

## Oakland Police and Fire Retirement System

February 26, 2025

Quarterly Performance Report as  
of December 31, 2024

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## **Executive Summary**

### Total Portfolio Review

The Oakland Police and Fire Retirement System (OPFRS) finished the calendar year with \$463.0 million in assets after net cash flows including monthly benefit payments.

→ As of December 31, 2024, most asset classes, except Domestic Equity and Fixed Income, were within their long-term target allocation ranges of the new asset allocation policy that became effective on July 1.

Cash Flow Summary (\$ Millions)	Quarter	1 Year
<b>Beginning Market Value</b>	<b>475.2</b>	<b>436.0</b>
Net Cash Flows (including Benefit Payments)	-4.3	-14.5
Net Investment Change (Gain/Loss)	-8.0	41.5
<b>Ending Market Value</b>	<b>463.0</b>	<b>463.0</b>

### Investment Performance<sup>1</sup>

	QTD	FYTD	1 Year	3 Year	5 Year
<b>Total Plan (Gross)</b>	<b>-1.7</b>	<b>4.1</b>	<b>9.6</b>	<b>2.2</b>	<b>6.0</b>
<b>Total Plan (Net)</b>	<b>-1.8</b>	<b>3.9</b>	<b>9.3</b>	<b>1.9</b>	<b>5.7</b>
<i>Policy Benchmark</i>	<i>-1.5</i>	<i>3.9</i>	<i>10.9</i>	<i>3.2</i>	<i>6.5</i>
Excess Return	-0.3	0.1	-1.6	-1.3	-0.8
<i>Public DB (\$250M-\$1B) Median Fund</i>	<i>-1.0</i>	<i>4.3</i>	<i>10.4</i>	<i>2.6</i>	<i>6.9</i>
Total Plan (Net) vs. Peer Median Fund	-0.7	-0.4	-1.1	-0.8	-1.2
<i>Peer Group Percentile Rank</i>	<i>91</i>	<i>66</i>	<i>70</i>	<i>76</i>	<i>86</i>

<sup>1</sup> Fiscal year begins on July 1. Peer group is Investment Metrics Public Defined Benefit plans with \$250 million to \$1 billion in assets. The number of peers is between 104–107 portfolios in each time period. Please see the Benchmark History section for the Policy Benchmark's current and historical compositions.

#### Asset Class and Manager Highlights<sup>1</sup>

- On both gross- and net-of-fees basis, the **Total Plan** lagged its Policy Benchmark during the quarter as well as over the 1-, 3-, and 5-year trailing periods.
  - The Plan's underperformance during the quarter was primarily due to the underperformance within the Domestic Equity segment as large- and mid-cap growth stocks appreciated the most while the value stocks declined.
  - On the other hand, despite a decline in the broad bond market, the Fixed Income asset class contributed positively to the Total Plan's relative performance and partially offset Domestic Equity's negative contribution due to its under-allocation relative to its interim target.
- **Domestic Equity** underperformed the Russell 3000 Index over all time periods. All active Domestic Equity managers except the growth-oriented Rice Hall James underperformed their respective benchmarks for the quarter.
- **International Equity** and its only active manager, SGA, outperformed MSCI ACWI ex US (Net) for all time periods.
- **Fixed Income** slightly underperformed its custom benchmark<sup>2</sup> over the quarter. Among its underlying managers, Wellington Core Bond outperformed its Bloomberg US Aggregate benchmark across all time periods.
- The **Credit** segment, with Polen Capital as its sole manager, slightly outperformed its benchmark, the Bloomberg US Corporate High Yield Index, during the quarter and over the 3- and 5-year trailing periods. **Covered Calls**, as well as both the passive BXM and the active DeltaShift strategies, underperformed the CBOE S&P 500 Buy Write Index during the quarter and over the 1-year period.
  - Please note that the Credit and Covered Calls asset classes are undergoing gradual withdrawals as no longer have a target allocation since July 2024.
- The **Crisis Risk Offset** segment underperformed its custom benchmark over all time periods measured. Kepos Alternative Risk Premia outperformed its benchmark across all time periods while Versor Trend Following lagged its benchmark.

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

<sup>2</sup> The custom benchmark is Bloomberg US Universal Index since 04/2006.

# **Economic and Market Update**

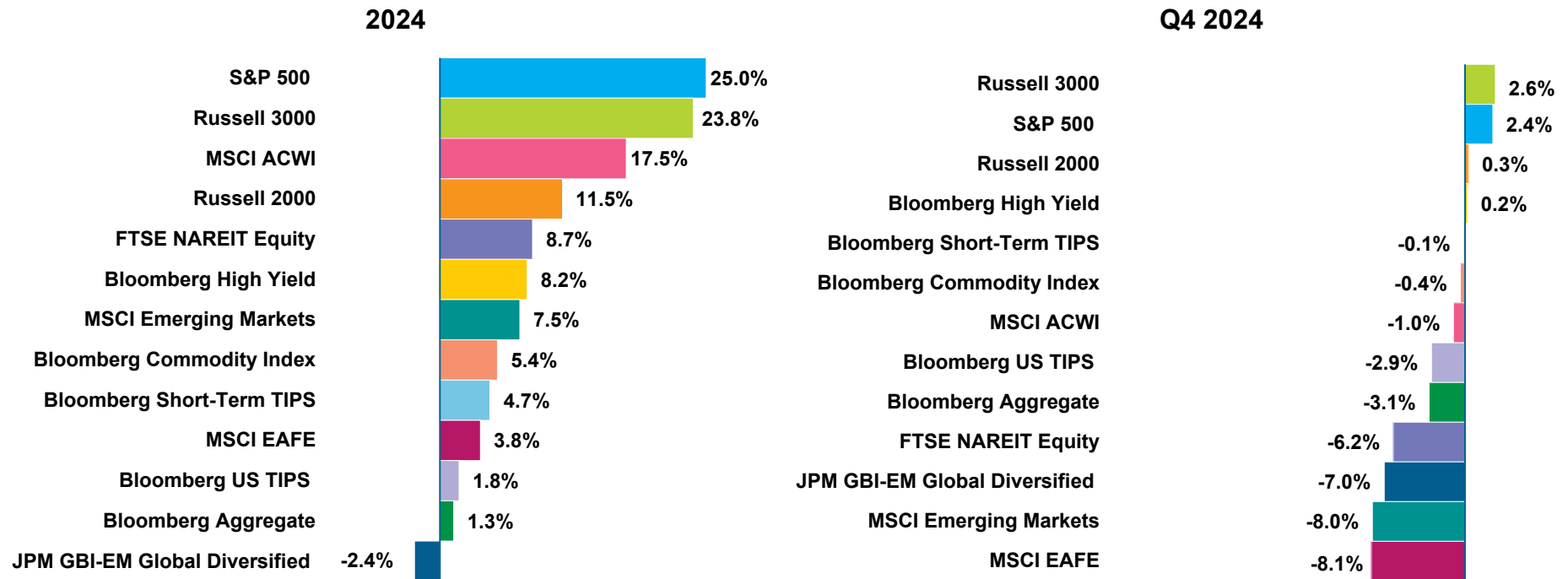
## Data as of December 31, 2024

### Commentary

**Although most major markets finished 2024 in positive territory, in the fourth quarter, with the exception of US stocks, the majority of markets declined.**

- Trump's victory along with a now Republican controlled Congress, supported US equity markets in the fourth quarter on anticipation of pro-growth policies. Domestic equity markets (Russell 3000) posted a return of 2.6% in the quarter and an impressive 23.8% for the year driven by large cap technology stocks.
- Non-US developed stocks sold-off in the fourth quarter (MSCI EAFE: -8.1%) largely driven by the strength of the US dollar, as well as slowing growth in Europe and the potential for trade wars. For the year, they trailed US equities by a wide 20% margin (3.8% versus 23.8%).
- Emerging market stocks also fell (MSCI Emerging Markets: -8.0%) in the fourth quarter, again driven by the strong dollar and concerns about US tariffs. In 2024, emerging markets beat developed international markets (7.5% versus 3.8%) but significantly trailed the US.
- The Federal Reserve cut its policy rate another 0.25% in December, but its Summary of Economic Projections and hawkish comments provoked a repricing of future rate cuts and their timing.
- Most fixed income markets fell for the quarter with interest rates rising given fears of inflation from the proposed policies of the incoming US administration. The broad US bond market (Bloomberg Aggregate) declined 3.1% for the quarter, reducing its 2024 gain to 1.3%. For the year, most major bond markets delivered positive returns on cooling global inflation.
- Looking ahead, uncertainty related to the policies of the new Trump Administration and its 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 Returns<sup>1</sup>



→ In 2024, most major assets classes posted gains, led by the S&P 500's 25.0% return.

→ Markets had mixed returns in the fourth quarter. US equities rose on optimism over potential pro-growth policies from the incoming administration while inflation concerns and a strong dollar, respectively, weighed on bonds and international equities.

<sup>1</sup> Source: Bloomberg. Data is as of December 31, 2024.



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

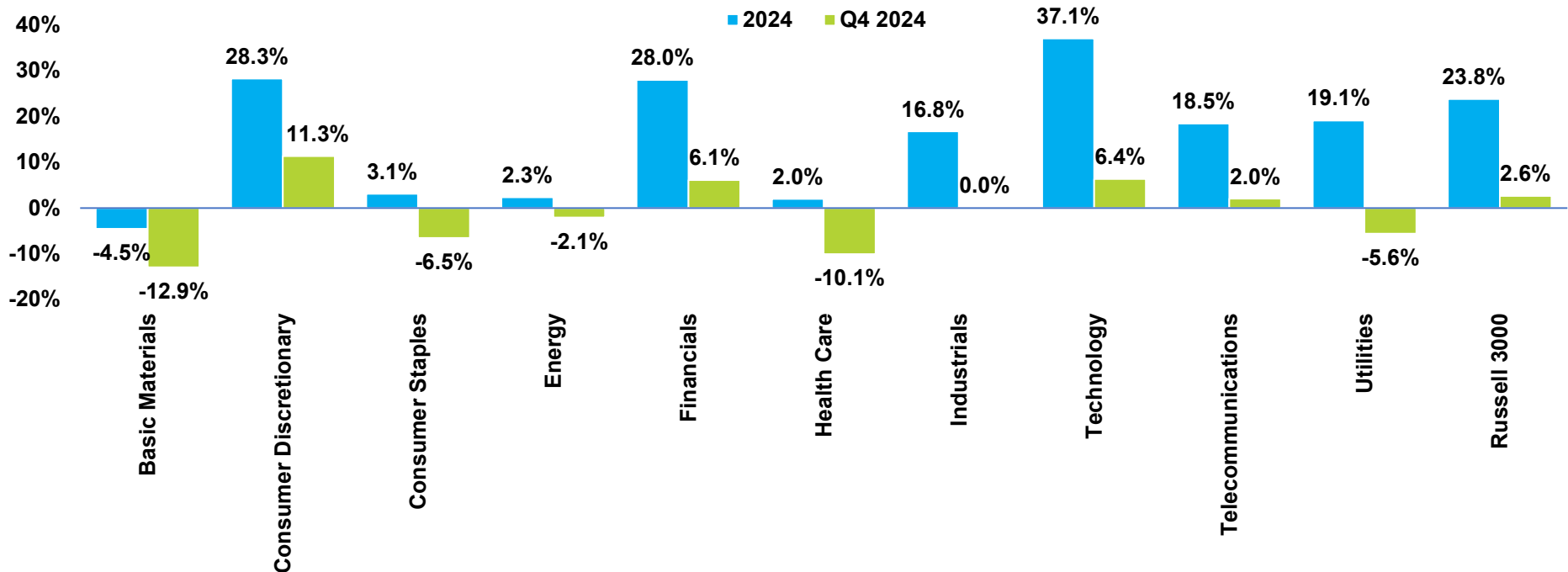
Domestic Equity	December (%)	Q4 2024 (%)	2024 (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	-2.4	2.4	25.0	8.9	14.5	13.1
Russell 3000	-3.1	2.6	23.8	8.0	13.9	12.5
Russell 1000	-2.8	2.7	24.5	8.4	14.3	12.9
Russell 1000 Growth	0.9	7.1	33.4	10.5	19.0	16.8
Russell 1000 Value	-6.8	-2.0	14.4	5.6	8.7	8.5
Russell MidCap	-7.0	0.6	15.3	3.8	9.9	9.6
Russell MidCap Growth	-6.2	8.1	22.1	4.0	11.5	11.5
Russell MidCap Value	-7.3	-1.7	13.1	3.9	8.6	8.1
Russell 2000	-8.3	0.3	11.5	1.2	7.4	7.8
Russell 2000 Growth	-8.2	1.7	15.2	0.2	6.9	8.1
Russell 2000 Value	-8.3	-1.1	8.1	1.9	7.3	7.1

#### US Equities: The Russell 3000 rose 2.6% in the fourth quarter, bringing the year-to-date results to +23.8%.

- US stocks rose broadly in the fourth quarter on a post-election rally. However, value stocks did not participate and ended the quarter lower. In the large cap space, the Russell 1000 Value index’s omission of several “Magnificent 7” stocks, such as NVIDIA, Amazon, and Tesla, drove much of the divergence.
- For the full year, US equities gained 23.8%. NVIDIA was the leading contributor among all stocks in the Russell 3000 index. The stock appreciated 171% during the year and was responsible for 20% of total index gains. The “Magnificent 7” stocks contributed just under 50% of the 2024 index gains.
- Growth stocks outperformed value stocks across the market cap spectrum in 2024, which was more pronounced in the large cap space. Larger companies (Russell 1000) produced more than double the returns of smaller companies (Russell 2000) for the year.

<sup>1</sup> Source: Bloomberg. Data is as of December 31, 2024.

### Russell 3000 Sector Returns<sup>1</sup>



- US equity sectors experienced mixed results in the final quarter of the year but all sectors except materials, experienced gains in 2024.
- Technology stocks rose 37.1% last year, which led all sectors. Within technology, NVIDIA and Broadcom accounted for more than half of the sector's contribution to overall index gains.
- After technology, consumer discretionary (+28.3%) and financials (+28.0%) were next driven by Amazon and Tesla and a steepening yield curve/strong economy, respectively.

<sup>1</sup> Source: Bloomberg. Data is as of December 31, 2024.

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

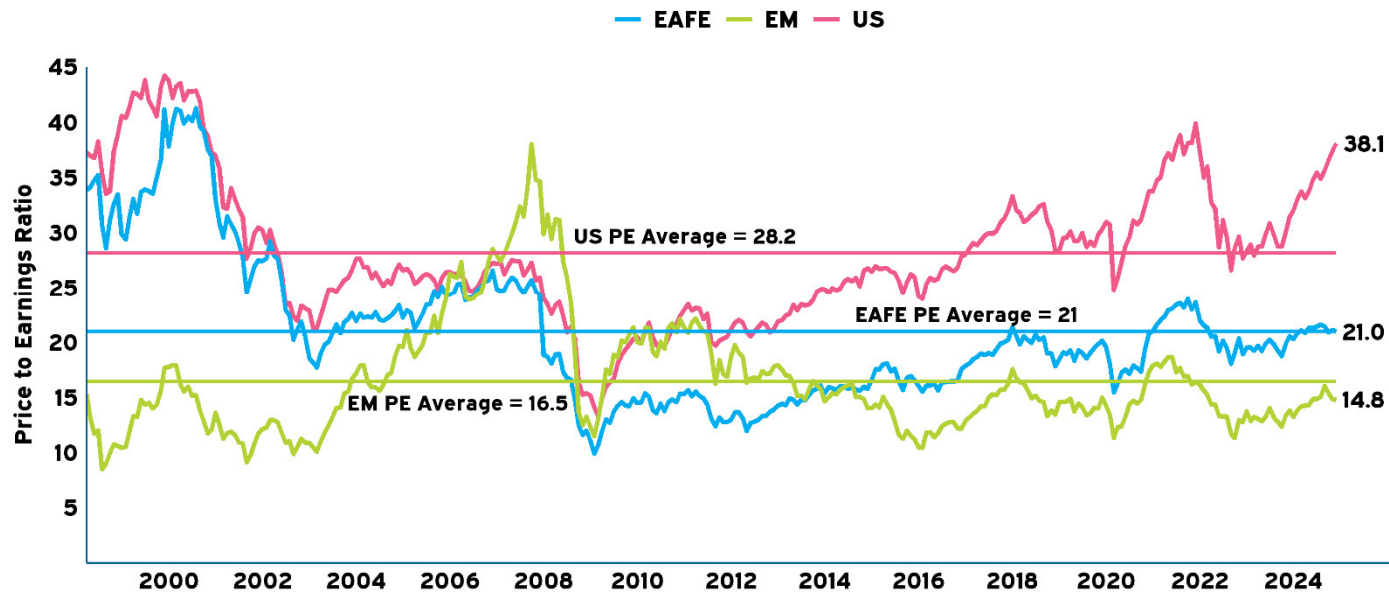
Foreign Equity	December (%)	Q4 2024 (%)	2024 (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI Ex US	-1.9	-7.6	5.5	0.8	4.1	4.8
MSCI EAFE	-2.3	-8.1	3.8	1.6	4.7	5.2
MSCI EAFE (Local Currency)	0.4	-0.6	11.3	6.3	7.5	7.1
MSCI EAFE Small Cap	-2.3	-8.4	1.8	-3.2	2.3	5.5
MSCI Emerging Markets	-0.1	-8.0	7.5	-1.9	1.7	3.6
MSCI Emerging Markets (Local Currency)	1.2	-4.4	13.1	1.6	4.5	6.0
MSCI EM ex China	-1.2	-8.1	3.6	0.1	4.4	4.7
MSCI China	2.7	-7.7	19.4	-6.1	-3.4	1.9

**Foreign Equity: Developed international equities (MSCI EAFE) fell -8.1% in the fourth quarter but rose 3.8% for the year, while emerging market equities (MSCI Emerging Markets) fell -8.0% in the quarter but returned 7.5% for the year.**

- Continued strength in the US dollar weighed on developed market shares, with declines in local terms significantly lower (-0.6% versus -8.1%). An unstable political environment, potential tariffs from the US, and weak growth all weighed on eurozone equities. Japan was a bright spot, outperforming the US for the quarter, with renewed yen weakness boosting the outlook for exporters.
- Emerging markets reacted poorly to Mr. Trump’s win in the fourth quarter, due largely to tariff fears and the Fed’s decreased likelihood of reducing rates in 2025. A strong dollar also weighed on results but not as much as in developed markets. China declined less than the broader index for the quarter (-7.7% versus -8.0%).
- Over the full 2024 calendar year, international equities significantly trailed US equities.

<sup>1</sup> Source: Bloomberg. Data is as of December 31, 2024.

