

**Defined Contribution Committee Meeting Agenda** 

Tuesday, June 25, 2024 10:00 A.M.

I. Market Update and Performance Review-Callan (Information Only)

- a. MDC
- b. <u>ORP</u>
- **II.** <u>MDC Watchlist</u> (Intended Outcome – TBD)
- III. <u>ORP Plan Document</u> (Intended Outcome – Adoption)
- IV. Miscellaneous Updates (Information Only)
- V. Other

State Treasurer David McRae

# Callan

March 31, 2024

Mississippi Public Employees Retirement System Deferred Compensation Plan

Investment Measurement Service Quarterly Review

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Capital Market Review

# Callan Institute

# Capital Markets Review

# Investors, Be Careful for What You Wish

#### ECONOMY

PAGE Investors spent the 2010s wishing for a return to normal in interest rates. The U.S. economy is not back to this mythical equilibrium but is close. So, we achieved the yearned-for goal of normal interest rates, and the markets should be happy about this achievement. Right? Not so.

## Agg Falls as Rates Rose; HY Benefits

FIXED INCOME

A ggregate Bond Index PAGE fell 0.8% as rates rose. Investment grade corporates outperformed like-duration Treasuries. Lower quality also outperformed, with high yield corporates and leveraged loans posting the highest returns.

# Long-term Returns Top Leveraged Loans

### PRIVATE CREDIT

12 PAGE In 4Q23, private credit gained 3.1%, just above leveraged loans but well below a high yield benchmark. But over longer time periods it has handily outperformed both, with gains of 8.1% over the last 10 years. Investor interest in the asset class continues.

## Investors Show Gains but Lag Benchmark

#### INSTITUTIONAL INVESTORS

4<br/>P A G ENonprofits<br/>best, while<br/>risk-averse<br/>DB<br/>plans<br/>lagged. Public DB plans are review-<br/>ing their<br/>fixed-income<br/>structures<br/>in the new yield<br/>environment.<br/>Corporate<br/>DB plans<br/>saw interest<br/>rate<br/>hedging work. DC plans con-<br/>tinue to focus on fees.

### Private, Public Indices Fall on Rate Worries

#### REAL ESTATE/REAL ASSETS

**10** P A G E Both the NCREIF Property Index and the ODCE dropped, although income returns were positive. REITs trailed equities both in the U.S. and globally. In the U.S., stronger equity returns hurt, while rate concerns led to underperformance in Europe. Asian REITs outperformed.

# Strong Start to Year and Optimism in '24

#### HEDGE FUNDS/MACs

**13** PAGE All four major hedge fund types had positive performance, and the Callan Institutional Hedge Fund Peer Group rose 4.1%. MACs also saw gains. The market environment should remain positive for the asset class, especially for skilled long/ short managers.

# Big Rally at the Start of Year in Stocks

#### EQUITY

**6 P A G E** 500 posting a YTD gain of 11%, its best first quarter since 2019. Broad global markets also delivered strong returns on the decreasing expected probability of a recession in the U.S. and continued optimism around AI.

## Huge Drop in Activity From 2021-22 Peak

### PRIVATE EQUITY

Fundraising fell sharply in 2023 from the highs of 2021-22. Buyout activity also declined. There is a bifurcation in VC: An AI "supercycle" is accelerating early-stage deal activity and buoying valuations while late-stage companies struggle with slower growth.

### DC Index Rallies After Previous 3Q23 Loss

#### DEFINED CONTRIBUTION

**15** PAGE The Callan DC Index rose in 4Q23 by 9.5% after a loss in 3Q. Investment gains powered the increase. Exposure to equities in plans rose, as U.S. large cap equity saw a jump in allocations. Management fee data showed a drop in fees across the board.

### Broad Market Quarterly Returns











Sources: Bloomberg, FTSE Russell, MSCI

# Be Careful for What You Wish

#### ECONOMY | Jay Kloepfer

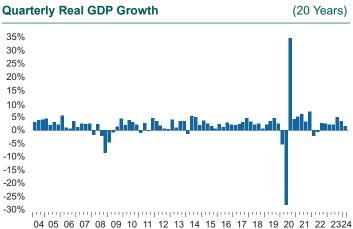
Since central bankers began the Zero Interest Rate Policy experiment following the Global Financial Crisis in 2008-09, including a revival of the policy in 2020 post-COVID, the market has bemoaned the lack of meaningful interest rates for debt investors. Investors spent the 2010s wishing for a "return to normal" in interest rates, which means a real return to investing in cash (a small premium over inflation); an upward sloping yield curve; and a 10-year Treasury rate that roughly equals nominal GDP growth.

What does that really mean? In a world of, say, 2% inflation (the Fed's target), and real GDP growth of 2.0%-3.0% (let's call it 2.5%), then cash would yield about 2.5%, 10-year Treasuries would yield about 4.5%, both savers and retirees would be satisfied with a positive real return to holding debt, and the economy could function on a real cost of capital that looks like the long-term average.

Today inflation is at 3.5% (March 2024), and economic growth has come in hotter than expected, meaning the Fed's inflation-fighting efforts may not yet be over. The U.S. economy and global capital markets are not back to this mythical equilibrium, but one could argue there is a decent chance of getting there within the next year or so.

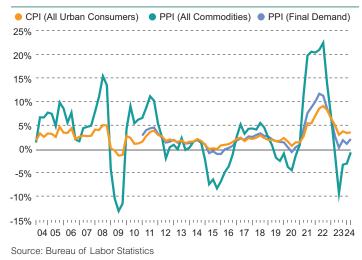
So we achieved the yearned-for goal of normal interest rates, and the markets should be happy about this achievement. Right? Not so—almost from the moment we began raising rates in 2022, moving in quick steps toward normalization, the capital markets have priced in an imminent recession and a reversal of interest rates, the very counter to normalization. What gives? Are we (the market) a giant collection of irrational actors? Did we regret our wished-for goal of normal interest rates once we saw what the goal would mean for the cost of debt, for mortgages, for short-term borrowing?

When I say the markets called for a reversal of rate hikes, it means the yield curve inverted, just three months after the Federal Reserve began raising rates. An inverted yield curve is simply the expression of market participants' belief that interest rates



Source: Bureau of Economic Analysis

#### Inflation Year-Over-Year



will come down at some point in the future, and it happens when bond investors move into longer-dated debt to pick up a bigger price gain when rates come down. This investor move drives up the price of longer bonds and drives down their yield. Why would investors expect rates to fall? They believe the rate hikes enacted by the Fed will slow the economy enough to cause recession and spur the Fed to start cutting rates to stimulate growth.

To the casual observer, this explanation of the path from investor expectations to an inverted yield curve to an economic forecast looks like a long way to go. What makes the current situation particularly interesting is that many market participants, simply by virtue of the experience since 2009 and their age, have never lived through inflation greater than 2% and interest rates anywhere near their current level. We can talk about a return to normal, but for many, the 10-year plus period of ZIRP was their "normal."

All forecasters expected the rate hikes begun in 2022 to cause a slowdown and likely a recession by 2023, and most certainly by 2024. GDP growth defied all forecasters and got stronger as 2023 progressed, finishing the year 2.5% higher than 2022. Driving the growth was a phenomenal year in the job market, as almost every industry segment finally surpassed its pre-pandemic peak. 1Q24 GDP growth came in at 1.6%, which is softer than the forecasts that led up to its release, and the first time growth has been below 2% in seven quarters, all the way back to the anomalous GDP losses in 1Q and 2Q in 2022. The Fed's Open Market Committee voted on May 1 to hold the Fed Funds target at 5.25%-5.5%. The Fed directly referenced final sales to domestic purchasers as reason for holding rates steady, as these sales grew at 3%, 3.3%, and 3.1% over the last three quarters (through 1Q24). The Fed has also changed its tone regarding inflation, after inflation rose in the first quarter, with the CPI hitting 3.5% in March. CPI dropped to 3.0% in June 2023, bounced around in the fall and started 2024 at 3.1%, but the persistence of inflation is humbling to the Fed.

The logical conclusion is that the current strength of the economy is both a sign that there is no urgent need to lower rates, and that this strength and the current rate of inflation are not in alignment with the Fed's goal of 2% inflation. So long as progress on inflation remains stalled, it will take longer than expected before the FOMC believes it will be appropriate to lower rates.

### Recent Quarterly Economic Indicators

#### 1Q24 4Q23 3Q23 2Q23 1Q23 4Q22 4.8% 4.5% Employment Cost: Total Compensation Growth 4.2% 4.2% 4.3% 5.1% 3.3% Nonfarm Business: Productivity Growth 0.3% 3.5% 4.6% -0.3% 2.1% GDP Growth 1.6% 3.3% 4.9% 2.1% 2.2% 2.6% 76.9% 77.2% 77.7% 78.0% 78.2% 78.5% Manufacturing Capacity Utilization 78.4 64.9 69.6 62.3 64.6 58.8 Consumer Sentiment Index (1966=100)

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve, IHS Economics, Reuters/University of Michigan

#### The Long-Term View

Index	1Q24	P 1 Yr		Ended 10 Yrs	
U.S. Equity	16(24		0 113	10 113	20 113
Russell 3000	10.0	29.3	14.3	12.3	8.0
S&P 500	10.6	29.9	15.0	13.0	7.8
Russell 2000	5.2	19.7	8.1	7.6	8.4
Global ex-U.S. Equity					
MSCI EAFE	5.8	15.3	7.3	4.8	4.6
MSCI ACWI ex USA	4.7	13.3	6.0	4.3	
MSCI Emerging Markets	2.4	8.2	2.2	2.9	
MSCI ACWI ex USA Small Cap	2.1	12.8	6.2	4.7	7.2
Fixed Income					
Bloomberg Agg	-0.8	1.7	0.4	1.5	3.8
90-Day T-Bill	1.3	5.2	2.0	1.4	1.9
Bloomberg Long G/C	-2.4	-1.1	-0.6	2.3	5.2
Bloomberg GI Agg ex US	-3.2	-0.7	-2.5	-1.4	2.3
Real Estate					
NCREIF Property	-1.0	-7.2	3.8	6.4	7.9
FTSE Nareit Equity	-0.2	10.5	4.1	6.6	9.5
Alternatives					
Cambridge PE*	-0.4	4.2	14.6	14.3	13.9
Cambridge Senior Debt*	0.1	11.3	5.9	6.7	
HFRI Fund Weighted	4.5	11.7	6.9	4.9	6.3
Bloomberg Commodity	2.2	-0.6	6.4	-1.6	2.7
Inflation – CPI-U	1.8	3.5	4.2	2.8	2.6

\*Data for most recent period lags. Data as of 3Q23.

Sources: Bloomberg, Bureau of Economic Analysis, FTSE Russell, Hedge Fund Research, MSCI, NCREIF, Refinitiv/Cambridge, S&P Dow Jones Indices

# **Investors Show Gains but Still Lag Benchmark**

### INSTITUTIONAL INVESTORS

- Strong equity gains and a modest rebound in bonds helped all investor types show gains in the one-year period ending 1Q24.
- Given their generally more aggressive portfolios, nonprofits performed best, while risk-averse corporate plans saw lower returns.
- But all investor types significantly lagged a benchmark consisting of 60% S&P 500/40% Bloomberg Aggregate.
- Over longer periods, public defined benefit (DB) plans have performed best.
- Over the last 20 years, investors have seen gains but still lag equities and the 60%/40% benchmark.

#### Market environment issues of concern to investors

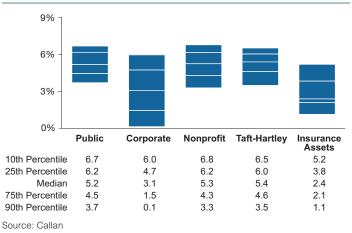
- On an annual-average over annual-average basis, forecasters from the Federal Reserve Bank of Philadelphia expect real GDP to increase 2.4% in 2024, up 0.7 percentage points from the estimate in the previous survey.
- The yield curve continues to be inverted, implying a recession is on the horizon.
  - Inversion started in July 2022 (20 months) or approximately 600+ days ago

- Many now saying this indicator may not be as good as it was
- · Election years also tend to do weird things to indicators

#### **Public DB plans**

- The median discount rate, according to the most recent NASRA survey, is 7.0%.
- A 7.0% return expectation can be achieved with 50% in fixed income.





#### Callan Database Median and Index Returns\* for Periods Ended 3/31/24

Database Group	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
Public Database	5.2	13.9	4.9	8.3	7.3	7.1
Corporate Database	3.1	9.1	1.1	5.4	5.7	6.5
Nonprofit Database	5.3	14.3	4.8	8.2	6.9	6.9
Taft-Hartley Database	5.4	13.2	4.9	7.9	7.2	6.8
Insurance Assets Database	2.4	8.6	1.8	4.4	4.1	4.7
All Institutional Investors	4.9	13.0	4.3	7.7	6.8	6.9
Large (>\$1 billion)	4.4	11.8	4.7	8.0	7.2	7.1
Medium (\$100mm - \$1bn)	5.1	13.2	4.4	7.8	6.9	6.9
Small (<\$100 million)	5.2	14.2	4.2	7.5	6.6	6.6
60% S&P 500/40% Bloomberg Agg	6.0	18.1	5.9	9.4	8.6	7.6
*						

\*Returns less than one year are not annualized.

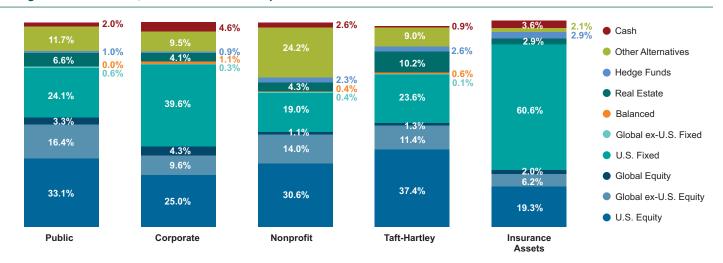
Source: Callan. Callan's database includes the following groups: public defined benefit (DB) plans, corporate DB plans, nonprofits, insurance assets, and Taft-Hartley plans. Approximately 10% to 15% of the database constituents are Callan's clients. All database group returns presented gross of fees. Past performance is no guarantee of future results. Reference to or inclusion in this report of any product, service, or entity should not be construed as a recommendation, approval, affiliation, or endorsement of such product, service, or entity by Callan.

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- Plans are starting to review their fixed income structures, specifically the need for risk in a higher-rate environment.
- More than a quarter of plans considered increasing their allocations to private real estate, a sharp jump from 3Q23, according to the Callan Consultant Survey.
- Interest in private credit took a big drop in 1Q24. At the same time, nearly 16% of clients are considering cutting allocations to the asset class, the most in survey history.
- There was also a big jump in the share of clients considering cuts to global ex-U.S. equity allocations.
- There was a smaller but still significant decrease in the share of clients considering reductions to U.S. equity.
- No clients planned changes to their fixed income allocations.

#### **Corporate DB plans**

- Liabilities decreased as rates rose.
- Interest rate hedging continues to work.
- Funded ratios for some clients improved as the equity markets increased.
- As closed plans' liabilities shorten, intermediate fixed income will continue to gather interest.
- As credit spreads have tightened, it is important to manage or reduce any overweight to credit.
- Corporate DB plans are considering increasing private equity, up from 0% in 3Q23.
- According to the Consultant Survey, the share of plans with a funded status between 91% and 100% dropped dramatically.



Average Asset Allocation, Callan Database Groups

- Both the share of clients with funded status under 80% and between 81% and 90% jumped.
- The share over 100% funded stayed relatively in line with previous quarters.

#### **Defined contribution (DC) plans**

 Fees are almost always the top concern for plan sponsors. This quarter, for the first time since 1Q18, they tied with another significant issue, in this case investment structure, in our Consultant Survey.

#### **Nonprofits**

- For clients that had increased the risk in their fixed income sleeves to gain a higher yield (in the lower-rate environment), they too are reviewing the need for risk in a higherrate environment.
- Nonprofit clients indicated they planned small adjustments for most alternative asset classes, with the notable exception of hedge funds and private real estate.

#### **Insurance assets**

- Insurance companies are still benefiting from higher yields on short-term fixed income.
- Claim costs are higher from experienced inflation.
- Risk-based capital charges must be considered when investing in alternative investments.

Note: Charts may not sum to 100% due to rounding. Other alternatives include but is not limited to: diversified multi-asset, private credit, private equity, and real assets. Source: Callan

# Equity

#### **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

15.8% 12.7% 11.0% 8.9% 8.8% 7.5% 5.0% -0.5% Communication Consumer Consumer Energy Financials Health Industrials Information Materials Real Estate Utilities Discretionary Staples Care Technology Services Source: S&P Dow Jones Indices

#### **Quarterly Performance of Industry Sectors** (3/31/24)

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.

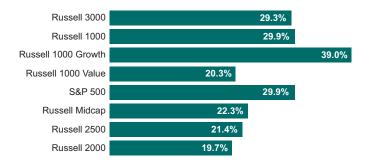
#### U.S. Equity: Quarterly Returns

Russell 3000 10.0% Russell 1000 10.3% 11.4% Russell 1000 Growth Russell 1000 Value 9.0% S&P 500 10.6% Russell Midcan 8.6% Russell 2500 6.9% Russell 2000 5.2%



(3/31/24)

(3/31/24)



Sources: FTSE Russell and S&P Dow Jones Indices

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#### **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.

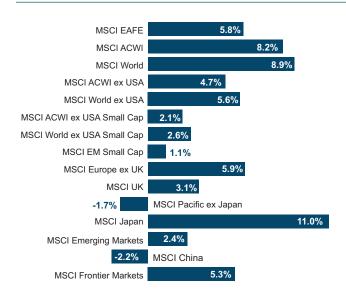
#### Fast growth in India

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

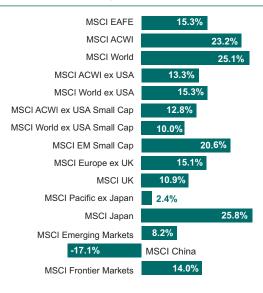
#### Market valuation in India

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

#### Global ex-U.S. Equity: Quarterly Returns (U.S. Dollar, 3/31/24)



#### Global ex-U.S. Equity: One-Year Returns (U.S. Dollar, 3/31/24)



Source: MSCI

# **Fixed Income**

#### **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).

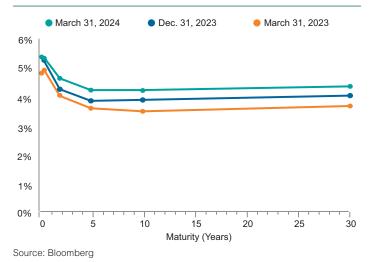
#### Aggregate falls as rates climb

- 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**

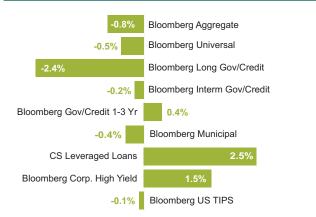
- Highest first quarter of new issuance on record, with \$529 billion in investment grade corporates, surpassing 2020's \$479 billion.
- High yield quarterly issuance was just as significant with a volume of \$85 billion, a level not seen since 2021.
- Both were met with strong investor demand.
- Corporate 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 13th percentile over the last 20 years, while high yield bonds are in the 8th percentile. Bank loans are relatively more attractive, with spreads in the 42nd percentile since June 2008.
- However, all-in yields continue to provide high levels of income, with investment grade credit in the 77th percentile

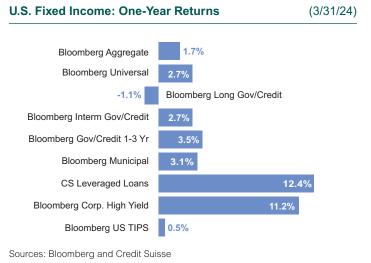
#### **U.S. Treasury Yield Curves**



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







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### 13/201

#### FIXED INCOME (Continued)

over the last 20 years, while high yield is in the 58th percentile. Bank loan yields, which are benefitting from the inverted yield curve, are in the 81st percentile since June 2008.

#### **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%.

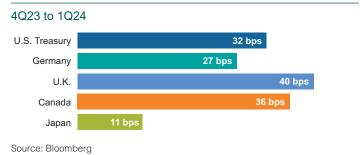
#### U.S. dollar strengthened

- 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%.

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

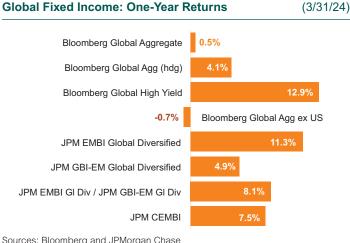


**Global Fixed Income: Quarterly Returns** 

(3/31/24)



Sources: Bloomberg and JPMorgan Chase



Sources: Bloomberg and JPMorgan Chase

Local currencies generally lost ground to the U.S. dollar, hurting returns for the JPM GBI-EM Global Diversified Index.

# Private, Public Indices Fall on Rate Concerns

#### REAL ESTATE/REAL ASSETS | Munir Iman

#### Appreciation returns drive NPI lower

- The NCREIF Property Index, a measure of unlevered U.S. institutional real estate assets, fell 1.0% during 1Q24.
- The income return was 1.2% while the appreciation return was -2.1%.
- Hotels, which represent a small portion of the index, led property sector performance with a gain of 0.8%. Office finished last with a loss of 3.8%.
- Regionally, the South led with a gain of 0.1%, while the West was the worst performer with a drop of 1.4%.
- The NCREIF Open-End Diversified Core Equity (ODCE) Index, representing equity ownership positions in U.S. core real estate, fell 2.4% during 1Q, with an income return of 1.0% and an appreciation return of -3.4%.

#### U.S. real estate securities

- U.S. REITs (-0.2%) underperformed the S&P 500 (+10.6%). The underperformance was driven by optimism about the broader economy and excitement about artificial intelligence, which drew capital flows away from REITs.
- Earnings growth for U.S. REITs is expected to be in the low single digits due to conservatism and elevated interest rates.
- Cyclical sectors including malls and lodging led U.S. REITs in 1Q, while net lease and storage trailed due to higher interest rate sensitivity and weak pricing power, respectively.



Source: NCREIF

 Dampening inflation, coupled with more dovish Federal Reserve sentiment, sparked a rally to close the year.

#### Asia/Pacific real estate securities

- The FTSE EPRA Nareit Developed Asia Index (USD) fell 0.2% during the quarter. Strength in higher beta, growthsensitive Japanese developers was a driver of the region's relative outperformance.
- Hong Kong was the primary underperformer due to concerns over a sustainable pickup in China growth momentum.

#### European real estate securities

- The FTSE EPRA Nareit Developed Europe Index (USD) dropped by 5.0% during the quarter.
- Europe was the lowest-performing region, driven by signs of stickier inflation driving a repricing of rate cut expectations.
- The less-indebted U.K. outperformed continental Europe.

#### Callan Database Median and Index Returns\* for Periods Ended 3/31/24

Private Real Assets	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	20 Years
Real Estate ODCE Style	-1.8	-1.8	-11.6	2.9	3.2	6.4	6.0
NFI-ODCE (value-weighted, net)	-2.6	-2.6	-12.0	2.5	2.6	5.8	6.0
NCREIF Property	-1.0	-1.0	-7.2	3.6	3.8	6.4	7.5
NCREIF Farmland	0.7	0.7	3.6	7.4	6.0	7.1	12.2
NCREIF Timberland	2.1	2.1	9.8	11.0	7.0	5.8	7.1
Public Real Estate							
Global Real Estate Style	-0.7	-0.7	9.4	0.8	2.9	5.5	7.1
FTSE EPRA Nareit Developed	0.7	0.7	1.6	2.5	3.3	5.5	
Global ex-U.S. Real Estate Style	-1.0	-1.0	8.4	-4.2	-0.3	3.8	
FTSE EPRA Nareit Dev ex US	-2.0	-2.0	5.9	-5.8	-3.3	0.9	
U.S. REIT Style	-0.8	-0.8	9.9	3.7	5.3	7.3	8.3
FTSE EPRA Nareit Equity REITs	-0.2	-0.2	10.5	4.1	4.1	6.6	7.4

\*Returns less than one year are not annualized. Sources: Callan, FTSE Russell, NCREIF

# 10 Callan Institute

# Significant Drops in Activity From Peak Years of 2021-22

#### PRIVATE EQUITY | Ashley Kahn

**Fundraising** In 2023, the number of funds raised declined sharply by ~50% from the highs of 2021–22. The 2023 vintage experienced the full impact of the denominator effect, which when combined with slower deal activity and exits, left minimal capital for new commitments.

**Buyouts** ► Buyout activity in 2023 declined by about a third compared to the highs of 2021-22, reflecting high interest rates, a wide bid-ask spread, and lingering effects from the slowdown in the public markets. 3Q23 appears to be the trough in buyout dealmaking, with early 2024 seeing improved liquidity conditions and higher public markets comps. Average deal size has declined; larger buyouts have been more difficult to finance, leading to greater activity for small/mid buyouts and add-on acquisitions.

Venture Capital and Growth Equity ► 2023 saw a substantial decline of ~50% in venture capital and growth equity activity, following the highs of 2021. There is a bifurcation by stage: An artificial intelligence "supercycle" is accelerating early-stage deal activity and buoying valuations, while late-stage companies struggle with slower growth, falling valuations, and lack of exit prospects.

A significant amount of capital is tied up in venture-backed companies waiting to go public, which is slowing down new

investment activity (e.g., SpaceX, Databricks, Chime, Scale AI, etc.). 2023-24 has witnessed a few high-profile IPOs (Instacart, Klaviyo, and Reddit), but there has not been an IPO above \$10 billion since 2021.

Exits ► Exits in 2023 have declined dramatically by over 50% compared to their all-time record in 2021. Only 8% of total private equity AUM generated liquidity in 2023 (the lowest level ever, lower even than in the depths of the Global Financial Crisis).

**Returns** ► The strong recovery of the public equity market in 2023 (led by the "Magnificent Seven" technology stocks) has left private equity in its wake. Private equity doesn't recover as quickly as the public markets because the smoothing effect dampens private equity returns in both up and down markets.

#### Funds Closed 1/1/23 to 12/31/23

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	1,584	199,090	21%
Growth Equity	139	103,324	11%
Buyouts	515	471,684	50%
Mezzanine Debt	24	36,050	4%
Distressed/Special Credit	42	46,018	5%
Energy	6	3,296	0%
Secondary and Other	137	74,616	8%
Fund-of-funds	25	5,567	1%
Totals	1,472	552,402	100%

Source: PitchBook (Figures may not total due to rounding.)

#### Private Equity Performance (%) (Pooled Horizon IRRs through 9/30/23\*)

Strategy	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
All Venture	-2.4	-8.9	14.8	17.2	17.2	13.4	12.5	20.4
Growth Equity	-0.6	0.8	12.3	14.8	14.3	13.1	13.8	14.3
All Buyouts	0.1	10.2	16.8	15.0	14.6	12.4	14.6	12.8
Mezzanine	1.8	13.0	13.5	11.0	11.1	10.7	11.1	9.9
Credit Opportunities	1.2	8.2	11.1	7.1	7.5	10.1	9.3	9.6
Control Distressed	0.4	5.6	19.4	13.6	11.7	11.5	11.6	11.4
All Private Equity	-0.4	4.2	15.4	14.8	14.3	12.5	13.6	13.0
S&P 500	-3.3	21.6	10.2	9.9	11.9	11.3	9.7	7.9
Russell 3000	-3.3	20.5	9.4	9.1	11.3	11.1	9.7	8.1

Note: Private equity returns are net of fees. Sources: LSEG/Cambridge and S&P Dow Jones Indices \*Most recent data available at time of publication

Note: Transaction count and dollar volume figures across all private equity measures are preliminary figures and are subject to update in subsequent versions of the Capital Markets Review and other Callan publications.

# Long-term Returns Top Leveraged Loans

#### PRIVATE CREDIT | Cos Braswell

- Private credit performance varies across sub-asset class and underlying return drivers.
- In 4Q23, it gained 3.1%, slightly above a leveraged loan index and well below a high yield benchmark.
- Over the past 10 years, the asset class has generated a net IRR of 8.2%, outperforming leveraged loans and high yield bonds, as of Dec. 31, 2023.
- Higher-risk strategies have performed better than lower-risk strategies.
- Private credit remained in high demand across Callan's investor base, and a number of large defined benefit plans are looking to increase their existing private credit allocations from 2%–3% to 5%–10%.
- While we always work to build out diversified client portfolios, we think there is particularly interesting relative value

in upper middle market sponsor-backed lending and assetbased lending.

- We are seeing an uptick in stress for some individual names in direct lending portfolios due to a combination of input cost inflation and increased interest expense.
- Private credit AUM stood at over \$1.5 trillion at the end of 2023, with Preqin forecasting the asset class will grow to over \$2.5 trillion by 2028 at a 11.13% CAGR from 2023 to 2028.
- Direct lending is expected to grow steadily through 2028 as investors increase their private credit allocations.
- Distressed exposure will grow a bit more slowly, with other strategies such as opportunistic, special situations, and other niche diversifiers growing more quickly.



#### Private Credit Performance (%) (Pooled Horizon IRRs through 12/31/23\*)

#### Private Credit Performance (%) (Pooled Horizon IRRs by Strategy through 12/31/23\*)

Strategy	Quarter	1 Year	5 Years	10 Years	20 Years
Senior Debt	4.2	9.9	7.0	7.1	7.3
Mezzanine	3.3	12.3	11.7	11.1	11.1
Credit Opportunities	2.6	7.9	8.3	7.5	9.2
Total Private Credit	3.1	9.2	8.7	8.2	9.4

Source: LSEG/Cambridge

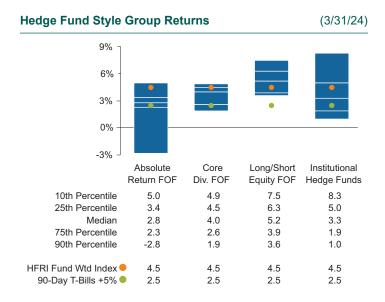
\*Most recent data available at time of publication

# **Strong Start to Year For Most Strategies**

#### HEDGE FUNDS/MACs | Joe McGuane

2024 started the year off on a strong note, as risk assets saw a second consecutive double-digit quarter for U.S. equities. Interest rate expectations stayed front-and-center throughout the quarter as lingering inflationary pressures in the U.S. led to a tempering of Fed rate cut expectations for 2024. Positive macroeconomic sentiment was further spurred by corporate earnings, and secular themes such as artificial intelligence (AI) growth and related efficiency gains helped move broad markets higher.

Hedge funds started the year off on a strong note, as macro strategies produced their strongest quarter in over 20 years. Macro managers were positioned for moderating inflation, interest rate volatility, and an improving economic outlook. Equity hedge strategies also performed well during 1Q, as managers saw performance coming from the Technology, Energy, and Health Care sectors. Event-driven had a positive quarter, as positions across special situations, distressed, and



Sources: Callan, Credit Suisse, Federal Reserve

#### Callan Peer Group Median and Index Returns\* for Periods Ended 3/31/24

Hedge Fund Universe	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years
Callan Institutional Hedge Fund Peer Group	3.3	9.3	5.8	7.2	6.1	7.6
Callan Fund-of-Funds Peer Group	3.9	10.1	4.2	5.6	4.4	5.6
Callan Absolute Return FOF Style	2.8	8.2	5.2	5.1	4.2	5.3
Callan Core Diversified FOF Style	4.0	10.2	4.3	5.6	3.8	5.4
Callan Long/Short Equity FOF Style	5.2	13.0	1.1	6.1	5.5	6.2
HFRI Fund Weighted Index	4.5	11.7	4.1	6.9	4.9	5.9
HFRI Fixed Convertible Arbitrage	4.0	7.5	3.9	6.6	5.0	7.7
HFRI Distressed/Restructuring	2.8	9.9	4.1	6.5	4.1	7.0
HFRI Emerging Markets	3.0	9.7	0.2	4.1	3.5	5.3
HFRI Equity Market Neutral	4.1	9.5	5.5	3.8	3.3	3.1
HFRI Event-Driven	2.5	11.7	4.1	6.4	4.7	6.8
HFRI Relative Value	2.5	8.2	4.1	4.6	4.0	6.1
HFRI Macro	6.2	8.5	6.1	6.4	3.7	3.0
HFRI Equity Hedge	5.2	14.3	3.2	7.9	5.7	6.9
HFRI Multi-Strategy	2.0	10.6	0.3	4.6	3.1	5.4
HFRI Merger Arbitrage	0.3	7.2	4.7	5.6	4.6	4.6
90-Day T-Bill + 5%	2.5	10.2	7.6	7.0	6.4	6.0

\*Net of fees. Sources: Callan, Credit Suisse, Hedge Fund Research

activist positions drove performance. Relative value strategies performed well, as managers profited off interest rate volatility throughout the quarter.

Serving as a proxy for large, broadly diversified hedge funds with low-beta exposure to equity markets, the median Callan Institutional Hedge Fund Peer Group rose 3.3%. Within this style group of 50 peers, the average hedged credit manager gained 6.4%, driven by interest rate volatility. Meanwhile, the average hedged equity manager added 5.0%, as those focused on technology, energy, and health care drove performance. The median Callan Institutional hedged rates manager rose 0.7%, largely driven by relative value fixed income trades.

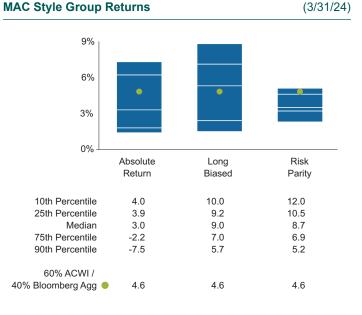
Within the HFRI Indices, the best performing strategy was macro, which gained 6.2%, as managers were positioned for moderating inflation, interest rate volatility, and an improving economic outlook.

Across the Callan Hedge FOF database, the median Callan Long-Short Equity FOF ended 5.2% higher, as managers with a focus on the technology sector drove performance. Meanwhile, the median Callan Core Diversified FOF rose 4.0%, as equity and event-driven strategies drove performance. Callan Absolute Return FOF gained 2.8%, as higher equity beta strategies were behind this move higher.

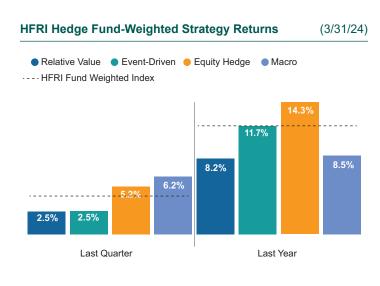
Since the Global Financial Crisis, liquid alternatives to hedge funds have become popular among investors for their attractive risk-adjusted returns that are similarly uncorrelated with traditional stock and bond investments but offered at a lower cost.

Within Callan's database of liquid alternative solutions, the Callan MAC Long Biased manager rose 9.0%, as the strong equity rally pushed performance higher. The Callan MAC Risk Parity peer group rose 8.7%, as equities and fixed income drove performance. The Callan MAC Absolute Return peer group rose 3.0%, as broad markets had a strong start to the year.

As it appears interest rates will be higher for longer, this will likely keep return expectations and opportunities for hedge funds elevated. In the current market environment, where both businesses and investors face higher capital costs, this causes a greater focus on capital allocation, rewarding skilled investors for identifying the highest and best uses of scarce capital. The potential for alpha generation through long-short strategies remains strong, as there has been significant dispersion across asset classes and sectors.



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



Source: HFRI

# Index Rallies After Previous Quarter's Loss

#### **DEFINED CONTRIBUTION | Scotty Lee**

#### Performance: One-year gain of 17%

- The Callan DC Index<sup>™</sup> gained 9.5% in 4Q23, which brought the Index's trailing one-year gain to 17.2%.

#### Growth Sources: Investment gains lead to rise in balances

Balances within the DC Index rose by 9.0% after a 3.2% decrease in the previous guarter. Investment gains (9.5%) were the sole driver of the gain, while net flows (-0.5%) detracted.

#### Turnover: Net transfers decrease

 Turnover (i.e., net transfer activity levels within plans) slightly fell to 0.24% from the previous guarter's measure of 0.26%. The Index's historical average (0.55%) remained steady.

#### Net Cash Flow Analysis: TDFs remain in top spot

Target date funds (TDFs) garnered 90.7% of guarterly net flows. Notably, stable value (-45.1%) saw relatively large outflows for the fifth consecutive guarter.

#### Equity Allocation: Exposure rises

The Index's overall allocation to equity (72.5%) rose slightly from the previous quarter's level (71.5%).

#### Asset Allocation: Capital preservation declines

- U.S. large cap equity (26.9%) and target date funds (34.8%) were among the asset classes with the largest percentage increases in allocation, while stable value (7.4%) had the largest decrease in allocation due to net outflows.

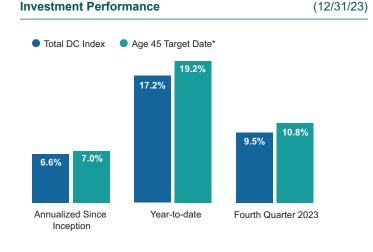
#### Prevalence of Asset Class: Global equity rises

The prevalence of global equity funds (19.2%) rose by 3.4%. In contrast, the prevalence of U.S. small/mid cap funds (92.9%) fell by 3.3%.

#### Management Fees: Decline for all plan sizes

For plans with assets less than \$500 million in assets, the average asset-weighted fee decreased by 3 basis points. Plans with assets between \$500 million and \$1 billion saw the largest fee decrease of 9 bps, while the fee for plans with more than \$1 billion in assets had a decrease of 4 bps.

Underlying fund performance, asset allocation, and cash flows of more than 100 large defined contribution plans representing approximately \$400 billion in assets are tracked in the Callan DC Index.



### **Growth Sources**

% Total Growth % Net Flows % Return Growth



(12/31/2)

#### Net Cash Flow Analysis (4Q23)

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	90.7%
Global ex-U.S. Equity	6.9%
U.S. Small/Mid Cap	-16.9%
Stable Value	-45.1%
Total Turnover**	0.2%

Data provided here is the most recent available at time of publication. Source: Callan DC Index

Note: DC Index inception date is January 2006.

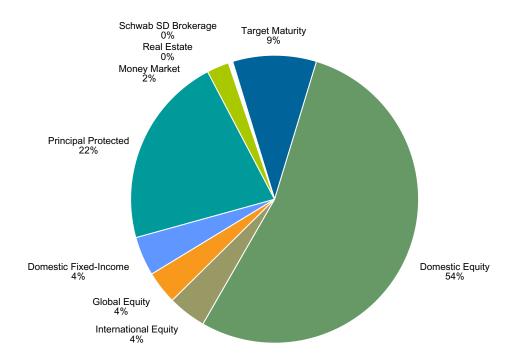
- The Age 45 Fund transitioned from the average 2035 TDF to the 2040 TDF in June 2018.
- \*\* Total Index "turnover" measures the percentage of total invested assets (transfers only, excluding contributions and withdrawals) that moved between asset classes.

### **Investment Performance**

Asset Allocation and Performance

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

The chart below shows the Fund's asset allocation as of March 31, 2024.



#### **Actual Asset Allocation**

Asset Class	\$000s Actual	Weight Actual
Target Maturity	220,367	9.5%
Domestic Equity	1,248,051	53.6%
International Equity	99,983	4.3%
Global Equity	85,558	3.7%
Domestic Fixed-Income	102,463	4.4%
Principal Protected	502,263	21.6%
Money Market	57,196	2.5%
Real Éstate	9,793	0.4%
Schwab SD Brokerage	2,264	0.1%
Total	2,327,938	100.0%

### **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.

	March 31,	2024			December 3	1, 2023
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Principal Protected	\$502,262,560	21.58%	\$(11,244,223)	\$3,665,593	\$509,841,190	22.98%
MDC Stable Value	502,262,560	21.58%	(11,244,223)	3,665,593	509,841,190	22.98%
Money Market	\$57,196,265	2.46%	\$2,481,456	\$766,672	\$53,948,137	2.43%
BlackRock Money Market	57,196,265	2.46%	2,481,456	766,672	53,948,137	2.43%
Domestic Equity	\$1,248,051,232	53.61%	\$(25,653,928)	\$119,309,545	\$1,154,395,615	52.04%
NT S&P 500 Index	415,834,052	17.86%	(5,745,558)	39,949,190	381,630,420	17.20%
Vanguard Windsor	104,397,620	4.48%	(2,599,130)	5,936,279	101,060,471	4.56%
Loomis Sayles LC Growth	375,601,588	16.13%	(7,813,575)	41,815,273	341,599,891	15.40%
PGI Mid-Cap Equity Fund	284,116,706	12.20%	(8,032,082)	28,610,994	263,537,794	11.88%
NT R2000 Index Fund	26,464,589	1.14%	(801,127)	1,296,073	25,969,644	1.17%
Wellington Small Cap Opps	41,636,674	1.79%	(662,455)	1,701,737	40,597,393	1.83%
International Equity	\$99,982,897	4.29%	\$(912,869)	\$4,319,510	\$96,576,257	4.35%
NT EAFE Index Fund	33,146,609	1.42%	1,345,397	1,758,454	30,042,759	1.35%
T Rowe Price Intl Growth Equity Trus (1)	66,836,288	2.87%	(2,258,266)	2,561,056	66,533,498	3.00%
Global Equity	\$85,557,561	3.68%	\$(1,741,170)	\$6,757,016	\$80,541,715	3.63%
American Funds New Perspective	85,557,561	3.68%	(1,741,170)	6,757,016	80,541,715	3.63%
Domestic Fixed-Income	\$102,462,566	4.40%	\$3,640,656	\$(368,409)	\$99,190,319	4.47%
NT Aggregate Bond Index	42,455,612	1.82%	1,628,832	(320,352)	41,147,133	1.85%
Voya Intermediate Bond R6	33,569,366	1.44%	200.395	(35,997)	33,404,969	1.51%
NT TIPS Index Fund	26,437,587	1.14%	1,811,430	(12,060)	24,638,217	1.11%
Real Estate	\$9,793,380	0.42%	\$278,288	\$(145,051)	\$9,660,143	0.44%
BNY Mellon EB US RE Securities	9,793,380	0.42%	278,288	(145,051)	9,660,143	0.44%
Target Maturity	\$220,367,460	9.47%	\$(1,073,179)	\$9,243,600	\$212,197,039	9.57%
Vanguard Target Retirement Inc	44,117,298	1.90%	(1,461,587)	945,409	44,633,476	2.01%
Vanguard Target Retirement 2020	19,076,628	0.82%	(595,654)	524,339	19,147,943	0.86%
Vanguard Target Retirement 2025	33,106,111	1.42%	(1,148,623)	1,209,065	33,045,669	1.49%
Vanguard Target Retirement 2030	34,674,395	1.49%	1,189,584	1,517,487	31,967,323	1.44%
Vanguard Target Retirement 2035	29,093,866	1.25%	1,125,564	1,434,669	26,533,634	1.20%
Vanguard Target Retirement 2040	19,315,841	0.83%	(411,748)	1,053,391	18,674,198	0.84%
Vanguard Target Retirement 2045	16,546,350	0.71%	125,831	995,591	15,424,928	0.70%
Vanguard Target Retirement 2050	11,228,070	0.48%	152,152	719,430	10,356,488	0.47%
Vanguard Target Retirement 2055	5,951,432	0.26%	(157,926)	386,043	5,723,315	0.26%
Vanguard Target Retirement 2060	3,496,322	0.15%	6,292	223,107	3,266,923	0.15%
Vanguard Target Retirement 2065	3,761,146	0.16%	102,935	235,069	3,423,142	0.15%
Schwab Self-Directed Brokerage	\$2,263,664	0.10%	\$191,610	\$(36,722)	\$2,108,776	0.10%
Total Fund	\$2,327,937,586	100.0%	\$(34,033,359)	\$143,511,754	\$2,218,459,191	100.0%

#### **Asset Distribution Across Investment Managers**

(1) Changed share class in 3Q16 from T. Rowe Price International Growth Mutual Fund to T. Rowe Price International Growth Equity Trust.

### **Investment Fund Returns and Peer Group Rankings**

The table below details the rates of return and peer group rankings for the Fund's investment funds 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.

annualizeu.	urns and Ranking	no for	Deriede F	ndad	Marah 21	2024			
	Last Quarter	ys 101	Last Year	Indeu	Last 3 Years	2024	Last 5 Years		Last 10 Years
Principal Protected MDC Stable Value FTSE 3 Month T-Bill + 100 bp Callan Stable Value	0.74% 1.61% 0.59%	10 1	2.91% 6.52% 2.39%	10 1	2.25% 3.70% 1.77%	8 1	2.32% 3.07% 1.79%	4 1	2.23% 2.39% 1.65%
Money Market BlackRock Money Market FTSE 3 Mo T-Bill Callan Money Market Funds	1.39% 1.37% 1.29%	21 22	5.60% 5.52% 5.23%	27 29	2.90% 2.70% 2.52%	6 15	2.24% 2.07% 1.90%	17 27	1.61% 1.39% 1.24%
Domestic Equity NT S&P 500 Index Fund S&P 500 Index Callan Large Cap Core MFs	10.55% 10.56% 11.60%	67 67	29.86% 29.88% 31.10%	55 55	11.48% 11.49% 11.77%	54 54	15.04% 15.05% 14.50%	43 43	- 12.96% 11.87%
Vanguard Windsor Russell 1000 Value Index Callan Lg Cap Value MF	6.02% 8.99% 9.55%	97 55	18.48% 20.27% 21.90%	74 63	10.40% 8.11% 9.42%	34 74	13.74% 10.32% 11.35%	10 69	10.11% 9.01% 9.19%
Loomis Sayles LC Growth Russell 1000 Growth Index Callan Large Cap Grwth MF	12.35% 11.41% 12.81%	57 71	40.46% 39.00% 40.21%	48 59	12.54% 12.50% 9.64%	3 3	17.22% 18.52% 15.89%	21 8	16.86% 15.98% 14.38%
PGI Mid-Cap Equity Fund Russell MidCap Index Callan Mid Cap MFs	11.05% 8.60% 9.06%	19 60	32.77% 22.35% 22.27%	4 50	9.42% 6.07% 4.41%	17 43	- 11.10% 11.37%	54	- 9.95% 9.87%
NT R2000 Index Fund Russell 2000 Index Callan Small Cap MFs	5.17% 5.18% 6.51%	69 69	19.63% 19.71% 19.58%	50 49	(0.11%) (0.10%) 2.42%	68 68	8.10% 8.10% 9.55%	71 71	- 7.58% 8.49%
Wellington Small Cap Opps Russell 2000 Index Callan Small Cap MFs	4.28% 5.18% 6.51%	80 69	17.31% 19.71% 19.58%	61 49	3.58% (0.10%) 2.42%	40 68	- 8.10% 9.55%	71	- 7.58% 8.49%
International Equity NT EAFE Index Fund MSCI EAFE Index Callan Intl Eq Dev Mkt MF	5.78% 5.78% 4.85%	36 36	15.27% 15.32% 13.33%	26 26	5.11% 4.78% 3.30%	23 25	7.67% 7.33% 7.20%	37 48	- 4.80% 4.59%
T Rowe Price International Gr Trust* Custom Benchmark** Callan Non US Equity MFs	3.95% 4.69% 5.29%	80 64	10.68% 13.26% 13.33%	76 55	0.34% 1.94% 3.34%	76 69	6.28% 5.97% 6.95%	69 73	5.82% 4.25% 4.65%
Global Equity American Funds New Perspective MSCI World Index Callan Global Equity MFs	8.49% 8.88% 7.98%	35 32	22.92% 25.11% 22.42%	43 33	5.22% 8.60% 5.34%	56 9	12.78% 12.07% 10.48%	25 30	10.96% 9.39% 8.88%
Domestic Fixed Income NT Aggregate Bond Index Fund BImbg Aggregate Index Callan Core Bond MFs	(0.79%) (0.78%) (0.48%)	89 88	1.67% 1.70% 2.25%	75 75	(2.44%) (2.46%) (2.42%)	52 58	0.32% 0.36% 0.70%	91 89	- 1.54% 1.73%
Voya Intermediate Bond R6 Blmbg Aggregate Index Callan Core Plus MFs	(0.11%) (0.78%) (0.28%)	29 90	3.60% 1.70% 2.87%	31 82	(2.12%) (2.46%) (2.04%)	53 69	0.89% 0.36% 0.91%	52 87	2.15% 1.54% 2.00%

0.46%

0.45% 1.05%

8.40%

8.02% 8.16%

57

57

46

53

(0.47%)

(0.53%) (0.55%)

2.94% 2.47% 2.68%

49

50

37

58

\*Changed share class in 3Q16 from T Rowe Price International Growth Mutual Fund to T Rowe Price International Growth

(0.08%) (0.08%) 0.14%

(1.30% (1.04%

74

75

67

61

Equity Trust. \*\*Custom Benchmark is MSCI EAFE Index through 12/31/07 and MSCI AC World ex US USD (Net) thereafter. \*\*\*NAREIT Equity Index through 4/30/2020; then NAREIT All Equity Index thereafter.

Real Estate

NT TIPS Index Fund

Blmbg US TIPS Index Morningstar Infl-Prot Bd

BNY Mellon EB US RE Securities NAREIT All Equity Index\*\*\* Callan Real Estate MFs

2.49%

2.49% 2.53%

3.61%

2.51% 4.26%

52

52

69

90

1 1

18 26

26

23 61

4 7

45

72

72

44

21 61

16 41

79

33 91

17

44

78

-2.21% 2.00%

6.73%

5.76% 6.43%

### **Investment Fund Returns and Peer Group Rankings**

The table below details the rates of return and peer group rankings for the Fund's investment funds 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.

					Last		Last	Last		
	Last				3		5		Last 10	
	Quarter		Year		Years		Years		Years	
arget Maturity										
Vanguard Target Retirement Inc.	2.09%	78	8.47%	61	1.25%	59	4.19%	60	4.18%	40
Vanguard Tgt Income Index	2.15%	75	8.70%	59	1.44%	51	4.44%	47	4.37%	24
Callan Tgt Date Ret Inc	2.62%		9.01%		1.47%		4.39%		4.12%	
Vanguard Target Retirement 2020	2.83%	81	10.42%	69	2.02%	65	5.64%	49	5.66%	37
Vanguard Tgt 2020 Index	2.86%	78	10.70%	56	2.25%	44	5.96%	27	5.91%	18
Callan Target Date 2020	3.36%		10.80%		2.18%		5.63%		5.47%	
Vanguard Target Retirement 2025	3.81%	44	12.95%	17	2.71%	34	6.60%	28	6.35%	18
Vanguard Tgt 2025 Index	3.84%	41	13.24%	11	3.04%	20	6.99%	8	6.64%	9
Callan Target Date 2025	3.77%		11.96%		2.55%		6.37%		5.91%	
Vanguard Target Retirement 2030	4.57%	50	14.81%	25	3.39%	41	7.41%	39	6.91%	27
Vanguard Tgt 2030 Index	4.52%	55	15.09%	19	3.71%	25	7.80%	13	7.20%	14
Callan Target Date 2030	4.56%		14.26%		3.20%		7.28%		6.72%	
Vanguard Target Retirement 2035	5.24%	62	16.37%	51	4.07%	49	8.21%	54	7.46%	36
Vanguard Tgt 2035 Index	5.14%	69	16.61%	43	4.36%	30	8.59%	24	7.75%	25
Callan Target Date 2035	5.52%		16.37%		4.06%		8.24%		7.33%	
Vanguard Target Retirement 2040	5.85%	68	17.94%	62	4.74%	60	8.99%	52	7.98%	43
Vanguard Tgt 2040 Index	5.76%	75	18.15%	58	5.02%	44	9.37%	33	8.28%	28
Callan Target Date 2040	6.45%		18.56%		4.92%		9.01%		7.91%	
Vanguard Target Retirement 2045	6.45%	70	19.45%	65	5.37%	55	9.75%	49	8.43%	41
Vanguard Tgt 2045 Index	6.38%	75	19.70%	58	5.66%	34	10.14%	28	8.73%	16
Callan Target Date 2045	6.96%		19.96%		5.51%		9.74%		8.22%	
Vanguard Target Retirement 2050	6.86%	69	20.42%	58	5.72%	49	10.02%	48	8.56%	38
Vanguard Tgt 2050 Index	6.84%	70	20.76%	50	6.02%	31	10.41%	25	8.86%	15
Callan Target Date 2050	7.26%		20.69%		5.68%		9.95%		8.43%	
Vanguard Target Retirement 2055	6.88%	73	20.43%	63	5.72%	55	10.02%	52	8.55%	47
Vanguard Tgt 2055 Index	6.84%	74	20.76%	57	6.02%	36	10.41%	34	8.86%	2′
Callan Target Date 2055	7.48%		21.12%		5.78%		10.08%		8.52%	
Vanguard Target Retirement 2060	6.87%	78	20.44%	62	5.73%	53	10.04%	51	8.55%	4(
Vanguard Tgt 2060 Index	6.84%	80	20.76%	56	6.02%	36	10.41%	37	8.86%	17
Callan Target Date 2060	7.55%		21.29%		5.79%		10.10%		8.52%	
Vanguard Target Retirement 2065	6.88%	83	20.41%	68	5.74%	49	10.02%	75	-	
Vanguard Tgt 2065 Index	6.84%	88	20.76%	65	6.02%	33	10.41%	37	-	
Callan Target Date 2065	7.67%		21.61%		5.73%		10.09%		-	

Returns for Target Date funds are Investor share class through September 2015; then Institutional share class through December 2021; and Investor share class thereafter.

