



East Bay Municipal Utility District Employees' Retirement System

March 20, 2025

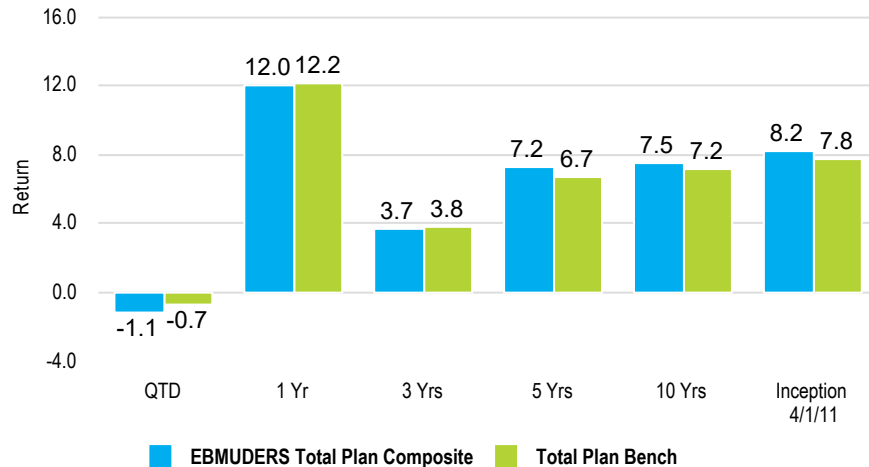
Q4 2024 Performance Report

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Introduction

EBMUDERS Total Plan Composite | As of December 31, 2024

Return Summary



Summary of Cash Flows

QTD

1 Yr

EBMUDERS Total Plan Composite

Beginning Market Value	\$2,656,881,374	\$2,360,015,381
Net Cash Flow	\$4,412,526	-\$11,849,208
Net Investment Change	-\$28,819,872	\$284,307,855
Ending Market Value	\$2,632,474,028	\$2,632,474,028

	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)
EBMUDERS Total Plan Composite - Net	-1.1	12.0	3.7	7.2	7.5	--
EBMUDERS Total Plan Composite - Gross	-1.1	12.1	3.8	7.4	7.7	7.6
Total Plan Bench	-0.7	12.2	3.8	6.7	7.2	7.2
InvMetrics Public DB > \$1B Median	-0.8	9.1	2.9	7.0	7.1	7.1

Historical net returns for the Total Portfolio Aggregate are currently available from 2Q 2011.

EBMUDERS | As of December 31, 2024

	Market Value \$	% of Portfolio	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
EBMUDERS Total Plan Composite	2,632,474,028	100.0	-1.1	12.0	3.7	7.2	7.5	8.2	Apr-11
<i>Total Plan Bench</i>			<i>-0.7</i>	<i>12.2</i>	<i>3.8</i>	<i>6.7</i>	<i>7.2</i>	<i>7.8</i>	
US Equity Composite	1,018,912,698	38.7	2.6	23.8	8.0	13.8	12.7	13.1	Apr-11
<i>Russell 3000 Hybrid</i>			<i>2.6</i>	<i>23.8</i>	<i>8.0</i>	<i>13.9</i>	<i>12.5</i>	<i>13.1</i>	
Non-US Equity Composite	608,707,946	23.1	-7.5	5.7	1.1	4.4	4.6	6.1	Jul-95
<i>MSCI ACWI xUS (blend)</i>			<i>-7.5</i>	<i>6.1</i>	<i>1.3</i>	<i>4.6</i>	<i>5.3</i>	<i>5.4</i>	
Covered Calls Composite	376,668,315	14.3	3.0	17.2	6.5	9.4	8.7	9.5	Feb-14
<i>Cboe S&P 500 Buy Write Index</i>			<i>5.8</i>	<i>20.1</i>	<i>6.0</i>	<i>6.9</i>	<i>6.9</i>	<i>7.1</i>	
Real Estate Composite	53,294,231	2.0	-0.5	5.5	0.3	5.0	6.7	5.8	Jan-07
<i>Real Estate Composite Benchmark</i>			<i>0.8</i>	<i>6.5</i>	<i>1.1</i>	<i>5.2</i>	<i>6.7</i>	<i>6.8</i>	
Fixed Income Composite	557,649,884	21.2	-2.9	2.0	-0.3	0.9	2.0	2.6	Apr-11
<i>Fixed Income Composite Bench</i>			<i>-2.2</i>	<i>2.6</i>	<i>-0.3</i>	<i>0.9</i>	<i>2.1</i>	<i>2.6</i>	
Cash Composite	17,240,952	0.7	1.3	4.8	3.5	2.6	1.9	1.4	Aug-10
<i>FTSE 3 Month T-Bill</i>			<i>1.2</i>	<i>5.4</i>	<i>4.1</i>	<i>2.5</i>	<i>1.8</i>	<i>1.3</i>	

Economic and Market Update

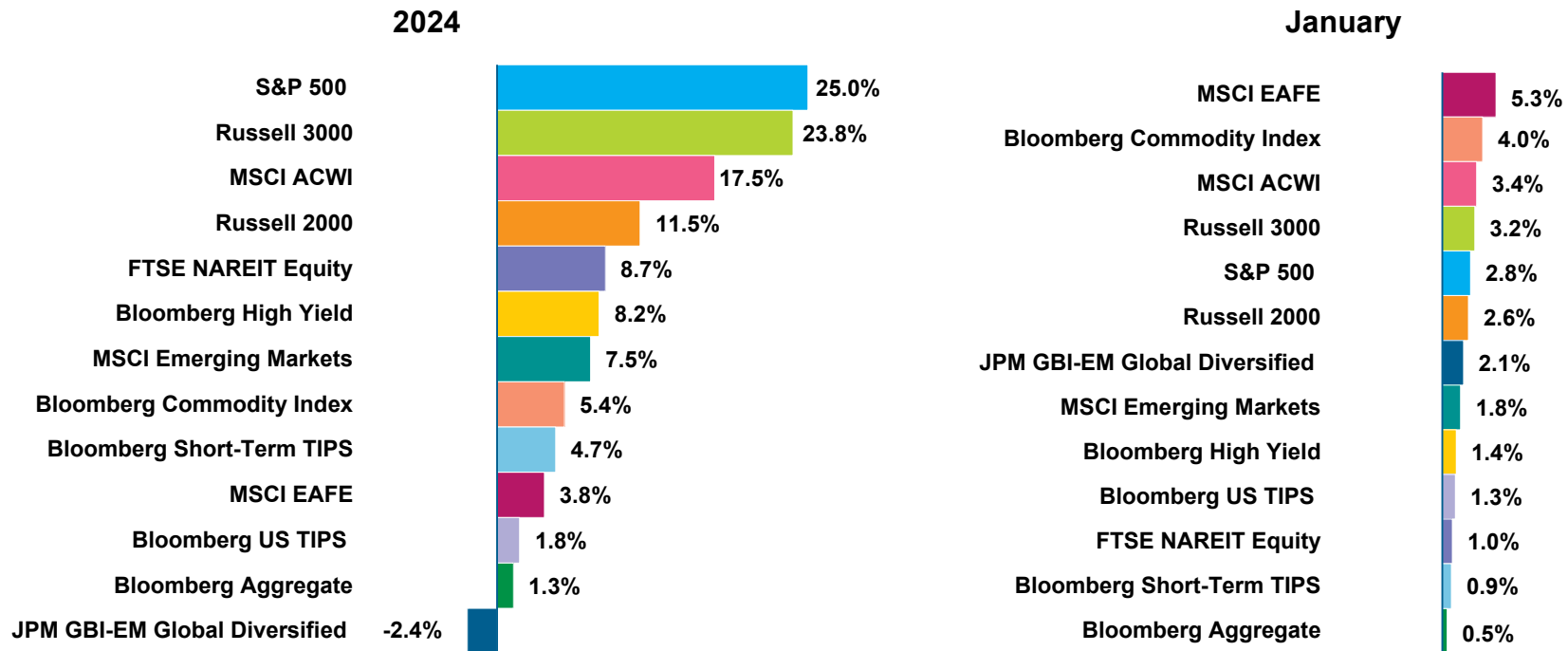
Data as of January 31, 2025

Commentary

Equity and bond markets posted gains in the first month of 2025 after a largely positive 2024.

- Domestic equity markets (Russell 3000) returned 3.2% in January. Technology stocks sold off, then recovered in the last week of the month as the release of Chinese AI application – DeepSeek-R1 – challenged market expectations for US technology stocks.
- Non-US developed market stocks (MSCI EAFE +5.3%) led the way in January, supported by rate cuts from the ECB and a rotation out of the US tech sector.
- Emerging market equities returned +1.8% for the month, underperforming developed markets given tariff risks from the US, particularly toward China.
- The Federal Reserve held policy rates steady in January as inflation remains above the target level and the labor market continues to be relatively healthy.
- Most fixed income markets posted positive returns to start the year, with high yield bonds (+1.4%) and TIPS (+1.3%) outperforming the broad US bond market (Bloomberg Aggregate +0.5%).
- Looking ahead, uncertainty related to the Trump Administration's policies and their impact on the economy, inflation, and Fed policy will be key. The path of China's economy and concerns over elevated valuations and technology-driven concentration in the US equity market will also be important focuses of 2025.

Index Returns¹



- In 2024, most major assets classes appreciated, led by the S&P 500's 25.0% return.
- To start the year, all asset classes posted gains with equities generally leading the way. In a reversal of the prior trend, non-US developed markets were the top performers given pressures on the tech sector in the US.

¹ Source: Bloomberg. Data is as of January 31, 2025.

Domestic Equity Returns¹

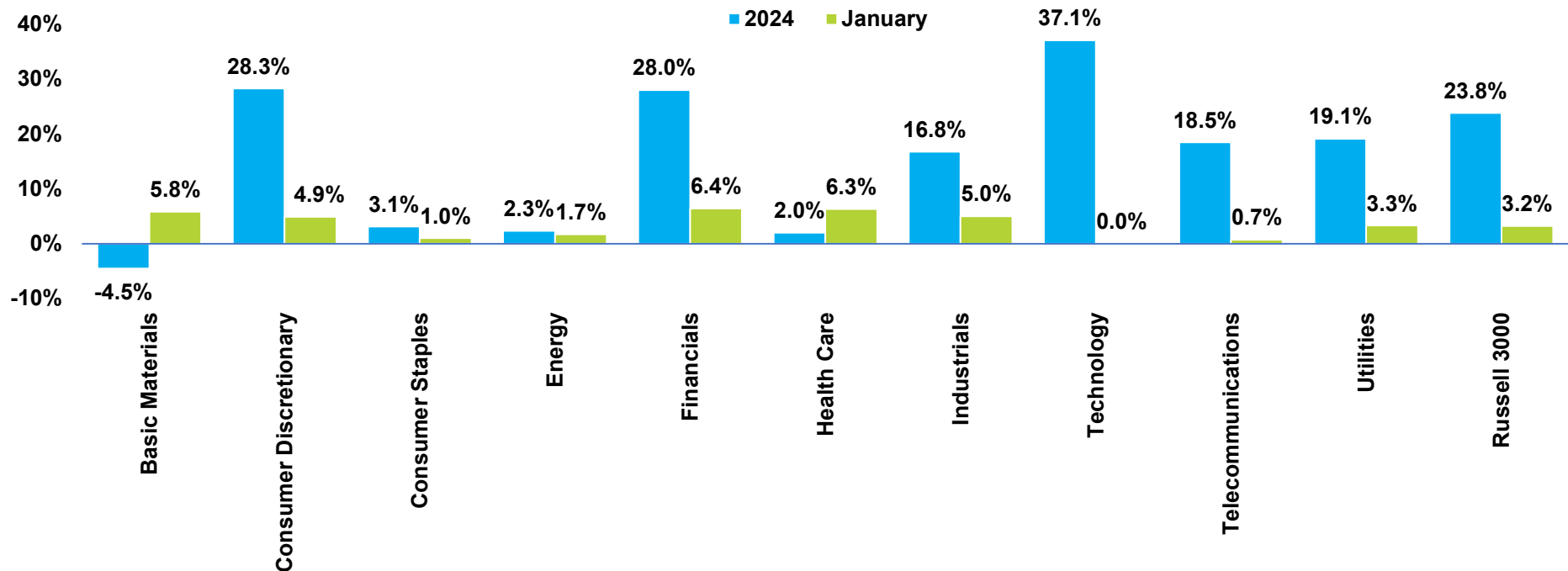
Domestic Equity	January (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	2.8	26.4	11.9	15.1	13.7
Russell 3000	3.2	26.3	11.3	14.6	13.2
Russell 1000	3.2	26.7	11.7	15.0	13.5
Russell 1000 Growth	2.0	32.7	14.6	18.9	17.2
Russell 1000 Value	4.6	19.5	8.1	10.1	9.4
Russell MidCap	4.3	22.0	8.0	11.0	10.2
Russell MidCap Growth	6.4	30.6	11.2	12.6	12.4
Russell MidCap Value	3.5	19.2	6.6	9.8	8.6
Russell 2000	2.6	19.1	5.6	8.7	8.4
Russell 2000 Growth	3.2	22.7	6.2	7.8	8.7
Russell 2000 Value	2.1	15.5	4.7	8.9	7.8

US Equities: The Russell 3000 rose 3.2% in January, bringing the one-year return to +26.3%.

- US stocks rose 3.2% for the month, driven in part by bank earnings. JP Morgan, Wells Fargo, and Citigroup all advanced more than 10% after reporting strong quarters.
- The “Magnificent 7” stocks diverged during January amid a disruption to the AI narrative by Chinese firm DeepSeek. Meta, Amazon, and Alphabet were the top performers in the Russell 3000 index for the month. Microsoft, Apple, and NVIDIA were among the largest detractors.
- Growth stocks continued to outperform value stocks within the mid cap and small cap markets, but trailed in large cap given the issues in the tech sector. While large cap stocks continued to outperform small cap stocks, mid cap stocks outperformed both groups. These stocks benefitted versus the large cap sector due to the lower exposure to the weaker “Magnificent 7” stocks. Relative performance against small cap was driven by increased exposure to select software and capital markets companies.

¹ Source: Bloomberg. Data is as of January 31, 2025.

Russell 3000 Sector Returns¹



- The release of the Chinese AI Model (DeepSeek-R1) in late January roiled US technology stocks with Nvidia losing 16% of its market share in a single day; technology stocks recovered after their sell-off but still lagged other sectors in January.
- Outside of technology, all sectors rose in January on continued US consumer and economic strength.
- Financials (+6.4%) led the way, driven by strong earnings reports from large banks. Health care (+6.3%) and basic materials (+5.8%) also posted strong returns.

¹ Source: Bloomberg. Data is as of January 31, 2025.

Foreign Equity Returns¹

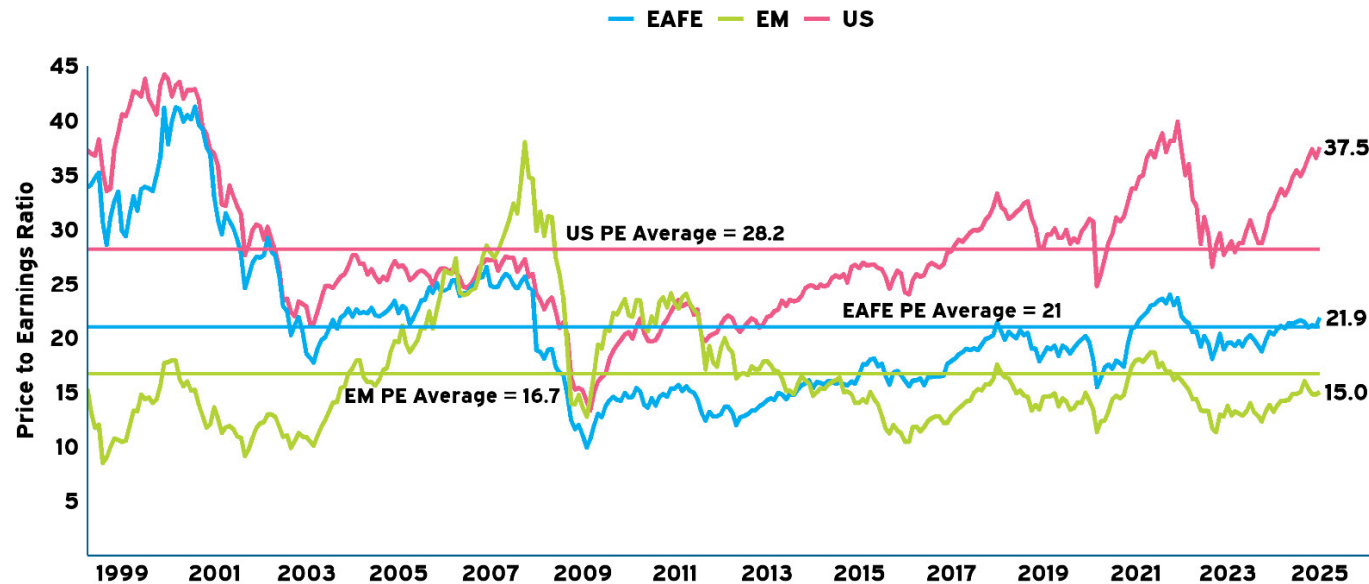
Foreign Equity	January (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI Ex US	4.0	10.9	3.4	5.5	5.2
MSCI EAFE	5.3	8.7	5.1	6.2	5.7
MSCI EAFE (Local Currency)	4.8	13.7	9.3	8.8	7.3
MSCI EAFE Small Cap	3.4	7.1	0.4	3.6	5.9
MSCI Emerging Markets	1.8	14.8	-0.7	3.0	3.8
MSCI Emerging Markets (Local Currency)	1.6	19.1	2.8	5.6	6.0
MSCI EM ex China	2.1	8.5	1.3	5.9	4.9
MSCI China	0.9	34.8	-4.9	-2.3	1.7

Foreign Equity: Developed international equities (MSCI EAFE) returned 5.3% in January and emerging market equities (MSCI Emerging Markets) rose 1.8%.

- Developed equities outperformed US and emerging market peers in January. Eurozone equities saw the highest returns globally, bolstered by rate reductions from the ECB and a lower weight to the tech sector. UK equities followed shortly behind, also benefiting from the rotation out of large cap tech stocks in the US. Japan was the weakest performer in January, at 0.1%, due in part to concerns over potential tariffs from the US given it has an export-focused economy.
- Emerging markets saw modest gains but lagged international developed market and US peers for the month given tariff concerns from the US. China saw slightly positive returns as dynamics in the tech sector and economic stimulus were balanced by ongoing tensions with the US and a sluggish economy. South Korea saw strong returns as political turmoil ebbed, while India faced its fourth consecutive month of declines given growth concerns.

¹ Source: Bloomberg. Data is as of January 31, 2025.

Equity Cyclically Adjusted P/E Ratios¹



- Valuations in US stocks remained at a significant premium to non-US developed and emerging market stocks at the start of 2025.
- US stocks, priced at 37.5 times earnings, continue to trade well above their long-run P/E average of 28.2.
- Non-US developed market valuations (21.9 times) are trading near their long-term average. Emerging market stock valuations (15.0 times) are below their long-run average.

¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E Source: Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is as of January 2025. The average line is the long-term average of the US, EM, and EAFE PE values from April 1998 to the recent month-end, respectively.

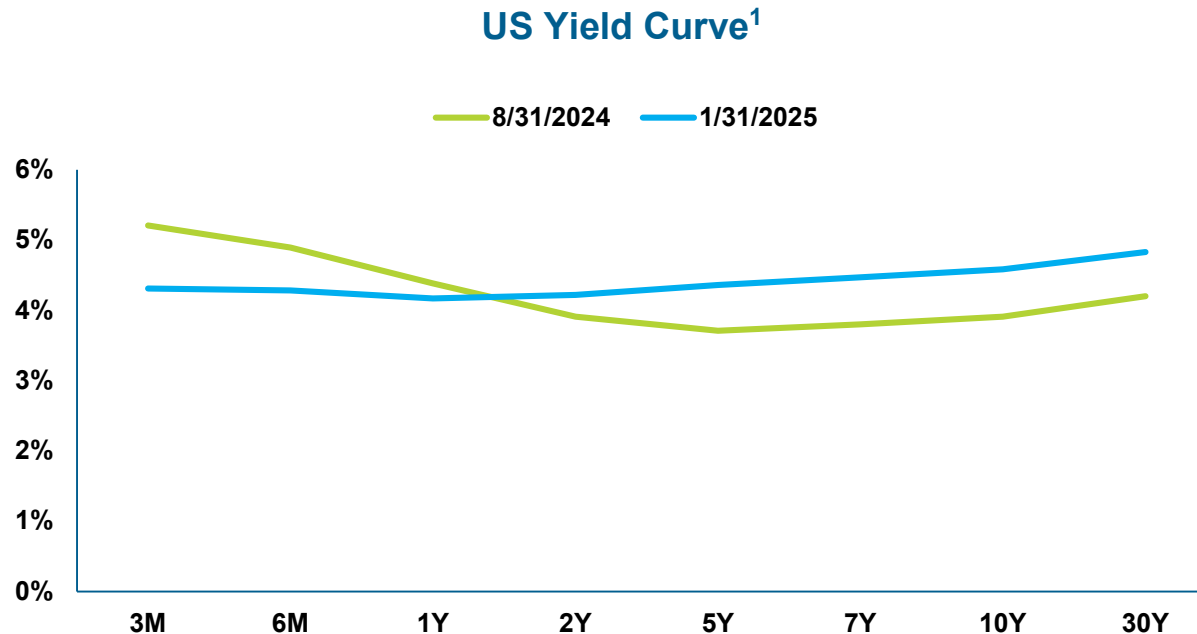
Fixed Income Returns¹

Fixed Income	January (%)	1 Yr (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	0.6	2.9	-1.0	-0.2	1.6	5.1	5.9
Bloomberg Aggregate	0.5	2.1	-1.5	-0.6	1.2	4.9	6.1
Bloomberg US TIPS	1.3	3.0	-1.2	1.7	2.1	4.6	6.8
Bloomberg Short-term TIPS	0.9	5.2	2.6	3.4	2.6	4.4	2.6
Bloomberg US Long Treasury	0.4	-3.9	-10.6	-6.4	-1.4	4.9	14.8
Bloomberg High Yield	1.4	9.7	4.3	4.5	5.2	7.2	3.3
JPM GBI-EM Global Diversified (USD)	2.1	1.2	-0.3	-1.2	0.6	--	--

Fixed Income: The Bloomberg Universal index rose 0.6% in January.

- After an initial increase in rates at the start of the month, they fell after and fixed income indexes provided positive returns for the month. This dynamic was driven by initial concerns over the potential inflationary impacts of the new administration's policies followed by a flight to quality on the news of Chinese AI technology.
- The broad US bond market (Bloomberg Aggregate) rose 0.5% in January, with TIPS outperforming as inflation risks remain elevated.
- High yield bonds and emerging market debt outperformed as investor risk appetite remained robust.