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



- Valuations in US stocks continued to move higher over the quarter while valuations for international equities fell.
- US stocks, priced at 38.1 times earnings, continue to trade well above their long-run PE average of 28.2.
- Non-US developed market valuations are trading at their long-term average. Emerging market stock valuations declined the most over the quarter (16.1 to 14.8) and remain below their long-term average.

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

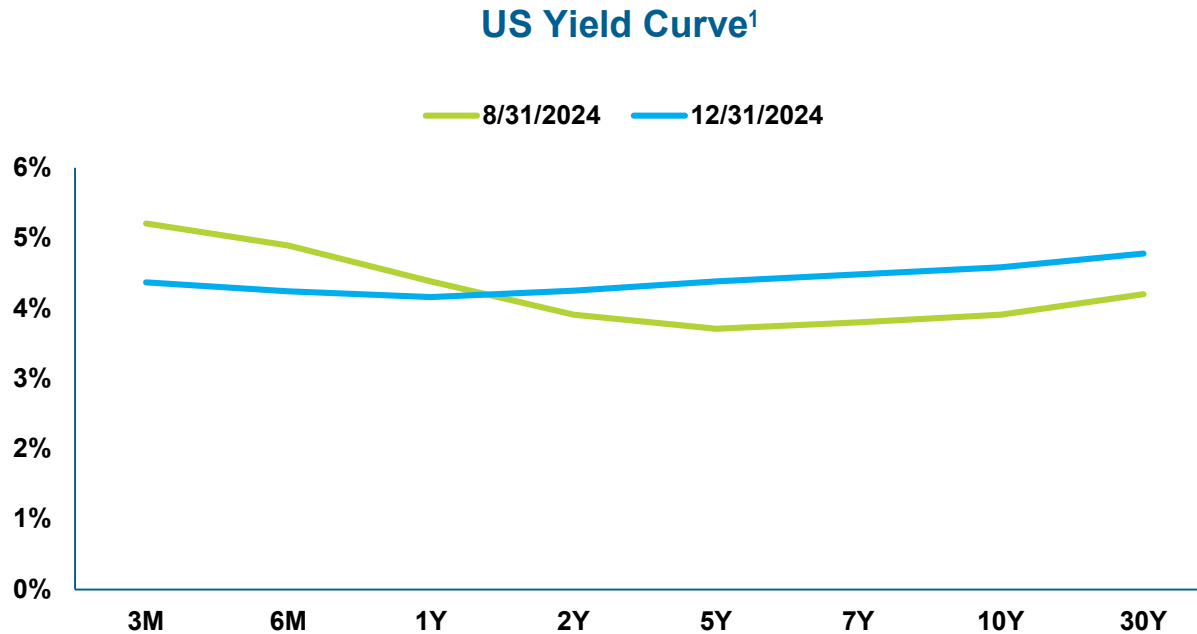
### Fixed Income Returns<sup>1</sup>

Fixed Income	December (%)	Q4 2024 (%)	2024 (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	-1.5	-2.7	2.0	-1.9	0.1	1.7	5.1	5.9
Bloomberg Aggregate	-1.6	-3.1	1.3	-2.4	-0.3	1.3	4.9	6.1
Bloomberg US TIPS	-1.6	-2.9	1.8	-2.3	1.9	2.2	4.6	6.5
Bloomberg Short-term TIPS	-0.1	-0.1	4.7	2.1	3.3	2.6	4.4	2.4
Bloomberg US Long Treasury	-5.3	-8.6	-6.4	-12.0	-5.2	-0.6	4.9	14.9
Bloomberg High Yield	-0.4	0.2	8.2	2.9	4.2	5.2	7.5	3.5
JPM GBI-EM Global Diversified (USD)	-1.9	-7.0	-2.4	-1.0	-1.9	-0.4	--	--

**Fixed Income: The Bloomberg Universal index fell 2.7% in the quarter, bringing the year-to-date return to +2.0%.**

- Fixed income indexes largely declined over the quarter due to rising interest rates as investors considered proposed policies like tariffs and deportations and their respective risks to inflation.
- The broad US bond market (Bloomberg Aggregate) fell 3.1% over the quarter, with TIPS performing similarly at longer maturities. Long-term Treasury bonds experienced the largest declines, with a drop of 8.6%.
- High yield bonds outperformed as investor risk appetite remained robust, while emerging market debt weakened on uncertainty about the path of proposed US tariffs by the incoming administration as well as by higher US interest rates.

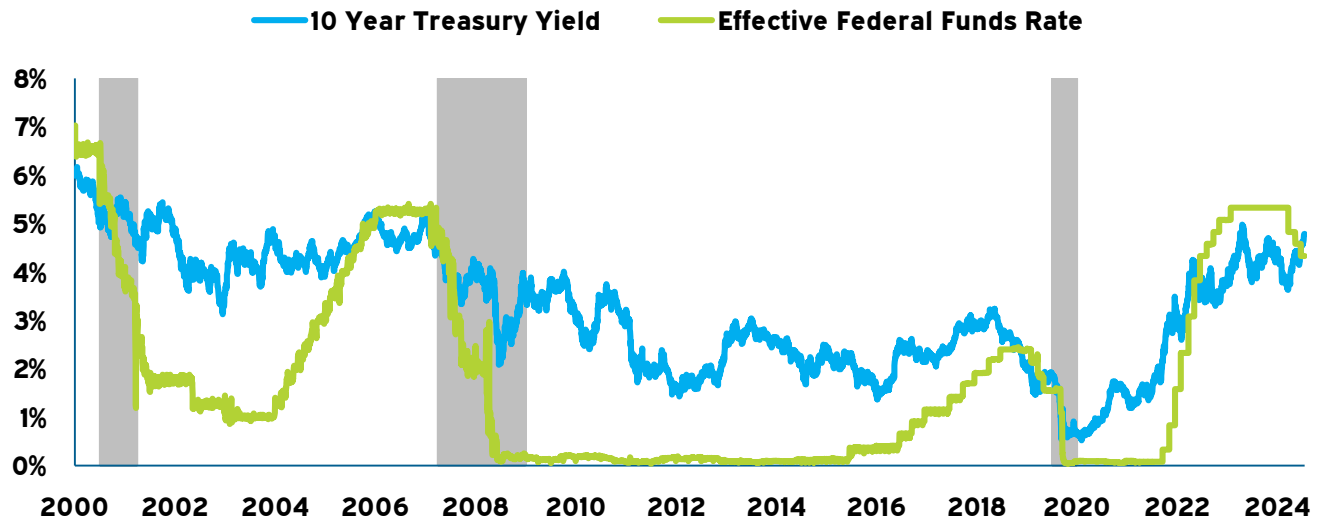
<sup>1</sup> Source: Bloomberg. Data is as of December 31, 2024. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration, respectively. JPM GBI-EM data is from J.P. Morgan. Current yield and duration data is not available.



- With the exception of the very shortest maturities, US Treasury yields rose in the fourth quarter driven by resilient growth and increased inflation expectations. Term premium (a measure of interest rate uncertainty) spiking over the quarter was a key driver of higher rates.
- Over the quarter, the more policy sensitive 2-year Treasury yield rose from 3.64% to 4.24%, while the 10-year Treasury yield rose from 3.78% to 4.57%.
- The yield curve was no longer inverted (short-term interest rates higher than long-term interest rates) at year-end given expectations for the Fed to continue to reduce rates and resilient economic growth and persistent inflation.

<sup>1</sup> Source: Bloomberg. Data is as of December 31, 2024. The August 2024 Treasury yields are shown as a reference before the first interest rate cut.

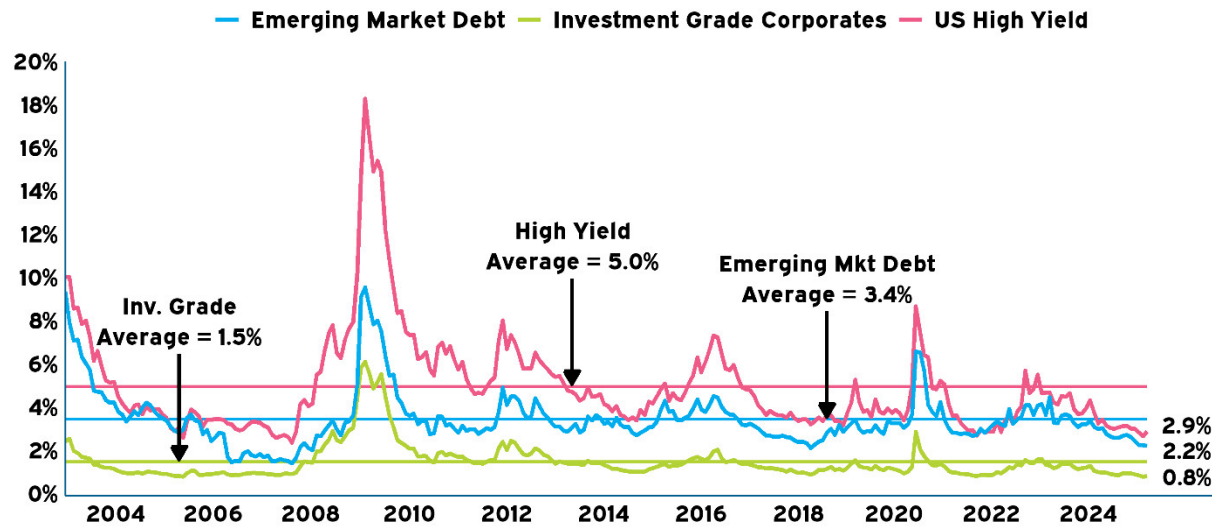
**10-Year Treasury Yield versus Fed Funds Rate<sup>1</sup>**



- 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 ten-year Treasury increasing by a similar amount over the same time period.
- Questions remain about why this is happening with some saying it is related to fiscal concerns and others pointing to lower demand for our debt from overseas. It is also possible the market feels the Fed has overcut rates already.

<sup>1</sup> Source: FRED. Data is as of January 15, 2025.

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

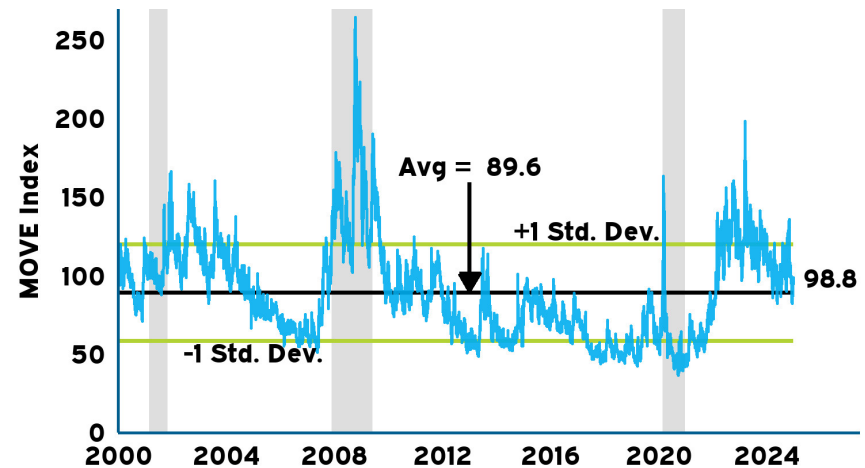
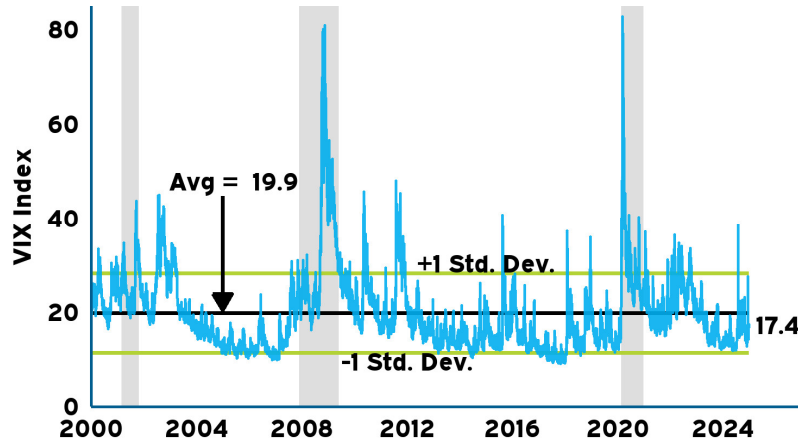


- Spreads (the yield above a comparable maturity Treasury) all continued to tighten over the quarter.
- All yield spreads remained below their respective long-run averages, particularly high yield (2.9% versus 5.0%).
- Although spreads are tight, absolute yields remain at above-average levels compared to the last two decades.

<sup>1</sup> Source: Bloomberg. Data is as December 31, 2024. Average lines denote the average of the investment grade, high yield, and emerging market spread values from September 2002 to the recent month-end, respectively.



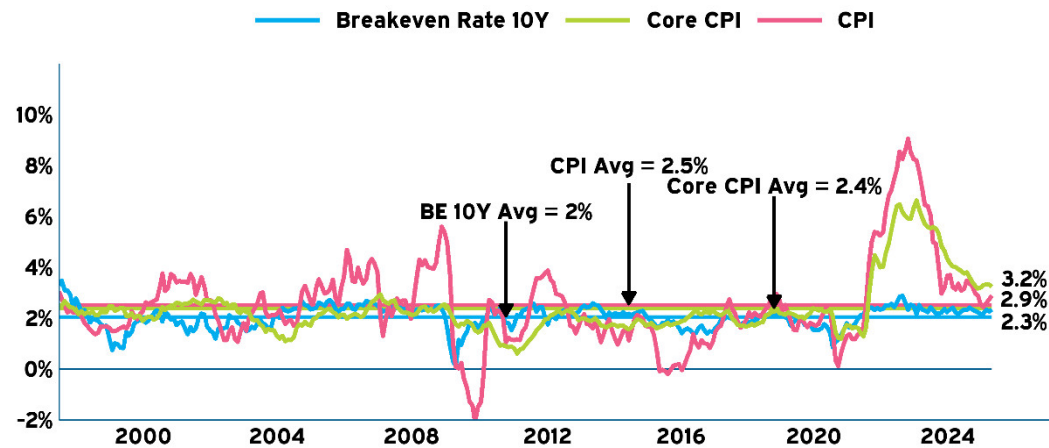
### Equity and Fixed Income Volatility<sup>1</sup>



- Bond and equity volatility experienced several spikes over the quarter ahead of the election but finished lower after the clear results.
- Volatility levels (VIX) in the US stock market finished the quarter below its long-run average, while volatility in the bond market (MOVE) ended December above its long-run average.

<sup>1</sup> 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 December 31, 2024. The average line indicated is the average of the VIX and MOVE values between January 2000 and December 2024.

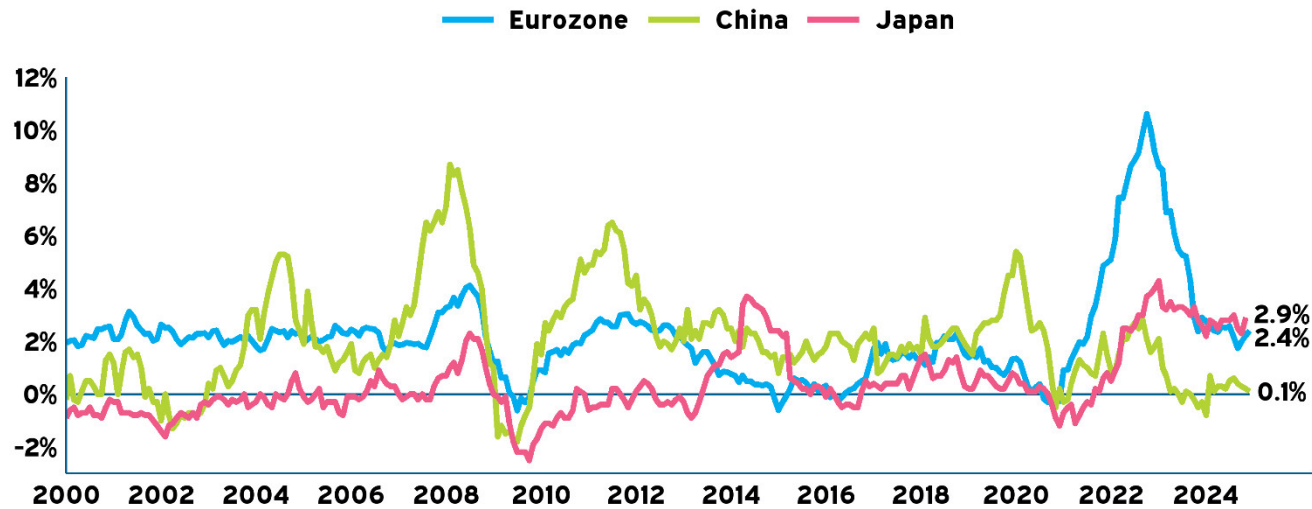
### US Ten-Year Breakeven Inflation and CPI<sup>1</sup>



- In December, inflation rose 0.4% month-over-month with energy prices accounting for 40% of the monthly increase.
- Year-over-year inflation increased from 2.4% to 2.9% over the quarter largely driven by base year effects. In the December reading shelter (+4.6%), transportation (+7.3%), and medical care (+3.4%) contributed to the annual gain while energy prices (-0.5%) fell over the past year despite the December (+2.6%) gains.
- Year-over-year core inflation (excluding food and energy) fell slightly over the quarter (3.3% to 3.2%).
- Inflation expectations (breakevens) rose over the quarter from the September lows of 2.0%, on continued uncertainty regarding the likelihood and magnitude of potential policies of the next US president.

