



JOSH GREEN, M.D.
GOVERNOR
SYLVIA LUKE
LIEUTENANT GOVERNOR

**STATE OF HAWAII'
HAWAII EMPLOYER-UNION HEALTH BENEFITS TRUST FUND**

201 MERCHANT STREET, SUITE 1700
HONOLULU, HAWAII 96813
Oahu (808) 586-7390
Toll Free 1(800) 295-0089
www.eutf.hawaii.gov

BOARD OF TRUSTEES
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ADMINISTRATOR
DEREK M. MIZUNO
ASSISTANT ADMINISTRATOR
DONNA A. TONAKI

November 13, 2024

**NOTICE OF MEETING
HAWAII EMPLOYER-UNION HEALTH BENEFITS TRUST FUND
INVESTMENT COMMITTEE**

DATE: November 19, 2024, Tuesday
TIME: 9:00 a.m.
PLACE: HAWAII EMPLOYER-UNION HEALTH BENEFITS TRUST FUND (EUTF)
CITY FINANCIAL TOWER
201 MERCHANT STREET, 17TH FLOOR BOARD ROOM
HONOLULU, HAWAII

A G E N D A

**OPEN SESSION PARTICIPATION IN PERSON, VIA TELECONFERENCE AND
TELEPHONE
(see below for details)**

- I. Call to Order
- II. Review of Minutes – August 20, 2024
- III. Executive Session
 - A. Private Equity Manager Evaluation [Authorized under HRS 92-5(a)(8) and HRS 87A-31(g)]
 - B. Private Credit Manager Evaluation [Authorized under HRS 92-5(a)(8) and HRS 87A-31(g)]
 - C. Private Equity Updates [Authorized under HRS 92-5(a)(8) and HRS 87A-31(g)]
 - D. Review of Minutes – August 20, 2024 [Authorized under HRS 92-5(a)(8) and 92-9(b)]
- IV. New Business
 - A. Quarterly Performance Report – Q3 2024
 - B. Quarterly Private Credit Report – Q2 2024
 - C. Quarterly Private Equity Report – Q2 2024
 - D. Quarterly Private Real Assets Report – Q2 2024

EUTF's Mission: We care for the health and well being of our beneficiaries by striving to provide quality benefit plans that are affordable, reliable, and meet their changing needs. We provide informed service that is excellent, courteous, and compassionate.

- E. EUTF Trust Fund Objective Recommendation
- F. Manager Selection Process

V. Future Agenda Items Discussion and Possible Meeting Dates

VI. Adjournment

If you need an auxiliary aid/service or other accommodation due to a disability, please contact Ms. Desiree Yamauchi at (808) 587-5434 or eutfadmin@hawaii.gov, as soon as possible, preferably at least 3 business days prior to the meeting. Requests made as early as possible have a greater likelihood of being fulfilled.

Testimony may be submitted prior to the meeting via email to eutfadmin@hawaii.gov or via postal mail to: Hawaii Employer-Union Health Benefits Trust Fund, Attn: Investment Committee-Testimony, 201 Merchant Street, Suite 1700, Honolulu, HI 96813. Please include the word “testimony”, the agenda item number, and subject matter following the address line. There is no deadline for submission of testimony, however, the EUTF requests that all written testimony be received no later than 9:00 a.m., one (1) business day prior to the meeting date in order to afford Board members adequate time to review materials.

To view the meeting and provide live oral testimony during the meeting, following are the Microsoft Teams Meeting details:

- [Join the meeting now](#) or copy and paste the following URL into your browser:
https://teams.microsoft.com/l/meetup-join/19%3ameeting_YTBmOWJmNTItODY1My00Y2ZhLWI1M2UtZGY4MzY5MDUxODVm%40thread.v2/0?context=%7b%22Tid%22%3a%223847dec6-63b2-43f9-a6d0-58a40aaa1a10%22%2c%22Oid%22%3a%221ec28820-992a-428a-a6a0-44c156209163%22%7d
 - If prompted, enter:
 - Meeting ID: 253 218 995 00
 - Passcode: XYD86f
 - For instructions to turn on live captions in Microsoft Teams, [please click here](#).
- Dial-in number: [+1 808-829-4853](tel:+18088294853) United States, Honolulu (Toll)
 - Phone Conference ID: 979 149 456#

A listing of all documents included in the Board packet will be available at the EUTF website (eutf.hawaii.gov) through the Events Calendar two (2) business days prior to the meeting.

The Board packet can also be accessed at the EUTF website (eutf.hawaii.gov) through the Events Calendar two (2) business days prior to the meeting. A copy of the packet will also be available for public inspection in the EUTF office at that time.

Please contact Ms. Desiree Yamauchi at (808) 587-5434 or eutfadmin@hawaii.gov if you have any questions.

Upon request, an electronic copy of this notice can be provided.

HAWAII EMPLOYER-UNION HEALTH BENEFITS TRUST FUND
Minutes of the Investment Committee Meeting
Tuesday, August 20, 2024

TRUSTEES PRESENT

Mr. Christian Fern, Chairperson (via video conference) Mr. Wesley Machida (via video conference)
Mr. Robert Yu, Vice-Chairperson (via video conference) Ms. Maureen Wakuzawa
(excused at 10:20 a.m.) Mr. Ryan Yamane (via video conference, joined at 9:02 a.m.)
Ms. Jacqueline Ferguson-Miyamoto

TRUSTEES ABSENT

Ms. Sabrina Nasir Mr. James Wataru

ATTORNEY

Mr. Michael Chambrella, Deputy Attorney General (via video conference)

EUTF STAFF

Mr. Derek Mizuno, Administrator Mr. Joao Marco Maffini
Mr. David Okamoto, Chief Investment Officer Ms. Desiree Yamauchi (via video conference)
Mr. Brett Tatsuno, Investment Officer

CONSULTANTS (via video conference, unless otherwise noted)

Mr. Colin Bebee, Meketa Investment Group (in person) Mr. Pete Keliuotis, Callan LLC (in person)
Mr. Tad Fergusson, Meketa Investment Group Mr. Aaron Quach, Callan LLC (in person)
Mr. Jonathan Gould, Callan LLC Mr. Avery Robinson, Callan LLC (in person)
Mr. Inwoo Hwang, Meketa Investment Group Ms. Stephanie Sorg, Meketa Investment Group (in person)

OTHERS PRESENT (via video conference)

Ms. Salena Atencio, Verdegard Ms. Canela Queiruga, Verdegard
Mr. Kevin Balaod, With Intelligence Anonymous (x3)

I. CALL TO ORDER

The meeting of the Investment Committee was called to order at 9:00 a.m. by Trustee Christian Fern, Chairperson, in the Hawaii Employer-Union Health Benefits Trust Fund (EUTF) Board Room, City Financial Tower, 201 Merchant Street, Suite 1700, Honolulu, Hawaii, on Tuesday, August 20, 2024.

II. REVIEW OF MINUTES – MAY 20, 2024

The Investment Committee reviewed the draft minutes of May 20, 2024. Since there were no edits or objections by the Trustees, the minutes stand approved.

Trustee Ryan Yamane joined the meeting at 9:02 a.m.

III. EXECUTIVE SESSION

MOTION was made and seconded to move into Executive Session at 9:03 a.m. (Machida/Yu) The motion passed unanimously. (Employer Trustees-3/Employee-Beneficiary Trustees-3)

The regular meeting reconvened at 9:53 a.m.

Chairperson Fern reported that the following occurred during Executive Session:

- Approved a recommendation to the Board to commit funds to a private real assets fund, subject to contract negotiations.
- Approved a recommendation to the Board to commit funds to a private equity fund, subject to contract negotiations.
- Discussed a private equity co-investment.
- Reviewed and discussed the May 20, 2024 Executive Session Minutes.