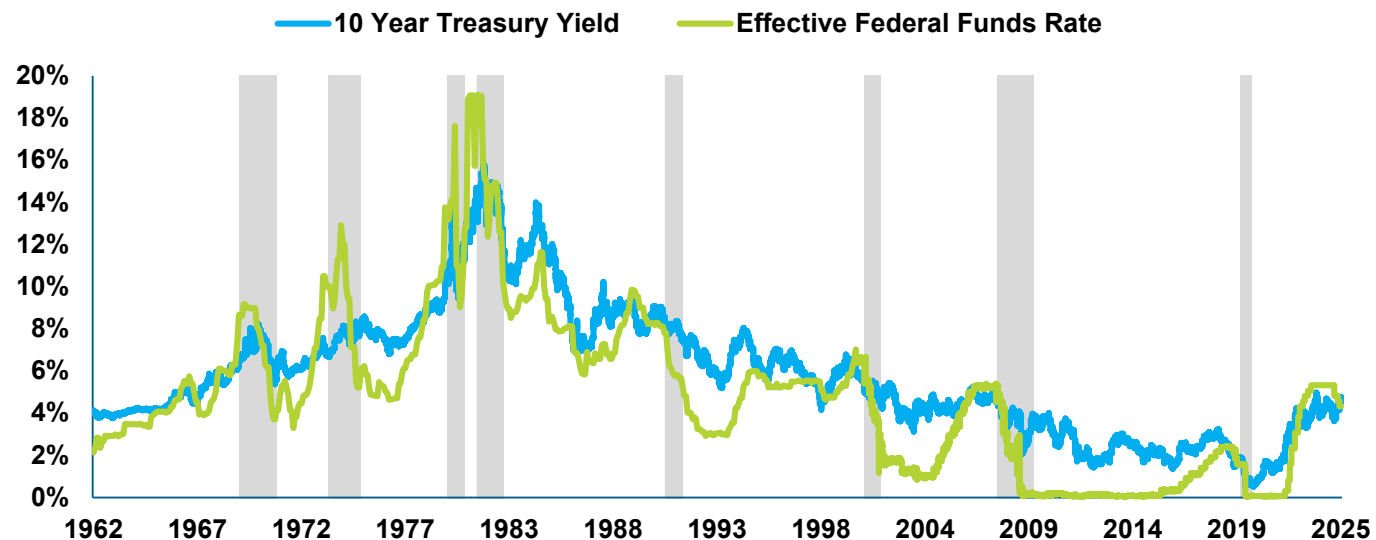
¹ Source: Bloomberg. Data is as of January 31, 2025. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration, respectively. JPM GBI-EM data is from J.P. Morgan. Current yield and duration data is not available.



- With the exception of the very shortest maturities, US Treasury yields declined slightly over the month.
- The more policy sensitive 2-year Treasury yield moved from 4.24% to 4.20%, while the 10-year Treasury yield declined from 4.57% to 4.54%.
- After the Fed started reducing interest rates in September 2024, the yield curve stopped being inverted (short-term interest rates higher than long-term interest rates) given expectations for the Fed to continue to reduce rates amid resilient economic growth and persistent inflation.

¹ Source: Bloomberg. Data is as of January 31, 2025. The August 2024 Treasury yields are shown as a reference before the first interest rate cut.

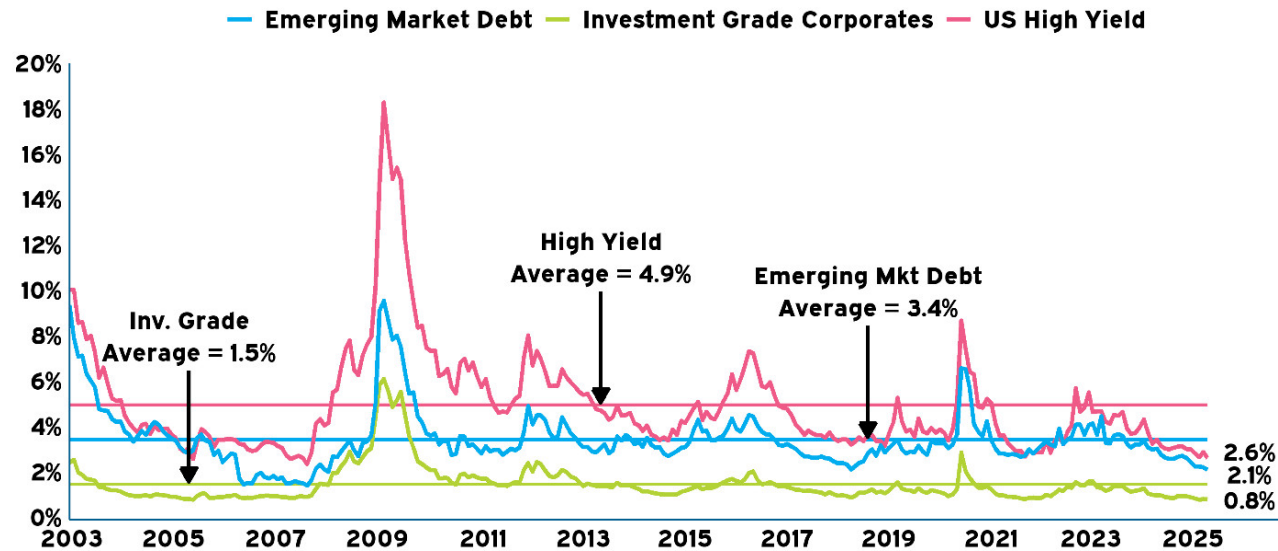
10-Year Treasury Yield versus Fed Funds Rate¹



- Typically, when the Fed cuts interest rates, the yield on the ten-year Treasury follows, as rate cuts often come in an environment of falling inflation and rising unemployment.
- The recent dynamic has been very unusual with the Fed cutting interest rates by a total of 1.0% since September and the 10-year Treasury increasing by a similar amount over the same period.
- Inflation concerns and broad uncertainty about the future path of interest rates (also known as “term premium”) are the key factors driving this dynamic.

¹ Source: FRED. Data is as of January 31, 2025.

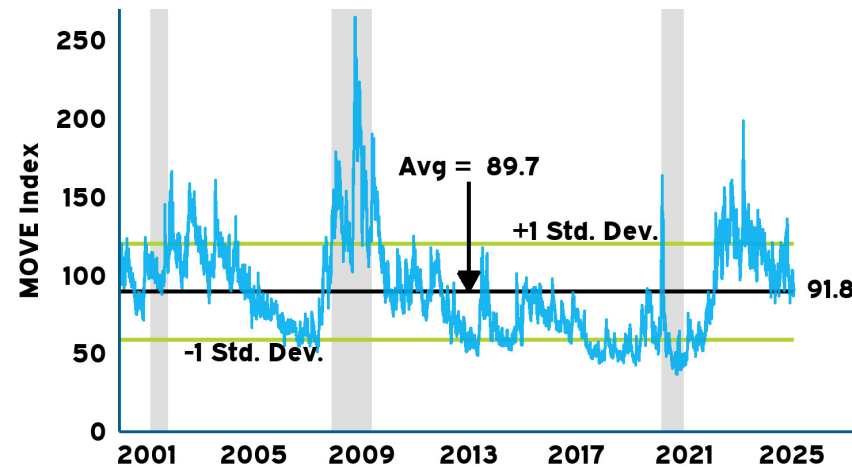
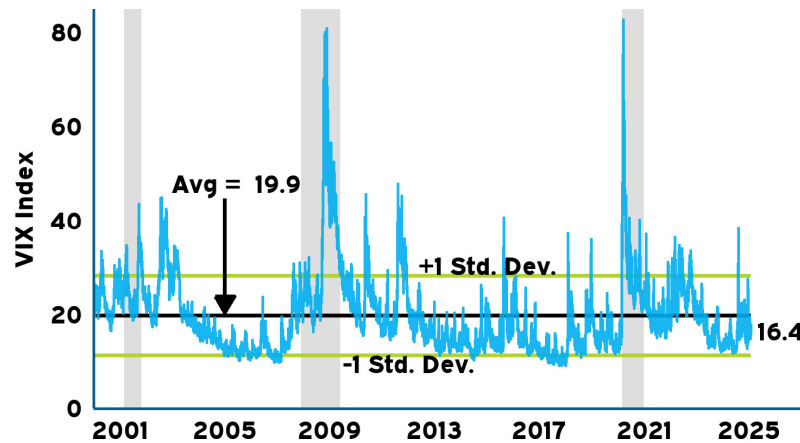
Credit Spreads vs. US Treasury Bonds¹



- Spreads (the yield above a comparable maturity Treasury) continued to tighten in January for riskier bonds, and were stable for investment grade issues.
- All yield spreads remained below their respective long-run averages, particularly high yield (2.6% versus 4.9%).
- Although spreads are tight, absolute yields remain at above-average levels compared to the last two decades.

¹ Source: Bloomberg. Data is as January 31, 2025. Average lines denote the average of the investment grade, high yield, and emerging market spread values from September 2002 to the recent month-end, respectively.

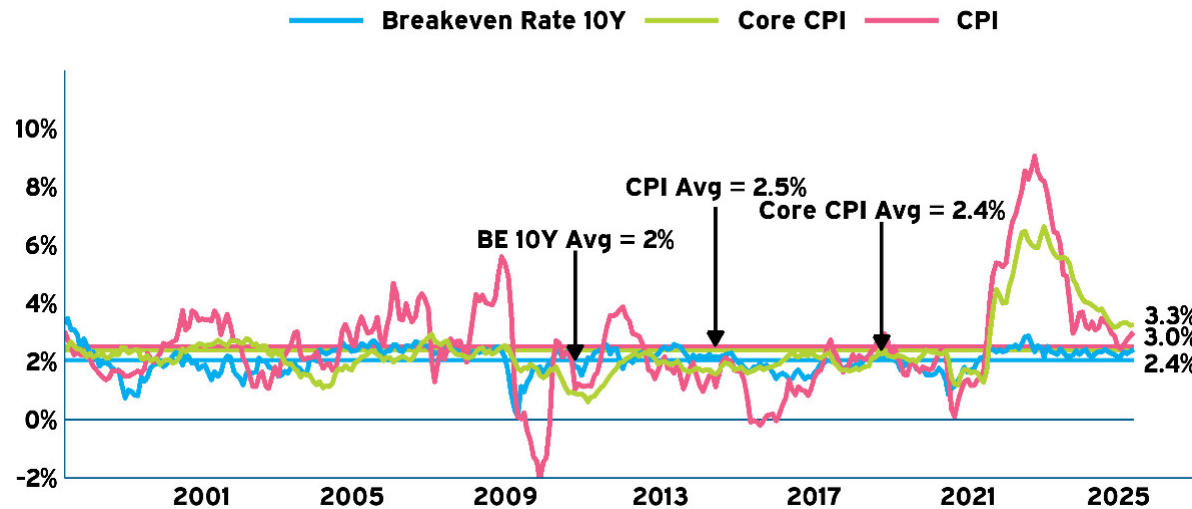
Equity and Fixed Income Volatility¹



- Bond and equity volatility declined in January despite tech stock volatility and policy uncertainty.
- Volatility levels (VIX) in the US stock market finished January below its long-run average, while volatility in the bond market (MOVE) finished the month slightly above its long-run average.

¹ Equity Volatility – Source: FRED. Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of January 31, 2025. The average line indicated is the average of the VIX and MOVE values between January 2000 and January 2025.

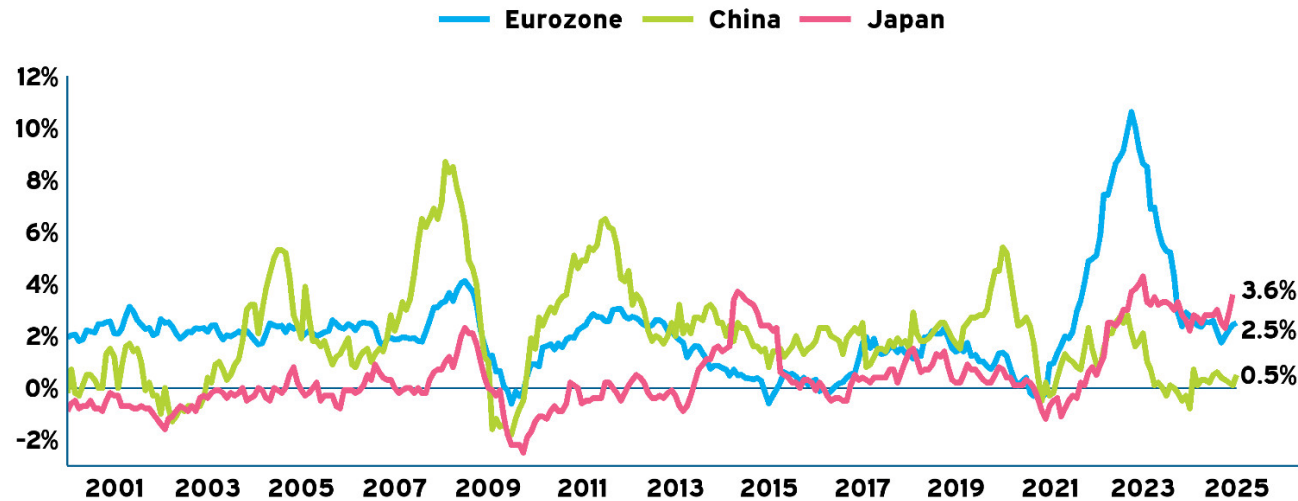
US Ten-Year Breakeven Inflation and CPI¹



- In January, inflation surprised to the upside across most categories. Month-over-month (mom) inflation came in at 0.5% compared to a 0.3% expectation, while 12-month inflation was expected to stay stable at 2.9% but increased to 3.0%.
- Shelter (+0.4% mom) accounted for 30% of the monthly gain and contributed to the surprise in inflation. Energy prices also rose (+1.1% for the month), while food increased 0.4% over the same period.
- In January, core inflation (excluding food and energy) rose 0.4% lifting the 12-month gain to 3.3%, slightly above December's year-over-year 3.2% reading and expectations of a decline to 3.1%.
- Inflation expectations (breakevens) rose over the quarter from the September lows of 2.0%, on continued uncertainty regarding the likelihood and magnitude of the new administration's policies.

¹ Source: FRED. Data is as of January 2025. The CPI and 10 Year Breakeven average lines denote the average values from February 1997 to the present month-end, respectively. Breakeven values represent month-end values for comparative purposes.

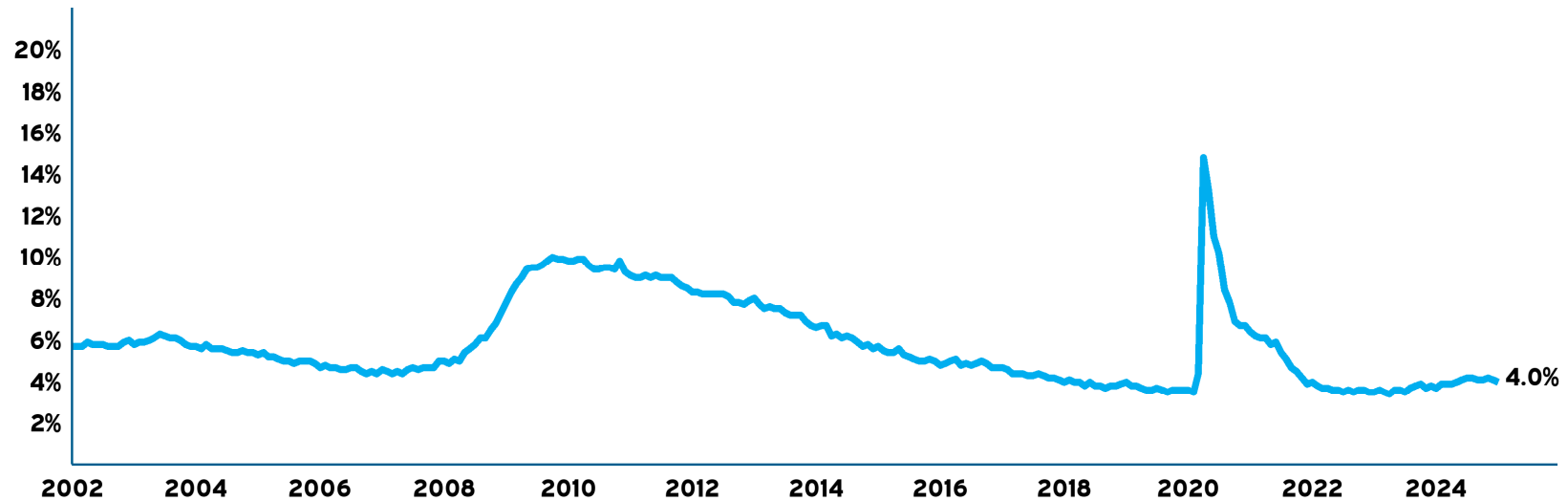
Global Inflation (CPI Trailing Twelve Months)¹



- In the eurozone, inflation increased each month since last September, but levels remain below the US. The increase has been largely driven by last year's significant fall in energy prices no longer being included in the calculation.
- In the latest reading of inflation in Japan, it rose from 2.9% to 3.6% due in part to an increase in food prices and the end of energy subsidies driving electricity and gas prices higher.
- After four months of declines, inflation in China increased in January from 0.1% to 0.5% (above expectations) driven by the Lunar New Year and recent stimulus. Despite the rise, inflation levels remain only slightly positive in China as the economy slows and consumers pulls back.

¹ Source: Bloomberg. Data is as January 2025, except Japan which is as of December 2024.

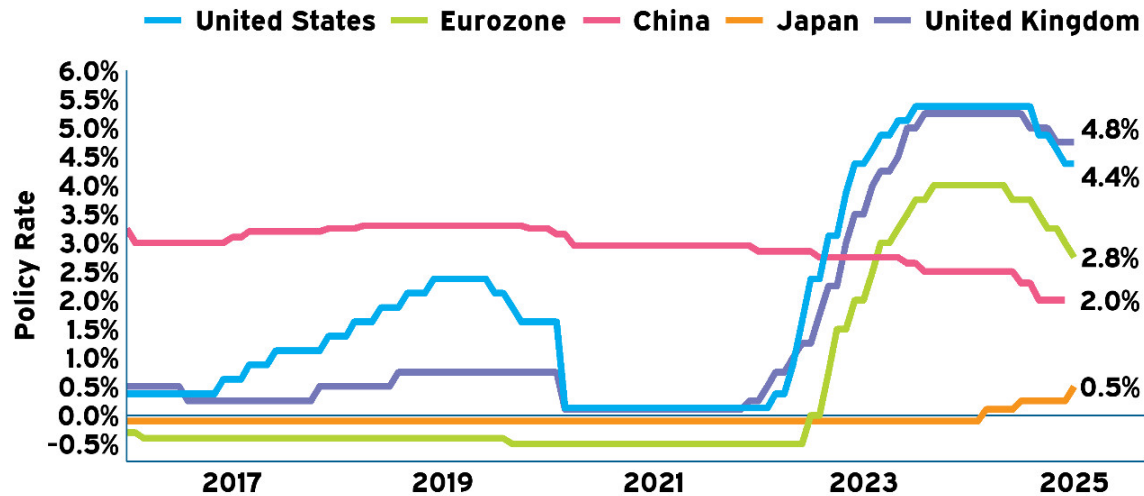
US Unemployment¹



- The unemployment rate fell slightly in January to 4.0% (it was expected to stay at 4.1%) as the annual population adjustment was made. The economy added 143,000 jobs, below expectations of 175,000, but prior month job gains were revised higher by 51,000 jobs to 307,000 jobs added in December 2024.
- In January, the health care (+44K), retail (+34K), and government (+32K) sectors added the most jobs.
- The last reading of job openings fell from 8.1M to 7.6M, a level well below the pandemic highs (>12M); the number of openings exceeds the number of unemployed workers looking for work (6.9M).
- Separations (5.3M) and hires (5.5M) remained steady and average hourly wages continued to grow at approximately 4.2% a year.

¹ Source: FRED and BLS. Data is as of January 31, 2025.

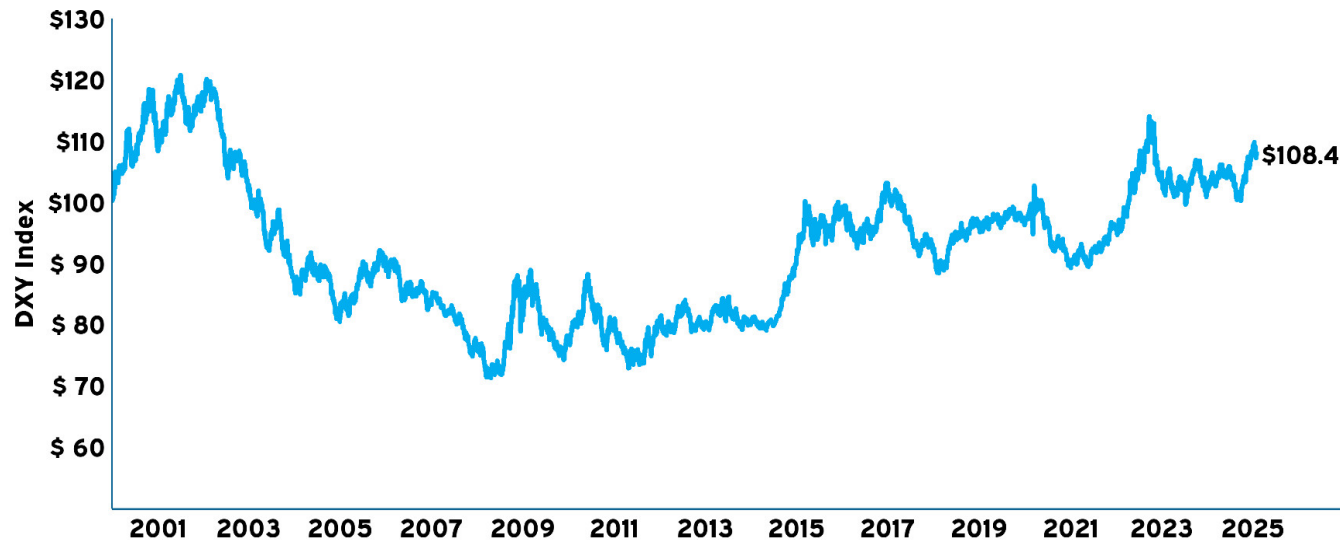
Policy Rates¹



- In the US, the Fed kept interest rates steady at their January meeting after reducing interest rates by 0.25% twice over the final quarter of 2024 to a range of 4.25% to 4.50%. Going forward, questions remain about the timing and amount of additional cuts (if any) given the strength of the economy and persistent above-target inflation.
- After month-end, the Bank of England cut interest rates for the third time by 0.25%, while the European Central Bank cut rates by another 0.25% in January. The People's Bank of China also continues to maintain measures to try to stimulate the economy.
- In contrast to many other central banks, the Bank of Japan increased interest rates in January, in the face of persistent inflation. Rate cutting by other major central banks are complicating prospects for further policy rate hikes in Japan.