Callan

25/201

## Expense Analysis For the Quarter Ending March 31, 2024

Fund	Style	Fund Balance	Estimated Fund Expense	Fund Net Expense Ratio	Median Net Expense Ratio*	Net Expense Difference
Principal Protected						
MDC Stable Value	Principal Protected	502,262,560.35	1,356,108.91	0.27%	0.57%	-0.30%
Money Market						
BlackRock Money Market	Money Market	57,196,265.12	28,598.13	0.05%	0.36%	-0.31%
Domestic Equity						
NT S&P 500 Index Fund	Large Cap Core	415,834,051.93		0.01%	0.92%	-0.91%
Vanguard Windsor	Large Cap Value	104,397,620.46	334,072.39	0.32%	0.99%	-0.67%
Loomis Sayles	Large Cap Growth	375,601,588.13	1,690,207.15	0.45%	1.00%	-0.55%
PGI Mid-Cap Equity Fund	US Mid Cap Eq	284,116,706.20	1,164,878.50	0.41%	1.11%	-0.70%
Wellington Small Cap Opps	US Small Cap Eq	41,636,674.34	324,766.06	0.78%	1.15%	-0.37%
NT Russell 2000 Index Fund	US Small Cap Eq	26,464,588.92	7,939.38	0.03%	1.15%	-1.12%
International Equity						
NT EAFE Index Fund	Intl Equity	33,146,608.94	13,258.64	0.04%	1.06%	-1.02%
T Rowe Price International	Intl Equity	66,836,288.42	421,068.62	0.63%	1.06%	-0.43%
Global Equity						
American Funds New Perspective	Global Equity	85,557,560.92	359,341.76	0.42%	1.13%	-0.71%
Domestic Fixed Income						
Voya Intermediate Bond R6	US Fixed-Income	33,569,366.46	100,708.10	0.30%	0.65%	-0.35%
NT Aggregate Bond	US Fixed-Income	42,455,612.04	12,736.68	0.03%	0.65%	-0.62%
NT TIPS Index Fund	TIPS	26,437,587.40	7,931.28	0.03%	0.65%	-0.62%
Real Estate						
BNY Mellon EB US RE Securities	Real Estate	9,793,379.90	53,863.59	0.55%	0.98%	-0.43%
Target Maturity						
Vanguard Target Retirement Inc	Target Maturity	44,117,298.17	35,293.84	0.08%	0.44%	-0.36%
Vanguard Target Retirement 2020	Target Maturity	19,076,628.16	15,261.30	0.08%	0.49%	-0.41%
Vanguard Target Retirement 2025	Target Maturity	33,106,110.95	26,484.89	0.08%	0.42%	-0.34%
Vanguard Target Retirement 2030	Target Maturity	34,674,395.09	27,739.52	0.08%	0.47%	-0.39%
Vanguard Target Retirement 2035	Target Maturity	29,093,866.48	23,275.09	0.08%	0.43%	-0.35%
Vanguard Target Retirement 2040	Target Maturity	19,315,841.48	15,452.67	0.08%	0.49%	-0.41%
Vanguard Target Retirement 2045	Target Maturity	16,546,350.17	13,237.08	0.08%	0.44%	-0.36%
Vanguard Target Retirement 2050	Target Maturity	11,228,069.65	8,982.46	0.08%	0.48%	-0.40%
Vanguard Target Retirement 2055	Target Maturity	5,951,431.97	4,761.15	0.08%	0.44%	-0.36%
Vanguard Target Retirement 2060	Target Maturity	3,496,321.79	2,797.06	0.08%	0.44%	-0.36%
Vanguard Target Retirement 2065	Target Maturity	3,761,146.20		0.08%	0.42%	-0.34%
TOTAL		2,325,673,919.64	6,093,356.55	0.26%	0.83%	-0.57%
*Median net expense ratio as defin	ed by the respective		Groups			

Stable Value

### MDC Stable Value Period Ended March 31, 2024

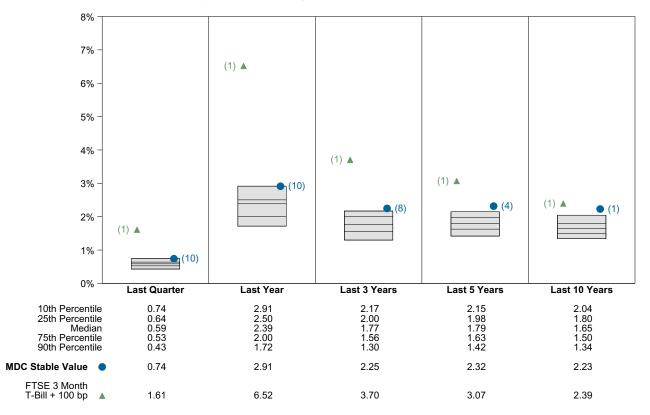
#### **Investment Philosophy**

The fund provides a stable rate of return while preserving capital by investing in a pool of securities issued by the US government or its agencies as well as high-quality corporate bonds.

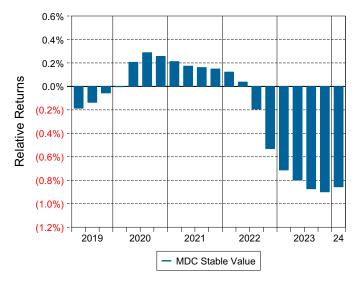
#### **Quarterly Summary and Highlights**

- MDC Stable Value's portfolio posted a 0.74% return for the quarter placing it in the 10 percentile of the Callan Stable Value group for the quarter and in the 10 percentile for the last year.
- MDC Stable Value's portfolio underperformed the FTSE 3 Month T-Bill + 100 bp by 0.87% for the quarter and underperformed the FTSE 3 Month T-Bill + 100 bp for the year by 3.61%.

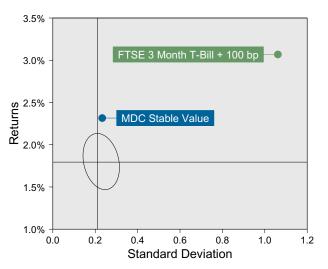
#### Performance vs Callan Stable Value (Institutional Net)







#### Callan Stable Value (Institutional Net) Annualized Five Year Risk vs Return



### BlackRock Money Market Period Ended March 31, 2024

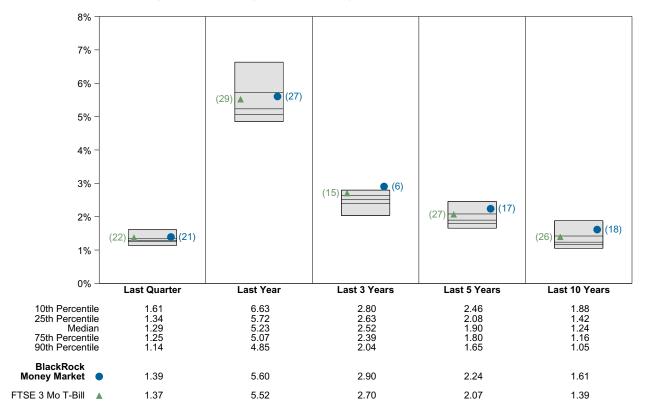
#### **Investment Philosophy**

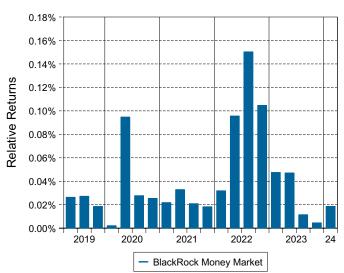
The Money Market Funds Database consists of actively managed short term funds. These funds invest in low-risk, highly liquid, short-term financial instruments.

#### **Quarterly Summary and Highlights**

- BlackRock Money Market's portfolio posted a 1.39% return for the quarter placing it in the 21 percentile of the Callan Money Market Funds group for the quarter and in the 27 percentile for the last year.
- BlackRock Money Market's portfolio outperformed the FTSE 3 Mo T-Bill by 0.02% for the quarter and outperformed the FTSE 3 Mo T-Bill for the year by 0.09%.

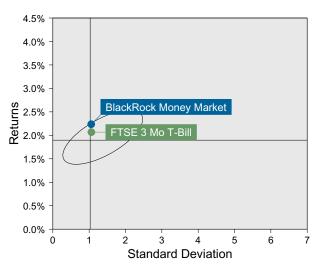
#### Performance vs Callan Money Market Funds (Institutional Net)





#### Relative Return vs FTSE 3 Mo T-Bill

#### Callan Money Market Funds (Institutional Net) Annualized Five Year Risk vs Return



### NT S&P 500 Index Fund\* Period Ended March 31, 2024

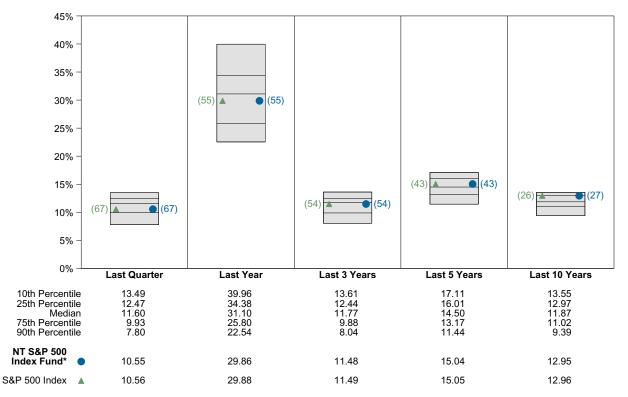
#### **Investment Philosophy**

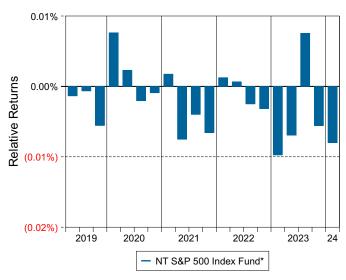
Northern Trust seeks to replicate the risk and returns of the S&P 500 equity index and believes that a passive approach to portfolio management will provide index-like returns with minimal transaction costs. \*Fund inception 1Q18; returns for longer time periods are that of the Collective Trust.

#### **Quarterly Summary and Highlights**

- NT S&P 500 Index Fund\*'s portfolio posted a 10.55% return for the quarter placing it in the 67 percentile of the Callan Large Cap Core Mutual Funds group for the quarter and in the 55 percentile for the last year.
- NT S&P 500 Index Fund\*'s portfolio underperformed the S&P 500 Index by 0.01% for the quarter and underperformed the S&P 500 Index for the year by 0.02%.

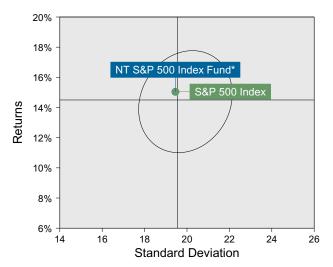
#### Performance vs Callan Large Cap Core Mutual Funds (Institutional Net)





Relative Return vs S&P 500 Index

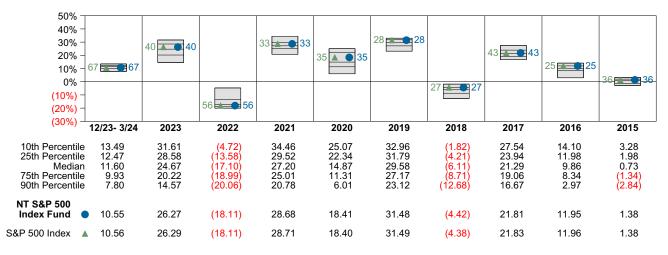
#### Callan Large Cap Core Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



### NT S&P 500 Index Fund Return Analysis Summary

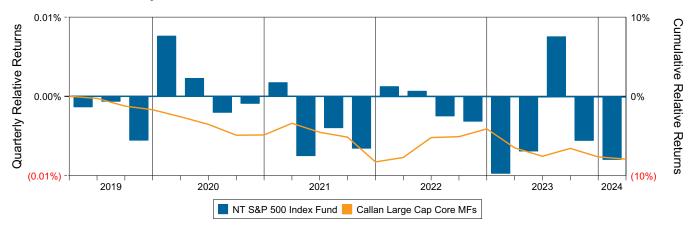
#### **Return Analysis**

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 Large Cap Core Mutual Funds (Institutional Net)

Cumulative and Quarterly Relative Returns vs S&P 500 Index







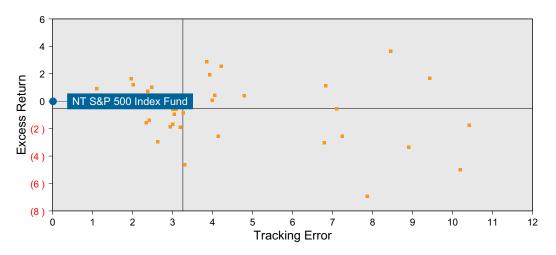


### NT S&P 500 Index Fund **Risk Analysis Summary**

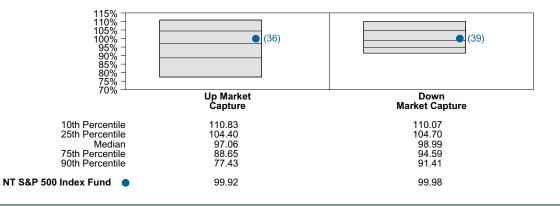
#### **Risk Analysis**

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.

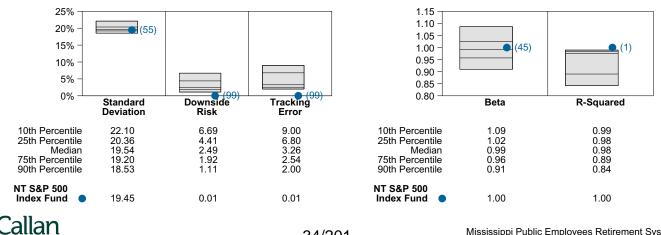
Risk Analysis vs Callan Large Cap Core Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



#### Market Capture vs S&P 500 Index Rankings Against Callan Large Cap Core Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



#### **Risk Statistics Rankings vs S&P 500 Index** Rankings Against Callan Large Cap Core Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



#### Vanguard Windsor Period Ended March 31, 2024

#### **Investment Philosophy**

Vanguard Windsor Fund seeks long-term growth of capital and income; current income is a secondary consideration. The fund invests primarily in common stocks of medium-size and large companies. Management typically selects securities that it believes have relatively low P/E ratios and meaningful income yields. The fund may also invest in preferred stocks, fixed-income securities, convertible securities, and money-market instruments.

#### **Quarterly Summary and Highlights**

- Vanguard Windsor's portfolio posted a 6.02% return for the quarter placing it in the 97 percentile of the Callan Large Cap Value Mutual Funds group for the quarter and in the 74 percentile for the last year.
- Vanguard Windsor's portfolio underperformed the Russell 1000 Value Index by 2.97% for the quarter and underperformed the Russell 1000 Value Index for the year by 1.79%.

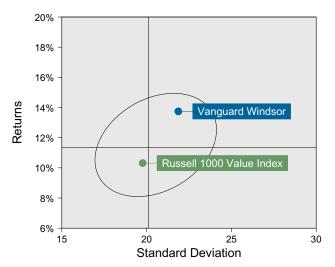




B% 6% 6% 4% 2% 0% 0% (2%) (4%) (2%) (4%) (2019 2020 2021 2021 2022 2023 24

**Relative Return vs Russell 1000 Value Index** 

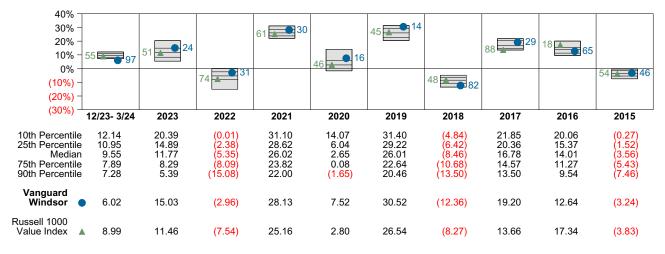
#### Callan Large Cap Value Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



### Vanguard Windsor Return Analysis Summary

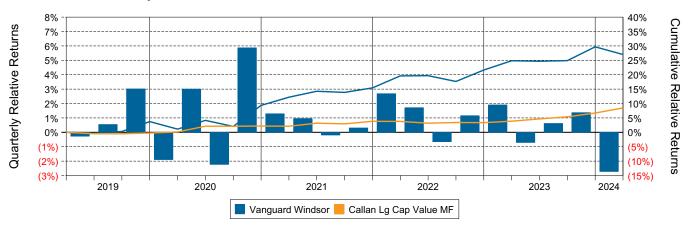
#### **Return Analysis**

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.

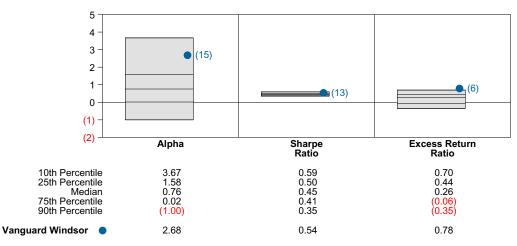


Performance vs Callan Large Cap Value Mutual Funds (Institutional Net)

Cumulative and Quarterly Relative Returns vs Russell 1000 Value Index



Risk Adjusted Return Measures vs Russell 1000 Value Index Rankings Against Callan Large Cap Value Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



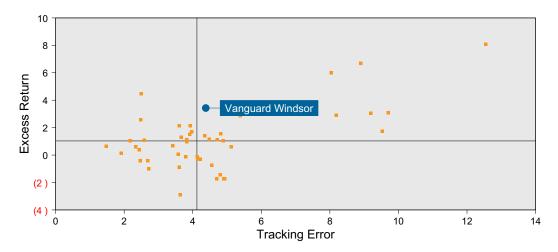


## Vanguard Windsor **Risk Analysis Summary**

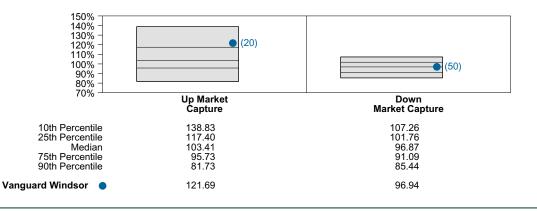
#### **Risk Analysis**

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.

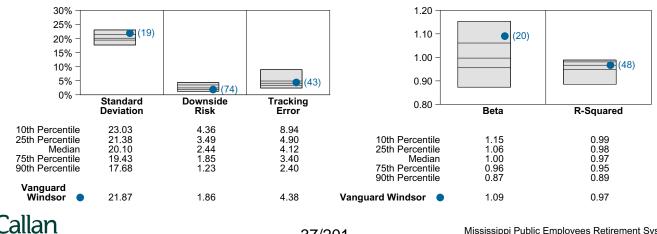
Risk Analysis vs Callan Large Cap Value Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



### Market Capture vs Russell 1000 Value Index Rankings Against Callan Large Cap Value Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



**Risk Statistics Rankings vs Russell 1000 Value Index** Rankings Against Callan Large Cap Value Mutual Funds (Institutional Net) Five Years Ended March 31, 2024

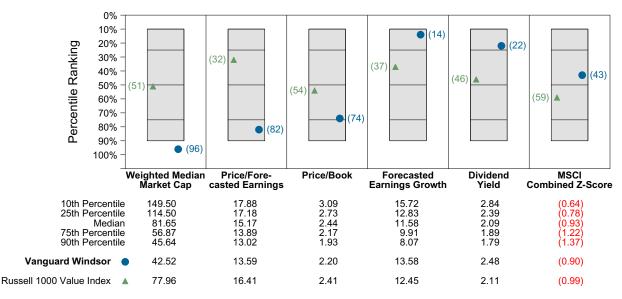


## Vanguard Windsor Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

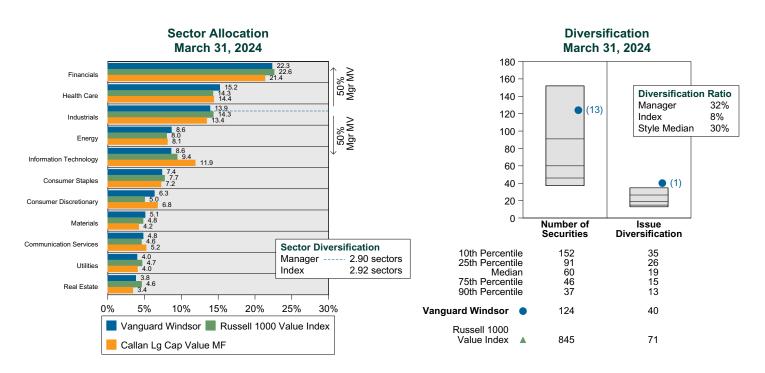
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Value Mutual Funds 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.



## Vanguard Windsor Top 10 Portfolio Holdings Characteristics as of March 31, 2024

## **10 Largest Holdings**

		Percent			Price/ Forecasted		Forecasted
Steel	Sector	of	Qtrly	Market	Earnings	Dividend Yield	Growth in
Stock	Sector	Portfolio	Return	Capital	Ratio		Earnings
Pfizer	Health Care	1.9%	(2.14)%	157.14	11.86	6.05%	7.00%
Edison International	Utilities	1.8%	0.05%	27.21	13.89	4.41%	7.30%
Morgan Stanley	Financials	1.7%	1.96%	153.98	14.20	3.61%	8.00%
Metlife Inc	Financials	1.7%	12.95%	53.58	8.17	2.81%	6.17%
Schlumberger	Energy	1.7%	5.93%	78.53	14.86	2.01%	19.70%
Tyson Foods Inc CI A	Consumer Staples	1.7%	10.25%	16.82	19.98	3.34%	53.70%
Equitable Hldgs Inc	Financials	1.6%	14.87%	12.53	6.03	2.32%	2.02%
Leidos Hldgs Inc	Industrials	1.5%	21.47%	17.70	16.30	1.16%	9.45%
Voya Finl Inc Com	Financials	1.4%	1.91%	7.51	8.55	2.16%	20.20%
Nxp Semiconductors	Information Technology	1.3%	8.33%	63.54	17.52	1.64%	9.17%

#### **10 Best Performers**

					Price/		
		Percent of	Qtrly	Market	Forecasted Earnings	Dividend	Forecasted Growth in
Stock	Sector	Portfolio	Return	Capital	Ratio	Yield	Earnings
Micron Technology Inc	Information Technology	1.2%	38.28%	130.55	25.05	0.39%	(2.62)%
Disney Walt Co Com Disney	Communication Services	1.2%	35.52%	224.45	24.16	0.49%	18.53%
Diamondback Energy Inc	Energy	0.8%	29.99%	35.34	10.93	1.82%	49.90%
Mohawk Industries	Consumer Discretionary	0.6%	26.46%	8.34	13.13	0.00%	(3.80)%
Allstate Corp	Financials	1.3%	24.33%	45.51	12.57	2.13%	0.41%
Citigroup Inc	Financials	1.0%	24.11%	120.87	10.27	3.35%	10.00%
Crh Plc Ord	Materials	0.6%	24.11%	59.38	15.79	1.66%	10.24%
Encompass Health Corp	Health Care	0.5%	24.00%	8.27	20.27	0.73%	13.60%
Cigna Corp New	Health Care	0.4%	21.80%	106.18	12.38	1.54%	12.00%
Leidos Hldgs Inc	Industrials	1.5%	21.47%	17.70	16.30	1.16%	9.45%

## **10 Worst Performers**

		Percent			Price/ Forecasted		Forecasted
Stock	Sector	of Portfolio	Qtrly Return	Market Capital	Earnings Ratio	Dividend Yield	Growth in Earnings
Charter Communications Inc N CI A	Communication Services	0.7%	(25.23)%	46.87	8.30	0.00%	12.70%
Humana	Health Care	0.8%	(24.07)%	41.80	18.84	1.02%	4.90%
Rio Tinto Plc Sponsored Adr	Materials	0.9%	(11.74)%	79.38	8.34	680.54%	(1.90)%
Teleflex Inc	Health Care	0.5%	(9.15)%	10.65	16.03	0.60%	7.20%
Fresenius Med Care Ag&co Kga Sponsor	Health Care	0.6%	(8.82)%	11.33	12.11	3.33%	9.50%
American Tower Corp New	Real Estate	1.2%	(8.47)%	92.15	27.76	3.28%	4.67%
Enphase Energy Inc	Information Technology	0.5%	(8.45)%	16.42	31.16	0.00%	14.80%
Byd Co Ltd Shs H	Consumer Discretionary	0.4%	(7.78)%	28.28	14.14	61.06%	11.60%
Magna Intl Inc	Consumer Discretionary	0.8%	(7.36)%	15.64	8.46	3.48%	16.00%
Extra Space Storage Inc	Real Estate	0.5%	(7.27)%	31.10	33.21	4.41%	14.60%

## Current Holdings Based Style Analysis Vanguard Windsor As of March 31, 2024

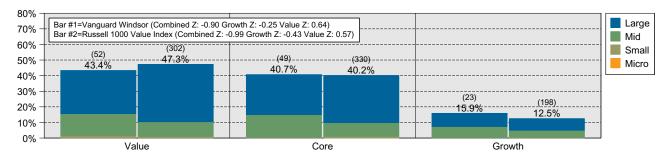
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization segments are dictated by capitalization decile breakpoints. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

**Style Exposure Matrix** 

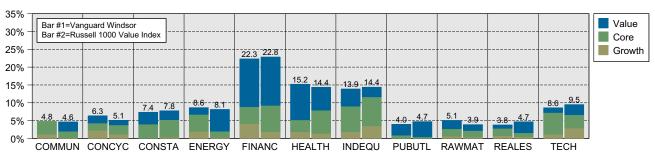


#### Style Map vs Callan Lg Cap Value MF Holdings as of March 31, 2024

## Combined Z-Score Style Distribution Holdings as of March 31, 2024



## Sector Weights Distribution Holdings as of March 31, 2024



## Loomis Sayles LC Growth\* Period Ended March 31, 2024

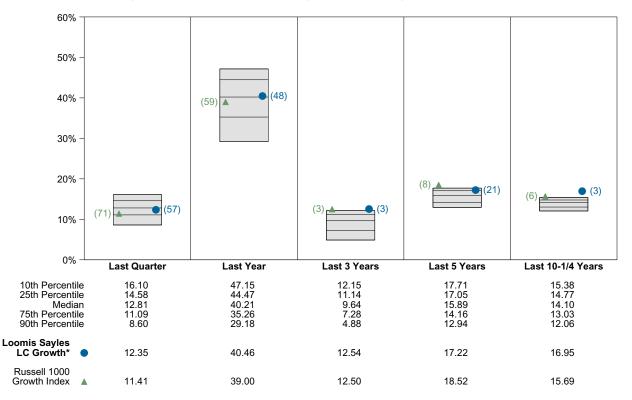
#### **Investment Philosophy**

The Large Cap Growth team believes successful investing is the result of identifying a small number of high quality companies capable of sustaining above average, long-term cash flow growth and purchasing them at discounted prices to their intrinsic value. \* Fund Inception 4Q2013.

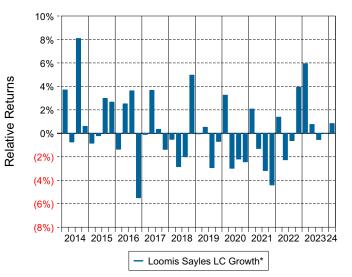
#### **Quarterly Summary and Highlights**

- Loomis Sayles LC Growth\*'s portfolio posted a 12.35% return for the quarter placing it in the 57 percentile of the Callan Large Cap Growth Mutual Funds group for the quarter and in the 48 percentile for the last year.
- Loomis Sayles LC Growth\*'s portfolio outperformed the Russell 1000 Growth Index by 0.94% for the quarter and outperformed the Russell 1000 Growth Index for the year by 1.46%.

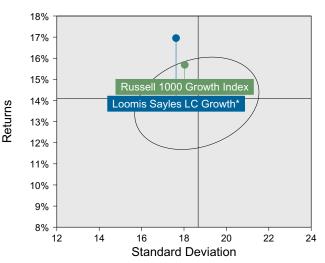
#### Performance vs Callan Large Cap Growth Mutual Funds (Institutional Net)



**Relative Return vs Russell 1000 Growth Index** 



Callan Large Cap Growth Mutual Funds (Institutional Net) Annualized Ten and One-Quarter Year Risk vs Return



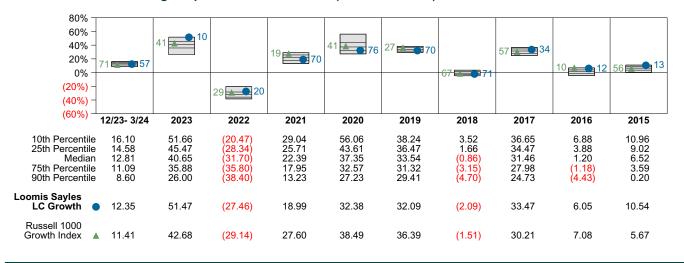
## Callan

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## Loomis Sayles LC Growth Return Analysis Summary

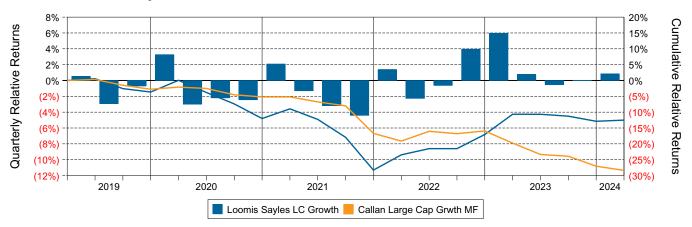
## **Return Analysis**

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.

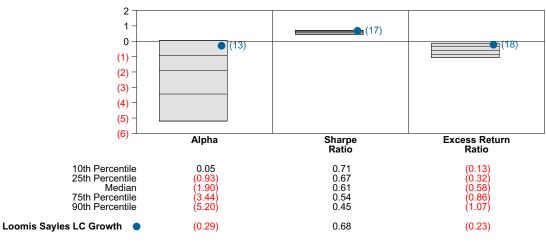


#### Performance vs Callan Large Cap Growth Mutual Funds (Institutional Net)

**Cumulative and Quarterly Relative Returns vs Russell 1000 Growth Index** 



## Risk Adjusted Return Measures vs Russell 1000 Growth Index Rankings Against Callan Large Cap Growth Mutual Funds (Institutional Net) Five Years Ended March 31, 2024

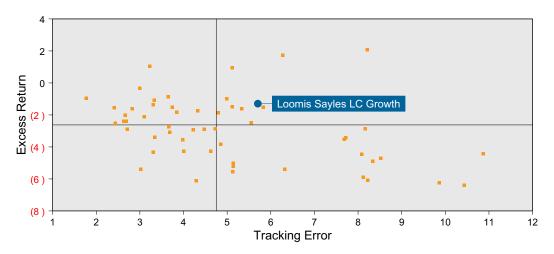


## Loomis Sayles LC Growth Risk Analysis Summary

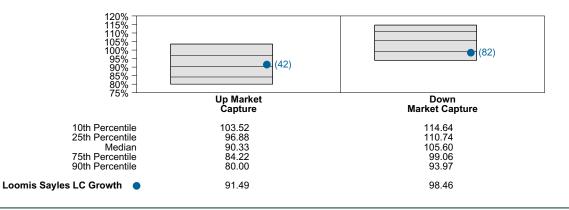
#### **Risk Analysis**

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.

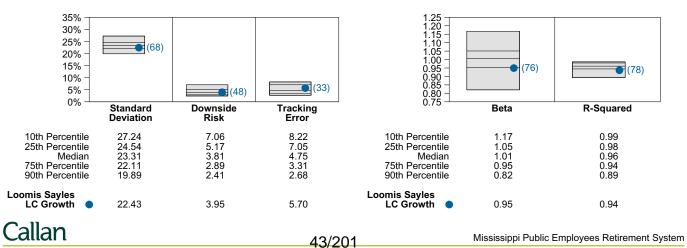
Risk Analysis vs Callan Large Cap Growth Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



## Market Capture vs Russell 1000 Growth Index Rankings Against Callan Large Cap Growth Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



Risk Statistics Rankings vs Russell 1000 Growth Index Rankings Against Callan Large Cap Growth Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



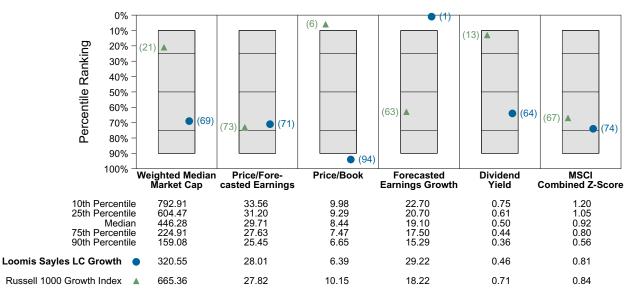
39

## Loomis Sayles LC Growth Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

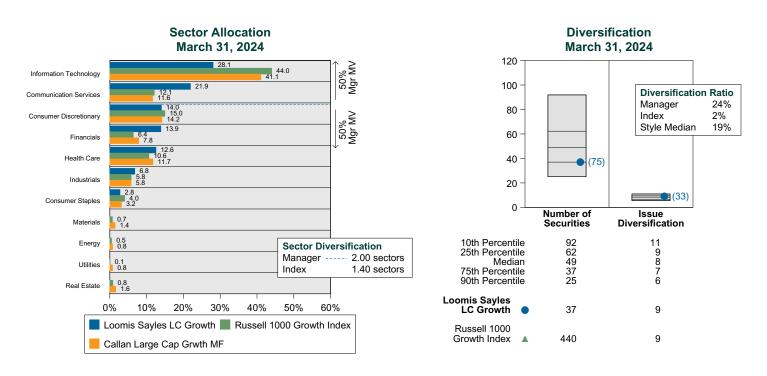
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Cap Growth Mutual Funds 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.



## Loomis Sayles LC Growth Top 10 Portfolio Holdings Characteristics as of March 31, 2024

## **10 Largest Holdings**

		Ending	Percent			Price/ Forecasted		Forecasted
		Market	of	Qtrly	Market	Earnings	Dividend	Growth in
Stock	Sector	Value	Portfolio	Return	Capital	Ratio	Yield	Earnings
Meta Platforms Inc	Communication Services	\$502,465,559	7.6%	37.33%	1068.30	23.35	0.41%	26.00%
Nvidia Corp	Information Technology	\$500,324,665	7.6%	82.46%	2258.90	35.53	0.02%	37.90%
Amazon.Com	Consumer Discretionary	\$381,809,805	5.8%	18.72%	1873.67	41.05	0.00%	10.21%
Visa Inc Com CI A	Financials	\$345,898,450	5.3%	7.40%	441.39	26.50	0.75%	13.28%
Microsoft Corp	Information Technology	\$334,878,816	5.1%	12.09%	3126.13	32.52	0.71%	17.08%
Boeing Co	Industrials	\$319,672,496	4.9%	(25.96)%	117.75	173.40	0.00%	252.20%
Netflix Inc	Communication Services	\$318,928,418	4.8%	24.74%	262.83	33.43	0.00%	24.67%
Tesla Mtrs Inc	Consumer Discretionary	\$307,703,695	4.7%	(29.25)%	559.85	55.45	0.00%	15.30%
Oracle Corp	Information Technology	\$281,597,146	4.3%	19.60%	345.24	20.52	1.27%	11.06%
Alphabet Inc CI A	Communication Services	\$264,837,173	4.0%	8.05%	889.43	21.35	0.00%	19.30%

#### **10 Best Performers**

		Ending	Percent			Price/ Forecasted		Forecasted
		Market	of	Qtrly	Market	Earnings	Dividend	Growth in
Stock	Sector	Value	Portfolio	Return	Capital	Ratio	Yield	Earnings
Nvidia Corp	Information Technology	\$500,324,665	7.6%	82.46%	2258.90	35.53	0.02%	37.90%
Meta Platforms Inc	Communication Services	\$502,465,559	7.6%	37.33%	1068.30	23.35	0.41%	26.00%
Disney Walt Co Com Disney	Communication Services	\$229,962,895	3.5%	35.52%	224.45	24.16	0.49%	18.53%
Netflix Inc	Communication Services	\$318,928,418	4.8%	24.74%	262.83	33.43	0.00%	24.67%
Novo-Nordisk A S Adr	Health Care	\$142,743,179	2.2%	21.69%	438.34	35.58	1.07%	19.15%
Oracle Corp	Information Technology	\$281,597,146	4.3%	19.60%	345.24	20.52	1.27%	11.06%
Amazon.Com	Consumer Discretionary	\$381,809,805	5.8%	18.72%	1873.67	41.05	0.00%	10.21%
Intuitive Surgical Inc	Health Care	\$90,100,155	1.4%	18.30%	141.46	61.26	0.00%	12.36%
Qualcomm Inc	Information Technology	\$121,192,728	1.8%	17.66%	188.94	16.49	1.89%	8.34%
Salesforce Com Inc	Information Technology	\$225,503,405	3.4%	14.61%	291.54	30.20	0.53%	16.22%

## **10 Worst Performers**

					Price/		
	Ending	Percent			Forecasted		Forecasted
	Market	of	Qtrly	Market	Earnings	Dividend	Growth in
Sector	Value	Portfolio	Return	Capital	Ratio	Yield	Earnings
Consumer Discretionary	\$307,703,695	4.7%	(29.25)%	559.85	55.45	0.00%	15.30%
Industrials	\$319,672,496	4.9%	(25.96)%	117.75	173.40	0.00%	252.20%
Health Care	\$53,699,271	0.8%	(16.84)%	179.17	12.45	4.18%	3.45%
Health Care	\$71,535,704	1.1%	(9.68)%	212.43	13.43	3.78%	8.20%
Consumer Discretionary	\$44,320,283	0.7%	(8.44)%	184.04	8.25	0.17%	8.32%
Consumer Discretionary	\$23,826,769	0.4%	(7.68)%	15.95	17.46	1.38%	(0.65)%
Financials	\$88,535,620	1.3%	(4.55)%	17.31	26.90	0.86%	9.80%
Financials	\$262,823,044	4.0%	(4.53)%	1.29	7.76	0.40%	19.11%
Industrials	\$89,899,678	1.4%	(4.43)%	17.49	25.34	1.14%	(16.80)%
Consumer Discretionary	\$95,401,747	1.4%	(4.25)%	103.47	20.83	2.49%	15.81%
	Consumer Discretionary Industrials Health Care Health Care Consumer Discretionary Consumer Discretionary Financials Financials Industrials	Market           Sector         Value           Consumer Discretionary         \$307,703,695           Industrials         \$319,672,496           Health Care         \$53,699,271           Health Care         \$71,535,704           Consumer Discretionary         \$44,320,283           Consumer Discretionary         \$23,826,769           Financials         \$88,535,620           Financials         \$88,535,620           Financials         \$88,939,678	Market         of           Sector         Value         Portfolio           Consumer Discretionary         \$307,703,695         4.7%           Industrials         \$319,672,496         4.9%           Health Care         \$53,699,271         0.8%           Health Care         \$71,535,704         1.1%           Consumer Discretionary         \$44,320,283         0.7%           Consumer Discretionary         \$23,826,769         0.4%           Financials         \$88,535,620         1.3%           Financials         \$262,823,044         4.0%           Industrials         \$89,899,678         1.4%	Market         of         Qtrly           Sector         Value         Portfolio         Return           Consumer Discretionary         \$307,703,695         4.7%         (29.25)%           Industrials         \$319,672,496         4.9%         (25.96)%           Health Care         \$53,699,271         0.8%         (16.84)%           Health Care         \$71,535,704         1.1%         (9.68)%           Consumer Discretionary         \$44,320,283         0.7%         (8.44)%           Consumer Discretionary         \$23,826,769         0.4%         (7.68)%           Financials         \$88,535,620         1.3%         (4.55)%           Financials         \$262,823,044         4.0%         (4.53)%           Industrials         \$89,899,678         1.4%         (4.43)%	Market         of         Qtrly         Market           Sector         Value         Portfolio         Return         Capital           Consumer Discretionary         \$307,703,695         4.7%         (29.25)%         559.85           Industrials         \$319,672,496         4.9%         (25.96)%         117.75           Health Care         \$53,699,271         0.8%         (16.84)%         179.17           Health Care         \$71,535,704         1.1%         (9.68)%         212.43           Consumer Discretionary         \$44,320,283         0.7%         (8.44)%         184.04           Consumer Discretionary         \$23,826,769         0.4%         (7.68)%         15.95           Financials         \$88,535,620         1.3%         (4.55)%         17.31           Financials         \$262,823,044         4.0%         (4.53)%         1.29           Industrials         \$89,899,678         1.4%         (4.43)%         17.49	Ending Market         Percent         Forecasted           Sector         Value         of         Qtrly         Market         Earnings           Consumer Discretionary         \$307,703,695         4.7%         (29.25)%         559.85         55.45           Industrials         \$319,672,496         4.9%         (25.96)%         117.75         173.40           Health Care         \$53,699,271         0.8%         (16.84)%         179.17         12.45           Health Care         \$71,535,704         1.1%         (9.68)%         212.43         13.43           Consumer Discretionary         \$44,320,283         0.7%         (8.44)%         184.04         8.25           Consumer Discretionary         \$23,826,769         0.4%         (7.68)%         15.95         17.46           Financials         \$88,535,620         1.3%         (4.55)%         17.31         26.90           Financials         \$262,823,044         4.0%         (4.53)%         1.29         7.76           Industrials         \$89,899,678         1.4%         (4.43)%         17.49         25.34	Ending Market         Percent         Forecasted           Sector         Value         Portfolio         Return         Capital         Ratio         Yield           Consumer Discretionary         \$307,703,695         4.7%         (29.25)%         559.85         55.45         0.00%           Industrials         \$319,672,496         4.9%         (25.96)%         117.75         173.40         0.00%           Health Care         \$53,699,271         0.8%         (16.84)%         179.17         12.45         4.18%           Health Care         \$71,535,704         1.1%         (9.68)%         212.43         13.43         3.78%           Consumer Discretionary         \$44,320,283         0.7%         (8.44)%         184.04         8.25         0.17%           Consumer Discretionary         \$23,826,769         0.4%         (7.68)%         15.95         17.46         1.38%           Financials         \$88,535,620         1.3%         (4.55)%         17.31         26.90         0.86%           Financials         \$262,823,044         4.0%         (4.53)%         1.29         7.76         0.40%           Industrials         \$89,899,678         1.4%         (4.43)%         17.49         25.34         <

## Current Holdings Based Style Analysis Loomis Sayles LC Growth As of March 31, 2024

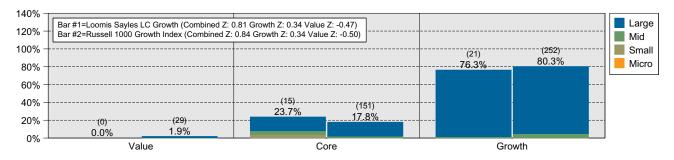
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization segments are dictated by capitalization decile breakpoints. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

Style Exposure Matrix

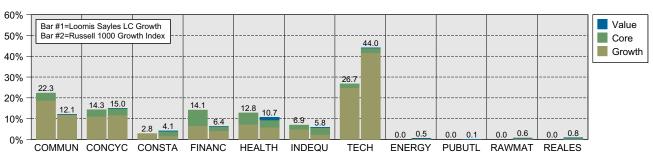


### Style Map vs Callan Large Cap Grwth MF Holdings as of March 31, 2024

## Combined Z-Score Style Distribution Holdings as of March 31, 2024



## Sector Weights Distribution Holdings as of March 31, 2024



## PGI Mid-Cap Equty Fund\* Period Ended March 31, 2024

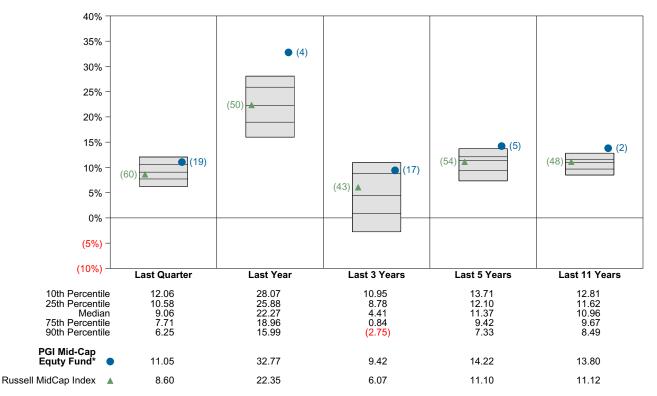
#### **Investment Philosophy**

The Principal Mid-Cap Core team believes that superior stock selection combined with disciplined risk management will produce superior investment returns over time. \*Fund inception 1Q20; returns for longer time periods are that of the Collective Trust.

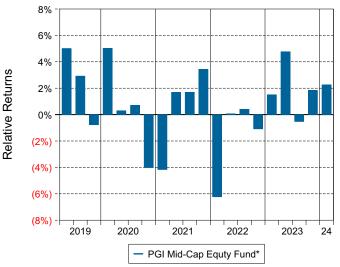
#### **Quarterly Summary and Highlights**

- PGI Mid-Cap Equty Fund\*'s portfolio posted a 11.05% return for the quarter placing it in the 19 percentile of the Callan Mid Cap Mutual Funds group for the quarter and in the 4 percentile for the last year.
- PGI Mid-Cap Equty Fund\*'s portfolio outperformed the Russell MidCap Index by 2.45% for the quarter and outperformed the Russell MidCap Index for the year by 10.43%.

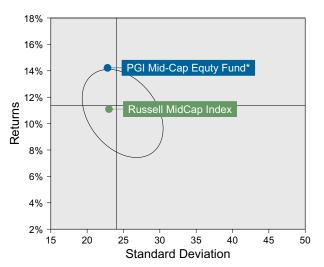
## Performance vs Callan Mid Cap Mutual Funds (Institutional Net)



Relative Return vs Russell MidCap Index



#### Callan Mid Cap Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



## Callan

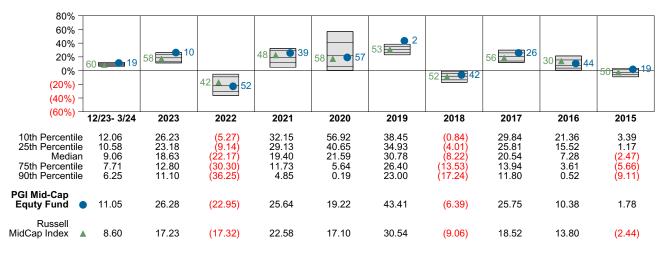
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## PGI Mid-Cap Equty Fund Return Analysis Summary

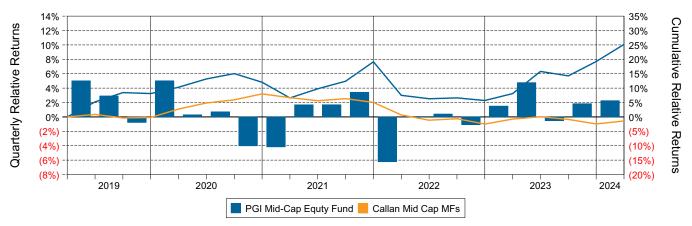
## **Return Analysis**

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.

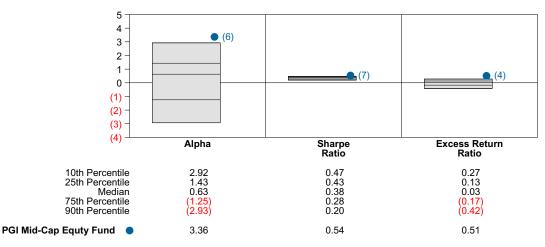




Cumulative and Quarterly Relative Returns vs Russell MidCap Index



Risk Adjusted Return Measures vs Russell MidCap Index Rankings Against Callan Mid Cap Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



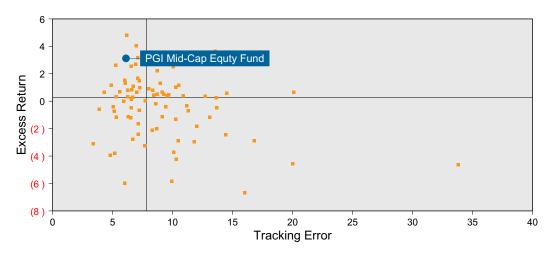


## PGI Mid-Cap Equty Fund **Risk Analysis Summary**

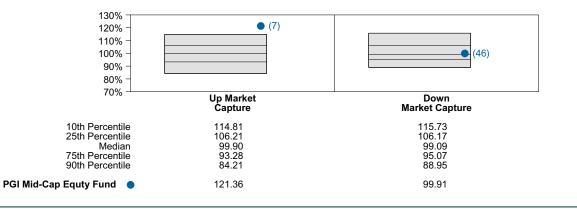
#### **Risk Analysis**

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.

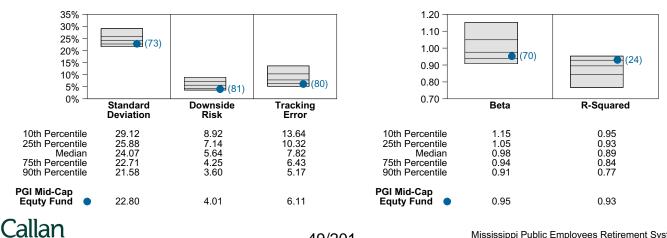
Risk Analysis vs Callan Mid Cap Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



### Market Capture vs Russell Mid-Cap Index Rankings Against Callan Mid Cap Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



#### **Risk Statistics Rankings vs Russell Mid-Cap Index** Rankings Against Callan Mid Cap Mutual Funds (Institutional Net) Five Years Ended March 31, 2024

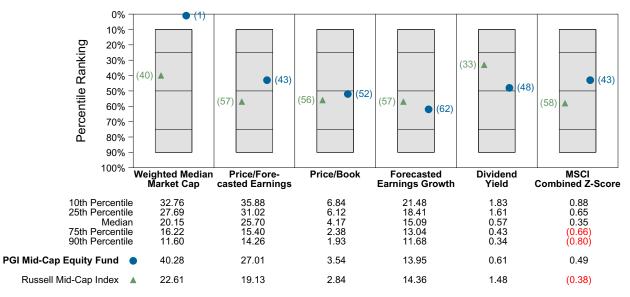


## PGI Mid-Cap Equity Fund Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

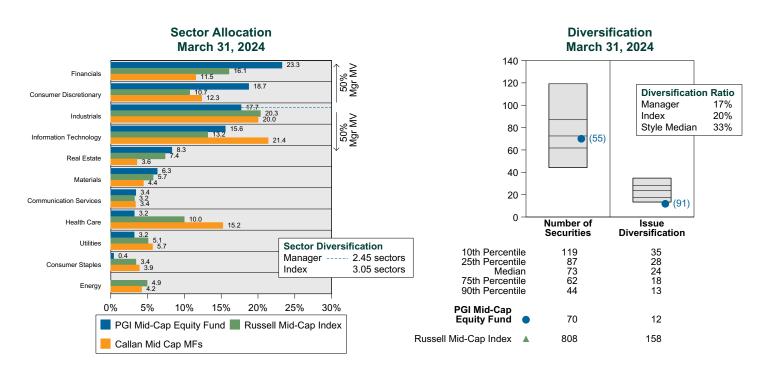
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Mid Cap Mutual Funds 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.