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1
2 Since there were no edits or objections, the minutes stand approved.
3

4 IV. NEW BUSINESS

5 A. Quarterly Performance Report – Q2 2024

6 Ms. Stephanie Sorg and Mr. Colin Bebee of Meketa Investment Group (Meketa) highlighted
7 significant points in the Q2 Performance Report. The OPEB Trust finished the quarter at \$7.8
8 billion, gaining 1.0% and 8.2% for the quarter and 1-year, respectively (net of fees),
9 underperforming the policy benchmark of 1.7% and 9.6%, respectively. Underperformance during
10 both periods was primarily attributed to short-term benchmarking challenges within the Private
11 Equity and Private Credit asset classes. Since inception (June 23, 2011), the portfolio has returned
12 7.3% (net of fees) versus the policy benchmark return of 7.3%.
13

14 During the quarter, all public managers with the exception of AlphaSimplex (Trend Following),
15 Mount Lucas (Trend Following), Kepos (Alternative Risk Premia), and Capstone (Long Volatility)
16 performed in line with or above their benchmarks. AlphaSimplex and Mount Lucas were both
17 impacted by changes in interest rates, the US Dollar, and commodity prices. AlphaSimplex
18 outperformed across the 1-year and longer periods, whereas Mount Lucas materially outperformed
19 over the trailing 1-year period but has lagged across other periods (including by 1.1% since
20 inception). Kepos produced a relatively flat return for the quarter (+0.4%), which lagged the
21 benchmark. Kepos has produced a meaningfully positive return on a calendar year-to-date basis
22 and has outperformed its benchmark by over 8% in the first six months of 2024. Capstone was
23 funded in August 2023 to complement the portfolio's Long Treasury exposure as a primary
24 diversifier during the initial leg of a material market selloff. Capstone's performance trailed during
25 the quarter by 0.5% but has outperformed by 0.2% since inception. Overall, performance is within
26 expectations given the lack of a large market drawdown or increase in volatility since the manager
27 was added.
28

29 Ms. Sorg and Mr. Bebee reported that the EUTF Trust Fund finished the quarter at \$577.1 million,
30 up 0.6% and 8.6% for the quarter and 1-year, respectively (net of fees). Since inception (October 1,
31 2013), the portfolio has returned 3.8% (net of fees).
32

33 Trustee Robert Yu was excused from the meeting at 10:20 a.m., during the presentation.
34

35 B. Quarterly Private Credit Report and Annual Portfolio Review – Q1 2024

36 Mr. Pete Keliuotis of Callan LLC highlighted significant points in the Private Credit Annual
37 Performance Review. Since reporting for private market investments is lagged by one quarter, the
38 report covered performance through the first quarter of 2024. At the end of the quarter, Private
39 Credit reported a market value of \$576.1 million (7.6% of the OPEB Trust), with a since inception
40 return of 10.1% (net of fees), outperforming the asset class benchmark of 9.6%.
41

42 After Callan's presentation, the Committee, Callan, and EUTF staff discussed Callan's staffing
43 updates.
44

45 C. Quarterly Private Equity Report – Q1 2024

46 This report was included for informational purposes and was not discussed at the meeting.
47

48 D. Quarterly Private Real Assets Report – Q1 2024

49 This report was included for informational purposes and was not discussed at the meeting.
50

51 E. OPEB Evolving Policy Plan

52 Mr. Colin Bebee of Meketa presented a memorandum recommending an updated Evolving Policy
53 Plan for the OPEB Trust. The plan consists of five transition stages over a three-year period to

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1 ensure a smooth and gradual path towards the new long-term strategic allocation approved at the
2 May 2024 Board meeting. The plan's evolution exhibits a deliberate shift in the risk/return posture
3 from one stage to another, marginally increasing risk while increasing expected returns. While the
4 actual pacing will depend on how fast private market managers call capital, the overall transition is
5 expected to be completed by January 1, 2027.

6
7 MOTION was made and seconded to recommend to the Board approval of the OPEB Evolving
8 Policy Plan. (Machida/Ferguson-Miyamoto) The motion passed unanimously. (Employer
9 Trustees-2/Employee-Beneficiary Trustees-3)

10
11 F. EUTF Trust Fund Strategic Allocation Study

12 Mr. Bebee presented the 2024 Strategic Allocation Study for the EUTF Trust Fund (Trust Fund).
13 The short-term portion will remain in the existing short-term corporate bond strategy. The study
14 for the long-term portion, incorporated in both the Retirees and Actives portfolios, followed a
15 similar methodology for the OPEB Trust that was done in May 2024. Risk/return assumptions for
16 each asset class were developed and used in a modeling process to create two portfolio options, A
17 and B, to compare with the current long-term policy allocation. Option A maintains a similar
18 expected return while reducing risk (standard deviation and expected maximum drawdown).
19 Option B maintains similar risk characteristics and increases the expected compound return. Both
20 options included the addition of liquid credit (predominately below investment grade fixed income
21 instruments) and US Treasury Inflation-Protected Securities (US TIPS) in the long-term portion of
22 the Trust Fund to further diversify the program while maintaining an expected return between 6.0-
23 6.6%.

24
25 MOTION was made and seconded to recommend to the Board approval of Option B as the new
26 policy portfolio for the long-term component of the EUTF Trust Fund. (Fern/Machida) The
27 motion passed unanimously. (Employer Trustees-2/Employee-Beneficiary Trustees-3)

28
29 The Committee also discussed Option B's evolving policy plan.

30
31 MOTION was made and seconded to recommend to the Board approval of the Option B evolving
32 policy plan. (Ferguson-Miyamoto/Machida) The motion passed unanimously. (Employer
33 Trustees-2/Employee-Beneficiary Trustees-3)

34
35 Trustee Wesley Machida asked if Meketa and staff can provide guidance and recommendations on
36 a goal/objective for the Trust Fund.

37
38 V. FUTURE AGENDA ITEMS DISCUSSION AND POSSIBLE MEETING DATES, CONFERENCE
39 TRAVEL REPORT

40 Mr. David Okamoto reported that the next Investment Committee meetings are scheduled for Tuesday,
41 November 19, 2024 and Tuesday, December 10, 2024. He also discussed the timeline for two RFIs that
42 will be completed in FY 2025 and a travel report that was prepared by Investment Office staff for the
43 2024 Pension Bridge Annual Conference.

44
45 VI. ADJOURNMENT

46 MOTION was made and seconded for the Investment Committee to adjourn the meeting at 11:16 a.m.
47 (Ferguson-Miyamoto/Machida) The motion passed unanimously. (Employer Trustees-2/Employee-
48 Beneficiary Trustees-3)

49
50
51
52 Documents Distributed:

- 53 1. Draft May 20, 2024 Investment Committee Minutes. (4 pages)

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- 1 2. EUTF, Q2 2024 Quarterly Report, Preliminary, prepared by Meketa Investment Group, dated August 20,
2 2024. (107 pages)
- 3 3. EUTF, 1Q 2024, Private Credit Portfolio Review, prepared by Callan LLC, dated August 20, 2024. (29
4 pages)
- 5 4. EUTF, Private Equity Q1 2024, Quarterly Report, prepared by Meketa Investment Group, dated August
6 20, 2024. (15 pages)
- 7 5. EUTF, Real Assets 1Q 2024, Quarterly Performance Review, prepared by Callan LLC, dated August 20,
8 2024. (29 pages)
- 9 6. Memorandum to EUTF from Meketa Investment Group, regarding 2024 Asset-Liability Study – OPEB
10 Trust Evolving Policy Plan, dated August 20, 2024. (3 pages)
- 11 7. EUTF, 2024 Strategic Allocation-EUTF Trust Fund Portfolio, prepared by Meketa Investment Group,
12 dated August 20, 2024. (28 pages)
- 13 8. Memorandum to EUTF Chief Investment Officer from EUTF Investment Analyst, regarding Travel
14 Summary – Pension Bridge The Annual 2024, dated August 20, 2024. (2 pages)

DRAFT



Hawaii Employer-Union Health Benefits Trust Fund

November 19, 2024

Q3 2024 Quarterly Report

1. Economic & Market Update as of September 30, 2024
2. Introduction/Portfolio Review
3. Portfolio Detail
 - Managers/Funds on Watch – Performance Monitoring
 - Performance Attribution v. Policy Benchmark – Net-Of-Fees
 - Manager Fund/Fee Analysis
4. EUTF Trust Fund Portfolio Review
5. Appendix

Economic and Market Update

Data as of September 30, 2024

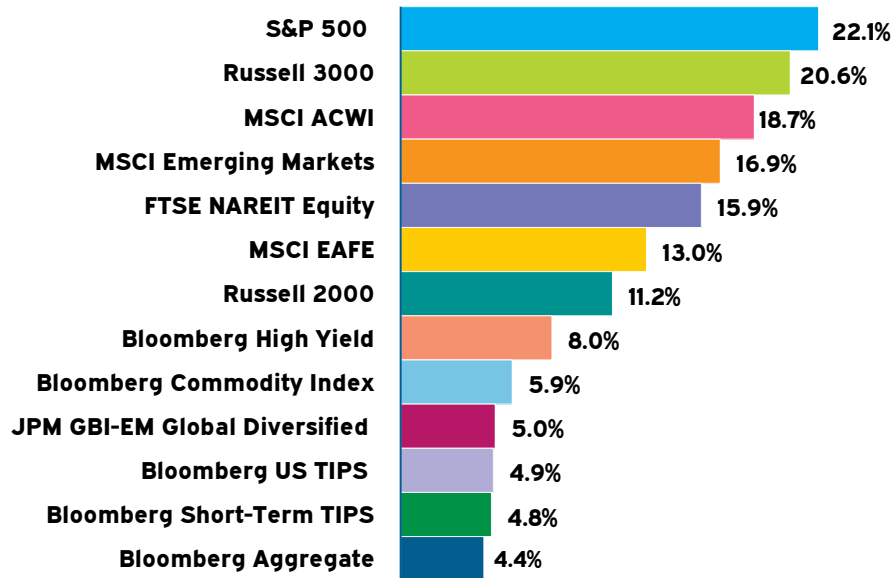
Commentary

In the third quarter, stock and bond markets rallied despite heightened volatility. Central bank indications of future interest rate cuts given declining inflation pressures was a key driver of gains.