¹ Source: Bloomberg. Data is as of January 31, 2025 except China Rate is as of December 31, 2024. United States rate is the mid-point of the Federal Funds Target Rate range. Eurozone rate is the ECB Deposit Facility Announcement Rate. Japan rate is the Bank of Japan Unsecured Overnight Call Rate Expected. China rate is the China Central Bank 1-Year Medium Term Interest Rate. UK rate is the UK Bank of England Official Bank Rate.

US Dollar vs. Broad Currencies¹



- The strength of the US dollar persisted in the first month of 2025 as the Fed paused its rate cutting while other central banks continued to cut interest rates.
- A rise in interest rates driven by potential inflationary impacts of proposed higher tariffs, lower taxes, and immigration policies from the new US administration has led to the dollar's recent gains.

¹ Source: Bloomberg. Data as of January 31, 2025.

Summary

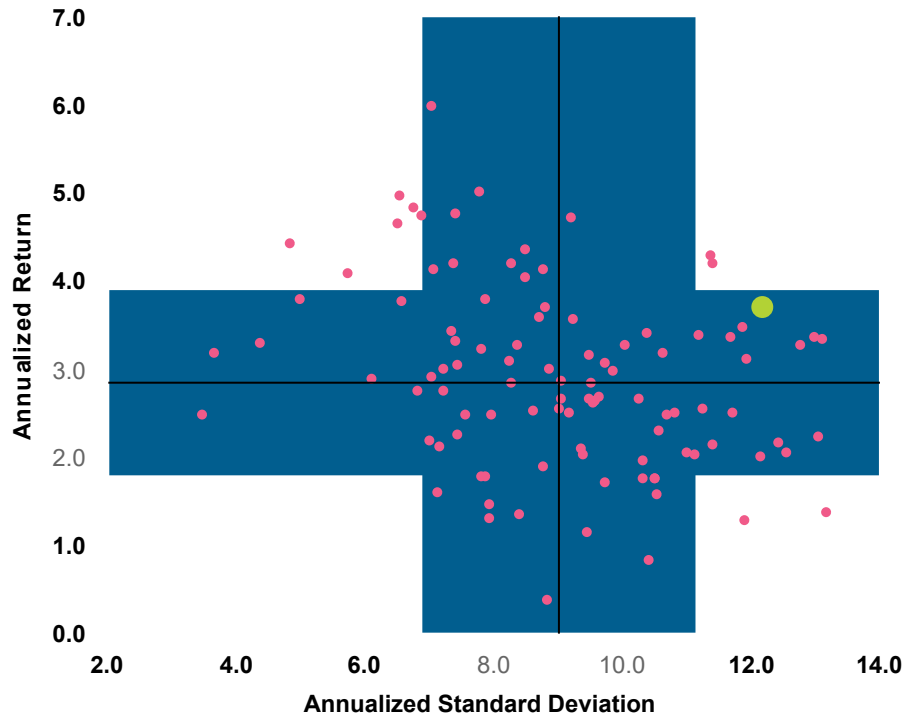
Key Trends:

- According to the International Monetary Fund's (IMF) October report, global growth in 2025 is expected to be similar to 2024 at around 3.2%, with most major economies predicted to avoid a recession.
- Questions remain about what policies will be implemented by the new administration in the US. Although deregulation and tax cuts could support growth, these policies, along with higher tariffs and restrictive immigration, could fan inflation. This will likely lead to additional uncertainty regarding the timing and pace of interest rate cuts in the coming year.
- US consumers could feel pressure as certain components of inflation (e.g., shelter) remain high, borrowing costs stay elevated, and the job market may weaken further.
- A focus for US equities going forward will be whether earnings can remain resilient if growth slows. Also, the future paths of the large technology companies that have driven market gains will be important.
- We have started to see divergence in monetary policies. The Fed is likely going to cut interest rates at a much slower pace than previously expected with the chance of no further cuts in 2025. On the other hand, additional rate cuts are expected from the European Central Bank and the Bank of England, while the Bank of Japan has increased interest rates. This disparity will likely influence capital flows and currencies.
- China appears to have shifted focus to more policy support for the economy/asset prices with a suite of fiscal and financial policy stimulus measures. Thus far, these efforts have not increased weak consumer spending or helped the lingering trouble in the real estate sector. It is not clear what the long-term impact of these policies will be on the economy and if policy makers will remain committed to these efforts.

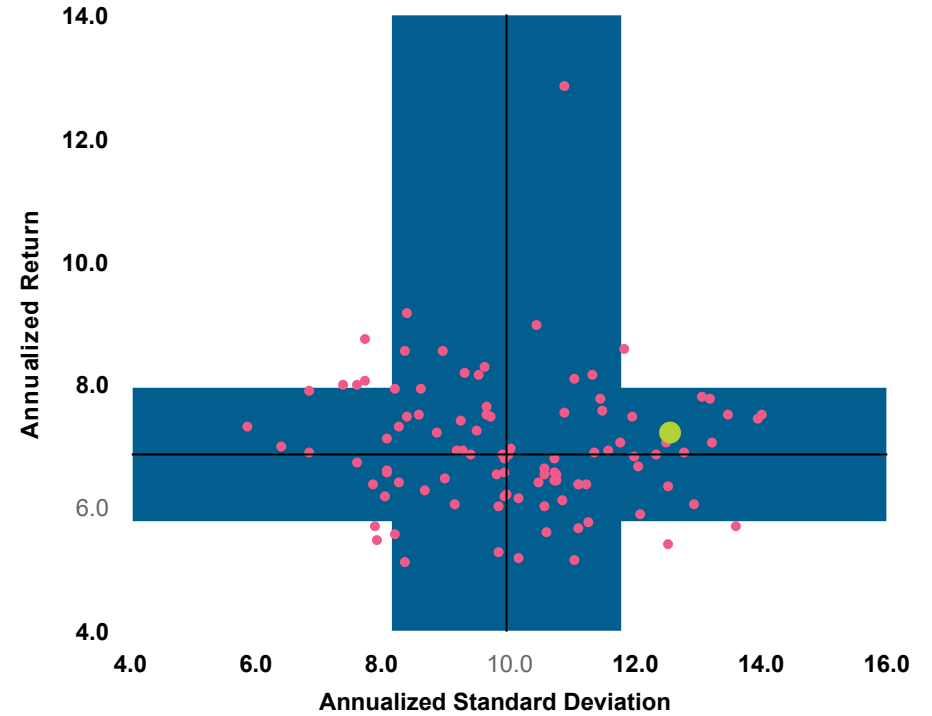
Fourth Quarter Performance Review

EBMUDERS | As of December 31, 2024

Annualized Return vs. Annualized Standard Deviation
3 Years Ending December 31, 2024



Annualized Return vs. Annualized Standard Deviation
5 Years Ending December 31, 2024



3 Years Ending December 31, 2024

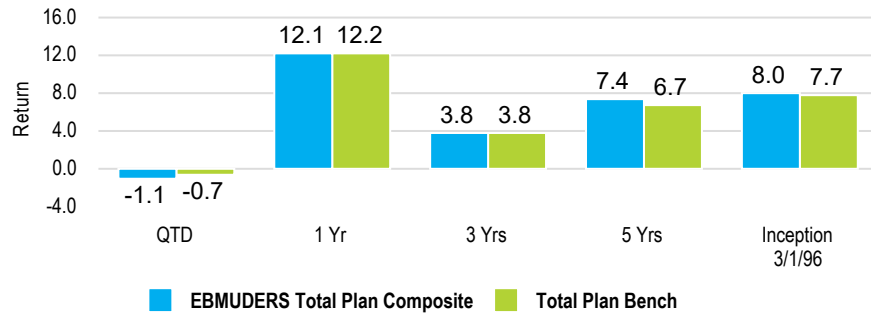
	Return	Standard Deviation	Sharpe Ratio
EBMUDERS Total Plan Composite	3.7	12.2	0.0
Total Plan Bench	3.8	11.3	0.0

5 Years Ending December 31, 2024

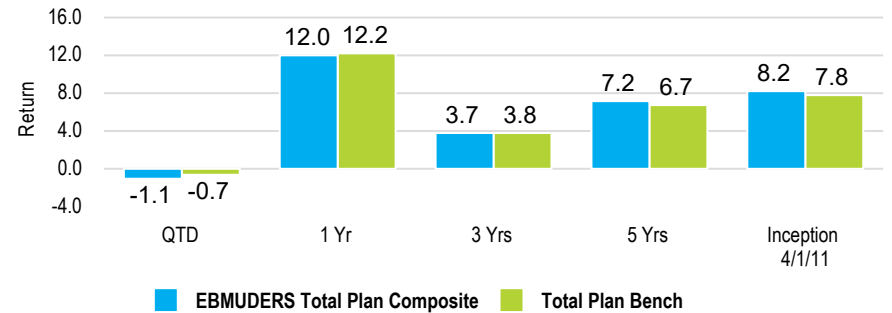
	Return	Standard Deviation	Sharpe Ratio
EBMUDERS Total Plan Composite	7.2	12.5	0.4
Total Plan Bench	6.7	12.2	0.4

EBMUDERS Total Plan Composite| As of December 31, 2024

Trailing Performance - Gross

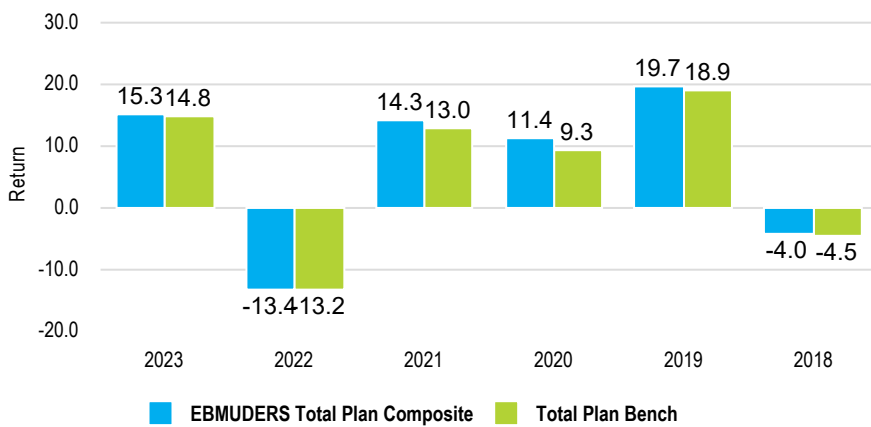


Trailing Performance - Net

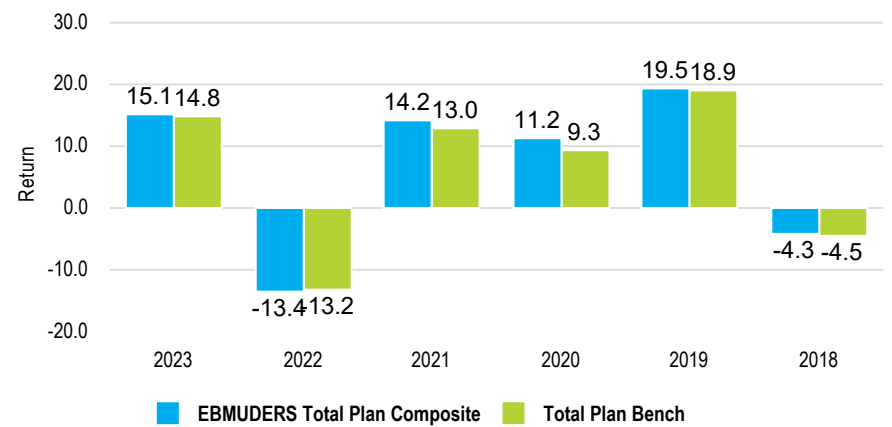


	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	2023 (%)	2022 (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)
EBMUDERS Total Plan Composite	-1.1	12.0	3.7	7.2	7.5	15.1	-13.4	14.2	11.2	19.5	-4.3
EBMUDERS Total Plan Composite	-1.1	12.1	3.8	7.4	7.7	15.3	-13.4	14.3	11.4	19.7	-4.0
<i>Total Plan Bench</i>	<i>-0.7</i>	<i>12.2</i>	<i>3.8</i>	<i>6.7</i>	<i>7.2</i>	<i>14.8</i>	<i>-13.2</i>	<i>13.0</i>	<i>9.3</i>	<i>18.9</i>	<i>-4.5</i>
InvMetrics Public DB > \$1B Median	-0.8	9.1	2.9	7.0	7.1	11.4	-10.4	15.8	11.8	17.3	-3.2

12-month Performance - Gross

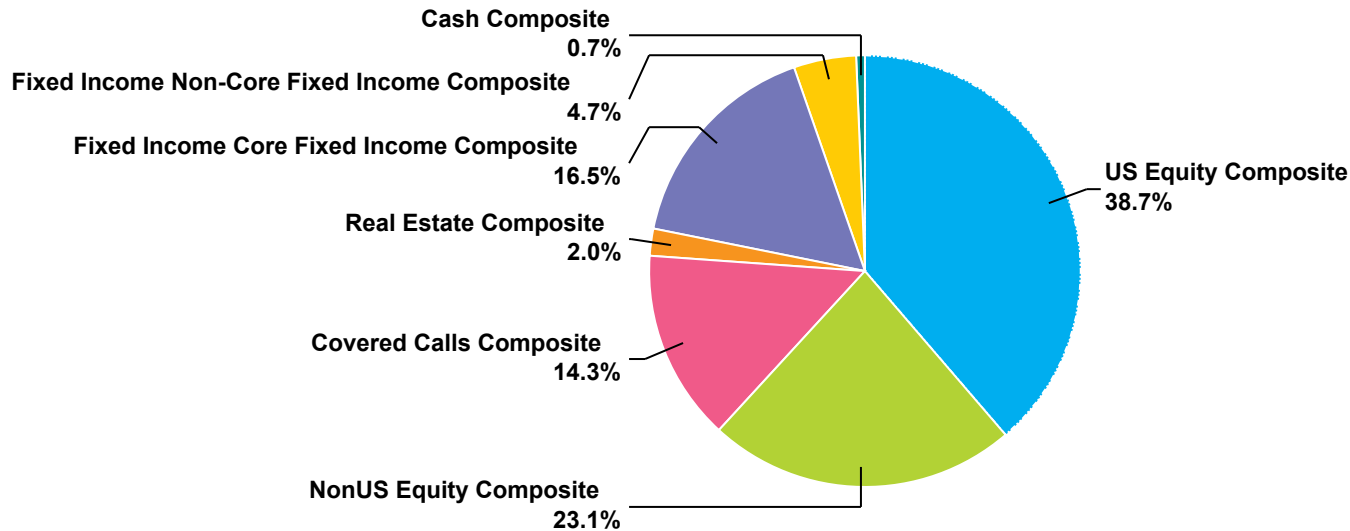


12-month Performance - Net



Actual vs Target Allocation | As of December 31, 2024

Allocation vs. Targets and Policy				
	Current Balance (\$)	Current Allocation (%)	Policy (%)	Policy Range (%)
Domestic Equity	\$1,018,912,698	38.7	33.5	28.5 - 38.5
International Equity	\$608,707,946	23.1	25.0	20.0 - 30.0
Covered Calls	\$376,668,315	14.3	14.0	11.0 - 17.0
Real Estate	\$53,294,231	2.0	2.5	0.5 - 4.5
Core Fixed Income	\$434,334,093	16.5	20.0	17.0 - 23.0
Non-Core Fixed Income	\$123,315,791	4.7	5.0	3.0 - 7.0
Cash	\$17,240,953	0.7	0.0	0.0 - 5.0
Total	\$2,632,474,028	100.0	100.0	



Policy Targets reflect stage 1 Interim Policy Targets per the Evolving Policy Plan.
Actual allocations may deviate from Policy Targets and ranges during the asset allocation transition.

Manager Performance - Net of Fees | As of December 31, 2024

	Market Value \$	QTR (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
EBMUDERS Total Plan Composite	2,632,474,028	-1.1	12.0	3.7	7.2
<i>Total Plan Bench</i>		<i>-0.7</i>	<i>12.2</i>	<i>3.8</i>	<i>6.7</i>
US Equity Composite	1,018,912,698	2.6	23.8	8.0	13.8
<i>Russell 3000 Hybrid</i>		<i>2.6</i>	<i>23.8</i>	<i>8.0</i>	<i>13.9</i>
Northern Trust Russell 3000	1,018,135,383	2.6	23.8	8.0	13.8
<i>Russell 3000 Index</i>		<i>2.6</i>	<i>23.8</i>	<i>8.0</i>	<i>13.9</i>
Non US Equity Composite	608,707,946	-7.5	5.7	1.1	4.4
<i>MSCI ACWI xUS (blend)</i>		<i>-7.5</i>	<i>6.1</i>	<i>1.3</i>	<i>4.6</i>
Northern Trust ACWI ex US	608,707,946	-7.5	5.7	1.1	4.2
<i>MSCI AC World ex USA index</i>		<i>-7.5</i>	<i>6.1</i>	<i>1.3</i>	<i>4.6</i>

Manager Performance - Net of Fees | As of December 31, 2024

	Market Value \$	QTR (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Covered Calls Composite	376,668,315	3.0	17.2	6.5	9.4
<i>Cboe S&P 500 Buy Write Index</i>		<i>5.8</i>	<i>20.1</i>	<i>6.0</i>	<i>6.9</i>
Parametric BXM	183,169,006	3.3	16.1	6.6	9.0
<i>Cboe S&P 500 Buy Write Index</i>		<i>5.8</i>	<i>20.1</i>	<i>6.0</i>	<i>6.9</i>
Parametric Delta Shift	193,499,125	2.6	19.4	6.7	12.5
<i>Cboe S&P 500 Buy Write Index</i>		<i>5.8</i>	<i>20.1</i>	<i>6.0</i>	<i>6.9</i>

Van Hulzen had \$185 of residual assets at the time of this report.

Manager Performance - Net of Fees | As of December 31, 2024

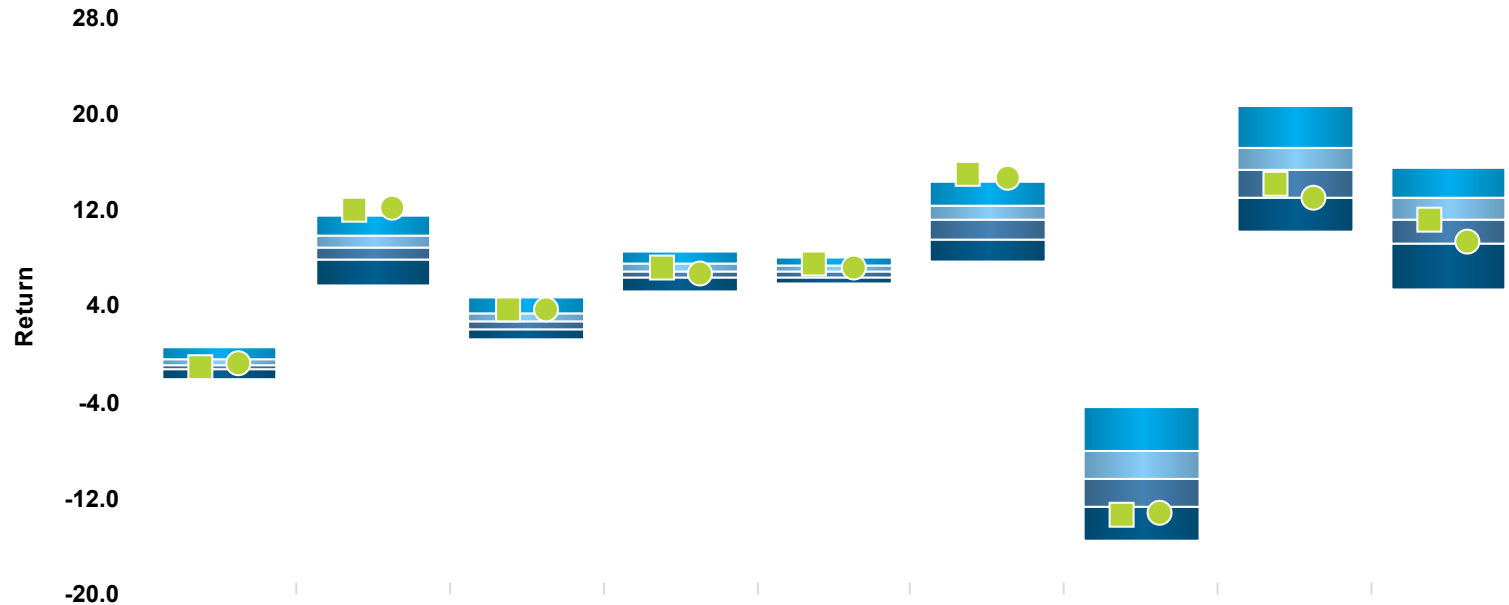
	Market Value \$	QTR (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Core Fixed Income Composite	434,334,093	-3.8	0.7	-1.5	0.1
<i>Fixed Income Core Composite Bench</i>		<i>-3.1</i>	<i>1.3</i>	<i>-1.7</i>	<i>0.0</i>
CS McKee	220,831,480	-3.2	1.6	-2.1	-0.1
<i>Blmbg. U.S. Aggregate Index</i>		<i>-3.1</i>	<i>1.3</i>	<i>-2.4</i>	<i>-0.3</i>
Garcia Hamilton	213,502,613	-4.5	-0.2	-1.0	0.2
<i>Blmbg. U.S. Aggregate Index</i>		<i>-3.1</i>	<i>1.3</i>	<i>-2.4</i>	<i>-0.3</i>
Non-Core Fixed Income Composite	123,315,791	0.7	6.7	4.1	4.1
<i>Fixed Income Non-Core Composite Bench</i>		<i>1.2</i>	<i>8.0</i>	<i>5.2</i>	<i>4.5</i>
MacKay Shields (HY)	63,554,212	0.1	6.8	4.9	5.1
<i>ICE BofA ML US Corp Cash Pay BB-B 1-5Yr</i>		<i>0.2</i>	<i>7.9</i>	<i>4.6</i>	<i>4.3</i>
Federated Investment Counseling (Bank Loans)	59,761,579	1.3	7.0	3.3	2.9
<i>60% CredSuisLevLoan/40% BBStGovCorp</i>		<i>1.8</i>	<i>7.5</i>	<i>5.6</i>	<i>4.5</i>

Manager Performance - Net of Fees | As of December 31, 2024

	Market Value \$	QTR (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Real Estate Composite	53,294,231	-0.5	5.5	0.3	5.0
<i>Real Estate Composite Benchmark</i>		<i>0.8</i>	<i>6.5</i>	<i>1.1</i>	<i>5.2</i>
RREEF America II Lag	53,293,993	-0.6	-7.9	-0.6	2.3
<i>NCREIF NPI Lag</i>		<i>0.8</i>	<i>-3.5</i>	<i>0.9</i>	<i>3.3</i>

RREEF results are lagged 1 quarter.
CenterSquare had \$238 of residual assets at the time of this report.