## PGI Mid-Cap Equity Fund Top 10 Portfolio Holdings Characteristics as of March 31, 2024

## 10 Largest Holdings

		Percent			Price/ Forecasted		Forecasted
Stock	Sector	of Portfolio	Qtrly Return	Market Capital	Earnings Ratio	Dividend Yield	Growth in Earnings
Transdigm Group Inc	Industrials	5.6%	21.75%	68.48	35.67	0.00%	17.44%
Copart Inc	Industrials	5.4%	18.20%	55.69	37.20	0.00%	22.69%
Brookfield Asset Mgmt Inc CI A Ltd V	Financials	4.8%	1.88%	68.70	11.38	0.76%	12.04%
O Reilly Automotive Inc New	Consumer Discretionary	4.7%	18.82%	66.63	25.96	0.00%	11.50%
Kkr & Co Inc CI A	Financials	4.6%	21.61%	89.01	19.19	0.66%	25.01%
Hilton Worldwide Hldgs Inc	Consumer Discretionary	4.4%	17.23%	53.79	28.78	0.28%	15.85%
Heico Corp New CI A	Industrials	4.3%	8.15%	12.87	40.60	0.13%	6.22%
Costar Group Inc	Real Estate	4.3%	10.54%	39.45	126.77	0.00%	20.00%
Vulcan Matls Co	Materials	3.6%	20.43%	36.10	30.68	0.67%	18.55%
Brown & Inc	Financials	3.3%	23.31%	24.98	24.55	0.59%	9.10%

#### **10 Best Performers**

					Price/ Forecasted		
		Percent			Forecasted		
<b>-</b> / .		of	Qtrly	Market	Earnings	Dividend	Growth in
Stock	Sector	Portfolio	Return	Capital	Ratio	Yield	Earnings
Perimeter Solutions	Materials	0.2%	61.31%	1.08	23.71	0.00%	-
Appfolio Inc Com Cl A	Information Technology	0.1%	42.43%	5.37	59.10	0.00%	26.55%
Progressive Corp Ohio	Financials	1.9%	30.50%	121.13	20.48	0.19%	(7.66)%
Esab Corporation	Industrials	0.0%	27.72%	6.68	22.41	0.22%	10.20%
Arch Capital Group	Financials	1.8%	24.46%	34.68	11.35	0.00%	19.70%
Brown & Inc	Financials	3.3%	23.31%	24.98	24.55	0.59%	9.10%
Martin Marietta Matls Inc	Materials	1.6%	23.21%	37.96	27.97	0.48%	10.90%
Hyatt Hotels Corp Com CI A	Consumer Discretionary	1.1%	22.52%	7.16	42.13	0.38%	11.86%
Transdigm Group Inc	Industrials	5.6%	21.75%	68.48	35.67	0.00%	17.44%
Kkr & Co Inc Cl A	Financials	4.6%	21.61%	89.01	19.19	0.66%	25.01%

## **10 Worst Performers**

		Percent			Price/ Forecasted		Forecasted
Stock	Sector	of Portfolio	Qtrly Return	Market Capital	Earnings Ratio	Dividend Yield	Growth in Earnings
Brookfield Renewable Cor	Utilities	0.2%	(15.59)%	4.41	(48.56)	5.78%	-
Howard Hughes Holdings Inc	Real Estate	0.3%	(15.11)%	3.65	27.47	0.00%	(7.98)%
Sba Communications Corp New CI A	Real Estate	1.7%	(14.20)%	23.43	39.62	1.81%	12.98%
F&g Annuities & Life Inc Com	Financials	0.0%	(11.34)%	5.12	8.23	2.07%	-
Brown Forman Corp CI A	Consumer Staples	0.0%	(10.79)%	8.95	33.26	1.64%	2.96%
Brookfield Renewable Energy	Utilities	0.6%	(10.42)%	6.68	(40.91)	4.51%	(4.14)%
Brown Forman Corp B	Consumer Staples	0.4%	(9.24)%	15.66	25.98	1.69%	7.90%
Verisign	Information Technology	1.3%	(7.99)%	19.12	23.23	0.00%	5.95%
Ansys Inc	Information Technology	0.5%	(4.33)%	30.21	34.76	0.00%	9.15%
Idexx Labs Corp	Health Care	0.7%	(2.72)%	44.84	46.81	0.00%	12.00%

## Current Holdings Based Style Analysis PGI Mid-Cap Equity Fund As of March 31, 2024

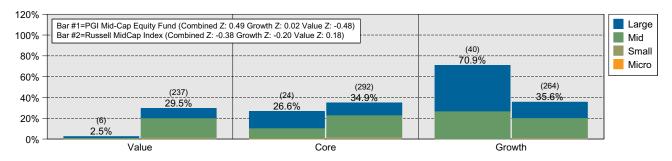
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization segments are dictated by capitalization decile breakpoints. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

**Style Exposure Matrix** 

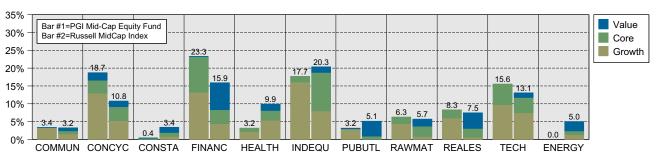


#### Style Map vs Callan Mid Cap MFs Holdings as of March 31, 2024

## Combined Z-Score Style Distribution Holdings as of March 31, 2024



Sector Weights Distribution Holdings as of March 31, 2024



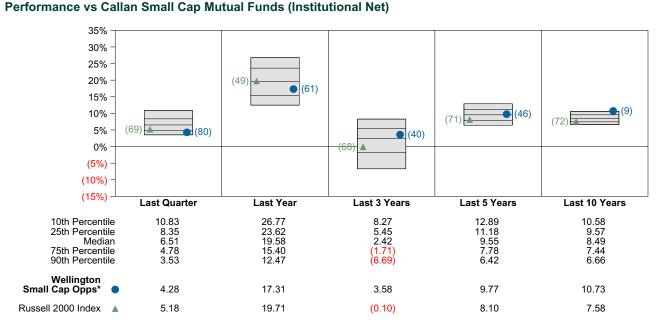
## Wellington Small Cap Opps\* Period Ended March 31, 2024

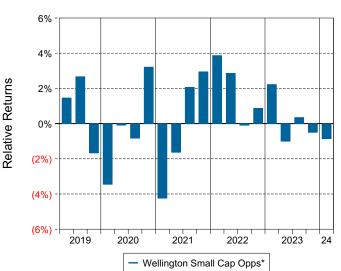
### **Investment Philosophy**

Wellington Management is a Boston-based, employee owned investment firm with over \$1.2 trillion in assets under management and nearly 1,000 employees globally. The Wellington Small Cap Opportunities strategy is part of the Opportunities boutique within Wellington and seeks to outperform the benchmark by 200 basis points net of fees over a full market cycle by investing in equity securities of high quality small companies. The investment team is led by DJ Fitzpatrick, who is supported by two dedicated analysts (Paul Elia, Jessica Lebo Costello) and leverages the expertise of the 52 member Global Industry Analyst group within Wellington. The investment process is fundamentally driven, focused on identifying quality companies via superior corporate management teams. The end portfolio tends to plot core in style and is consistent with small cap market capitalization range. \*Fund inception 1Q20; returns for longer time periods are that of the Collective Trust.

### **Quarterly Summary and Highlights**

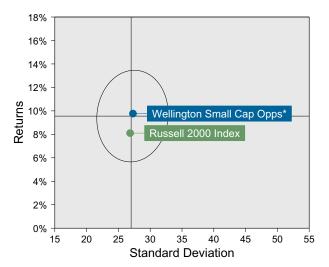
- Wellington Small Cap Opps\*'s portfolio posted a 4.28% return for the quarter placing it in the 80 percentile of the Callan Small Cap Mutual Funds group for the quarter and in the 61 percentile for the last year.
- Wellington Small Cap Opps\*'s portfolio underperformed the Russell 2000 Index by 0.90% for the quarter and underperformed the Russell 2000 Index for the year by 2.40%.





#### **Relative Return vs Russell 2000 Index**

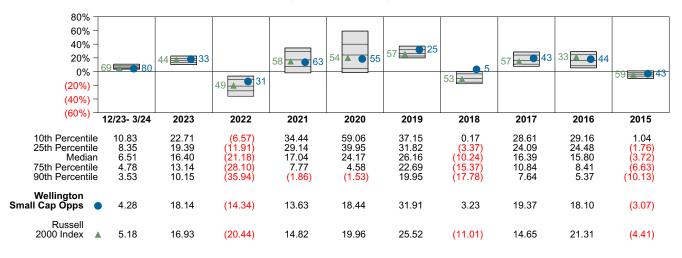
#### Callan Small Cap Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



## Wellington Small Cap Opps Return Analysis Summary

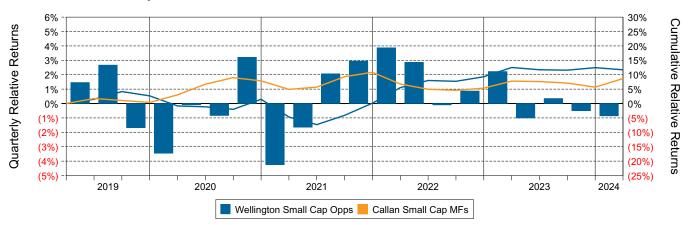
## **Return Analysis**

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.

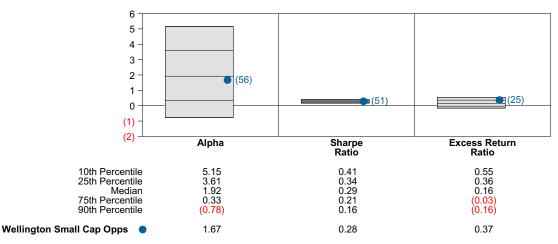


#### Performance vs Callan Small Cap Mutual Funds (Institutional Net)

Cumulative and Quarterly Relative Returns vs Russell 2000 Index



Risk Adjusted Return Measures vs Russell 2000 Index Rankings Against Callan Small Cap Mutual Funds (Institutional Net) Five Years Ended March 31, 2024

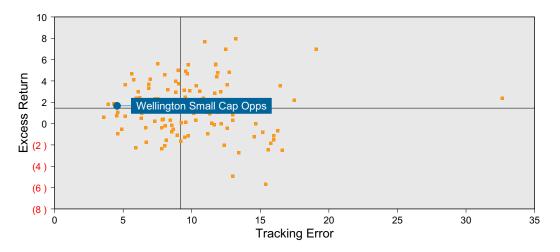


## Wellington Small Cap Opps **Risk Analysis Summary**

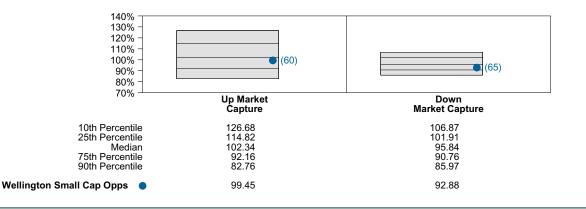
#### **Risk Analysis**

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.

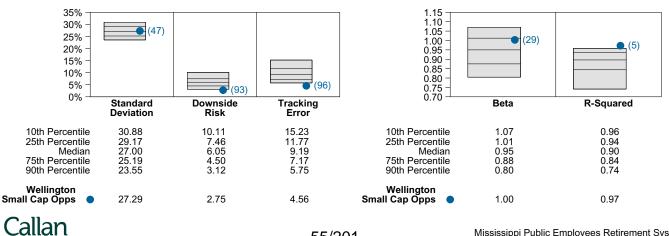
**Risk Analysis vs Callan Small Cap Mutual Funds (Institutional Net)** Five Years Ended March 31, 2024



## Market Capture vs Russell 2000 Index Rankings Against Callan Small Cap Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



#### **Risk Statistics Rankings vs Russell 2000 Index Rankings Against Callan Small Cap Mutual Funds (Institutional Net)** Five Years Ended March 31, 2024

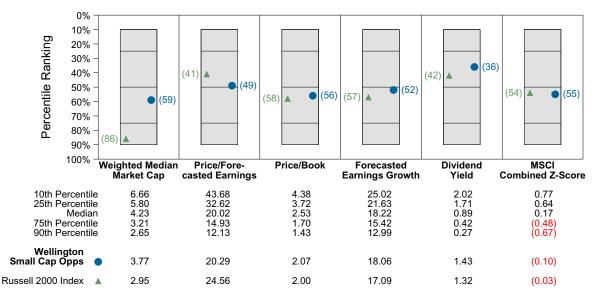


## Wellington Small Cap Opps Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

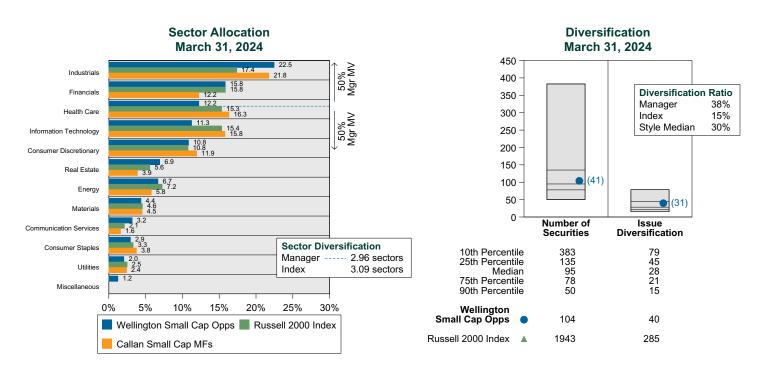
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Cap Mutual Funds 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.



## Wellington Small Cap Opps Top 10 Portfolio Holdings Characteristics as of March 31, 2024

## 10 Largest Holdings

		Percent			Price/ Forecasted		Forecasted
Stock	Sector	of Portfolio	Qtrly Return	Market Capital	Earnings Ratio	Dividend Yield	Growth in Earnings
Rush Enterprises Inc CI A	Industrials	1.7%	6.79%	3.29	17.77	1.27%	30.87%
Fluor Corp New	Industrials	1.7%	7.94%	7.19	14.70	0.00%	56.60%
Air Lease Corp CI A	Industrials	1.6%	23.21%	5.73	10.56	1.63%	0.25%
Viper Energy Inc CI A	Energy	1.6%	24.41%	3.31	21.18	2.81%	55.93%
Cabot Corp	Materials	1.4%	10.95%	5.11	12.96	1.74%	14.35%
Boise Cascade Co Del	Industrials	1.4%	18.75%	6.07	13.36	0.52%	66.77%
Oasis Pete Inc New Issue_code 20	Energy	1.4%	9.40%	7.40	8.46	3.93%	29.36%
Freshpet Inc	Consumer Staples	1.4%	33.54%	5.60	549.10	0.00%	-
Gulfport Energy	Energy	1.3%	20.21%	2.91	7.02	0.00%	-
Enpro Inds Inc	Industrials	1.3%	7.89%	3.53	21.98	0.71%	20.32%

#### **10 Best Performers**

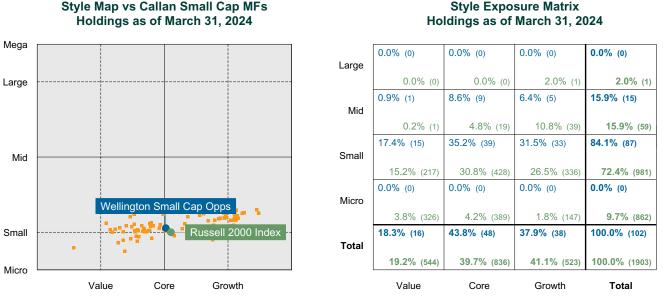
		Percent			Price/ Forecasted		Forecasted
Stock	Sector	of Portfolio	Qtrly Return	Market Capital	Earnings Ratio	Dividend Yield	Growth in Earnings
Aeglea Biotherapeutics Inc	Health Care	0.2%	76.28%	1.39	(10.65)	0.00%	-
Modine Mfg Co	Consumer Discretionary	0.9%	59.45%	4.97	24.98	0.00%	34.00%
Kymera Therapeutics Inc	Health Care	0.4%	57.90%	2.46	(12.92)	0.00%	-
Atmus Filtration Technologies	Industrials	0.6%	37.29%	2.69	14.63	0.00%	-
Freshpet Inc	Consumer Staples	1.4%	33.54%	5.60	549.10	0.00%	-
Crinetics Pharmaceuticals In	Health Care	0.7%	31.56%	3.65	(13.96)	0.00%	-
Azek Co Inc	Industrials	1.1%	31.30%	7.32	40.18	0.00%	0.30%
Kemper Corp Del	Financials	1.3%	27.88%	3.98	13.75	2.00%	(9.45)%
Cinemark Holdings Inc	Communication Services	1.0%	27.54%	2.18	18.60	0.00%	(41.77)%
Viper Energy Inc CI A	Energy	1.6%	24.41%	3.31	21.18	2.81%	55.93%

## **10 Worst Performers**

		Demonst			Price/		Famaaatad
Stock	Sector	Percent of Portfolio	Qtrly Return	Market Capital	Forecasted Earnings Ratio	Dividend Yield	Forecasted Growth in Earnings
Shoals Technologies Group In Cl A	Industrials	0.7%	(28.05)%	1.91	16.74	0.00%	15.40%
Yeti Hldgs Inc	Consumer Discretionary	0.7%	(25.55)%	3.29	15.15	0.00%	23.04%
Veracyte Inc	Health Care	0.8%	(19.44)%	1.74	(99.37)	0.00%	-
Cytokinetics Inc	Health Care	0.4%	(16.02)%	7.22	(16.81)	0.00%	-
Perficient Inc	Information Technology	0.9%	(14.48)%	1.97	13.48	0.00%	21.26%
Rapid7 Inc	Information Technology	0.8%	(14.11)%	3.04	21.95	0.00%	105.32%
Simply Good Foods Co Com	Consumer Staples	0.8%	(14.07)%	3.40	17.76	0.00%	8.08%
Power Integrations Inc	Information Technology	0.9%	(12.61)%	4.07	50.53	1.12%	(14.55)%
Arcadium Lithium	Materials	0.4%	(12.37)%	4.63	18.66	0.00%	-
Papa John's Intl	Consumer Discretionary	0.9%	(12.08)%	2.19	24.11	2.76%	11.88%

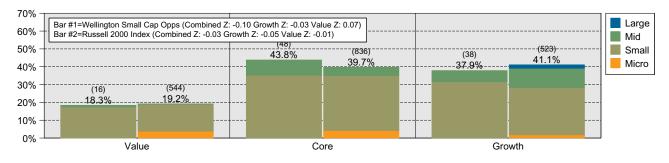
## **Current Holdings Based Style Analysis** Wellington Small Cap Opps As of March 31, 2024

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization segments are dictated by capitalization decile breakpoints. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

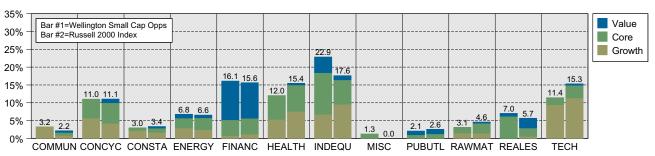


# Style Map vs Callan Small Cap MFs

## **Combined Z-Score Style Distribution** Holdings as of March 31, 2024



## **Sector Weights Distribution** Holdings as of March 31, 2024



## NT Russell 2000 Index Fund\* Period Ended March 31, 2024

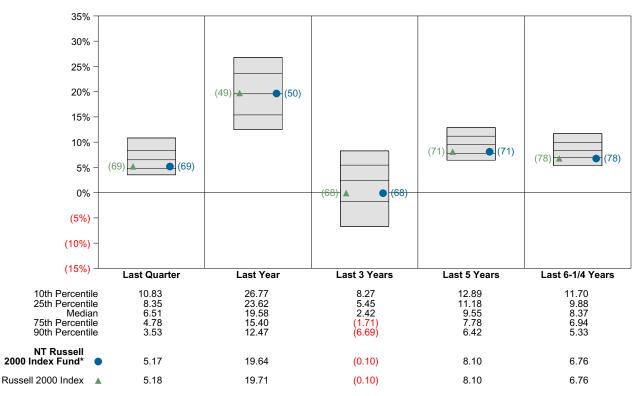
#### **Investment Philosophy**

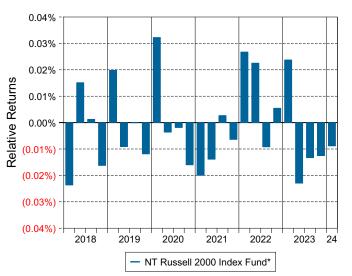
Northern Trust Asset Management's objective is to create a fund which replicates the risk and total return characteristics of the Russell 2000 Index while keeping transaction costs associated with the trading of the securities as low as possible. Fund Inception 1Q2018.

#### **Quarterly Summary and Highlights**

- NT Russell 2000 Index Fund\*'s portfolio posted a 5.17% return for the quarter placing it in the 69 percentile of the Callan Small Cap Mutual Funds group for the quarter and in the 50 percentile for the last year.
- NT Russell 2000 Index Fund\*'s portfolio underperformed the Russell 2000 Index by 0.01% for the quarter and underperformed the Russell 2000 Index for the year by 0.07%.

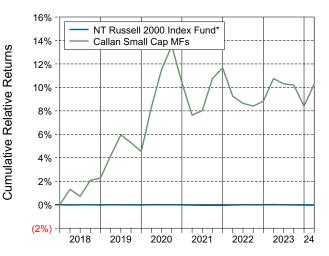
## Performance vs Callan Small Cap Mutual Funds (Institutional Net)





#### **Relative Return vs Russell 2000 Index**

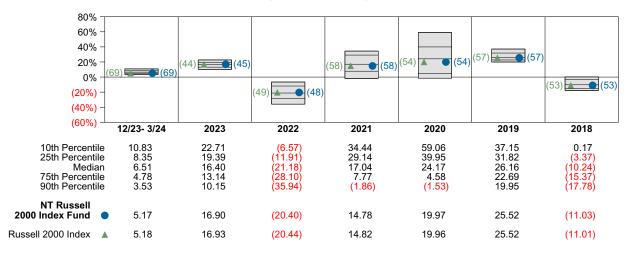
#### **Cumulative Returns vs Russell 2000 Index**



## NT Russell 2000 Index Fund Return Analysis Summary

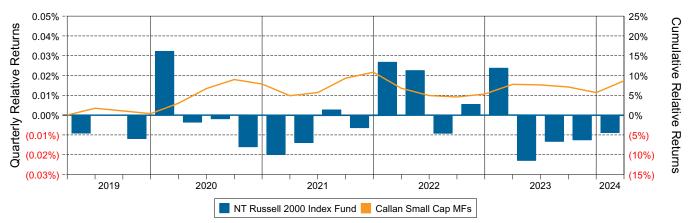
## **Return Analysis**

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.

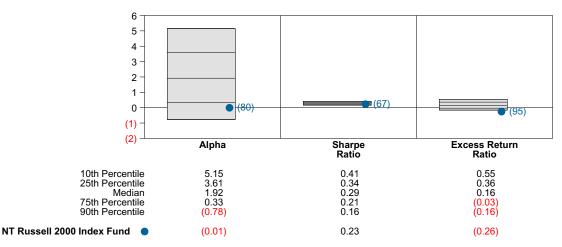


#### Performance vs Callan Small Cap Mutual Funds (Institutional Net)





Risk Adjusted Return Measures vs Russell 2000 Index Rankings Against Callan Small Cap Mutual Funds (Institutional Net) Five Years Ended March 31, 2024

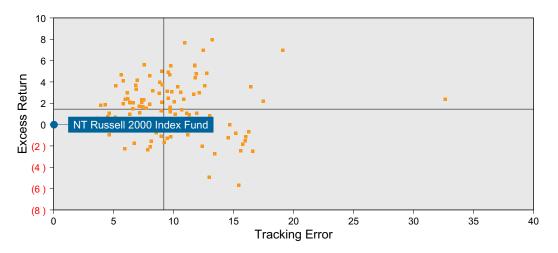


## NT Russell 2000 Index Fund **Risk Analysis Summary**

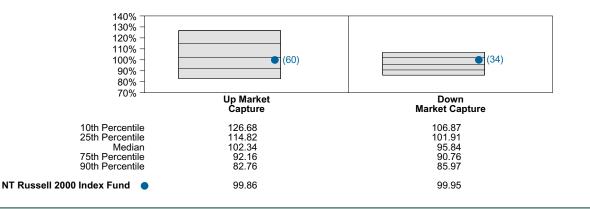
#### **Risk Analysis**

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.

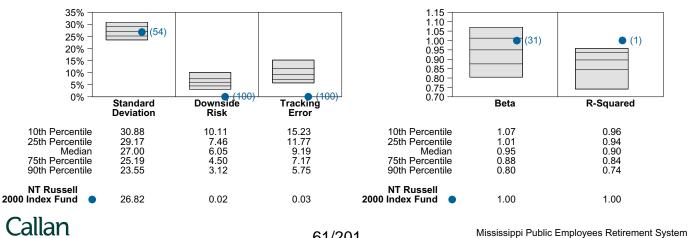
**Risk Analysis vs Callan Small Cap Mutual Funds (Institutional Net)** Five Years Ended March 31, 2024



### Market Capture vs Russell 2000 Index Rankings Against Callan Small Cap Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



#### **Risk Statistics Rankings vs Russell 2000 Index Rankings Against Callan Small Cap Mutual Funds (Institutional Net)** Five Years Ended March 31, 2024



57

International Equity

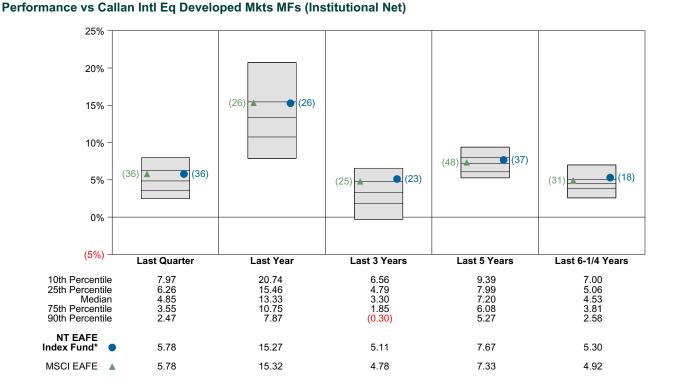
## NT EAFE Index Fund\* Period Ended March 31, 2024

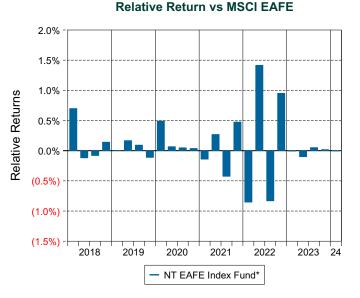
## **Investment Philosophy**

NTGI's philosophy in managing EAFE index fund portfolios is to create a portfolio which replicates the risk and total return characteristics of the MSCI EAFE Index while minimizing transaction costs in a model-driven optimization approach. This system seeks to achieve lower transaction costs, as well as low tracking error. By limiting the number of stocks in their trade lists, the model-driven optimization strategy generally attempts to bear lower costs and increased potential for improved returns relative to replication strategies. \*Fund Inception 1Q2018.

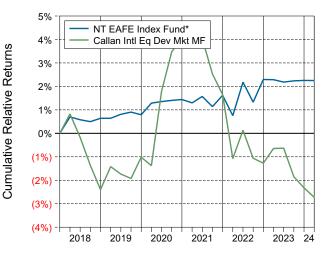
## **Quarterly Summary and Highlights**

- NT EAFE Index Fund\*'s portfolio posted a 5.78% return for the quarter placing it in the 36 percentile of the Callan Intl Eq Developed Mkts MFs group for the quarter and in the 26 percentile for the last year.
- NT EAFE Index Fund\*'s portfolio underperformed the MSCI EAFE by 0.01% for the quarter and underperformed the MSCI EAFE for the year by 0.04%.





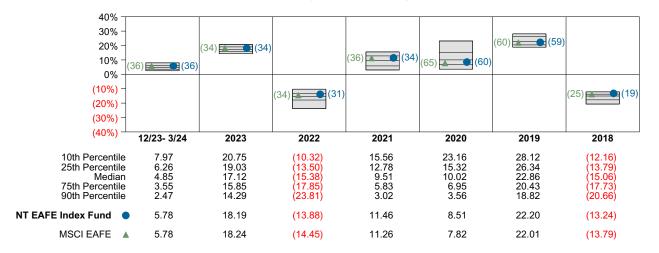
## **Cumulative Returns vs MSCI EAFE**



## NT EAFE Index Fund Return Analysis Summary

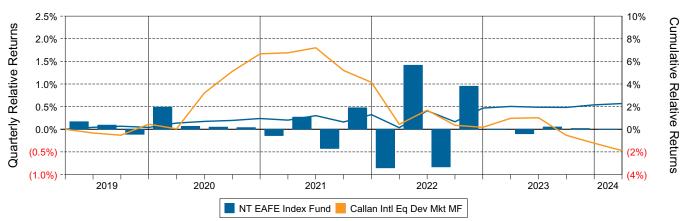
## **Return Analysis**

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.

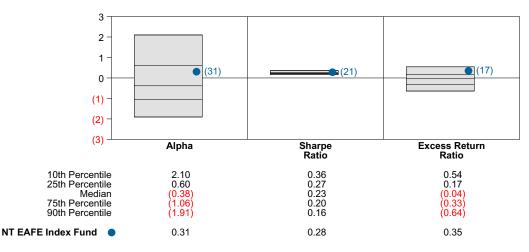


#### Performance vs Callan Intl Eq Developed Mkts MFs (Institutional Net)





Risk Adjusted Return Measures vs MSCI EAFE Rankings Against Callan Intl Eq Developed Mkts MFs (Institutional Net) Five Years Ended March 31, 2024

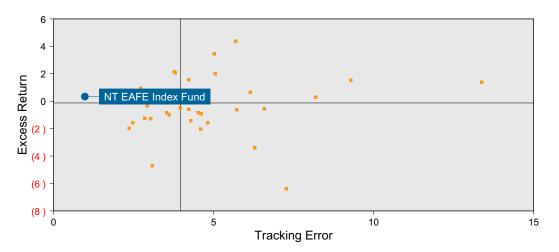


## NT EAFE Index Fund Risk Analysis Summary

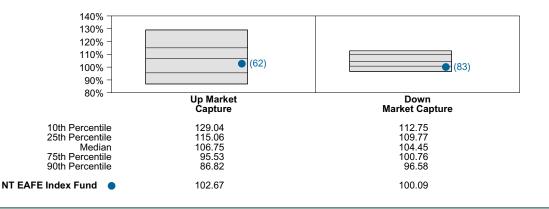
#### **Risk Analysis**

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.

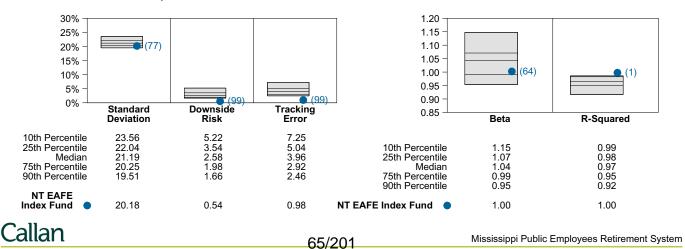
Risk Analysis vs Callan Intl Eq Developed Mkts MFs (Institutional Net) Five Years Ended March 31, 2024



## Market Capture vs MSCI EAFE Rankings Against Callan Intl Eq Developed Mkts MFs (Institutional Net) Five Years Ended March 31, 2024



#### Risk Statistics Rankings vs MSCI EAFE Rankings Against Callan Intl Eq Developed Mkts MFs (Institutional Net) Five Years Ended March 31, 2024



61

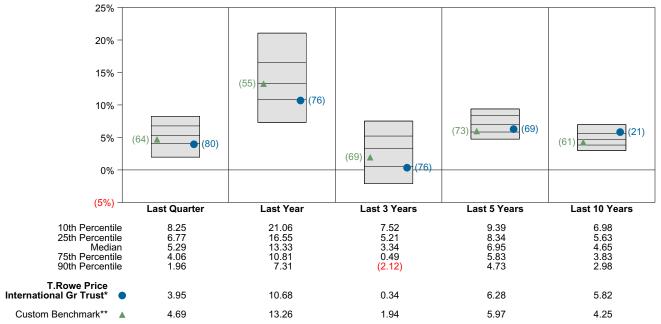
## T.Rowe Price International Gr Trust\* Period Ended March 31, 2024

## **Investment Philosophy**

T. Rowe believes international growth companies are often mispriced by global investors due to misperceptions about companies' ability to grow earnings and cash flow for sustainable periods beyond market expectations. By successfully identifying such companies and buying them at reasonable valuations, the firm believes it can generate value for client portfolios over time. The teams commitment to bottom-up stock selection supported by independent fundamental research distinguishes their investment philosophy from others. \*Changed share class in 3Q16 from T Rowe Price International Growth Mutual Fund to T Rowe Price International Growth Equity Trust. Returns prior to this are that of the Mutual Fund. \*\*Custom Benchmark is MSCI EAFE Index through 12/31/07 and MSCI AC World ex US USD thereafter.

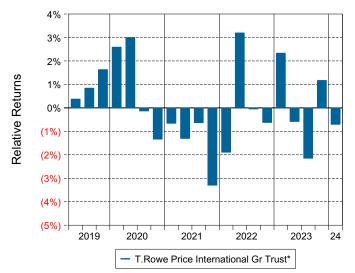
## **Quarterly Summary and Highlights**

- T.Rowe Price International Gr Trust\*'s portfolio posted a 3.95% return for the quarter placing it in the 80 percentile of the Callan Non US Equity Mutual Funds group for the quarter and in the 76 percentile for the last year.
- T.Rowe Price International Gr Trust\*'s portfolio underperformed the Custom Benchmark\*\* by 0.74% for the quarter and underperformed the Custom Benchmark\*\* for the year by 2.57%.



Performance vs Callan Non US Equity Mutual Funds (Institutional Net)





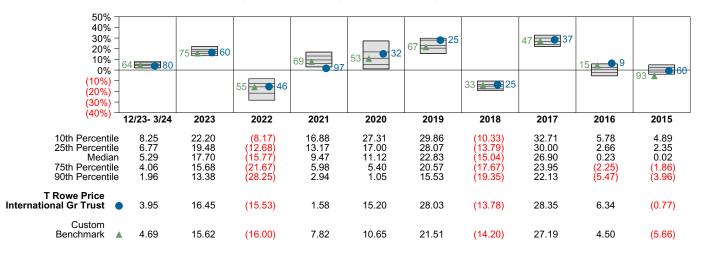
### Callan Non US Equity Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



## **T Rowe Price International Gr Trust Return Analysis Summary**

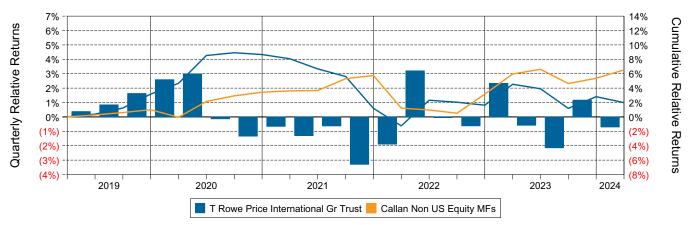
## **Return Analysis**

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.

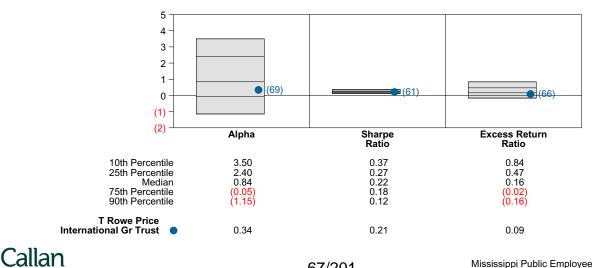


## Performance vs Callan Non US Equity Mutual Funds (Institutional Net)





**Risk Adjusted Return Measures vs Custom Benchmark** Rankings Against Callan Non US Equity Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



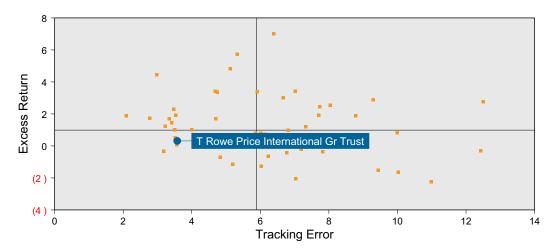
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## **T Rowe Price International Gr Trust Risk Analysis Summary**

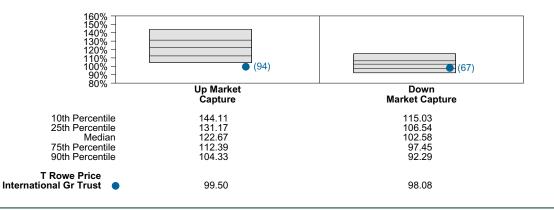
#### **Risk Analysis**

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.

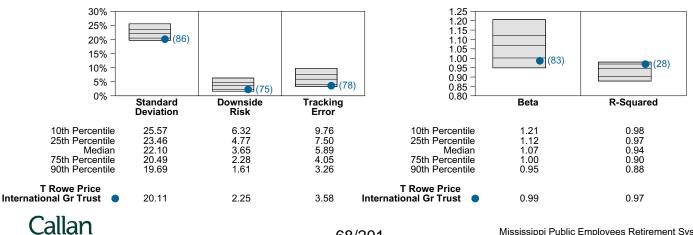
Risk Analysis vs Callan Non US Equity Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



### Market Capture vs Custom Benchmark Rankings Against Callan Non US Equity Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



#### **Risk Statistics Rankings vs Custom Benchmark** Rankings Against Callan Non US Equity Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



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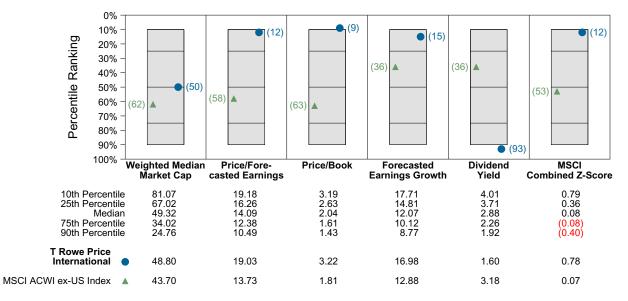
64

## T Rowe Price International Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

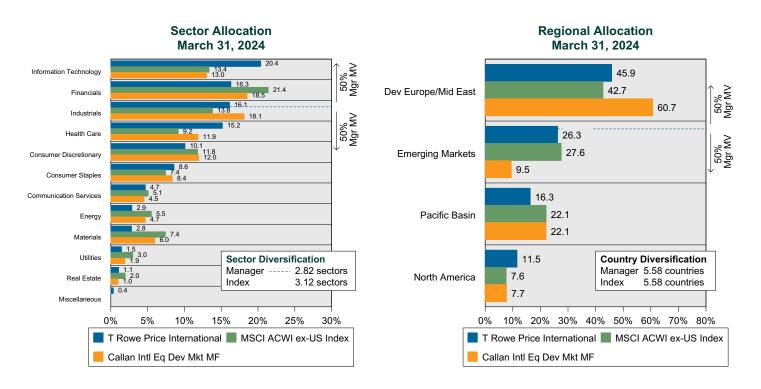
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Intl Eq Developed Mkts MFs 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.



## T Rowe Price International Top 10 Portfolio Holdings Characteristics as of March 31, 2024

## **10 Largest Holdings**

Stock		Percent		Price/ Forecasted			Forecasted
	Sector	of Portfolio	Qtrly Return	Market Capital	Earnings Ratio	Dividend Yield	Growth in Earnings
Taiwan Semicond Manufac Co L Shs	Information Technology	4.6%	26.55%	631.29	19.14	1.67%	11.74%
Asml Holding N V Asml Rev Stk Spl	Information Technology	3.3%	28.18%	385.04	41.98	0.68%	19.60%
Samsung Electronics Co Ltd Ord	Information Technology	2.1%	0.88%	365.39	16.40	1.75%	54.00%
Novo-Nordisk A S Adr	Health Care	2.0%	21.69%	438.34	35.58	1.07%	19.15%
Prosus N	Consumer Discretionary	1.7%	5.34%	83.51	11.44	0.10%	32.13%
Nestle S A Shs Nom New	Consumer Staples	1.6%	(8.24)%	283.84	18.82	3.13%	6.10%
Deutsche Telekom	Communication Services	1.6%	1.31%	120.96	12.20	3.43%	6.55%
Suncor Energy Inc New	Energy	1.5%	16.07%	47.59	9.80	4.36%	26.87%
Sap Se Shs	Information Technology	1.4%	26.43%	239.51	34.25	1.22%	22.20%
National Thermal Power Corp Shs	Utilities	1.4%	8.40%	39.04	14.82	1.34%	15.88%

#### **10 Best Performers**

Stock					Price/	Dividend Yield	Forecasted Growth in Earnings
		Percent of Portfolio	Qtrly Return	Market Capital	Forecasted Earnings Ratio		
	Sector						
Disco Corp	Information Technology	1.3%	52.79%	40.95	51.31	0.45%	14.40%
Mitsui Fudosan Co Ltd Shs	Real Estate	0.4%	34.15%	30.60	19.01	1.46%	7.60%
Adyen NV Common Stock	Financials	0.7%	31.41%	52.55	52.93	0.00%	22.47%
Sea Ltd Adr	Communication Services	0.5%	29.62%	28.00	70.86	0.00%	-
Safran Sa	Industrials	1.3%	28.79%	96.93	28.64	1.05%	34.67%
Asml Holding N V Asml Rev Stk Spl	Information Technology	3.3%	28.18%	385.04	41.98	0.68%	19.60%
Taiwan Semicond Manufac Co L Shs	Information Technology	4.6%	26.55%	631.29	19.14	1.67%	11.74%
Sap Se Shs	Information Technology	1.4%	26.43%	239.51	34.25	1.22%	22.20%
Ermenegildo Zegna	Consumer Discretionary	0.4%	23.80%	3.66	24.02	0.75%	31.41%
Novo-Nordisk A S Adr	Health Care	2.0%	21.69%	438.34	35.58	1.07%	19.15%

## **10 Worst Performers**

Stock		Percent			Forecasted		
	Sector	of Portfolio	Qtrly Return	Market Capital	Forecasted Earnings Ratio	Dividend Yield	Growth in Earnings
Silergy	Information Technology	0.3%	(36.71)%	3.94	41.16	0.60%	(2.14)%
Evotec Ag Shs	Health Care	0.6%	(33.21)%	2.79	48.70	0.00%	124.92%
Jd Health International	Consumer Staples	0.2%	(30.53)%	11.29	18.82	0.00%	-
Z Hldgs Corp Shs	Communication Services	0.4%	(26.70)%	19.56	22.07	1.44%	6.91%
Aia Group Ltd Com Par Usd 1	Financials	1.1%	(22.95)%	75.83	12.30	3.13%	(4.53)%
Pinduoduo Inc Sponsored Ads	Consumer Discretionary	0.4%	(22.08)%	154.45	12.28	0.00%	26.58%
Jeronimo Martins Sgps Sa Lis Shs	Consumer Staples	0.6%	(21.50)%	12.49	14.00	2.99%	16.20%
Naver Corp Shs	Communication Services	0.4%	(19.68)%	22.61	20.43	0.64%	7.46%
Puma Ag Rudolf Dassler Sport Ord	Consumer Discretionary	0.3%	(18.74)%	6.83	16.25	1.96%	15.74%
Bolsa De Mercadorias	Financials	0.3%	(18.68)%	13.94	13.41	3.67%	11.24%

## Current Holdings Based Style Analysis T Rowe Price International As of March 31, 2024

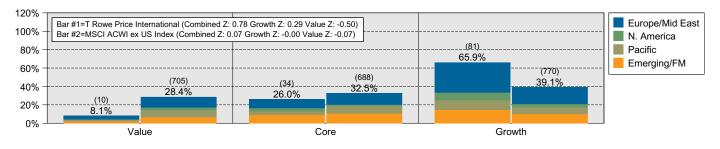
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

**Style Exposure Matrix** 

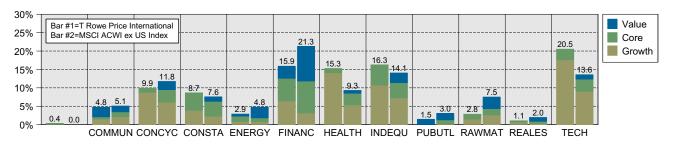


## Style Map vs Callan Intl Eq Dev Mkt MF Holdings as of March 31, 2024

## Combined Z-Score Style Distribution Holdings as of March 31, 2024



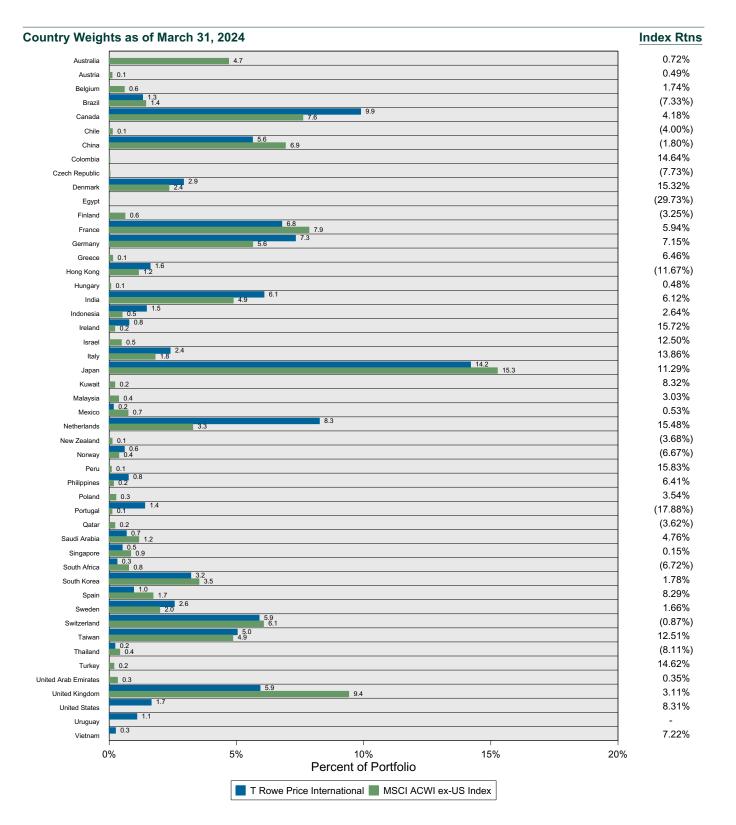
## Sector Weights Distribution Holdings as of March 31, 2024



## Country Allocation T Rowe Price International VS MSCI ACWI ex-US Index

#### **Country Allocation**

The chart below contrasts the portfolio's country allocation with that of the index as of March 31, 2024. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.





Global Equity

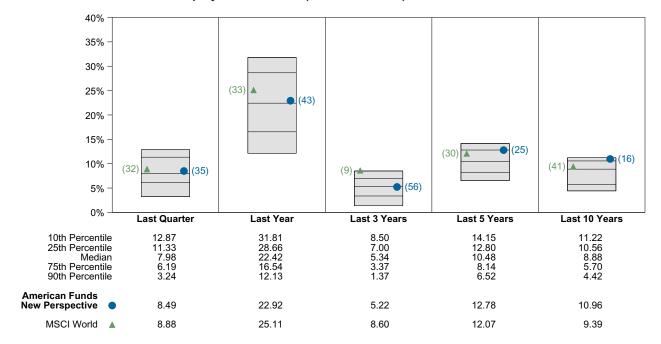
## American Funds New Perspective Period Ended March 31, 2024

#### **Investment Philosophy**

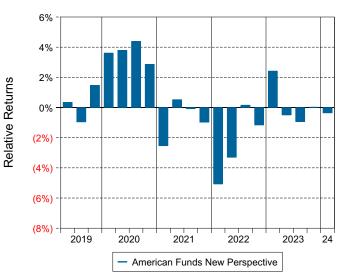
The New Perspective Fund seeks to provide long-term growth of capital through investments all over the world. The Fund invests in blue chip companies, emphasizing multinational or global companies and focusing on opportunities generated by changes in global trade patterns and economic and political relationships. The Fund is divided among seven portfolio managers and two research sleeves. Each portfolio manager has sole responsibility for selecting securities for his/her portion of the portfolio. The research sleeves are run by the senior analysts and are overseen by a research coordinator. The portfolio is highly diversified. There are no formal sector or country constraints, however, over the last ten years, the Fund's exposure to the US has fluctuated between 30-50%. Emerging markets exposure has been relatively limited.

#### **Quarterly Summary and Highlights**

- American Funds New Perspective's portfolio posted a 8.49% return for the quarter placing it in the 35 percentile of the Callan Global Equity Mutual Funds group for the quarter and in the 43 percentile for the last year.
- American Funds New Perspective's portfolio underperformed the MSCI World by 0.39% for the quarter and underperformed the MSCI World for the year by 2.18%.



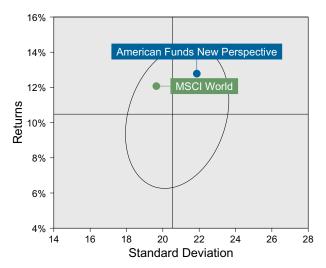
#### Performance vs Callan Global Equity Mutual Funds (Institutional Net)



Callan

#### **Relative Return vs MSCI World**

#### Callan Global Equity Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return

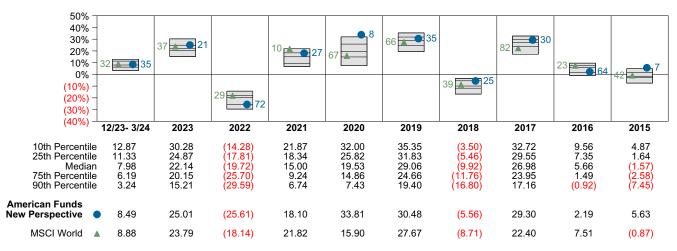


Mississippi Public Employees Retirement System 70

# American Funds New Perspective Return Analysis Summary

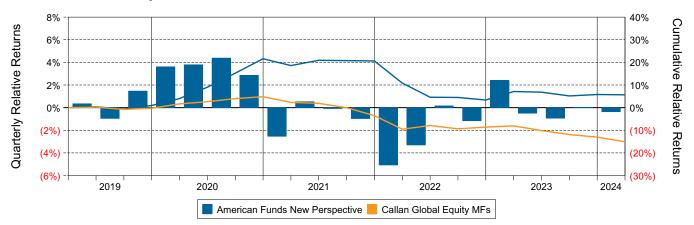
## **Return Analysis**

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.