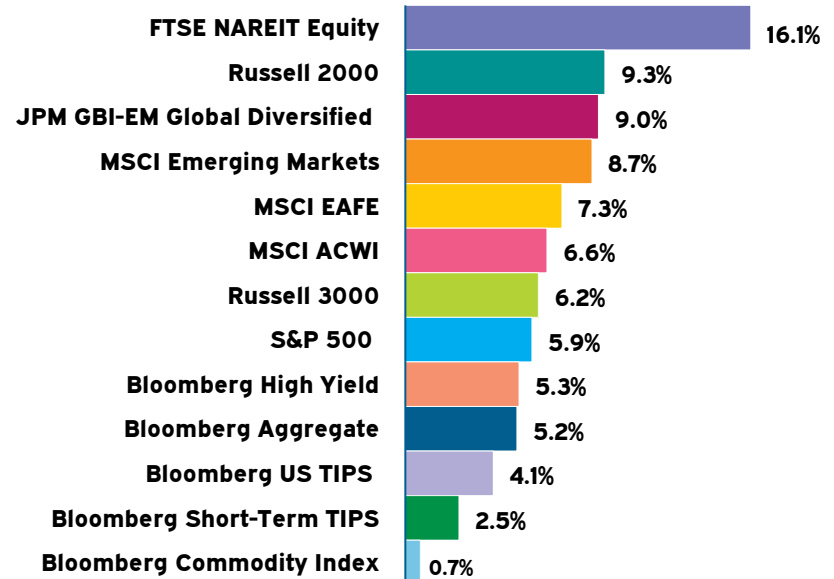
- In September, the Federal Reserve surprised many in the markets with a 50 basis point interest rate cut while the US economy and employment picture remains quite healthy.
- In the third quarter, US equities (Russell 3000) rose 6.2%. The US equity rally broadened, with value and small cap stocks outperforming large cap growth stocks, reversing the narrow leadership trend earlier this year.
- Emerging market stocks (+8.7%) outperformed developed market stocks in the third quarter; in non-US developed markets (+7.3%) value and small cap stocks also beat the broad market.
- After two years of piecemeal policy stimulus, China's policy makers rolled out a significant stimulus package to support equity prices, reduce bank reserve requirements and funding rates, and support current and future mortgage borrowers. In particular, bank loans for listed company share buybacks and purchases drove the MSCI China equity index to rally 23.9% in September and 23.5% for the entire third quarter.
- Fixed income markets also posted positive returns on expectations for additional policy rate cuts this year and next, as inflation pressures recede, and the economy slows.
- Looking ahead, the paths of inflation, labor markets, and monetary policy, China's slowing economy and potential policy stimulus benefits, increased geopolitical tensions, and the looming US election will be key factors.

Index Returns¹

YTD



Q3



→ Major markets finished the third quarter in positive territory despite several spikes in volatility. Falling inflation, resilient growth in the US, and dovish central banks supported stocks and bonds. Rate sensitive sectors, like REITs, particularly benefited from lower interest rates.

→ Year-to-date through September, all major asset classes were positive, led by US equities.

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

Domestic Equity Returns¹

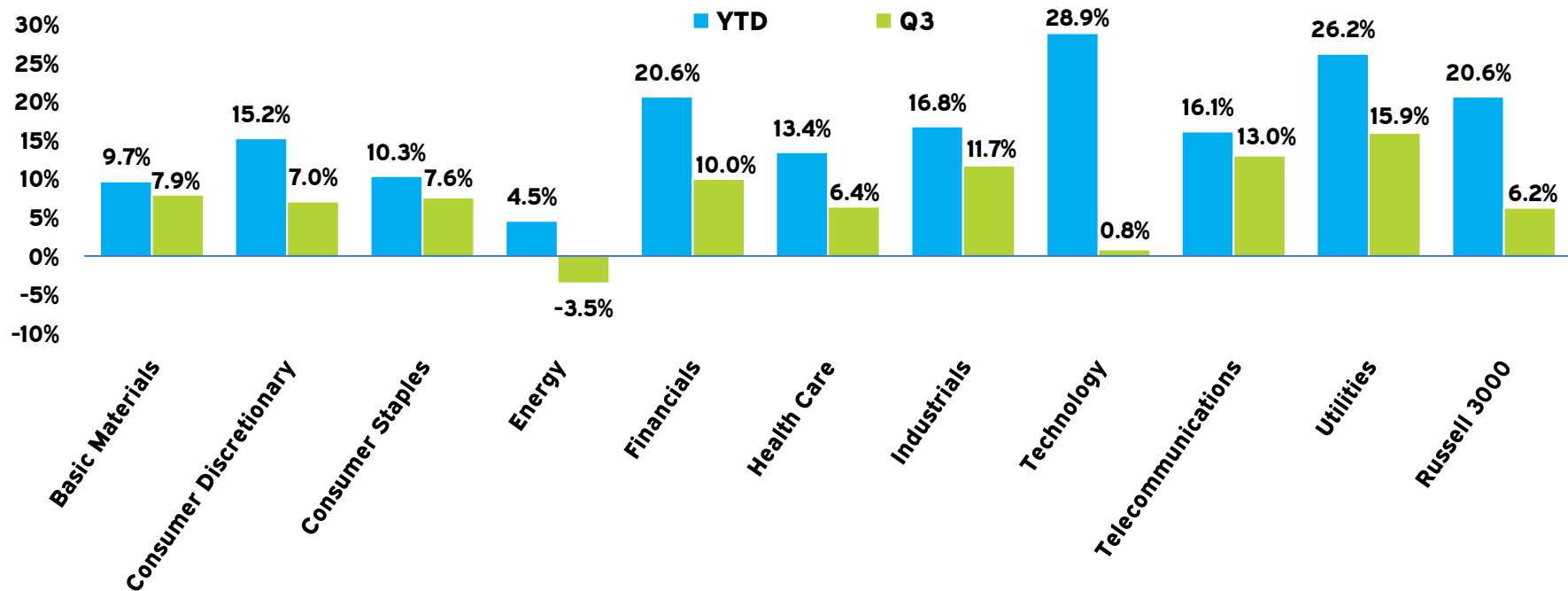
Domestic Equity	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	2.1	5.9	22.1	36.4	11.9	16.0	13.4
Russell 3000	2.1	6.2	20.6	35.2	10.3	15.3	12.8
Russell 1000	2.1	6.1	21.2	35.7	10.8	15.6	13.1
Russell 1000 Growth	2.8	3.2	24.5	42.2	12.0	19.7	16.5
Russell 1000 Value	1.4	9.4	16.7	27.8	9.0	10.7	9.2
Russell MidCap	2.2	9.2	14.6	29.3	5.7	11.3	10.2
Russell MidCap Growth	3.3	6.5	12.9	29.3	2.3	11.5	11.3
Russell MidCap Value	1.9	10.1	15.1	29.0	7.4	10.3	8.9
Russell 2000	0.7	9.3	11.2	26.8	1.8	9.4	8.8
Russell 2000 Growth	1.3	8.4	13.2	27.7	-0.4	8.8	8.9
Russell 2000 Value	0.1	10.2	9.2	25.9	3.8	9.3	8.2

US Equities: The Russell 3000 rose +6.2% in the third quarter, bringing the year-to-date results to +20.6%.

- In the third quarter, the previously technology-driven stock rally broadened out as optimism grew over the potential for a “soft landing” of the US economy and as investors reexamined the future of AI-related stocks.
- In this environment, value outperformed growth across the capitalization spectrum and small cap stocks (Russell 2000: +9.3%) outperformed large cap stocks (Russell 1000: +6.1%).
- Despite the third quarter’s rally in value and small cap stocks, large cap growth stocks are the best performing asset class (R1000 Growth: +24.5%) for the year-to-date 2024 due to on-going enthusiasm for AI.

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

Russell 3000 Sector Returns¹



- With the notable exception of energy stocks, all sectors posted positive returns in the third quarter.
- On the prospect of growing energy demand for cloud computing for AI, utilities were the best performing sector in the third quarter (+15.9%) followed by telecom (+13.0%) and industrials (+11.7%).
- All sectors feature positive returns for the year-to-date period. Technology stocks (+28.9%) continue to lead the broader market, followed by utilities (+26.2%), and financials (+20.6%).