InvMetrics Public Plans > \$1B Return Comparison December 31, 2024



	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	2023	2022	2021	2020
■ EBMUDERS Total Plan Composite	-1.1 (62)	12.0 (2)	3.7 (20)	7.2 (36)	7.5 (19)	15.1 (4)	-13.4 (85)	14.2 (62)	11.2 (50)
● Total Plan Bench	-0.7 (39)	12.2 (2)	3.8 (18)	6.7 (58)	7.2 (33)	14.8 (4)	-13.2 (82)	13.0 (76)	9.3 (75)
5th Percentile	0.6	11.6	4.8	8.6	8.1	14.4	-4.4	20.7	15.5
1st Quartile	-0.4	9.9	3.4	7.5	7.4	12.4	-8.0	17.2	13.0
Median	-0.9	8.9	2.8	6.9	6.9	11.3	-10.3	15.3	11.2
3rd Quartile	-1.3	7.9	2.1	6.3	6.4	9.6	-12.7	13.0	9.3
95th Percentile	-2.0	5.7	1.3	5.3	5.8	7.8	-15.5	10.2	5.4
Population	108	107	103	100	94	194	192	226	239

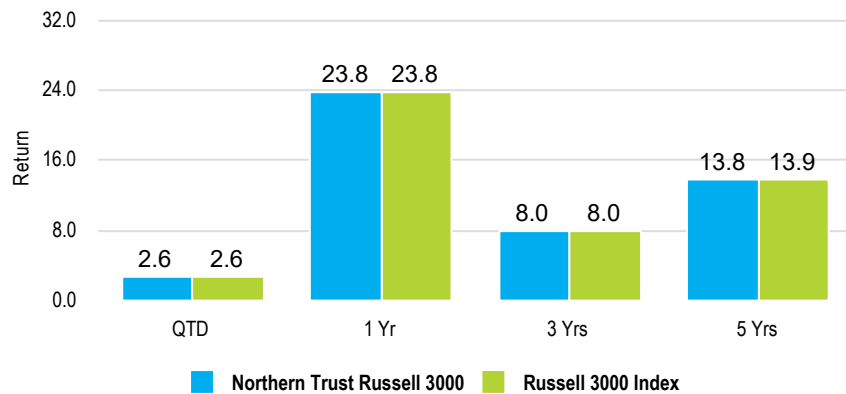
Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Northern Trust Russell 3000 | As of December 31, 2024

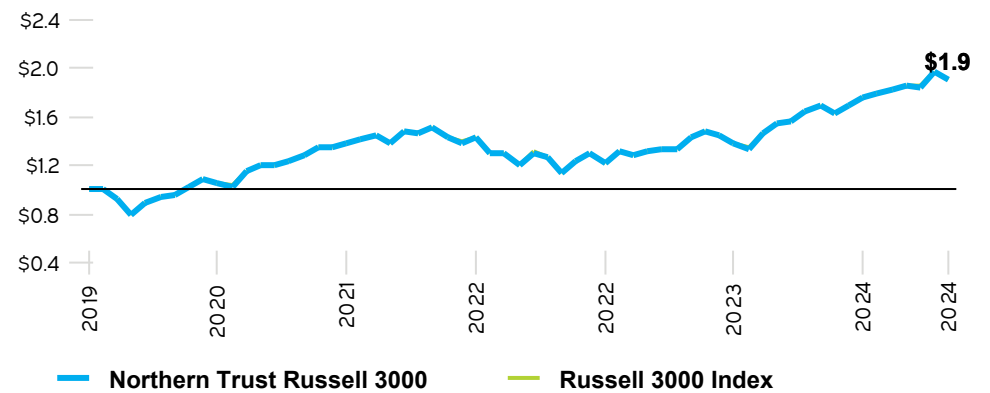
Statistics Summary 5 Years Ending December 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Northern Trust Russell 3000	0.0	1.0	-0.3	0.7	0.1	1.0	99.8	99.8
Russell 3000 Index	0.0	1.0	-	0.7	0.0	1.0	100.0	100.0

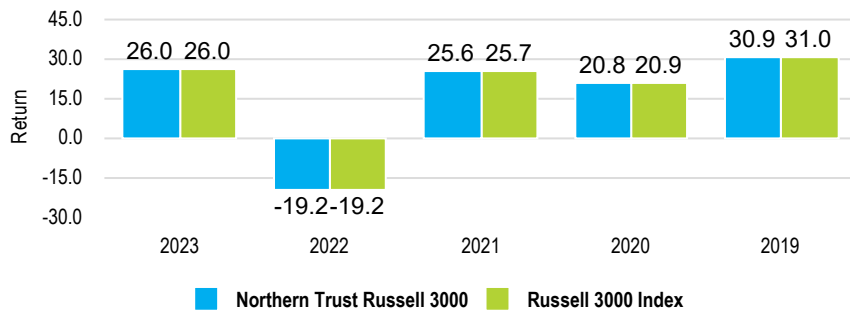
Return Summary



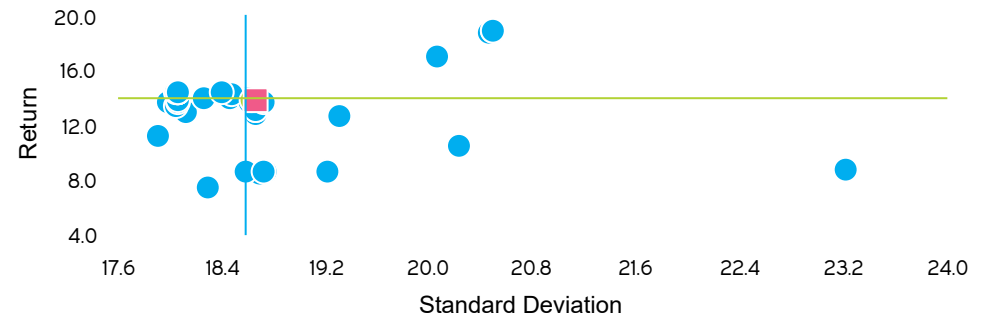
Investment Growth



Return Summary



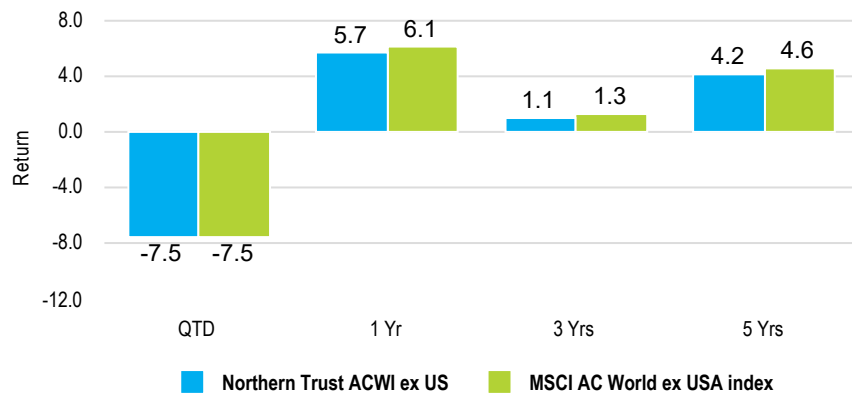
Risk Reward



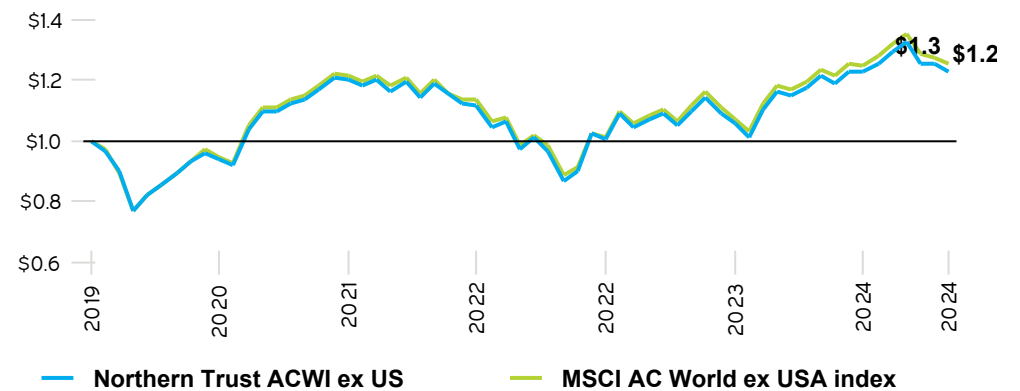
Statistics Summary 5 Years Ending December 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Northern Trust ACWI ex US	-0.4	1.0	-0.2	0.2	1.8	1.0	101.5	103.6
MSCI AC World ex USA index	0.0	1.0	-	0.2	0.0	1.0	100.0	100.0

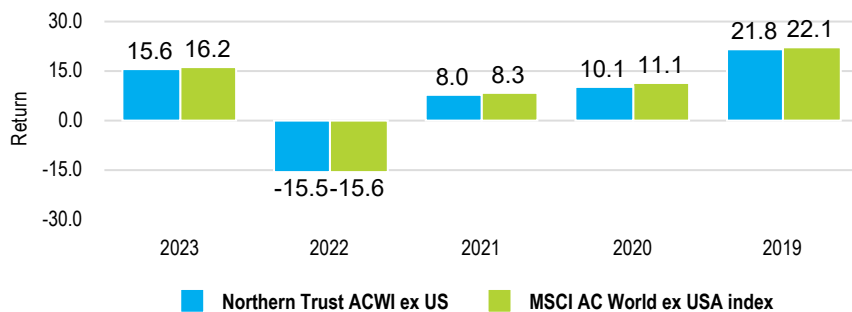
Return Summary



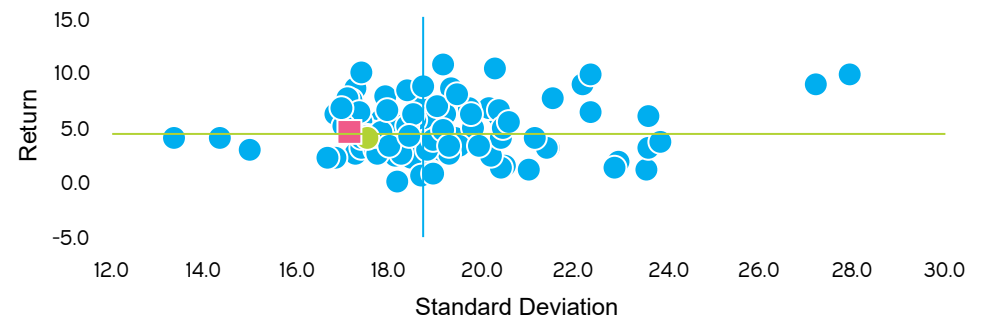
Investment Growth



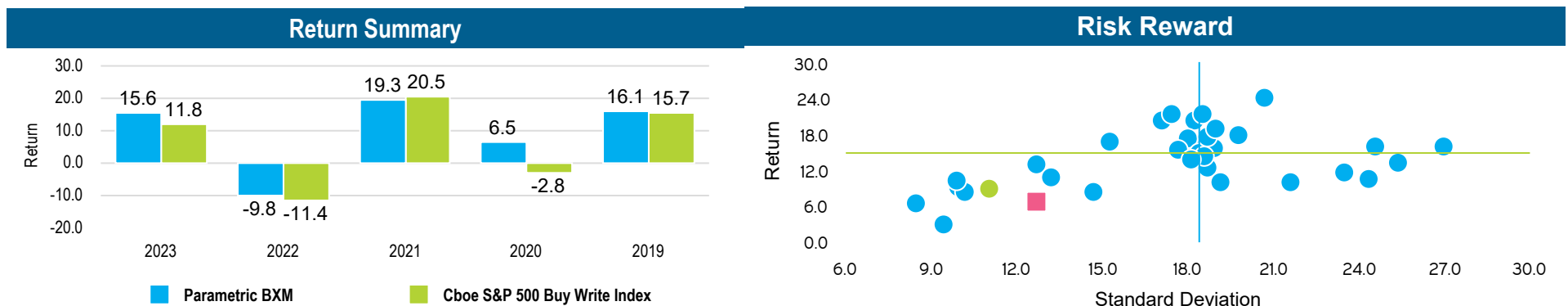
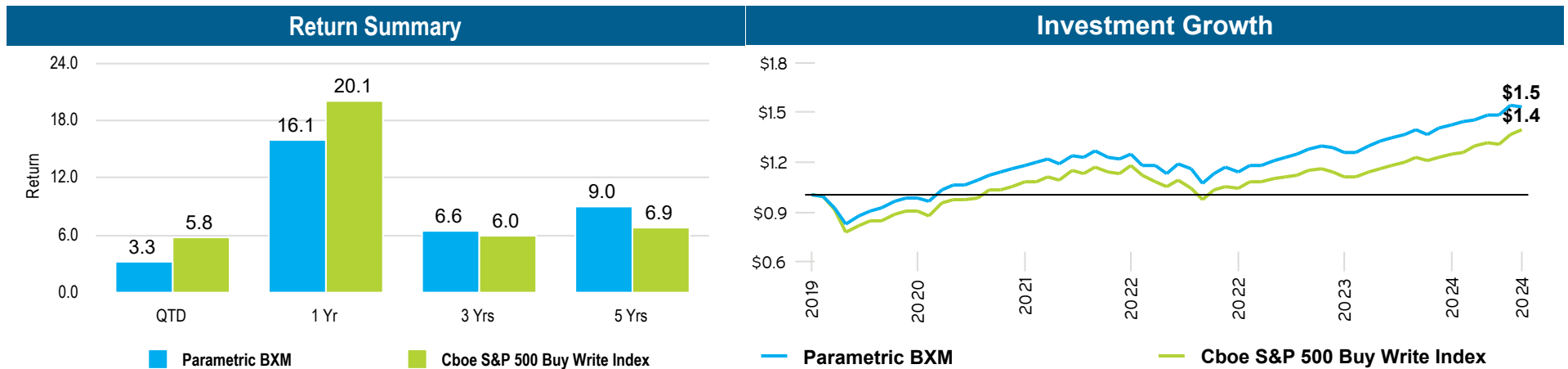
Return Summary



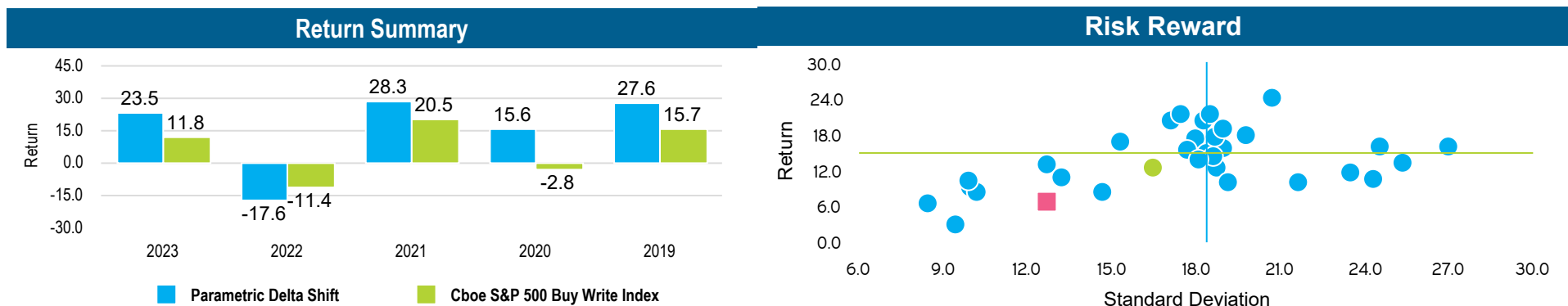
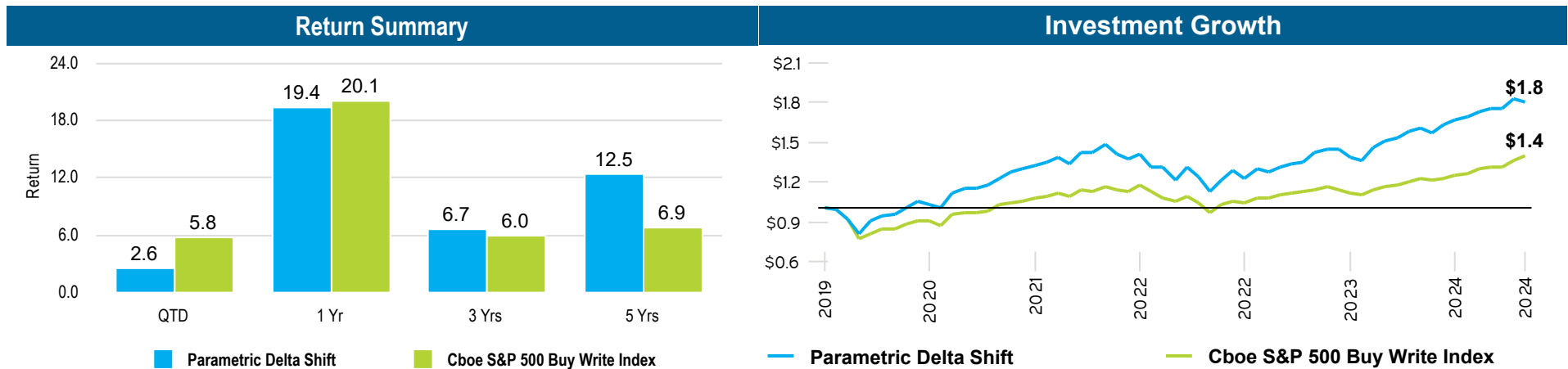
Risk Reward



Statistics Summary 5 Years Ending December 31, 2024									
	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture	
Parametric BXM	3.1	0.8	0.4	0.6	4.4	0.9	94.8	78.4	
Cboe S&P 500 Buy Write Index	0.0	1.0	-	0.4	0.0	1.0	100.0	100.0	

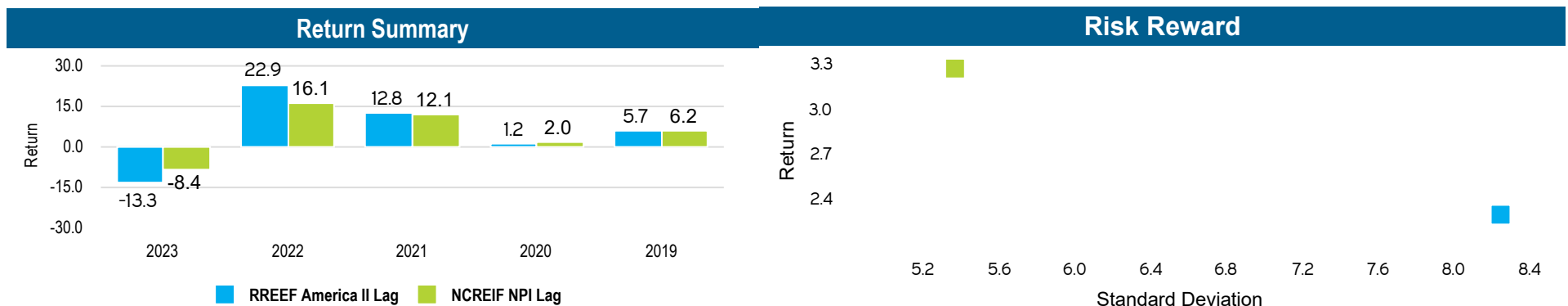
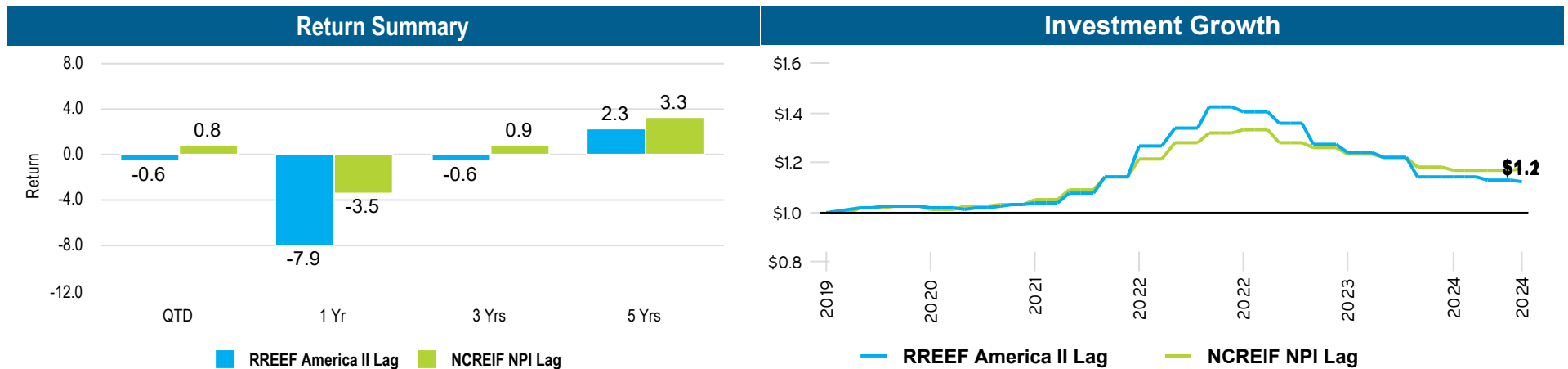


Statistics Summary 5 Years Ending December 31, 2024									
	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture	
Parametric Delta Shift	4.6	1.2	0.7	0.7	7.6	0.8	143.3	124.5	
Cboe S&P 500 Buy Write Index	0.0	1.0	-	0.4	0.0	1.0	100.0	100.0	



RREEF American II Lag | As of December 31, 2024

Statistics Summary 5 Years Ending December 31, 2024								
	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
RREEF America II Lag	-2.0	1.4	-0.2	0.0	3.9	0.8	112.8	155.9
NCREIF NPI Lag	0.0	1.0	-	0.2	0.0	1.0	100.0	100.0

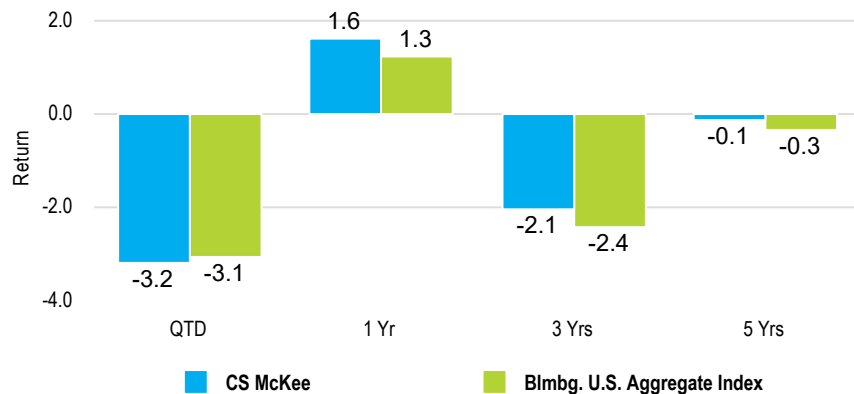


CS McKee | As of December 31, 2024

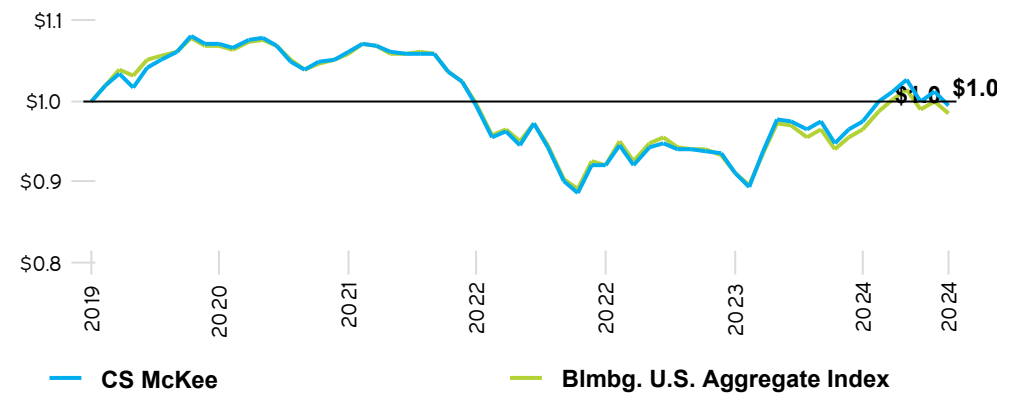
Statistics Summary 5 Years Ending December 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
CS McKee	0.2	1.0	0.2	-0.4	0.9	1.0	106.0	103.5
Blmbg. U.S. Aggregate Index	0.0	1.0	-	-0.4	0.0	1.0	100.0	100.0