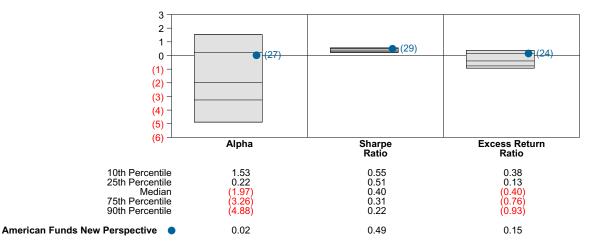


## Performance vs Callan Global Equity Mutual Funds (Institutional Net)

**Cumulative and Quarterly Relative Returns vs MSCI World** 





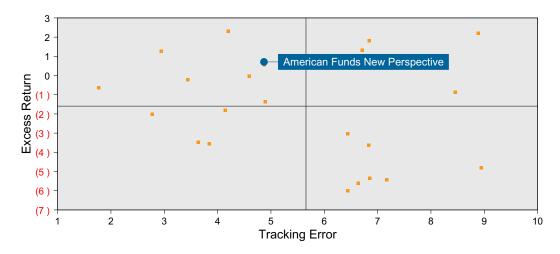


# American Funds New Perspective Risk Analysis Summary

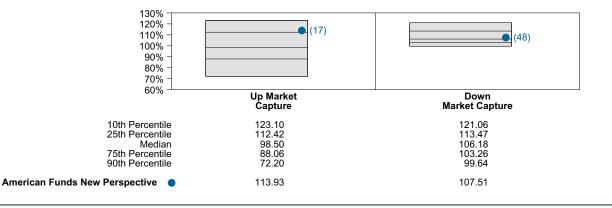
#### **Risk Analysis**

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.

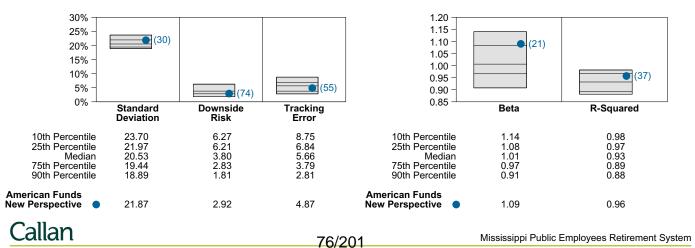
Risk Analysis vs Callan Global Equity Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



## Market Capture vs MSCI World (Net) Rankings Against Callan Global Equity Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



#### Risk Statistics Rankings vs MSCI World (Net) Rankings Against Callan Global Equity Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



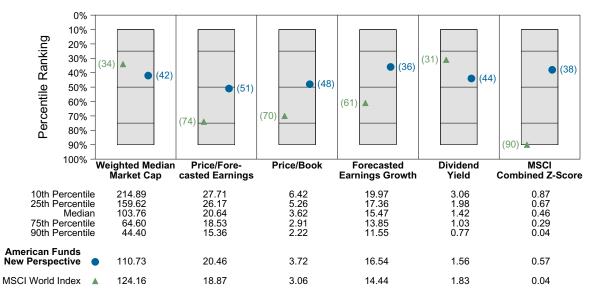
72

# American Funds New Perspective Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

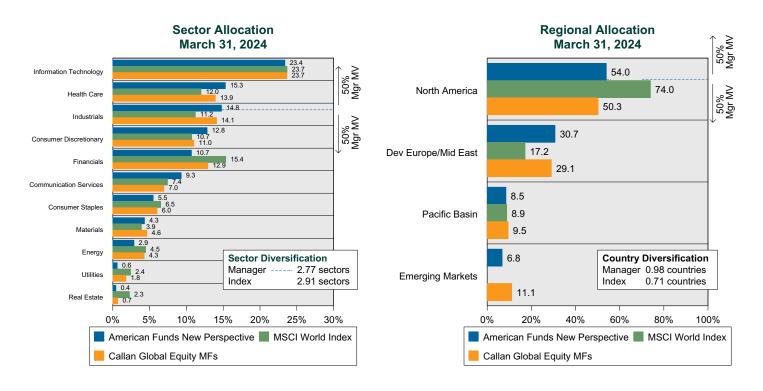
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Global Equity Mutual Funds 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.



# American Funds New Perspective Top 10 Portfolio Holdings Characteristics as of March 31, 2024

## **10 Largest Holdings**

	Percent				Forecasted		
Stock	Sector	of Portfolio	Qtrly Return	Market Capital	Earnings Ratio	Dividend Yield	Growth in Earnings
Microsoft Corp	Information Technology	3.8%	12.09%	3126.13	32.52	0.71%	17.08%
Meta Platforms Inc	Communication Services	3.4%	37.33%	1068.30	23.35	0.41%	26.00%
Novo-Nordisk A S Almindelig Aktie	Health Care	2.7%	24.24%	438.34	35.58	1.07%	19.15%
Broadcom Ltd Shs	Information Technology	2.4%	19.23%	614.22	25.94	1.58%	14.40%
Taiwan Semicond Manufac Co L Shs	Information Technology	2.3%	26.55%	631.29	19.14	1.67%	11.74%
Fujitsu	Information Technology	2.2%	10.04%	34.07	16.72	1.04%	4.60%
Tesla Mtrs Inc	Consumer Discretionary	1.6%	(29.25)%	559.85	55.45	0.00%	15.30%
Lilly (Eli) & Co	Health Care	1.5%	33.69%	739.66	55.89	0.67%	49.75%
Astrazeneca Plc Ord	Health Care	1.4%	1.37%	209.11	16.04	2.15%	10.30%
Nvidia Corp	Information Technology	1.3%	82.46%	2258.90	35.53	0.02%	37.90%

#### **10 Best Performers**

	Percent				Forecasted		
Stock	Sector	of Portfolio	Qtrly Return	Market Capital	Forecasted Earnings Ratio	Dividend Yield	Growth in Earnings
Nvidia Corp	Information Technology	1.3%	82.46%	2258.90	35.53	0.02%	37.90%
Dell Technologies Inc CI C	Information Technology	0.1%	49.16%	34.83	14.81	1.30%	0.39%
Tokyo Electron	Information Technology	0.2%	46.77%	123.31	40.72	0.93%	21.44%
Lonza Group Ag Zuerich Namen Akt	Health Care	0.1%	42.72%	44.66	40.33	0.65%	17.42%
Rolls Royce Holdings Plc Lon Shs	Industrials	0.4%	41.09%	45.37	27.09	0.00%	54.92%
Unicredit Spa Roma Az Ord Senza	Financials	0.4%	40.00%	63.89	6.79	5.11%	18.41%
Micron Technology Inc	Information Technology	0.1%	38.28%	130.55	25.05	0.39%	(2.62)%
General Electric Co	Industrials	0.3%	37.53%	191.90	35.20	0.18%	37.33%
Meta Platforms Inc	Communication Services	3.4%	37.33%	1068.30	23.35	0.41%	26.00%
Lilly (Eli) & Co	Health Care	1.5%	33.69%	739.66	55.89	0.67%	49.75%

## **10 Worst Performers**

		Percent			Forecasted		Forecasted
Stock	Sector	of Portfolio	Qtrly Return	Market Capital	Earnings Ratio	Dividend Yield	Growth in Earnings
Grifols S A Sp Adr Rep B Nvt	Health Care	0.1%	(43.50)%	1.70	6.40	6.14%	(15.25)%
Concentrix Corp Com	Industrials	0.0%	(32.34)%	4.34	5.38	1.83%	8.25%
Wolfspeed Inc	Information Technology	0.0%	(32.20)%	3.71	(14.88)	0.00%	(40.15)%
Kose Corp Tokyo Shs	Consumer Staples	0.0%	(29.80)%	3.19	28.71	1.76%	(5.68)%
Tesla Mtrs Inc	Consumer Discretionary	1.6%	(29.25)%	559.85	55.45	0.00%	15.30%
Worldline	Financials	0.0%	(28.37)%	3.51	5.52	0.00%	11.29%
Boeing Co	Industrials	0.1%	(25.96)%	117.75	173.40	0.00%	252.20%
Lululemon Athletica Inc	Consumer Discretionary	0.1%	(24.74)%	47.23	27.12	0.00%	12.30%
Vale S A Adr	Materials	0.3%	(23.33)%	55.16	5.12	11.49%	(12.84)%
Aia Group Ltd Com Par Usd 1	Financials	0.8%	(22.95)%	75.83	12.30	3.13%	(4.53)%

# **Current Holdings Based Style Analysis American Funds New Perspective** As of March 31, 2024

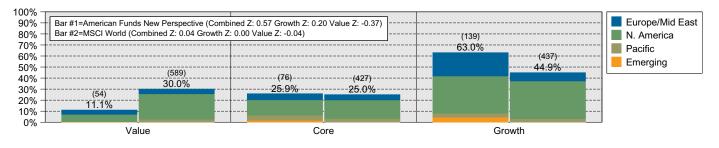
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

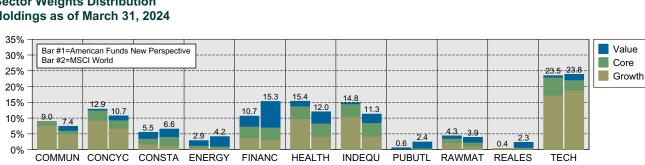
**Style Exposure Matrix** 



## Style Map vs Callan Global Equity MFs Holdings as of March 31, 2024

## **Combined Z-Score Style Distribution** Holdings as of March 31, 2024



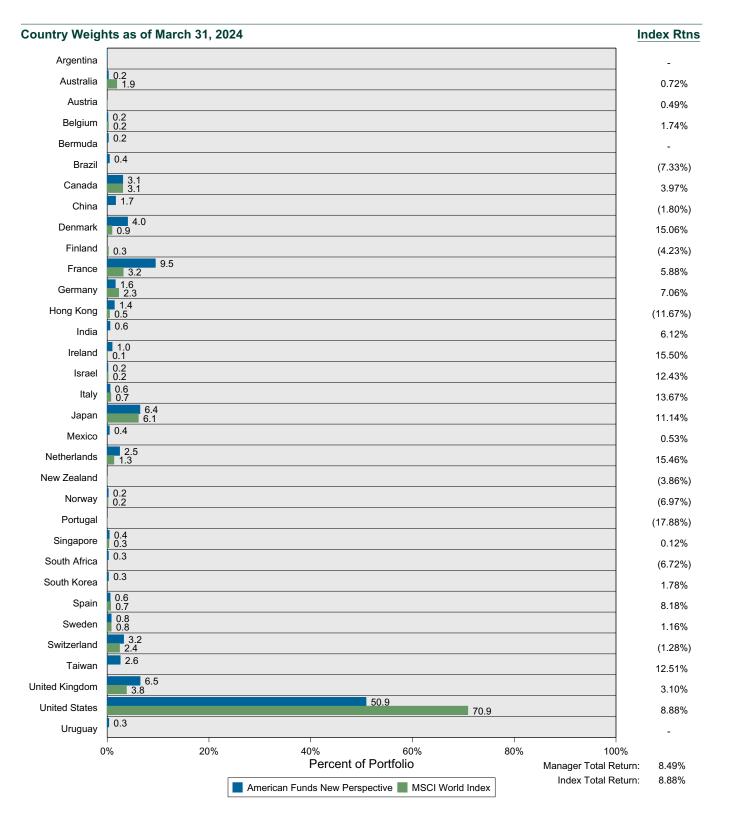


## **Sector Weights Distribution** Holdings as of March 31, 2024

# Country Allocation American Funds New Perspective VS MSCI World Index

## **Country Allocation**

The chart below contrasts the portfolio's country allocation with that of the index as of March 31, 2024. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.





Domestic Fixed-Income

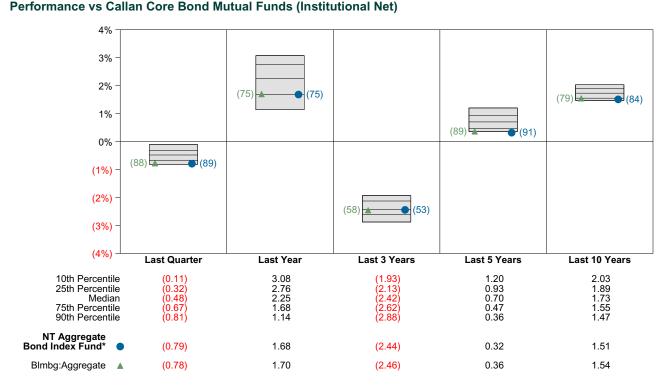
# NT Aggregate Bond Index Fund\* Period Ended March 31, 2024

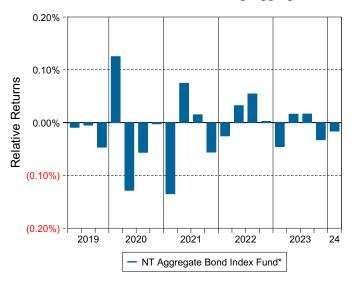
### **Investment Philosophy**

The objective of Northern Trust's index trade generation process is to maximize liquidity and minimize market impact, while utilizing a multi-dimensional risk management process. The result of their intelligent indexing approach is a fully representative portfolio which seeks to control trading costs and eliminate the erosion of economic value. They pay particular attention to variances between market prices and index prices to control transaction costs. \*Fund inception 1Q18; returns for longer time periods are that of the Collective Trust.

## **Quarterly Summary and Highlights**

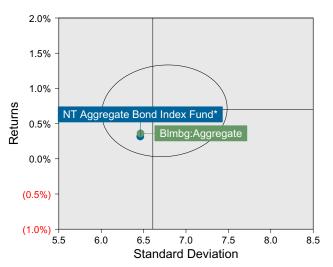
- NT Aggregate Bond Index Fund\*'s portfolio posted a (0.79)% return for the quarter placing it in the 89 percentile of the Callan Core Bond Mutual Funds group for the quarter and in the 75 percentile for the last year.
- NT Aggregate Bond Index Fund\*'s portfolio underperformed the BImbg:Aggregate by 0.02% for the quarter and underperformed the BImbg:Aggregate for the year by 0.02%.





**Relative Return vs Blmbg:Aggregate** 

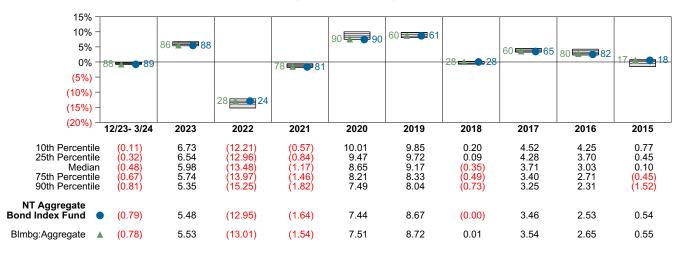
#### Callan Core Bond Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



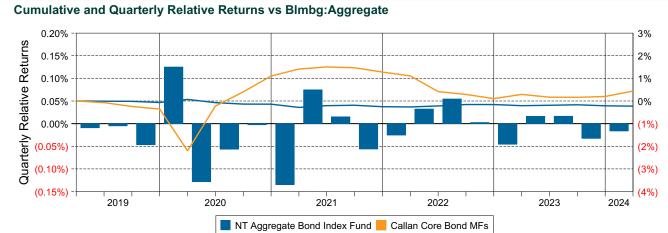
# **NT Aggregate Bond Index Fund Return Analysis Summary**

## **Return Analysis**

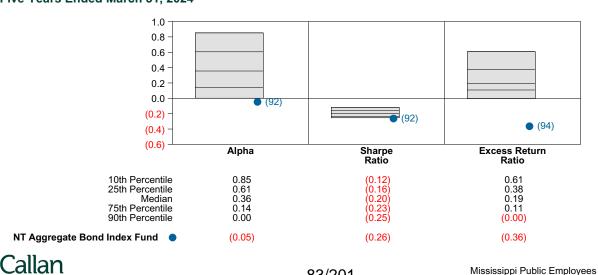
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate 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 Mutual Funds (Institutional Net)



**Risk Adjusted Return Measures vs Blmbg:Aggregate** Rankings Against Callan Core Bond Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



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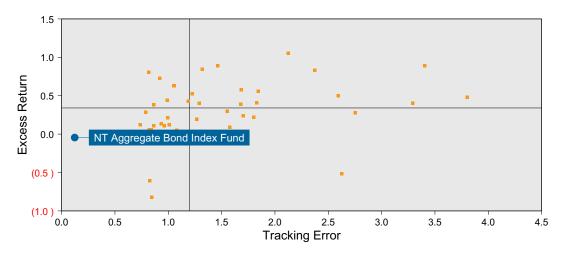
**Cumulative Relative Returns** 

# **NT Aggregate Bond Index Fund Risk Analysis Summary**

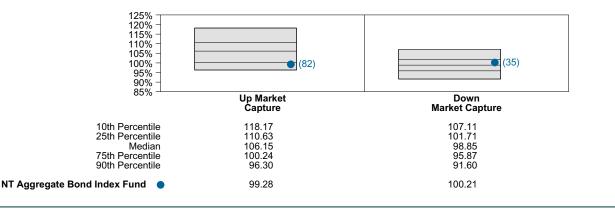
#### **Risk Analysis**

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.

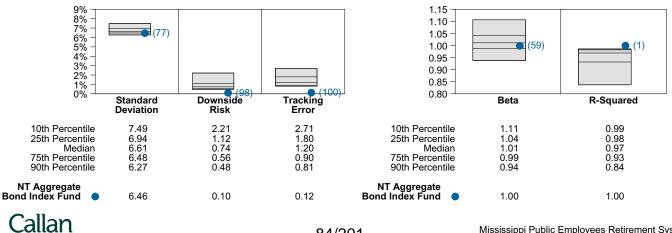
**Risk Analysis vs Callan Core Bond Mutual Funds (Institutional Net)** Five Years Ended March 31, 2024



#### Market Capture vs Bloomberg Aggregate **Rankings Against Callan Core Bond Mutual Funds (Institutional Net)** Five Years Ended March 31, 2024



#### **Risk Statistics Rankings vs Bloomberg Aggregate** Rankings Against Callan Core Bond Mutual Funds (Institutional Net) Five Years Ended March 31, 2024



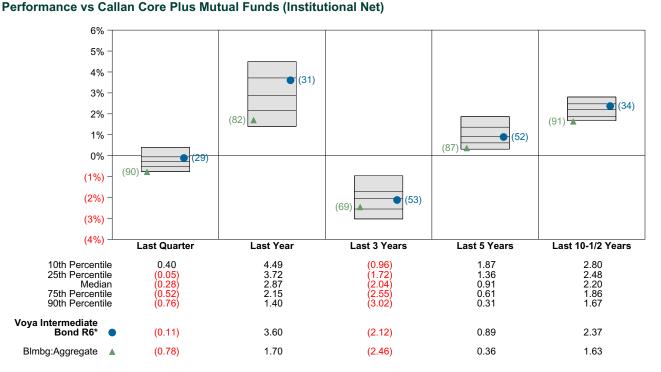
# Voya Intermediate Bond R6\* Period Ended March 31, 2024

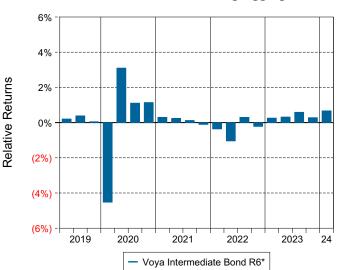
## **Investment Philosophy**

The investment philosophy for the Voya Core Plus Fixed Income strategy is centered around the belief that consistent superior risk adjusted returns are achieved by recognizing how relationships among alpha sources change with the business cycle; utilizing far-reaching and well integrated research to discover unrecognized value ahead of consensus; balancing the investment process to exploit both macro and security-level investment inputs; and aligning active risk management to match portfolio exposures with client objectives. \*Fund Inception 1Q2017. Returns prior to this are that of the Mutual Fund.

## **Quarterly Summary and Highlights**

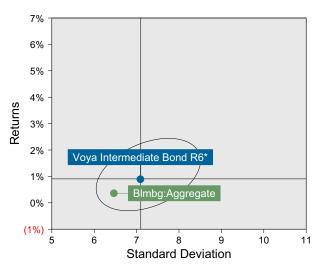
- Voya Intermediate Bond R6\*'s portfolio posted a (0.11)% return for the quarter placing it in the 29 percentile of the Callan Core Plus Mutual Funds group for the quarter and in the 31 percentile for the last year.
- Voya Intermediate Bond R6\*'s portfolio outperformed the Blmbg:Aggregate by 0.66% for the quarter and outperformed the Blmbg:Aggregate for the year by 1.91%.





### Relative Return vs Blmbg:Aggregate

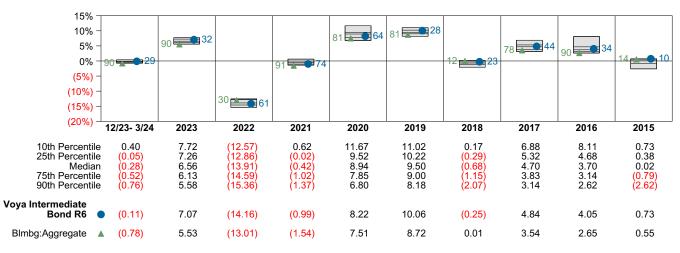
#### Callan Core Plus Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



# Voya Intermediate Bond R6 Return Analysis Summary

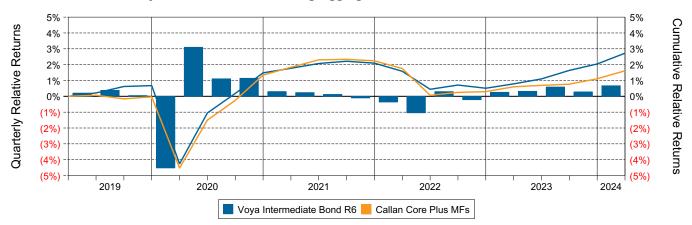
## **Return Analysis**

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.

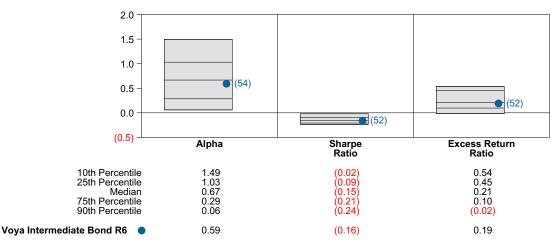


Performance vs Callan Core Plus Mutual Funds (Institutional Net)

Cumulative and Quarterly Relative Returns vs Blmbg:Aggregate



Risk Adjusted Return Measures vs Blmbg:Aggregate Rankings Against Callan Core Plus Mutual Funds (Institutional Net) Five Years Ended March 31, 2024

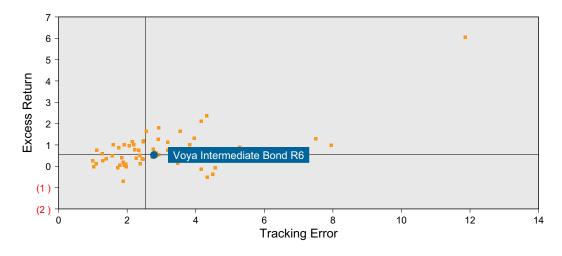


# Voya Intermediate Bond R6 **Risk Analysis Summary**

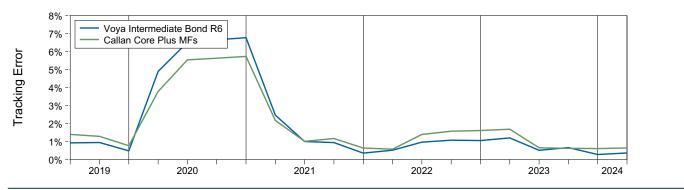
#### **Risk Analysis**

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.

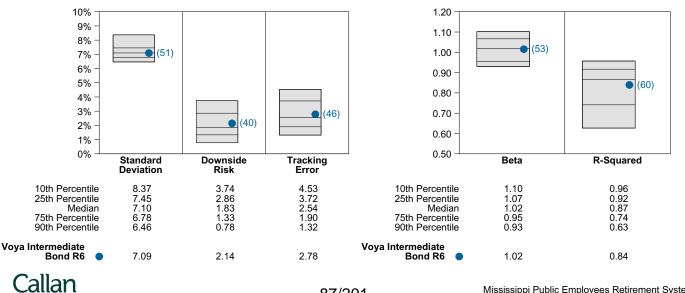
**Risk Analysis vs Callan Core Plus Mutual Funds (Institutional Net)** Five Years Ended March 31, 2024











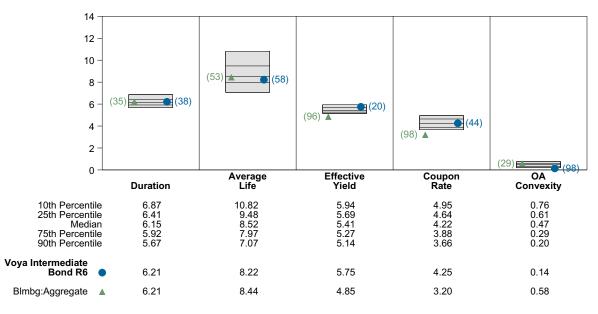
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# Voya Intermediate Bond R6 Bond Characteristics Analysis Summary

## **Portfolio Characteristics**

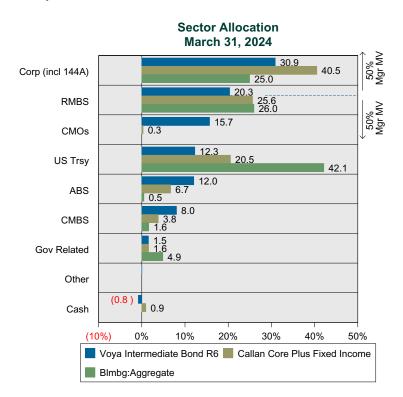
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

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

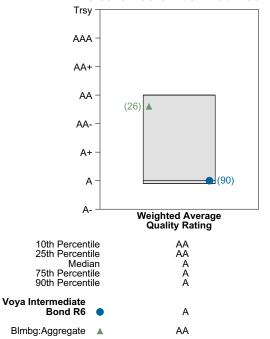


## Sector Allocation and Quality Ratings

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.



Quality Ratings vs Callan Core Plus Fixed Income



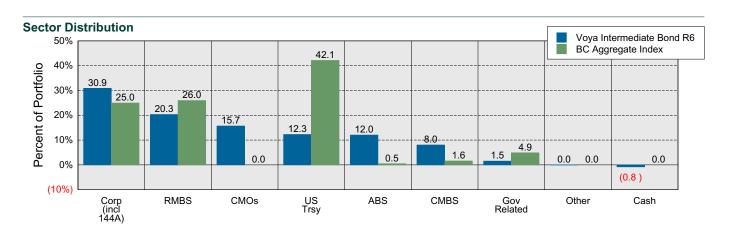
Callan

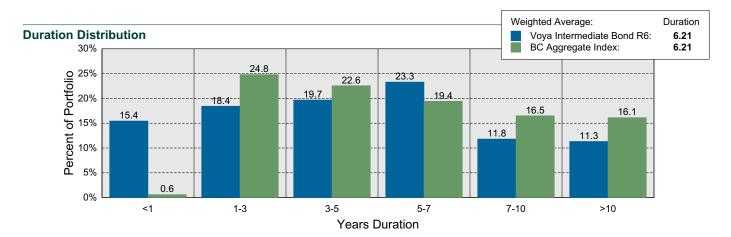
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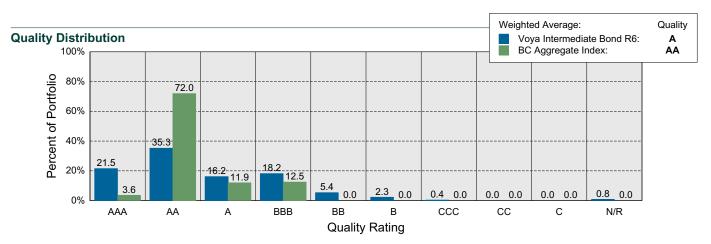
# Voya Intermediate Bond R6 Portfolio Characteristics Summary As of March 31, 2024

## **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.







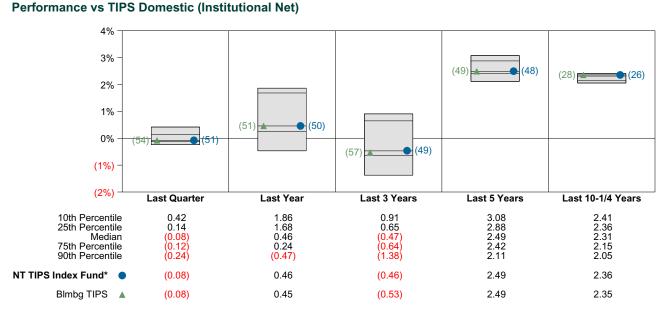
## NT TIPS Index Fund\* Period Ended March 31, 2024

#### **Investment Philosophy**

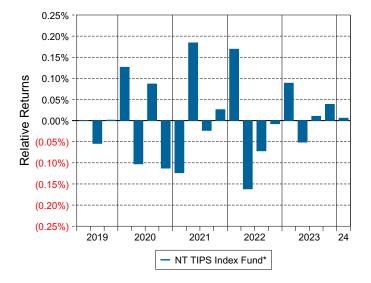
The underlying philosophy that drives the management of all Northern Trust's portfolios is that the assumption of risk within a portfolio should be rewarded commensurate with the amount of risk taken. Within NT's passive portfolios, risk is defined to be the risk of variance in returns versus the benchmark. Thus, for these portfolios, differences in portfolio composition from the benchmark are undertaken only if justified by reductions in costs, particularly transaction costs. Differences in composition may result in tracking variances versus the benchmark, but these variances are expected to be diversified and mean-reverting over time, whereas transactions costs are always negative. The objective of the firm's passive portfolios is to provide investment results that closely approximate the return performance and risk characteristics of the securities in the underlying index. Within the context of the current regulatory framework and market environment, they design portfolios to meet client expectations and achieve the desired exposure at minimal cost. \*Fund inception 1Q18; returns for longer time periods are that of the Collective Trust.

#### **Quarterly Summary and Highlights**

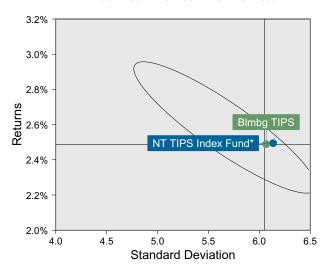
- NT TIPS Index Fund\*'s portfolio posted a (0.08)% return for the quarter placing it in the 51 percentile of the TIPS Domestic group for the quarter and in the 50 percentile for the last year.
- NT TIPS Index Fund\*'s portfolio outperformed the Blmbg TIPS by 0.01% for the quarter and outperformed the Blmbg TIPS for the year by 0.00%.



**Relative Return vs Blmbg TIPS** 



#### TIPS Domestic (Institutional Net) Annualized Five Year Risk vs Return

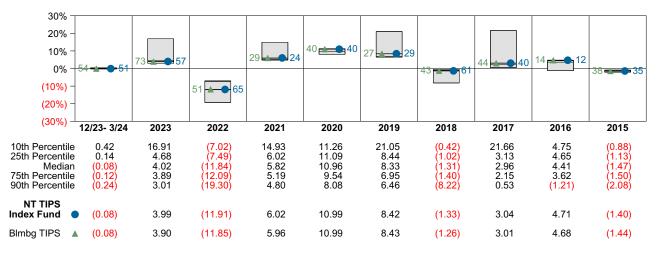


# NT TIPS Index Fund Return Analysis Summary

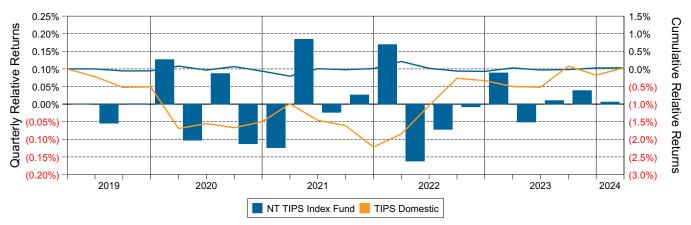
## **Return Analysis**

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.

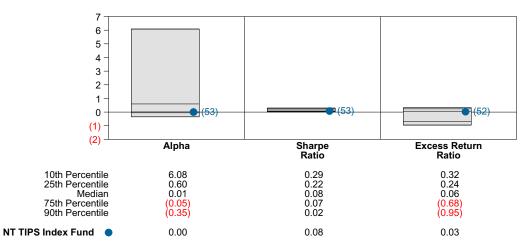
### Performance vs TIPS Domestic (Institutional Net)



**Cumulative and Quarterly Relative Returns vs Blmbg TIPS** 



## Risk Adjusted Return Measures vs Blmbg TIPS Rankings Against TIPS Domestic (Institutional Net) Five Years Ended March 31, 2024



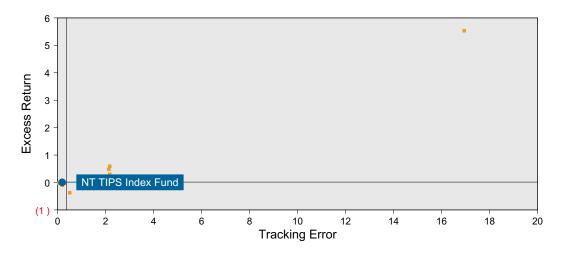


# **NT TIPS Index Fund Risk Analysis Summary**

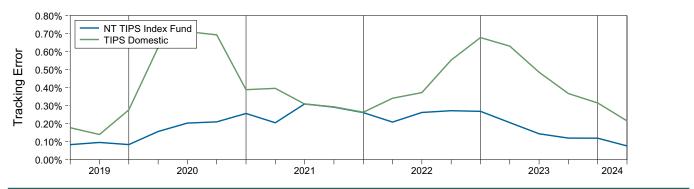
#### **Risk Analysis**

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.

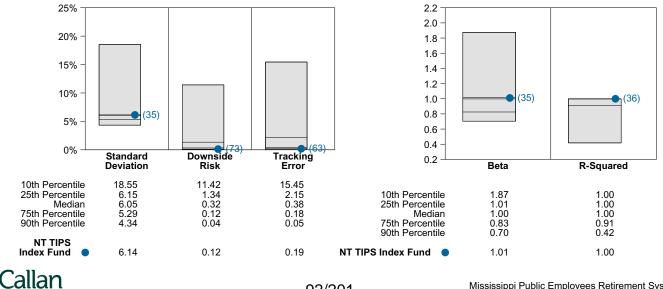
**Risk Analysis vs TIPS Domestic (Institutional Net)** Five Years Ended March 31, 2024











## BNY Mellon EB US RE Securities Period Ended March 31, 2024

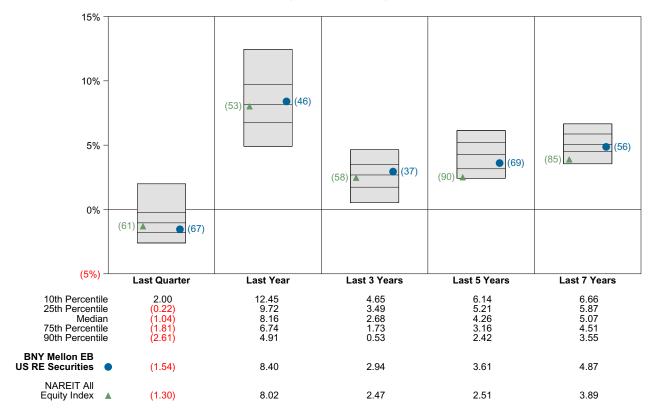
#### **Investment Philosophy**

CenterSquare's investment philosophy is based on the following three tenets: A value-oriented investment philosophy, both real estate and capital markets research and strong quantitative analysis.

#### **Quarterly Summary and Highlights**

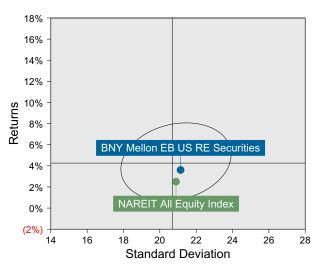
- BNY Mellon EB US RE Securities's portfolio posted a (1.54)% return for the quarter placing it in the 67 percentile of the Callan Real Estate Mutual Funds group for the quarter and in the 46 percentile for the last year.
- BNY Mellon EB US RE Securities's portfolio underperformed the NAREIT All Equity Index by 0.24% for the quarter and outperformed the NAREIT All Equity Index for the year by 0.38%.

### Performance vs Callan Real Estate Mutual Funds (Institutional Net)



**Relative Return vs NAREIT All Equity Index** 

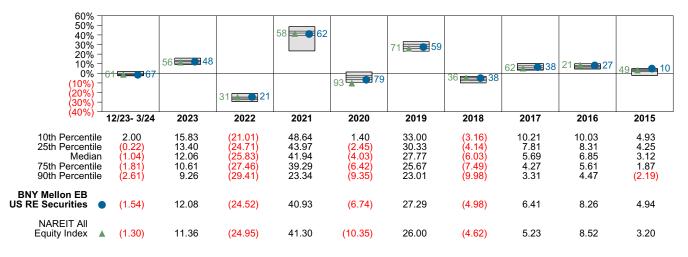
Callan Real Estate Mutual Funds (Institutional Net) Annualized Five Year Risk vs Return



# BNY Mellon EB US RE Securities Return Analysis Summary

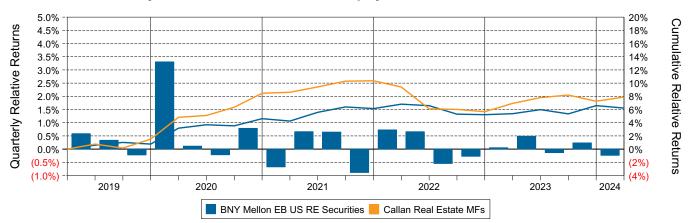
## **Return Analysis**

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.

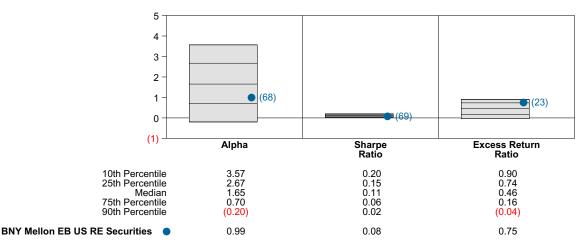


## Performance vs Callan Real Estate Mutual Funds (Institutional Net)

Cumulative and Quarterly Relative Returns vs NAREIT All Equity Index



Risk Adjusted Return Measures vs NAREIT All Equity Index Rankings Against Callan Real Estate Mutual Funds (Institutional Net) Five Years Ended March 31, 2024

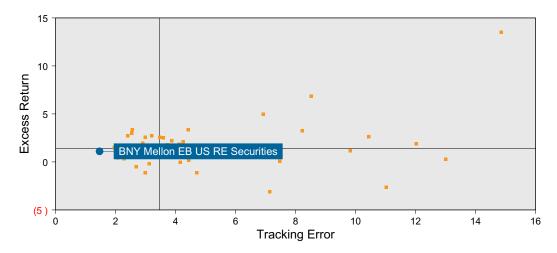


## **BNY Mellon EB US RE Securities Risk Analysis Summary**

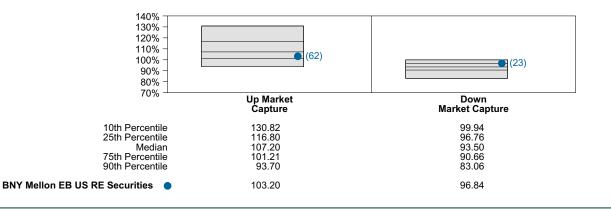
#### **Risk Analysis**

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.

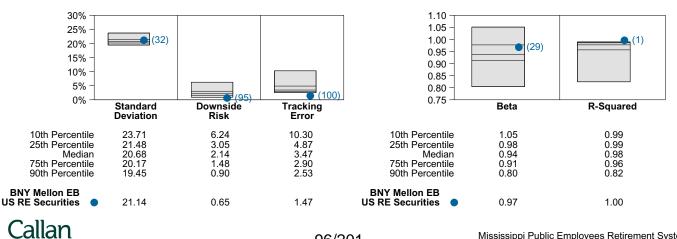
Risk Analysis vs Callan Real Estate Mutual Funds (Net) Five Years Ended March 31, 2024



#### Market Capture vs NAREIT All Equity Index **Rankings Against Callan Real Estate Mutual Funds (Net)** Five Years Ended March 31, 2024

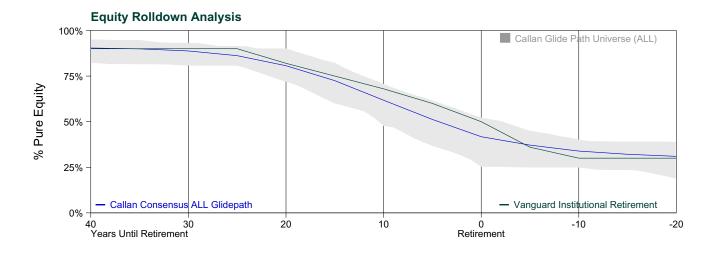


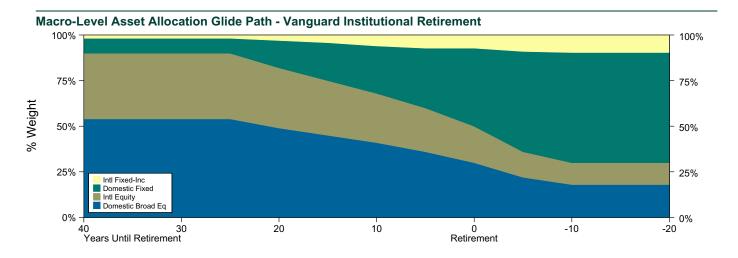
#### **Risk Statistics Rankings vs NAREIT All Equity Index** Rankings Against Callan Real Estate Mutual Funds (Net) Five Years Ended March 31, 2024

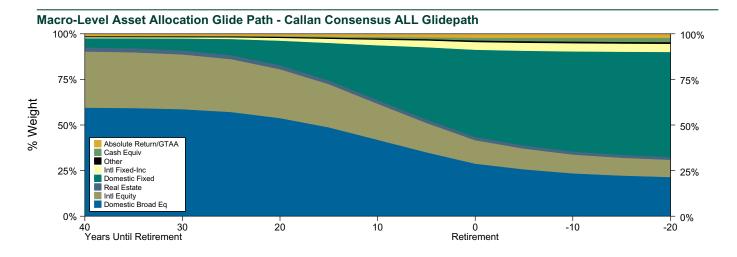


# Vanguard Institutional Retirement Target Date Glide Path Analysis as of March 31, 2024

The following charts illustrate the asset allocation "glide path" underlying the relevant suite of target date funds. This analysis covers forty years of investor wealth accumulation up to retirement, as well as twenty years of wealth decumulation following retirement. The top chart shows the "pure" equity exposure (public equities excluding REITs) versus the peer group and index. The subsequent charts show more asset allocation detail at the high "macro" level.





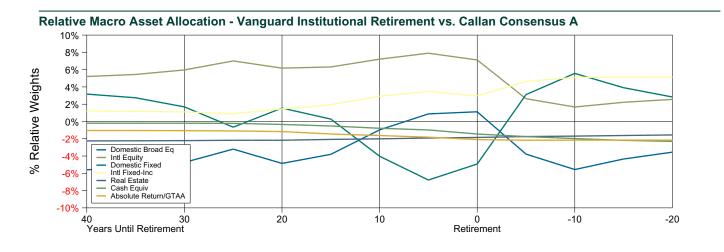


Callan

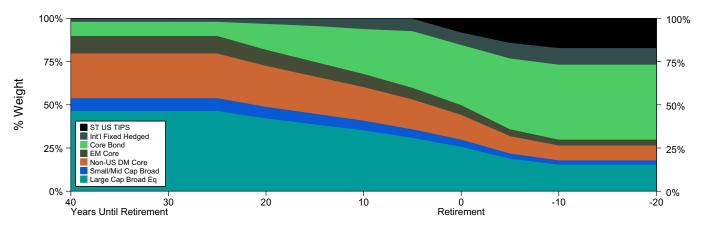
Mississippi Public Employees Retirement System 94

## Vanguard Institutional Retirement Target Date Glide Path Analysis as of March 31, 2024

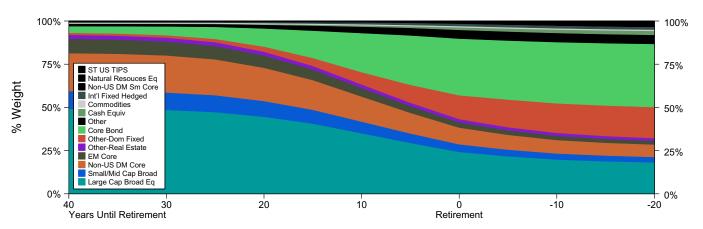
The following charts illustrate the asset allocation "glide path" underlying the relevant suite of target date funds. This analysis covers forty years of investor wealth accumulation up to retirement, as well as twenty years of wealth decumulation following retirement. The top chart highlights any significant "macro-level" differences between the manager's asset allocation glide path and that of the glide path index. The bottom two charts illustrate the asset allocation glide paths of both the manager and index at the more detailed "micro" level.





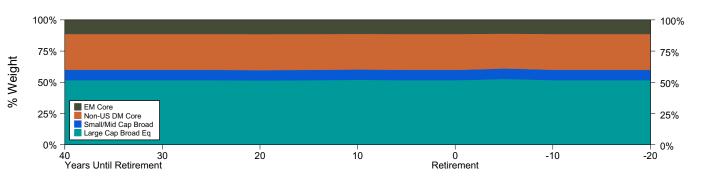






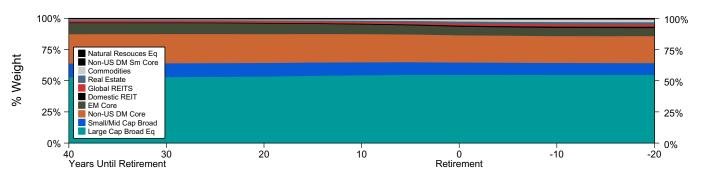
## Vanguard Institutional Retirement Target Date Glide Path Analysis as of March 31, 2024

The first two charts below illustrate the detailed composition over time of the "risky", or "growth" portion of the glide paths for both the manager and index, defined to be all public equity and real estate asset classes. These charts highlight both the levels of diversification and aggressiveness within the wealth creation portion of the glide paths. The last two charts serve a similar purpose but focus on the composition over time of the remaining wealth preservation portion (non-equity) of the manager and index glide paths.

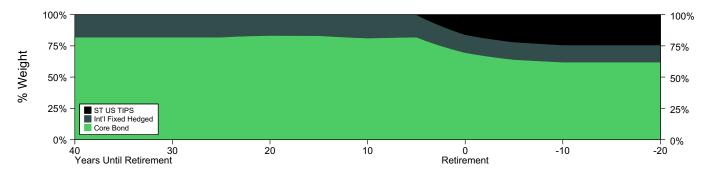


## Micro-Level Equity Allocation Glide Path - Vanguard Institutional Retirement

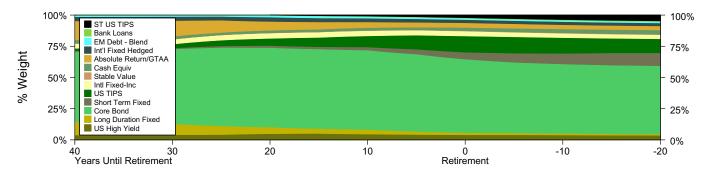




### Micro-Level Non-Equity Allocation Glide Path - Vanguard Institutional Retirement

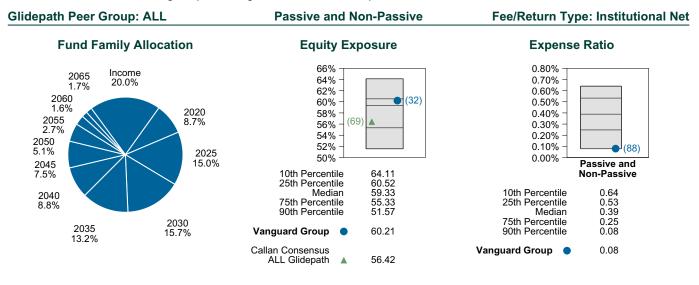






## Mississippi Public Employees Retirement System - Vanguard Group Target Date Fund Family Analysis as of March 31, 2024

The following is an analysis of the client's suite of target date funds as an aggregated portfolio using actual proportions held by the client's participants. The upper-left pie chart shows the current client weights across target dates. The rest of the charts compare different attributes of the aggregated client target date portfolio to a peer group of target date fund families, as well as target date indices, by mimicking the client target date weights using these alternatives. The first two charts evaluate the aggregate client equity exposure and expense ratio via target date funds. The last two charts analyze aggregate client target date performance on both an actual return basis as well as a "glide path return" basis (simulated returns using each funds' asset allocation "glide path" weights and index returns).



#### **Target Date Family Performance vs Peer Families**

18% 16% - 14% - 12% - 10% - 8% - 6% - 4% - 2% - 0%	(61) (73)	(58) (54)	(23) (58)	(24)	(27) (43)
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 8-3/4 Years
10th Percentile	5.56	15.86	4.20	7.48	6.90
25th Percentile	5.19	14.91	3.78	7.23	6.73
Median	4.77	14.20	3.33	6.99	6.49
75th Percentile	4.34	13.40	2.99	6.70	6.22
90th Percentile	4.05	12.02	2.50	6.40	5.99
Vanguard Group 🏾 🌒	4.40	14.14	3.25	7.00	6.58
Callan Consensus ALL Glidepath 🔺	4.53	14.05	3.79	7.24	6.71

#### **Target Date Family Glide Path Returns vs Peer Families**

20%   18% - 16% - 14% - 12% - 10% - 8% - 6% - 4% - 2% - 0% -	(57)	(58)	(50)	(51)	(59)
0 %	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 8-3/4 Years
10th Percentile 25th Percentile Median 75th Percentile 90th Percentile	5.42 5.10 4.60 4.29 3.99	16.58 15.13 14.43 13.55 12.92	5.24 4.59 3.80 3.36 3.13	8.27 7.92 7.27 6.99 6.70	7.74 7.37 6.81 6.52 6.41
Vanguard Group 🛛 🌒	4.66	14.24	3.74	7.43	6.91
Callan Consensus ALL Glidepath	4.53	14.05	3.79	7.24	6.71

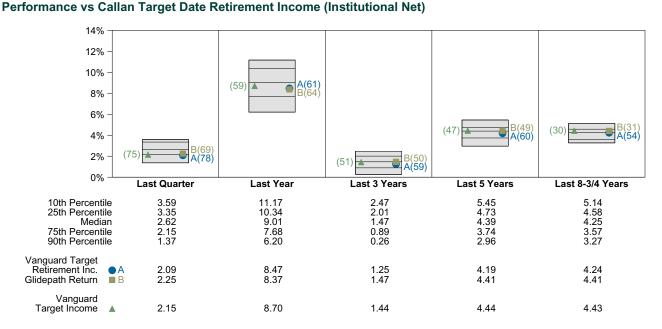
## Vanguard Target Retirement Inc. Period Ended March 31, 2024

#### **Investment Philosophy**

The allocation of Vanguard Target Retirement Funds' assets among the underlying Vanguard funds is based on methodology developed by Vanguard Investment Counseling and Research group, which takes advantage of Vanguard's experience in providing investment advice to clients. Vanguard Target Retirement Funds are funds-of-funds designed to meet the needs of investors seeking broadly diversified investments. The objective of these funds is to provide straightforward, yet sophisticated, savings vehicles for investors seeking simple solutions. The original allocations were derived from research on the benefits gained through diversification and asset allocation using "efficient frontier" modeling. The results were then adapted to create a simple structure that is transparent to both participants and plan sponsors and easily communicated to fund investors. Similarly, the rolldown schedule was developed to provide a smooth, easy-to-understand, and transparent path.