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

Foreign Equity Returns¹

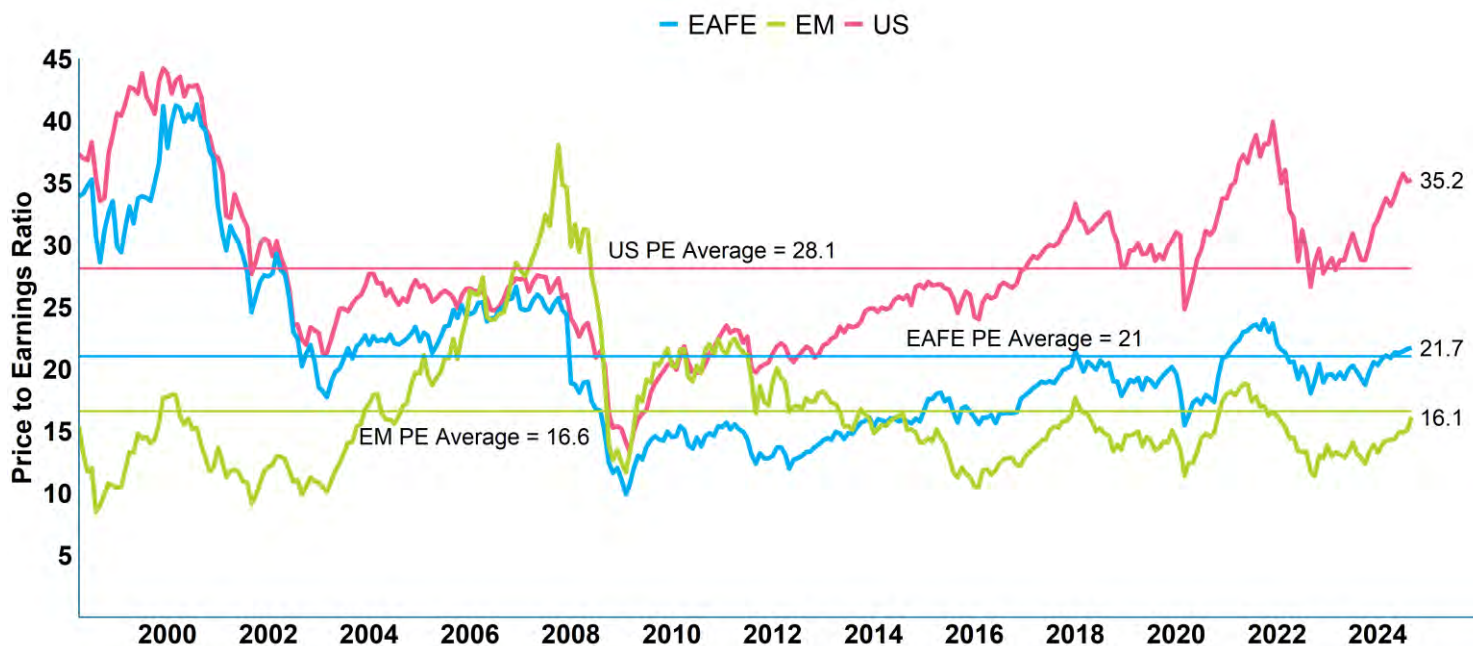
Foreign Equity	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	2.7	8.1	14.2	25.4	4.1	7.6	5.2
MSCI EAFE	0.9	7.3	13.0	24.8	5.5	8.2	5.7
MSCI EAFE (Local Currency)	-0.4	0.8	12.0	17.5	7.9	8.8	7.4
MSCI EAFE Small Cap	2.6	10.5	11.1	23.5	-0.4	6.4	6.2
MSCI Emerging Markets	6.7	8.7	16.9	26.1	0.4	5.7	4.0
MSCI Emerging Markets (Local Currency)	5.6	6.6	18.3	25.0	2.9	7.4	6.5
MSCI EM ex. China	1.3	4.0	12.7	27.4	3.4	8.4	4.8
MSCI China	23.9	23.5	29.3	23.9	-5.6	0.8	3.4

Foreign Equity: Developed international equities (MSCI EAFE) rose +7.3% in the third quarter, while emerging market equities (MSCI Emerging Markets) gained 8.7%.

- Non-US developed market stocks saw similar themes as the US, with value and small cap stocks outperforming large cap stocks in the third quarter, as investors anticipated further rate cuts from the European Central Bank and the Bank of England. Japan’s TOPIX index experienced an over 20% decline at the start of August due to the Bank of Japan’s (BoJ) unexpected rate increase and related pressures on the yen carry trade. It subsequently recovered, though, as the BoJ signaled that further rate increases were not likely.
- In late September, China announced significant stimulus measures to support asset prices resulting in Chinese stocks rallying +23.9% just in September. This led to emerging markets having the best quarterly results (+8.7%).
- The weakening US dollar further supported international stocks, particularly in developed markets.

¹ Source: Bloomberg. Data is as September 30, 2024.

Equity Cyclically Adjusted P/E Ratios¹



- The broad global equity rally lifted stocks' cyclically adjusted price/earnings ratios over the quarter, with US stock valuations finishing well above their long-term 28.1 average.
- Non-US developed market valuations increased to slightly above their long-term average while emerging market stocks are now trading close to their long-term average given the strong recent gains.

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

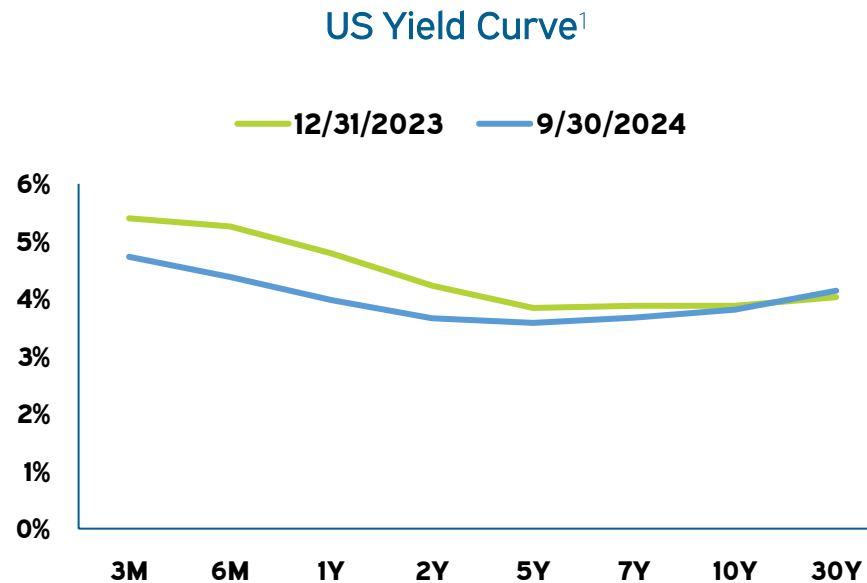
Fixed Income Returns¹

Fixed Income	September (%)	QTD (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	1.4	5.2	4.9	12.1	-1.0	0.7	2.1	4.5	6.0
Bloomberg Aggregate	1.3	5.2	4.4	11.6	-1.4	0.3	1.8	4.2	6.2
Bloomberg US TIPS	1.5	4.1	4.9	9.8	-0.6	2.6	2.5	3.8	6.9
Bloomberg Short-term TIPS	1.0	2.5	4.8	7.5	2.5	3.6	2.4	3.9	2.4
Bloomberg US Long Treasury	2.0	7.8	2.4	15.4	-8.3	-4.3	1.1	4.2	15.5
Bloomberg High Yield	1.6	5.3	8.0	15.7	3.1	4.7	5.0	7.0	3.4
JPM GBI-EM Global Diversified (USD)	3.4	9.0	5.0	13.4	0.6	0.6	0.6	--	--

Fixed Income: The Bloomberg Universal index rose 5.2% in the third quarter, bringing the year-to-date return into positive territory (+4.9%).

- Fixed income indexes rose in the quarter as rates fell, driven by a continued decline in inflation. This and the weakening labor market led to the Fed cutting interest rates with more cuts expected.
- The broad US bond market (Bloomberg Aggregate) rose 5.2% over the quarter, with the broad TIPS market gaining 4.1%. The less interest rate sensitive short-term TIPS index increased 2.5%.
- Riskier bonds experienced volatility during the quarter but ultimately posted strong results as risk appetite remained strong. Emerging market debt gained 9.0% and high yield rose 5.3%.