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

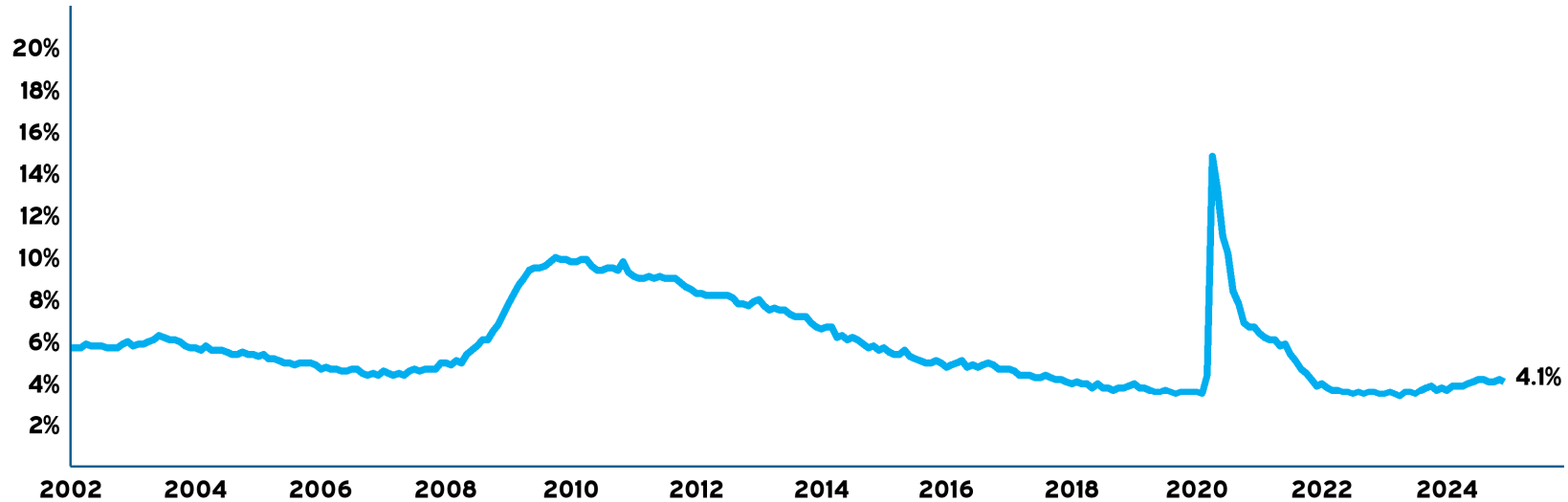
### Global Inflation (CPI Trailing Twelve Months)<sup>1</sup>



- In the eurozone, inflation rose each month over the quarter (1.7% to 2.4%) but levels remain below the US. The increase was largely driven by last year's significant fall in energy prices no longer being included in the calculation.
- Inflation in Japan rose over the quarter due in part to an increase in food prices and the end of energy subsidies driving electricity and gas prices higher.
- Inflation in China grinded lower in the fourth quarter (0.4% to 0.1%). China continues to experience deflationary pressures despite recent stimulus measures.

<sup>1</sup> Source: Bloomberg. Data is as December 2024, except Japan which is as of November 2024.

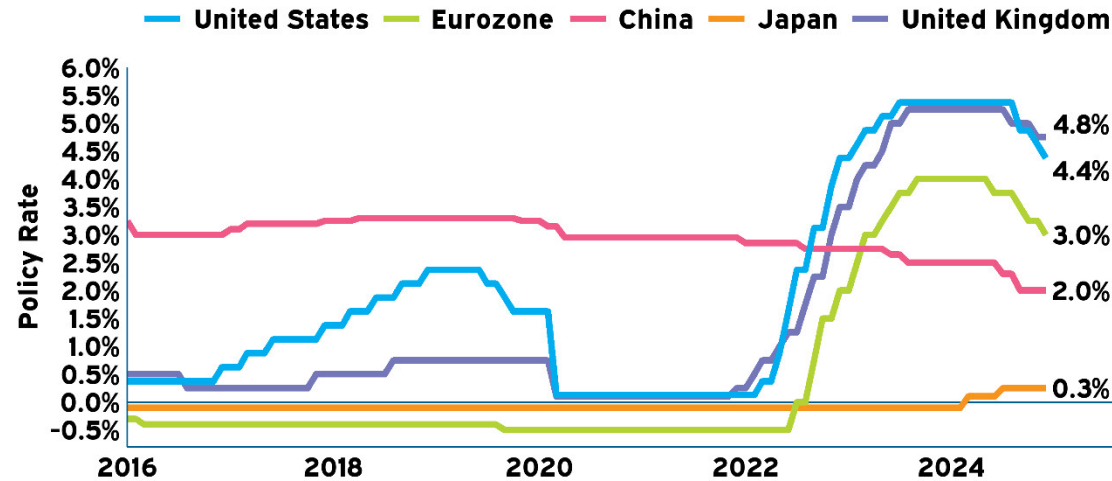
### US Unemployment<sup>1</sup>



- The unemployment rate stayed stable over the quarter at 4.1% with close to 500k jobs added to the economy since the end of September.
- In December, the health care (+46K), retail (+43k), and government (+33K) sectors added jobs, while retail – which lost jobs in November – rebounded (+43K) jobs.
- Job openings (8.1M) rose over last month’s openings (7.7M) but are well below pandemic highs (>12M); the number of openings exceeds the number of unemployed workers looking for work (6.9M).
- Separations (5.1M) and hires (5.3M) remain steady and average hourly wages continue to grow at approximately 3.9% a year.

<sup>1</sup> Source: FRED and BLS. Data is as of December 31, 2024.

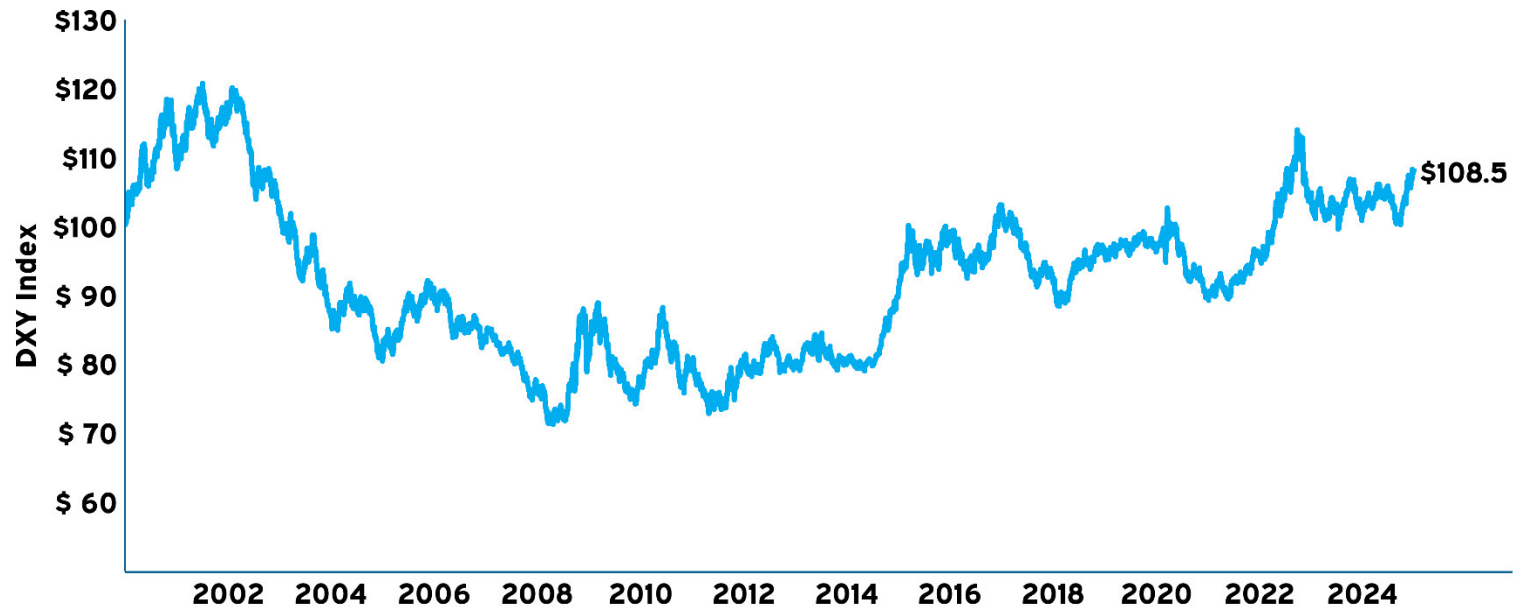
### Policy Rates<sup>1</sup>



- In the US, the Fed reduced interest rates by 0.25% twice over the quarter to a range of 4.25% to 4.50%, in moves largely expected by investors. Going forward, questions remain about the timing and amount of additional cuts given the strength of the economy and persistent above-target inflation.
- The Bank of England left rates unchanged in December after their November 0.25% cut, while the European Central Bank cut rates by another 0.25% in early December.
- After exiting negative interest rates in 2024 and making several rate increases, rate cutting by other major central banks are complicating prospects for further policy rate hikes in Japan.

<sup>1</sup> Source: Bloomberg. Data 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 Currencies<sup>1</sup>



- Over the quarter, the US dollar sharply strengthened (+8.0%) versus other currencies.
- A rise in interest rates driven by potential inflationary impacts of proposed higher tariffs, lower taxes, and immigration policies from candidate, and now president-elect Trump, drove the dollar's gains.

<sup>1</sup> Source: Bloomberg. Data as of December 31, 2024.

## 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 divergences in monetary policy. Some central banks, such as the Fed, European Central Bank, and the Bank of England, have started to cut interest rates and others, like the Bank of Japan, have 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 still 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.

**Quarterly Performance**  
as of December 31, 2024



#### Summary of Cash Flows

	QTD (\$)	1 Year (\$)
<b>OPFRS Total Plan</b>		
<b>Beginning Market Value</b>	<b>475,224,987</b>	<b>435,955,522</b>
Net Cash Flow	-4,291,089	-14,514,580
Net Investment Change	-7,964,099	41,528,857
<b>Ending Market Value</b>	<b>462,969,798</b>	<b>462,969,798</b>

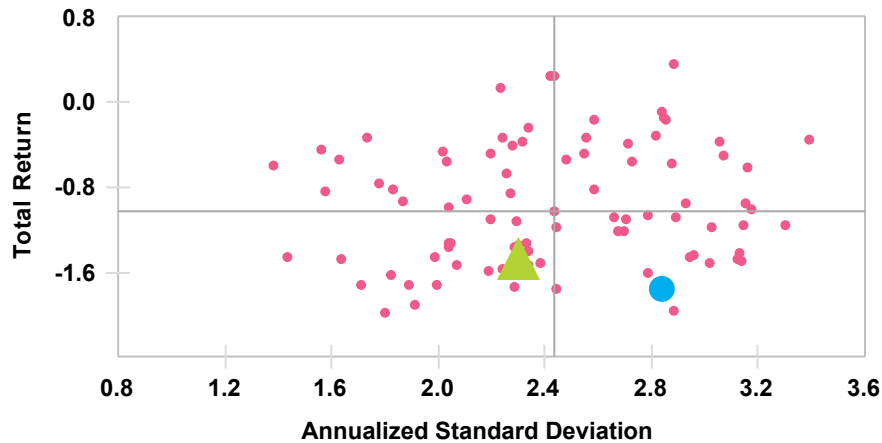
#### Return Summary Ending December 31, 2024



Total Plan performance shown is net of fees.

### Total Plan Risk/Return Summary | As of December 31, 2024

#### Risk-Return Summary QTD Ending December 31, 2024

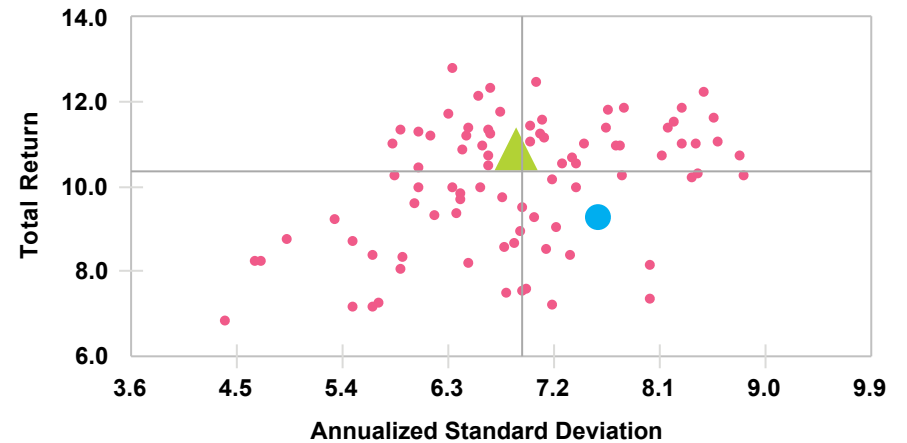


- IM Public DB \$250M-\$1B
- OPFRS Total Plan
- ▲ OPFRS Policy Benchmark

	Return	Standard Deviation
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OPFRS Total Plan	-1.8	2.8
OPFRS Policy Benchmark	-1.5	2.3
Median	-1.0	2.4

#### Risk-Return Summary 1 Yr Ending December 31, 2024



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

	Return	Standard Deviation
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OPFRS Total Plan	9.3	7.6
OPFRS Policy Benchmark	10.9	6.9
Median	10.4	6.9

Performance shown is net of fees. Calculation is based on monthly periodicity. Plan Sponsor Peer Group shown is net of fees.

## Asset Class Performance: Gross of Fees | As of December 31, 2024

	Market Value (\$)	% of Portfolio	QTD (%)	FYTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
<b>OPFRS Total Plan (Gross)</b>	<b>462,969,798</b>	<b>100.0</b>	<b>-1.7</b>	<b>4.1</b>	<b>9.6</b>	<b>2.2</b>	<b>6.0</b>	<b>7.1</b>	<b>6.8</b>	<b>Dec-88</b>
<i>OPFRS Policy Benchmark</i>			<i>-1.5</i>	<i>3.9</i>	<i>10.9</i>	<i>3.2</i>	<i>6.5</i>	<i>7.1</i>	<i>8.0</i>	
Excess Return			-0.2	0.2	-1.3	-1.0	-0.5	0.0	-1.2	
<b>Domestic Equity (Gross)</b>	<b>211,086,408</b>	<b>45.6</b>	<b>0.4</b>	<b>8.1</b>	<b>17.6</b>	<b>5.6</b>	<b>11.7</b>	<b>11.4</b>	<b>9.3</b>	<b>Jun-97</b>
<i>Russell 3000 (Blend)</i>			<i>2.6</i>	<i>9.0</i>	<i>23.8</i>	<i>8.0</i>	<i>13.9</i>	<i>12.5</i>	<i>9.8</i>	
Excess Return			-2.3	-0.9	-6.2	-2.4	-2.1	-1.1	-0.4	
<b>International Equity (Gross)</b>	<b>60,379,355</b>	<b>13.0</b>	<b>-6.6</b>	<b>1.2</b>	<b>8.1</b>	<b>3.1</b>	<b>5.6</b>	<b>6.6</b>	<b>5.6</b>	<b>Jan-98</b>
<i>MSCI ACWI ex US (Blend)</i>			<i>-7.6</i>	<i>-0.1</i>	<i>5.5</i>	<i>0.8</i>	<i>4.1</i>	<i>4.8</i>	<i>5.1</i>	
Excess Return			1.0	1.3	2.6	2.3	1.5	1.8	0.5	
<b>Fixed Income (Gross)</b>	<b>109,911,826</b>	<b>23.7</b>	<b>-3.1</b>	<b>2.0</b>	<b>1.8</b>	<b>-1.9</b>	<b>0.3</b>	<b>2.0</b>	<b>4.7</b>	<b>Jan-94</b>
<i>Bloomberg Universal (Blend)</i>			<i>-2.7</i>	<i>2.3</i>	<i>2.0</i>	<i>-2.0</i>	<i>0.1</i>	<i>1.7</i>	<i>4.5</i>	
Excess Return			-0.4	-0.3	-0.2	0.0	0.2	0.3	0.2	
<b>Credit (Gross)</b>	<b>7,433,085</b>	<b>1.6</b>	<b>0.9</b>	<b>4.0</b>	<b>8.5</b>	<b>4.3</b>	<b>6.1</b>	<b>--</b>	<b>5.9</b>	<b>Feb-15</b>
<i>Blmbg. U.S. Corp: High Yield Index</i>			<i>0.2</i>	<i>5.5</i>	<i>8.2</i>	<i>2.9</i>	<i>4.2</i>	<i>--</i>	<i>5.1</i>	
Excess Return			0.8	-1.4	0.3	1.4	1.9	--	0.7	
<b>Covered Calls (Gross)</b>	<b>20,191,744</b>	<b>4.4</b>	<b>3.0</b>	<b>7.7</b>	<b>18.7</b>	<b>7.7</b>	<b>11.6</b>	<b>10.4</b>	<b>10.2</b>	<b>Apr-14</b>
<i>Cboe S&amp;P 500 Buy Write Index</i>			<i>5.8</i>	<i>11.6</i>	<i>20.1</i>	<i>6.0</i>	<i>6.9</i>	<i>6.9</i>	<i>6.7</i>	
Excess Return			-2.7	-3.9	-1.4	1.7	4.8	3.5	3.4	
<b>Crisis Risk Offset (Gross)</b>	<b>37,541,773</b>	<b>8.1</b>	<b>-4.2</b>	<b>-5.1</b>	<b>-3.4</b>	<b>-5.8</b>	<b>-9.5</b>	<b>--</b>	<b>-6.8</b>	<b>Aug-18</b>
<i>Crisis Risk Offset Benchmark</i>			<i>-2.4</i>	<i>-1.8</i>	<i>2.0</i>	<i>3.1</i>	<i>0.1</i>	<i>--</i>	<i>0.3</i>	
Excess Return			-1.7	-3.3	-5.4	-8.9	-9.5	--	-7.1	
<b>Cash (Gross)</b>	<b>16,425,606</b>	<b>3.5</b>	<b>0.2</b>	<b>0.5</b>	<b>0.8</b>	<b>0.3</b>	<b>0.4</b>	<b>0.8</b>	<b>0.6</b>	<b>Mar-11</b>

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

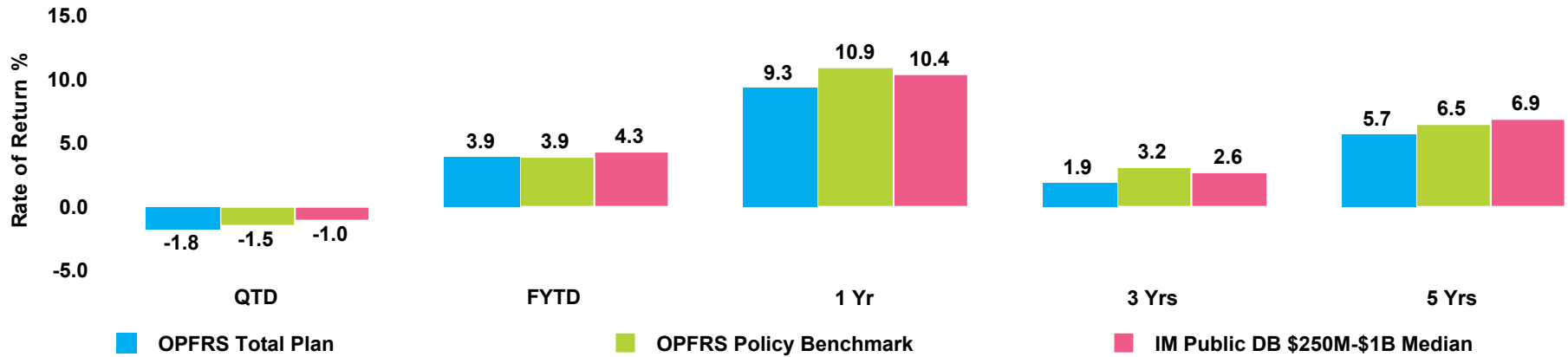
## Asset Class Performance: Net of Fees | As of December 31, 2024