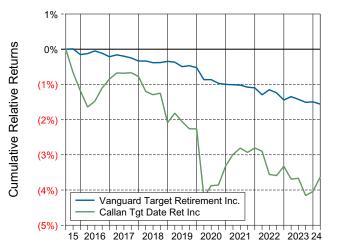
#### **Quarterly Summary and Highlights**

- Vanguard Target Retirement Inc.'s portfolio posted a 2.09% return for the quarter placing it in the 78 percentile of the Callan Target Date Retirement Income group for the quarter and in the 61 percentile for the last year.
- Vanguard Target Retirement Inc.'s portfolio underperformed the Vanguard Target Income by 0.07% for the quarter and underperformed the Vanguard Target Income for the year by 0.23%.



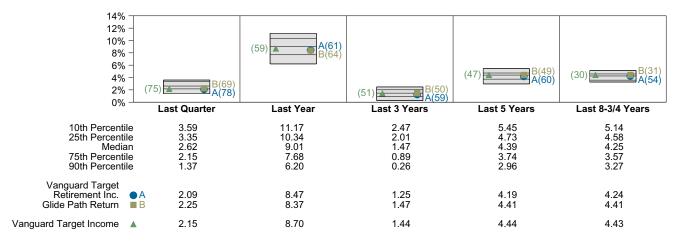


#### Cumulative Returns vs Vanguard Target Income



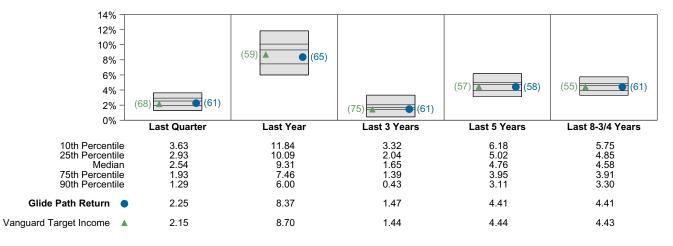
# Vanguard Target Retirement Inc. Target Date Peer Group Analysis as of March 31, 2024

The charts below evaluate not only the total return performance of a target date fund but also two separate underlying sources of return: "glide path return" (asset allocation), and "implementation return" (value-added relative to glide path return). The top chart ranks the fund on a total return basis. The middle chart compares the fund's glide path return (passively implemented asset allocation glide path) to the peer group range of glide path returns. The bottom chart ranks the fund's implementation return (active management, style tilts, rebalancing strategy, fees, etc...) versus the range of peer group implementation returns.

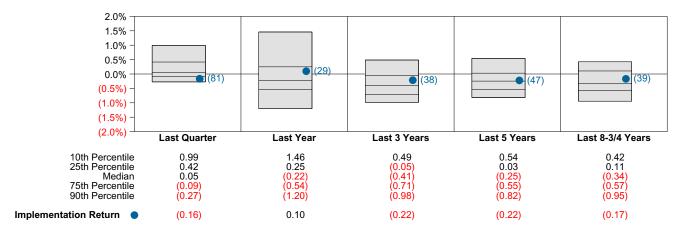


## Total Returns - Group: Callan Tgt Date Ret Inc (Institutional Net)



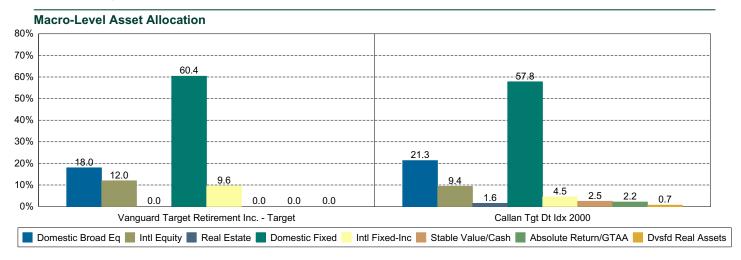


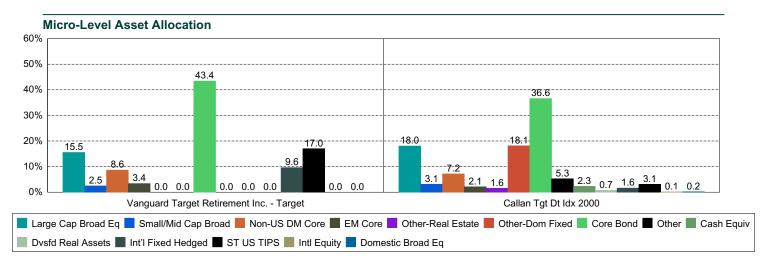
#### Implementation Returns - Group: Callan Tgt Date Ret Inc

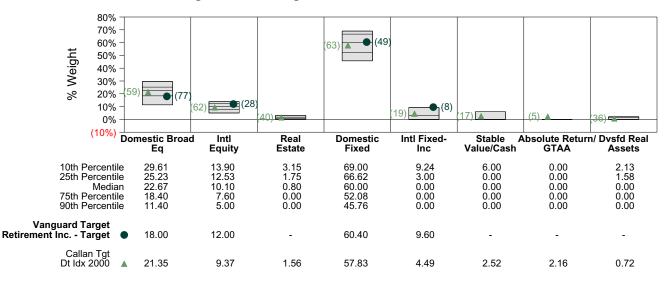


# Vanguard Target Retirement Inc. Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.









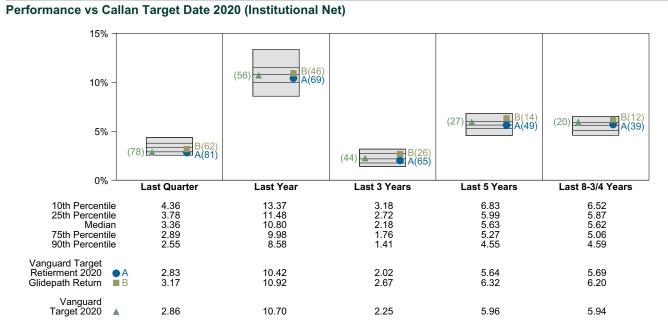
## Vanguard Target Retierment 2020 Period Ended March 31, 2024

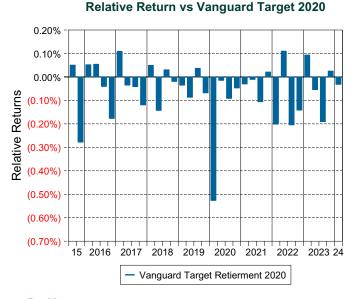
### **Investment Philosophy**

The allocation of Vanguard Target Retirement Funds' assets among the underlying Vanguard funds is based on methodology developed by Vanguard Investment Counseling and Research group, which takes advantage of Vanguard's experience in providing investment advice to clients. Vanguard Target Retirement Funds are funds-of-funds designed to meet the needs of investors seeking broadly diversified investments. The objective of these funds is to provide straightforward, yet sophisticated, savings vehicles for investors seeking simple solutions. The original allocations were derived from research on the benefits gained through diversification and asset allocation using "efficient frontier" modeling. The results were then adapted to create a simple structure that is transparent to both participants and plan sponsors and easily communicated to fund investors. Similarly, the rolldown schedule was developed to provide a smooth, easy-to-understand, and transparent path.

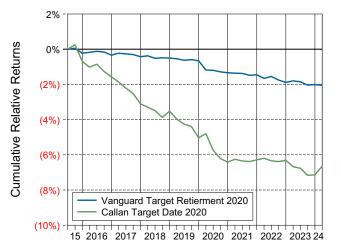
#### **Quarterly Summary and Highlights**

- Vanguard Target Retierment 2020's portfolio posted a 2.83% return for the quarter placing it in the 81 percentile of the Callan Target Date 2020 group for the quarter and in the 69 percentile for the last year.
- Vanguard Target Retierment 2020's portfolio underperformed the Vanguard Target 2020 by 0.03% for the quarter and underperformed the Vanguard Target 2020 for the year by 0.28%.



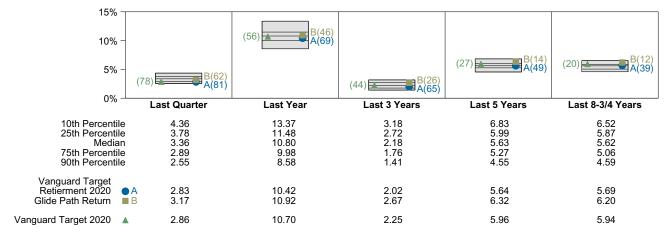


#### Cumulative Returns vs Vanguard Target 2020



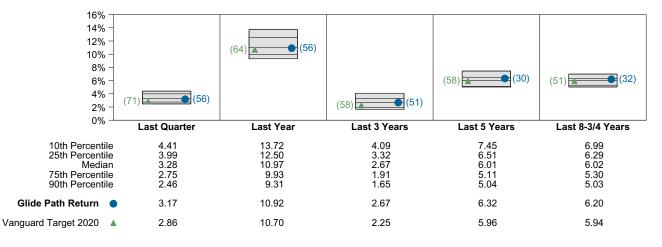
# Vanguard Target Retierment 2020 Target Date Peer Group Analysis as of March 31, 2024

The charts below evaluate not only the total return performance of a target date fund but also two separate underlying sources of return: "glide path return" (asset allocation), and "implementation return" (value-added relative to glide path return). The top chart ranks the fund on a total return basis. The middle chart compares the fund's glide path return (passively implemented asset allocation glide path) to the peer group range of glide path returns. The bottom chart ranks the fund's implementation return (active management, style tilts, rebalancing strategy, fees, etc...) versus the range of peer group implementation returns.

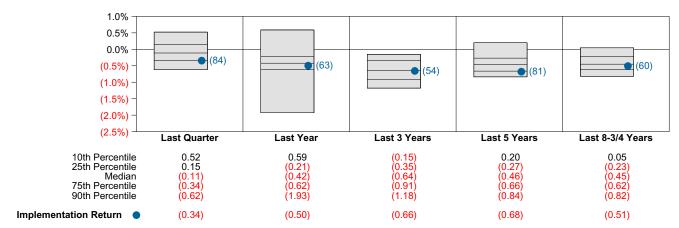


# Total Returns - Group: Callan Target Date 2020 (Institutional Net)



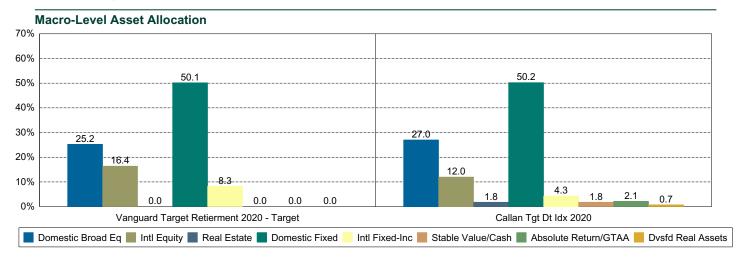


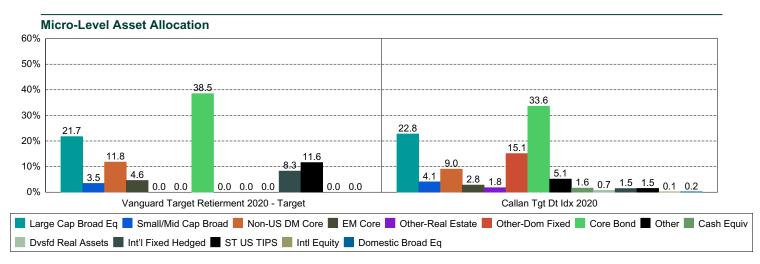
### Implementation Returns - Group: Callan Target Date 2020

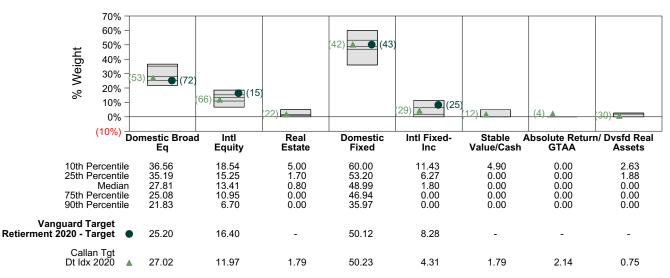


# Vanguard Target Retierment 2020 Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







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#### Macro Asset Allocation Rankings vs. Callan Target Date 2020

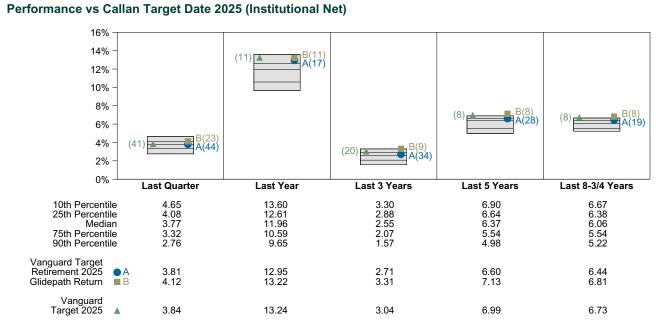
## Vanguard Target Retirement 2025 Period Ended March 31, 2024

#### **Investment Philosophy**

The allocation of Vanguard Target Retirement Funds' assets among the underlying Vanguard funds is based on methodology developed by Vanguard Investment Counseling and Research group, which takes advantage of Vanguard's experience in providing investment advice to clients. Vanguard Target Retirement Funds are funds-of-funds designed to meet the needs of investors seeking broadly diversified investments. The objective of these funds is to provide straightforward, yet sophisticated, savings vehicles for investors seeking simple solutions. The original allocations were derived from research on the benefits gained through diversification and asset allocation using "efficient frontier" modeling. The results were then adapted to create a simple structure that is transparent to both participants and plan sponsors and easily communicated to fund investors. Similarly, the rolldown schedule was developed to provide a smooth, easy-to-understand, and transparent path.

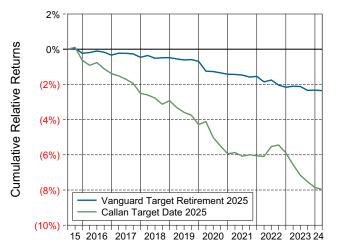
#### **Quarterly Summary and Highlights**

- Vanguard Target Retirement 2025's portfolio posted a 3.81% return for the quarter placing it in the 44 percentile of the Callan Target Date 2025 group for the quarter and in the 17 percentile for the last year.
- Vanguard Target Retirement 2025's portfolio underperformed the Vanguard Target 2025 by 0.03% for the quarter and underperformed the Vanguard Target 2025 for the year by 0.29%.



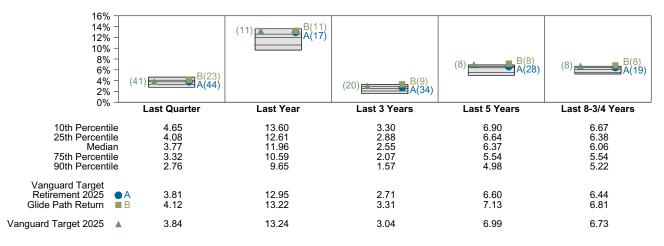


#### Cumulative Returns vs Vanguard Target 2025



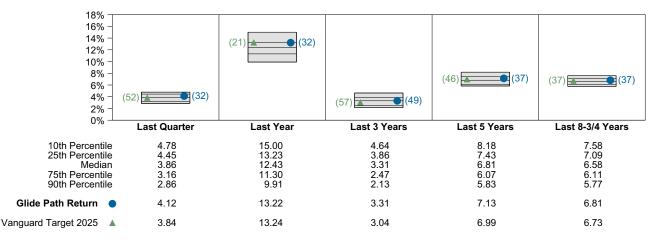
# Vanguard Target Retirement 2025 Target Date Peer Group Analysis as of March 31, 2024

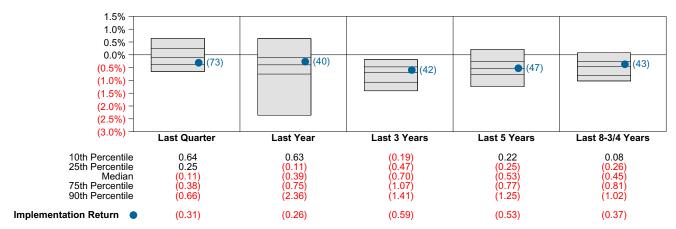
The charts below evaluate not only the total return performance of a target date fund but also two separate underlying sources of return: "glide path return" (asset allocation), and "implementation return" (value-added relative to glide path return). The top chart ranks the fund on a total return basis. The middle chart compares the fund's glide path return (passively implemented asset allocation glide path) to the peer group range of glide path returns. The bottom chart ranks the fund's implementation return (active management, style tilts, rebalancing strategy, fees, etc...) versus the range of peer group implementation returns.



## Total Returns - Group: Callan Target Date 2025 (Institutional Net)

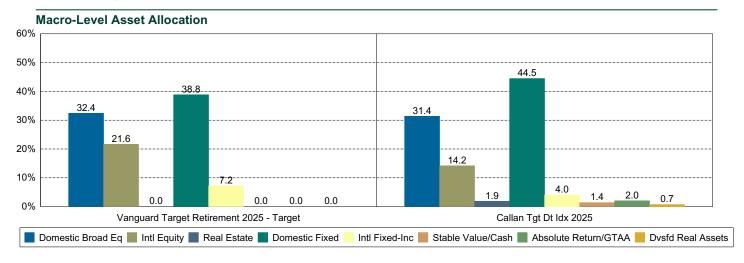


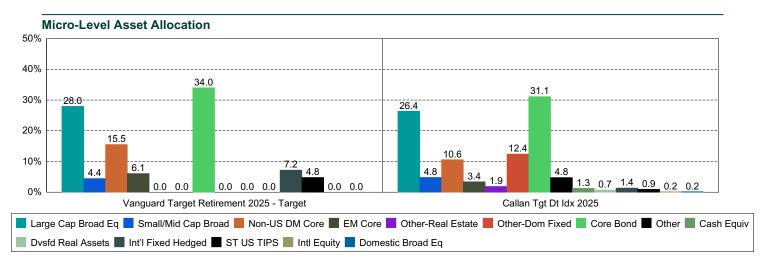


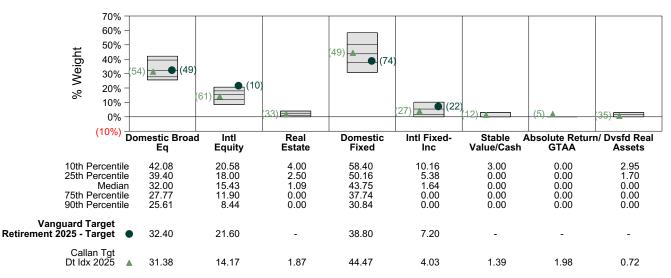


# Vanguard Target Retirement 2025 Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







#### Macro Asset Allocation Rankings vs. Callan Target Date 2025

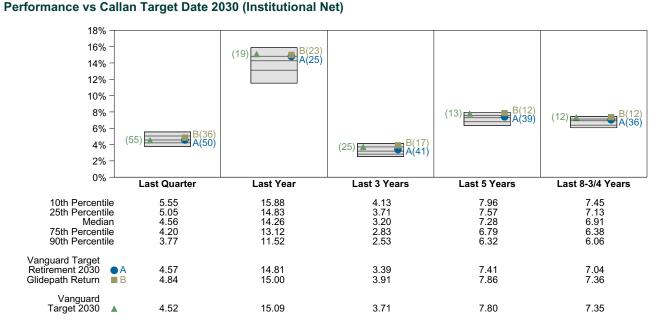
## Vanguard Target Retirement 2030 Period Ended March 31, 2024

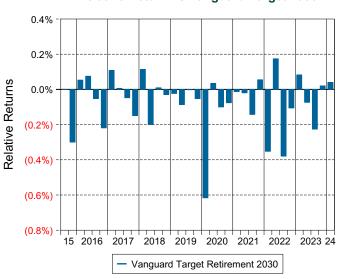
#### **Investment Philosophy**

The allocation of Vanguard Target Retirement Funds' assets among the underlying Vanguard funds is based on methodology developed by Vanguard Investment Counseling and Research group, which takes advantage of Vanguard's experience in providing investment advice to clients. Vanguard Target Retirement Funds are funds-of-funds designed to meet the needs of investors seeking broadly diversified investments. The objective of these funds is to provide straightforward, yet sophisticated, savings vehicles for investors seeking simple solutions. The original allocations were derived from research on the benefits gained through diversification and asset allocation using "efficient frontier" modeling. The results were then adapted to create a simple structure that is transparent to both participants and plan sponsors and easily communicated to fund investors. Similarly, the rolldown schedule was developed to provide a smooth, easy-to-understand, and transparent path.

#### **Quarterly Summary and Highlights**

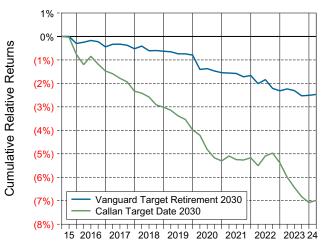
- Vanguard Target Retirement 2030's portfolio posted a 4.57% return for the quarter placing it in the 50 percentile of the Callan Target Date 2030 group for the quarter and in the 25 percentile for the last year.
- Vanguard Target Retirement 2030's portfolio outperformed the Vanguard Target 2030 by 0.04% for the quarter and underperformed the Vanguard Target 2030 for the year by 0.28%.





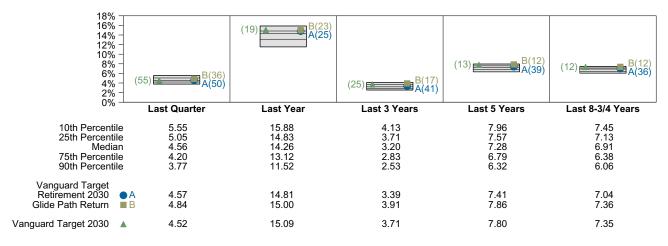
### Relative Return vs Vanguard Target 2030

## Cumulative Returns vs Vanguard Target 2030



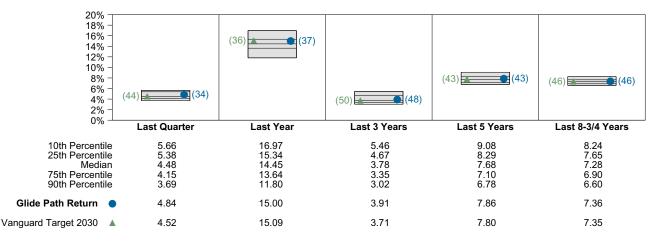
# Vanguard Target Retirement 2030 Target Date Peer Group Analysis as of March 31, 2024

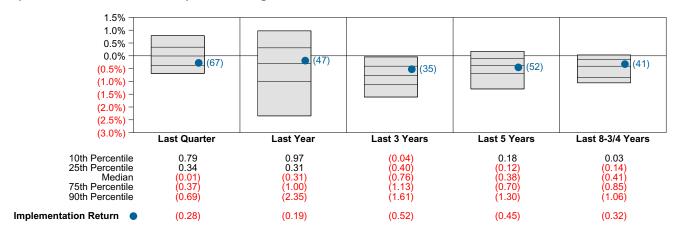
The charts below evaluate not only the total return performance of a target date fund but also two separate underlying sources of return: "glide path return" (asset allocation), and "implementation return" (value-added relative to glide path return). The top chart ranks the fund on a total return basis. The middle chart compares the fund's glide path return (passively implemented asset allocation glide path) to the peer group range of glide path returns. The bottom chart ranks the fund's implementation return (active management, style tilts, rebalancing strategy, fees, etc...) versus the range of peer group implementation returns.



## Total Returns - Group: Callan Target Date 2030 (Institutional Net)

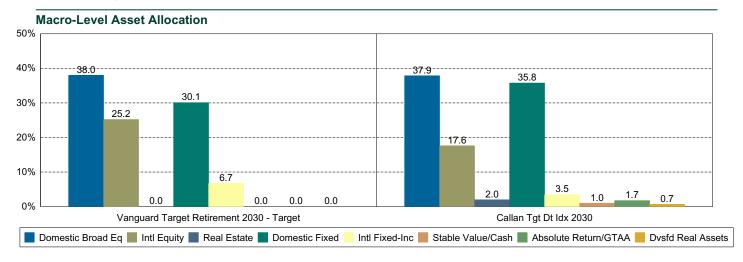


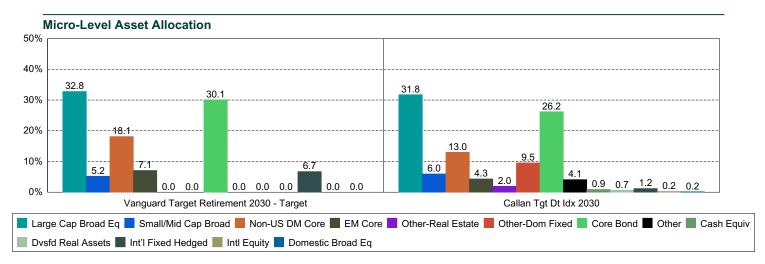


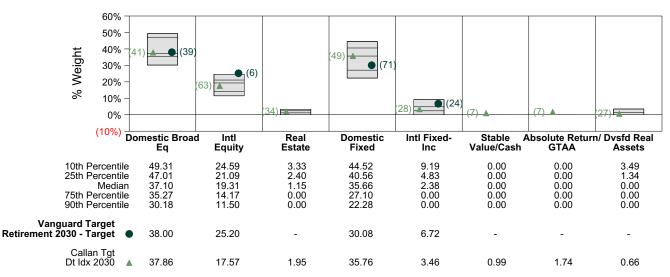


# Vanguard Target Retirement 2030 Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







#### Macro Asset Allocation Rankings vs. Callan Target Date 2030

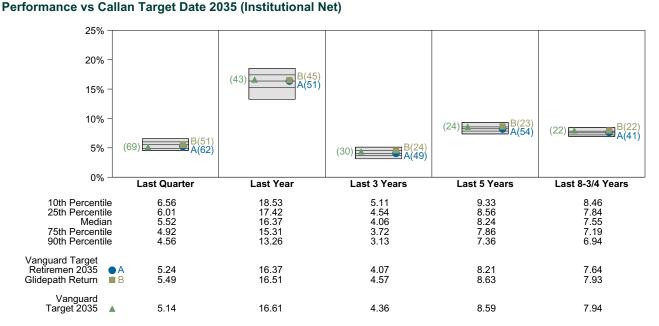
## Vanguard Target Retiremen 2035 Period Ended March 31, 2024

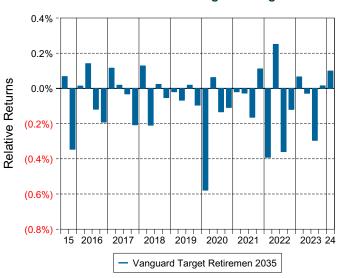
#### **Investment Philosophy**

The allocation of Vanguard Target Retirement Funds' assets among the underlying Vanguard funds is based on methodology developed by Vanguard Investment Counseling and Research group, which takes advantage of Vanguard's experience in providing investment advice to clients. Vanguard Target Retirement Funds are funds-of-funds designed to meet the needs of investors seeking broadly diversified investments. The objective of these funds is to provide straightforward, yet sophisticated, savings vehicles for investors seeking simple solutions. The original allocations were derived from research on the benefits gained through diversification and asset allocation using "efficient frontier" modeling. The results were then adapted to create a simple structure that is transparent to both participants and plan sponsors and easily communicated to fund investors. Similarly, the rolldown schedule was developed to provide a smooth, easy-to-understand, and transparent path.

#### **Quarterly Summary and Highlights**

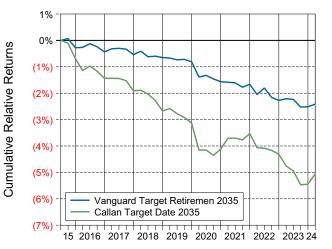
- Vanguard Target Retiremen 2035's portfolio posted a 5.24% return for the quarter placing it in the 62 percentile of the Callan Target Date 2035 group for the quarter and in the 51 percentile for the last year.
- Vanguard Target Retiremen 2035's portfolio outperformed the Vanguard Target 2035 by 0.10% for the quarter and underperformed the Vanguard Target 2035 for the year by 0.24%.





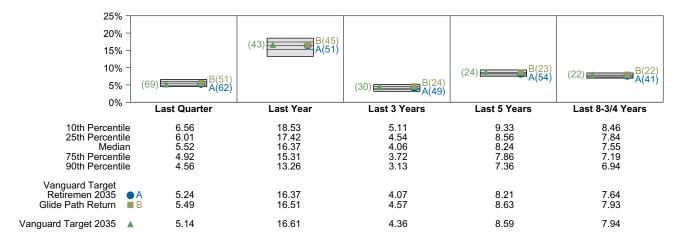
## Relative Return vs Vanguard Target 2035

## Cumulative Returns vs Vanguard Target 2035



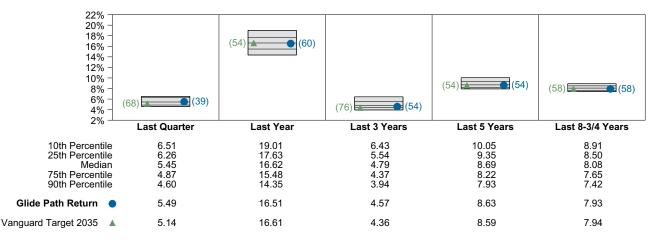
# Vanguard Target Retiremen 2035 Target Date Peer Group Analysis as of March 31, 2024

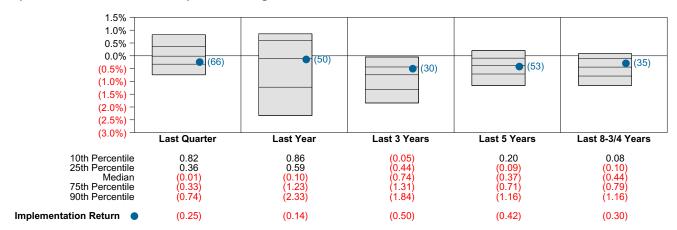
The charts below evaluate not only the total return performance of a target date fund but also two separate underlying sources of return: "glide path return" (asset allocation), and "implementation return" (value-added relative to glide path return). The top chart ranks the fund on a total return basis. The middle chart compares the fund's glide path return (passively implemented asset allocation glide path) to the peer group range of glide path returns. The bottom chart ranks the fund's implementation return (active management, style tilts, rebalancing strategy, fees, etc...) versus the range of peer group implementation returns.



### Total Returns - Group: Callan Target Date 2035 (Institutional Net)

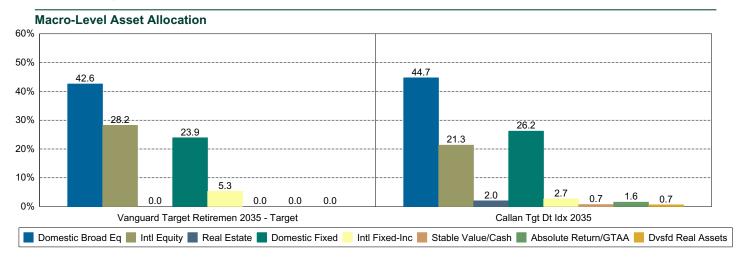


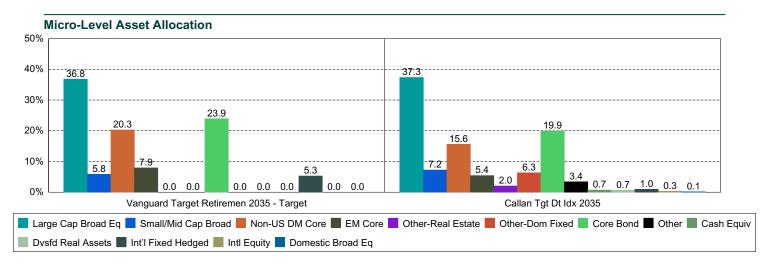


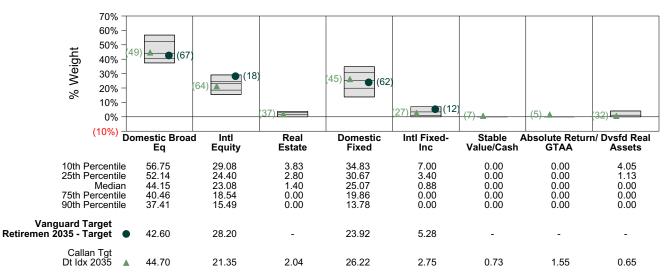


# Vanguard Target Retiremen 2035 Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







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#### Macro Asset Allocation Rankings vs. Callan Target Date 2035

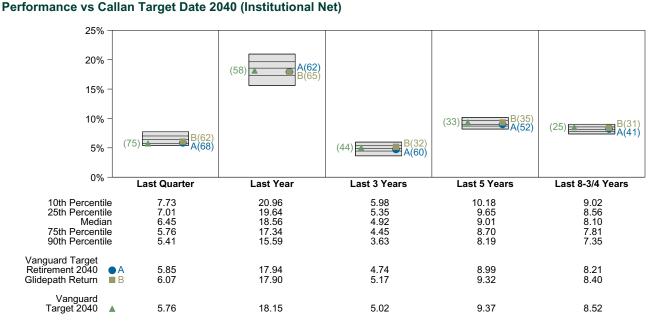
## Vanguard Target Retirement 2040 Period Ended March 31, 2024

#### **Investment Philosophy**

The allocation of Vanguard Target Retirement Funds' assets among the underlying Vanguard funds is based on methodology developed by Vanguard Investment Counseling and Research group, which takes advantage of Vanguard's experience in providing investment advice to clients. Vanguard Target Retirement Funds are funds-of-funds designed to meet the needs of investors seeking broadly diversified investments. The objective of these funds is to provide straightforward, yet sophisticated, savings vehicles for investors seeking simple solutions. The original allocations were derived from research on the benefits gained through diversification and asset allocation using "efficient frontier" modeling. The results were then adapted to create a simple structure that is transparent to both participants and plan sponsors and easily communicated to fund investors. Similarly, the rolldown schedule was developed to provide a smooth, easy-to-understand, and transparent path.

#### **Quarterly Summary and Highlights**

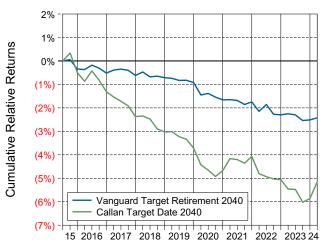
- Vanguard Target Retirement 2040's portfolio posted a 5.85% return for the quarter placing it in the 68 percentile of the Callan Target Date 2040 group for the quarter and in the 62 percentile for the last year.
- Vanguard Target Retirement 2040's portfolio outperformed the Vanguard Target 2040 by 0.09% for the quarter and underperformed the Vanguard Target 2040 for the year by 0.21%.





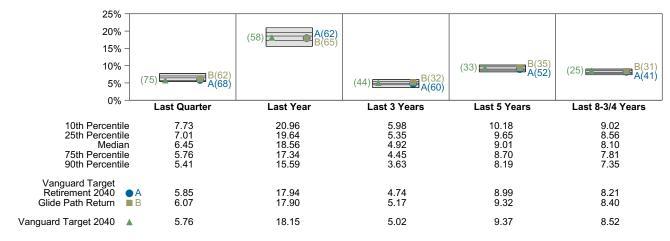
# Relative Return vs Vanguard Target 2040

## Cumulative Returns vs Vanguard Target 2040



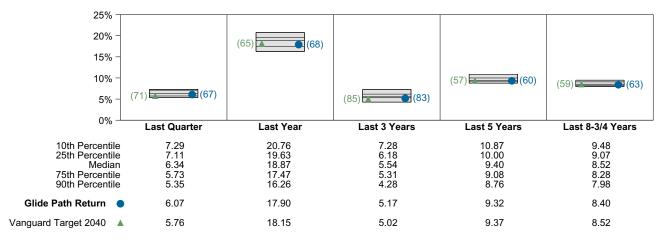
# Vanguard Target Retirement 2040 Target Date Peer Group Analysis as of March 31, 2024

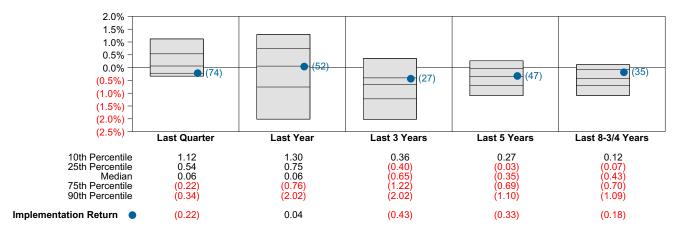
The charts below evaluate not only the total return performance of a target date fund but also two separate underlying sources of return: "glide path return" (asset allocation), and "implementation return" (value-added relative to glide path return). The top chart ranks the fund on a total return basis. The middle chart compares the fund's glide path return (passively implemented asset allocation glide path) to the peer group range of glide path returns. The bottom chart ranks the fund's implementation return (active management, style tilts, rebalancing strategy, fees, etc...) versus the range of peer group implementation returns.



# Total Returns - Group: Callan Target Date 2040 (Institutional Net)

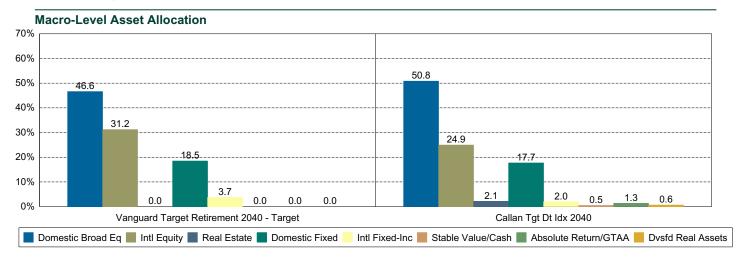


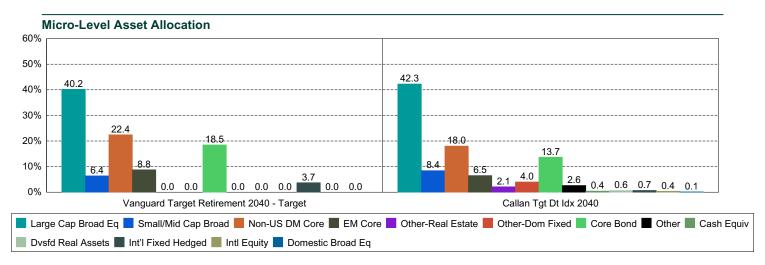


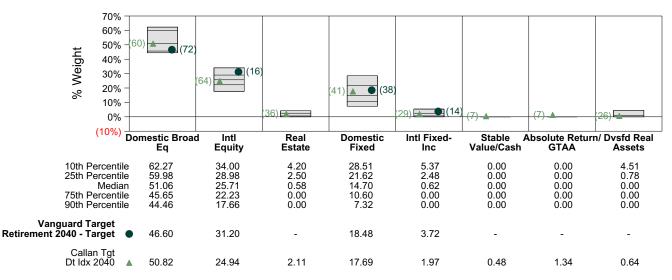


# Vanguard Target Retirement 2040 Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







#### Macro Asset Allocation Rankings vs. Callan Target Date 2040

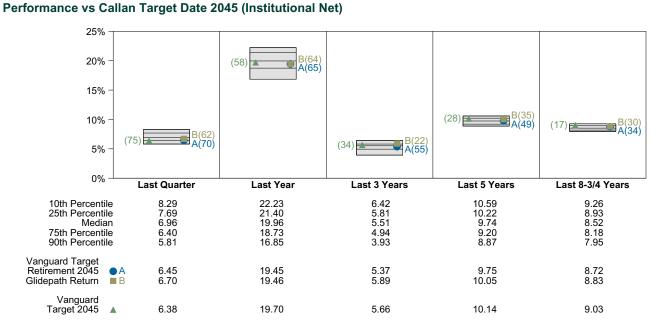
## Vanguard Target Retirement 2045 Period Ended March 31, 2024

#### **Investment Philosophy**

The allocation of Vanguard Target Retirement Funds' assets among the underlying Vanguard funds is based on methodology developed by Vanguard Investment Counseling and Research group, which takes advantage of Vanguard's experience in providing investment advice to clients. Vanguard Target Retirement Funds are funds-of-funds designed to meet the needs of investors seeking broadly diversified investments. The objective of these funds is to provide straightforward, yet sophisticated, savings vehicles for investors seeking simple solutions. The original allocations were derived from research on the benefits gained through diversification and asset allocation using "efficient frontier" modeling. The results were then adapted to create a simple structure that is transparent to both participants and plan sponsors and easily communicated to fund investors. Similarly, the rolldown schedule was developed to provide a smooth, easy-to-understand, and transparent path.

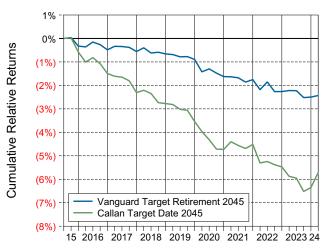
#### **Quarterly Summary and Highlights**

- Vanguard Target Retirement 2045's portfolio posted a 6.45% return for the quarter placing it in the 70 percentile of the Callan Target Date 2045 group for the quarter and in the 65 percentile for the last year.
- Vanguard Target Retirement 2045's portfolio outperformed the Vanguard Target 2045 by 0.07% for the quarter and underperformed the Vanguard Target 2045 for the year by 0.26%.



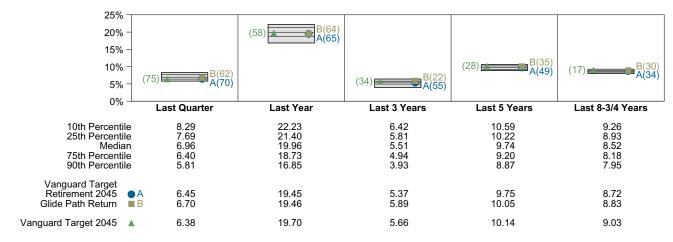


#### Cumulative Returns vs Vanguard Target 2045



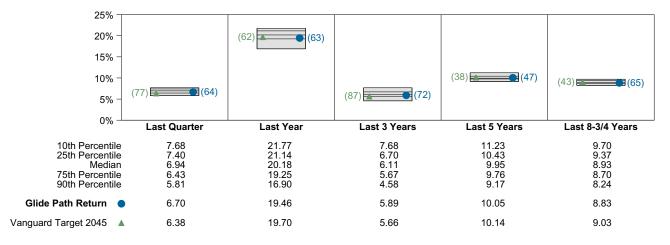
# Vanguard Target Retirement 2045 Target Date Peer Group Analysis as of March 31, 2024

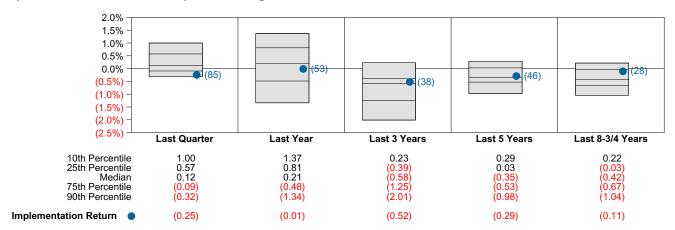
The charts below evaluate not only the total return performance of a target date fund but also two separate underlying sources of return: "glide path return" (asset allocation), and "implementation return" (value-added relative to glide path return). The top chart ranks the fund on a total return basis. The middle chart compares the fund's glide path return (passively implemented asset allocation glide path) to the peer group range of glide path returns. The bottom chart ranks the fund's implementation return (active management, style tilts, rebalancing strategy, fees, etc...) versus the range of peer group implementation returns.



## Total Returns - Group: Callan Target Date 2045 (Institutional Net)

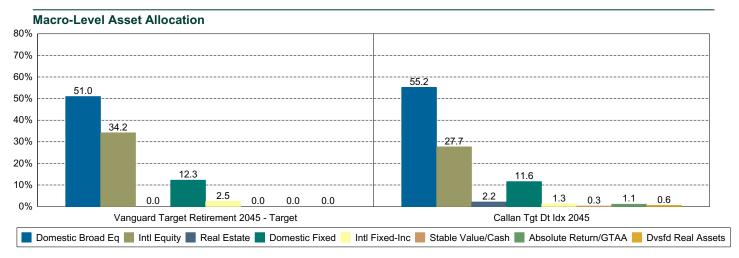


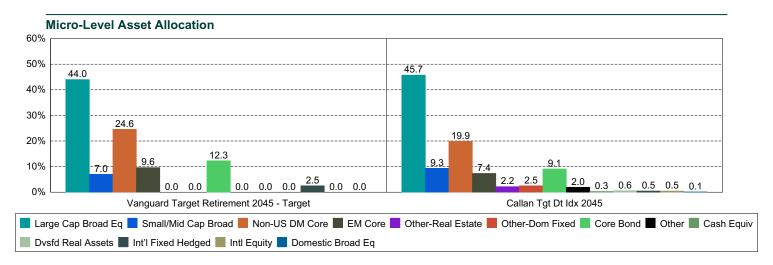


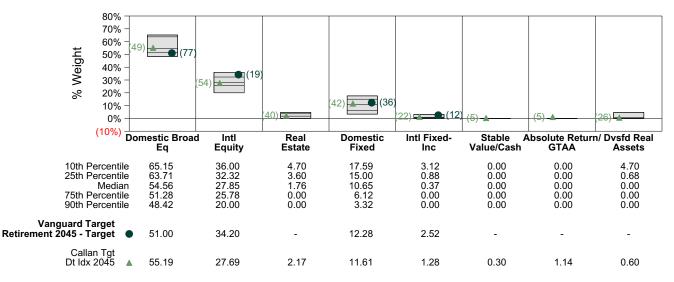


# Vanguard Target Retirement 2045 Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







#### Macro Asset Allocation Rankings vs. Callan Target Date 2045

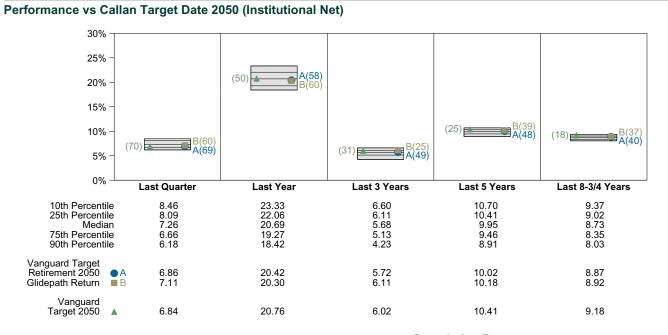
## Vanguard Target Retirement 2050 Period Ended March 31, 2024

#### **Investment Philosophy**

The allocation of Vanguard Target Retirement Funds' assets among the underlying Vanguard funds is based on methodology developed by Vanguard Investment Counseling and Research group, which takes advantage of Vanguard's experience in providing investment advice to clients. Vanguard Target Retirement Funds are funds-of-funds designed to meet the needs of investors seeking broadly diversified investments. The objective of these funds is to provide straightforward, yet sophisticated, savings vehicles for investors seeking simple solutions. The original allocations were derived from research on the benefits gained through diversification and asset allocation using "efficient frontier" modeling. The results were then adapted to create a simple structure that is transparent to both participants and plan sponsors and easily communicated to fund investors. Similarly, the rolldown schedule was developed to provide a smooth, easy-to-understand, and transparent path.

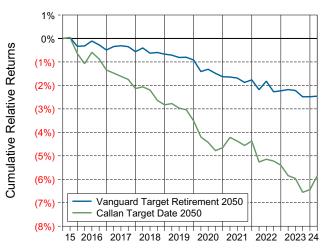
#### **Quarterly Summary and Highlights**

- Vanguard Target Retirement 2050's portfolio posted a 6.86% return for the quarter placing it in the 69 percentile of the Callan Target Date 2050 group for the quarter and in the 58 percentile for the last year.
- Vanguard Target Retirement 2050's portfolio outperformed the Vanguard Target 2050 by 0.03% for the quarter and underperformed the Vanguard Target 2050 for the year by 0.35%.



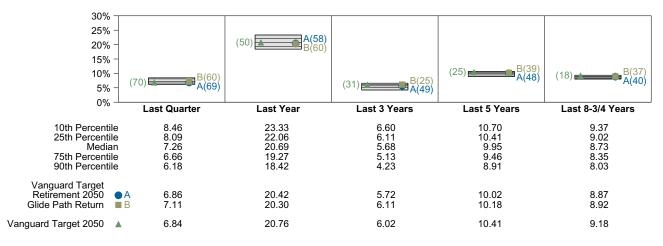


#### Cumulative Returns vs Vanguard Target 2050



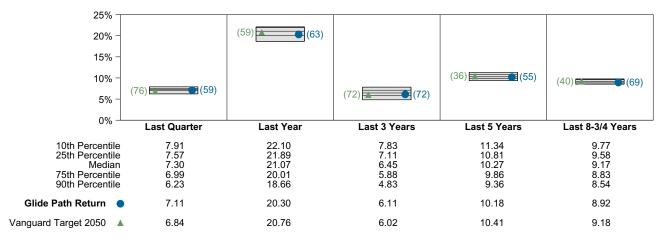
# Vanguard Target Retirement 2050 Target Date Peer Group Analysis as of March 31, 2024

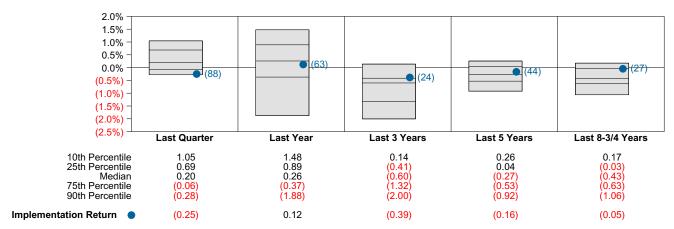
The charts below evaluate not only the total return performance of a target date fund but also two separate underlying sources of return: "glide path return" (asset allocation), and "implementation return" (value-added relative to glide path return). The top chart ranks the fund on a total return basis. The middle chart compares the fund's glide path return (passively implemented asset allocation glide path) to the peer group range of glide path returns. The bottom chart ranks the fund's implementation return (active management, style tilts, rebalancing strategy, fees, etc...) versus the range of peer group implementation returns.