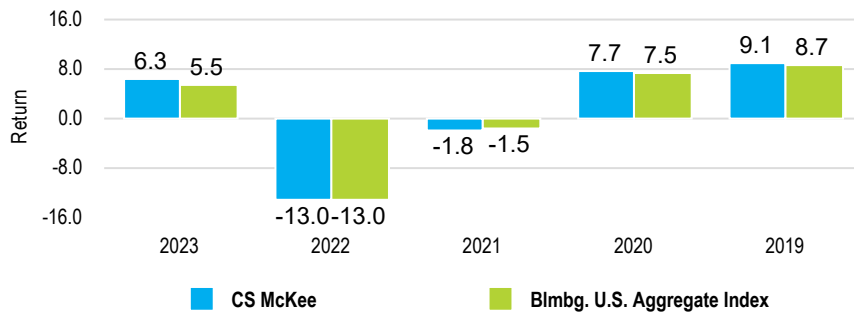
Return Summary



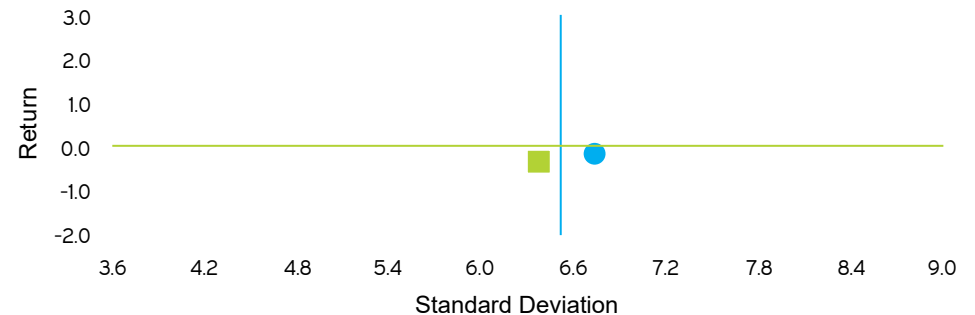
Investment Growth



Return Summary



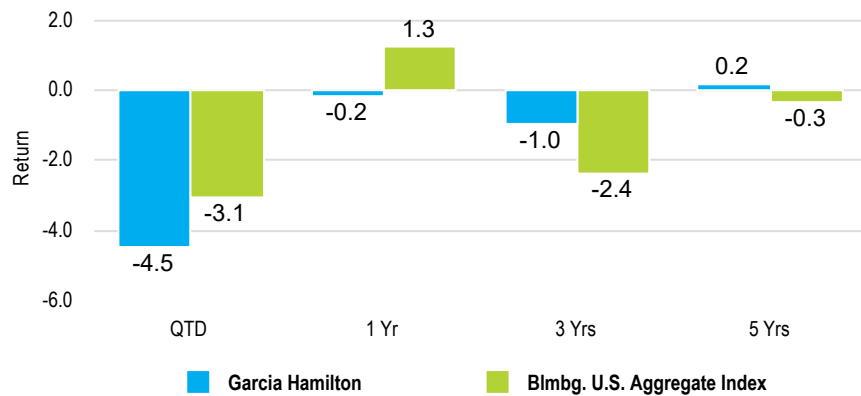
Risk Reward



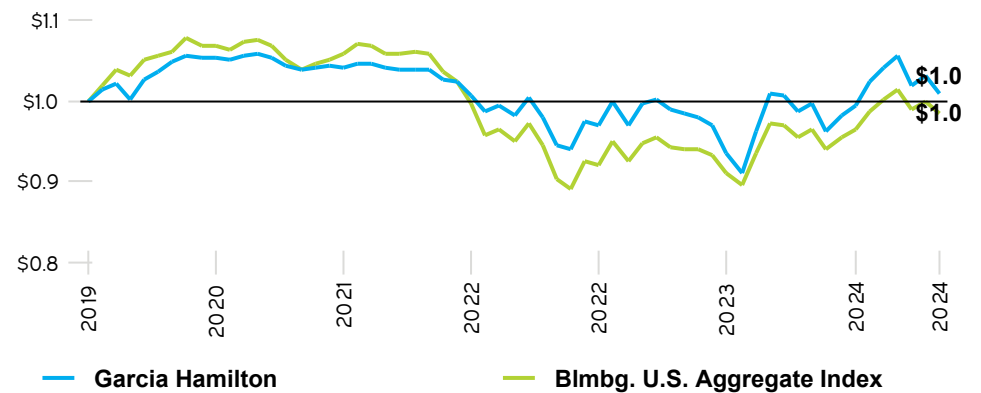
Statistics Summary 5 Years Ending December 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Garcia Hamilton	0.5	1.0	0.2	-0.3	2.2	0.9	101.6	95.9
Blmbg. U.S. Aggregate Index	0.0	1.0	-	-0.4	0.0	1.0	100.0	100.0

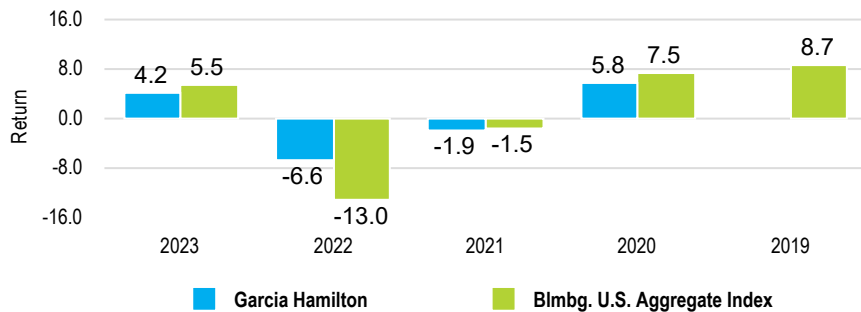
Return Summary



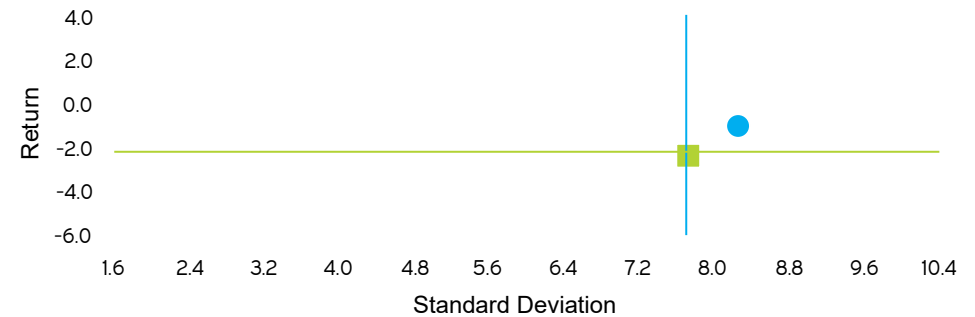
Investment Growth



Return Summary

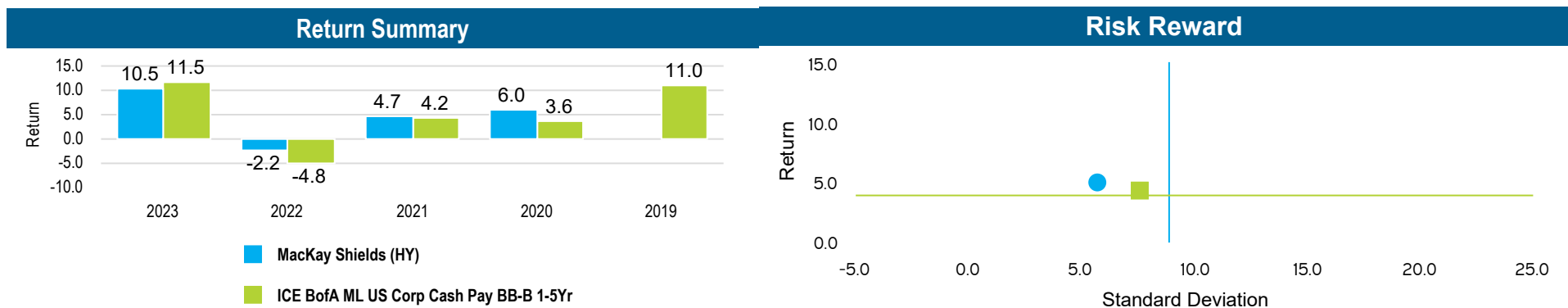
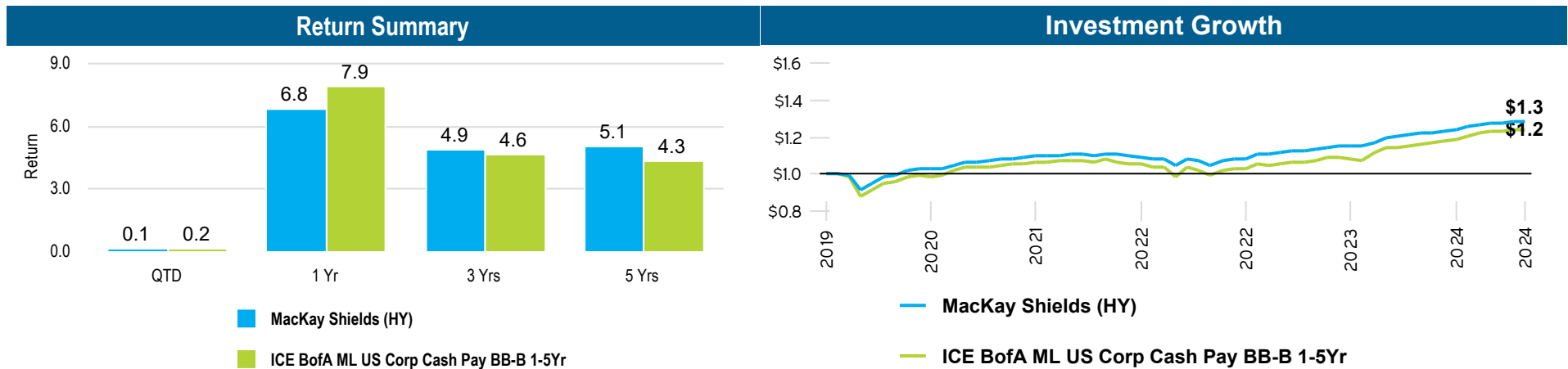


Risk Reward



Mackay Shields | As of December 31, 2024

Statistics Summary 5 Years Ending December 31, 2024								
	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
MacKay Shields (HY)	1.8	0.7	0.3	0.5	2.3	1.0	83.0	61.5
ICE BofA ML US Corp Cash Pay BB-B 1-5Yr	0.0	1.0	-	0.3	0.0	1.0	100.0	100.0

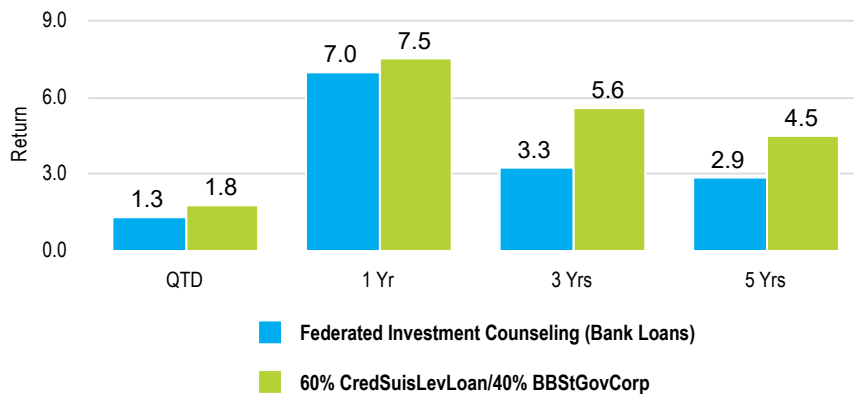


Federated Investment Counseling (Bank Loans) | As of December 31, 2024

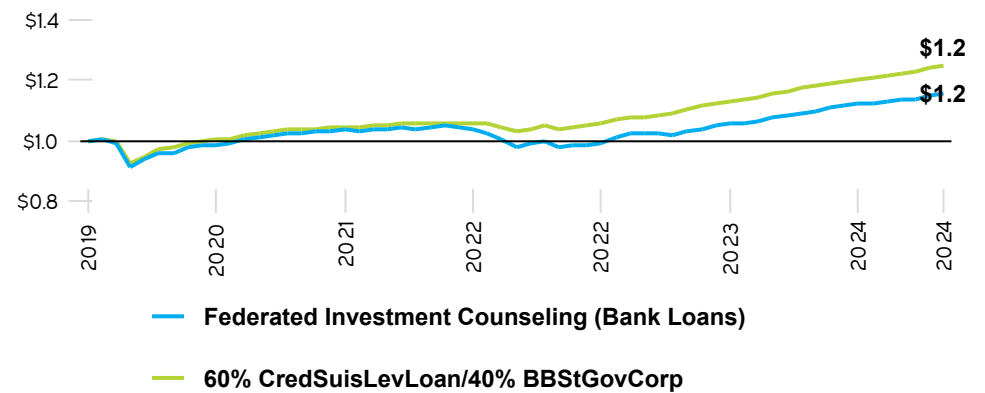
Statistics Summary 5 Years Ending December 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Federated Investment Counseling (Bank Loans)	-2.0	1.1	-1.1	0.1	1.4	0.9	91.3	136.1
60% CredSuisLevLoan/40% BBStGovCorp	0.0	1.0	-	0.5	0.0	1.0	100.0	100.0

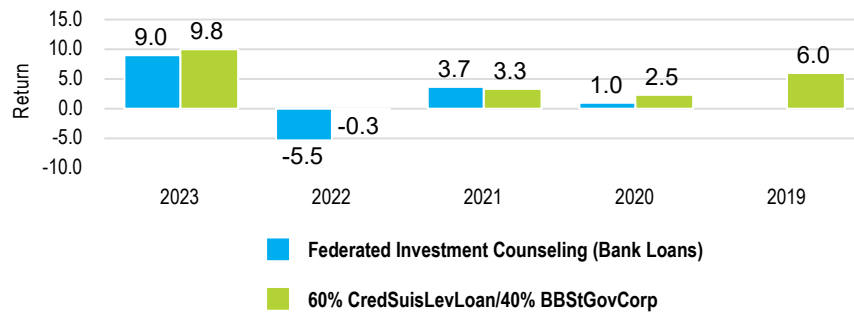
Return Summary



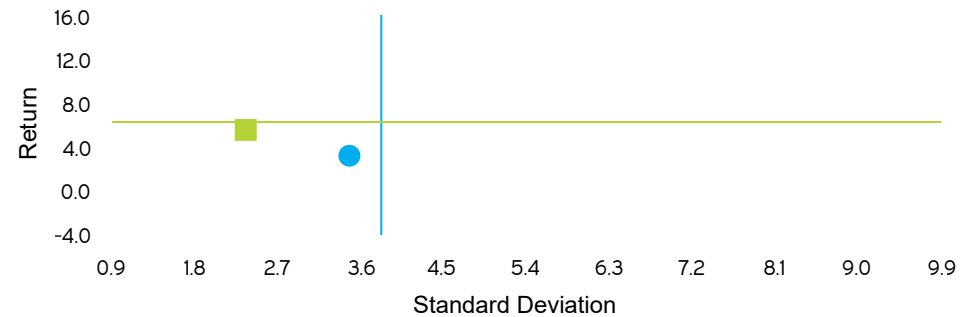
Investment Growth



Return Summary



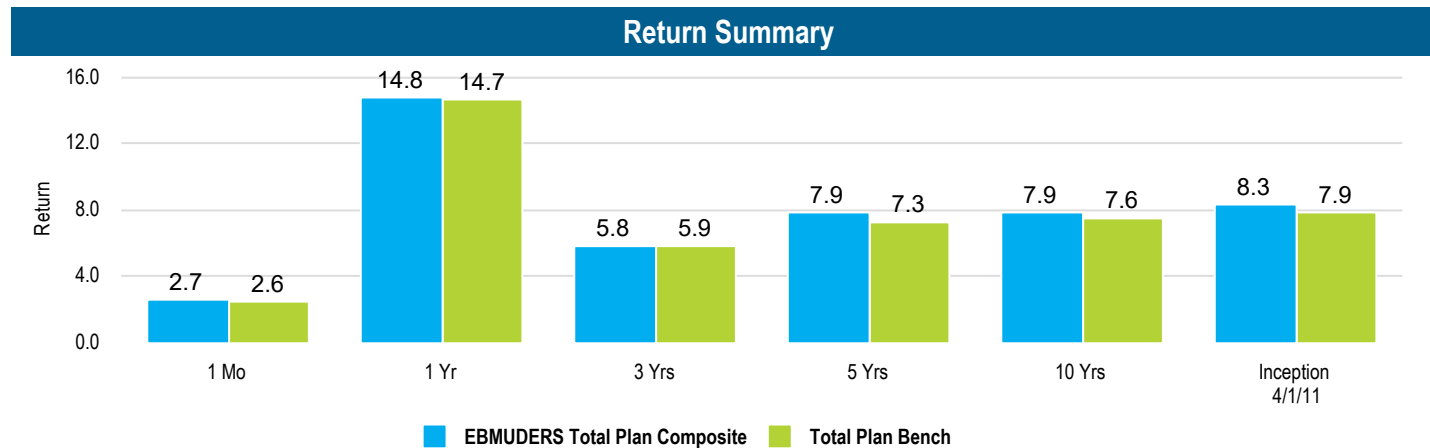
Risk Reward



Gross Performance Update

As of January 31, 2025

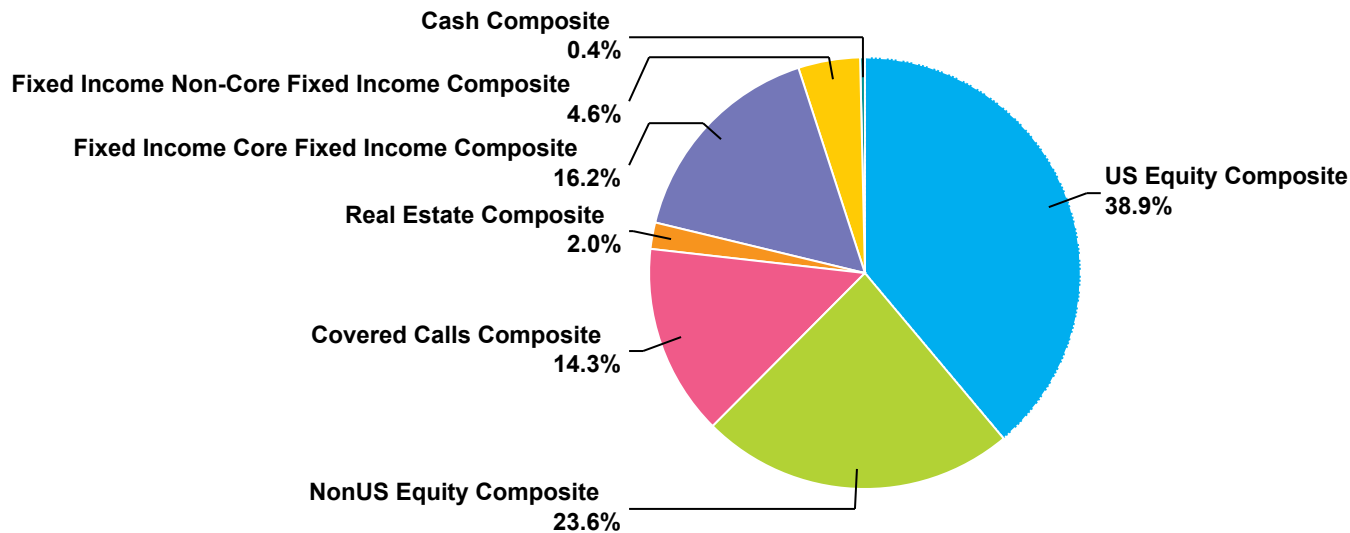
Summary of Cash Flows		
	1 Mo	1 Yr
EBMUDERS Total Plan Composite		
Beginning Market Value	\$2,632,474,028	\$2,361,526,063
Net Cash Flow	-\$12,057,598	-\$20,861,248
Net Investment Change	\$70,203,473	\$349,955,088
Ending Market Value	\$2,690,619,903	\$2,690,619,903



Benchmark definitions are listed at the end of this report.

Actual vs Target Allocation | As of January 31, 2025

Allocation vs. Targets and Policy				
	Current Balance (\$)	Current Allocation (%)	Policy (%)	Policy Range (%)
Domestic Equity	\$1,046,578,791	38.9	33.5	28.5 - 38.5
International Equity	\$634,294,183	23.6	25.0	20.0 - 30.0
Covered Calls	\$385,273,159	14.3	14.0	11.0 - 17.0
Real Estate	\$53,293,993	2.0	2.5	0.5 - 4.5
Core Fixed Income	\$436,769,826	16.2	20.0	17.0 - 23.0
Non-Core Fixed Income	\$124,709,843	4.6	5.0	3.0 - 7.0
Cash	\$9,700,108	0.4	0.0	0.0 - 5.0
Total	\$2,690,619,903	100.0	100.0	



Policy Targets reflect stage 1 Interim Policy Targets per the Evolving Policy Plan.
Actual allocations may deviate from Policy Targets and ranges during the asset allocation transition.