	Market Value (\$)	% of Portfolio	QTD (%)	FYTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
<b>OPFRS Total Plan (Net)</b>	<b>462,969,798</b>	<b>100.0</b>	<b>-1.8</b>	<b>3.9</b>	<b>9.3</b>	<b>1.9</b>	<b>5.7</b>	<b>6.8</b>	<b>6.7</b>	<b>Dec-88</b>
<i>OPFRS Policy Benchmark</i>			<i>-1.5</i>	<i>3.9</i>	<i>10.9</i>	<i>3.2</i>	<i>6.5</i>	<i>7.1</i>	<i>8.0</i>	
Excess Return			<i>-0.3</i>	<i>0.1</i>	<i>-1.6</i>	<i>-1.3</i>	<i>-0.8</i>	<i>-0.3</i>	<i>-1.3</i>	
<i>IM Public DB \$250M-\$1B Median (Net)</i>			<i>-1.0</i>	<i>4.3</i>	<i>10.4</i>	<i>2.6</i>	<i>6.9</i>	<i>7.0</i>	<i>8.1</i>	
Peer Group Rank			91	66	70	76	86	58	100	
<b>Domestic Equity (Net)</b>	<b>211,086,408</b>	<b>45.6</b>	<b>0.3</b>	<b>7.9</b>	<b>17.2</b>	<b>5.3</b>	<b>11.4</b>	<b>11.1</b>	<b>9.2</b>	<b>Jun-97</b>
<i>Russell 3000 (Blend)</i>			<i>2.6</i>	<i>9.0</i>	<i>23.8</i>	<i>8.0</i>	<i>13.9</i>	<i>12.5</i>	<i>9.8</i>	
Excess Return			<i>-2.3</i>	<i>-1.1</i>	<i>-6.6</i>	<i>-2.7</i>	<i>-2.5</i>	<i>-1.4</i>	<i>-0.5</i>	
<b>International Equity (Net)</b>	<b>60,379,355</b>	<b>13.0</b>	<b>-6.7</b>	<b>0.8</b>	<b>7.5</b>	<b>2.5</b>	<b>5.0</b>	<b>6.1</b>	<b>5.4</b>	<b>Jan-98</b>
<i>MSCI ACWI ex US (Blend)</i>			<i>-7.6</i>	<i>-0.1</i>	<i>5.5</i>	<i>0.8</i>	<i>4.1</i>	<i>4.8</i>	<i>5.1</i>	
Excess Return			<i>0.9</i>	<i>1.0</i>	<i>1.9</i>	<i>1.7</i>	<i>0.9</i>	<i>1.3</i>	<i>0.3</i>	
<b>Fixed Income (Net)</b>	<b>109,911,826</b>	<b>23.7</b>	<b>-3.2</b>	<b>1.9</b>	<b>1.6</b>	<b>-2.1</b>	<b>0.1</b>	<b>1.8</b>	<b>4.4</b>	<b>Jan-94</b>
<i>Bloomberg Universal (Blend)</i>			<i>-2.7</i>	<i>2.3</i>	<i>2.0</i>	<i>-2.0</i>	<i>0.1</i>	<i>1.7</i>	<i>4.5</i>	
Excess Return			<i>-0.4</i>	<i>-0.4</i>	<i>-0.4</i>	<i>-0.2</i>	<i>0.0</i>	<i>0.1</i>	<i>-0.1</i>	
<b>Credit (Net)</b>	<b>7,433,085</b>	<b>1.6</b>	<b>0.8</b>	<b>3.7</b>	<b>7.9</b>	<b>3.7</b>	<b>5.4</b>	<b>--</b>	<b>5.2</b>	<b>Feb-15</b>
<i>Blmbg. U.S. Corp: High Yield Index</i>			<i>0.2</i>	<i>5.5</i>	<i>8.2</i>	<i>2.9</i>	<i>4.2</i>	<i>--</i>	<i>5.1</i>	
Excess Return			<i>0.6</i>	<i>-1.7</i>	<i>-0.3</i>	<i>0.8</i>	<i>1.2</i>	<i>--</i>	<i>0.1</i>	
<b>Covered Calls (Net)</b>	<b>20,191,744</b>	<b>4.4</b>	<b>3.0</b>	<b>7.6</b>	<b>18.4</b>	<b>7.5</b>	<b>11.4</b>	<b>10.2</b>	<b>9.9</b>	<b>Apr-14</b>
<i>Cboe S&amp;P 500 Buy Write Index</i>			<i>5.8</i>	<i>11.6</i>	<i>20.1</i>	<i>6.0</i>	<i>6.9</i>	<i>6.9</i>	<i>6.7</i>	
Excess Return			<i>-2.8</i>	<i>-4.0</i>	<i>-1.7</i>	<i>1.5</i>	<i>4.5</i>	<i>3.2</i>	<i>3.1</i>	
<b>Crisis Risk Offset (Net)</b>	<b>37,541,773</b>	<b>8.1</b>	<b>-4.2</b>	<b>-5.2</b>	<b>-3.6</b>	<b>-6.0</b>	<b>-9.6</b>	<b>--</b>	<b>-7.0</b>	<b>Aug-18</b>
<i>Crisis Risk Offset Benchmark</i>			<i>-2.4</i>	<i>-1.8</i>	<i>2.0</i>	<i>3.1</i>	<i>0.1</i>	<i>--</i>	<i>0.3</i>	
Excess Return			<i>-1.8</i>	<i>-3.4</i>	<i>-5.6</i>	<i>-9.1</i>	<i>-9.7</i>	<i>--</i>	<i>-7.4</i>	
<b>Cash (Net)</b>	<b>16,425,606</b>	<b>3.5</b>	<b>0.2</b>	<b>0.5</b>	<b>0.8</b>	<b>0.3</b>	<b>0.4</b>	<b>0.8</b>	<b>0.6</b>	<b>Mar-11</b>

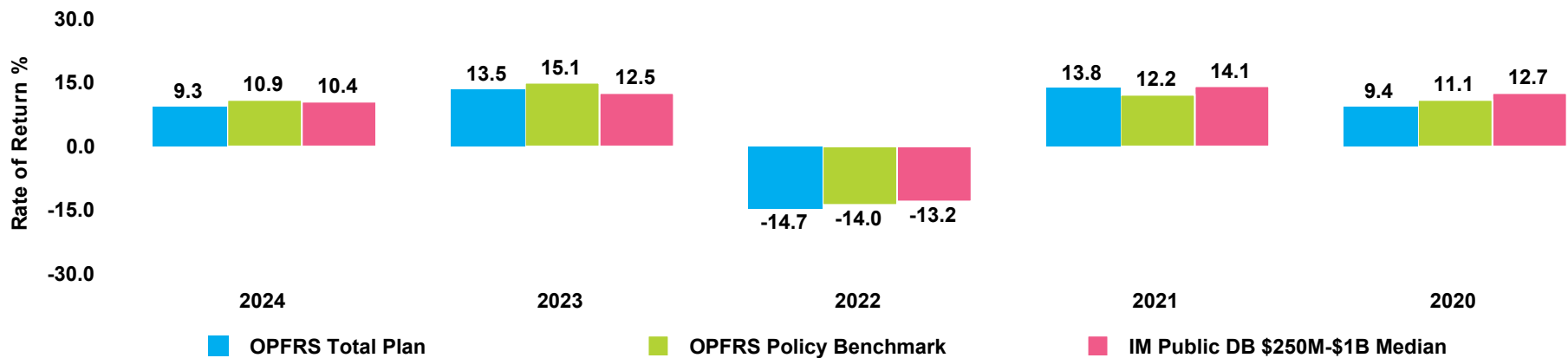
Performance shown is net of fees, except for Total Plan, Domestic Equity, and International Equity composites which have a mix of gross and net of fees performance. Please see the Addendum for more details. Since inception date and performance begin in the month following an investments initial funding.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

### Portfolio Relative Performance Results | As of December 31, 2024

#### Trailing Period Performance Ending December 31, 2024



#### Calendar Year Performance Ending December 31, 2024



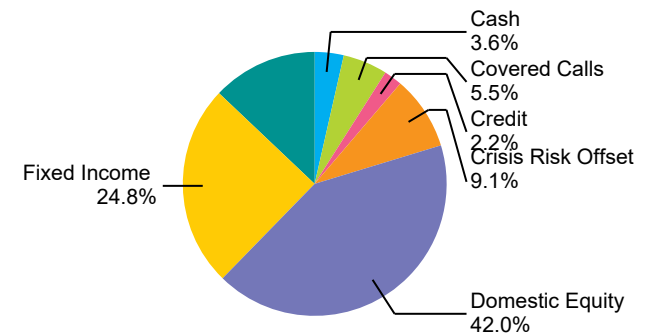
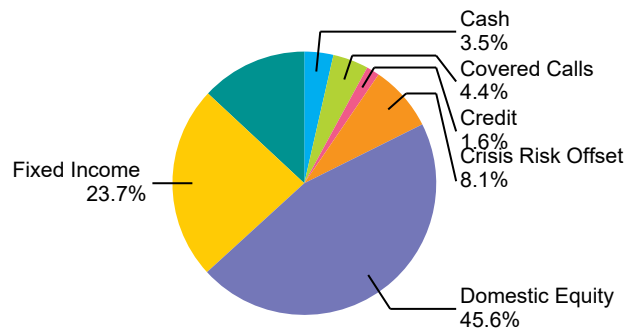
Total Plan performance is a mix of gross and net of fees; performance is gross of fees prior to January 2016 and thereafter. Fiscal year begins on July 1.

### Asset Allocation | As of As of December 31, 2024

	Balance (\$)	Current Allocation (%)	Policy (%)	Difference (%)	Interim Policy (%)	Policy Range (%)	Within IPS Range?
Domestic Equity	211,086,408	45.6	25.0	20.6	34.0	15.0 - 35.0	No
International Equity	60,379,355	13.0	5.0	8.0	12.0	2.0 - 22.0	Yes
Fixed Income	109,911,826	23.7	51.0	-27.3	44.0	31.0 - 71.0	No
Credit	7,433,085	1.6	10.0	-8.4	0.0	0.0 - 16.0	Yes
Covered Calls	20,191,744	4.4	0.0	4.4	0.0	0.0 - 5.0	Yes
Crisis Risk Offset	37,541,773	8.1	9.0	-0.9	10.0	4.0 - 14.0	Yes
Cash	16,425,606	3.5	0.0	3.5	0.0	0.0 - 5.0	Yes
<b>Total</b>	<b>462,969,798</b>	<b>100.0</b>	<b>100.0</b>	<b>0.0</b>	<b>100.0</b>		

December 31, 2024: \$462,969,797.9

December 31, 2023: \$406,308,110.42



Cash account market value includes cash balances held in ETF accounts at the custodian and residuals from terminated managers.  
Policy (%) column reflects the long-term allocation targets starting July 1, 2024.

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

	Market Value (\$)	% of Portfolio	QTD (%)	FYTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
<b>Domestic Equity</b>	<b>211,086,408</b>	<b>100.0</b>	<b>0.3</b>	<b>7.9</b>	<b>17.2</b>	<b>5.3</b>	<b>11.4</b>	<b>11.1</b>	<b>9.2</b>	<b>Jun-97</b>
<i>Russell 3000 (Blend)</i>			<i>2.6</i>	<i>9.0</i>	<i>23.8</i>	<i>8.0</i>	<i>13.9</i>	<i>12.5</i>	<i>9.8</i>	
Excess Return			-2.3	-1.1	-6.6	-2.7	-2.5	-1.4	-0.5	
Northern Trust Russell 1000	109,837,244	52.0	2.7	9.0	24.4	8.3	14.2	12.8	14.2	Jun-10
<i>Russell 1000 Index</i>			<i>2.7</i>	<i>9.0</i>	<i>24.5</i>	<i>8.4</i>	<i>14.3</i>	<i>12.9</i>	<i>14.3</i>	
Excess Return			0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	
EARNEST Partners	41,511,365	19.7	-3.2	4.8	7.1	1.7	9.5	10.9	9.3	Apr-06
<i>Russell Midcap Index</i>			<i>0.6</i>	<i>9.9</i>	<i>15.3</i>	<i>3.8</i>	<i>9.9</i>	<i>9.6</i>	<i>9.1</i>	
Excess Return			-3.8	-5.1	-8.2	-2.1	-0.4	1.3	0.2	
eV US Mid Cap Core Equity Rank			88	94	86	74	63	22	47	
Wellington Select Quality Equity	26,998,936	12.8	-4.1	5.6	10.4	--	--	--	8.0	May-22
<i>Russell 1000 Index</i>			<i>2.7</i>	<i>9.0</i>	<i>24.5</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>15.7</i>	
Excess Return			-6.9	-3.4	-14.1	--	--	--	-7.7	
eV US Large Cap Core Equity Rank			99	75	96	--	--	--	95	
Brown Fundamental Small Cap Value	14,767,286	7.0	-1.4	9.0	12.7	6.9	--	--	8.2	Apr-21
<i>Russell 2000 Value Index</i>			<i>-1.1</i>	<i>9.0</i>	<i>8.1</i>	<i>1.9</i>	<i>--</i>	<i>--</i>	<i>3.1</i>	
Excess Return			-0.3	0.0	4.7	5.0	--	--	5.1	
eV US Small Cap Value Equity Rank			73	40	30	19	--	--	19	
Rice Hall James	17,971,578	8.5	2.5	12.2	16.1	0.0	7.3	--	7.9	Aug-17
<i>Russell 2000 Growth Index</i>			<i>1.7</i>	<i>10.3</i>	<i>15.2</i>	<i>0.2</i>	<i>6.9</i>	<i>--</i>	<i>8.2</i>	
Excess Return			0.8	1.9	0.9	-0.2	0.4	--	-0.3	
eV US Small Cap Growth Equity Rank			31	20	37	36	69	--	87	

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

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

	Market Value (\$)	% of Portfolio	QTD (%)	FYTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
<b>International Equity</b>	<b>60,379,355</b>	<b>100.0</b>	<b>-6.7</b>	<b>0.8</b>	<b>7.5</b>	<b>2.5</b>	<b>5.0</b>	<b>6.1</b>	<b>5.4</b>	<b>Jan-98</b>
<i>MSCI ACWI ex US (Blend)</i>			-7.6	-0.1	5.5	0.8	4.1	4.8	5.1	
Excess Return			0.9	1.0	1.9	1.7	0.9	1.3	0.3	
<b>Vanguard Developed Markets ETF</b>	<b>16,013,244</b>	<b>26.5</b>	<b>-8.1</b>	<b>-1.5</b>	<b>3.2</b>	<b>1.0</b>	<b>4.8</b>	<b>--</b>	<b>6.7</b>	<b>Sep-19</b>
<i>FTSE Developed All Cap ex-U.S. Index</i>			-7.9	-0.8	3.7	1.3	5.1	--	7.0	
Excess Return			-0.2	-0.7	-0.5	-0.3	-0.3	--	-0.3	
<b>SGA ACWI ex-U.S. Equity</b>	<b>44,366,111</b>	<b>73.5</b>	<b>-6.2</b>	<b>1.7</b>	<b>9.1</b>	<b>3.3</b>	<b>5.3</b>	<b>--</b>	<b>5.3</b>	<b>Dec-19</b>
<i>MSCI AC World ex USA (Net)</i>			-7.6	-0.1	5.5	0.8	4.1	--	4.9	
Excess Return			1.4	1.9	3.6	2.4	1.2	--	0.4	
eV ACWI ex-US All Cap Core Eq Rank			34	18	22	19	36	--	52	

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



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

	Market Value (\$)	% of Portfolio	QTD (%)	FYTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
<b>Fixed Income</b>	<b>109,911,826</b>	<b>100.0</b>	<b>-3.2</b>	<b>1.9</b>	<b>1.6</b>	<b>-2.1</b>	<b>0.1</b>	<b>1.8</b>	<b>4.4</b>	<b>Jan-94</b>
<i>Bloomberg Universal (Blend)</i>			-2.7	2.3	2.0	-2.0	0.1	1.7	4.5	
Excess Return			-0.4	-0.4	-0.4	-0.2	0.0	0.1	-0.1	
Ramirez	74,416,688	67.7	-3.3	1.8	1.4	-2.3	-0.2	--	1.6	Jan-17
<i>Blmbg. U.S. Aggregate Index</i>			-3.1	2.0	1.3	-2.4	-0.3	--	1.3	
Excess Return			-0.2	-0.2	0.1	0.1	0.2	--	0.4	
eV US Core Fixed Inc Rank			90	79	76	68	76	--	41	
Wellington Core Bond	7,160,521	6.5	-3.0	2.2	2.4	-2.1	--	--	-1.2	Apr-21
<i>Blmbg. U.S. Aggregate Index</i>			-3.1	2.0	1.3	-2.4	--	--	-1.4	
Excess Return			0.1	0.2	1.1	0.3	--	--	0.2	
eV US Core Fixed Inc Rank			52	27	19	44	--	--	53	
Reams	28,334,617	25.8	-3.0	2.1	1.9	-1.6	2.4	2.9	4.8	Feb-98
<i>Bloomberg Universal (Blend)</i>			-2.7	2.3	2.0	-2.0	0.1	1.7	4.1	
Excess Return			-0.3	-0.2	-0.1	0.4	2.3	1.1	0.7	
eV US Core Plus Fixed Inc Rank			70	66	75	37	4	13	31	

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

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

	Market Value (\$)	% of Portfolio	QTD (%)	FYTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
<b>Credit</b>	<b>7,433,085</b>	<b>100.0</b>	<b>0.8</b>	<b>3.7</b>	<b>7.9</b>	<b>3.7</b>	<b>5.4</b>	<b>--</b>	<b>5.2</b>	<b>Feb-15</b>
<i>Bimbg. U.S. Corp: High Yield Index</i>			<i>0.2</i>	<i>5.5</i>	<i>8.2</i>	<i>2.9</i>	<i>4.2</i>	<i>--</i>	<i>5.1</i>	
Excess Return			0.6	-1.7	-0.3	0.8	1.2	--	0.1	
<b>Polen Capital</b>	<b>7,433,085</b>	<b>100.0</b>	<b>0.8</b>	<b>3.7</b>	<b>7.9</b>	<b>3.7</b>	<b>5.4</b>	<b>--</b>	<b>5.2</b>	<b>Feb-15</b>
<i>ICE BofA U.S. High Yield Index</i>			<i>0.2</i>	<i>5.4</i>	<i>8.2</i>	<i>2.9</i>	<i>4.0</i>	<i>--</i>	<i>5.1</i>	
Excess Return			0.6	-1.7	-0.3	0.8	1.4	--	0.2	
eV US High Yield Fixed Inc Rank			19	86	44	26	13	--	21	