### Total Returns - Group: Callan Target Date 2050 (Institutional Net)

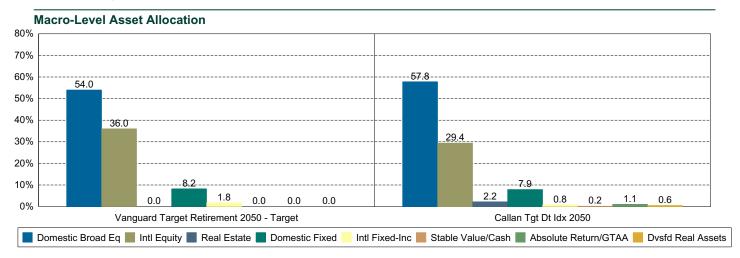


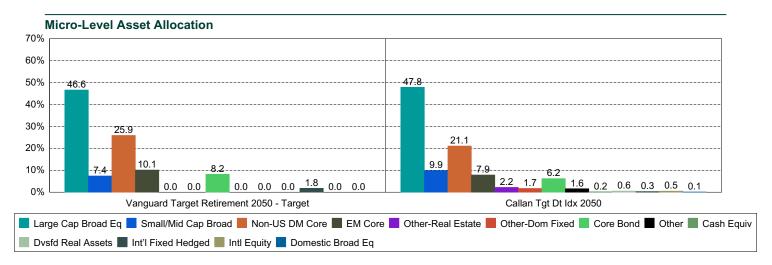


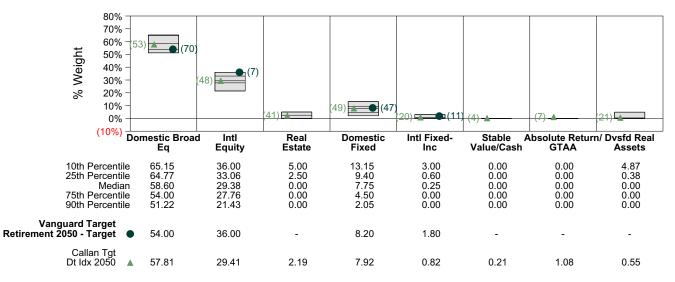


# Vanguard Target Retirement 2050 Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







#### Macro Asset Allocation Rankings vs. Callan Target Date 2050

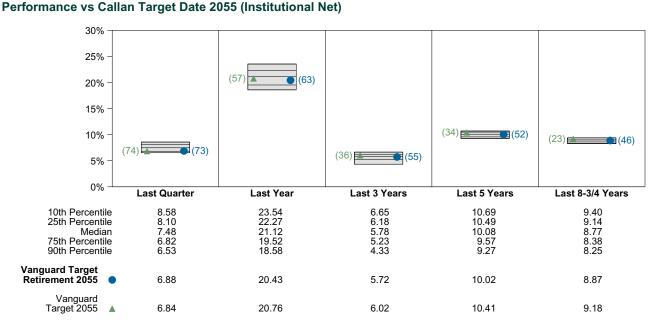
## Vanguard Target Retirement 2055 Period Ended March 31, 2024

#### **Investment Philosophy**

The allocation of Vanguard Target Retirement Funds' assets among the underlying Vanguard funds is based on methodology developed by Vanguard Investment Counseling and Research group, which takes advantage of Vanguard's experience in providing investment advice to clients. Vanguard Target Retirement Funds are funds-of-funds designed to meet the needs of investors seeking broadly diversified investments. The objective of these funds is to provide straightforward, yet sophisticated, savings vehicles for investors seeking simple solutions. The original allocations were derived from research on the benefits gained through diversification and asset allocation using "efficient frontier" modeling. The results were then adapted to create a simple structure that is transparent to both participants and plan sponsors and easily communicated to fund investors. Similarly, the rolldown schedule was developed to provide a smooth, easy-to-understand, and transparent path.

#### **Quarterly Summary and Highlights**

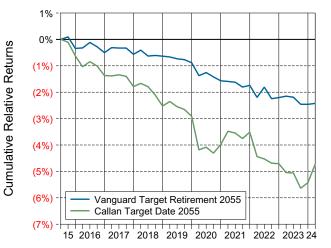
- Vanguard Target Retirement 2055's portfolio posted a 6.88% return for the quarter placing it in the 73 percentile of the Callan Target Date 2055 group for the quarter and in the 63 percentile for the last year.
- Vanguard Target Retirement 2055's portfolio outperformed the Vanguard Target 2055 by 0.04% for the quarter and underperformed the Vanguard Target 2055 for the year by 0.34%.





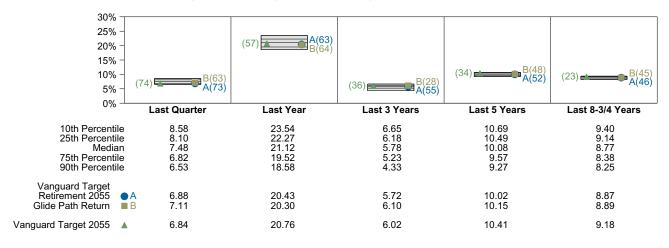
#### **Relative Return vs Vanguard Target 2055**

## Cumulative Returns vs Vanguard Target 2055



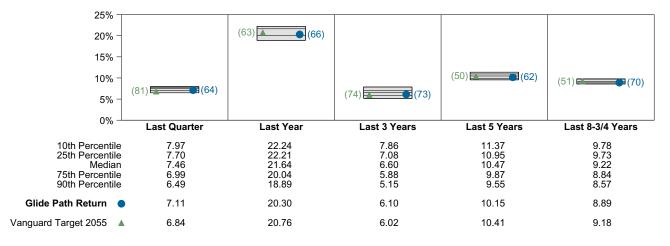
# Vanguard Target Retirement 2055 Target Date Peer Group Analysis as of March 31, 2024

The charts below evaluate not only the total return performance of a target date fund but also two separate underlying sources of return: "glide path return" (asset allocation), and "implementation return" (value-added relative to glide path return). The top chart ranks the fund on a total return basis. The middle chart compares the fund's glide path return (passively implemented asset allocation glide path) to the peer group range of glide path returns. The bottom chart ranks the fund's implementation return (active management, style tilts, rebalancing strategy, fees, etc...) versus the range of peer group implementation returns.

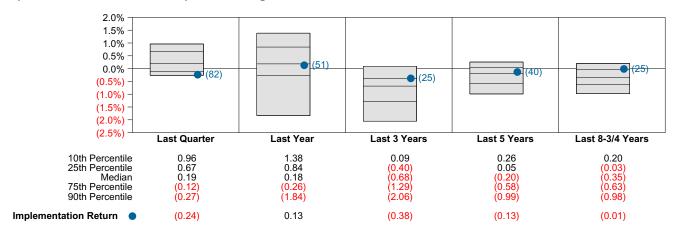


#### Total Returns - Group: Callan Target Date 2055 (Institutional Net)



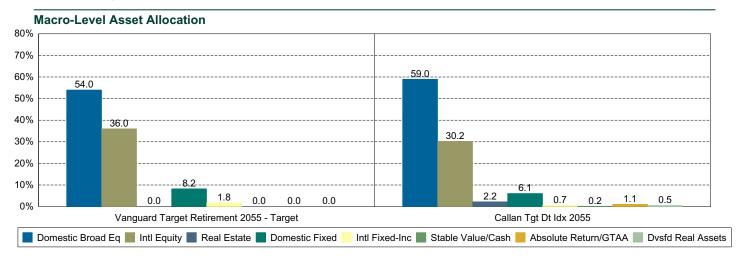


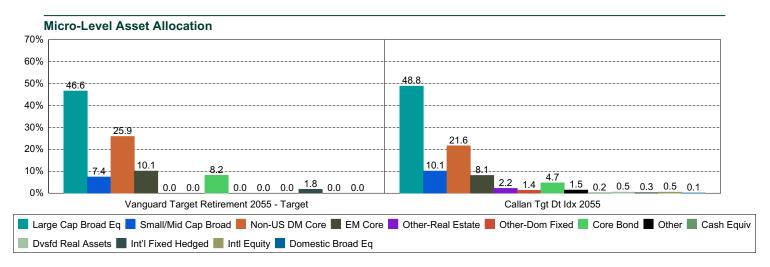
#### Implementation Returns - Group: Callan Target Date 2055

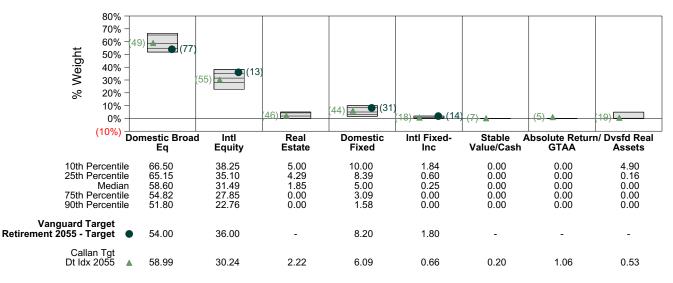


# Vanguard Target Retirement 2055 Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







#### Macro Asset Allocation Rankings vs. Callan Target Date 2055

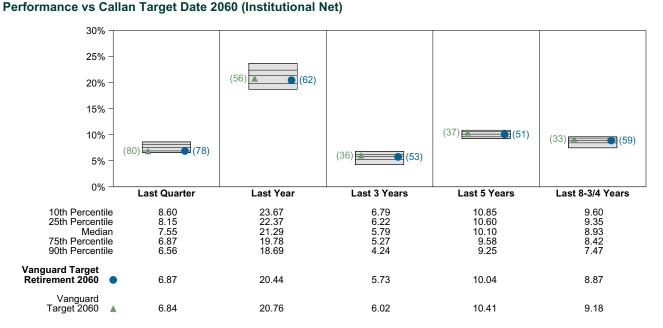
## Vanguard Target Retirement 2060 Period Ended March 31, 2024

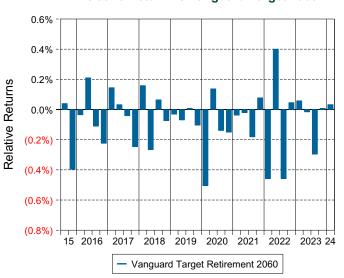
#### **Investment Philosophy**

The allocation of Vanguard Target Retirement Funds' assets among the underlying Vanguard funds is based on methodology developed by Vanguard Investment Counseling and Research group, which takes advantage of Vanguard's experience in providing investment advice to clients. Vanguard Target Retirement Funds are funds-of-funds designed to meet the needs of investors seeking broadly diversified investments. The objective of these funds is to provide straightforward, yet sophisticated, savings vehicles for investors seeking simple solutions. The original allocations were derived from research on the benefits gained through diversification and asset allocation using "efficient frontier" modeling. The results were then adapted to create a simple structure that is transparent to both participants and plan sponsors and easily communicated to fund investors. Similarly, the rolldown schedule was developed to provide a smooth, easy-to-understand, and transparent path.

#### **Quarterly Summary and Highlights**

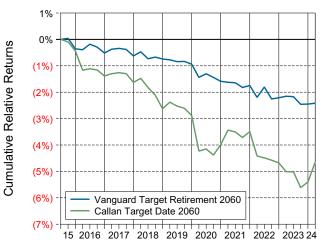
- Vanguard Target Retirement 2060's portfolio posted a 6.87% return for the quarter placing it in the 78 percentile of the Callan Target Date 2060 group for the quarter and in the 62 percentile for the last year.
- Vanguard Target Retirement 2060's portfolio outperformed the Vanguard Target 2060 by 0.03% for the quarter and underperformed the Vanguard Target 2060 for the year by 0.33%.





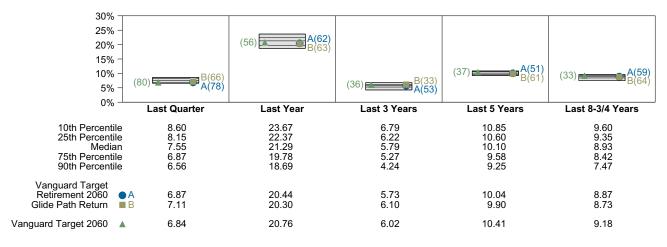
#### **Relative Return vs Vanguard Target 2060**

## Cumulative Returns vs Vanguard Target 2060



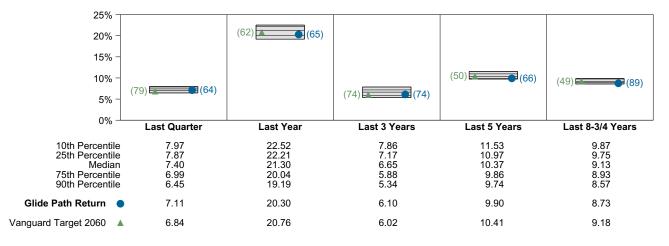
# Vanguard Target Retirement 2060 Target Date Peer Group Analysis as of March 31, 2024

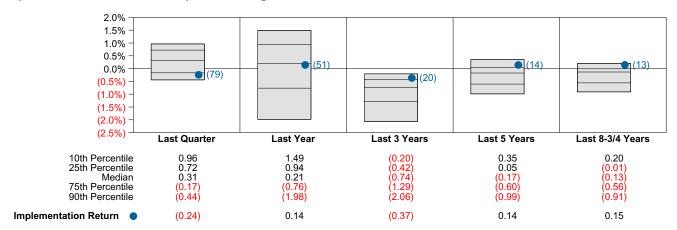
The charts below evaluate not only the total return performance of a target date fund but also two separate underlying sources of return: "glide path return" (asset allocation), and "implementation return" (value-added relative to glide path return). The top chart ranks the fund on a total return basis. The middle chart compares the fund's glide path return (passively implemented asset allocation glide path) to the peer group range of glide path returns. The bottom chart ranks the fund's implementation return (active management, style tilts, rebalancing strategy, fees, etc...) versus the range of peer group implementation returns.



#### Total Returns - Group: Callan Target Date 2060 (Institutional Net)

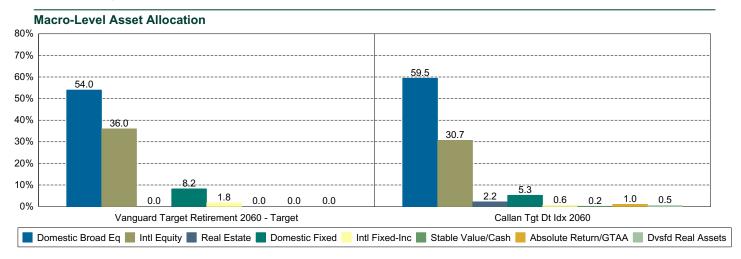


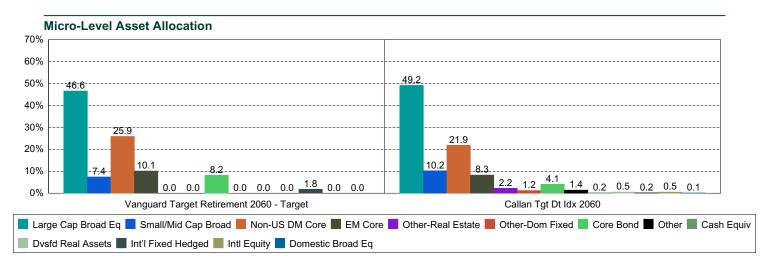


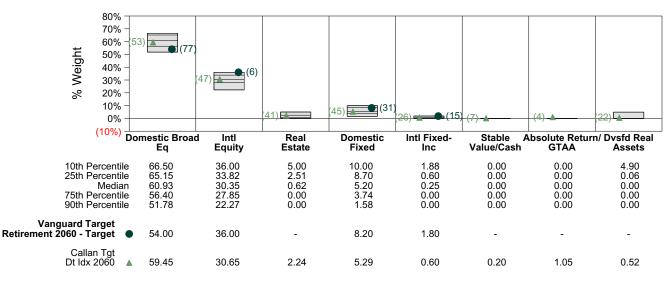


# Vanguard Target Retirement 2060 Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.







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Mississippi Public Employees Retirement System 127

#### Macro Asset Allocation Rankings vs. Callan Target Date 2060

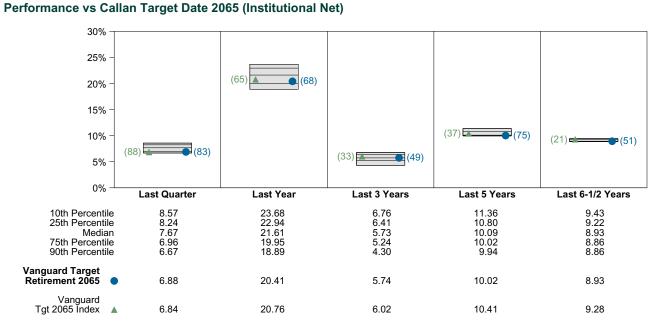
## Vanguard Target Retirement 2065 Period Ended March 31, 2024

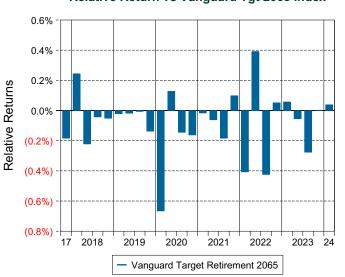
#### **Investment Philosophy**

The allocation of Vanguard Target Retirement Funds' assets among the underlying Vanguard funds is based on methodology developed by Vanguard Investment Counseling and Research group, which takes advantage of Vanguard's experience in providing investment advice to clients. Vanguard Target Retirement Funds are funds-of-funds designed to meet the needs of investors seeking broadly diversified investments. The objective of these funds is to provide straightforward, yet sophisticated, savings vehicles for investors seeking simple solutions. The original allocations were derived from research on the benefits gained through diversification and asset allocation using "efficient frontier" modeling. The results were then adapted to create a simple structure that is transparent to both participants and plan sponsors and easily communicated to fund investors. Similarly, the rolldown schedule was developed to provide a smooth, easy-to-understand, and transparent path.

#### **Quarterly Summary and Highlights**

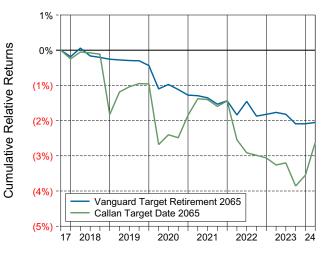
- Vanguard Target Retirement 2065's portfolio posted a 6.88% return for the quarter placing it in the 83 percentile of the Callan Target Date 2065 group for the quarter and in the 68 percentile for the last year.
- Vanguard Target Retirement 2065's portfolio outperformed the Vanguard Tgt 2065 Index by 0.04% for the quarter and underperformed the Vanguard Tgt 2065 Index for the year by 0.35%.





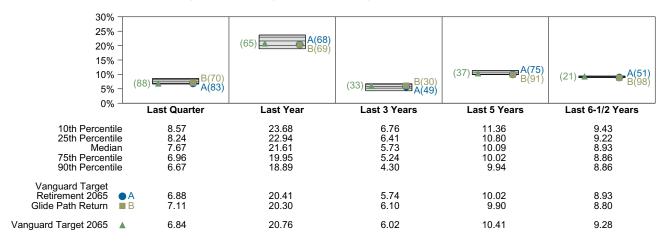
#### Relative Return vs Vanguard Tgt 2065 Index

#### Cumulative Returns vs Vanguard Tgt 2065 Index



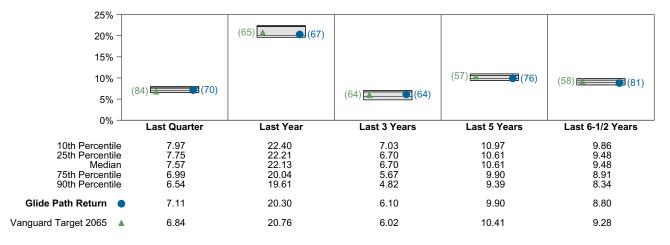
# Vanguard Target Retirement 2065 Target Date Peer Group Analysis as of March 31, 2024

The charts below evaluate not only the total return performance of a target date fund but also two separate underlying sources of return: "glide path return" (asset allocation), and "implementation return" (value-added relative to glide path return). The top chart ranks the fund on a total return basis. The middle chart compares the fund's glide path return (passively implemented asset allocation glide path) to the peer group range of glide path returns. The bottom chart ranks the fund's implementation return (active management, style tilts, rebalancing strategy, fees, etc...) versus the range of peer group implementation returns.

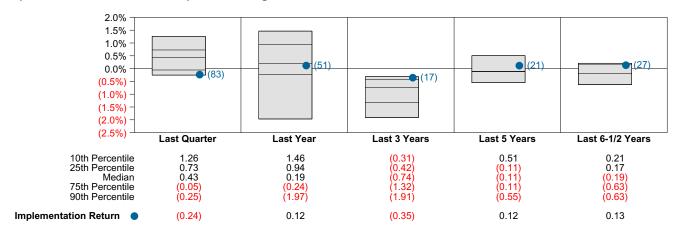


#### Total Returns - Group: Callan Target Date 2065 (Institutional Net)



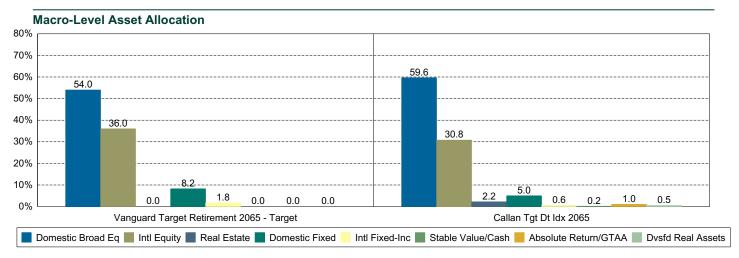


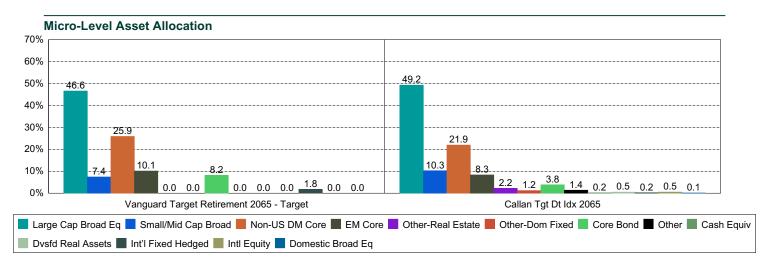
#### Implementation Returns - Group: Callan Target Date 2065

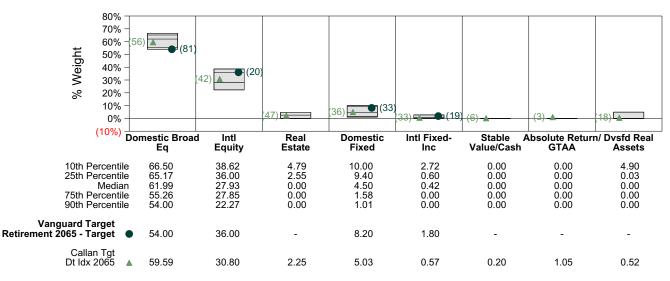


# Vanguard Target Retirement 2065 Target Date Fund Asset Allocation as of March 31, 2024

The charts below illustrate the current target asset allocation of the relevant target date fund based on its underlying glide path and compares it to an index. The top charts compare target asset allocation at a high "macro" asset class level, while the middle charts show a more detailed "micro" level view. The bottom chart compares the current "macro" level target asset allocation, and index, to a relevant peer group of target date funds by ranking the various target asset class weights versus those peer target date funds.

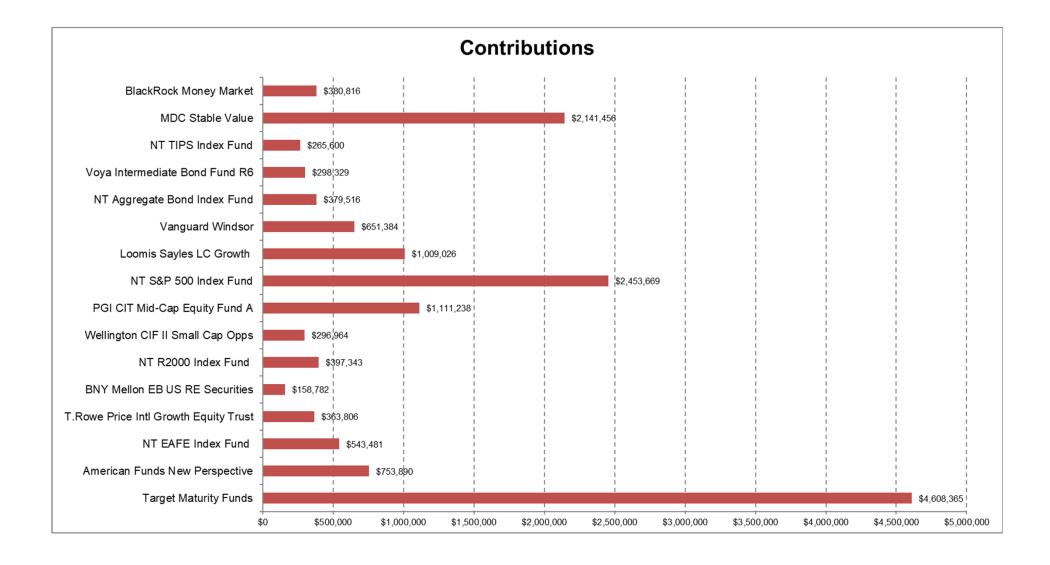


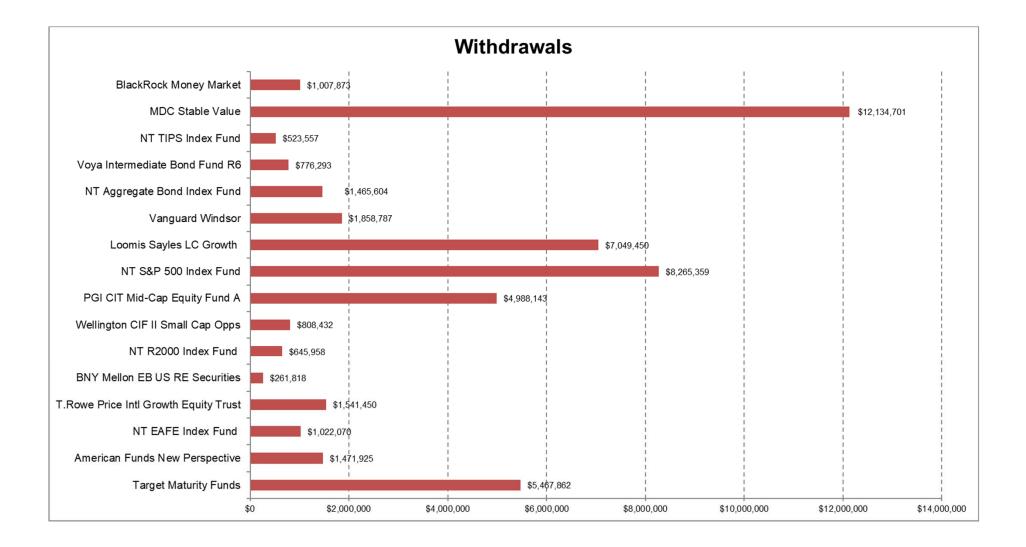


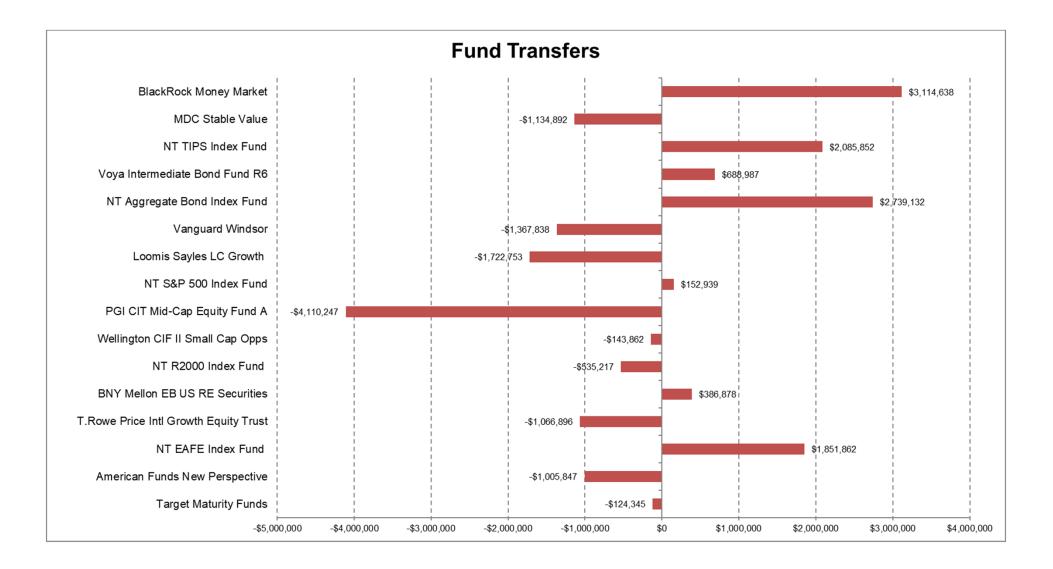


#### Macro Asset Allocation Rankings vs. Callan Target Date 2065

Cash Flow Analysis







Definitions

# **Equity Market Indicators**

The market indicators included in this report are regarded as measures of equity or fixed income performance results. The returns shown reflect both income and capital appreciation.

**Russell 1000 Growth Index** Measures the performance of the large-cap growth segment of the US equity universe. It includes those Russell 1000 companies with relatively higher price-to-book ratios, higher I/B/E/S forecast medium term (2 year) growth and higher sales per share historical growth (5 years). The Russell 1000 Growth Index is constructed to provide a comprehensive and unbiased barometer for the large-cap growth segment. The index is completely reconstituted annually to ensure new and growing equities are included and that the represented companies continue to reflect growth characteristics.

**Russell 1000 Value Index** Measures the performance of the large-cap value segment of the US equity universe. It includes those Russell 1000 companies with relatively lower price-to-book ratios, lower I/B/E/S forecast medium term (2 year) growth and lower sales per share historical growth (5 years). The Russell 1000 Value Index is constructed to provide a comprehensive and unbiased barometer for the large-cap value segment. The index is completely reconstituted annually to ensure new and growing equities are included and that the represented companies continue to reflect value characteristics

**Russell 2000 Index** Measures the performance of the small-cap segment of the US equity universe. The Russell 2000 Index is a subset of the Russell 3000 Index representing approximately 7% of the total market capitalization of that index, as of the most recent reconsitution. It includes approximately 2,000 of the smallest securities based on a combination of their market cap and current index membership. The Russell 2000 is constructed to provide a comprehensive and unbiased small-cap barometer and is completely reconstituted annually to ensure larger stocks do not distort the performance and characteristics of the true small-cap opportunity set.

**S&P 500 Index** Measures performance of top 500 companies in leading industries of U.S. economy. The index covers approximately 80% of available market capitalization.

## **Fixed Income Market Indicators**

**Bloomberg Aggregate** Represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities.

**Bloomberg TIPS** Measures the performance of the US Treasury Inflation Protected Securities (""TIPS"") market. The index includes TIPS with one or more years remaining maturity with total outstanding issue size of \$500m or more.

FTSE 3 Month Treasury Bill Is intended to track the daily performance of 3 month US Treasury bills.

## **International Equity Market Indicators**

**MSCI ACWI xUS (Gross)** Is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets, excluding the US.

**MSCI EAFE (Net)** Is composed of approximately 1000 equity securities representing the stock exchanges of Europe, Australia, New Zealand and the Far East. The index is capitalization-weighted and is expressed in terms of U.S. dollars.

**MSCI World (Net)** Is composed of approximately 1500 equity securities representing the stock exchanges of the USA, Europe, Canada, Australia, New Zealand and the Far East. The index is capitalization-weighted; includes currency changes and is expressed in terms of U.S. dollars.

## **Callan Databases**

In order to provide comparative investment results for use in evaluating a fund's performance, Callan gathers rate of return data from investment managers. These data are then grouped by type of assets managed and by the type of investment manager. Except for mutual funds, the results are for tax-exempt fund assets. The databases, excluding mutual funds, represent investment managers who handle over 80% of all tax-exempt fund assets.

### **Equity Funds**

Equity funds concentrate their investments in common stocks and convertible securities. The funds included maintain well-diversified portfolios.

**Core Equity** - Mutual funds whose portfolio holdings and characteristics are similar to that of the broader market as represented by the Standard & Poor's 500 Index, with the objective of adding value over and above the index, typically from sector or issue selection. The core portfolio exhibits similar risk characteristics to the broad market as measured by low residual risk with Beta and R-Squared close to 1.00.

Large Cap Growth - Mutual Funds that invest mainly in large companies that are expected to have above average prospects for long-term growth in earnings and profitability. Future growth prospects take precedence over valuation levels in the stock selection process. Invests in companies with P/E ratios, Price-to-Book values, Return-on-Assets values, Growth-in-Earnings values above the broader market. The companies typically have zero dividends or dividend yields below the broader market. Invests in securities which exhibit greater volatility than the broader market as measured by the securities' Beta and Standard Deviation.

**Large Cap Value** - Mutual funds that invest in predominantly large capitalization companies believed to be currently undervalued in the general market. The companies are expected to have a near-term earnings rebound and eventual realization of expected value. Valuation issues take precedence over near-term earnings prospects in the stock selection process. Invests in companies with P/E rations and Price-to-Book values below the broader market. Usually exhibits lower risk than the broader market as measured by the Beta and Standard Deviation.

**Middle Capitalization** - Mutual Funds who invest primarily in mid-range companies with market capitalizations between core equity companies and small capitalization companies. The average market capitalization is approximately \$7 billion. Invests in securities with greater volatility than the broader market as measured by the risk statistics Beta and Standard Deviation. The Middle Capitalization Style Group consists of the Middle Capitalization Growth Equity and the Middle Capitalization Value Equity Style Groups.

**Non-U.S. Equity Style Mutual Funds** - Mutual funds that invest their assets only in non-U.S. equity securities but exclude regional and index funds.

**Small Capitalization** - Mutual funds that invest in companies with relatively small capitalization. The average market capitalization is approximately \$1.4 billion. The companies typically have zero dividends or dividend yields below the broader market. The securities exhibit greater volatility than the broader market as measured by the risk statistics Beta and Standard Deviation. The Small Capitalization Style Group consists of the Small Capitalization (Growth) Style Group and the Small Capitalization (Value) Style Group.

# **Callan Databases**

## **Fixed Income Funds**

Fixed Income funds concentrate their investments in bonds, preferred stocks, and money market securities. The funds included maintain well-diversified portfolios.

**Core Bond** - Mutual Funds that construct portfolios to approximate the investment results of the Bloomberg Barclays Capital Government/Credit Bond Index or the Bloomberg Barclays Capital Aggregate Bond Index with a modest amount of variability in duration around the index. The objective is to achieve value added from sector and/or issue selection.

**Core Plus Bond** - Active managers whose objective is to add value by tactically allocating significant portions of their portfolios among non-benchmark sectors (e.g. high yield corporate, non-US\$ bonds, etc.) while maintaining majority exposure similar to the broad market.

**Stable Value** - The Stable Value database group is comprised of funds that invest primarily in Guaranteed Investment Contracts (GICs) and Synthetic Investment Contracts (SICs) to provide principal protection, stable book value and a guaranteed rate of return over a contractually specified time period. Common benchmarks for the universe include but not limited to, are the Ryan Labs GIC Master indices and the Hueler Stable Value Index.

#### **Risk/Reward Statistics**

The risk statistics used in this report examine performance characteristics of a manager or a portfolio relative to a benchmark (market indicator) which assumes to represent overall movements in the asset class being considered. The main unit of analysis is the excess return, which is the portfolio return minus the return on a risk free asset (3 month T-Bill).

**Alpha** measures a portfolio's return in excess of the market return adjusted for risk. It is a measure of the manager's contribution to performance with reference to security selection. A positive alpha indicates that a portfolio was positively rewarded for the residual risk which was taken for that level of market exposure.

**Beta** measures the sensitivity of rates of portfolio returns to movements in the market index. A portfolio's beta measures the expected change in return per 1% change in the return on the market. If a beta of a portfolio is 1.5, a 1 percent increase in the return on the market will result, on average, in a 1.5 percent increase in the return on the portfolio. The converse would also be true.

**Downside Risk** stems from the desire to differentiate between "good risk" (upside volatility) and "bad risk" (downside volatility). Whereas standard deviation punishes both upside and downside volatility, downside risk measures only the standard deviation of returns below the target. Returns above the target are assigned a deviation of zero. Both the frequency and magnitude of underperformance affect the amount of downside risk.

**Excess Return Ratio** is a measure of risk adjusted relative return. This ratio captures the amount of active management performance (value added relative to an index) per unit of active management risk (tracking error against the index.) It is calculated by dividing the manager's annualized cumulative excess return relative to the index by the standard deviation of the individual quarterly excess returns. The Excess Return Ratio can be interpreted as the manager's active risk/reward tradeoff for diverging from the index when the index is mandated to be the "riskless" market position.

**Information Ratio** measures the manager's market risk-adjusted excess return per unit of residual risk relative to a benchmark. It is computed by dividing alpha by the residual risk over a given time period. Assuming all other factors being equal, managers with lower residual risk achieve higher values in the information ratio. Managers with higher information ratios will add value relative to the benchmark more reliably and consistently.

**R-Squared** indicates the extent to which the variability of the portfolio returns are explained by market action. It can also be thought of as measuring the diversification relative to the appropriate benchmark. An r-squared value of .75 indicates that 75% of the fluctuation in a portfolio return is explained by market action. An r-squared of 1.0 indicates that a portfolio's returns are entirely related to the market and it is not influenced by other factors. An r-squared of zero indicates that no relationship exists between the portfolio's return and the market.

**Relative Standard Deviation** is a simple measure of a manager's risk (volatility) relative to a benchmark. It is calculated by dividing the manager's standard deviation of returns by the benchmark's standard deviation of returns. A relative standard deviation of 1.20, for example, means the manager has exhibited 20% more risk than the benchmark over that time period. A ratio of .80 would imply 20% less risk. This ratio is especially useful when analyzing the risk of investment grade fixed-income products where actual historical durations are not available. By using this relative risk measure over rolling time periods one can illustrate the "implied" historical duration patterns of the portfolio versus the benchmark.

**Residual Portfolio Risk** is the unsystematic risk of a fund, the portion of the total risk unique to the fund (manager) itself and not related to the overall market. This reflects the "bets" which the manager places in that particular asset market. These bets may reflect emphasis in particular sectors, maturities (for bonds), or other issue specific factors which the manager considers a good investment opportunity. Diversification of the portfolio will reduce or eliminate the residual risk of that portfolio.

## Callan

#### **Risk/Reward Statistics**

**Rising Declining Periods** refer to the sub-asset class cycles vis-a-vis the broader asset class. This is determined by evaluating the cumulative relative sub-asset class index performance to that of the broader asset class index. For example, to determine the Growth Style cycle, the S&P 500 Growth Index (sub-asset class) performance is compared to that of the S&P 500 Index (broader asset class).

**Sharpe Ratio** is a commonly used measure of risk-adjusted return. It is calculated by subtracting the "risk-free" return (usually 3 Month Treasury Bill) from the portfolio return and dividing the resulting "excess return" by the portfolio's risk level (standard deviation). The result is a measure of return gained per unit of risk taken.

**Sortino Ratio** is a downside risk-adjusted measure of value-added. It measures excess return over a benchmark divided by downside risk. The natural appeal is that it identifies value-added per unit of truly bad risk. The danger of interpretation, however, lies in these two areas: (1) the statistical significance of the denominator, and (2) its reliance on the persistence of skewness in return distributions.

**Standard Deviation** is a statistical measure of portfolio risk. It reflects the average deviation of the observations from their sample mean. Standard deviation is used as an estimate of risk since it measures how wide the range of returns typically is. The wider the typical range of returns, the higher the standard deviation of returns, and the higher the portfolio risk. If returns are normally distributed (ie. has a bell shaped curve distribution) then approximately 2/3 of the returns would occur within plus or minus one standard deviation from the sample mean.

**Total Portfolio Risk** is a measure of the volatility of the quarterly excess returns of an asset. Total risk is composed of two measures of risk: market (non-diversifiable or systematic) risk and residual (diversifiable or unsystematic) risk. The purpose of portfolio diversification is to reduce the residual risk of the portfolio.

**Tracking Error** is a statistical measure of a portfolio's risk relative to an index. It reflects the standard deviation of a portfolio's individual quarterly or monthly returns from the index's returns. Typically, the lower the Tracking Error, the more "index-like" the portfolio.

**Treynor Ratio** represents the portfolio's average excess return over a specified period divided by the beta relative to its benchmark over that same period. This measure reflects the reward over the risk-free rate relative to the systematic risk assumed.

Note: Alpha, Total Risk, and Residual Risk are annualized.

Callan Research/Education



## Education

1st Quarter 2024

## **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 to see all of our publications, and www.callan.com/blog to view our blog. For more information contact Barb Gerraty at 415-274-3093 / 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**

<u>SEC Releases Final Climate Disclosure Rule</u> | 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.

<u>A Strong Finish to 2023 Bodes Well for Hedge Funds in 2024 |</u> 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

<u>Market Pulse</u>, 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<sup>™</sup>, 4Q23 | Tracks the performance and asset allocation of available target date mutual funds and CITs

<u>Callan DC Index™, 4Q23</u> | 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.

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

#### **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



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, break-fast 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



"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



# Callan

## List of Callan's Investment Manager Clients

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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	Manager Name
abrdn	Audax Private Debt
Acadian Asset Management LLC	AXA Investment Managers
Adams Street Partners, LLC	Baillie Gifford International, LLC
Aegon Asset Management	Baird Advisors
AllianceBernstein	Barings LLC
Allspring Global Investments, LLC	Baron Capital Management, Inc.
Altrinsic Global Advisors, LLC	Barrow, Hanley, Mewhinney & Strauss, LLC
American Century Investments	Belle Haven Investment L.P.
Amundi US, Inc.	BentallGreenOak
ntares Capital LP	Beutel, Goodman & Company Ltd.
pollo Global Management, Inc.	Black Creek Investment Management Inc.
AQR Capital Management	BlackRock
Ares Management LLC	Blackstone Group (The)
RGA Investment Management, LP	Blue Owl Capital, Inc.
Ariel Investments, LLC	BNY Mellon Asset Management
Aristotle Capital Management, LLC	Boston Partners
rtemis Real Estate Partners	Brandes Investment Partners, L.P.
tlanta Capital Management Co., LLC	Brandywine Global Investment Management, LL

# Callan

#### Manager Name Manager Name Brookfield Asset Management Inc. Heitman LLC Hotchkis & Wiley Capital Management, LLC Brown Brothers Harriman & Company Brown Investment Advisory & Trust Company HPS Investment Partners, LLC Capital Group **IFM Investors** CastleArk Management, LLC Impax Asset Management LLC Cercano Management LLC Income Research + Management CIBC Asset Management Inc. Insight Investment CIM Group, LP Intercontinental Real Estate Corporation **Clarion Partners** Invesco J.P. Morgan ClearBridge Investments, LLC Cohen & Steers Capital Management, Inc. Janus Jennison Associates LLC Columbia Threadneedle Investments NA **Comvest Partners** Jensen Investment Management CQS Jobs Peak Advisors Crescent Capital Group LP Kayne Anderson Rudnick Investment Management, LLC Dana Investment Advisors, Inc. King Street Capital Management, L.P. D.E. Shaw Investment Management, LLC Kohlberg Kravis Roberts & Co. L.P. (KKR) DePrince, Race & Zollo, Inc. Lazard Asset Management Diamond Hill Capital Management, Inc. LGIM America Dimensional Fund Advisors L.P. Lincoln National Corporation Doubleline Longview Partners DWS Loomis, Sayles & Company, L.P. EARNEST Partners, LLC Lord, Abbett & Company Fayez Sarofim & Company Los Angeles Capital Management Federated Hermes, Inc. LSV Asset Management Fidelity Institutional Asset Management MacKay Shields LLC Fiera Capital Corporation Macquarie Asset Management First Eagle Investment Management, LLC Manulife Investment Management First Hawaiian Bank Wealth Management Division Marathon Asset Management, L.P. **Fisher Investments** Mawer Investment Management Ltd. Franklin Templeton MetLife Investment Management Fred Alger Management, LLC MFS Investment Management GAMCO Investors, Inc. Mondrian Investment Partners Limited GlobeFlex Capital, L.P. Montag & Caldwell, LLC **Goldman Sachs** Morgan Stanley Investment Management MUFG Bank, Ltd. **Golub** Capital GW&K Investment Management Natixis Investment Managers Harbor Capital Group Trust Neuberger Berman Hardman Johnston Global Advisors LLC Newton Investment Management Haven Global Partners, LLC Northern Trust Asset Management

# Callan

#### Manager Name Manager Name Nuveen Segall Bryant & Hamill Oaktree Capital Management, L.P. SLC Management **Orbis Investment Management Limited** Sprucegrove Investment Management Ltd. P/E Investments Star Mountain Capital, LLC Pacific Investment Management Company State Street Global Advisors Parametric Portfolio Associates LLC Strategic Global Advisors, LLC Parnassus Investments T. Rowe Price Associates, Inc. Partners Group (USA) Inc. TA Realty Pathway Capital Management, LP **TD Global Investment Solutions** Peregrine Capital Management, LLC The TCW Group, Inc. **PGIM DC Solutions** Thompson, Siegel & Walmsley LLC **PGIM Fixed Income TPG Angelo Gordon** PGIM Quantitative Solutions LLC **UBS Asset Management** Pictet Asset Management VanEck Versus Capital Group **PineBridge Investments** Polen Capital Management, LLC Victory Capital Management Inc. PPM America, Inc. Virtus Investment Partners, Inc. Pretium Partners, LLC Vontobel Asset Management Principal Asset Management Voya Pzena Investment Management, LLC Walter Scott & Partners Limited **Raymond James Investment Management** WCM Investment Management **RBC Global Asset Management** Wellington Management Company LLP **Regions Financial Corporation** Western Asset Management Company LLC S&P Dow Jones Indices Westfield Capital Management Company, LP Sands Capital Management William Blair & Company LLC Schroder Investment Management North America Inc. Xponance, Inc.

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Past performance is no guarantee of future results.

# Callan

March 31, 2024

Mississippi Public Employees Retirement System Optional Retirement Plan

Investment Measurement Service Quarterly Review

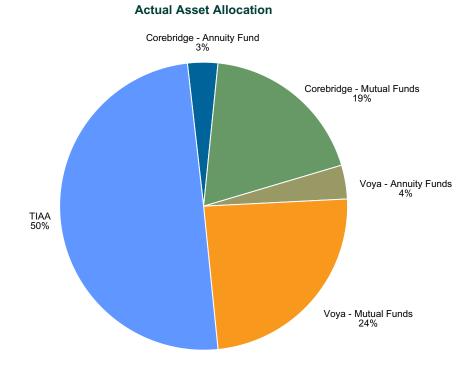
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Total Plan Management Summary

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

The chart below shows the Fund's asset allocation as of March 31, 2024.



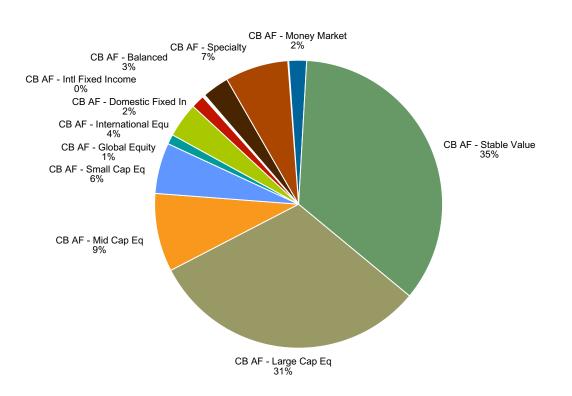
Asset Class	\$Dollars Actual	Weight Actual
Corebridge - Annuity Fund	68,137,963	3.4%
Corebridge - Mutual Funds	373,042,104	18.8%
Voya - Annuity Funds	75,333,057	3.8%
Voya - Mutual Funds	480,651,044	24.2%
TIÁA	989,491,765	49.8%
Total	1,986,655,933	100.0%

Callan

Corebridge Asset Allocation and Performance

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

The chart below shows the Fund's asset allocation as of March 31, 2024.



**Actual Asset Allocation** 

	\$000s	Weight
Asset Class	Actual	Actual
CB AF - Money Market	1,366	2.0%
CB AF - Stable Value	23,898	35.1%
CB AF - Large Cap Eq	21,377	31.4%
CB AF - Mid Cap Èq	5,986	8.8%
CB AF - Small Cap Eq	3,881	5.7%
CB AF - Global Equity	755	1.1%
CB AF - International Equ	2,684	3.9%
CB AF - Domestic Fixed In	1,051	1.5%
CB AF - Intl Fixed Income	213	0.3%
CB AF - Balanced	2,065	3.0%
CB AF - Specialty	4,861	7.1%
Total	68,138	100.0%

\*CB is Corebridge Financial.



#### **Investment Fund Balances**

The table below compares the fund's investment fund balances as of March 31, 2024 with that of December 31, 2023.

	March 31, 2	024	December 31, 2023			
	Market Value	Weight	Market Value	Weight		
orebridge - Annuity Funds						
Ioney Market	\$1,365,890	2.00%	\$1,321,502	1.99%		
Goldman Sachs VIT Govt MM Instl (1)	1,365,890	2.00%	1,321,502	1.99%		
table Value	\$23,898,251	35.07%	\$25,150,589	37.89%		
Fixed Account Plus	18,376,313	26.97%	19,037,889	28.68%		
Short-Term Fixed Account	5,521,938	8.10%	6,112,700	9.21%		
alanced	\$2,064,758	3.03%	\$1,982,454	2.99%		
Asset Allocation (PineBridge)	71,304	0.10%	66,970	0.10%		
Vanguard Wellington	1,993,454	2.93%	1,915,485	2.89%		
omestic Equity	\$31,244,541	45.85%	\$28,928,293	43.59%		
arge Cap Equity	\$21,377,239	31.37%	\$19,536,347	29.44%		
Dividend Value (BlackRock/SunAmerica)	359,257	0.53%	333,782	0.50%		
Vanguard Windsor II	4,347,904	6.38%	4,127,464	6.22%		
Systematic Core Fd (Goldman Sachs) (2)	1,826,621	2.68%	1.616.190	2.44%		
Stock Index (SunAmerica)	9,643,494	14.15%	8,889,471	13.39%		
Growth Fund (American Century)	3,902,824	5.73%	3,353,485	5.05%		
Large Capital Gr (Mass. Financial)	1,297,140	1.90%	1,215,955	1.83%		
id Cap Equity	\$5,985,951	8.79%	\$5,673,646	8.55%		
Mid Cap Index (SunAmerica)	5,390,188	7.91%	5,054,699	7.62%		
Mid Cap Strategic (RCM/Morgan Stanley)	595,763	0.87%	618,946	0.93%		
mall Cap Equity	\$3,881,351	5.70%	\$3,718,301	5.60%		
Small Cap Growth Fund (JP Morgan) (3)	1.014.622	1.49%	911,341	1.37%		
Small Cap Index (SunAmerica)	2,866,728	4.21%	2,806,959	4.23%		
lobal Equity	\$755,189	1.11%	\$726,651	1.09%		
Int'l Socially Resp (SunAmerica) (4)	125,281	0.18%	121,241	0.18%		
Emerging Economies (JP Morgan)	207,245	0.30%	210,569	0.32%		
Global Strategy (Franklin Templeton)	422,663	0.62%	394,841	0.59%		
ternational Equity	\$2,684,414	3.94%	\$2,567,217	3.87%		
International Value (Templeton Global)	<b>\$2,064,414</b> 643.084	0.94%	611.924	0.92%		
International Equities (PineBridge)	973.199	1.43%	929.863	1.40%		
International Equities (PineBridge) Intl Growth (American Cent./Invesco/MFS)	1,068,131	1.43%	929,863 1,025,429	1.40%		
omestic Fixed Income	\$1,050,909	1.54%	\$1,092,477	1.65%		
Core Bond Fund (Pinebridge) (3)						
	116,041	0.17% 0.25%	123,997 168.881	0.19% 0.25%		
Govt Securities (JP Morgan/SunAmerica)	167,652		/			
Vanguard Long-Term Investment Grade	352,810	0.52%	359,601	0.54%		
Vanguard Long-Term Treasury	414,406	0.61%	439,998	0.66%		
ternational Fixed Income	\$213,296	0.31%	\$216,645	0.33%		
Intl Government Bond (PineBridge)	213,296	0.31%	216,645	0.33%		
pecialty	\$4,860,714	7.13%	\$4,383,559	6.60%		
Science & Tech (T.Rowe/RCM/Wellington)	4,860,714	7.13%	4,383,559	6.60%		

#### **Asset Distribution Across Investment Funds**

(1) 2Q22 changed from Money Market I Fund (SunAmerica) to Goldman Sachs VIT Govt MMkt Instl.(2) Systematic Core Fund (Goldman Sachs) formerly Growth & INcome (JP Morgan); subadvisor change 1Q2020.