EBMUDERS | As of January 31, 2025

	Market Value \$	% of Portfolio	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
EBMUDERS Total Plan Composite	2,690,619,903	100.0	2.7	14.9	6.0	8.0	8.1	7.7	9.5	Aug-84
<i>Total Plan Benchmark</i>			<i>2.6</i>	<i>14.7</i>	<i>5.9</i>	<i>7.3</i>	<i>7.6</i>	<i>7.3</i>	<i>9.6</i>	
US Equity Composite	1,046,578,791	38.9	3.2	26.3	11.4	14.6	13.5	10.6	11.8	Aug-84
<i>Russell 3000 Hybrid</i>			<i>3.2</i>	<i>26.3</i>	<i>11.4</i>	<i>14.6</i>	<i>13.2</i>	<i>10.6</i>	<i>--</i>	
Non-US Equity Composite	634,294,183	23.6	4.2	11.4	3.5	6.1	5.3	5.8	6.5	Jul-95
<i>MSCI ACWI xUS (blend)</i>			<i>4.0</i>	<i>11.5</i>	<i>4.0</i>	<i>6.0</i>	<i>5.7</i>	<i>5.6</i>	<i>5.5</i>	
Covered Calls Composite	385,273,159	14.3	2.3	18.3	8.6	10.2	9.4	--	9.9	Feb-14
<i>Cboe S&P 500 Buy Write Index</i>			<i>2.2</i>	<i>20.6</i>	<i>7.7</i>	<i>7.6</i>	<i>7.3</i>	<i>6.0</i>	<i>7.2</i>	
Real Estate Composite	53,293,993	2.0	0.0	8.4	2.1	5.5	6.8	--	6.3	Jan-07
<i>Real Estate Composite Benchmark</i>			<i>0.0</i>	<i>8.7</i>	<i>2.3</i>	<i>5.1</i>	<i>6.3</i>	<i>7.9</i>	<i>6.8</i>	
Fixed Income Composite	561,479,669	20.9	0.7	3.0	0.5	0.9	2.2	3.5	6.5	Aug-84
<i>Fixed Income Composite Benchmark</i>			<i>0.6</i>	<i>3.4</i>	<i>0.4</i>	<i>0.8</i>	<i>2.0</i>	<i>3.4</i>	<i>6.3</i>	
Cash Composite	9,700,108	0.4	1.3	5.0	3.9	2.7	2.0	2.0	2.9	Apr-96
<i>FTSE 3 Month T-Bill</i>			<i>0.4</i>	<i>5.4</i>	<i>4.2</i>	<i>2.6</i>	<i>1.8</i>	<i>1.6</i>	<i>2.3</i>	

Benchmark definitions are listed at the end of this report.

Manager Performance - Gross of Fees | As of January 31, 2025

	Market Value \$	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
EBMUDERS Total Plan Composite	2,690,619,903	2.7	14.9	6.0	8.0
<i>Total Plan Bench</i>		<i>2.6</i>	<i>14.7</i>	<i>5.9</i>	<i>7.3</i>
US Equity Composite	1,046,578,791	3.2	26.3	11.4	14.6
<i>Russell 3000 Hybrid</i>		<i>3.2</i>	<i>26.3</i>	<i>11.4</i>	<i>14.6</i>
Northern Trust Russell 3000	1,045,798,485	3.2	26.3	11.4	14.6
<i>Russell 3000 Index</i>		<i>3.2</i>	<i>26.3</i>	<i>11.4</i>	<i>14.6</i>
Non US Equity Composite	634,294,183	4.2	11.4	3.5	6.1
<i>MSCI ACWI xUS (blend)</i>		<i>4.0</i>	<i>11.5</i>	<i>4.0</i>	<i>6.0</i>
Northern Trust ACWI ex US	634,294,183	4.2	11.4	3.5	5.8
<i>MSCI AC World ex USA index</i>		<i>4.0</i>	<i>11.5</i>	<i>4.0</i>	<i>6.0</i>
Covered Calls Composite	385,273,159	2.3	18.3	8.6	10.2
<i>Cboe S&P 500 Buy Write Index</i>		<i>2.2</i>	<i>20.6</i>	<i>7.7</i>	<i>7.6</i>
Parametric BXM	186,435,053	1.8	16.6	8.4	9.6
<i>Cboe S&P 500 Buy Write Index</i>		<i>2.2</i>	<i>20.6</i>	<i>7.7</i>	<i>7.6</i>
Parametric Delta Shift	198,838,106	2.8	21.4	9.7	13.5
<i>Cboe S&P 500 Buy Write Index</i>		<i>2.2</i>	<i>20.6</i>	<i>7.7</i>	<i>7.6</i>

Manager Performance - Gross of Fees | As of January 31, 2025

	Market Value \$	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Core Fixed Income Composite	436,769,826	0.6	1.7	-0.6	0.0
<i>Fixed Income Core Composite Bench</i>		<i>0.5</i>	<i>2.1</i>	<i>-0.9</i>	<i>-0.2</i>
CS McKee	222,040,384	0.5	2.5	-1.0	-0.2
<i>Blmbg. U.S. Aggregate Index</i>		<i>0.5</i>	<i>2.1</i>	<i>-1.5</i>	<i>-0.6</i>
Garcia Hamilton	214,729,442	0.6	0.9	-0.3	0.2
<i>Garcia Hamilton Blended Benchmark</i>		<i>0.5</i>	<i>2.1</i>	<i>-0.4</i>	<i>0.2</i>
Non-Core Fixed Income Composite	124,709,843	1.1	7.8	4.9	4.6
<i>Fixed Income Non-Core Composite Bench</i>		<i>1.0</i>	<i>8.7</i>	<i>5.8</i>	<i>4.7</i>
MacKay Shields (HY)	64,484,088	1.5	8.1	6.0	5.8
<i>Mackay Shields Blended Benchmark</i>		<i>1.4</i>	<i>9.3</i>	<i>5.6</i>	<i>4.6</i>
Federated Investment Counseling (Bank Loans)	60,225,756	0.8	7.9	4.0	3.5
<i>Federated Investment Counseling Blended Benchmark</i>		<i>0.7</i>	<i>8.1</i>	<i>5.9</i>	<i>4.7</i>
Real Estate Composite	53,293,993	0.0	8.4	2.1	5.5
<i>Real Estate Composite Benchmark</i>		<i>0.0</i>	<i>8.7</i>	<i>2.3</i>	<i>5.1</i>
RREEF America II Lag	53,293,993	0.0	-7.1	0.2	3.1
<i>NCREIF NPI Lag</i>		<i>0.0</i>	<i>-3.5</i>	<i>0.9</i>	<i>3.3</i>

Manager Performance - Gross of Fees | As of January 31, 2025

	Market Value \$	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Cash Composite	9,700,108	1.3	5.0	3.9	2.7
Cash LAIF	9,700,108	1.3	5.0	3.9	2.7
<i>FTSE 3 Month T-Bill</i>		<i>0.4</i>	<i>5.4</i>	<i>4.2</i>	<i>2.6</i>

Benchmark History		
From Date	To Date	Benchmark
EBMUDERS Total Plan Composite		
10/01/2024	Present	33.5% Russell 3000 Index, 20.0% Blmbg. U.S. Aggregate Index, 25.0% MSCI AC World ex USA index, 2.5% Morningstar LSTA U.S. Performing Loans, 14.0% Cboe S&P 500 Buy Write Index, 2.5% Credit Suisse Leveraged Loans, 2.5% Blmbg. U.S. Corp: High Yield Index
02/01/2023	10/01/2024	2.5% Real Estate Composite, 25.0% Russell 3000 Index, 20.0% Blmbg. U.S. Aggregate Index, 25.0% MSCI AC World ex USA index, 2.5% Morningstar LSTA U.S. Performing Loans, 20.0% Cboe S&P 500 Buy Write Index, 2.5% 60% CredSuisLevLoan/40% BBStGovCorp, 2.5% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr
12/01/2019	02/01/2023	2.5% Real Estate Composite, 25.0% Russell 3000 Index, 10.0% Blmbg. Intermed. U.S. Government/Credit, 10.0% Blmbg. U.S. Aggregate Index, 25.0% MSCI AC World ex USA index, 2.5% Morningstar LSTA U.S. Performing Loans, 20.0% Cboe S&P 500 Buy Write Index, 2.5% 60% CredSuisLevLoan/40% BBStGovCorp, 2.5% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr
03/01/2019	12/01/2019	2.5% Real Estate Composite, 25.0% Russell 3000 Index, 5.0% Bloomberg U.S. Gov/Credit 1-3 Year Index, 15.0% Blmbg. U.S. Aggregate Index, 25.0% MSCI AC World ex USA index, 2.5% Morningstar LSTA U.S. Performing Loans, 20.0% Cboe S&P 500 Buy Write Index, 2.5% 60% CredSuisLevLoan/40% BBStGovCorp, 2.5% 50% BBG EM Hard Cur Agg: Sovereign/50% BBG EM USD Aggregate Corporate TR
07/01/2018	03/01/2019	2.5% Real Estate Composite, 25.0% Russell 3000 Index, 5.0% Bloomberg U.S. Gov/Credit 1-3 Year Index, 15.0% Blmbg. U.S. Aggregate Index, 25.0% MSCI AC World ex USA index, 2.5% Morningstar LSTA U.S. Performing Loans, 2.5% Blmbg. U.S. High Yield 1-5 Yr Cash Pay 2%, 20.0% Cboe S&P 500 Buy Write Index, 2.5% NCREIF NPI Lag
04/01/2014	07/01/2018	2.5% Real Estate Composite, 40.0% Russell 3000 Index, 5.0% Bloomberg U.S. Gov/Credit 1-3 Year Index, 10.0% Blmbg. U.S. Aggregate Index, 15.0% MSCI AC World ex USA index, 2.5% Morningstar LSTA U.S. Performing Loans, 2.5% Blmbg. U.S. High Yield 1-5 Yr Cash Pay 2%, 20.0% Cboe S&P 500 Buy Write Index, 2.5% NCREIF NPI Lag
03/01/2014	04/01/2014	2.5% Real Estate Composite, 40.0% Russell 3000 Index, 15.0% Blmbg. U.S. Aggregate Index, 15.0% MSCI AC World ex USA index, 2.5% Morningstar LSTA U.S. Performing Loans, 2.5% Blmbg. U.S. High Yield 1-5 Yr Cash Pay 2%, 20.0% Cboe S&P 500 Buy Write Index, 2.5% NCREIF NPI Lag
11/01/2011	03/01/2014	2.5% Real Estate Composite, 50.0% Russell 3000 Index, 20.0% MSCI AC World ex USA index, 25.0% Blmbg. U.S. Universal Index, 2.5% NCREIF NPI Lag
01/01/2008	11/01/2011	50.0% Russell 3000 Index, 20.0% MSCI AC World ex USA index, 25.0% Blmbg. U.S. Universal Index, 5.0% NCREIF NPI Lag
01/01/2007	01/01/2008	50.0% Russell 3000 Index, 25.0% Blmbg. U.S. Aggregate Index, 20.0% MSCI AC World ex USA index, 5.0% NCREIF NPI Lag
10/01/2005	01/01/2007	50.0% Russell 3000 Index, 25.0% Blmbg. U.S. Aggregate Index, 20.0% MSCI EAFE (Net), 5.0% NCREIF NPI Lag
04/01/2005	10/01/2005	10.0% Russell 2000 Index, 30.0% S&P 500 Index, 10.0% S&P MidCap 400 Index, 25.0% Blmbg. U.S. Aggregate Index, 20.0% MSCI EAFE (Net), 5.0% NCREIF NPI Lag
09/01/1998	04/01/2005	10.0% Russell 2000 Index, 33.0% S&P 500 Index, 10.0% S&P MidCap 400 Index, 30.0% Blmbg. U.S. Aggregate Index, 17.0% MSCI EAFE (Net)

Benchmark History | As of January 31, 2025

From Date	To Date	Benchmark
07/01/1978	09/01/1998	30.0% S&P 500 Index, 30.0% Blmbg. U.S. Aggregate Index, 5.0% FTSE 3 Month T-Bill, 15.0% MSCI EAFE (Net), 5.0% NCREIF NPI Lag, 15.0% Wilshire 5000 Total Market Index

Fixed Income Composite

10/01/2024	Present	80.0% Blmbg. U.S. Aggregate Index, 10.0% Credit Suisse Leveraged Loans, 10.0% Blmbg. U.S. Corp: High Yield Index
02/01/2023	10/01/2024	80.0% Blmbg. U.S. Aggregate Index, 10.0% 60% CredSuisLevLoan/40% BBStGovCorp, 10.0% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr
12/01/2019	02/01/2023	40.0% Blmbg. Intermed. U.S. Government/Credit, 40.0% Blmbg. U.S. Aggregate Index, 10.0% 60% CredSuisLevLoan/40% BBStGovCorp, 10.0% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr
03/01/2019	12/01/2019	20.0% Bloomberg U.S. Gov/Credit 1-3 Year Index, 60.0% Blmbg. U.S. Aggregate Index, 10.0% 60% CredSuisLevLoan/40% BBStGovCorp, 10.0% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr
07/01/2018	03/01/2019	20.0% Bloomberg U.S. Gov/Credit 1-3 Year Index, 60.0% Blmbg. U.S. Aggregate Index, 10.0% Morningstar LSTA U.S. Performing Loans, 10.0% Blmbg. U.S. High Yield 1-5 Yr Cash Pay 2%
04/01/2014	07/01/2018	25.0% Bloomberg U.S. Gov/Credit 1-3 Year Index, 50.0% Blmbg. U.S. Aggregate Index, 12.5% Morningstar LSTA U.S. Performing Loans, 12.5% Blmbg. U.S. High Yield 1-5 Yr Cash Pay 2%
03/01/2014	04/01/2014	75.0% Blmbg. U.S. Aggregate Index, 12.5% Morningstar LSTA U.S. Performing Loans, 12.5% Blmbg. U.S. High Yield 1-5 Yr Cash Pay 2%
01/01/2008	03/01/2014	100.0% Blmbg. U.S. Universal Index
01/01/1976	01/01/2008	100.0% Blmbg. U.S. Aggregate Index

Fixed Income Core Fixed Income Composite

02/01/2023	Present	100.0% Blmbg. U.S. Aggregate Index
12/01/2019	02/01/2023	50.0% Blmbg. Intermed. U.S. Government/Credit, 50.0% Blmbg. U.S. Aggregate Index

Fixed Income Non-Core Fixed Income Composite

10/01/2024	Present	50.0% Credit Suisse Leveraged Loans, 50.0% Blmbg. U.S. Corp: High Yield Index
12/01/2019	10/01/2024	50.0% 60% CredSuisLevLoan/40% BBStGovCorp, 50.0% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr
03/01/2019	12/01/2019	50.0% Bloomberg U.S. Gov/Credit 1-3 Year Index, 25.0% 60% CredSuisLevLoan/40% BBStGovCorp, 25.0% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr
03/01/2014	03/01/2019	50.0% Bloomberg U.S. Gov/Credit 1-3 Year Index, 25.0% Morningstar LSTA U.S. Performing Loans, 25.0% Blmbg. U.S. High Yield 1-5 Yr Cash Pay 2%

Real Estate Composite

Benchmark History | As of January 31, 2025

From Date	To Date	Benchmark
10/01/2024	Present	100.0% NCREIF NPI Lag
11/01/2011	10/01/2024	50.0% NCREIF NPI Lag, 50.0% FTSE NAREIT Equity REIT Index
10/01/1998	11/01/2011	100.0% NCREIF NPI Lag
04/01/1978	10/01/1998	100.0% NCREIF Property Index

Fixed Income Blended Benchmarks

Garcia Hamilton

02/01/2023	Present	100.0% Blmbg. U.S. Aggregate Index
11/01/2019	02/01/2023	100.0% Blmbg. Intermed. U.S. Government/Credit

MacKay Shields (HY)

10/01/2024	Present	100.0% Blmbg. U.S. Corp: High Yield Index
02/01/2019	10/01/2024	100.0% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr

Federated Investment Counseling (Bank Loans)

10/01/2024	Present	100.0% Credit Suisse Leveraged Loans
02/01/2019	10/01/2024	100.0% 60% CredSuisLevLoan/40% BBStGovCorp

Benchmark History		
From Date	To Date	Benchmark
Real Estate Composite		
10/01/2024	Present	100.0% NCREIF NPI Lag
11/01/2011	10/01/2024	50.0% NCREIF NPI Lag, 50.0% FTSE NAREIT Equity REIT Index
10/01/1998	11/01/2011	100.0% NCREIF NPI Lag
04/01/1978	10/01/1998	100.0% NCREIF Property Index
Fixed Income Blended Benchmarks		
Garcia Hamilton		
02/01/2023	Present	100.0% Blmbg. U.S. Aggregate Index
11/01/2019	02/01/2023	100.0% Blmbg. Intermed. U.S. Government/Credit
MacKay Shields (HY)		
10/01/2024	Present	100.0% Blmbg. U.S. Corp: High Yield Index
02/01/2019	10/01/2024	100.0% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr
Federated Investment Counseling (Bank Loans)		
10/01/2024	Present	100.0% Credit Suisse Leveraged Loans
02/01/2019	10/01/2024	100.0% 60% CredSuisLevLoan/40% BBStGovCorp

Manager Watch Screens

Manager Performance			
	QTD	1 Yr	3 Yrs
Northern Trust Russell 3000	2.6	23.8	8.0
Russell 3000 Index	2.6	23.8	8.0

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -3.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.75% for 6 consecutive months

Current Status: **Acceptable**

Long-Term Criteria (60+ months)

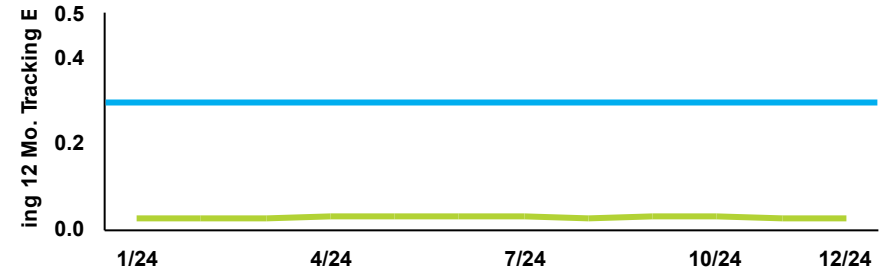
VRR < 0.98 for 6 consecutive months

Current Status: **Acceptable**

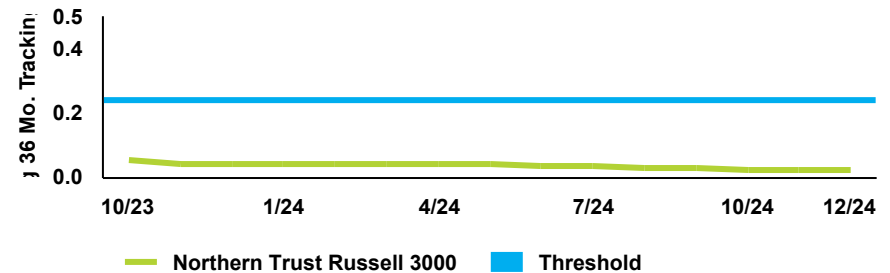
Overall Status:

Acceptable

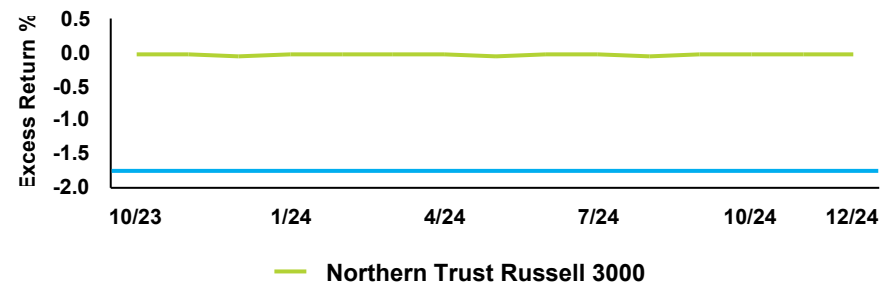
Short-Term Performance Evaluation



Medium-Term Performance Evaluation



Medium-Term Performance Evaluation



Manager Performance				
	QTD	1 Yr	3 Yrs	5 Yrs
Northern Trust ACWI ex US	-7.5	5.7	1.1	4.2
MSCI AC World ex USA index	-7.5	6.1	1.3	4.6

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -3.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.75% for 6 consecutive months

Current Status: **Acceptable**

Long-Term Criteria (60+ months)

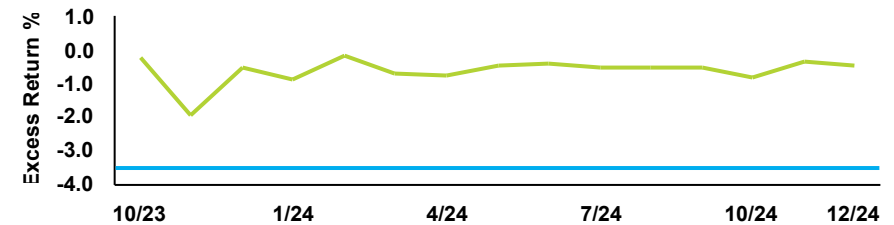
VRR < 0.98 for 6 consecutive months

Current Status: **Acceptable**

Overall Status:

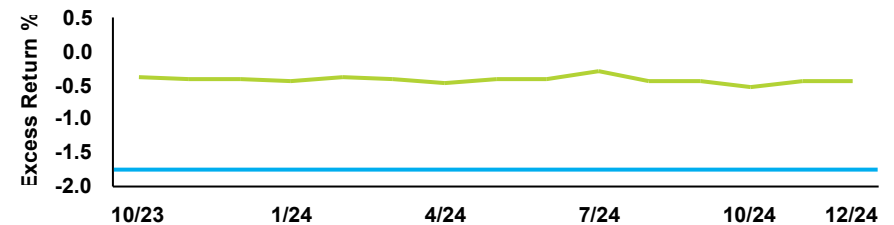
Acceptable

Short-Term Performance Evaluation



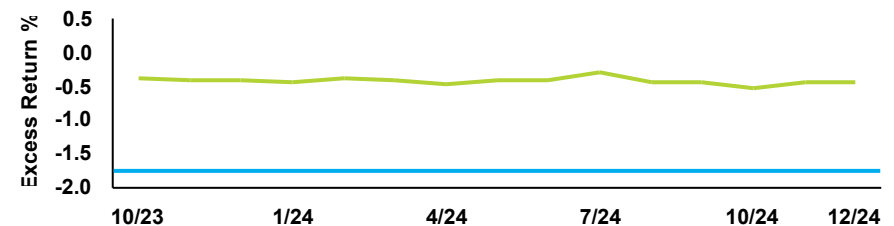
— Northern Trust ACWI ex US

Long-Term Performance Evaluation



— Northern Trust ACWI ex US

Long-Term Performance Evaluation



— Northern Trust ACWI ex US

Manager Performance				
	QTD	1 Yr	3 Yrs	5 Yrs
Parametric BXM	3.3	16.1	6.6	9.0
Cboe S&P 500 Buy Write Index	5.8	20.1	6.0	6.9

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -3.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.75% for 6 consecutive months

Current Status: **Acceptable**

Long-Term Criteria (60+ months)