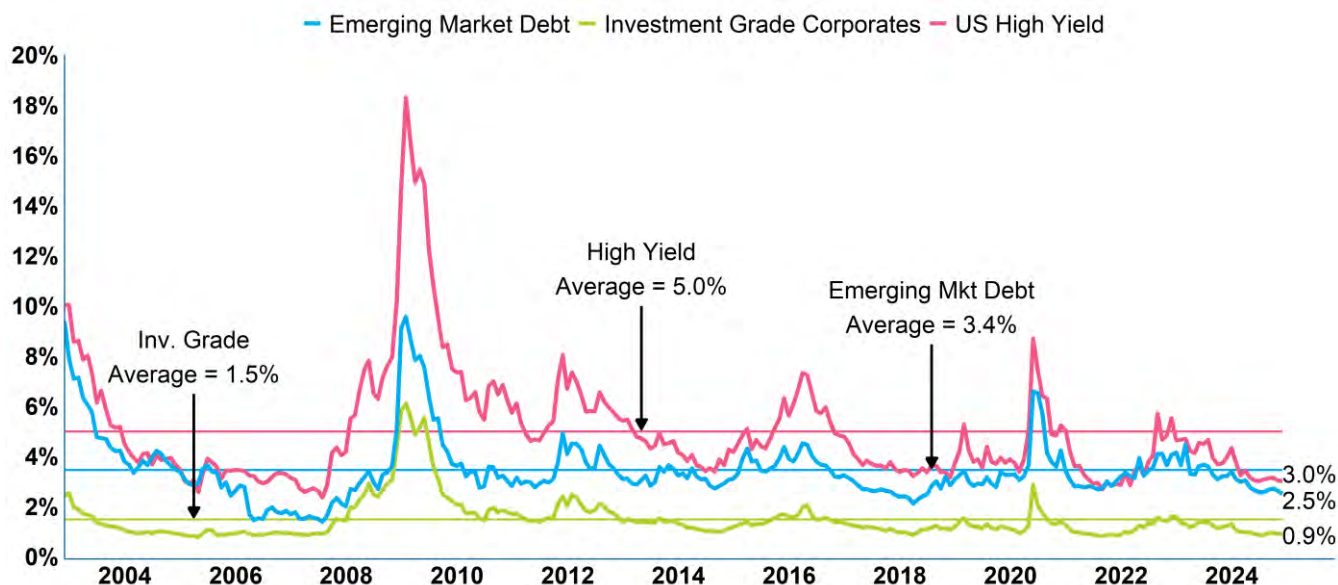
¹ Source: Bloomberg. Data is as of September 30, 2024. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration, respectively. JPM GBI-EM data is from J.P. Morgan. Current yield and duration data is not available.



- US interest rates fell over the quarter as economic data continued to soften and the Fed started its rate cutting cycle.
- The more policy sensitive 2-year Treasury yield declined from 4.75% to 3.64% over the quarter, while the 10-year Treasury yield fell from 4.40% to 3.78% over the same period.
- Notably, the portion of the yield curve from 2-years to 10-years was no longer inverted at the end of September, given policy rate cuts and resilient growth. This trend could continue as the Fed likely continues to cut interest rates.

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

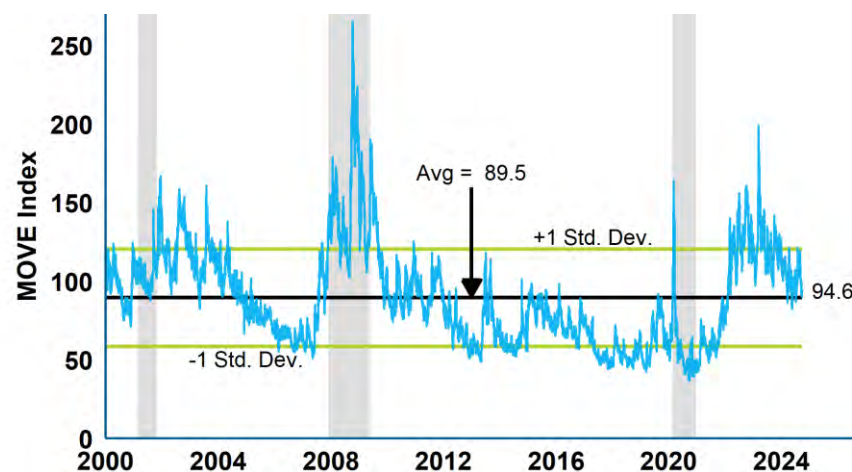
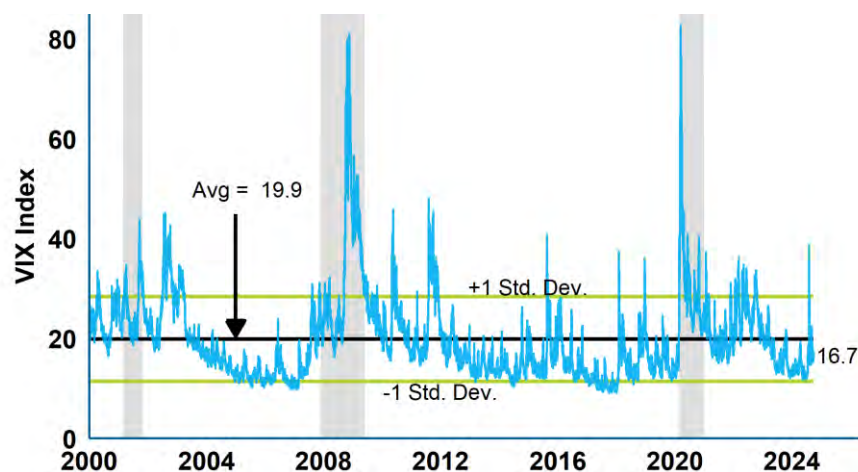
Credit Spreads vs. US Treasury Bonds¹



- Spreads (the yield above a comparable maturity Treasury) widened significantly at the start of the quarter in the volatile environment but declined after, largely finishing where they started.
- All yield spreads remained below their respective long-run averages, particularly high yield.
- Although spreads are relatively tight, yields remain at above-average levels compared to the last two decades, particularly for short-term issues.

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

Equity and Fixed Income Volatility¹



- In the third quarter, equity and bond market volatility experienced periods of elevation due to concerns over the US labor market, the unwinding of the yen-carry trade, and increased geopolitical tensions. Ultimately, both settled well below their respective peaks as additional economic data and the easing of monetary policy calmed investors.
- Volatility levels (VIX) in the stock market spiked above one standard deviation of its long-term average in early August but finished below the long-term average.
- Bond market volatility (MOVE) also fluctuated through the quarter. Uncertainty in the bond market remains above the long-run average as markets continue to reprice the pace of interest rate cuts.

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 September 2024. The average line indicated is the average of the VIX and MOVE values between January 2000 and September 2024.

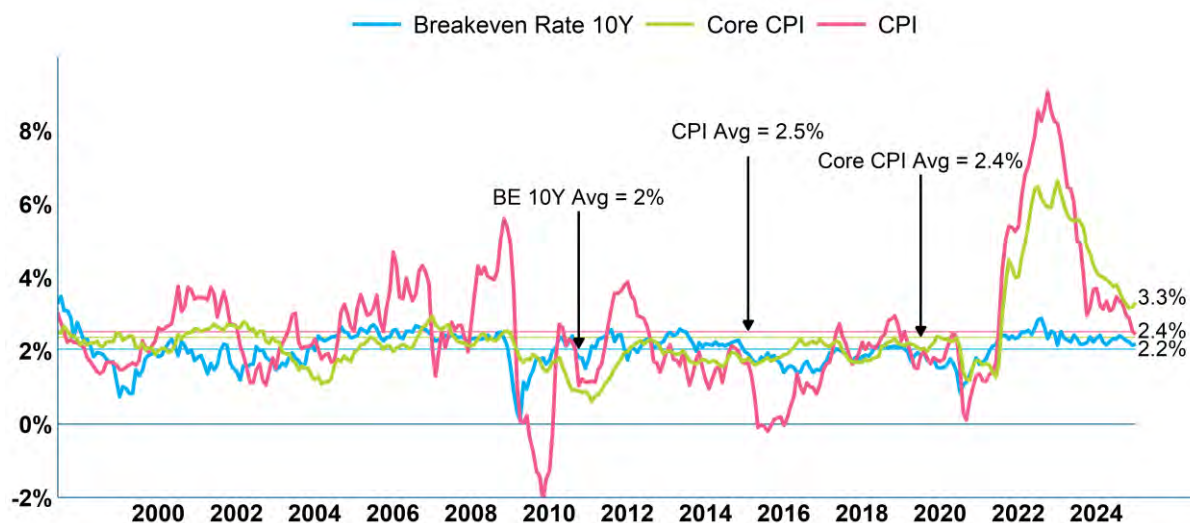
Recent Market Strength: China¹



- On September 24th, Chinese policy makers surprised markets with a suite of policy stimulus measures designed to support stock prices, banks, and mortgage borrowers.
- Banks were asked to extend loans to publicly traded companies for share purchases and buybacks, contributing to significant equity market gains in the last week of the quarter. These policies also contributed to increased foreign demand for Chinese shares.
- The banking sector benefited from a cut to the 1-year medium term lending rate and to their reserve requirement rate.
- Homeowners may also benefit from changes to downpayment minimums and mortgage rate reductions.
- Despite the recent gains in the stock market, questions remain about the ultimate impact of these policies on longer-term growth in China, as well as policy makers' commitment to continue supporting the economy.