(3) 2Q2021 Small Cap Growth Fund replaced Small Cap Fund. Core Bond Fund replaced Capital Preservation Fund. Core

Equity Fund closed, assets rolled into Systematic Core Fund. (4) 2Q19 name change from Global Social Awareness (Sun America) to International Socially Responsible (Sun America).



The table below details the rates of return and peer group rankings for the Fund's investment funds 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.

					Last		Last		Last	
	Last		Last Year		3 Xaara		5 Vaara		10 Years	
Corebridge - Annuity Funds	Quarter		rear		Years		Years		Tears	
Money Market										
Goldman Sachs VIT Govt MM Inst (1)	1.30%	44	5.27%	45	2.63%	25	1.85%	63	1.14%	80
FTSE 3 Mo T-Bill	1.37%	22	5.52%	29	2.70%	15	2.07%	27	1.39%	26
Callan Money Market Funds	1.29%		5.23%		2.52%		1.90%		1.24%	
Stable Value										
Fixed Account Plus	0.86%	5	3.57%	1	2.63%	1	2.41%	2	2.30%	1
Short-Term Fixed Account	0.25%	96	1.00%	99	1.00%	98	1.00%	99	1.00%	99
5 Yr US Treas Rolling	0.53%	74	2.01%	75	1.75%	54	1.75%	62	1.58%	61
Callan Stable Value	0.59%		2.39%		1.77%		1.79%		1.65%	
Balanced										
Asset Allocation (PineBridge)	6.69%	39	19.22%	40	6.24%	26	8.06%	69	6.16%	84
Custom Benchmark (2)	5.94%	55	17.97%	44	5.94%	45	9.30%	45	8.52%	25
Vanguard Wellington	5.50%	67 39	16.75%	57	5.91%	45 15	8.94%	49	8.21%	40
Wellington Composite Index (3) Callan Dom Balanced MFs	6.59% 6.01%	39	19.99% 17.16%	31	6.73% 5.61%	15	10.21% 8.87%	19	9.29% 7.91%	7
	0.01%		17.10%		5.01%		0.07 %		7.91%	
Domestic Equity										
Large Cap Equity										
Dividend Value (BlackRock/SunAmerica)	7.87%	75	19.86%	66	7.86%	78	9.49%	84	8.92%	66
Vanguard Windsor II	8.86%	57	25.87%	24	9.83%	46	14.24%	9	10.67%	17
Russell 1000 Value Index	8.99%	55	20.27%	63	8.11%	74	10.32%	69	9.01%	61
Callan Lg Cap Value MF	9.55%		21.90%		9.42%		11.35%		9.19%	
Systematic Core (Goldman Sachs) (4)	10.40%	72	28.52%	62	9.64%	78	14.86%	48	12.35%	35
Stock Index (SunAmerica)	10.48%	68	29.42%	57	11.15%	60	14.69%	49	12.59%	33
S&P 500 Index	10.56%	67	29.88%	55	11.49%	54	15.05%	43	12.96%	26
Callan Large Cap Core MFs	11.60%		31.10%		11.77%		14.50%		11.87%	
Growth Fund (American Century)	13.48%	39	43.21%	32	8.97%	61	15.81%	51	13.69%	7'
Large Capital Gr (Mass. Financial)	8.05%	95	24.32%	97	9.69%	50	14.73%	69	13.51%	75
Russell 1000 Growth Index	11.41%	71	39.00%	59	12.50%	3	18.52%	8	15.98%	7
Callan Large Cap Grwth MF	12.81%		40.21%		9.64%		15.89%		14.38%	
Mid Cap Equity										
Mid Cap Index (SunAmerica)	9.89%	37	22.85%	46	6.56%	37	11.31%	51	9.63%	53
S&P Mid Cap 400 Index	9.95%	37	23.33%	45	6.96%	35	11.71%	37	9.99%	42
Callan Mid Cap MFs	9.06%		22.27%		4.41%		11.37%		9.87%	
Mid Cap Strategic (RCM/Morgan Stanley)	11.07%	21	25.20%	28	5.30%	14	13.53%	6	11.45%	22
Russell MidCap Growth Idx	9.50%	50	26.28%	17	4.62%	17	11.82%	25	11.35%	26
Callan Mid Cap Growth MFs	9.51%		22.14%		1.78%		10.76%		10.35%	
Small Cap Equity										
Small Cap Growth Fund (JP Morgan) (5)	11.60%	8	21.92%	31	(6.11%)	88	-		-	
Small Cap Index (SunAmerica)	5.12%	69	19.22%	51	(0.46%)	71	7.70%	76	7.30%	78
Russell 2000 Index	5.18%	69	19.71%	49	(0.10%)	68	8.10%	71	7.58%	72
Callan Small Cap MFs	6.51%		19.58%		2.42%		9.55%		8.49%	

(1) 2Q22 changed from Money Market I Fund (SunAmerica) to Goldman Sachs VIT Govt MMkt Instl.

(2) Custom Benchmark is 60% S&P 500 Index, 40% Bloomberg Aggregate Index.

(3) Wellington Composite Index is 65% S&P 500 Index and 35% Bloomberg Creidt A or better.

(4) Systematic Core Fund (Goldman Sachs) formerly Growth & Income (JP Morgan); subadvisor change 1Q2020.

(5) 2Q2021 Small Cap Growth Fund replaced Small Cap Fund.

The table below details the rates of return and peer group rankings for the Fund's investment funds 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.

					Last		Last		Last	
	Last		Last		3		5		10	
	Quarter		Year		Years		Years		Years	
Corebridge - Annuity Funds										
Global Equity										
Int'l Socially Resp (SunAmerica) (1)	5.04%	83	14.71%	77	4.10%	67	7.08%	80	7.23%	68
MSCI World Index	8.88%	32	25.11%	33	8.60%	9	12.07%	30	9.39%	41
Emerging Economies (JPMorgan)	5.64%	80	12.36%	88	(5.52%)	99	2.47%	100	2.65%	99
MSCI Emerging Markets Index	2.37%	99	8.15%	96	(5.05%)	98	2.22%	100	2.95%	99
Global Strategy (F. Templeton)	7.29%	56	18.26%	65	3.23%	76	3.72%	99	2.85%	99
Custom Benchmak (2)	4.88%	84	15.37%	76	3.79%	71	7.08%	80	6.27%	72
Callan Global Equity MFs	7.98%		22.42%		5.34%		10.48%		8.88%	
International Equity										
International Value (Templeton Glbl)	7.92%	10	16.19%	23	3.43%	48	5.64%	86	2.36%	94
Intl Equities (PineBridge)	5.55%	41	14.40%	38	4.38%	31	6.80%	57	4.40%	63
Intl Growth (Amer Cent/Invesco/MFS)	5.95%	32	5.66%	95	(2.49%)	93	7.35%	48	6.23%	11
MSCI EAFE Index	5.78%	36	15.32%	26	4.78%	25	7.33%	48	4.80%	44
Callan Intl Eq Dev Mkt MF	4.85%		13.33%		3.30%		7.20%		4.59%	
Domestic Fixed Income										
Core Bond Fund (Pinebridge) (4)	(0.48%)	49	3.13%	9	(2.49%)	62	-		-	
Blmbg Aggregate	(0.78%)	88	1.70%	75	(2.46%)	58	0.36%	89	1.54%	79
Govt Securities (JP Morgan/SunAmerica)	(0.49%)	54	0.89%	96	(2.45%)	58	(0.01%)	92	1.06%	97
BImbg US Government	(0.93%)	96	0.13%	99	(2.68%)	83	(0.04%)	93	1.05%	97
Vanguard Long-Term Investment	(1.66%)	100	1.69%	75	(4.80%)	99	0.25%	91	3.50%	1
BImbg Long Cred A+	(1.98%)	100	1.76%	73	(4.96%)	99	0.11%	92	2.77%	2
Vanguard Long-Term Treasury	(3.25%)	100	(6.26%)	100	(8.22%)	100	(2.86%)	100	1.13%	96
Blmbg Treasury Long	(3.26%)	100	(6.08%)	100	(8.04%)	100	(2.78%)	100	1.25%	96
Callan Core Bond MFs	(0.48%)		2.25%		(2.42%)		0.70%		1.73%	
International Fixed Income										
Intl Govt Bond (PineBridge)	(1.20%)	59	2.05%	59	(4.48%)	77	(0.86%)	52	0.24%	44
Custom Benchmark (3)	(1.09%)	59	2.67%	58	(4.69%)	78	(1.26%)	55	0.38%	43
Intl Income MFs	(0.54%)		4.55%		(3.11%)		(0.61%)		(0.26%)	
Specialty										
Science &Tech (T.Rowe/RCM/Welling)	14.23%	6	46.56%	2	6.10%	34	16.83%	1	16.93%	1
S&P N American Technology Idx	15.31%	5	52.97%	1	13.65%	3	21.25%	1	20.19%	1
Callan Health/Biotech MFs	7.49%		13.67%		3.51%		9.43%		10.00%	

(1) 2Q19 name change from Global Social Awareness (Sun America) to International Socially Responsible (Sun America).

- (2) Custom Benchmark is 60% MSCI ACWI + 40% Bloomberg Global Aggregate Unhedged.
- (3) Custom Benchmark is 30% JPM EMBI Global Diversified and 70% FTSE WGBI.

(4) 2Q2021 Core Bond Fund replaced Capital Preservation Fund.

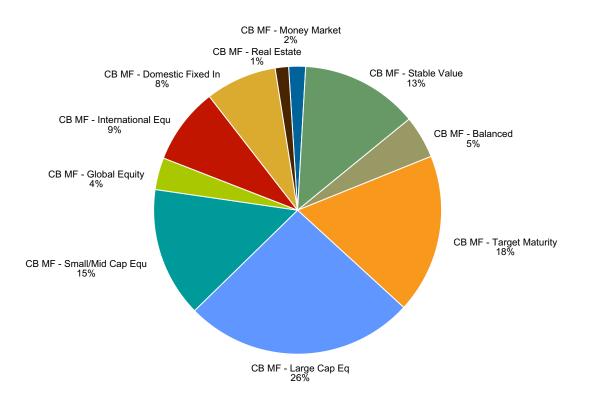


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Fund	Investment Vehicle Type (Variable Annuity Fund or Mutual Fund)	Gross Investment Expenses (inclusive of all other expenses, 12b-1 fees, management fees) (bps)	Expense reimbursements, fee rebates, waivers or revenue sharing waived or credited back to offset participant investment fees (bps)	Net Investment Expense charged to participants by Variable Annuity Fund or Mutual Fund (bps)	Net Recordkeeping Fee Separate Account or Mortality & Expense Charge (M&E) charged by Retirement Provider (bps)	Total Annual Fees Paid by Participants (Net Investment Expense + Net Record keeping Fee) (bps)
Asset Allocation Fund	Variable Annuity	68	5	63	80	143
Core Bond Fund	Variable Annuity	51	0	51	80	131
Dividend Value Fund	Variable Annuity	79	11	68	80	148
Emerging Economies Fund	Variable Annuity	93	0	93	80	173
Global Strategy Fund	Variable Annuity	84	6	78	80	158
Goldman Sachs VIT Government MMkt Instl	Variable Annuity	21	3	18	80	98
Government Securities Fund	Variable Annuity	65	0	65	80	145
Growth Fund	Variable Annuity	77	16	61	80	141
International Equities Index Fund	Variable Annuity	42	0	42	80	122
International Government Bond Fund	Variable Annuity	69	0	69	80	149
International Growth Fund	Variable Annuity	105	20	85	80	165
International Socially Responsible Fund	Variable Annuity	64	0	64	80	144
International Value Fund	Variable Annuity	81	7	74	80	154
Large Capital Growth Fund	Variable Annuity	74	0	74	80	154
Mid Cap Index Fund	Variable Annuity	34	0	34	80	114
Mid Cap Strategic Growth Fund	Variable Annuity	75	0	75	80	155
Science & Technology Fund	Variable Annuity	95	4	91	80	171
Small Cap Growth Fund	Variable Annuity	92	3	89	80	169
Small Cap Index Fund	Variable Annuity	41	5	36	80	116
Stock Index Fund	Variable Annuity	31	2	29	80	109
Systematic Core Fund	Variable Annuity	85	22	63	80	143
Vanguard Long-Term Inv Grade Fund	Variable Annuity	22	0	22	80	102
Vanguard Long-Term Treasury Fund	Variable Annuity	20	0	20	80	100
Vanguard Wellington Fund	Variable Annuity	24	0	24	105	129
Vanguard Windsor II Fund	Variable Annuity	34	0	34	105	139
Fixed Account Plus	Variable Annuity	N/A	N/A	N/A	N/A	N/A
Short-Term Fixed	Variable Annuity	N/A	N/A	N/A	N/A	N/A

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

The chart below shows the Fund's asset allocation as of March 31, 2024.



#### **Actual Asset Allocation**

	\$000s	Weight
Asset Class	Actual	Actual
CB MF - Money Market	7,152	1.9%
CB MF - Stable Value	49,402	13.2%
CB MF - Balanced	18,001	4.8%
CB MF - Target Maturity	66,888	17.9%
CB MF - Large Cap Eq	96,538	25.9%
CB MF - Small/Mid Cap Equ	54,295	14.6%
CB MF - Global Equity	13,274	3.6%
CB MF - International Equ	32,017	8.6%
CB MF - Domestic Fixed In	30,016	8.0%
CB MF - Real Estate	5,460	1.5%
Total	373,042	100.0%

CB is Corebridge Financial.



#### **Investment Fund Balances**

The table below compares the fund's investment fund balances as of March 31, 2024 with that of December 31, 2023.

	March 31, 2	024	December 31,	, 2023	
	Market Value	Weight	Market Value	Weight	
Corebridge - Mutual Funds					
Noney Market	\$7,152,213	1.92%	\$9,744,899	2.75%	
Vanguard Federal MM	7,152,213	1.92%	9,744,899	2.75%	
Stable Value	\$49,402,000	13.24%	\$51,468,047	14.54%	
Invesco Stable Value Trust	18,684,072	5.01%	19,818,206	5.60%	
Fixed Interest Option	30,717,928	8.23%	31,649,841	8.94%	
Balanced	\$18,001,018	4.83%	\$10,377,846	2.93%	
Amer. Funds American Balanced	18,001,018	4.83%	10,377,846	2.93%	
arget Maturity*	\$66,887,755	17.93%	\$62,154,450	17.56%	
Vanguard Target Ret Inc	1,095,335	0.29%	988,123	0.28%	
Vanguard Target Ret 2020	2,474,534	0.66%	2,335,153	0.66%	
Vanguard Target Ret 2025	3,640,199	0.98%	3,454,070	0.98%	
Vanguard Target Ret 2030	2,796,013	0.75%	2,614,375	0.74%	
Vanguard Target Ret 2035	5,054,609	1.35%	5,309,583	1.50%	
Vanguard Target Ret 2000	6,654,964	1.78%	6,041,529	1.71%	
Vanguard Target Ret 2045	11,145,530	2.99%	10,784,121	3.05%	
Vanguard Target Ret 2050	18,475,350	4.95%	16,696,308	4.72%	
Vanguard Target Ret 2055	9,821,827	2.63%	8,863,157	2.50%	
Vanguard Target Ret 2060	5,729,395	1.54%	5,068,030	1.43%	
omestic Equity	\$150,832,425	40.43%	\$141,168,593	39.89%	
arge Cap Equity	\$96,537,538	25.88%	\$87,096,394	24.61%	
Amer. Funds American Mutual	19,596,812	5.25%	15,370,401	4.34%	
Amer. Funds AMCAP	12,312,996	3.30%	10,646,664	3.01%	
State St S&P 500 Index	64,627,730	17.32%	61,079,330	17.26%	
Small/Mid Cap Equity	\$54,294,888	14.55%	\$54,072,198	15.28%	
GW&K Small/Mid Cap Core Eq	6.609.255	1.77%	7.508.392	2.12%	
State St Rus Sm/Mid Cp Indx Fund	47,685,633	12.78%	46,563,806	13.16%	
Blobal Equity	\$13,273,938	3.56%	\$10,913,634	3.08%	
Amer. Funds New Perspective	13,273,938	3.56%	10,913,634	3.08%	
nternational Equity	\$32,016,572	8.58%	\$30,286,029	8.56%	
Amer. Funds Euro Pacific Growth	32,016,572	8.58%	30,286,029	8.56%	
Domestic Fixed Income	\$30,016,365	8.05%	\$32,393,802	9.15%	
Vanguard Total Bond Idx	23,535,102	6.31%	24,951,298	7.05%	
American Century Infl Adj Bond	6,253,501	1.68%	6,885,664	1.95%	
John Hancock Core PL Fixed Inc Trust	227,763	0.06%	556,840	0.16%	
Real Estate	\$5,459,818	1.46%	\$5,421,243	1.53%	
Cohen and Steers	5,459,818	1.46%	5,421,243	1.53%	

#### **Asset Distribution Across Investment Funds**

\*Vanguard Target Retirement Funds Institutional Share Class closed in 1Q2022; All funds were merged to the Investor Share Class.



The table below details the rates of return and peer group rankings for the Fund's investment funds 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.

Return	is and Ranking	gs for	Periods E	nded	March 31,	2024				
					Last		Last		Last	
	Last		Last		3		5		10	
	Quarter		Year		Years		Years		Years	
Corebridge - Mutual Funds										
Money Market Vanguard Federal Money Market	1.32%	30	5.32%	40	2.64%	23	1.98%	35	1.34%	31
FTSE 3 Mo T-Bill	1.37%	22	5.52%	29	2.70%	15	2.07%	27	1.39%	26
Callan Money Market Funds	1.29%		5.23%		2.52%		1.90%		1.24%	
Stable Value										
Invesco Stable Value Trust (1)	0.67% 1.61%	18 1	2.62% 6.52%	18 1	1.83% 3.70%	44 1	1.91% 3.07%	37 1	1.80% 2.39%	25 1
FTSE 3 Mo T Bill + 100bp Premium Fixed Interest Option	0.55%	66	2.28%	62	1.95%	31	1.96%	28	2.03%	11
5 Yr US Treas Rolling	0.53%	74	2.01%	75	1.75%	54	1.75%	62	1.58%	61
Callan Stable Value	0.59%		2.39%		1.77%		1.79%		1.65%	
Balanced	6.249/	20	10 110/	25	6.21%	10	0.010/	26	0.270/	01
Amer. Funds American Balanced Custom Benchmark (2)	6.24% 5.94%	29 40	18.11% 17.97%	25 28	5.94%	18 31	8.91% 9.30%	36 31	8.37% 8.52%	21 15
Callan Dom Bal Mod MF	5.49%		15.66%		4.67%		8.09%		7.08%	
Target Maturity										
Vanguard Target Retirement Inc. (3)	2.09%	78 75	8.47% 8.70%	61 59	1.25%	59 51	4.19% 4.44%	60 47	- 4.37%	24
Vanguard Target Income Index Callan Tgt Dt Idx 2000	2.15% 2.41%	59	8.91%	56	1.44% 1.77%	37	4.63%	34	4.37%	24 25
Callan Tgt Date Ret Inc	2.62%		9.01%		1.47%		4.39%		4.12%	
Vanguard Target Retirement 2020 (3)	2.83%	81	10.42%	69	2.02%	65	5.64%	49	-	
Vanguard Target 2020 Index	2.86%	78	10.70%	56	2.25%	44	5.96%	27	5.91%	18
Callan Tgt Dt Idx 2020 Callan Target Date 2020	3.07% 3.36%	70	10.56% 10.80%	63	2.40% 2.18%	38	5.70% 5.63%	42	5.42% 5.47%	54
Vanguard Target Retirement 2025 (3)	3.81%	44	12.95%	17	2.71%	34	6.60%	28		
Vanguard Target 2025 Index	3.84%	41	13.24%	11	3.04%	20	6.99%	8	6.64%	9
Callan Tgt Dt Idx 2025	3.60%	58	12.01%	46	3.01%	20	6.55%	33	6.10%	39
Callan Target Date 2025	3.77%		11.96%		2.55%		6.37%		5.91%	
Vanguard Target Retirement 2030 (3)	4.57% 4.52%	50 55	14.81% 15.09%	25 19	3.39% 3.71%	41 25	7.41% 7.80%	39 13	- 7.20%	14
Vanguard Target 2030 Index Callan Tgt Dt Idx 2030	4.52%	61	14.09%	55	3.82%	23	7.53%	27	6.84%	38
Callan Target Date 2030	4.56%		14.26%		3.20%		7.28%		6.72%	
Vanguard Target Retirement 2035 (3)	5.24%	62	16.37%	51	4.07%	49	8.21%	54	-	
Vanguard Target 2035 Index Callan Tgt Dt Idx 2035	5.14% 5.33%	69 58	16.61% 16.32%	43 54	4.36% 4.73%	30 19	8.59% 8.53%	24 26	7.75% 7.53%	25 33
Callan Target Date 2035	5.52%	50	16.37%	54	4.06%	15	8.24%	20	7.33%	55
Vanguard Target Retirement 2040 (3)	5.85%	68	17.94%	62	4.74%	60	8.99%	52	-	
Vanguard Target 2040 Index	5.76%	75	18.15%	58	5.02%	44	9.37%	52 33	8.28%	28
Callan Tgt Dt Idx 2040 Callan Target Date 2040	6.14% 6.45%	61	18.28% 18.56%	56	5.49% 4.92%	20	9.32% 9.01%	35	8.06% 7.91%	38
5									7.0170	
Vanguard Target Retirement 2045 (3) Vanguard Target 2045 Index	6.45% 6.38%	70 75	19.45% 19.70%	65 58	5.37% 5.66%	55 34	9.75% 10.14%	49 28	- 8.73%	16
CallanTgt Dt Idx 2045	6.73%	61	19.68%	58	6.02%	19	9.87%	38	8.39%	43
Callan Target Date 2045	6.96%		19.96%		5.51%		9.74%		8.22%	
Vanguard Target Retirement 2050 (3)	6.86%	69	20.42%	58	5.72%	49	10.02%	48	-	45
Vanguard Target 2050 Index Callan Tgt Dt Idx 2050	6.84% 7.09%	70 61	20.76% 20.51%	50 54	6.02% 6.31%	31 17	10.41% 10.13%	25 42	8.86% 8.55%	15 38
Callan Target Date 2050	7.26%	01	20.69%	01	5.68%		9.95%		8.43%	00
Vanguard Target Retirement 2055 (3)	6.88%	73	20.43%	63	5.72%	55	10.02%	52	-	
Vanguard Target 2055 Index	6 84%	74	20.76%	57	6.02%	36	10.41%	34	8.86%	21
Callan Tgt Dt ldx 2055 Callan Target Date 2055	7.26% 7.48%	59	20.89% 21.12%	55	6.44% 5.78%	14	10.25% 10.08%	41	8.63% 8.52%	37
ő		70		00		50		54		
Vanguard Target Retirement 2060 (3) Vanguard Target 2060 Index	6.87% 6.84%	78 80	20.44% 20.76%	62 56	5.73% 6.02%	53 36	10.04% 10.41%	51 37	- 8.86%	17
Callan Tgt Dt Idx 2055	7.26%	63	20.89%	56	6.44%	15	10.25%	45	8.63%	28
Callan Target Date 2060	7.55%		21.29%		5.79%		10.10%		8.52%	

Inception 1Q2021; returns prior to 1Q2021 are that of the Invesco Stable Value Tr CF.
 Custom Benchmark is 60% S&P 500 Index and 40% Blmbg Aggregate Index
 Returns are Vanguard Target Funds Investor Share Class; prior to 12/31/2021 returns are the Institutional Share Class.



The table below details the rates of return and peer group rankings for the Fund's investment funds 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.

					Last		Last		Last	
	Last		Last		3		5		10	
Corebridge - Mutual Funds	Quarter		Year		Years		Years		Years	
-										
Domestic Equity										
Large Cap Equity	7.400/		10.040		0.000/		10.000/	05	10.000/	~
Amer. Funds American Mutual	7.16%	93 55	16.64%	85 63	9.38%	50 74	10.69%	65 69	10.00%	24 61
Russell 1000 Value Index Callan Lg Cap Value MF	8.99% 9.55%	55	20.27% 21.90%	63	8.11% 9.42%	74	10.32% 11.35%	69	9.01% 9.19%	61
Callan Ly Cap value INF	9.00%		21.90%		9.42 /0		11.55%		9.1970	
Amer. Funds AMCAP	10.81%	78	32.21%	86	7.20%	76	12.06%	99	11.22%	96
Russell 1000 Growth Index	11.41%	71	39.00%	59	12.50%	3	18.52%	8	15.98%	7
Callan Large Cap Grwth MF	12.81%		40.21%		9.64%		15.89%		14.38%	
State Str S&P 500 Index Fund (1)	10.55%	60	29.88%	54	11.47%	26	15.03%	40	12.94%	41
S&P 500 Index	10.56%	60	29.88%	54	11.49%	26	15.05%	40	12.96%	41
Callan Lg Cap Broad MF	11.25%		31.41%		9.95%		14.09%		12.12%	
Small/Mid Cap Equity										
GW&K Small/Mid Cap Core Eq (2)	9.30%	15	21.01%	44	5.77%	40	12.92%	11	9.93%	18
Russell 2500 Index	6.92%	74	21.43%	43	2.97%	70	9.90%	60	8.84%	38
Callan SMID Core MFs	7.91%		20.20%		5.32%		10.25%		8.40%	
State Str Russ Small/Mid Cap Idx Fd(3)	7.25%	65	26.53%	12	1.59%	86	10.49%	47	9.22%	25
Russell Sm Cap Completion Index	7.22%	65	26.39%	12	1.54%	86	10.51%	47	9.25%	25
Callan SMID Core MFs	7.91%		20.20%		5.32%		10.25%		8.40%	
Global Equity										
Amer. Funds New Perspective	8.49%	35	22.92%	43	5.22%	56	12.78%	25	10.96%	16
MSCI ACWI	8.20%	44	23.22%	40	6.96%	26	10.92%	46	8.66%	57
Callan Global Equity MFs	7.98%		22.42%		5.34%		10.48%		8.88%	
International Equity										
Amer. Funds Euro Pacific Growth	7.44%	16	13.49%	49	(0.16%)	87	6.91%	54	5.58%	15
MSCI ACWI ex US	4.69%	54	13.26%	54	1.94%	73	5.97%	79	4.25%	68
Callan Intl Eq Dev Mkt MF	4.85%		13.33%		3.30%		7.20%		4.59%	
Fixed Income					(0.4.04)				. = = = = /	
Vanguard Total Bond Idx	(0.79%)	89	1.67%	75	(2.41%)	48	0.39%	88	1.53%	81
Vanguard Spl Blmbg Agg FA (4) Callan Core Bond MFs	(0.72%)	78	1.77% 2.25%	73	(2.39%)	46	0.43% 0.70%	81	1.57% 1.73%	72
Callan Core Bond MFS	(0.48%)		2.23%		(2.42%)		0.70%		1.73%	
American Century Inflat Adj Bd	(0.10%)	62	(0.37%)	89	(0.69%)	80	2.28%	84	-	
BImbg US TIPS	(0.08%)	54	0.45%	51	(0.53%)	57	2.49%	49	2.21%	42
TIPS Domestic	(0.08%)		0.46%		(0.47%)		2.49%		2.18%	
JHancock Core Plus Fixed Trust (5)	0.00%	6	3.19%	8	(1.98%)	14	-		-	
Blmbg Aggregate Index	(0.78%)	88	1.70%	75	(2.46%)	58	0.36%	89	1.54%	79
Callan Core Bond MFs	(0.48%)		2.25%		(2.42%)		0.70%		1.73%	
Real Estate										
Cohen & Steers RE Securities	(0.46%)	27	9.85%	25	3.07%	30	5.57%	11	-	
FTSE NAREIT Equity Index	(0.20%)	18	10.54%	15	4.14%	6	4.15%	41	6.61%	39
Lipper Real Estate Funds	(1.06%)		8.56%		2.50%		3.82%		6.30%	

(1) Inception 1Q2021; returns prior to 1Q2021 are that of the State Street S&P 500 Index Fund

- (2) Inception 1Q2021; returns prior to 1Q2021 are that of the GW&K Small/Mid Cap Core Equity CIT Class A.
- (3) Inception 1Q2021; returns prior to 1Q2021 are that of the State Street Russell SMID NL Class K CIT.

(4) Bloomberg Aggregate Index through 12/31/09; then Bloomberg Aggregate Float Adjusted therafter.
 (5) Inception 1Q2021; returns prior to 1Q2021 are that of the Manulife Core Fixed Income CIT Composite.

Callan

# **Corebridge: Mutual Fund Fees and Expenses**

Fund	Vehicle Type (MF, CIT, Ann Fd)	Gross Investment Expenses (inclusive of all other expenses, e.g., 12b-1 fees, management fees, etc.) (bps)	Fee Rebates or Waivers Revenue Sharing (credited back to participants to offset TPA fees) (bps)	Net Expense Ratio (bps)
American Century Inflation-Adjs Bond R6	MF	21	0	21
American Funds AMCAP R6	MF	33	0	33
American Funds American Balanced R6	MF	25	0	25
American Funds American Mutual R6	MF	27	0	27
American Funds Europacific Growth R6	MF	46	0	46
American Funds New Perspective R6	MF	41	0	41
DFA Emerging Markets I	MF	46	0	46
MFS Blended Research Core Equity I	MF	56	0	56
Cohen & Steers Real Estate Securities Z	MF	75	0	75
Vanguard Institutional Index I	MF	4	0	4
Vanguard Mid Cap Index Institutional	MF	4	0	4
Vanguard Federal Money Market Investor	MF	11	0	11
Vanguard Small Cap Index I	MF	4	0	4
Vanguard Target Retirement 2020 Fund	MF	8	0	8
Vanguard Target Retirement 2025 Fund	MF	8	0	8
Vanguard Target Retirement 2030 Fund	MF	8	0	8
Vanguard Target Retirement 2035 Fund	MF	8	0	8
Vanguard Target Retirement 2040 Fund	MF	8	0	8
Vanguard Target Retirement 2045 Fund	MF	8	0	8
Vanguard Target Retirement 2050 Fund	MF	8	0	8
Vanguard Target Retirement 2055 Fund	MF	8	0	8
Vanguard Target Retirement 2060 Fund	MF	8	0	8
Vanguard Target Retirement Income Fund	MF	8	0	8
Vanguard Total Bond Market Index I	MF	4	0	4
Invesco Stable Value Trust - C	СП	26	0	26
State St Russell Sm/Mid Cp® Indx NL Cl K	СІТ	4	0	4
State St S&P 500® Indx NL CI K	СП	1	0	1
GW&K S/M Cp Cor Eq Collective Invmt Fund	СП	65	0	65
JHancock Core Plus Fixed Inc Trust I4	СП	23	0	23
VALIC Fixed Interest Option	Group Fixed Annuity	NA	0	NA

#### Summary of Record Keeping Cost Paid by Participants to Retirement Provider

Annual Recordkeeping Fee Paid by Participant	\$85
Total Number of Participants with this Provider	1959
Total Amount Paid to Service Provider (quarterly estimate)	\$41,590.38
Optional Fee for Advisory Services	NA

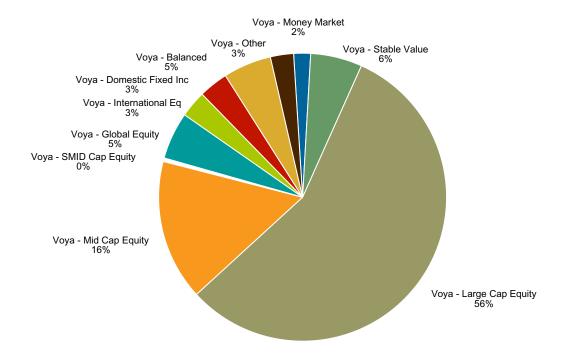
Represents all fees charged to participants

Callan

Voya Asset Allocation and Performance

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

The chart below shows the Fund's asset allocation as of March 31, 2024.



#### **Actual Asset Allocation**

Asset Class	\$000s Actual	Weight Actual
Voya - Money Market	1,450	1.9%
Voya - Stable Value	4,387	5.8%
Voya - Large Cap Equity	42,532	56.5%
Voya - Mid Cap Equity	11,914	15.8%
Voya - SMID Cap Equity	285	0.4%
Voya - Global Equity	3,960	5.3%
Voya - International Eq	2,266	3.0%
Voya - Domestic Fixed Inc	2,510	3.3%
Voya - Balanced	4,093	5.4%
Voya - Other	1,936	2.6%
Total	75,333	100.0%

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#### **Investment Fund Balances**

The table below compares the fund's investment fund balances as of March 31, 2024 with that of December 31, 2023.

	March 31, 2024		December 31, 2023		
	Market Value	Weight	Market Value	Weight	
/oya - Annuity Funds					
Money Market	\$1,450,212	1.93%	\$1,446,329	2.07%	
Voya Money Market Portfolio - I	1,450,212	1.93%	1,446,329	2.07%	
Stable Value	\$4,386,905	5.82%	\$4,326,990	6.19%	
Voya Fixed Account	530.847	0.70%	486.889	0.70%	
Voya Fixed Plus Account II	3,856,059	5.12%	3,840,102	5.49%	
Balanced	\$4,092,656	5.43%	\$3,948,839	5.64%	
Voya Strategic Alloc. Conservative	2,199	0.00%	2,135	0.00%	
Voya Strategic Alloc. Growth	6,420	0.01%	6,022	0.00%	
Voya Strategic Alloc. Moderate	33,964	0.05%	32,282	0.05%	
Calvert VP SRI Balanced	478,750	0.64%	485,337	0.69%	
Voya Balanced	1,368,075	1.82%	1,310,030	1.87%	
Voya Invesco Equity & Income Portfolio	2,203,248	2.92%	2,113,033	3.02%	
Domestic Equity	\$54,731,236	72.65%	\$49,749,547	71.11%	
_arge Cap Equity	\$42,531,709	56.46%	\$38,283,145	54.72%	
Fidelity VIP Contrafund	13,104,938	17.40%	11,790,377	16.85%	
Voya Growth and Income	3,438,033	4.56%	3,118,473	4.46%	
Voya Index Plus Large Cap	4,026,364	5.34%	3,658,791	5.23%	
Invesco V.I. Core Equity		0.97%		0.94%	
	728,752		656,007		
Fidelity VIP Equity-Income	4,026,751	5.35%	3,698,844	5.29%	
Voya Invesco Comstock Portfolio	1,889,533	2.51%	1,734,342	2.48%	
Fidelity VIP Growth	6,750,970	8.96%	6,006,056	8.59%	
Voya Large Cap Growth	3,915,402	5.20%	3,460,099	4.95%	
Voya T. Rowe Price Growth Equity	3,701,312	4.91%	3,301,522	4.72%	
Invesco V.I. American Franchise Fund	949,653	1.26%	858,633	1.23%	
/lid Cap Equity	\$11,914,335	15.82%	\$11,195,636	16.00%	
Voya TRowe Price Diversified MCG	7,545,544	10.02%	7,221,365	10.32%	
Voya Index Plus MidCap		5.80%			
Voya Index Plus MidCap	4,368,791	5.60%	3,974,271	5.68%	
Global Equity	\$3,960,245	5.26%	\$3,947,316	5.64%	
Voya Invesco Global Portfolio (1)	3,960,245	5.26%	3,947,316	5.64%	
Voya Global High Div Low Vol (3)	285,192	0.38%	270,766	0.39%	
nternational Equity	\$2,265,840	3.01%	\$2,077,332	2.97%	
Fidelity VIP Overseas	1,402,093	1.86%	1,247,613	1.78%	
Voya Intl High Div Low Volatility (2)	863,748	1.15%	829,719	1.19%	
Domestic Fixed Income	\$2,510,024	3.33%	\$2,515,017	3.60%	
Voya Intermediate Bond	1,531,970	2.03%	1,514,117	2.16%	
Voya Global Bond	978,055	1.30%	1,000,900	1.43%	
Other	\$1,935,939	2.57%	\$1,945,878	2.78%	
Voya Short Term GAA	1,867,034	2.48%	1,877,421	2.68%	
Voya Long Term GAA	68,904	0.09%	68,457	0.10%	

#### **Asset Distribution Across Investment Funds**

(1) 2Q19 Voya Oppenheimer Global Portfolio changed to Voya Invesco Oppenheimer Global Portfolio; 4Q21 name changed to Voya Invesco Global Portfolio.

(2) 2Q19 Voya Templeton Foreign Equity Portfolio approved a sub-adviser change, as well as, a corresponding strategy

change and name change to Voya International High Dividend Low Volatility Portfolio. (3) 2Q20 Voya Global Equity changed to Voya Global High Dividend Low Volatility.

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The table below details the rates of return and peer group rankings for the Fund's investment funds 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.

Return	s and Rankin	Rankings for Periods Ended March 31, 2024								
	Last Quarter		Last Year		Last 3 Years		Last 5 Years		Last 10 Years	
Voya - Annuity Funds										
Money Market										
Voya Money Market Portfolio	1.08%	93	4.33%	95	1.82%	93	1.17%	97	0.87%	96
FTSE 3 Mo T-Bill	1.37%	22	5.52%	29	2.70%	15	2.07%	27	1.39%	26
Callan Money Market Funds	1.29%		5.23%		2.52%		1.90%		1.24%	
Stable Value										
Voya Fixed Account	0.74%	10	3.01%	7	3.01%	1	3.01%	1	2.46%	1
Voya Fixed Plus Account II	0.74%	10	3.01%	7	3.01%	1	3.01%	1	3.01%	1
FTSE 3 Mo T Bill + 100bp Premium	1.61%	1	6.52%	1	3.70%	1	3.07%	1	2.39%	1
Callan Stable Value	0.59%		2.39%		1.77%		1.79%		1.65%	
Balanced										
Voya Strategic Alloc. Conservative	3.00%	97	9.92%	92	0.57%	98	3.96%	99	4.22%	96
Blmbg Aggregate	(0.78%)	100	1.70%	99	(2.46%)	99	0.36%	100	1.54%	99
Callan Dom Balanced MFs	6.01%		17.16%		5.61%		8.87%		7.91%	
Voya Strategic Alloc. Growth	6.61%	39	18.49%	43	3.86%	82	8.09%	69	6.94%	71
Voya Strategic Alloc. Moderate	5.21%	71	15.21%	67	2.78%	88	6.45%	87	5.92%	86
Russell 3000 Index	10.02%	7	29.29%	4	9.78%	7	14.34%	5	12.33%	3
Callan Dom Balanced MFs	6.01%		17.16%		5.61%		8.87%		7.91%	
Calvert VP SRI Balanced	7.00%	34	18.66%	42	5.44%	52	8.83%	51	7.65%	53
Voya Balanced	5.31%	69	15.30%	66	3.48%	86	6.62%	86	5.90%	86
Voya Invesco Equity & Income Portfolio	6.75%	37	16.64%	59	5.24%	56	8.61%	57	7.16%	63
S&P 500 Index	10.56%	7	29.88%	4	11.49%	6	15.05%	4	12.96%	2
Custom Benchmark (1)	6.02%	50	18.09%	44	5.94%	45	9.40%	43	8.57%	23
Callan Dom Balanced MFs	6.01%		17.16%		5.61%		8.87%		7.91%	

#### Returns and Rankings for Periods Ended March 31, 2024

(1) Custom Benchmark is 60% S&P 500 Index and 40% Blmbg Aggregate Index

The table below details the rates of return and peer group rankings for the Fund's investment funds 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.

					Last		Last		Last	
	Last		Last		3		5		10	
	Quarter		Year		Years		Years		Years	
Voya - Annuity Funds										
Domestic Equity										
Large Cap Equity										
Fidelity VIP Contrafund	16.71%	1	41.62%	9	12.14%	36	16.34%	18	12.79%	31
Voya Growth and Income	12.42%	27	31.46%	44	12.44%	25	15.67%	30	12.09%	42
Voya Index Plus Large Cap	10.74%	61	29.30%	58	10.37%	67	13.51%	65	11.93%	48
Invesco V.I. Core Equity	11.09%	58	27.06%	70	8.16%	87	11.88%	88	8.26%	95
S&P 500 Index	10.56%	67	29.88%	55	11.49%	54	15.05%	43	12.96%	26
Russell 1000 Index	10.30%	72	29.87%	55	10.45%	66	14.76%	48	12.68%	32
Callan Large Cap Core MFs	11.60%		31.10%		11.77%		14.50%		11.87%	
Fidelity VIP Equity-Income	8.91%	56	19.27%	68	8.76%	53	11.00%	56	8.92%	66
Voya Invesco Comstock Portfolio	8.93%	56	21.62%	52	11.02%	22	11.97%	32	9.19%	50
Russell 1000 Value Index	8.99%	55	20.27%	63	8.11%	74	10.32%	69	9.01%	61
Russell 3000 Value Index	8.62%	61	20.18%	64	7.74%	79	10.18%	73	8.86%	69
Callan Lg Cap Value MF	9.55%		21.90%		9.42%		11.35%		9.19%	
Fidelity VIP Growth	15.77%	11	42.41%	35	11.87%	12	18.73%	8	15.67%	10
Voya Large Cap Growth	14.94%	17	41.12%	41	9.19%	56	14.06%	78	13.57%	73
Voya T. Rowe Price Growth Equity	12.19%	61	40.51%	48	3.97%	95	11.92%	99	12.78%	84
Invesco V.I. American Franchise Fund	14.84%	19	42.71%	34	6.24%	83	15.04%	65	12.99%	81
Russell 1000 Growth Index	11.41%	71	39.00%	59	12.50%	3	18.52%	8	15.98%	7
Russell 3000 Growth Index	11.23%	73	37.95%	62	11.54%	18	17.82%	10	15.43%	20
Callan Large Cap Grwth MF	12.81%		40.21%		9.64%		15.89%		14.38%	
Mid Cap Equity										
Voya TRowe Price Diversified MCG	10.94%	23	23.85%	42	4.31%	22	11.19%	48	11.36%	24
Russell MidCap Growth Idx	9.50%	50	26.28%	17	4.62%	17	11.82%	25	11.35%	26
Callan Mid Cap Growth MFs	9.51%		22.14%		1.78%		10.76%		10.35%	
Voya Index Plus MidCap	10.40%	27	24.51%	36	7.16%	35	10.47%	64	8.62%	71
S&P Mid Cap 400 Index	9.95%	37	23.33%	45	6.96%	35	11.71%	37	9.99%	42
Callan Mid Cap MFs	9.06%		22.27%		4.41%		11.37%		9.87%	
Global Equity	1.000/		00 500/		4 770/		0.000/	05	0.040/	
Voya Invesco Global Portfolio (1)	4.00%	86	20.52%	55	1.77%	88	8.66%	65	8.31%	59
Voya Global High Div Low Vol (3)	7.65%	54	14.88%	77	6.96%	25	6.74%	83	-	
MSCIACWI	8.20%	44	23.22%	40	6.96%	26	10.92%	46	8.66%	57
Callan Global Equity MFs	7.98%		22.42%		5.34%		10.48%		8.88%	
International Equity	7 700/	10	17 070/	10	4.050/	20	0.040/	20	E 700/	
Fidelity VIP Overseas	7.79%	12	17.27%	18	4.25%	32	8.64%	20	5.70%	14
Voya Intl High Div Low Vol (2)	4.26%	66	13.54%	49	4.43%	30	5.10%	90	2.62%	93
MSCI EAFE	5.78%	36	15.32%	26	4.78%	25	7.33%	48	4.80%	44
MSCI World ex US Callan Intl Eg Dev Mkt MF	5.59% 4.85%	41	15.29% 13.33%	26	4.93% 3.30%	24	7.48% 7.20%	46	4.81% 4.59%	43
			/ •							
Fixed Income	(0.400()	10	2 2 2 2 1	-	(0 770/)	00	0 470/	00	1 700/	
Voya Intermediate Bond	(0.18%)	16	3.36%	5	(2.77%)	88	0.17%	92	1.76%	41
Voya Global Bond	(1.72%)	100	1.15%	88	(5.82%)	100	(1.98%)	100	(0.11%)	99
Blmbg Aggregate	(0.78%)	88	1.70%	75	(2.46%)	58	0.36%	89	1.54%	79
Callan Core Bond MFs	(0.48%)		2.25%		(2.42%)		0.70%		1.73%	

(1) 2Q19 Voya Oppenheimer Global Portfolio changed to Voya Invesco Oppenheimer Global Portfolio; 4Q21 name changed to Voya Invesco Global Portfolio.

(2) 2Q19 Voya Templeton Foreign Equity Portfolio approved a sub-adviser change, as well as, a corresponding strategy

change and name change to Voya International High Dividend Low Volatility Portfolio. (3) 2Q20 Voya Global Equity changed to Voya Global High Dividend Low Volatility.

# Voya: Annuity Fund Fees and Expenses

Fund	Investment Vehicle Type (Variable Annuity Fund or Mutual Fund)	Gross Investment Expenses (inclusive of all other expenses, 12b-1 fees, management fees)	Expense reimbursements, fee rebates, waivers or revenue sharing waived or credited back to offset participant investment fees	Net Investment Expense charged to participants by Variable Annuity Fund or Mutual Fund	Net Recordkeeping Fee Separate Account or Mortality & Expense Charge (M&E) charged by Retirement Provider	Total Annual Fees Paid by Participants (Net Investment Expense + Net Record keeping Fee)
Voya Government Money Market Portfolio - Class I	Variable Annuity Fund	50	5	45	65	110
Voya Intermediate Bond Portfolio - Class I	Variable Annuity Fund	60	5	55	65	120
Voya Global Bond Portfolio - Initial Class	Variable Annuity Fund	83	14	69	65	134
Voya Strategic Allocation Growth Portfolio - Class I	Variable Annuity Fund	81	4	77	65	142
Voya Strategic Allocation Moderate Portfolio - Class I	Variable Annuity Fund	76	1	75	65	140
Voya Strategic Allocation Conservative Portfolio - Class I	Variable Annuity Fund	76	5	71	65	136
Voya Balanced Portfolio - Class I	Variable Annuity Fund	80	6	74	65	139
Calvert VP SRI Balanced Portfolio	Variable Annuity Fund	64	0	64	65	129
VY® Invesco Equity and Income Portfolio - Initial Class	Variable Annuity Fund	72	8	64	65	129
Voya Growth and Income Portfolio - Class I	Variable Annuity Fund	68	1	67	65	132
Voya Index Plus LargeCap Portfolio - Class I	Variable Annuity Fund	57	2	55	65	120
Invesco V.I. Core Equity Fund - Series I Shares	Variable Annuity Fund	80	0	80	65	145
Fidelity VIP Equity-Income Portfolio - Initial Class	Variable Annuity Fund	51	0	51	65	116
VY® Invesco Comstock Portfolio - Service Class	Variable Annuity Fund	103	8	95	65	160
Fidelity VIP Growth Portfolio - Initial Class	Variable Annuity Fund	61	0	61	65	126
VY® T. Rowe Price Growth Equity Portfolio - Initial Class	Variable Annuity Fund	80	9	71	65	136
Fidelity VIP Contrafund Portfolio - Initial Class	Variable Annuity Fund	60	0	60	65	125
Invesco V.I. American Franchise Fund - Series I Shares	Variable Annuity Fund	89	0	89	65	154
Voya Large Cap Growth Portfolio - Institutional Class	Variable Annuity Fund	71	4	67	65	132
Voya Index Plus MidCap Portfolio - Class I	Variable Annuity Fund	68	8	60	65	125
VY® T. Rowe Price Diversified Mid Cap Growth Port - Initial	Variable Annuity Fund	86	8	78	65	143
Fidelity VIP Overseas Portfolio - Initial Class	Variable Annuity Fund	77	0	77	65	142
Voya Intl High Dividend Low Volatility Port - Initial Class	Variable Annuity Fund	72	0	72	65	137
Voya Global High Dividend Low Volatility Prtf - Class I	Variable Annuity Fund	65	5	60	65	125
Voya Global Insights Portfolio - Initial Class	Variable Annuity Fund	85	5	80	65	145

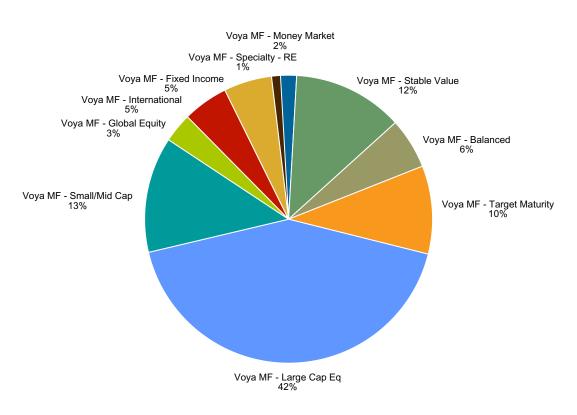
#### Summary of Fees Paid by Participants to Retirement Provider

Total Number of Participants with this Provider	781
Total Amount Paid to Service Provider (quarterly estimate)	\$164,064

#### Represents all fees charged to participants

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

The chart below shows the Fund's asset allocation as of March 31, 2024.



	\$000s	Weight
Asset Class	Actual	Actual
Voya MF - Money Market	9,160	1.9%
Voya MF - Stable Value	59,628	12.4%
Voya MF - Balanced	27,199	5.7%
Voya MF - Target Maturity	47,396	9.9%
Voya MF - Large Cap Eq	203,829	42.4%
Voya MF - Small/Mid Cap	62,463	13.0%
Voya MF - Global Equity	15,989	3.3%
Voya MF - International	24,286	5.1%
Voya MF - Fixed Income	25,920	5.4%
Voya MF - Specialty - RE	4,783	1.0%
Total	480,651	100.0%

**Actual Asset Allocation** 



#### **Investment Fund Balances**

The table below compares the fund's investment fund balances as of March 31, 2024 with that of December 31, 2023.