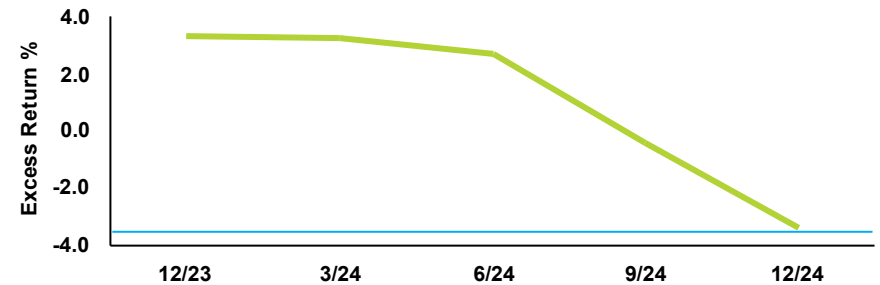
VRR < 0.97 for 6 consecutive months

Current Status: **Acceptable**

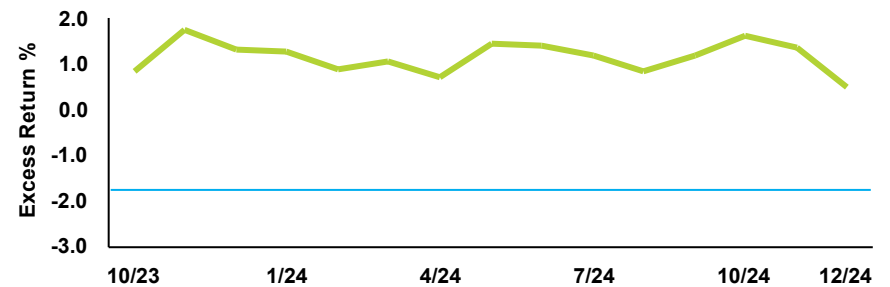
Overall Status:

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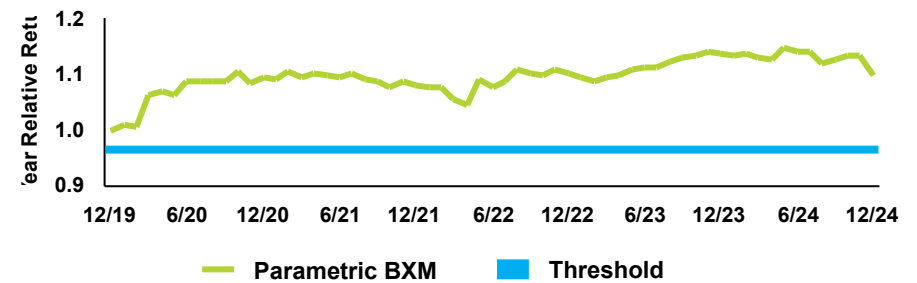
Short-Term Performance Evaluation



Medium-Term Performance Evaluation



Long-Term Performance



Manager Performance				
	QTD	1 Yr	3 Yrs	5 Yrs (%)
Parametric Delta Shift	2.6	19.4	6.7	12.5
Cboe S&P 500 Buy Write Index	5.8	20.1	6.0	6.9

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -3.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.75% for 6 consecutive months

Current Status: **Acceptable**

Long-Term Criteria (60+ months)

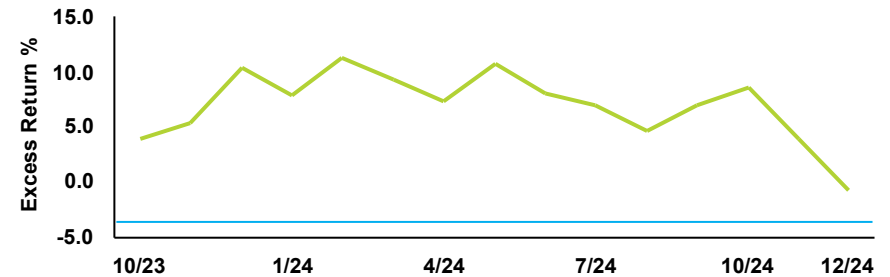
VRR < 0.97 for 6 consecutive months

Current Status: **Acceptable**

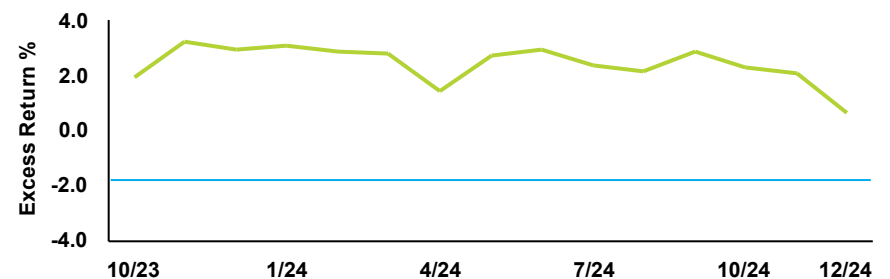
Overall Status:

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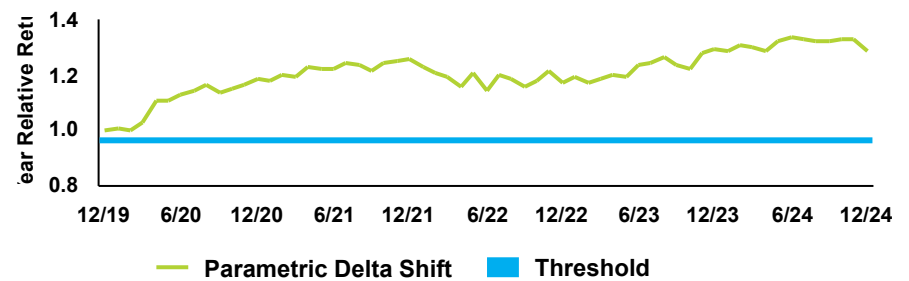
Short-Term Performance Evaluation



Medium-Term Performance Evaluation



Long-Term Performance Evaluation



Manager Performance				
	QTD	1 Yr	3 Yrs	5 Yrs
CS McKee	-3.2	1.6	-2.1	-0.1
Bmbg. U.S. Aggregate Index	-3.1	1.3	-2.4	-0.3

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -1.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.0% for 6 consecutive months

Current Status: **Acceptable**

Long-Term Criteria (60+ months)

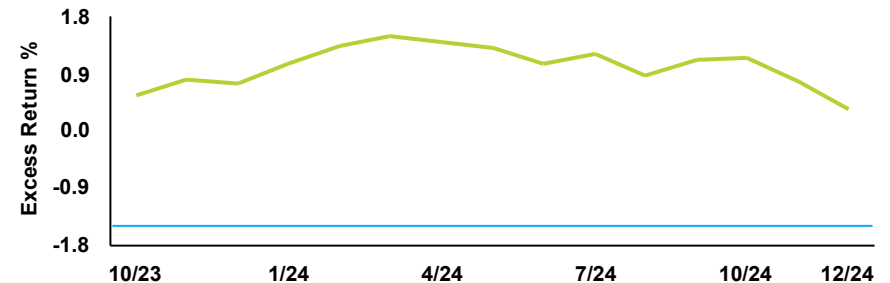
VRR < 0.98 for 6 consecutive months

Current Status: **Acceptable**

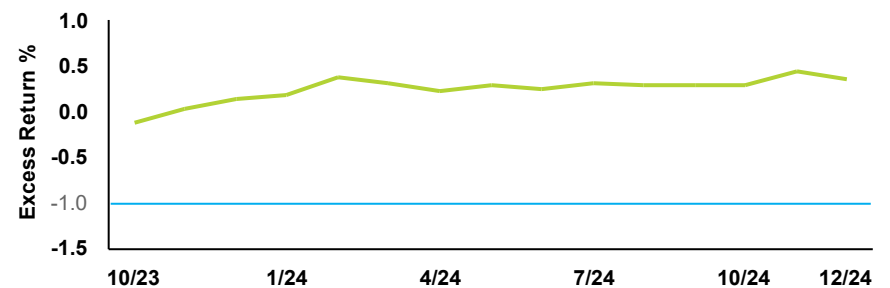
Overall Status:

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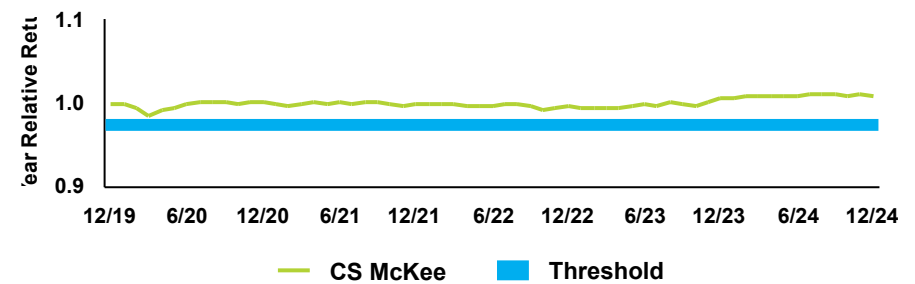
Short-Term Performance Evaluation



Medium-Term Performance Evaluation



Long-Term Performance



Manager Performance			
	QTD	1 Yr	3 Yrs
Garcia Hamilton	-4.5	-0.2	-1.0
Bimbg. U.S. Aggregate Index	-3.1	1.3	-2.4

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -3.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.75% for 6 consecutive months

Current Status: **Acceptable**

Long-Term Criteria (60+ months)

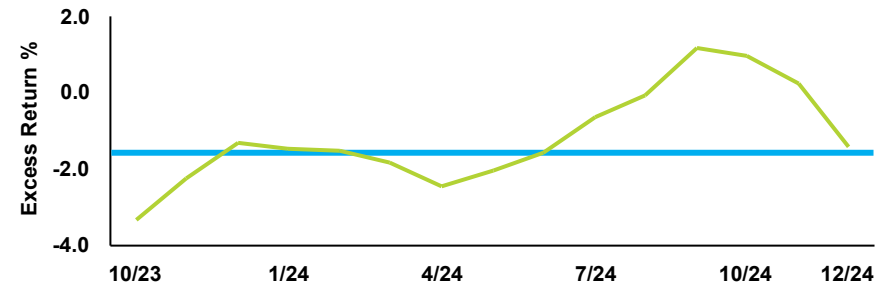
VRR < 0.97 for 6 consecutive months

Current Status: **Acceptable**

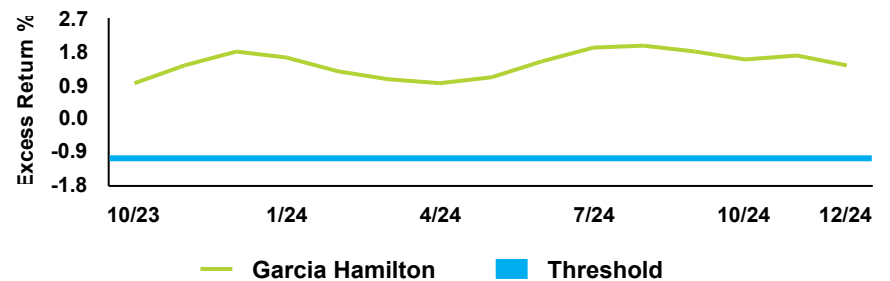
Overall Status:

Acceptable

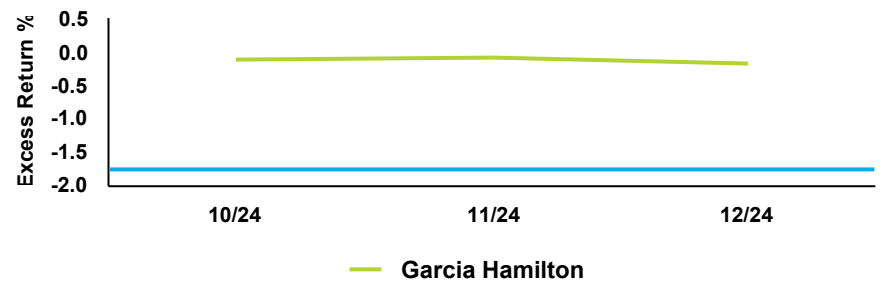
Short-Term Performance Evaluation



Medium-Term Performance Evaluation



Long-Term Performance Evaluation



Manager Performance			
	QTD	1 Yr	3 Yrs
Mackay Shields (HY)	0.1	6.8	4.9
ICE BofA ML US Corp Cash Pay BB-B 1-5Yr	0.2	7.9	4.6

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -3.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.75% for 6 consecutive months

Current Status: **Acceptable**

Long-Term Criteria (60+ months)

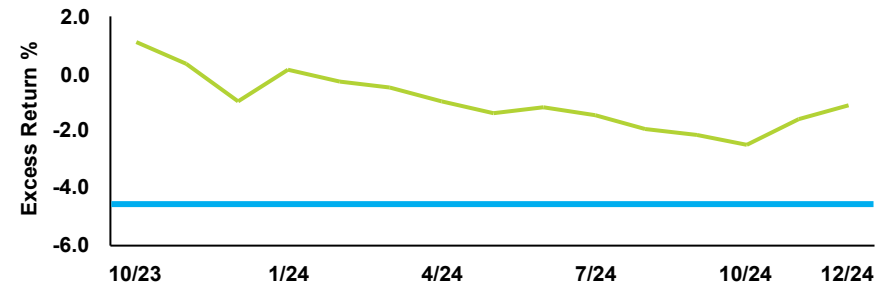
VRR < 0.97 for 6 consecutive months

Current Status: **Acceptable**

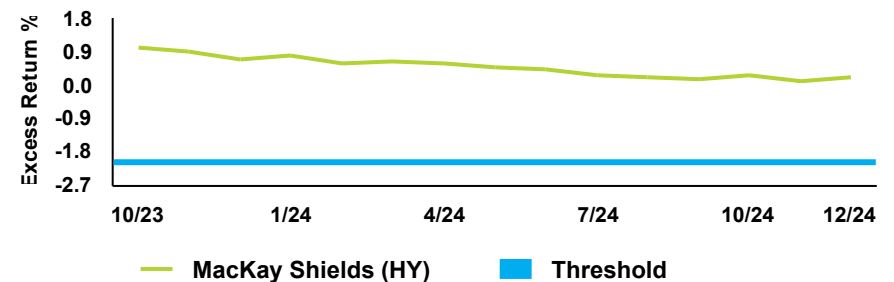
Overall Status:

Acceptable

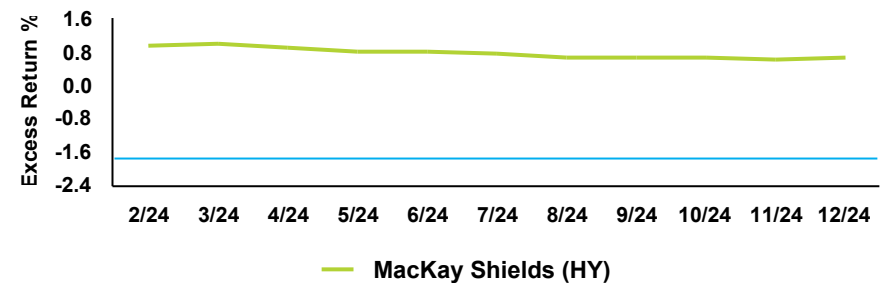
Short-Term Performance Evaluation



Medium-Term Performance Evaluation



Long-Term Performance Evaluation



Manager Performance			
	QTD	1 Yr	3 Yrs
Federated Investment Counseling (Bank Loans)	1.3	7.0	3.3
60% CredSuisLevLoan/40% BBStGovCorp	1.8	7.5	5.6

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -3.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.75% for 6 consecutive months

Current Status: **Acceptable**

Long-Term Criteria (60+ months)

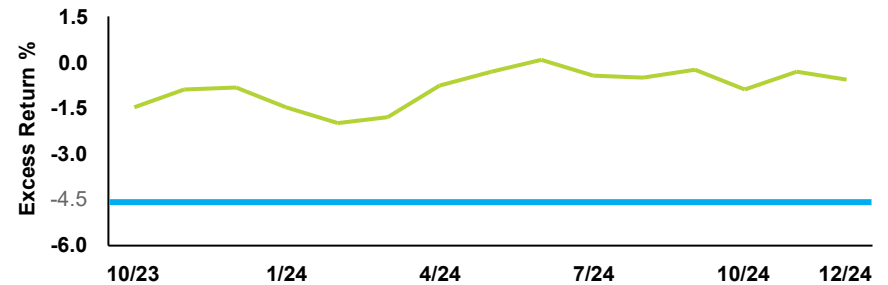
VRR < 0.97 for 6 consecutive months

Current Status: **Acceptable**

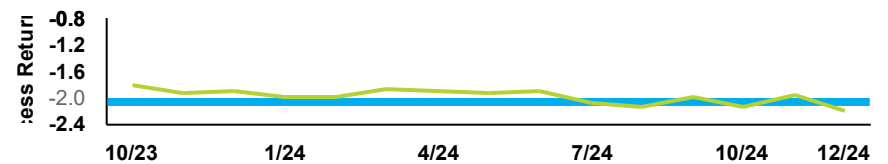
Overall Status:

Acceptable

Short-Term Performance Evaluation



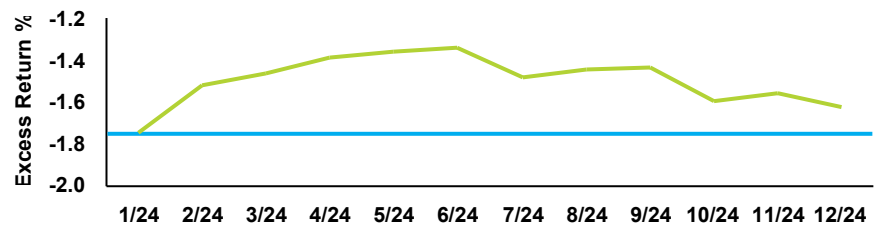
Medium-Term Performance Evaluation



— Federated Investment Counseling (Bank Loans)

■ Threshold

Long-Term Performance Evaluation



— Federated Investment Counseling (Bank Loans)

Performance Monitoring Summary

				Current Status			
Portfolio	Violation Type (Window) ¹	Date of Initial Violation	Correction Action(s)	Current Status	Est. Beg. Date of Current Status	Months Since Est. Beg. Date	Performance Since Est. Beg. Date ²³
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

→ No managers are currently on watch.

¹ Defined as: Short-Term (12 months), Medium-Term (36 months), Long-Term (60 months).

² Annualized for periods greater than 12 months.

³ Performance figures not yet available.

Quantitative Compliance Monitoring per Watch Criteria

Active Management Criteria

- Active investment managers are expected to outperform their respective passive benchmarks related to both their asset class and investment style.
- Relative excess performance that falls below the red acceptable threshold stated in the Watch Criteria for six consecutive months may be a trigger for Watch status.

Passive Management Criteria

- Passive investment managers are expected to track the performance of their respective passive benchmarks related to both their asset class and their investment style.
- Tracking error is a measure of how closely a portfolio follows the index to which it is benchmarked.
- For short- and medium-term performance monitoring, a portfolio with tracking error that is above the red acceptable threshold stated in the Watch Criteria for six consecutive months may be a trigger for Watch status.
- For long-term performance monitoring, relative excess performance that falls below the red acceptable threshold stated in the Watch Criteria for six consecutive months may be a trigger for Watch status.

Quantitative Monitoring Results - Overall Status Summary

	Prior Qtr Status	Current Qtr Status
Northern Trust – R3000	Acceptable	Acceptable
Northern Trust – ACWIXUS	Acceptable	Acceptable
Parametric – BXM	Acceptable	Acceptable
Parametric – Delta Shift	Acceptable	Acceptable
Van Hulzen	Acceptable	Acceptable
CS McKee	Acceptable	Acceptable
Garcia Hamilton	Acceptable	Acceptable
Mackay Shields – Short Term HY	Acceptable	Acceptable
Federated – Bank Loans	Acceptable	Acceptable
CenterSquare	Acceptable	Acceptable

Investment Performance Criteria by Asset Class

Asset Class	Short-term (rolling 12-month periods)	Medium-term (rolling 36-month periods)	Long-term (60+ months)
Domestic Equity - Passive	Tracking error > 0.30%	Tracking error > 0.25% for 6 consecutive months	Fund annualized return < benchmark annualized return -0.40% for 6 consecutive months
Non-US Equity - Passive	Tracking error > 1.75%	Tracking error > 1.5% for 6 consecutive months	Fund annualized return < benchmark annualized return - 0.50% for 6 consecutive months
Covered Calls - Active	Fund return < benchmark return - 3.5%	Fund annualized return < benchmark annualized return -1.75% for 6 consecutive months	VRR < 0.97 for 6 consecutive months
Covered Calls - Replication	Fund return < benchmark return - 3.5%	Fund annualized return < benchmark annualized return -1.75% for 6 consecutive months	Fund annualized return < benchmark annualized return - 0.40% for 6 consecutive months
Fixed Income - Core – Active	Fund return < benchmark return - 1.5%	Fund annualized return < benchmark annualized return -1.0% for 6 consecutive months	VRR < 0.98 for 6 consecutive months
Fixed Income - Core – Passive	Tracking error > 0.25%	Tracking error > 0.20% for 6 consecutive months	Fund annualized return < benchmark annualized return - 0.30% for 6 consecutive months
Fixed Income - Non-Core	Fund return < benchmark return - 4.5%	Fund annualized return < benchmark annualized return - 2.0% for 6 consecutive months	VRR < 0.97 for 6 consecutive months

All criteria are on an annualized basis.

VRR – Value Relative Ratio – is calculated as: manager cumulative return / benchmark cumulative return.

Manager Compliance Certification Responses

Manager Compliance Certification Responses

Qualitative Compliance Monitoring per EBMUDERS Investment Policy

Each of EBMUDERS managers is required to respond to a questionnaire on a quarterly basis to certify their compliance with EBMUDERS Investment Policy Statement and provide an update on specific qualitative indicators to be evaluated.

These indicators include:

- Compliance with the guidelines of 'Eligible Investments' for the manager's specific mandate
- Any litigation or governmental regulatory proceedings involving the firm/manager
- Changes to the manager's investment outlook, investment strategy, and/or portfolio structure
- Personnel changes to the investment team responsible for the EBMUDERS mandate
- Significant personnel changes at the management level of the firm
- Material client terminations
- Compliance with EBMUDERS current Investment Policy Statement

The manager's responses are rated based on the potential effects these factors could pose to the performance and management of the EBMUDERS portfolio.

Reasons for heightened concern triggering Watch status include, but are not limited to:

- Instability of key members of the portfolio management team and organization
- Changes in investment strategy and style
- Failure to comply with investment guidelines

A summary of manager responses as of the latest quarter-end is provided below.

Manager Compliance Certification Responses

Manager Compliance Certification Responses

Manager	Asset Class	Question 1 Compliance with 'Eligible Investments' for mandate	Question 2 Good standing as Registered Investment Advisor	Question 3 Litigation?	Question 4 Changes in manager's investment outlook, strategy, structure	Question 5 Investment team personnel changes	Question 6 Management level personnel changes	Question 7 Material business changes	Question 8 Compliance with IPS
Northern Trust R3000	Domestic Equity – All Cap	Yes	Yes	No	No	Yes*	Yes*	No	Yes
Northern Trust ACWI ex US	International Equity	Yes	Yes	No	No	Yes*	Yes*	No	Yes
Parametric	Covered Calls	Yes	Yes	No	No	No	No	No	Yes
CS McKee	Fixed Income – Core	Yes	Yes	No	No	No	No	No	Yes
Garcia Hamilton	Fixed Income – Core	Yes	Yes	No	No	No	No	No	Yes
Mackay Shields	Fixed Income – Short-term HY	Yes	Yes	No	No	Yes*	Yes*	No	Yes
Federated	Fixed Income – Bank Loans	Yes	Yes	No	No	No	No	No	Yes
RREEF	Real Estate	Yes	Yes	No	No	No	No	No	Yes

■ no concern
 ■ low concern
 ■ high concern (Watch status)

* see detailed manager response below

Northern Trust – R3000 and ACWI ex US

Question 5: Have there been any personnel changes to the investment team responsible for the EBMUD portfolio during the quarter?