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

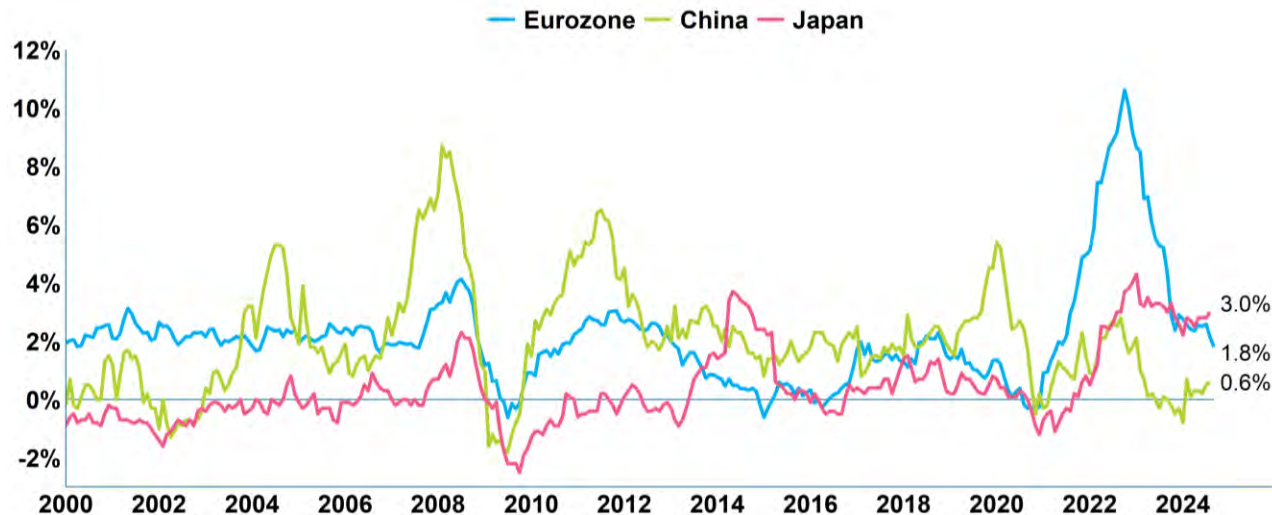
US Ten-Year Breakeven Inflation and CPI¹



- Over the quarter, year-over-year headline inflation continued to decline (3.0% to 2.4%) supporting the Fed's start to cutting policy rates. The 2.4% September level was the lowest since early 2021.
- Month-over-month inflation increased 0.2% each month over the quarter. Food and shelter costs saw monthly increases, while energy prices largely fell.
- Year-over-year core inflation (excluding food and energy) finished the quarter where it started (3.3%). Shelter (+4.9% YoY) and transportation (+8.5% YoY) remain key drivers of stickier core inflation.
- Inflation expectations (breakevens) have been relatively stable over the last several years. They remain below current inflation levels.

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

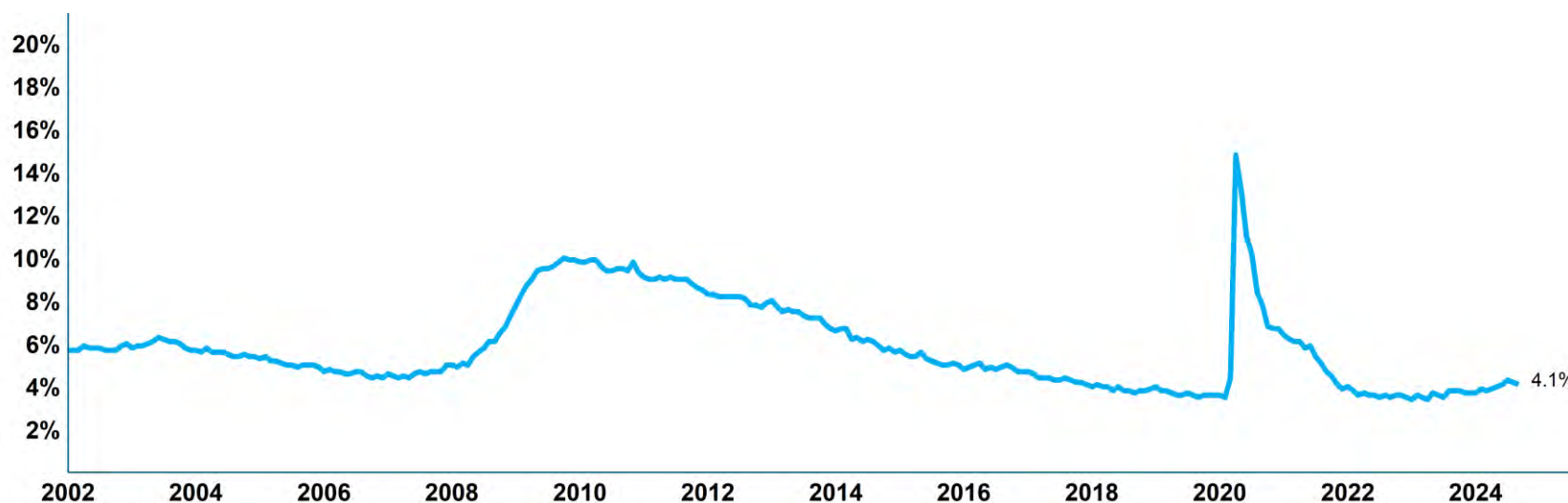
Global Inflation (CPI Trailing Twelve Months)¹



- In the eurozone, inflation fell from 2.5% to 1.8% over the quarter (a level below the US), potentially clearing the way for further rate cuts from the European Central Bank.
- By contrast, inflation in Japan recently increased (2.8% to 3.0%) due in part to higher food, electricity, and gas prices supporting the case for additional interest rate increases by the Bank of Japan.
- In China, inflation increased each of the last seven months, after declines late last year. Recent extreme weather has caused supply issues and contributed to higher prices. Inflation in China remains much lower than in other countries, due to weak consumer spending and as issues in the real estate sector continue to weigh on sentiment.

¹ Source: Bloomberg. Data is as of September 30, 2024, except Japan and China which are as of August 31, 2024.

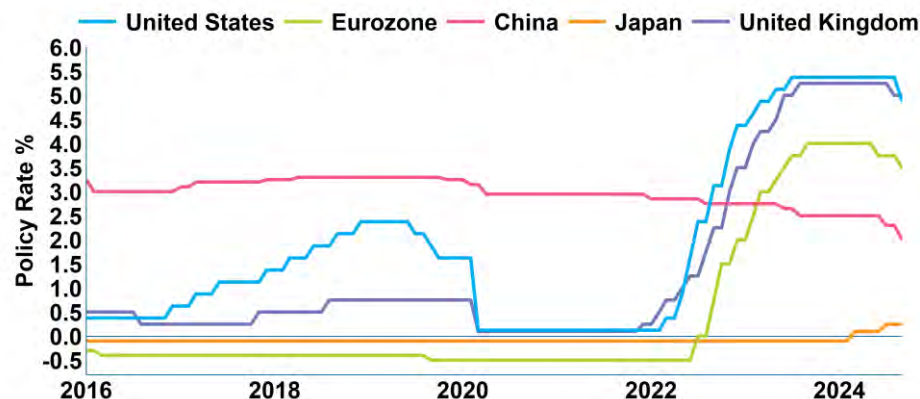
US Unemployment¹



- The US labor market has softened but remains relatively strong. After reaching 4.3% in July, the unemployment rate finished the quarter at the level it started (4.1%), with 6.8 million people looking for work.
- After job gains came in below expectations in July (114k versus 175k) and August (142k versus 165k), contributing to some of the market volatility, they finished strong in September, beating estimates (254k versus 150k). Food services (+69K) and healthcare (+45K) were the largest contributors to the September gains.
- Initial claims for unemployment remain relatively low and year-over-year wage gains remain strong (+4.0%). The number of job openings increased slightly (7.9 to 8.0 million) over the quarter.

¹ Source: FRED. Data is as of September 30, 2024.

Policy Rates¹



- In the US, the Fed reduced interest rates by 0.5% after holding them at a 5.25%-5.50% level for over a year. In their statement they highlighted that they would make additional interest rate cut decisions based on incoming data. Market participants are pricing in roughly two additional cuts in 2024.
- The Bank of England (BoE) and the European Central Bank (ECB) have both started cutting rates. The BoE made a 25 basis points interest rate cut in July while the ECB made two similar cuts in June and September.
- Inflation in Japan remains elevated, prompting Bank of Japan officials to raise the policy rate 0.15% to 0.25% over the quarter after decades at near-zero rates.
- China announced a broad based unexpected stimulus package that included lower interest rates, a reduction in bank reserve requirements, and liquidity for stock investors.

¹ Source: Bloomberg. Data is as of September, 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 US dollar weakened in the third quarter by 4.7% versus other major currencies, influenced by the decline in interest rates and expectations for slower growth.
- It remains at historically strong levels, though, given relatively stronger growth, higher interest rates, and on the prospects of other central banks, potentially easing policy faster than the Fed.
- Looking ahead, the track of policy rates across major central banks will be key for the path of the US dollar from here. If the US economy slows more than expected and the Fed relatedly lowers rates at a faster pace, we could see the dollar weaken further.