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

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

	Market Value (\$)	% of Portfolio	QTD (%)	FYTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
<b>Covered Calls</b>	<b>20,191,744</b>	<b>100.0</b>	<b>3.0</b>	<b>7.6</b>	<b>18.4</b>	<b>7.5</b>	<b>11.4</b>	<b>10.2</b>	<b>9.9</b>	<b>Apr-14</b>
<i>Cboe S&amp;P 500 Buy Write Index</i>			<i>5.8</i>	<i>11.6</i>	<i>20.1</i>	<i>6.0</i>	<i>6.9</i>	<i>6.9</i>	<i>6.7</i>	
Excess Return			-2.8	-4.0	-1.7	1.5	4.5	3.2	3.1	
<b>Parametric BXM</b>	<b>9,642,261</b>	<b>47.8</b>	<b>3.4</b>	<b>7.6</b>	<b>16.9</b>	<b>6.9</b>	<b>9.0</b>	<b>8.3</b>	<b>8.0</b>	<b>Apr-14</b>
<i>Cboe S&amp;P 500 Buy Write Index</i>			<i>5.8</i>	<i>11.6</i>	<i>20.1</i>	<i>6.0</i>	<i>6.9</i>	<i>6.9</i>	<i>6.7</i>	
Excess Return			-2.4	-4.1	-3.3	0.9	2.1	1.3	1.2	
<b>Parametric DeltaShift</b>	<b>10,549,483</b>	<b>52.2</b>	<b>2.6</b>	<b>7.7</b>	<b>19.9</b>	<b>8.1</b>	<b>13.6</b>	<b>11.7</b>	<b>11.9</b>	<b>Apr-14</b>
<i>Cboe S&amp;P 500 Buy Write Index</i>			<i>5.8</i>	<i>11.6</i>	<i>20.1</i>	<i>6.0</i>	<i>6.9</i>	<i>6.9</i>	<i>6.7</i>	
Excess Return			-3.2	-3.9	-0.2	2.1	6.7	4.7	5.1	

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

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

	Market Value (\$)	% of Portfolio	QTD (%)	FYTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
<b>Crisis Risk Offset</b>	<b>37,541,773</b>	<b>100.0</b>	<b>-4.2</b>	<b>-5.2</b>	<b>-3.6</b>	<b>-6.0</b>	<b>-9.6</b>	<b>--</b>	<b>-7.0</b>	<b>Aug-18</b>
<i>Crisis Risk Offset Benchmark</i>			<i>-2.4</i>	<i>-1.8</i>	<i>2.0</i>	<i>3.1</i>	<i>0.1</i>	<i>--</i>	<i>0.3</i>	
Over/Under			<i>-1.8</i>	<i>-3.4</i>	<i>-5.6</i>	<i>-9.1</i>	<i>-9.7</i>	<i>--</i>	<i>-7.4</i>	
<b>Kepos Alternative Risk Premia</b>	<b>12,522,581</b>	<b>33.4</b>	<b>2.0</b>	<b>3.3</b>	<b>15.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>8.0</b>	<b>Feb-22</b>
<i>SG Multi Alternative Risk Premia Index</i>			<i>1.0</i>	<i>1.3</i>	<i>9.4</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>6.8</i>	
Over/Under			<i>1.0</i>	<i>2.0</i>	<i>5.6</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>1.3</i>	
<b>Versor Trend Following</b>	<b>12,707,305</b>	<b>33.8</b>	<b>-5.4</b>	<b>-15.3</b>	<b>-14.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-5.9</b>	<b>Apr-22</b>
<i>SG Trend Index</i>			<i>0.3</i>	<i>-5.6</i>	<i>2.6</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>2.3</i>	
Over/Under			<i>-5.7</i>	<i>-9.7</i>	<i>-17.3</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-8.2</i>	
<b>Vanguard Long-Term Treasury ETF</b>	<b>12,311,888</b>	<b>32.8</b>	<b>-8.8</b>	<b>-1.7</b>	<b>-6.3</b>	<b>-11.9</b>	<b>-5.2</b>	<b>--</b>	<b>-4.2</b>	<b>Jul-19</b>
<i>Bimbg. US Govt: Long Term Bond Index</i>			<i>-8.6</i>	<i>-1.5</i>	<i>-6.4</i>	<i>-11.9</i>	<i>-5.2</i>	<i>--</i>	<i>-4.1</i>	
Over/Under			<i>-0.2</i>	<i>-0.2</i>	<i>0.1</i>	<i>0.0</i>	<i>-0.1</i>	<i>--</i>	<i>-0.1</i>	

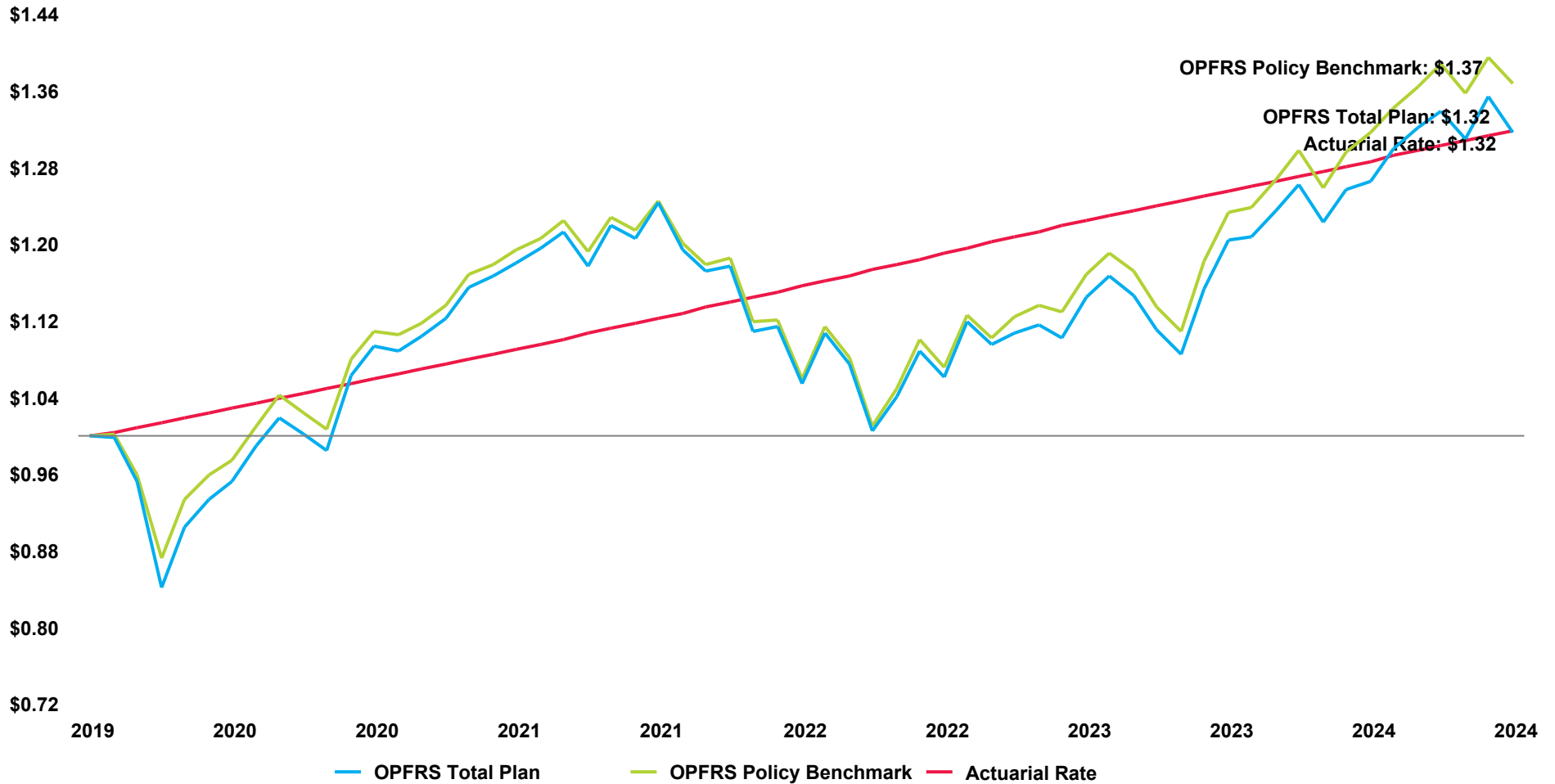
Performance shown is net of fees. Since inception date and performance begin in the month following an investments initial funding. Fiscal year begins on July 1. Please see Benchmark History section for custom benchmark compositions.

Cash Flow Summary  
Quarter To Date

	Beginning Market Value(\$)	Net Cash Flow(\$)	Net Investment Change(\$)	Ending Market Value(\$)
Northern Trust Russell 1000	106,908,322	-	2,928,922	109,837,244
EARNEST Partners	42,722,324	72,901	-1,283,860	41,511,365
Wellington Select Quality Equity	28,167,816	-	-1,168,880	26,998,936
Brown Fundamental Small Cap Value	14,693,257	249,201	-175,172	14,767,286
Rice Hall James	17,481,481	-	490,096	17,971,578
Vanguard Developed Markets ETF	17,684,221	-238,625	-1,432,352	16,013,244
SGA ACWI ex-U.S. Equity	47,191,363	-	-2,825,252	44,366,111
Ramirez	76,882,860	-	-2,466,172	74,416,688
Wellington Core Bond	7,381,307	-	-220,787	7,160,521
Reams	29,200,698	-	-866,081	28,334,617
Polen Capital	10,380,969	-3,000,000	52,116	7,433,085
Parametric BXM	10,071,437	-750,000	320,824	9,642,261
Parametric DeltaShift	11,023,268	-750,000	276,215	10,549,483
Kepos Alternative Risk Premia	12,271,394	-	251,186	12,522,581
Versor Trend Following	13,429,347	-	-722,043	12,707,305
Vanguard Long-Term Treasury ETF	13,688,773	-185,713	-1,191,172	12,311,888
Cash - Money Market	6,160,148	417,291	37,167	6,614,606
Cash - Treasury	9,886,000	-75,000	-	9,811,000
Securities Lending Northern Trust	-	-31,144	31,144	-
<b>OPFRS Total Plan</b>	<b>475,224,987</b>	<b>-4,291,089</b>	<b>-7,964,099</b>	<b>462,969,798</b>

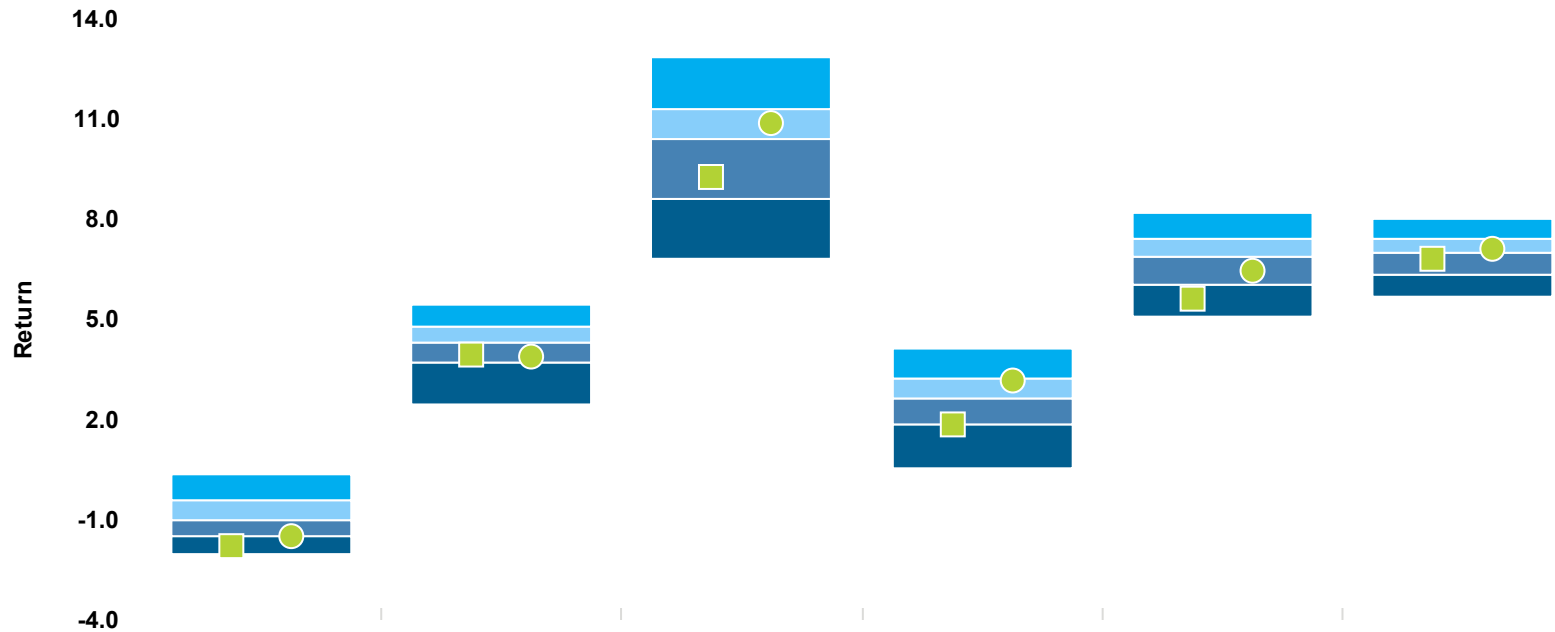
Total Portfolio 5-Year Performance | As of December 31, 2024

### Growth of a Dollar 5 Years ending December 31, 2024



The actuarial assumed rate is 8% through June 2009, 7.5% through June 2010, 7% through June 2011, 6.75% through June 2014, 6.5% through December 2017, 6.0% through June 2023, and 5.0% since July 2023.

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



	QTD (%)	FYTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
■ OPFRS Total Plan	-1.8 (91)	3.9 (66)	9.3 (70)	1.9 (76)	5.7 (86)	6.8 (58)
● OPFRS Policy Benchmark	-1.5 (75)	3.9 (70)	10.9 (41)	3.2 (28)	6.5 (67)	7.1 (42)
5th Percentile	0.4	5.5	12.8	4.1	8.2	8.0
1st Quartile	-0.4	4.8	11.3	3.3	7.4	7.4
Median	-1.0	4.3	10.4	2.6	6.9	7.0
3rd Quartile	-1.5	3.7	8.6	1.9	6.0	6.4
95th Percentile	-2.0	2.5	6.8	0.5	5.1	5.7
Population	111	110	108	106	105	93

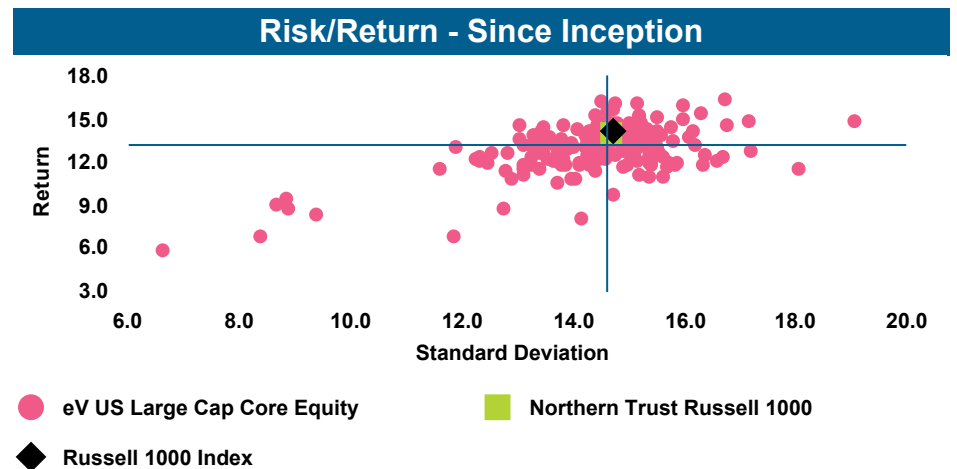
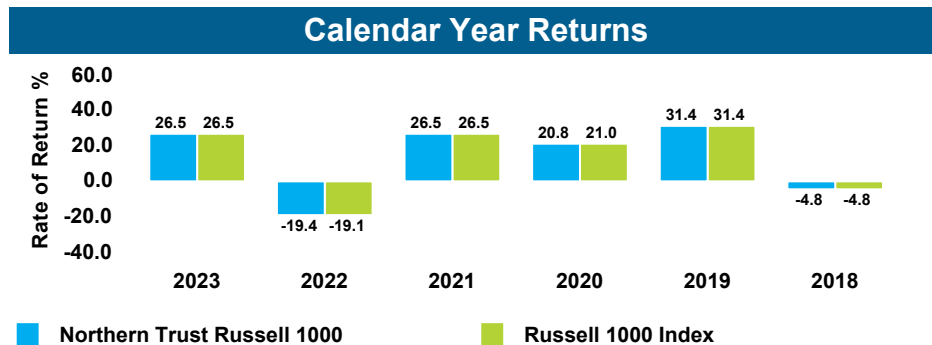
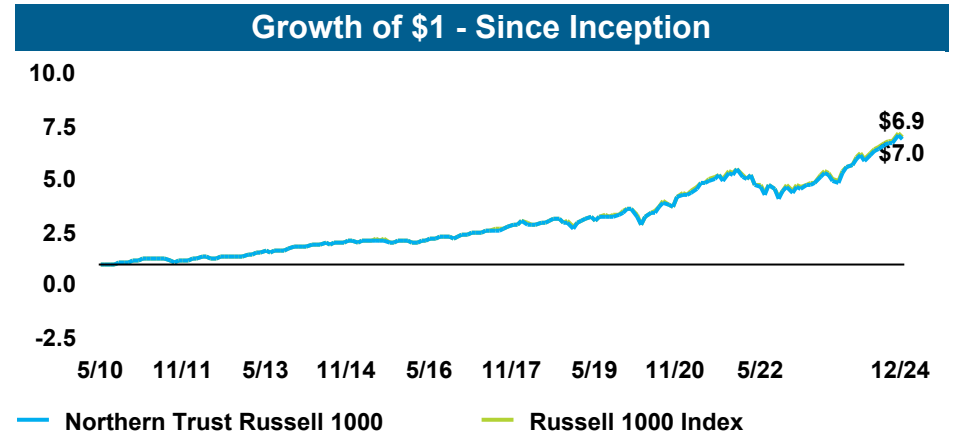
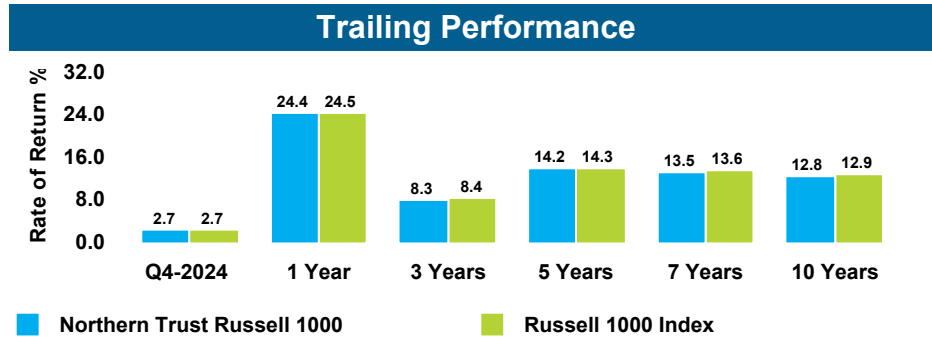
Total Plan performance is a mix of gross and net of fees; performance is gross of fees prior to January 2016 and net of fees thereafter. Parentheses contain percentile rankings. Calculation based on monthly periodicity. Fiscal year begins on July 1.