- Specific to the portfolio management team, in October of 2024, Robert Anstine is named Head of US Index Equity, replacing Brent Reeder, who left firm.
- As you are aware, NTAM utilizes a team managed approach and thus the departure of one portfolio manager does not affect the management of your portfolio.

Question 6: Have there been any significant personnel changes at the management level of the Firm during the quarter?

- **Senior Management Changes:** As a result of the constantly changing landscape of asset management, we believe the occasional organizational changes are a natural progression and necessary in order to adapt to new market and regulatory environments. The most recent changes to senior personnel are the following:
 - January 2025: Shannon Crowley has been named Head of Asset Management Marketing. Additionally, Darrell Hassler will assume the role of Head of Strategic Content.
 - October 2024: Rob Anstine has been named Head of Equity Index, U.S. effective October 1, replacing Brent Reeder who left the firm.

MacKay Shields

Question 5: Have there been any personnel changes to the investment team responsible for the EBMUD portfolio during the quarter?

- Maureen O'Callaghan, Portfolio Manager and Analyst on the High Yield Team, left the firm in December 2024. We are conducting a thorough search to hire an experienced credit specialist who aligns with our investment process and fits within the team's unique credit culture. In the interim, Maureen's responsibilities will be absorbed by senior team members.

Question 6: Have there been any significant personnel changes at the management level of the Firm during the quarter?

- Effective January 1, 2025, Alison Micucci became MacKay Shields CEO. Naïm Abou-Jaoudé, Chairman and CEO of New York Life Investment Management serves as MacKay Shields' Chairman.
- Allison replaced Jeffrey Phlegar, former Chairman and Chief Executive Officer of MacKay Shields of 13 years who retired on March 8, 2024.
 - Alison has almost 35 years of experience across the asset management, securities and insurance industries. Her career began with senior roles at the SEC, PGIM, and GSAM.
 - Since joining New York Life in 2002, Micucci has held various leadership roles, including Head of Institutional Annuities, New York Investments' Chief Administrative Officer, and Head of New York Life's Business Planning and Strategy team.
 - Among her accomplishments were launching New York Life Ventures, driving transformation initiatives to enhance client operations and services, and helping to develop New York Life Investments' international asset management strategy.
 - She has been most recently serving as Head of New York Life Direct, a leader in direct-to-consumer life insurance, which serves approximately 2 million customers.
 - Alison earned bachelor's degrees in political science and economics from the University of Massachusetts, Amherst, and a J.D. from the Western New England College School of Law.

Required California AB 2833 Disclosure – RREEF AMERICA II

Effective January 1, 2017 RREEF America REIT II, Inc. ("alternative investment vehicle") is required to provide to the East Bay Municipal Utility District ("public investment fund" or "District") specific information at least annually pursuant to Section 7514.7 of the California Government Code ("Section 7514.7").

1. The fees and expenses that the public investment fund pays directly to the alternative investment vehicle, the fund manager, or related parties.
 - EBMUD: includes intermediate and partnership fees – January 2024 – December 2024 = \$509,593.04
2. The public investment fund's pro rata share of fees and expenses not included in paragraph (1) that are paid from the alternative investment vehicle to the fund manager or related parties.

\$0.00
3. The public investment fund's pro rata share of carried interest distributed to the fund manager or related parties.

N/A
4. The public investment fund's pro rata share of aggregate fees and expenses paid by all of the portfolio companies held within the alternative investment vehicle to the fund manager or related parties.
 - EBMUD: includes intermediate and partnership fees – January 2024 – December 2024 = \$509,593.04
5. Any additional information described in subdivision (b) of Section 6254.26.

N/A
6. The gross and net rate of return of each alternative investment vehicle since inception.

Gross = 5.7% Net = 4.8% (as of December 31, 2024)¹
7. Any other information required to be collected pursuant to Section 7514.7.

N/A

¹ Please note that since inception returns provided represent the client's time frame in the Fund, and not the returns of the Fund as a whole.

Appendix

Glossary of Terms

Alpha: The premium an investment earns above a set standard. This is usually measured in terms of a common index (i.e., how the stock performs independent of the market). An Alpha is usually generated by regressing a security's excess return on the S&P 500 excess return.

Annualized Performance: The annual rate of return that when compounded t times generates the same t -period holding return as actually occurred from period 1 to period t .

Batting Average: Percentage of periods a portfolio outperforms a given index.

Beta: The measure of an asset's risk in relation to the Market (for example, the S&P 500) or to an alternative benchmark or factors. Roughly speaking, a security with a Beta of 1.5 will have moved, on average, 1.5 times the market return.

Bottom-up: A management style that de-emphasizes the significance of economic and market cycles, focusing instead on the analysis of individual stocks.

Dividend Discount Model: A method to value the common stock of a company that is based on the present value of the expected future dividends.

Growth Stocks: Common stock of a company that has an opportunity to invest money and earn more than the opportunity cost of capital.

Information Ratio: The ratio of annualized expected residual return to residual risk. A central measurement for active management, value added is proportional to the square of the information ratio.

R-Squared: Square of the correlation coefficient. The proportion of the variability in one series that can be explained by the variability of one or more other series a regression model. A measure of the quality of fit. 100% R-square means perfect predictability.

Standard Deviation: The square root of the variance. A measure of dispersion of a set of data from its mean.

Sharpe Ratio: A measure of a portfolio's excess return relative to the total variability of the portfolio.

Style Analysis: A returns-based analysis using a multi-factor attribution model. The model calculates a product's average exposure to particular investment styles over time (i.e., the product's normal style benchmark).

Top-down: Investment style that begins with an assessment of the overall economic environment and makes a general asset allocation decision regarding various sectors of the financial markets and various industries.

Tracking Error: The standard deviation of the difference between the performance of a portfolio and an appropriate benchmark.

Turnover: For mutual funds, a measure of trading activity during the previous year, expressed as a percentage of the average total assets of the fund. A turnover rate of 25% means that the value of trades represented one-fourth of the assets of the fund.

Value Stocks: Stocks with low price/book ratios or price/earnings ratios. Historically, value stocks have enjoyed higher average returns than growth stocks (stocks with high price/book or P/E ratios) in a variety of countries.

Definition of Benchmarks

BC Aggregate: an index comprised of approximately 6,000 publicly traded investment-grade bonds including U.S. Government, mortgage-backed, corporate, and yankee bonds with an approximate average maturity of 10 years.

BC High Yield: covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (e.g., Argentina, Brazil, Venezuela, etc.) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included. Original issue zeroes, step-up coupon structures, 144-As and pay-in-kind bonds (PIKs, as of October 1, 2009) are also included. Must be rated high-yield (Ba1/BB+ or lower) by at least two of the following ratings agencies: Moody's, S&P, Fitch. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. All issues must have at least one year to final maturity regardless of call features and have at least \$150 million par amount outstanding.

BC Multiverse Non-US Hedged: provides a broad-based measure of the international fixed-income bond market. The index represents the union of the BC Global Aggregate Index and the BC Global High Yield Index. In this sense, the term "Multiverse" refers to the concept of multiple universes in a single macro index.

BC US Credit: includes publicly issued U.S. corporate and foreign debentures and secured notes that which are rated investment grade or higher by Moody's Investor Services, Standard and Poor's Corporation, or Fitch Investor's Service, with all issues having at least one year to maturity and an outstanding par value of at least \$250 million. Issues must be publicly issued, dollar-denominated and non-convertible.

BC US Government: includes treasuries (i.e., public obligations of the U.S. Treasury that have remaining maturities of more than one year) and agencies (i.e., publicly issued debt of U.S. Government agencies, quasi-federal corporations, and corporate or foreign debt guaranteed by the U.S. Government).

BC Universal: includes market coverage by the Aggregate Bond Index fixed rate debt issues, which are rated investment grade or higher by Moody's Investor Services, Standard and Poor's Corporation, or Fitch Investor's Service, with all issues having at least one year to maturity and an outstanding par value of at least \$100 million) and includes exposures to high yield CMBS securities. All returns are market value weighted inclusive of accrued interest.

Citigroup 3-Month Treasury Bills (T-bills): tracks the performance of U.S. Treasury bills with 3-month maturity.

MSCI ACWI x US ND: comprises both developed and emerging markets less the United States. As of August 2008, the index consisted of 23 countries classified as developed markets and 25 classified as emerging markets. This series approximates the minimum possible dividend reinvestment. The dividend is reinvested after deduction of withholding tax, applying the rate to non-resident individuals who do not benefit from double taxation treaties. MSCI Barra uses withholding tax rates applicable to Luxembourg holding companies, as Luxembourg applies the highest rates.

MSCI EAFE Free (Europe, Australasia, Far East) ND: is a free float-adjusted market capitalization index that is designed to measure developed market equity performance, excluding the US & Canada. This series approximates the minimum possible dividend reinvestment. The dividend is reinvested after deduction of withholding tax, applying the rate to non-resident individuals who do not benefit from double taxation treaties. MSCI Barra uses withholding tax rates applicable to Luxembourg holding companies, as Luxembourg applies the highest rates.

MSCI EM (Emerging Markets) GD: is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. This series approximates the maximum possible dividend reinvestment. The amount reinvested is the entire dividend distributed to individuals resident in the country of the company, but does not include tax credits.

MSCI Europe is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of the developed markets in Europe. As of June 2007, this index consisted of the following 16 developed market country indices: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

MSCI Pacific is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of the developed markets in the Pacific region. As of June 2007, this index consisted of the following 5 Developed Market countries: Australia, Hong Kong, Japan, New Zealand, and Singapore.

NAREIT Index: consists of all tax-qualified REITs listed on the New York Stock Exchange, American Stock Exchange, and the NASDAQ National Market System. The data is market weighted.

NCREIF Property Index: the NPI contains investment-grade, non-agricultural, income-producing properties which may be financed in excess of 5% gross market value; were acquired on behalf of tax exempt institutions; and are held in a fiduciary environment. Returns are gross of fees; including income, realized gains/losses, and appreciation/depreciation; and are market value weighted. Index is lagged one quarter.

Russell 1000: measures the performance of the 1,000 largest securities in the Russell 3000 Index. Russell 1000 is highly correlated with the S&P 500 Index and capitalization-weighted.

Russell 1000 Growth: measures the performance of those Russell 1000 securities with a greater-than-average growth orientation. Securities in this index tend to exhibit higher price-to-book and price-earnings ratios, lower dividend yields and higher forecasted growth values than the Value universe.

Russell 1000 Value: measures the performance of those Russell 1000 securities with a less-than-average growth orientation. Securities in this index tend to exhibit lower price-to-book and price-earnings ratios, higher dividend yields and lower forecasted growth values than the Growth universe.

Russell 2000: measures the performance of the 2,000 smallest companies in the Russell 3000 Index, which represents approximately 8% of the total market capitalization of the Russell 3000 Index.

Russell 2000 Growth: measures the performance of those Russell 2000 securities with a greater-than-average growth orientation. Securities in this index tend to exhibit higher price-to-book and price-to-earnings ratios.

Russell 2000 Value: measures the performance of those Russell 2000 securities with a less-than-average growth orientation. Securities in this index tend to exhibit lower price-to-book and price-to-earnings ratios.

Russell 3000: represents the largest 3,000 US companies based on total market capitalization, representing approximately 98% of the investable US equity market.

Value Relative Ratio (VRR): Performance metric used to evaluate long-term manager performance relative to a benchmark and to highlight compounded over/under performance data over a certain time frame. VRR is calculated by the growth of a dollar invested with the manager divided by the growth of a dollar invested in the benchmark for the same time period.

Risk Metric Description – Rationale for Selection and Calculation Methodology**US Equity Markets**

Metric: $P/E \text{ ratio} = \text{Price} / \text{"Normalized" earnings for the S\&P 500 Index}$

To represent the price of US equity markets, we have chosen the S&P 500 index. This index has the longest published history of price, is well known, and also has reliable, long-term, published quarterly earnings. The price= P of the P/E ratio is the current price of the market index (the average daily price of the most recent full month for the S&P 500 index). Equity markets are very volatile. Prices fluctuate significantly during normal times and extremely during periods of market stress or euphoria. Therefore, developing a measure of earnings power (E) which is stable is vitally important, if the measure is to provide insight. While equity prices can and do double, or get cut in half, real earnings power does not change nearly as much. Therefore, we have selected a well known measure of real, stable earnings power developed by Yale Professor Robert Shiller known as the Shiller E-10. The calculation of E-10 is simply the average real annual earnings over the past 10 years. Over 10 years, the earnings shenanigans and boom and bust levels of earnings tend to even out (and often times get restated). Therefore, this earnings statistic gives a reasonably stable, slow-to-change estimate of average real earnings power for the index. Professor Shiller's data and calculation of the E-10 are available on his website at <http://www.econ.yale.edu/~shiller/data.htm>. We have used his data as the base for our calculations. Details of the theoretical justification behind the measure can be found in his book *Irrational Exuberance* [Princeton University Press 2000, Broadway Books 2001, 2nd ed., 2005].

Developed Equity Markets Excluding the US

Metric: $P/E \text{ ratio} = \text{Price} / \text{"Normalized" earnings for the MSCI EAFE Index}$

To represent the price of non-US developed equity markets, we have chosen the MSCI EAFE index. This index has the longest published history of price for non-US developed equities. The price= P of the P/E ratio is the current price of the market index (the average daily price of the most recent full month for the MSCI EAFE index). The price level of this index is available starting in December 1969. Again, for the reasons described above, we elected to use the Shiller E-10 as our measure of earnings (E). Since 12/1972, a monthly price earnings ratio is available from MSCI. Using this quoted ratio, we have backed out the implied trailing-twelve month earnings of the EAFE index for each month from 12/1972 to the present. These annualized earnings are then inflation adjusted using CPI-U to represent real earnings in US dollar terms for each time period. The Shiller E-10 for the EAFE index (10 year average real earnings) is calculated in the same manner as detailed above.

However, we do not believe that the pricing and earnings history of the EAFE markets are long enough to be a reliable representation of pricing history for developed market equities outside of the US. Therefore, in constructing the Long-Term Average Historical P/E for developed ex-US equities for comparison purposes, we have elected to use the US equity market as a developed market proxy, from 1881 to 1982. This lowers the Long-Term Average Historical P/E considerably. We believe this methodology provides a more realistic historical comparison for a market with a relatively short history.

Emerging Market Equity Markets

Metric: Ratio of Emerging Market P/E Ratio to Developed Market P/E Ratio

To represent the Emerging Markets P/E Ratio, we have chosen the MSCI Emerging Market Free Index, which has P/E data back to January 1995 on Bloomberg. To represent the Developed Markets PE Ratio, we have chosen the MSCI World Index, which also has data back to January 1995 on Bloomberg. Although there are issues with published, single time period P/E ratios, in which the denominator effect can cause large movements, we feel that the information contained in such movements will alert investors to market activity that they will want to interpret.

US Private Equity Markets

Metrics: S&P LCD Average EBITDA Multiples Paid in LBOs and US Quarterly Deal Volume

The Average Purchase Price to EBITDA multiples paid in LBOs is published quarterly by S&P in their LCD study. This is the total price paid (both equity and debt) over the trailing-twelve month EBITDA (earnings before interest, taxes, depreciation and amortization) as calculated by S&P LCD. This is the relevant, high-level pricing metric that private equity managers use in assessing deals. Data is published monthly.

US quarterly deal volume for private equity is the total deal volume in \$ billions (both equity and debt) reported in the quarter by Thomson Reuters Buyouts. This metric gives a measure of the level of activity in the market. Data is published quarterly.

US Private Real Estate Markets

Metrics: US Cap Rates, Cap Rate Spreads, and Transactions as a % of Market Value

Real estate cap rates are a measure of the price paid in the market to acquire properties versus their annualized income generation before financing costs (NOI=net operating income). The data, published by NCREIF, describes completed and leased properties (core) on an unleveraged basis. We chose to use current value cap rates. These are capitalization rates from properties that were revalued during the quarter. This data relies on estimates of value and therefore tends to be lagging (estimated prices are slower to rise and slower to fall than transaction prices). The data is published quarterly.

Spreads between the cap rate (described above) and the 10-year nominal Treasury yield, indicate a measure of the cost of properties versus a current measure of the cost of financing.

Transactions as a % of Market Value Trailing-Four Quarters is a measure of property turnover activity in the NCREIF Universe. This quarterly metric is a measure of activity in the market.

Credit Markets Fixed Income

Metric: Spreads

The absolute level of spreads over treasuries and spread trends (widening / narrowing) are good indicators of credit risk in the fixed income markets. Spreads incorporate estimates of future default, but can also be driven by technical dislocations in the fixed income markets. Abnormally narrow spreads (relative to historical levels) indicate higher levels of valuation risk, wide spreads indicate lower levels of valuation risk and / or elevated default fears. Investment grade bond spreads are represented by the Barclays Capital US Corporate Investment Grade Index Intermediate Component. The high yield corporate bond spreads are represented by the Barclays Capital US Corporate High Yield Index.

Measure of Equity Market Fear / Uncertainty

Metric: VIX – Measure of implied option volatility for US equity markets

The VIX is a key measure of near-term volatility conveyed by implied volatility of S&P 500 index option prices. VIX increases with uncertainty and fear. Stocks and the VIX are negatively correlated. Volatility tends to spike when equity markets fall.

Measure of Monetary Policy

Metric: Yield Curve Slope

We calculate the yield curve slope as the 10 year treasury yield minus the 1 year treasury yield. When the yield curve slope is zero or negative, this is a signal to pay attention. A negative yield curve slope signals lower rates in the future, caused by a contraction in economic activity. Recessions are typically preceded by an inverted (negatively sloped) yield curve. A very steep yield curve (2 or greater) indicates a large difference between shorter-term interest rates (the 1 year rate) and longer-term rates (the 10 year rate). This can signal expansion in economic activity in the future, or merely higher future interest rates.

Measures of US Inflation Expectations

Metrics: Breakeven Inflation and Inflation Adjusted Commodity Prices

Inflation is a very important indicator impacting all assets and financial instruments. Breakeven inflation is calculated as the 10 year nominal treasury yield minus the 10 year real yield on US TIPS (treasury inflation protected securities). Abnormally low long-term inflation expectations are indicative of deflationary fears. A rapid rise in breakeven inflation indicates an acceleration in inflationary expectations as market participants sell nominal treasuries and buy TIPS. If breakeven inflation continues to rise quarter over quarter, this is a signal of inflationary worries rising, which may cause Fed action and / or dollar decline.

Commodity price movement (above the rate of inflation) is an indication of anticipated inflation caused by real global economic activity putting pressure on resource prices. We calculate this metric by adjusted in the Dow Jones UBS Commodity Index (formerly Dow Jones AIG Commodity Index) by US CPI-U. While rising commodity prices will not necessarily translate to higher US inflation, higher US inflation will likely show up in higher commodity prices, particularly if world economic activity is robust.

These two measures of anticipated inflation can, and often are, conflicting.

Measures of US Treasury Bond Interest Rate Risk

Metrics: 10-Year Treasury Forward-Looking Real Yield and 10-Year Treasury Duration

The expected annualized real yield of the 10 year US Treasury Bond is a measure of valuation risk for US Treasuries. A low real yield means investors will accept a low rate of expected return for the certainty of receiving their nominal cash flows. Meketa estimates the expected annualized real yield by subtracting an estimate of expected 10 year inflation (produced by the Survey of Professional Forecasters as collected by the Federal Reserve Bank of Philadelphia), from the 10 year Treasury constant maturity interest rate.

Duration for the 10-Year Treasury Bond is calculated based on the current yield and a price of 100. This is a measure of expected percentage movements in the price of the bond based on small movements in percentage yield. We make no attempt to account for convexity.

Definition of “Extreme” Metric Readings

A metric reading is defined as “extreme” if the metric reading is in the top or bottom decile of its historical readings. These “extreme” reading should cause the reader to pay attention. These metrics have reverted toward their mean values in the past.

RISK METRICS DESCRIPTION – Meketa Market Sentiment Indicator

What is the Meketa Market Sentiment Indicator (MMSI)?

The MMSI is a measure meant to gauge the market's sentiment regarding economic growth risk. Growth risk cuts across most financial assets, and is the largest risk exposure that most portfolios bear. The MMSI takes into account the momentum¹ (trend over time, positive or negative) of the economic growth risk exposure of publicly traded stocks and bonds, as a signal of the future direction of growth risk returns; either positive (risk seeking market sentiment), or negative (risk averse market sentiment).

How do I read the Meketa Market Sentiment Indicator (MMSI) graph?

Simply put, the MMSI is a color coded indicator that signals the market's sentiment regarding economic growth risk. It is read left to right chronologically. A green indicator on the MMSI indicates that the market's sentiment towards growth risk is positive. A gray indicator indicates that the market's sentiment towards growth risk is neutral or inconclusive. A red indicator indicates that the market's sentiment towards growth risk is negative. The black line on the graph is the level of the MMSI. The degree of the signal above or below the neutral reading is an indication the signal's current strength.

How is the Meketa Market Sentiment Indicator (MMSI) Constructed?

The MMSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:

1. Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months)
2. Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration U.S. Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight). The scale of this measure is adjusted to match that of the stock return momentum measure.

The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure. The color reading on the graph is determined as follows:

1. If both stock return momentum and bond spread momentum are positive = GREEN (positive)
2. If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive)
3. If both stock return momentum and bond spread momentum are negative = RED (negative)

What does the Meketa Market Sentiment Indicator (MMSI) mean? Why might it be useful?

There is strong evidence that time series momentum is significant and persistent.² In particular, across an extensive array of asset classes, the sign of the trailing 12-month return (positive or negative) is indicative of future returns (positive or negative) over the next 12 month period. The MMSI is

¹ Momentum is defined as the persistence of relative performance. There is a significant amount of academic evidence indicating that positive momentum (e.g., strong performing stocks over the recent past continue to post strong performance into the near future) exists over near-to-intermediate holding periods. See, for example, "Understanding Momentum," *Financial Analysts Journal*, Scowcroft, Sefton, March, 2005.

² "Time Series Momentum" Moskowitz, Ooi, Pedersen, August 2010 <http://pages.stern.nyu.edu/~lpederse/papers/TimeSeriesMomentum.pdf>

Appendix

constructed to measure this momentum in stocks and corporate bond spreads. A reading of green or red is agreement of both the equity and bond measures, indicating that it is likely that this trend (positive or negative) will continue over the next 12 months. When the measures disagree, the indicator turns gray. A gray reading does not necessarily mean a new trend is occurring, as the indicator may move back to green, or into the red from there. The level of the reading (black line) and the number of months at the red or green reading, gives the user additional information on which to form an opinion, and potentially take action.

THIS REPORT (THE “REPORT”) HAS BEEN PREPARED FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE “RECIPIENT”).

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