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

Summary

Key Trends:

- According to the International Monetary Fund's (IMF) July report, global growth this year is expected to match the 2023 estimate at around 3.2% with most major economies predicted to avoid a recession.
- Key economic data in the US has largely weakened and come in below expectations, causing markets to expect an additional two rate cuts this year after the Fed's initial 0.5% reduction. Uncertainty remains 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 new suite of policy stimulus and signals for more support ahead. 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.

Introduction/Portfolio Review

	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	S.I.	Inception Date
Total Plan - Gross	3.9	3.9	13.9	5.0	8.3	7.2	7.6	Jul-11
Total Plan - Net	3.9	3.9	13.8	4.9	8.2	7.1	7.4	Jul-11
<i>Policy Benchmark¹</i>	<i>3.9</i>	<i>3.9</i>	<i>15.6</i>	<i>5.3</i>	<i>8.3</i>	<i>7.1</i>	<i>7.4</i>	
Excess Return vs. Net ²	0.0	0.0	-1.8	-0.4	-0.1	0.0	0.0	
<i>InvMetrics All Public DB Plans > \$1B Median³</i>	<i>4.8</i>	<i>4.8</i>	<i>17.4</i>	<i>4.6</i>	<i>8.0</i>	<i>6.9</i>	<i>7.2</i>	
Population	71	71	71	68	67	65	60	
Reference								
Original 50/50 Benchmark	6.8	6.8	21.2	3.3	6.3	6.1	6.3	Jul-11
65/35 Bench (blend) ⁴	5.8	5.8	26.6	6.3	10.2	9.2	9.7	Jul-11

Summary of Cash Flows (\$000's)

	QTD	FYTD	Since Inception	Inception Date
Total Plan				07/01/2011
Beginning Market Value	7,828,541	7,828,541	--	
Net Cash Flow	264,497	264,497	5,715,140	
Net Investment Change	280,489	280,489	2,101,016	
Income	32,535	32,535	658,449	
Fees	-2,821	-2,821	-71,362	
Ending Market Value	8,403,242	8,403,242	8,403,242	

1 See Appendix for Policy Benchmark (blend) definition.

2 Net-of-fees vs Policy Benchmark.

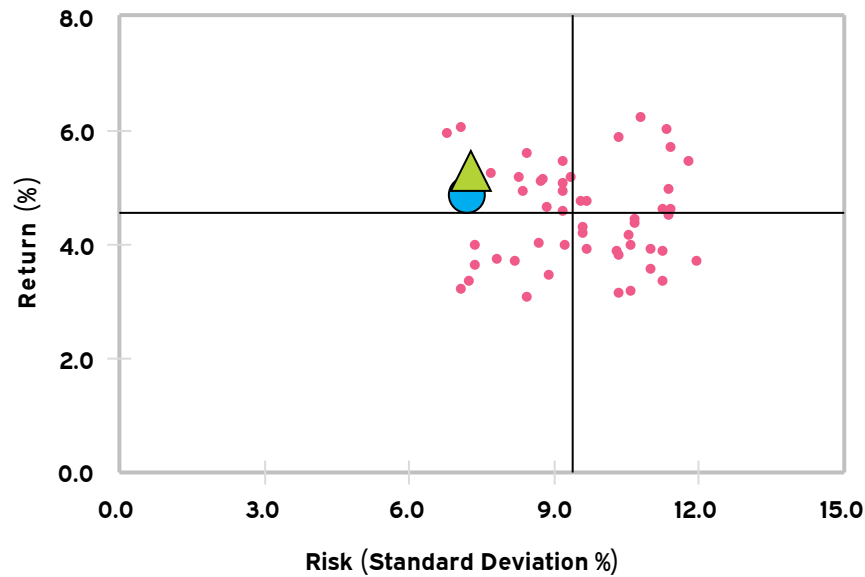
3 Investment Metrics (IM) - Public DB > \$1 Billion Universe includes BNY Mellon Public DB > \$1 Billion Universe and IM client data.

4 65% MSCI US Broad Market Index and 35% BC Aggregate Bond Index as of 3/1/12; previously, 50% MSCI US Broad Market Index.

- The third quarter of 2024 saw continued rallies across most public equity markets as central banks hinted towards additional future rate cuts. Fixed income markets also gained over the period as a result of both rate cuts and declines in inflation.
- The EUTF Total Portfolio ended the quarter with a value of approximately \$8.4 billion.
- The EUTF Total Portfolio, net of fees, closely tracked the Policy Benchmark over the most recent quarter, trailing 10-year, and since inception periods, though the portfolio lagged over the trailing 1-, 3-, and 5-year periods. Over longer-term periods, outperformance within the Aggressive Growth class has been a meaningful contributor to the Total Portfolio's relative performance. The Total Portfolio trailed the benchmark over the trailing 1-year period largely due to continued short-term benchmarking challenges within the Private Equity and Private Credit components. Similar to peers, the EUTF's Private Equity and Private Credit portfolios are benchmarked to public equity and credit indices plus illiquidity premium assumptions. While both private and public equity and credit markets share similar fundamental risk/return drivers, their responses to short-term economic conditions may vary. Private market strategies are long-term implementations (e.g., 10+ year horizons), and these portfolios are discussed in more detail in separate, dedicated reports.
- With respect to the Median Public Fund, the EUTF Total Portfolio, net of fees, matched or outperformed over the trailing 3-, 5-, and 10-year periods, as well as since inception. The Total Portfolio trailed the Median Public Fund over shorter-term periods, largely due to the extreme rally in the public equity markets over the last year. The EUTF has a strategic asset allocation that differs from peers (i.e., less public equity, more private markets, and a customized Diversifying Strategies class), and as such, this short-term relative underperformance is aligned with expectations. As desired by the EUTF Board, the Total Portfolio is constructed to generate as smooth of a return pattern as possible, and this has been exhibited by the Total Portfolio in recent years and has culminated in outperforming the Median Public Fund since inception.

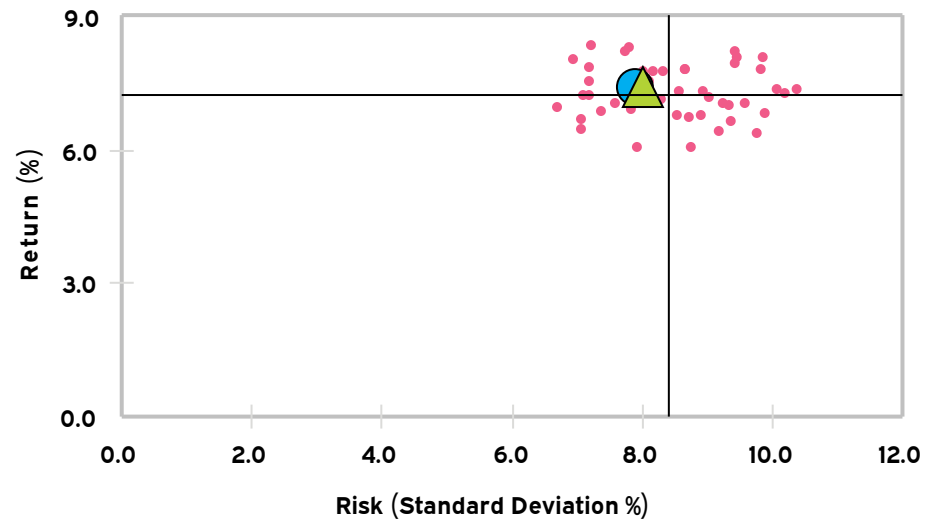
→ The most recent 2022 Strategic Allocation Review built off decisions from the 2020, 2018, and 2016 reviews. A common theme from each of these reviews was the build-out of private markets exposures. This evolution is in process and will continue over a multi-year period. The Total Portfolio is continually transitioning to new long-term policy targets as outlined in the approved Evolving Policy Plan. As of Q3 2024, the Total Portfolio allocation closely mirrored the policy targets but was slightly underweight in Aggressive Growth, Stabilized Growth, and Diversifying Strategies, with an offset by the overweight in Traditional Growth. The 2023/2024 Asset-Liability Study was completed in Q2 2024, and new target allocations will begin in 2025.