## Portfolio Characteristics & Manager Profiles



### Northern Trust Russell 1000 | As of December 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Northern Trust Russell 1000	0.00	1.00	-0.60	0.15	0.01	1.00	99.77	99.96
Russell 1000 Index	0.00	1.00	-	0.15	0.00	1.00	100.00	100.00

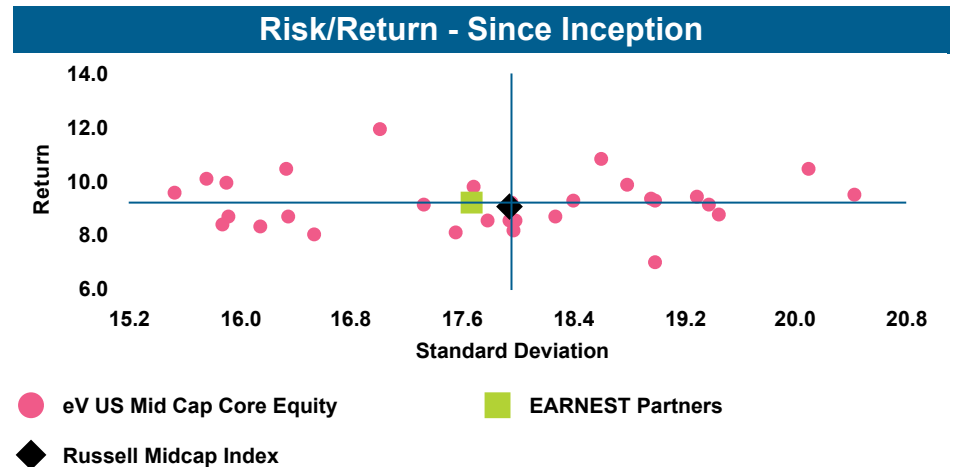
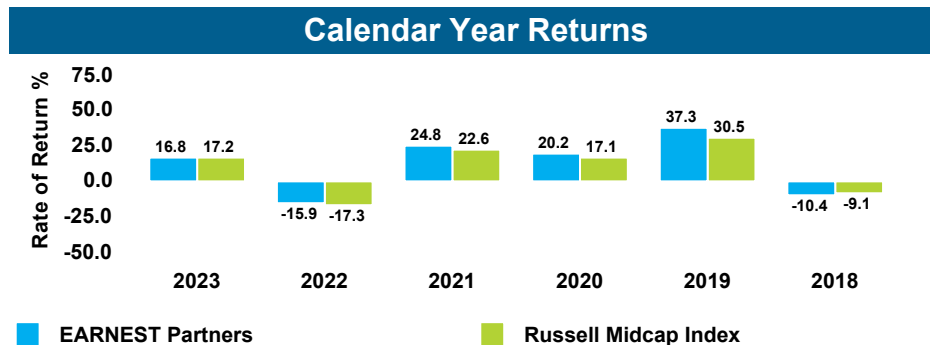
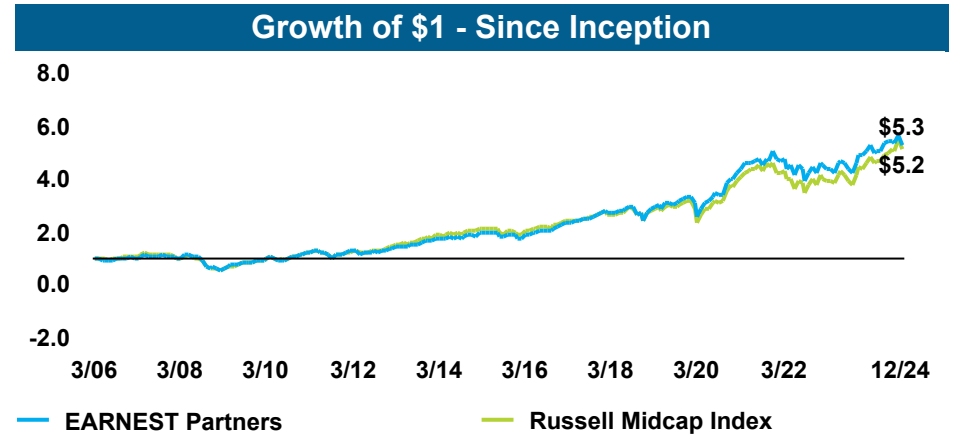
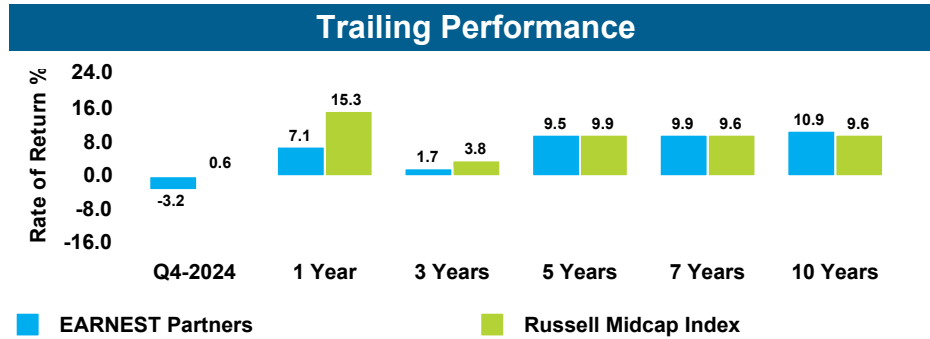


	QTD Return	QTD Risk
Northern Trust Russell 1000	2.73	3.94
Russell 1000 Index	2.75	3.95

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

### EARNEST Partners | As of December 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
EARNEST Partners	-1.27	0.80	-1.03	-0.25	1.32	1.00	66.29	114.38
Russell Midcap Index	0.00	1.00	-	0.00	0.00	1.00	100.00	100.00

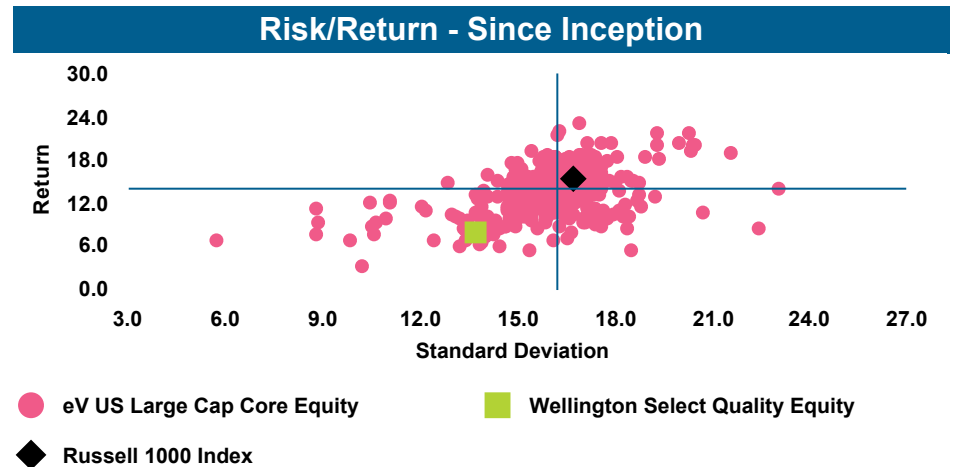
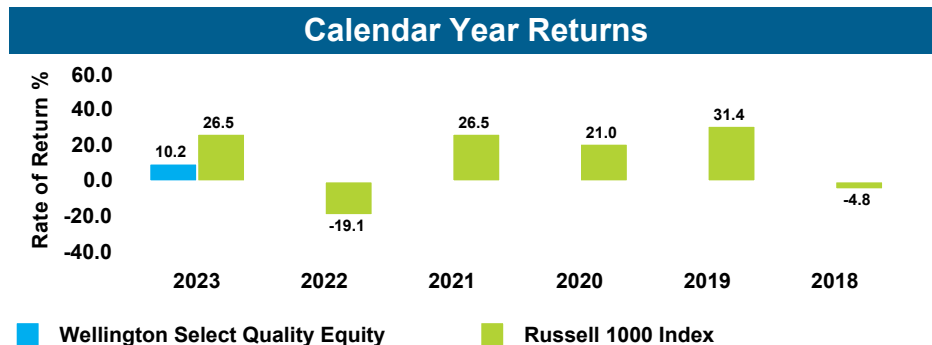
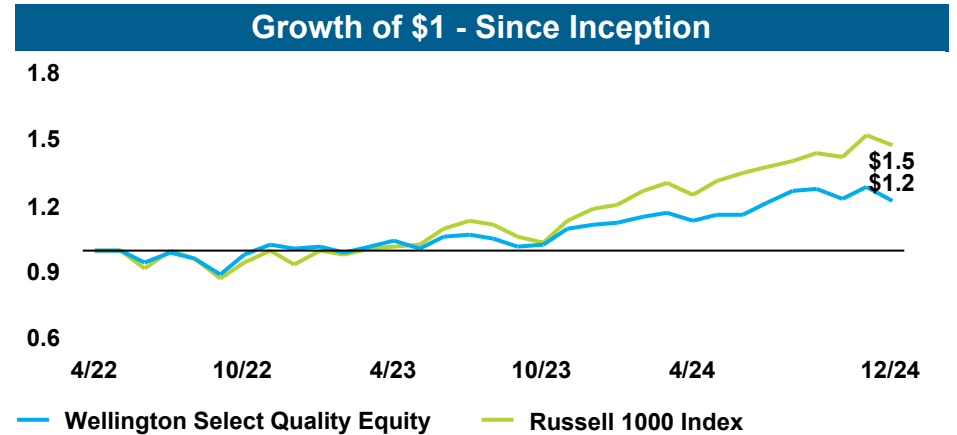
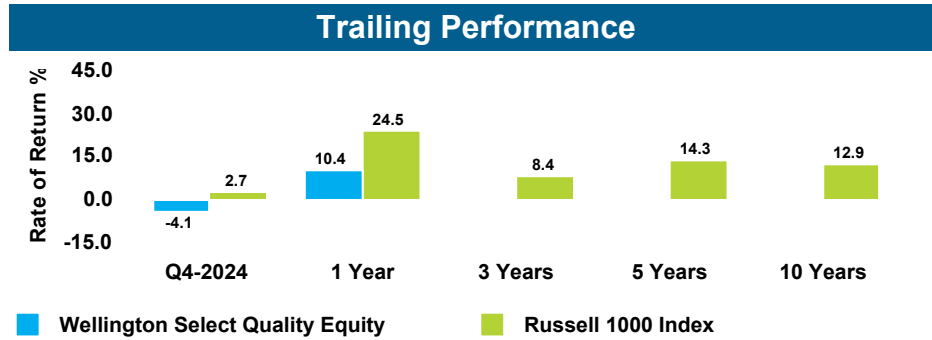


	QTD Return	QTD Risk
EARNEST Partners	-3.19	5.20
Russell Midcap Index	0.62	6.51

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

### Wellington Select Quality Equity | As of December 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Wellington Select Quality Equity	-2.29	0.98	-3.81	-0.44	0.61	0.98	65.66	235.30
Russell 1000 Index	0.00	1.00	-	0.15	0.00	1.00	100.00	100.00



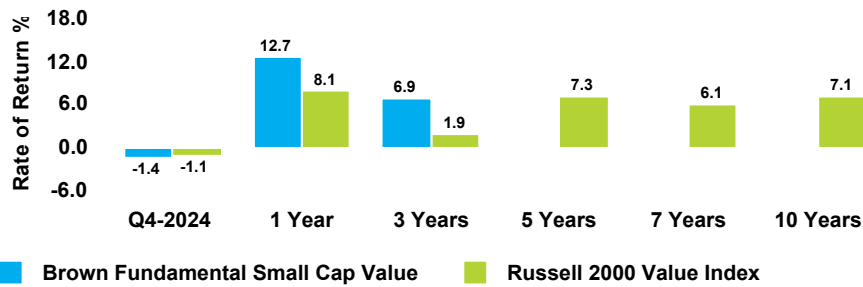
	QTD Return	QTD Risk
Wellington Select Quality Equity	-4.15	3.93
Russell 1000 Index	2.75	3.95

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

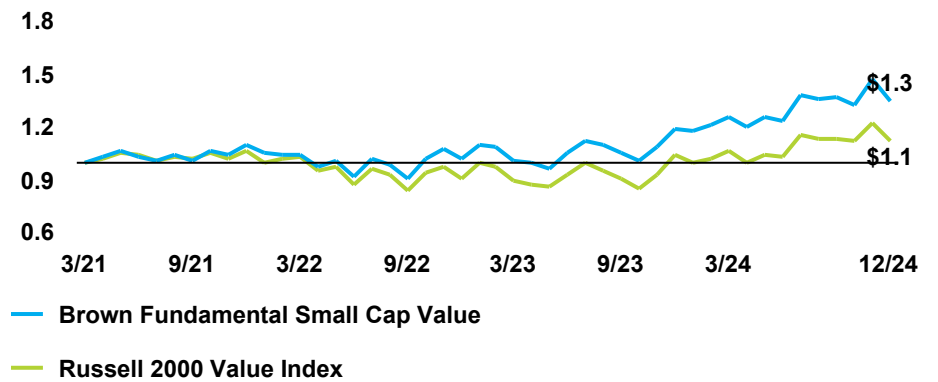
### Brown Fundamental Small Cap Value | As of December 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Brown Fundamental Small Cap Value	-0.05	1.10	-0.04	-0.06	1.36	0.98	115.78	117.01
Russell 2000 Value Index	0.00	1.00	-	-0.06	0.00	1.00	100.00	100.00

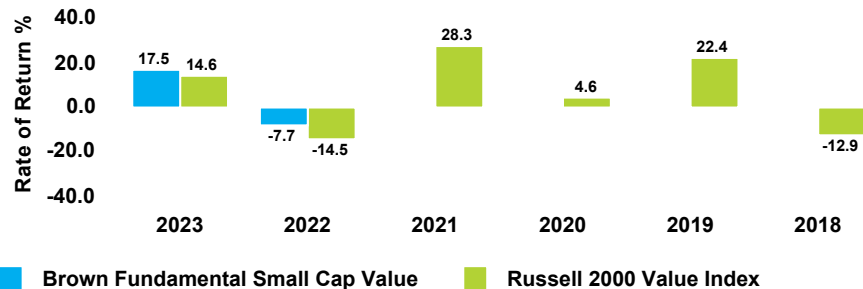
#### Trailing Performance



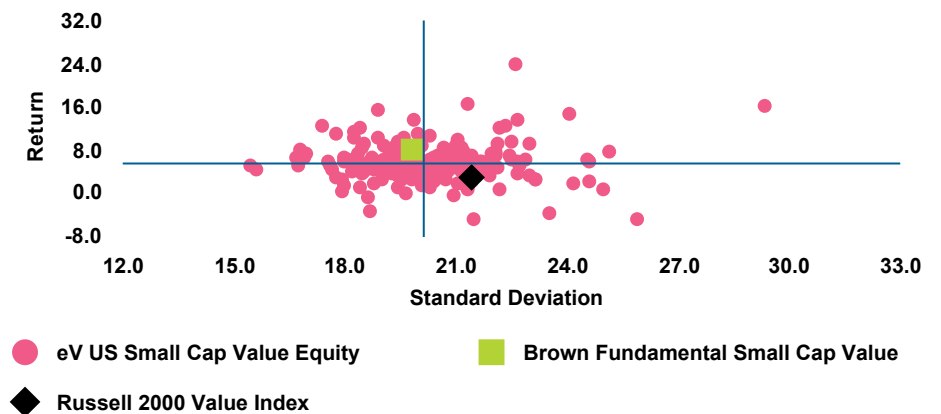
#### Growth of \$1 - Since Inception



#### Calendar Year Returns



#### Risk/Return - Since Inception



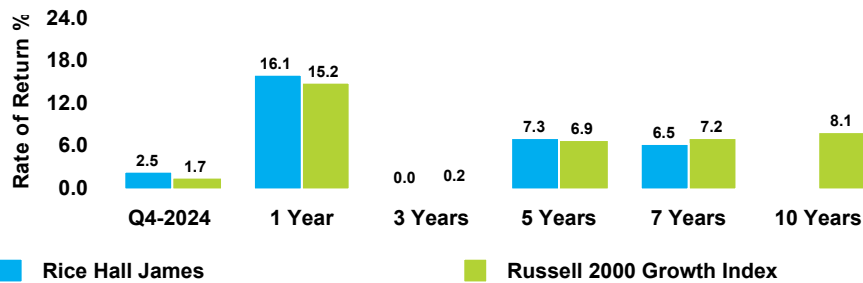
	QTD Return	QTD Risk
Brown Fundamental Small Cap Value	-1.40	8.23
Russell 2000 Value Index	-1.06	7.41

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

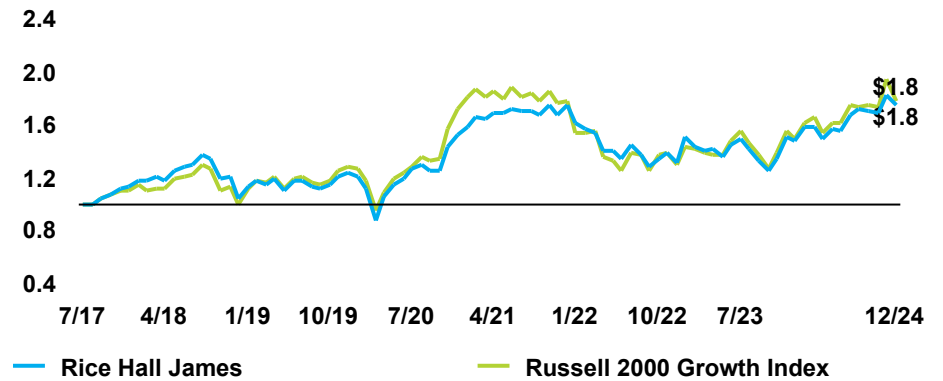
Rice Hall James | As of December 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Rice Hall James	0.42	0.60	0.02	0.11	3.41	0.99	65.91	54.30
Russell 2000 Growth Index	0.00	1.00	-	0.06	0.00	1.00	100.00	100.00