	March 31, 2	024	December 31, 2023		
	Market Value	Weight	Market Value	Weight	
Voya - Mutual Funds					
Money Market	\$9,159,521	1.91%	\$10,015,189	2.24%	
BlackRock Liquidity Fed Trust	9,159,521	1.91%	10,015,189	2.24%	
Stable Value	\$59,627,569	12.41%	\$60,566,492	13.53%	
Invesco Stable Value Trust	17,776,603	3.70%	17,322,938	3.87%	
Voya Fixed Plus Account III	41,850,967	8.71%	43,243,554	9.66%	
Balanced	\$27,198,512	5.66%	\$25,026,672	5.59%	
Vanguard Wellington	27,198,512	5.66%	25,026,672	5.59%	
Target Maturity	\$47,396,454	9.86%	\$42,986,138	9.60%	
T. Rowe Price Retirement 2015	863,108	0.18%	782,935	0.17%	
T. Rowe Price Retirement 2020	1,100,765	0.23%	1,087,270	0.24%	
T. Rowe Price Retirement 2025	1,428,010	0.30%	1,368,731	0.31%	
T. Rowe Price Retirement 2030	4,373,224	0.91%	4,071,013	0.91%	
T. Rowe Price Retirement 2005	1,958,986	0.41%	1,794,242	0.40%	
T. Rowe Price Retirement 2000	6,935,808	1.44%	6,251,584	1.40%	
T. Rowe Price Retirement 2045	6,244,729	1.30%	5,742,818	1.28%	
T. Rowe Price Retirement 2050	8,619,882	1.79%	7,685,318	1.72%	
T. Rowe Price Retirement 2055	8,150,598	1.70%	7,505,009	1.68%	
T. Rowe Price Retirement 2000	6,290,302	1.31%	5,431,342	1.21%	
T. Rowe Price Retirement 2065	1,431,042	0.30%	1,265,875	0.28%	
Domestic Equity	\$266,291,604	55.40%	\$240,487,737	53.73%	
Large Cap Equity	\$203,828,760	42.41%	\$181,791,167	40.61%	
American Funds Fndmntl Investors	46,749,138	9.73%	42,401,039	9.47%	
State Street S&P 500 Index NL	58,469,199	12.16%	50,980,961	11.39%	
T. Rowe Price Inst Lg Cp Core Growth	62,964,456	13.10%	54,914,419	12.27%	
Vanguard Equity Income	35,645,968	7.42%	33,494,749	7.48%	
Valiguard Equity income	33,043,906	1.42 /0	55,494,749	7.40%	
Small/Mid Cap Equity	\$62,462,843	13.00%	\$58,696,570	13.11%	
GW&K Small/Mid Cap Core Equity	2,839,007	0.59%	2,457,609	0.55%	
State Street Russ Small/Mid Cap Idx	59,623,836	12.40%	56,238,961	12.56%	
Global Equity	\$15,988,703	3.33%	\$15,123,666	3.38%	
AB Global Core Equity	15,988,703	3.33%	15,123,666	3.38%	
International Equity	\$24,285,682	5.05%	\$23,273,417	5.20%	
Vanguard International Growth	24,285,682	5.05%	23,273,417	5.20%	
Domestic Fixed Income	\$25,920,487	5.39%	\$25,438,563	5.68%	
PIMCO Real Return	5,246,300	1.09%	5,100,701	1.14%	
Metropolitan West Total Return	20,674,187	4.30%	20,337,862	4.54%	
Specialty - Real Estate	\$4,782,511	1.00%	\$4,680,538	1.05%	
Vanguard Real Estate Idx Fd	4,782,511	1.00%	4,680,538	1.05%	
Voya - Mutual Funds Total	\$480,651,044	100.00%	\$447,598,413	100.00%	

#### **Asset Distribution Across Investment Funds**

The table below details the rates of return and peer group rankings for the Fund's investment funds 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.

Retu	ns and Rankings for Periods Ended March 31, 2024									
		-			Last		Last		Last	
	Last Quarter		Last Year		3 Vaara		5 Vaara		10 Xaara	
Voya - Mutual Funds	Quarter		rear		Years		Years		Years	
Money Market										
BlackRock Liquidity Fed Trust FTSE 3 Mo T-Bill Callan Money Market Funds	1.30% 1.37% 1.29%	44 22	5.22% 5.52% 5.23%	51 29	2.56% 2.70% 2.52%	40 15	1.91% 2.07% 1.90%	48 27	1.27% 1.39% 1.24%	43 26
Stable Value Invesco Stable Value Trust (1) Voya Fixed Plus Account III FTSE 3 Mo T Bill + 100bp Premium	0.76% 0.74% 1.61%	8 10 1	2.98% 3.01% 6.52%	8 7 1	2.17% 3.01% 3.70%	10 1 1	2.15% 3.01% 3.07%	10 1 1	1.92% 3.01% 2.39%	21 1 1
Callan Stable Value	0.59%		2.39%		1.77%		1.79%		1.65%	
Balanced Vanguard Wellington Wellington Composite Index (2) Callan Dom Balanced MFs	5.53% 6.59% 6.01%	66 39	16.85% 19.99% 17.16%	56 31	6.00% 6.73% 5.61%	45 15	9.02% 10.21% 8.87%	48 19	8.29% 9.29% 7.91%	32 7
Target Maturity T. Rowe Price Retirement 2015 S&P Target Date 2015 Idx Callan Tgt Dt Idx 2015 Callan Target Date 2015	4.16% 2.71% 2.76% 2.97%	5 74 73	12.66% 9.71% 9.78% 9.83%	10 58 55	2.56% 2.38% 2.09% 1.99%	22 28 42	6.27% 5.26% 5.21% 5.17%	11 42 46	5.80% 5.05% 4.93% 5.11%	16 54 67
T. Rowe Price Retirement 2020 S&P Target Date 2020 ldx Callan Tgt Dt ldx 2020 Callan Target Date 2020	4.44% 3.20% 3.07% 3.36%	8 62 70	13.28% 10.89% 10.56% 10.80%	11 46 63	2.76% 2.70% 2.40% 2.18%	24 25 38	6.75% 5.62% 5.70% 5.63%	11 51 42	6.34% 5.44% 5.42% 5.47%	12 53 54
T. Rowe Price Retirement 2025 S&P Target Date 2025 ldx Callan Tgt Dt ldx 2025 Callan Target Date 2025	4.90% 3.44% 3.60% 3.77%	5 70 58	14.62% 11.60% 12.01% 11.96%	6 63 46	3.09% 3.15% 3.01% 2.55%	18 18 20	7.46% 6.42% 6.55% 6.37%	7 45 33	6.93% 6.04% 6.10% 5.91%	8 46 39
T. Rowe Price Retirement 2030 S&P Target Date 2030 ldx Callan Tgt Dt ldx 2030 Callan Target Date 2030	5.76% 4.26% 4.43% 4.56%	4 72 61	16.81% 13.80% 14.09% 14.26%	6 65 55	3.62% 3.95% 3.82% 3.20%	26 16 23	8.27% 7.38% 7.53% 7.28%	8 40 27	7.56% 6.72% 6.84% 6.72%	8 51 38
T. Rowe Price Retirement 2035 S&P Target Date 2035 ldx Callan Tgt Dt ldx 2035 Callan Target Date 2035	6.80% 5.23% 5.33% 5.52%	8 65 58	19.27% 16.13% 16.32% 16.37%	7 60 54	4.28% 4.78% 4.73% 4.06%	36 18 19	9.12% 8.43% 8.53% 8.24%	12 33 26	8.13% 7.41% 7.53% 7.33%	12 43 33
T. Rowe Price Retirement 2040 S&P Target Date 2040 ldx Callan Tgt Dt ldx 2040 Callan Target Date 2040	7.67% 6.02% 6.14% 6.45%	10 62 61	21.34% 18.11% 18.28% 18.56%	7 59 56	4.82% 5.52% 5.49% 4.92%	55 19 20	9.84% 9.25% 9.32% 9.01%	18 39 35	8.61% 7.94% 8.06% 7.91%	12 48 38
T. Rowe Price Retirement 2045 S&P Target Date 2045 ldx CallanTgt Dt Idx 2045 Callan Target Date 2045	8.18% 6.56% 6.73% 6.96%	11 64 61	22.64% 19.39% 19.68% 19.96%	7 66 58	5.27% 6.03% 6.02% 5.51%	62 19 19	10.36% 9.76% 9.87% 9.74%	18 48 38	8.92% 8.27% 8.39% 8.22%	11 48 43
T. Rowe Price Retirement 2050 S&P Target Date 2050 ldx Callan Tgt Dt ldx 2050 Callan Target Date 2050	8.34% 6.82% 7.09% 7.26%	13 70 61	23.03% 20.05% 20.51% 20.69%	12 63 54	5.43% 6.26% 6.31% 5.68%	61 20 17	10.47% 10.01% 10.13% 9.95%	20 48 42	8.97% 8.47% 8.55% 8.43%	13 48 38
T. Rowe Price Retirement 2055 S&P Target Date 2055 ldx Callan Tgt Dt ldx 2055 Callan Target Date 2055	8.41% 6.84% 7.26% 7.48%	13 74 59	23.22% 20.09% 20.89% 21.12%	13 67 55	5.41% 6.30% 6.44% 5.78%	68 22 14	10.44% 10.08% 10.25% 10.08%	29 50 41	8.94% 8.54% 8.63% 8.52%	20 48 37
T. Rowe Price Retirement 2060 S&P Target Date 2060 ldx Callan Tgt Dt ldx 2060 Callan Target Date 2060	8.40% 6.85% 7.33% 7.55%	15 80 61	23.16% 20.18% 21.03% 21.29%	17 64 54	5.40% 6.30% 6.49% 5.79%	69 22 14	10.44% 10.11% 10.30% 10.10%	35 50 42	- 8.60% 8.65% 8.52%	31 26
T. Rowe Price Retirement 2065 S&P Target Date 2065 Callan Tgt Dt Idx 2065 Callan Target Date 2065	8.46% 7.00% 7.35% 7.67%	16 73 68	23.20% 20.51% 21.07% 21.61%	18 66 59	6.44% 6.50% 5.73%	23 16	10.20% 10.31% 10.09%	46 41	- - 8.66% -	

Inception 4Q2020; returns prior to 4Q2020 are that of Invesco Stable Value Trust Composite.
 Wellington Composite Index is 65% S&P 500 Index and 35% Bloomberg Creidt A or better.

The table below details the rates of return and peer group rankings for the Fund's investment funds 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.

Deturne and Denkings for Deviade Ended March 21, 2024

Returns and Rankings for Periods Ended March 31, 2024											
	Last Quarter		Last Year		Last 3 Years		Last 5 Years		Last 10 Years		
Voya - Mutual Funds											
Domestic Equity											
Large Cap Equity											
American Funds Fndmntl Investors	11.58%	46	32.86%	45	10.79%	38	13.78%	52	12.17%	49	
S&P 500 Index	10.56%	60	29.88%	54	11.49%	26	15.05%	40	12.96%	41	
State Street S&P 500 Index Fd (1)	10.55%	60	29.87%	54	11.47%	26	15.03%	40	12.94%	41	
S&P 500 Index	10.56%	60	29.88%	54	11.49%	26	15.05%	40	12.96%	41	
Callan Lg Cap Broad MF	11.25%		31.41%		9.95%		14.09%		12.12%		
Vanguard Equity Income Fd	7.81%	76	18.68%	73	9.87%	45	11.17%	55	10.27%	21	
Vanguard Spl Equity Inc Index (2)	9.10%	52	18.43%	74	9.62%	47	10.67%	65	10.18%	22	
Callan Lg Cap Value MF	9.55%		21.90%		9.42%		11.35%		9.19%		
T. Rowe Price Inst Lg-Cp Core Gr (3)	14.08%	31	46.57%	15	7.17%	80	13.31%	85	14.18%	58	
Russell 1000 Growth Index	11.41%	71	39.00%	59	12.50%	3	18.52%	8	15.98%	7	
Callan Large Cap Grwth MF	12.81%		40.21%		9.64%		15.89%		14.38%		
Small/Mid Cap Equity											
GW&K Small/Mid Cap Core Eq (4)	9.30%	15	21.00%	44	5.76%	40	12.92%	11	9.93%	18	
Russell 2500 Index	6.92%	74	21.43%	43	2.97%	70	9.90%	60	8.84%	38	
State Street Russ Sm/Md Cap Idx (5)	7.25%	65	26.52%	12	1.59%	86	10.49%	47	9.22%	25	
Russell Sm Cap Completion Index	7.22%	65	26.39%	12	1.54%	86	10.51%	47	9.25%	25	
Callan SMID Core MFs	7.91%		20.20%		5.32%		10.25%		8.40%		
Global Equity											
AB Global Core Equity (6)	5.78%	79	16.87%	75	4.06%	67	8.94%	62	-		
MSCI ACWI Fund	8.20%	44	23.22%	40	6.96%	26	10.92%	46	8.66%	57	
Callan Global Equity MFs	7.98%		22.42%		5.34%		10.48%		8.88%		
International Equity											
Vanguard International Growth	5.28%	43	7.45%	93	(5.68%)	95	8.70%	20	7.73%	5	
Vanguard Spl Intl Growth Index (7)	4.69%	54	13.26%	54	1.94%	73	5.97%	79	4.25%	68	
MSČI EAFE	5.78%	36	15.32%	26	4.78%	25	7.33%	48	4.80%	44	
Callan Intl Eq Dev Mkt MF	4.85%		13.33%		3.30%		7.20%		4.59%		
Domestic Fixed Income											
PIMCO Real Return	0.33%	37	1.05%	46	(0.59%)	51	2.63%	47	2.18%	24	
Blmbg US TIPS	(0.08%)	73	0.45%	52	(0.53%)	47	2.49%	52	2.21%	21	
Lipper TIPS Funds	0.05%		0.60%		(0.58%)		2.53%		2.03%		
Metropolitan West Total Return	(0.85%)	92	1.45%	89	(3.02%)	90	0.42%	84	1.56%	90	
Blmbg Aggregate	(0.78%)	90	1.70%	82	(2.46%)	69	0.36%	87	1.54%	91	
Callan Core Plus MFs	(0.28%)		2.87%		(2.04%)		0.91%		2.00%	0.	
Real Estate											
Vanguard Real Estate Idx Fd	(1.18%)	61	8.54%	52	1.74%	74	3.71%	54	6.22%	57	
Vanguard Spl REIT Index (8)	(1.15%)	58	8.68%	45	1.87%	66	3.83%	49	6.33%	49	
NCREIF Total Index	(0.98%)	47	(7.16%)	100	3.63%	13	3.76%	52	6.41%	46	
	(1.06%)								6.30%		

(1) Inception 4Q2020; returns prior to 4Q2020 are that of the State Street S&P 500 Index NL Class K.

(2) Russell 1000 Value Index through July 31, 2007; FTSE High Dividend Yield Index thereafter.

(3) Inception 4Q2020; Returns are that of the T. Rowe Price Inst. Large Cap Core Growth Mutual Fund.

(4) Inception 4Q2020; returns prior to 4Q2020 are that of the GW&K Small MidCap Core Equity CIT Class A.

(5) Inception 4Q2020; returns prior to 4Q2020 are that of the State Street Russell SMID NL Class K CIT.

(6) Inception 4Q2020; Returns are that of the AB Global Core Equity Commingled Fund.

(7) MSCI EAFE Index through May 31, 2010; MSCI All Country World Index ex USA thereafter.

(8) MSCI REIT through 1/31/18; then MSCI US IMI Real Estate 25/50 Transition through 7/31/18; then MSCI US IMI Real Estate 25/50 thereafter.



# Voya: Mutual Fund Fees and Expenses

Fund	Vehicle Type (MF, CIT, Ann Fd)	Gross Investment Expenses (inclusive of all other expenses, e.g., 12b-1 fees, management fees, etc.) (bps)	Fee Rebates or Waivers Revenue Sharing (credited back to participants to offset TPA fees) (bps)	Net Expense Ratio (bps)
AB Global Core Equity Port P1	СІТ	75	0	75
American Funds® Fundamental Investors® - Class R-6	Mutual Fund	28	0	28
BlackRock Liquidity Federal Trust Fund - Inst Shares	Mutual Fund	23	6	17
GW&K Sm Md Cp Cr Eq Coll Inv I	СІТ	65	0	65
nvesco Stable Value Trust C	CIT	26	0	26
Netropolitan West Total Return Bond Fund - Class I Shares	Mutual Fund	45	10	35
PIMCO Real Return Fund - Institutional Class	Mutual Fund	67	0	67
State Street Russ Small/Mid Cp Ind NL Fd K	CIT	4	0	4
State Street S&P 500 Index NL Fd K	CIT	1	0	1
Rowe Prc Inst LgCp Core Grw	Mutual Fund	56	0	56
. Rowe Price Retirement 2015 Fund	Mutual Fund	50	15	35
. Rowe Price Retirement 2020 Fund	Mutual Fund	53	15	38
. Rowe Price Retirement 2025 Fund	Mutual Fund	54	15	39
Rowe Price Retirement 2030 Fund	Mutual Fund	57	15	42
. Rowe Price Retirement 2035 Fund	Mutual Fund	59	15	44
. Rowe Price Retirement 2040 Fund	Mutual Fund	60	15	45
. Rowe Price Retirement 2045 Fund	Mutual Fund	62	15	47
. Rowe Price Retirement 2050 Fund	Mutual Fund	63	15	48
. Rowe Price Retirement 2055 Fund	Mutual Fund	64	15	49
. Rowe Price Retirement 2060 Fund	Mutual Fund	64	15	49
. Rowe Price Retirement 2065 Fund	Mutual Fund	64	15	49
angrd Equity Income Fund Adm	Mutual Fund	19	0	19
anguard® International Growth Fund - Admiral Shares	Mutual Fund	31	0	31
anguard® REIT Index Fund - Admiral Shares	Mutual Fund	12	0	12
anguard® Wellington Fund - Admiral Shares	Mutual Fund	17	0	17

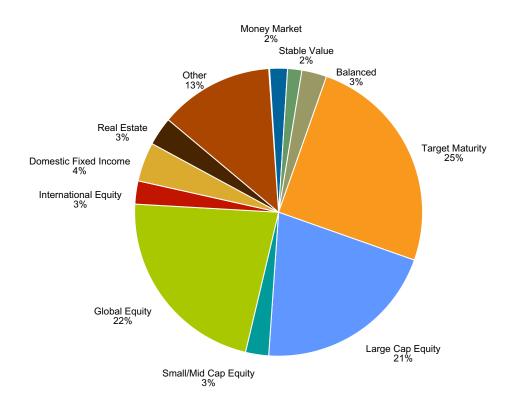
## Summary of Record Keeping Cost Paid by Participants to Retirement Provider

Annual Record Keeping Fee Paid by Participant	\$82
Total Number of Participants with this Provider	2,776
Total Amount Paid to Service Provider (quarterly estimate)	\$56,908
Optional Fee for In Plan Guidance	0.25%

Represents all fees charged to participants

# Actual Asset Allocation As of March 31, 2024

The chart below shows the Fund's asset allocation as of March 31, 2024.



## **Actual Asset Allocation**

Asset Class	\$000s Actual	Weight Actual
Money Market	19.405	2.0%
Stable Value	16,227	1.6%
Balanced	28,056	2.8%
Target Maturity	247,718	25.0%
Large Cap Equity	204,681	20.7%
Small/Mid Cap Equity	25,754	2.6%
Global Equity	219,378	22.2%
International Equity	25,932	2.6%
Domestic Fixed Income	43,623	4.4%
Real Estate	31,584	3.2%
Other	127,134	12.8%
Total	989,492	100.0%

# **Investment Fund Balances**

The table below compares the fund's investment fund balances as of March 31, 2024 with that of December 31, 2023.

	March 31, 2024		December 31, 2023		
	Market Value	Weight	Market Value	Weight	
Money Market	\$19.404.566	1.96%	\$18.648.439	2.02%	
CREF Money Market*	13,684,951	1.38%	13,279,988	1.44%	
Vanguard Federal Money Mkt Fd	5,719,615	0.58%	5,368,451	0.58%	
	-,,	,-	-,,		
Stable Value	\$16,227,233	1.64%	\$15,016,737	1.63%	
Invesco Stable Value Trust C	16,227,233	1.64%	15,016,737	1.63%	
Palanaad	\$28 DEC 427	2.84%	¢05 006 400	2.74%	
Balanced	\$28,056,437		\$25,286,183		
CREF Social Choice*	28,056,437	2.84%	25,286,183	2.74%	
Carget Maturity	\$247,717,766	25.03%	\$228,277,172	24.74%	
TIAA Lifecycle Retirement Inc	383,863	0.04%	360,324	0.04%	
TIAA Lifecycle 2010 Fund	2,554,013	0.26%	2,542,946	0.28%	
TIAA Lifecycle 2015 Fund	2,808,702	0.28%	2,788,476	0.30%	
TIAA Lifecycle 2020 Fund	8,280,560	0.84%	7,894,226	0.86%	
TIAA Lifecycle 2020 Fund		1.56%		1.63%	
	15,454,065		15,020,838		
TIAA Lifecycle 2030 Fund	15,596,632	1.58%	14,923,202	1.62%	
TIAA Lifecycle 2035 Fund	32,361,236	3.27%	30,556,448	3.31%	
TIAA Lifecycle 2040 Fund	40,566,435	4.10%	37,283,835	4.04%	
TIAA Lifecycle 2045 Fund	59,468,650	6.01%	54,376,114	5.89%	
TIAA Lifecycle 2050 Fund	44,964,363	4.54%	40,164,275	4.35%	
TIAA Lifecycle 2055 Fund	19,782,677	2.00%	17,727,211	1.92%	
TIAA Lifecycle 2060 Fund	5,002,770	0.51%	4,275,643	0.46%	
TIAA Lifecycle 2065 Fund	493,801	0.05%	363,633	0.04%	
Domestic Equity	\$204,680,899	20.69%	\$183,984,002	19.94%	
	+;;		+		
_arge Cap Equity	\$204,680,899	20.69%	\$183,984,002	19.94%	
CREF Equity Index*	68.211.552	6.89%	62.089.547	6.73%	
CREF Growth*	95,122,725	9.61%	85,982,071	9.32%	
Eaton Vance Large Cap Value	13,735,543	1.39%	13,042,932	1.41%	
State Str S&P 500 Idx NonLen K	27,611,078	2.79%	22,869,452	2.48%	
State Sti S&F 500 ldx NonLen K	27,011,070	2.1 5 /0	22,009,432	2.40 %	
Small/Mid Cap Equity	\$25,754,100	2.60%	\$24,190,804	2.62%	
GW&K Small/Md Cp Core Equity I	6,212,710	0.63%	5,667,621	0.61%	
State Str Russ SmMd Idx NoLe K	19,541,390	1.97%	18,523,182	2.01%	
Global Equity	\$219,377,834	22.17%	\$201,879,402	21.88%	
CREF Stock*	160,838,327	16.25%	147,798,938	16.02%	
CREF Global Equities*	58,539,507	5.92%	54,080,464	5.86%	
nternetienel Exuity	¢25 022 050	2.62%	¢24 405 427	2 6 2 9 /	
International Equity	\$25,932,256		<b>\$24,195,437</b>	2.62%	
American Funds EuroPacific Growth	25,932,256	2.62%	24,195,437	2.62%	
Domestic Fixed Income	\$43,622,679	4.41%	\$42,691,168	4.63%	
CREF Core Bond Market*	19,350,904	1.96%	19.163.529	2.08%	
CREF Inflation-Linked Bond*	19,291,976	1.95%	19,040,529	2.06%	
John Hancock PI Fix Inc Trust	4,979,799	0.50%	4,487,110	0.49%	
JOINT FIGHCOUR FTT IA INC THUSL	4,575,799	0.50%	4,407,110	0.49%	
Real Estate	\$31,584,033	3.19%	\$32,477,802	3.52%	
TIAA Real Estate	31,584,033	3.19%	32,477,802	3.52%	
<b>-</b> //		10.05%		10.055	
Other	\$127,133,962	12.85%	\$126,229,864	13.68%	
			1.76 7.70 864	1.7 68%	
TIAA Traditional Annuity	127,133,962	12.85%	126,229,864	13.68%	

## **Asset Distribution Across Investment Funds**

\*1Q2021 CREF Funds changed from R2 Share Class to R3 Share Class.

## **Investment Fund Returns and Peer Group Rankings**

The table below details the rates of return and peer group rankings for the Fund's investment funds 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.

Returns and R	ankings for	Periods	Ended	March 31.	2024

	Last Quarter		Last Year		Last 3 Years		Last 5 Years		Last 10 Years	
Money Market CREF Money Market* Vanguard Federal Money Fund (1) FTSE 3 Mo T-Bill Callan Money Market Funds	1.29% 1.32% 1.37% 1.29%	48 31 22	5.19% 5.32% 5.52% 5.23%	58 40 29	2.48% 2.64% 2.70% 2.52%	59 23 15	1.85% 1.98% 2.07% 1.90%	63 35 27	1.16% 1.34% 1.39% 1.24%	77 31 26
Stable Value Invesco Stable Value Trust (2) FTSE 3 Mo T Bill + 100bp Premium Callan Stable Value	0.67% 1.61% 0.59%	18 1	2.62% 6.52% 2.39%	18 1	1.81% 3.70% 1.77%	46 1	1.90% 3.07% 1.79%	39 1	1.79% 2.39% 1.65%	25 1
Balanced CREF Social Choice* TIAA Social Choice Benchmark (3) Callan Dom Balanced MFs	4.98% 4.85% 6.01%	79 80	14.56% 15.27% 17.16%	68 66	3.89% 4.12% 5.61%	82 81	7.66% 7.71% 8.87%	75 74	6.72% 7.03% 7.91%	74 70
<b>Target Maturity</b> TIAA Lifecycle Retirement Inc CAI Tgt Dt Idx 2000 Callan Tgt Date Ret Inc	3.37% 2.41% 2.62%	25 59	10.35% 8.91% 9.01%	25 56	2.05% 1.77% 1.47%	21 37	5.17% 4.63% 4.39%	15 34	4.96% 4.36% 4.12%	8 25
TIAA Lifecycle 2010 Fund CAI Tgt Dt ldx 2010 Callan Target Date 2010	3.17% 2.58% 2.58%	21 51	10.31% 9.31% 8.84%	20 43	2.03% 1.91% 1.80%	33 46	5.19% 4.91% 4.83%	29 38	5.08% 4.65% 4.73%	24 55
TIAA Lifecycle 2015 Fund CAI Tgt Dt Idx 2015 Callan Target Date 2015	3.54% 2.76% 2.97%	14 73	10.82% 9.78% 9.83%	16 55	2.17% 2.09% 1.99%	40 42	5.53% 5.21% 5.17%	34 46	5.40% 4.93% 5.11%	29 67
TIAA Lifecycle 2020 Fund CAI Tgt Dt Idx 2020 Callan Target Date 2020	3.95% 3.07% 3.36%	17 70	11.85% 10.56% 10.80%	20 63	2.46% 2.40% 2.18%	33 38	5.96% 5.70% 5.63%	28 42	5.80% 5.42% 5.47%	26 54
TIAA Lifecycle 2025 Fund CAI Tgt Dt ldx 2025 Callan Target Date 2025	4.41% 3.60% 3.77%	16 58	13.20% 12.01% 11.96%	11 46	2.86% 3.01% 2.55%	26 20	6.68% 6.55% 6.37%	21 33	6.34% 6.10% 5.91%	18 39
TIAA Lifecycle 2030 Fund CAI Tgt Dt ldx 2030 Callan Target Date 2030	5.23% 4.43% 4.56%	16 61	15.08% 14.09% 14.26%	21 55	3.49% 3.82% 3.20%	31 23	7.50% 7.53% 7.28%	30 27	6.93% 6.84% 6.72%	25 38
TIAA Lifecycle 2035 Fund CAI Tgt Dt Idx 2035 Callan Target Date 2035	6.08% 5.33% 5.52%	20 58	17.24% 16.32% 16.37%	31 54	4.20% 4.73% 4.06%	41 19	8.39% 8.53% 8.24%	35 26	7.54% 7.53% 7.33%	33 33
TIAA Lifecycle 2040 Fund CAI Tgt Dt Idx 2040 Callan Target Date 2040	7.08% 6.14% 6.45%	22 61	19.83% 18.28% 18.56%	23 56	5.13% 5.49% 4.92%	37 20	9.40% 9.32% 9.01%	31 35	8.18% 8.06% 7.91%	31 38
TIAA Lifecycle 2045 Fund CAI Tgt Dt Idx 2045 Callan Target Date 2045	7.87% 6.73% 6.96%	16 61	21.56% 19.68% 19.96%	20 58	5.67% 6.02% 5.51%	33 19	10.14% 9.87% 9.74%	28 38	8.63% 8.39% 8.22%	25 43
TIAA Lifecycle 2050 Fund CAI Tgt Dt Idx 2050 Callan Target Date 2050	8.18% 7.09% 7.26%	19 61	22.43% 20.51% 20.69%	19 54	5.89% 6.31% 5.68%	36 17	10.38% 10.13% 9.95%	27 42	8.78% 8.55% 8.43%	19 38
TIAA Lifecycle 2055 Fund CAI Tgt Dt Idx 2055 Callan Target Date 2055	8.30% 7.26% 7.48%	17 59	22.65% 20.89% 21.12%	21 55	5.97% 6.44% 5.78%	39 14	10.48% 10.25% 10.08%	25 41	8.86% 8.63% 8.52%	21 37
TIAA Lifecycle 2060 Fund Callan Tgt Dt ldx 2060 Callan Target Date 2060	8.33% 7.33% 7.55%	17 61	22.88% 21.03% 21.29%	22 54	6.07% 6.49% 5.79%	34 14	10.61% 10.30% 10.10%	25 42	8.65% 8.52%	26
TIAA Lifecycle 2065 Fund Callan Tgt Dt ldx 2065 Callan Target Date 2065	8.54% 7.35% 7.67%	13 68	23.15% 21.07% 21.61%	19 59	- 6.50% 5.73%	16	- 10.31% 10.09%	41	8.66% -	

\*1Q2021 CREF Funds changed from R2 Share Class to R3 Share Class.
(1) Inception 1Q2021; returns prior to 1Q2021 are that of the Vanguard Federal Money Market Fund Inv Mutual Fund.
(2) Inception 1Q2021; returns prior to 1Q2021 are that of the Invesco Stable Value Trust Composite.
(3) TIAA Social Choice Benchmark: 60% S&P 500 and 40% Blmbg Agg through July 1, 2002. 60% Russell 3000 and 40% Blmbg Agg through April 1, 2008. 47% Russell 3000, 40% Blmbg Agg and 13% MSCI EAFE+Canada Index through December 31, 2018.
42% Russell 3000, 40% Blmbg Agg and 18% MSCI EAFE+Canada Index currently.

## **Investment Fund Returns and Peer Group Rankings**

The table below details the rates of return and peer group rankings for the Fund's investment funds 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.

Return	s and Ranking	gs for	Periods E	nded	March 31,	2024				
	Last Quarter		Last Year		Last 3 Years		Last 5 Years		Last 10 Years	
Domestic Equity										
Large Cap Equity CREF Equity Index* Russell 3000 Index Callan Lg Cap Broad MF	9.95% 10.02% 11.25%	65 64	29.07% 29.29% 31.41%	56 55	9.65% 9.78% 9.95%	55 55	14.15% 14.34% 14.09%	49 46	12.07% 12.33% 12.12%	51 47
CREF Growth* Russell 1000 Growth Index Callan Large Cap Grwth MF	13.33% 11.41% 12.81%	41 71	43.71% 39.00% 40.21%	30 59	9.93% 12.50% 9.64%	49 3	16.40% 18.52% 15.89%	42 8	14.81% 15.98% 14.38%	35 7
Eaton Vance Large Cap Value Russell 1000 Value Index Callan Lg Cap Value MF	7.92% 8.99% 9.55%	73 55	18.14% 20.27% 21.90%	80 63	8.48% 8.11% 9.42%	57 74	10.90% 10.32% 11.35%	63 69	9.14% 9.01% 9.19%	57 61
State ST S&P 500 Index Fund (1) S&P 500 Index Callan Lg Cap Broad MF	10.55% 10.56% 11.25%	60 60	29.87% 29.88% 31.41%	54 54	11.47% 11.49% 9.95%	26 26	15.03% 15.05% 14.09%	40 40	12.94% 12.96% 12.12%	41 41
Small/Mid Cap Equity GW&K Small/Mid Cap Core Eq (2) Russell 2500 Index Callan SMID Core MFs	9.30% 6.92% 7.91%	15 74	21.00% 21.43% 20.20%	44 43	5.76% 2.97% 5.32%	40 70	12.92% 9.90% 10.25%	11 60	9.93% 8.84% 8.40%	18 38
State Str Russ Small/Mid Cap Idx (3) Russell Small Cap Completion Index Callan SMID Core MFs	7.25% 7.22% 7.91%	65 65	26.52% 26.39% 20.20%	12 12	1.59% 1.54% 5.32%	86 86	10.49% 10.51% 10.25%	47 47	9.22% 9.25% 8.40%	25 25
Global Equity CREF Stock* CRREF Stock Benchmark (4) Russell 3000 Index Callan Global Equity MFs	8.46% 8.31% 10.02% 7.98%	35 38 29	24.08% 24.32% 29.29% 22.42%	36 35 23	6.84% 7.37% 9.78% 5.34%	27 17 4	11.28% 11.83% 14.34% 10.48%	42 35 6	9.35% 9.93% 12.33% 8.88%	42 35 6
CREF Global Equities* MSCI ACWI Index Callan Global Equity MFs	9.47% 8.20% 7.98%	30 44	26.03% 23.22% 22.42%	31 40	7.36% 6.96% 5.34%	17 26	12.13% 10.92% 10.48%	30 46	9.05% 8.66% 8.88%	46 57
Inernational Equity American Funds EuroPacific Growth MSCI ACWI x US (Net) Callan Intl Eq Dev Mkt MF	7.44% 4.69% 4.85%	16 54	13.49% 13.26% 13.33%	49 54	<mark>(0.16%)</mark> 1.94% 3.30%	87 73	6.91% 5.97% 7.20%	54 79	5.58% 4.25% 4.59%	15 68
Domestic Fixed Income CREF Core Bond Market* Blmbg Aggregate Callan Core Bond MFs	(0.08%) (0.78%) (0.48%)	8 88	2.89% 1.70% 2.25%	17 75	(2.06%) (2.46%) (2.42%)	16 58	0.74% 0.36% 0.70%	49 89	1.79% 1.54% 1.73%	37 79
JHancock Core Plus Fixed Inc (5) Blmbg Aggregate Callan Core Bond MFs	0.00% (0.78%) (0.48%)	6 88	3.19% 1.70% 2.25%	8 75	(1.98%) (2.46%) (2.42%)	14 58	- 0.36% 0.70%	89	- 1.54% 1.73%	79
CREF Inflation-Linked Bond* Blmbg US TIPS 1-10 Yr Lipper TIPS Funds	0.48% 0.26% 0.04%	33 39	2.24% 1.65% 0.60%	31 40	1.24% 0.80% (0.63%)	30 33	3.05% 2.96% 2.43%	20 24	2.26% 2.23% 1.91%	12 12
Real Estate TIAA Real Estate NCREIF Total Index Callan OE Core Cmngld RE	(2.65%) (0.98%) (1.80%)	88 22	(13.84%) (7.16%) (9.67%)	78 37	1.61% 3.63% 3.01%	79 41	1.98% 3.76% 3.38%	86 45	4.36% 6.41% 6.35%	89 46
Other TIAA Traditional Annuity 5 Yr US Treas Rolling Callan Stable Value	1.12% 0.53% 0.72%	1 99	4.64% 2.01% 2.88%	1 98	4.03% 1.75% 2.26%	1 94	3.91% 1.75% 2.34%	1 95	3.87% 1.58% 2.19%	1 96

\*1Q2021 CREF Funds changed from R2 Share Class to R3 Share Class. Returns prior to 1Q2021 are R2 Share Class.
(1) Inception 1Q2021; returns prior to 1Q2021 are that of the State Street S&P 500 Index NL Class K.
(2) Inception 1Q2021; returns prior to 1Q2021 are that of the GW&K Small/Mid Cap Core Equity CIT Class A.
(3) Inception 1Q2021; returns prior to 1Q2021 are that of the State Street Russell SMID NL Class K CIT.
(4) TIAA Stock Benchmark: 70% Russell 3000 Index, 24% MSCI EAFE + Canada Index, 6% MSCI Emerging Mkts Idx through 6/30/11 and 70% Russell 3000 Index, 30% MSCI ACWI ex-US IMI Index thereafter
(5) Inception 1Q2021; returns prior to 1Q2021 are that of the Manulife Core Fixed Income CIT Composite.



# **TIAA: Fund Fees and Expenses**

Fund	Investment Vehicle Type (Variable Annuity Fund or Mutual Fund)	Gross Investment Expenses (inclusive of all other expenses, 12b-1 fees, management fees) (bps)	Expense reimbursements, fee rebates, waivers or revenue sharing waived or credited back to offset participant investment fees (bps)	Net Investment Expense charged to participants by Variable Annuity Fund or Mutual Fund (bps)	Net Recordkeeping Fee Separate Account or Mortality & Expense Charge (M&E) charged by Retirement Provider (bps)	Total Annual Fees Paid by Participants (Net Investment Expense + Net Record keeping Fee) (bps)
American EuroPac Growth R6	Mutual Fund	47.0	0.0	47.0	0.0	47.0
CREF Core Bond R3	Annuity Fund	23.0	10.0	13.0	0.0	13.0
CREF Equity Index R3	Annuity Fund	17.0	10.0	7.0	0.0	7.0
CREF Global Equities R3	Annuity Fund	25.0	10.0	15.0	0.0	15.0
CREF Growth R3	Annuity Fund	21.5	10.0	11.5	0.0	11.5
CREF Inflation-Linked Bond R3	Annuity Fund	18.5	10.0	8.5	0.0	8.5
CREF Money Market R3	Annuity Fund	18.0	10.0	8.0	0.0	8.0
CREF Social Choice R3	Annuity Fund	20.5	10.0	10.5	0.0	10.5
CREF Stock R3	Annuity Fund	25.5	10.0	15.5	0.0	15.5
Eaton Vance Large Cap Value I	Mutual Fund	77.0	15.0	62.0	0.0	62.0
GW&K Small/Md Cp Core Equity I	CIT	65.0	0.0	65.0	0.0	65.0
Invesco Stable Value Trust C	CIT	18.0	0.0	18.0	0.0	18.0
John Hancock PI Fix Inc Trust	CIT	23.0	0.0	23.0	0.0	23.0
State Str Russ SmMd ldx NoLe K	CIT	4.0	0.0	4.0	0.0	4.0
State Str S&P 500 ldx NonLen K	CIT	1.3	0.0	1.3	0.0	1.3
TIAA Real Estate	Annuity Fund	87.0	24.0	63.0	0.0	63.0
TIAA Traditional	Annuity Fund *	0.0	0.0	0.0	0.0	0.0
TIAA-CREF Licyle Rtmt Inc-Inst	Mutual Fund	37.0	0.0	37.0	0.0	37.0
TIAA-CREF Lifecycle 2010-Inst	Mutual Fund	37.0	0.0	37.0	0.0	37.0
TIAA-CREF Lifecycle 2015-Inst	Mutual Fund	38.0	0.0	38.0	0.0	38.0
TIAA-CREF Lifecycle 2020-Inst	Mutual Fund	39.0	0.0	39.0	0.0	39.0
TIAA-CREF Lifecycle 2025-Inst	Mutual Fund	41.0	0.0	41.0	0.0	41.0
TIAA-CREF Lifecycle 2030-Inst	Mutual Fund	42.0	0.0	42.0	0.0	42.0
TIAA-CREF Lifecycle 2035-Inst	Mutual Fund	43.0	0.0	43.0	0.0	43.0
TIAA-CREF Lifecycle 2040-Inst	Mutual Fund	44.0	0.0	44.0	0.0	44.0
TIAA-CREF Lifecycle 2045-Inst	Mutual Fund	45.0	0.0	45.0	0.0	45.0
TIAA-CREF Lifecycle 2050-Inst	Mutual Fund	45.0	0.0	45.0	0.0	45.0
TIAA-CREF Lifecycle 2055-Inst	Mutual Fund	45.0	0.0	45.0	0.0	45.0
TIAA-CREF Lifecycle 2060-Inst	Mutual Fund	45.0	0.0	45.0	0.0	45.0
TIAA-CREF Lifecycle 2065-Inst	Mutual Fund	45.0	0.0	45.0	0.0	45.0
Vanguard Federal Money Mkt Inv	Mutual Fund	11.0	0.0	11.0	0.0	11.0

\* The TIAA Traditional Annuity is not an investment for purposes of federal securities laws; it is a guaranteed insurance contract. Therefore, unlike a variable annuity or mutual lund, the TIAA Traditional Annuity for mutual lund, the TIAA Traditional Annuity is not an investment for purposes of federal securities laws; it is a guaranteed insurance contract. Therefore, unlike a variable annuity or mutual lund, the TIAA Traditional Annuity for mutual lund, the TIAA Traditional Annuity provides a guaranteed of the TIAA Traditional Annuity provides a guaranteed insurance contract. Therefore, unlike a variable annuity or mutual lund, the TIAA Traditional Annuity provides a guarantee of principal, a guaranteed insurance contract. Therefore, unlike a variable annuity of mutual lund, the TIAA Traditional Annuity, there is the free termining provides a guarantee of principal, a guaranteed insurance and the potential braditional amounts of interest when declared by TIAA's Board of Trustees. Additional amounts, when declared, remain in effect for the "declaration year" that begins each March 1 for accumulating annuities and January 1 for lifetime provides a guarantee of the titure years.

1Q2021 CREF Funds changed from R2 Share Class to R3 Share Class.

Callan

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# Education

1st Quarter 2024

# **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 to see all of our publications, and www.callan.com/blog to view our blog. For more information contact Barb Gerraty at 415-274-3093 / 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**

<u>SEC Releases Final Climate Disclosure Rule</u> | 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.

<u>A Strong Finish to 2023 Bodes Well for Hedge Funds in 2024</u> | 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

<u>Market Pulse</u>, 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<sup>™</sup>, 4Q23 | Tracks the performance and asset allocation of available target date mutual funds and CITs

<u>Callan DC Index™, 4Q23</u> | 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.

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

# **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



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, break-fast 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



"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



Disclosures

# Callan

# 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	Manager Name
abrdn	Audax Private Debt
Acadian Asset Management LLC	AXA Investment Managers
Adams Street Partners, LLC	Baillie Gifford International, LLC
Aegon Asset Management	Baird Advisors
AllianceBernstein	Barings LLC
Allspring Global Investments, LLC	Baron Capital Management, Inc.
Altrinsic Global Advisors, LLC	Barrow, Hanley, Mewhinney & Strauss, LLC
American Century Investments	Belle Haven Investment L.P.
Amundi US, Inc.	BentallGreenOak
ntares Capital LP	Beutel, Goodman & Company Ltd.
pollo Global Management, Inc.	Black Creek Investment Management Inc.
AQR Capital Management	BlackRock
Ares Management LLC	Blackstone Group (The)
RGA Investment Management, LP	Blue Owl Capital, Inc.
Ariel Investments, LLC	BNY Mellon Asset Management
Aristotle Capital Management, LLC	Boston Partners
rtemis Real Estate Partners	Brandes Investment Partners, L.P.
tlanta Capital Management Co., LLC	Brandywine Global Investment Management, LL

#### Manager Name Manager Name Brookfield Asset Management Inc. Heitman LLC Hotchkis & Wiley Capital Management, LLC Brown Brothers Harriman & Company Brown Investment Advisory & Trust Company HPS Investment Partners, LLC Capital Group **IFM Investors** CastleArk Management, LLC Impax Asset Management LLC Cercano Management LLC Income Research + Management CIBC Asset Management Inc. Insight Investment CIM Group, LP Intercontinental Real Estate Corporation **Clarion Partners** Invesco ClearBridge Investments, LLC J.P. Morgan Cohen & Steers Capital Management, Inc. Janus Jennison Associates LLC Columbia Threadneedle Investments NA **Comvest Partners** Jensen Investment Management CQS Jobs Peak Advisors Crescent Capital Group LP Kayne Anderson Rudnick Investment Management, LLC Dana Investment Advisors, Inc. King Street Capital Management, L.P. D.E. Shaw Investment Management, LLC Kohlberg Kravis Roberts & Co. L.P. (KKR) DePrince, Race & Zollo, Inc. Lazard Asset Management Diamond Hill Capital Management, Inc. LGIM America Dimensional Fund Advisors L.P. Lincoln National Corporation Doubleline Longview Partners DWS Loomis, Sayles & Company, L.P. EARNEST Partners, LLC Lord, Abbett & Company Fayez Sarofim & Company Los Angeles Capital Management Federated Hermes, Inc. LSV Asset Management Fidelity Institutional Asset Management MacKay Shields LLC Fiera Capital Corporation Macquarie Asset Management First Eagle Investment Management, LLC Manulife Investment Management First Hawaiian Bank Wealth Management Division Marathon Asset Management, L.P. **Fisher Investments** Mawer Investment Management Ltd. Franklin Templeton MetLife Investment Management Fred Alger Management, LLC MFS Investment Management GAMCO Investors, Inc. Mondrian Investment Partners Limited GlobeFlex Capital, L.P. Montag & Caldwell, LLC **Goldman Sachs** Morgan Stanley Investment Management MUFG Bank, Ltd. **Golub** Capital GW&K Investment Management Natixis Investment Managers Harbor Capital Group Trust Neuberger Berman Hardman Johnston Global Advisors LLC Newton Investment Management Haven Global Partners, LLC Northern Trust Asset Management

#### Manager Name Manager Name Nuveen Segall Bryant & Hamill Oaktree Capital Management, L.P. SLC Management **Orbis Investment Management Limited** Sprucegrove Investment Management Ltd. P/E Investments Star Mountain Capital, LLC Pacific Investment Management Company State Street Global Advisors Parametric Portfolio Associates LLC Strategic Global Advisors, LLC Parnassus Investments T. Rowe Price Associates, Inc. Partners Group (USA) Inc. TA Realty Pathway Capital Management, LP **TD Global Investment Solutions** Peregrine Capital Management, LLC The TCW Group, Inc. **PGIM DC Solutions** Thompson, Siegel & Walmsley LLC **PGIM Fixed Income TPG Angelo Gordon** PGIM Quantitative Solutions LLC **UBS Asset Management** Pictet Asset Management VanEck Versus Capital Group **PineBridge Investments** Polen Capital Management, LLC Victory Capital Management Inc. PPM America, Inc. Virtus Investment Partners, Inc. Pretium Partners, LLC Vontobel Asset Management Principal Asset Management Voya Pzena Investment Management, LLC Walter Scott & Partners Limited **Raymond James Investment Management** WCM Investment Management **RBC Global Asset Management** Wellington Management Company LLP **Regions Financial Corporation** Western Asset Management Company LLC S&P Dow Jones Indices Westfield Capital Management Company, LP Sands Capital Management William Blair & Company LLC Schroder Investment Management North America Inc. Xponance, Inc.

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Callan's performance, market value, and, if applicable, liability calculations are inherently estimates based on data available at the time each calculation is performed and may later be determined to be incorrect or require subsequent material adjustment due to many variables including, but not limited to, reliance on third party data, differences in calculation methodology, presence of illiquid assets, the timing and magnitude of unrecognized cash flows, and other data/assumptions needed to prepare such estimated calculations. In no event should the performance measurement and reporting services provided by Callan be used in the calculation, deliberation, policy determination, or any other action of the client as it pertains to determining amounts, timing or activity of contribution levels or funding amounts, rebalancing activity, benefit payments, distribution amounts, and/or performance-based fee amounts, unless the client understands and accepts the inherent limitations of Callan's estimated performance, market value, and liability calculations.

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.

Callan's performance measurement service may report on illiquid asset classes, including, but not limited to, private real estate, private equity, private credit, hedge funds and infrastructure. The final valuation reports, which Callan receives from third parties, for of these types of asset classes may not be available at the time a Callan performance report is issued. As a result, the estimated returns and market values reported for these illiquid asset classes, as well as for any composites including these illiquid asset classes, including any total fund composite prepared, may not reflect final data, and therefore may be subject to revision in future quarters.

The content of this document may consist of statements of opinion, which are made as of the date they are expressed and are not statements of fact. The opinions expressed herein may change based upon changes in economic, market, financial and political conditions and other factors. Callan has no obligation to bring current the opinions expressed herein.

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The issues considered and risks highlighted herein are not comprehensive and other risks may exist that the user of this document may deem material regarding the enclosed information. Please see any applicable full performance report or annual communication for other important disclosures.

Unless Callan has been specifically engaged to do so, Callan does not conduct background checks or in-depth due diligence of the operations of any investment manager search candidate or investment vehicle, as may be typically performed in an operational due diligence evaluation assignment and in no event does Callan conduct due diligence beyond what is described in its report to the client.

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.





# MDC Fund Watch List

Manager	3-year Criteria	Trend	Comments	Recommendation	Currently on Watch List	Date Added to Watch List
Loomis Sayles	Exceeded Benchmark	Improving	Rolling 5-year relative performance has lagged	Maintain on Watch List	Yes	1/1/2022
Looniis Sayles	Exceeded Peer Median	Improving	the benchmark		Yes	1/1/2022
Wellington Small Con	Exceeded Benchmark	Stable	Turnover of key personnel	Maintain on Watch List	Yes	6/27/2023
Wellington Small Cap	Exceeded Peer Median	Stable	Turnover of key personnel		res	0/2//2023

# **MDC Fund Watch List Performance**

# 5-year Returns

5-year period ending:		3/31/2024	12/31/2023	9/30/2023	6/30/2023
	Return	12.54%	17.98%	12.07%	14.44%
Loomis Sayles	Benchmark	12.50%	19.50%	12.42%	15.14%
	Percentile Rank	3	24	9	10
	Return	3.58%	12.43%	6.89%	9.67%
Wellington Small Cap	Benchmark	-0.10%	9.97%	2.40%	4.21%
	Percentile Rank	40	30	10	9

# 3-year Returns

3-year period ending:		3/31/2024	12/31/2023	9/30/2023	6/30/2023
Loomis Sayles	Return	40.46%	9.34%	7.57%	12.67%
	Benchmark	39.00%	8.86%	7.97%	13.73%
	Percentile Rank	48	8	17	18
Wellington Small Cap	Return	17.31%	4.77%	11.18%	14.53%
	Benchmark	19.71%	2.22%	7.16%	10.82%
	Percentile Rank	61	43	37	35

# Public Employees' Retirement System

# **Board of Trustees**

# June 26, 2024

# Proposed Amendments to Optional Retirement Plan Plan Document

Staff requests the Board's final approval of the proposed amendments to the following section:

Amend Section 4.1 *Plan Contributions* to update the employer contribution rate from 17.40% to 17.90% in accordance with House Bill 3231 as passed during the 2024 Legislative Session. In accordance with Miss. Code Ann. § 25-11-411, ORP employers shall contribute the same amount the employer would be required to contribute to PERS if the participant were a member.

The effective date of the proposed amendments will be July 1, 2024.

# ARTICLE IV PLAN CONTRIBUTIONS

## 4.1 Plan Contributions

The Institution will make Institution Plan Contributions monthly during years of participation in accordance with the schedule set forth below except as the same may hereafter be changed by statute, regulation, or termination of the Plan. Pursuant to Miss. Code Ann. § 25-11-415, (1972, as amended) the Board of Trustees is authorized to deduct a fee of up to two percent (2.00%) of the employers' contribution to defray the cost of administering the plan. Effective July 1, 2009, the Board has set the fee at one percent (1.00%) of the employers' total contribution which shall be transferred each month to PERS when contributions are due.

The Participant's contribution of 9.00% of compensation, which is picked-up by the Institution, shall be credited to the Participant's account. The Institution shall contribute 14.90% 15.40% of the Participant's compensation, reduced by the administrative fee noted in this section, to be credited to the Participant's account. In addition, the Institution shall contribute 2.50% of the Participant's compensation, reduced by the administrative fee noted in this section, to PERS for application to the accrued liability contribution fund.

# **Employer and Employee Plan Contributions as a**

By the	By the	
Participant	Institution	<u>Total</u>
9.00%	<del>17.40%</del> <u>17.90%</u>	<del>26.40%</del> <u>26.90%</u>

## **Percentage of Compensation**

# Allocation of 17.40% 17.90% Employer Contribution

% to PERS UAAL	% to Participant's Account
2 475% of Compensation	14.751% 15.246% of
•	Compensation
· · · · · · · · · · · · · · · · · · ·	•
administrative fee)	( <del>14.90%</del> <u>15.40%</u> less pro-rata
	share of administrative fee)
	% to PERS UAAL         2.475% of Compensation         (2.50% less pro-rata share of administrative fee)

# **Plan Contributions as**

## **Credited to Participant's Account**

By the	By the	
Participant	Institution	<u>Total</u>
9.00%	<del>14.751%</del> <u>15.246%</u>	<del>23.751%</del> _24.246%

In no event will compensation taken into account under the Plan exceed the limit of Code Section 401(a)(17) as such amount may be adjusted by the Secretary of Treasury from time to time.