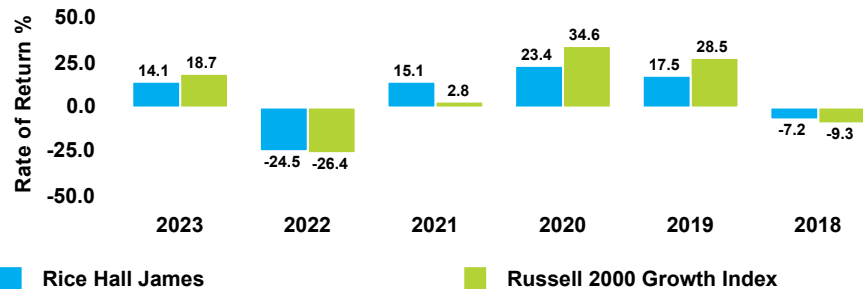
### Trailing Performance



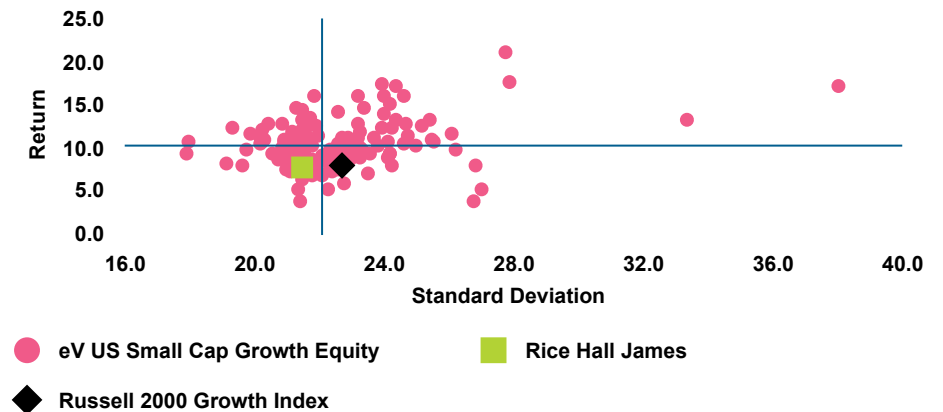
### Growth of \$1 - Since Inception



### Calendar Year Returns



### Risk/Return - Since Inception

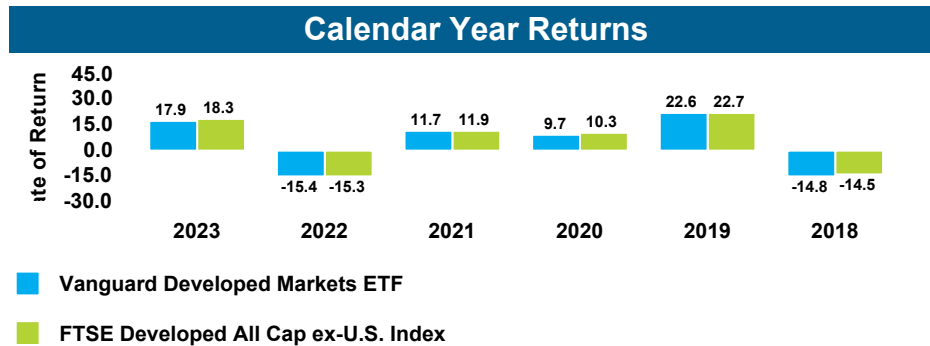
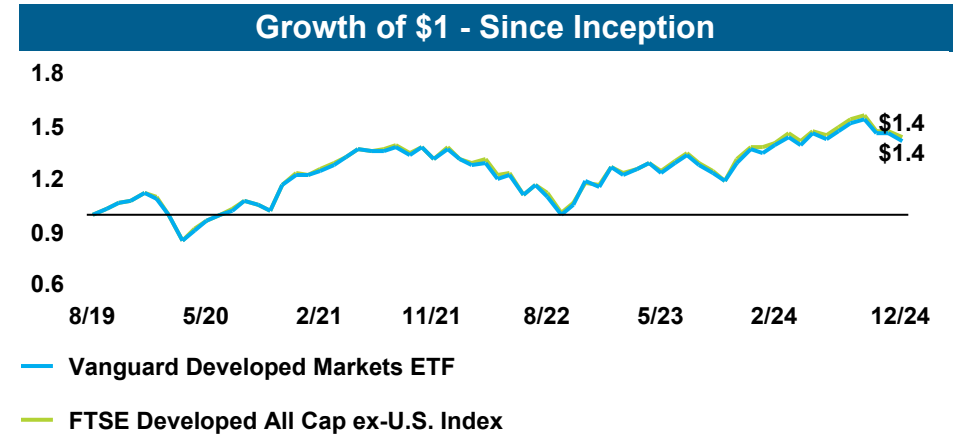
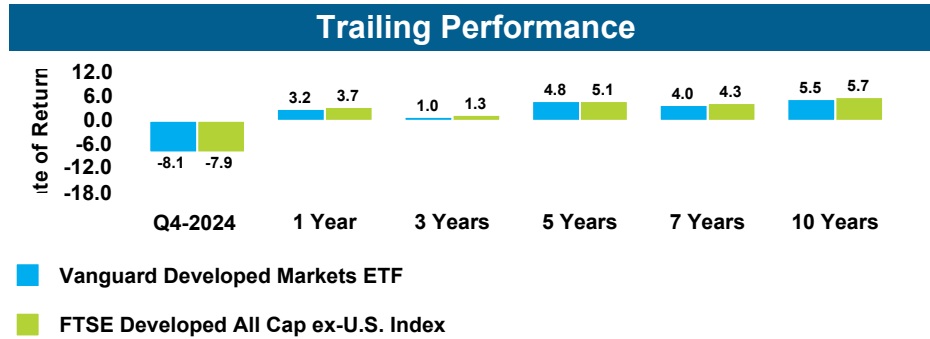


	QTD Return	QTD Risk
Rice Hall James	2.55	5.16
Russell 2000 Growth Index	1.70	8.50

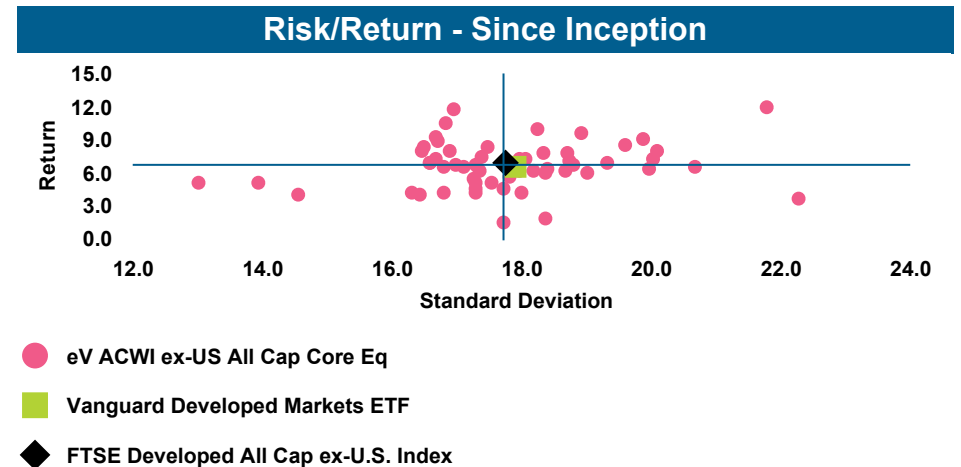
Performance shown is net of fees. Risk is measured as Standard Deviation.

### Vanguard Developed Markets ETF | As of December 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Vanguard Developed Markets ETF	0.07	1.06	-0.17	-1.35	0.47	0.96	1,279.49	107.58
FTSE Developed All Cap ex-U.S. Index	0.00	1.00	-	-1.42	0.00	1.00	100.00	100.00

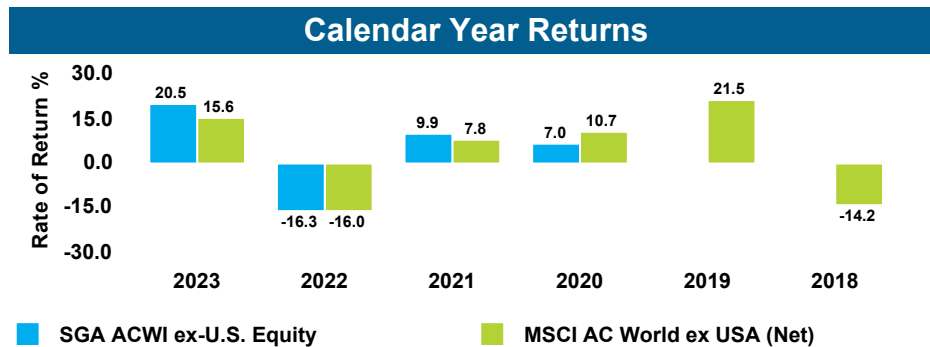
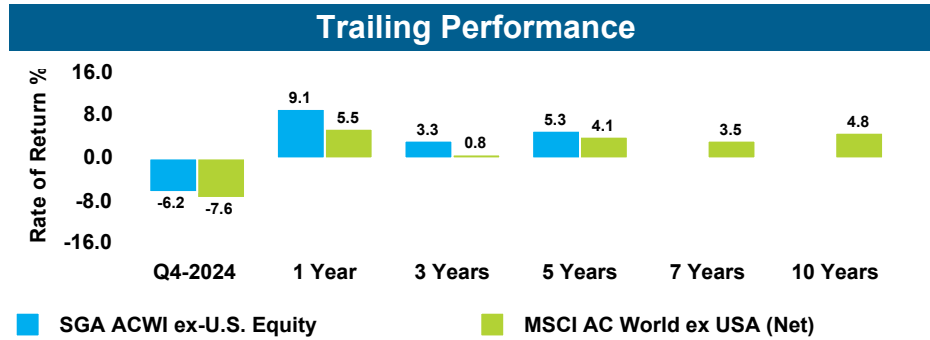


	QTD Return	QTD Risk
Vanguard Developed Markets ETF	-8.09	2.32
FTSE Developed All Cap ex-U.S. Index	-7.85	2.16

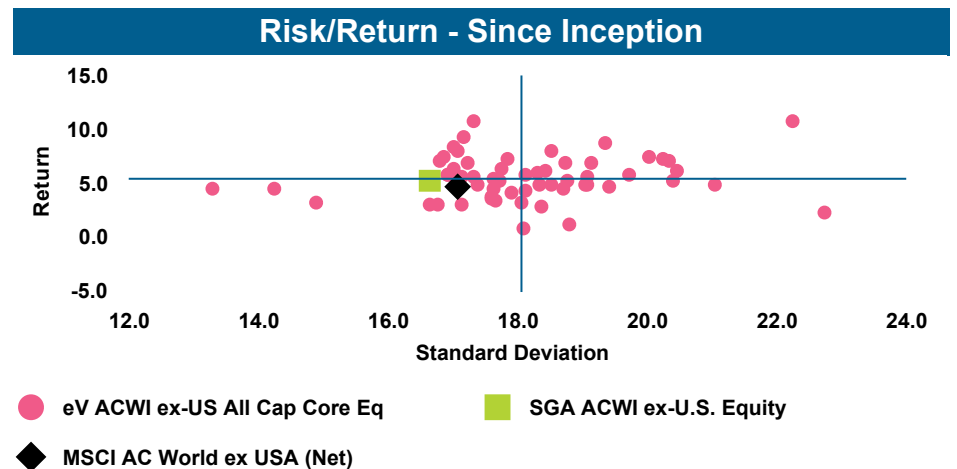
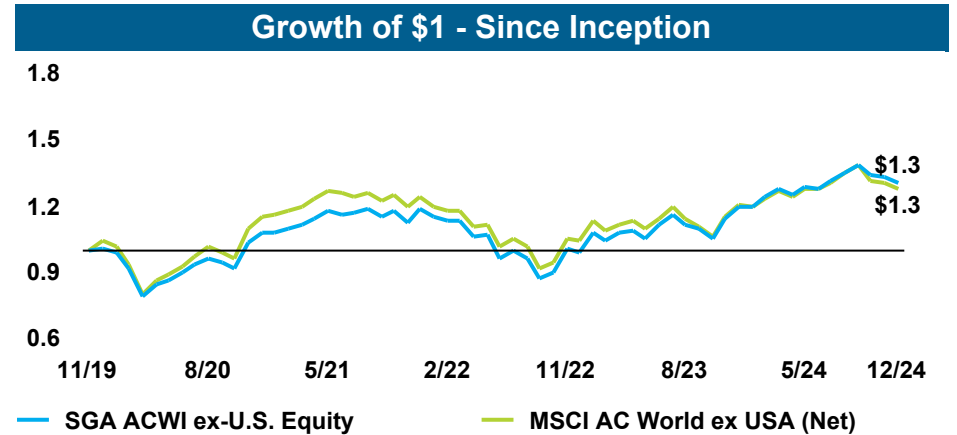


Performance shown is net of fees. Risk is measured as Standard Deviation.

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
SGA ACWI ex-U.S. Equity	-0.31	0.69	0.85	-2.09	0.57	0.97	-	81.26
MSCI AC World ex USA (Net)	0.00	1.00	-	-1.76	0.00	1.00	-	100.00



	QTD Return	QTD Risk
SGA ACWI ex-U.S. Equity	-6.19	1.19
MSCI AC World ex USA (Net)	-7.60	1.70



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

Ramirez | As of December 31, 2024

### Account Information

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

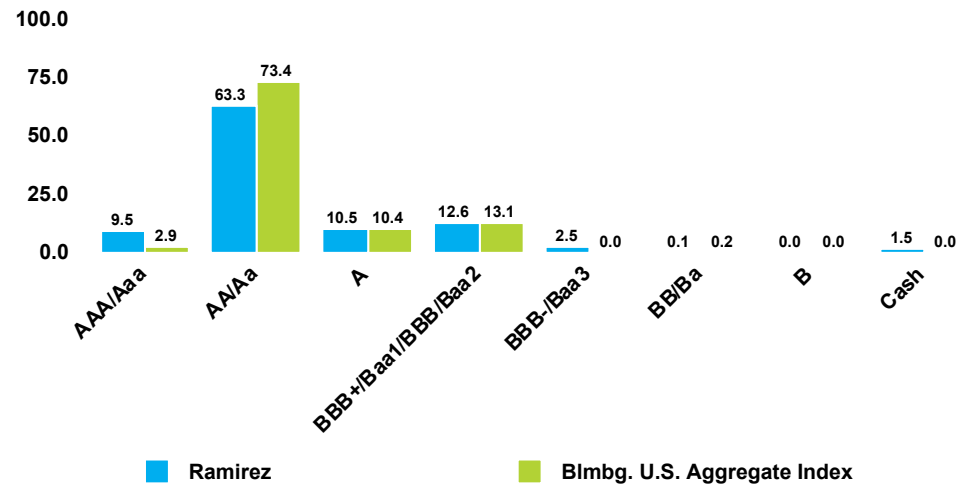
### Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Ramirez	-3.3	1.4	-2.3	-0.2
Blmbg. U.S. Aggregate Index	-3.1	1.3	-2.4	-0.3

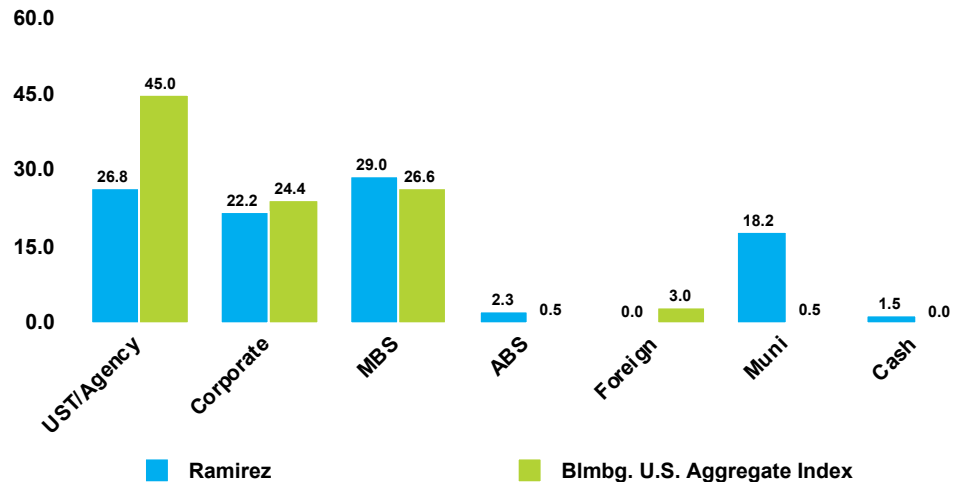
### Portfolio Fixed Income Characteristics

	Q4-24 Portfolio	Q3-24 Portfolio
Yield To Maturity	5.2	5.5
Average Duration	6.3	6.3
Average Quality	AA	AA
Weighted Average Maturity	9.3	9.0

### Credit Quality Allocation



### Sector Allocation



Performance shown is net of fees.

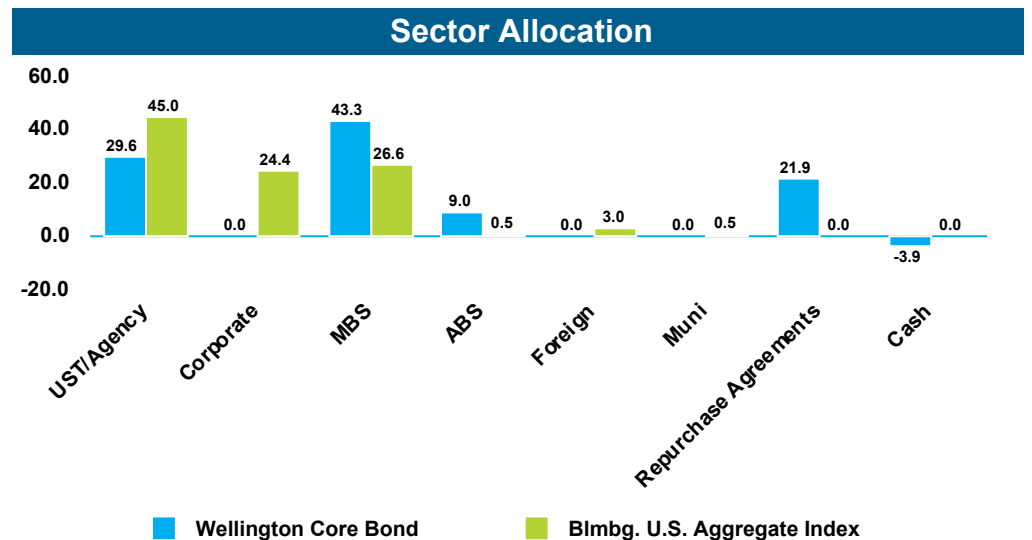
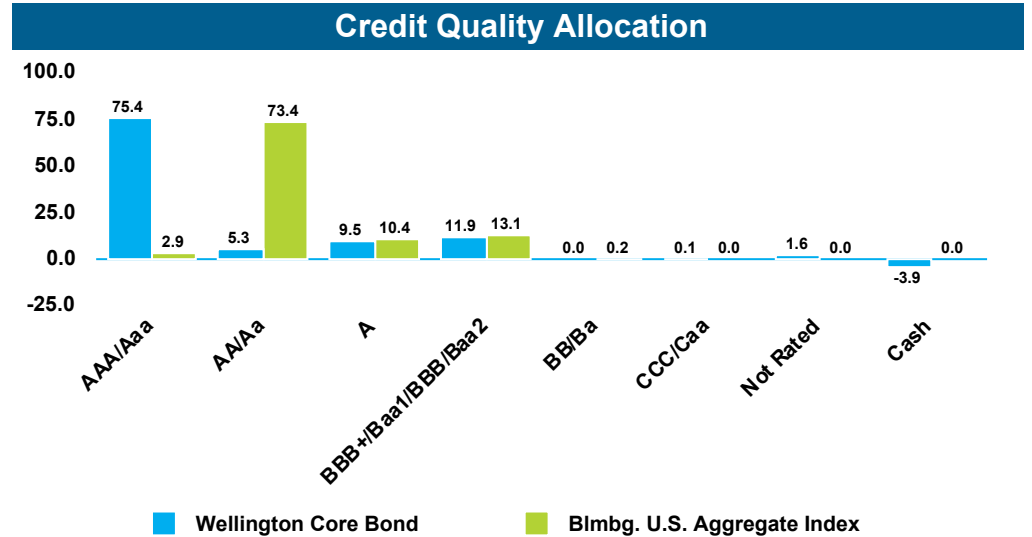


### Wellington Core Bond | As of December 31, 2024

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

Portfolio Performance Summary				
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Wellington Core Bond	-3.0	2.4	-2.1	-
Blmbg. U.S. Aggregate Index	-3.1	1.3	-2.4	-0.3

Portfolio Fixed Income Characteristics		
	Q4-24 Portfolio	Q3-24 Portfolio
Yield To Maturity	5.3	5.1
Average Duration	6.0	6.4
Average Quality	AA	AA
Weighted Average Maturity	-	-



Performance shown is net of fees.

Reams | As of December 31, 2024

### Account Information

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

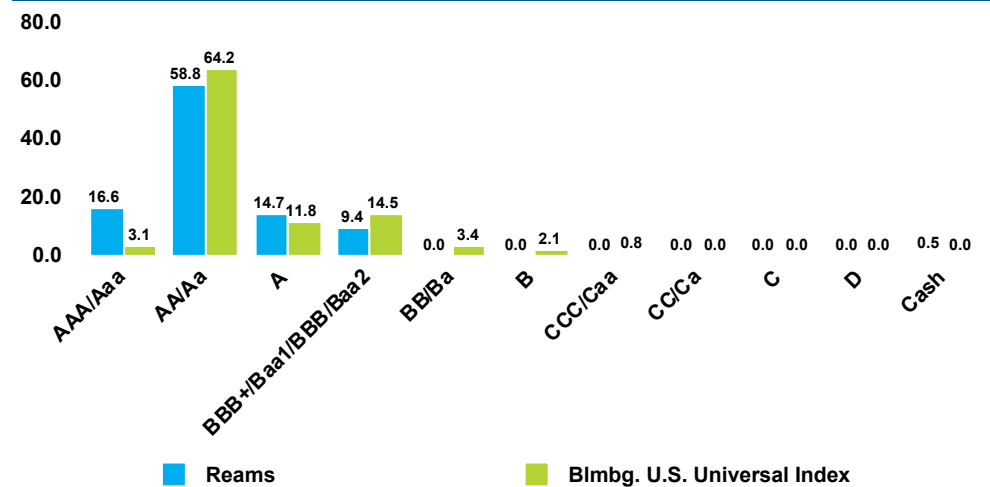
### Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Reams	-3.0	1.9	-1.6	2.4
Blmbg. U.S. Universal Index	-2.7	2.0	-2.0	0.1

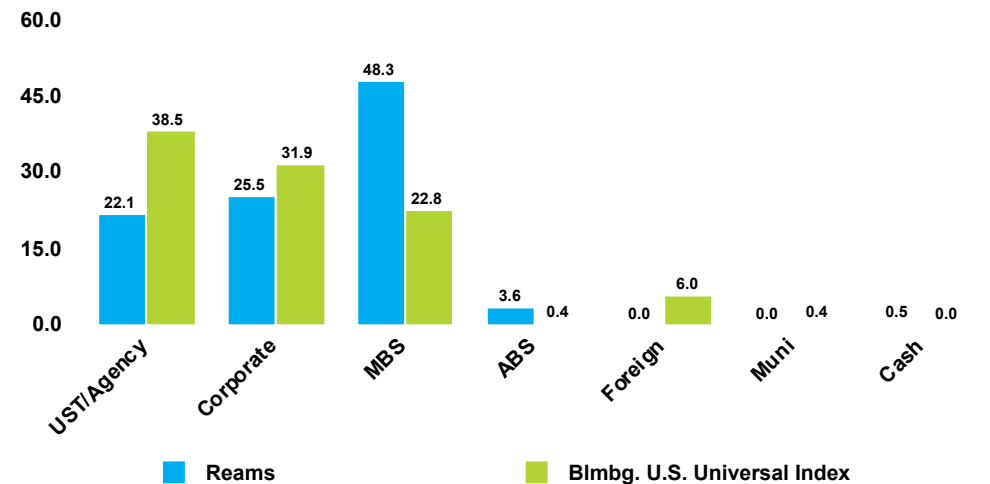
### Portfolio Fixed Income Characteristics

	Q4-24 Portfolio	Q3-24 Portfolio
Yield To Maturity	5.4	4.6
Average Duration	6.6	6.1
Average Quality	AA	AA
Weighted Average Maturity	9.5	8.7

### Credit Quality Allocation



### Sector Allocation



Performance shown is net of fees.

Polen Capital | As of December 31, 2024

### Account Information

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

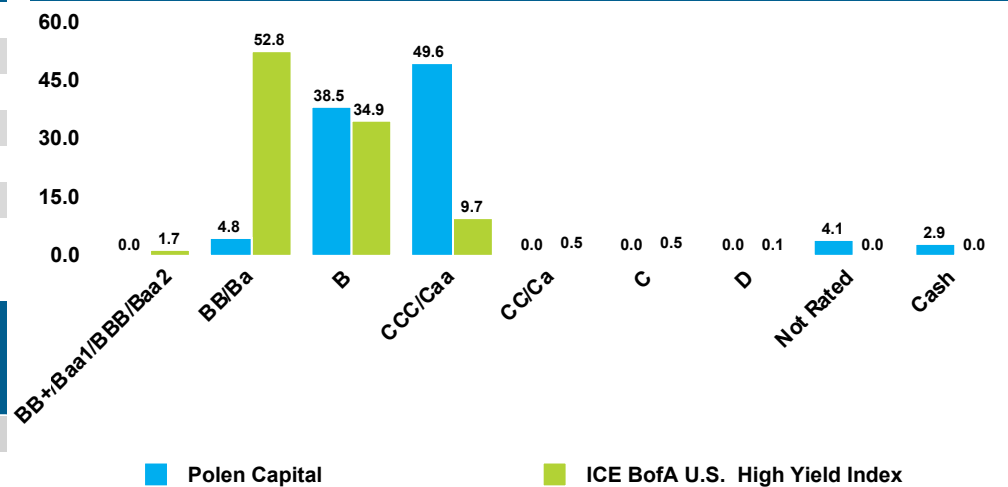
### Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Polen Capital	0.8	7.9	3.7	5.4
ICE BofA U.S. High Yield Index	0.2	8.2	2.9	4.0

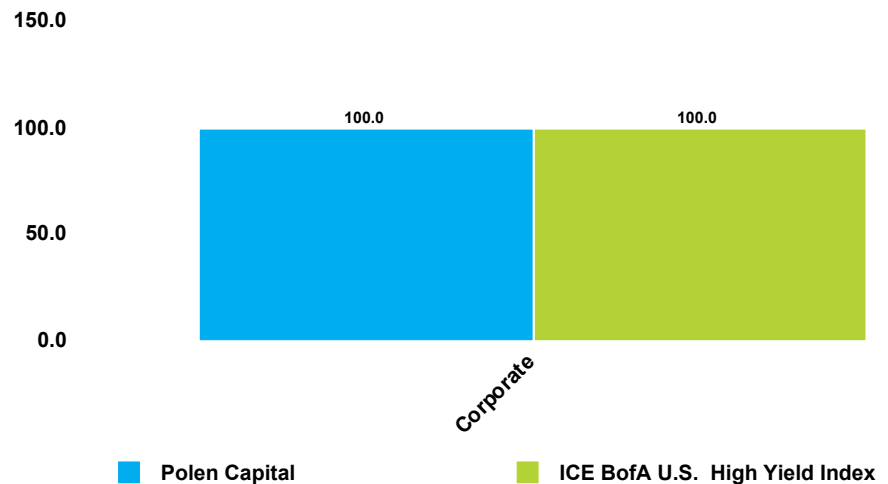
### Portfolio Fixed Income Characteristics

	Q4-24 Portfolio	Q3-24 Portfolio
Yield To Maturity	9.6	9.0
Average Duration	2.2	2.0
Average Quality	B	B
Weighted Average Maturity	4.7	4.8

### Credit Quality Allocation



### Sector Allocation



Performance shown is net of fees.

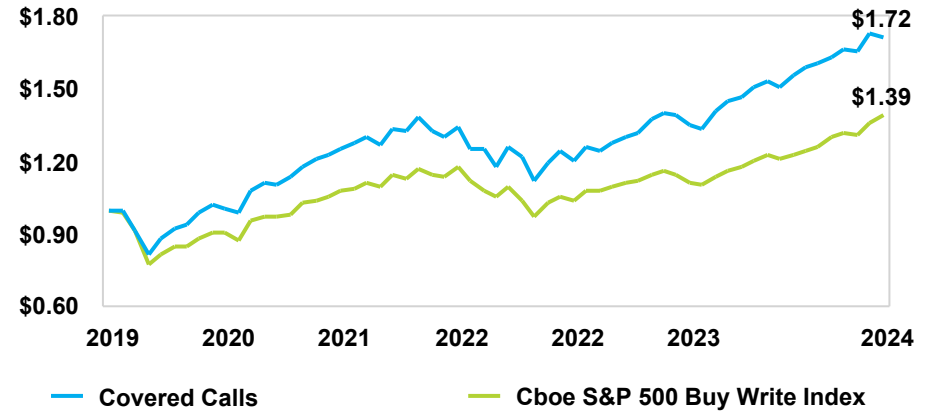
### Covered Calls | As of December 31, 2024

	Return	Standard Deviation	Alpha	Beta	Information Ratio	Tracking Error	Up Capture	Down Capture	Inception Date
Covered Calls	9.9	11.2	2.9	1.0	0.7	4.1	121.3	105.1	04/01/2014
Cboe S&P 500 Buy Write Index	6.7	10.1	0.0	1.0	-	0.0	100.0	100.0	
Parametric BXM	8.0	9.1	2.1	0.9	0.3	3.3	98.1	85.3	04/01/2014
Cboe S&P 500 Buy Write Index	6.7	10.1	0.0	1.0	-	0.0	100.0	100.0	
Parametric DeltaShift	11.9	13.4	3.8	1.2	0.8	6.2	143.7	122.1	04/01/2014
Cboe S&P 500 Buy Write Index	6.7	10.1	0.0	1.0	-	0.0	100.0	100.0	

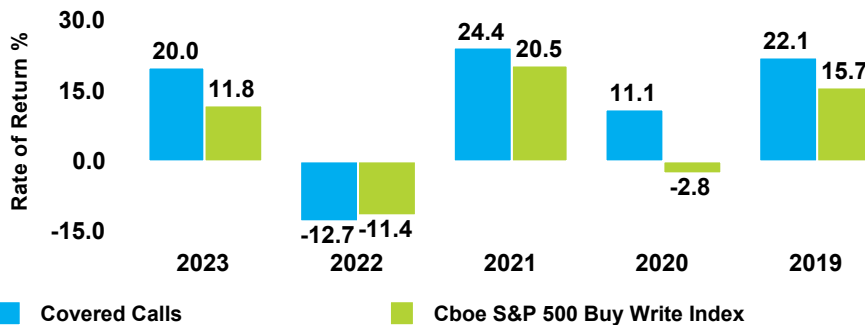
### Trailing Period Performance



### Growth of a Dollar



### Calendar Year Performance



Performance shown is net of fees.

### Crisis Risk Offset | As of December 31, 2024

	Return	Standard Deviation	Alpha	Beta	Information Ratio	Tracking Error	Up Capture	Down Capture	Inception Date
Crisis Risk Offset	-7.0	10.4	-6.9	0.8	-0.8	9.5	32.7	128.8	08/01/2018
<a href="#">Crisis Risk Offset Benchmark</a>	0.3	5.4	0.0	1.0	-	0.0	100.0	100.0	
Kepos Alternative Risk Premia	8.0	6.2	2.1	0.9	0.3	4.6	102.6	74.3	02/01/2022
<a href="#">SG Multi Alternative Risk Premia Index</a>	6.8	4.8	0.0	1.0	-	0.0	100.0	100.0	
Versor Trend Following	-5.9	14.3	-7.8	1.0	-1.2	6.6	73.5	118.8	04/01/2022
<a href="#">SG Trend Index</a>	2.3	12.3	0.0	1.0	-	0.0	100.0	100.0	
Vanguard Long-Term Treasury ETF	-4.2	14.9	0.0	1.0	-0.1	1.0	101.0	101.1	07/01/2019
<a href="#">Blmbg. U.S. Government: Long Term Bond Index</a>	-4.1	14.8	0.0	1.0	-	0.0	100.0	100.0	

### Correlation Matrix 3 Months Ending December 31, 2024

	Crisis Risk Offset	MSCI AC World Index Value	S&P 500 Index	Blmbg. Global Aggregate Index
Crisis Risk Offset	1.00			
MSCI AC World Index Value	0.55	1.00		
S&P 500 Index	0.68	0.99	1.00	
Blmbg. Global Aggregate Index	0.95	0.79	0.88	1.00

### Trailing Period Performance



Performance shown is net of fees.

### Benchmark History

From Date	To Date	Benchmark
<b>OPFRS Total Plan</b>		
07/01/2024	Present	34.0% Russell 3000 Index, 12.0% MSCI AC World ex USA (Net), 44.0% Blmbg. U.S. Universal Index, 10.0% Crisis Risk Offset Benchmark
06/01/2022	07/01/2024	40.0% Russell 3000 Index, 12.0% MSCI AC World ex USA (Net), 31.0% Blmbg. U.S. Universal Index, 2.0% Blmbg. U.S. Corp: High Yield Index, 5.0% Cboe S&P 500 Buy Write Index, 10.0% Crisis Risk Offset Benchmark
01/01/2019	06/01/2022	40.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 31.0% Blmbg. U.S. Universal Index, 5.0% Cboe S&P 500 Buy Write Index, 2.0% Blmbg. U.S. Treasury: Long, 10.0% Crisis Risk Offset Benchmark
05/01/2016	01/01/2019	48.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 20.0% Blmbg. U.S. Universal Index, 20.0% CBOE BXM
10/01/2015	05/01/2016	43.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 20.0% Blmbg. U.S. Universal Index, 15.0% CBOE BXM, 10.0% CPI - All Urban Consumers (unadjusted) +3%
01/01/2014	10/01/2015	48.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 20.0% Blmbg. U.S. Universal Index, 10.0% CBOE BXM, 10.0% CPI - All Urban Consumers (unadjusted) +3%
03/01/2013	01/01/2014	40.0% Russell 3000 Index, 10.0% MSCI AC World ex USA index, 17.0% Blmbg. U.S. Universal Index, 33.0% ICE BofA 3 Month U.S. T-Bill
08/01/2012	03/01/2013	20.0% Russell 3000 Index, 7.0% MSCI AC World ex USA index, 18.0% Blmbg. U.S. Universal Index, 55.0% ICE BofA 3 Month U.S. T-Bill
10/01/2007	08/01/2012	53.0% Russell 3000 Index, 17.0% MSCI AC World ex USA index, 30.0% Blmbg. U.S. Universal Index
04/01/2006	10/01/2007	35.0% Russell 3000 Index, 15.0% MSCI AC World ex USA index, 50.0% Blmbg. U.S. Universal Index
01/01/2005	04/01/2006	35.0% Russell 3000 Index, 50.0% Blmbg. U.S. Aggregate Index, 15.0% MSCI AC World ex USA index
04/01/1998	01/01/2005	20.0% Russell 1000 Value Index, 10.0% Russell 1000 Index, 5.0% Russell Midcap Index, 50.0% Blmbg. U.S. Aggregate Index, 15.0% MSCI EAFE (Net)
01/01/1978	04/01/1998	40.0% S&P 500 Index, 55.0% Blmbg. U.S. Aggregate Index, 5.0% FTSE 3 Month T-Bill

### Benchmark History

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

# Manager Monitoring



**Managers on Watch / Probation Status**

Manager & Strategy	Concern Triggering Watch Status	Date of Corrective Action <sup>1</sup>	Months Since Placement	Performance <sup>2</sup> Since Placement	Peer Group Rank Since Placement
Versor Trend Following	Organization / Performance	9/27/2023	15	-17.5	N/A
<i>Benchmark: SG Trend Index</i>	--	--	--	-2.1	--

**Investment Manager Monitoring Criteria<sup>3</sup>**

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

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

As of December 31, 2024, all public equity and fixed income managers pass the monitoring criteria.

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

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

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

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

# Appendix

### Additional Information

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

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

**Fiscal Year:** Fiscal year begins on July 1.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Sources: [Investment Terminology](#), International Foundation of Employee Benefit Plans, 1999.  
[The Handbook of Fixed Income Securities](#), Fabozzi, Frank J., 1991

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

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

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