**Annualized Return vs. Annualized Standard Deviation
3 Years Ending September 30, 2024**



- InvMetrics All Public DB Plans > \$1B
- Total Plan
- ▲ Policy Benchmark

**Annualized Return vs. Annualized Standard Deviation
Since Inception Ending September 30, 2024**



- InvMetrics All Public DB Plans > \$1B
- Total Plan
- ▲ Policy Benchmark

Annualized Risk-Return			
	3 Years Return	3 Years Standard Deviation	3 Years Sharpe Ratio
Total Plan	4.9	7.2	0.2
Policy Benchmark	5.3	7.3	0.3
InvMetrics All Public DB Plans > \$1B Median	4.6	9.4	0.2

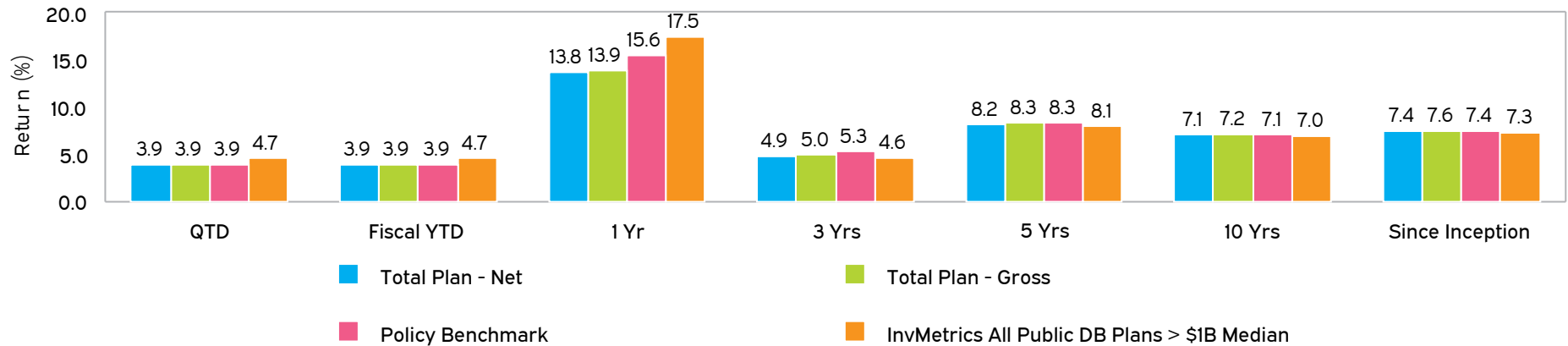
Annualized Risk-Return				
	S.I. Return	S.I. Standard Deviation	S.I. Sharpe Ratio	Inception Date
Total Plan	7.4	7.9	0.8	07/01/2011
Policy Benchmark	7.4	8.0	0.8	
InvMetrics All Public DB Plans > \$1B Median	7.2	8.4	0.7	

Growth Over Time - S.I. to Date (Net) As of September 30, 2024

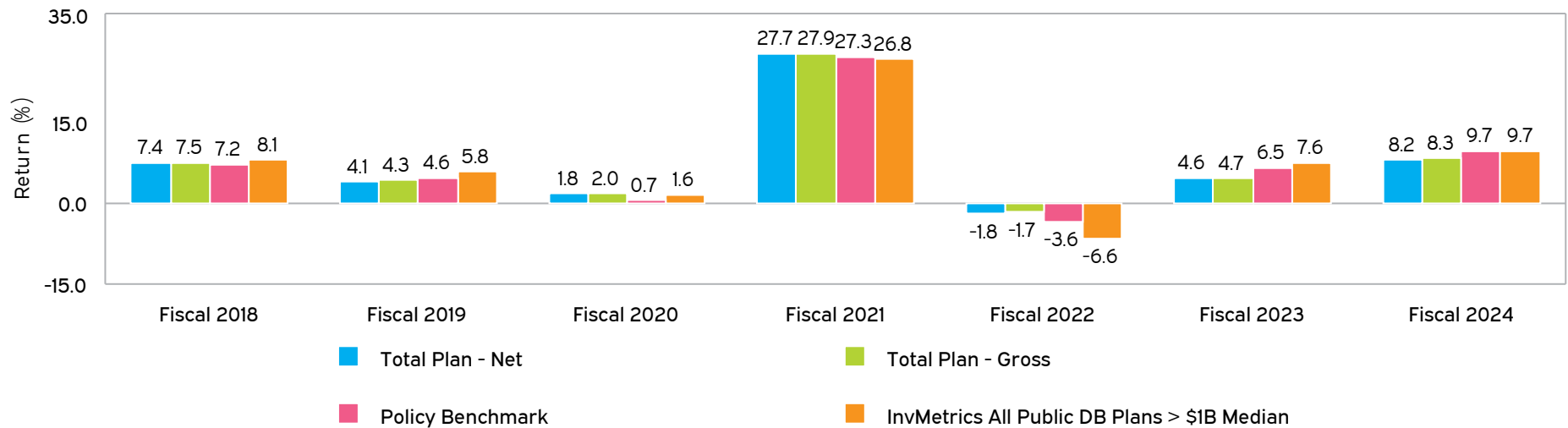


Portfolio Detail

Trailing Period Performance (annualized) Ending September 30, 2024



Fiscal Year - Periods Ending September 30, 2024



1 6/30/2011 for performance reporting (6/23/2011 actual).

2 See Appendix for Policy Benchmark (blend) definition.

Strategic Class Performance (Net-of-Fees) | As of September 30, 2024

	Market Value \$	% of Portfolio	Policy(%)	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since 6/30/11
Total Plan	8,403,241,872	100.0	100.0	3.9	13.8	4.9	8.2	7.1	7.4
<i>Policy Benchmark</i>				<i>3.9</i>	<i>15.6</i>	<i>5.3</i>	<i>8.3</i>	<i>7.1</i>	<i>7.4</i>
Excess Return				0.0	-1.8	-0.4	-0.1	0.0	0.0
Aggressive Growth	1,277,643,638	15.2	15.5	3.2	12.7	5.4	14.6	--	--
<i>Aggressive Growth Benchmark</i>				<i>5.7</i>	<i>27.5</i>	<i>5.5</i>	<i>14.2</i>	--	--
Excess Return				-2.5	-14.8	-0.1	0.4	--	--
Traditional Growth	2,665,525,436	31.7	29.0	7.0	31.0	7.8	11.4	--	--
<i>Traditional Growth Benchmark</i>				<i>7.0</i>	<i>31.0</i>	<i>7.9</i>	<i>11.5</i>	--	--
Excess Return				0.0	0.0	-0.1	-0.1	--	--
Stabilized Growth	1,799,562,644	21.4	23.0	2.3	5.5	5.1	6.1	--	--
<i>Stabilized Growth Benchmark</i>				<i>2.0</i>	<i>4.2</i>	<i>5.5</i>	<i>5.9</i>	--	--
Excess Return				0.3	1.3	-0.4	0.2	--	--
Diversifying Strategies	2,509,446,093	29.9	30.0	2.4	5.4	1.6	2.8	--	--
<i>Diversifying Strategies Benchmark</i>				<i>1.7</i>	<i>5.2</i>	<i>1.9</i>	<i>2.9</i>	--	--
Excess Return				0.7	0.2	-0.3	-0.1	--	--
Cash and Cash Equivalents	151,064,061	1.8	2.5	1.4	5.4	3.3	2.1	1.5	1.2
<i>ICE BofA 0-1 Yr. U.S. Treasury Notes & Bonds</i>				<i>1.6</i>	<i>5.6</i>	<i>3.2</i>	<i>2.3</i>	<i>1.7</i>	<i>1.3</i>
Excess Return				-0.2	-0.2	0.1	-0.2	-0.2	-0.1

Strategic Class Performance

Takeaways:

- Initial funding of Plan assets took place on June 23, 2011.
- Since June 30, 2011, the EUTF has matched its Policy Benchmark and outperformed the actuarial rate (net).
- The Aggressive Growth class outperformed its benchmark over longer trailing periods while meaningfully underperforming over the most recent quarter and trailing 1-year period. Within the class, Private Equity has struggled on a relative basis whereas Micro Cap Equity has produced mixed returns, underperforming over the most recent quarter and trailing 1-year, while outperforming over all longer periods. The Aggressive Growth class is currently being impacted by sharp underperformance in Private Equity over the shorter trailing periods which is largely the result of short-term benchmarking challenges. Similar to peers, the EUTF's Private Equity portfolio is benchmarked to a public equity index plus an illiquidity premium assumption (Russell 3000 + 3%). While both private and public equity share similar fundamental risk/return drivers, their responses to short-term economic conditions may vary. Private equity is a long-term class (e.g., 10+ year horizon) and the EUTF's Private Equity portfolio is discussed in detail in a separate, dedicated report.
- The Traditional Growth class has closely tracked its benchmark across all periods. As the class is entirely passively managed, any relative performance differences have been due to cash flows and/or Northern Trust's implementation of fair value fund pricing.
- The Stabilized Growth class has produced mixed returns relative to the benchmark, notably outperforming over the trailing 1-year period, underperforming over the trailing 3-year period, and slightly outperforming the index over the most recent quarter as well as the trailing 5-year and since inception periods. Global Options trailed the benchmark in the most recent quarter, while longer term relative returns remain positive. Real Assets outpaced the benchmark across all measured trailing periods, while Private Credit has been a strong contributor over the

long term but recently has struggled, trailing the index over the trailing 1- and 3-year periods. This recent underperformance is due to a similar benchmarking challenges as with Private Equity.

- The Diversifying Strategies class trailed its benchmark over the trailing 3- and 5-year periods, though the class outperformed the benchmark over the most recent quarter, trailing 1-year period, and since inception. The outperformance over the most recent quarter is largely attributable to the Trend Following sleeve, which has outperformed across all measured trailing periods. Longer-term underperformance has generally been due to the Alternative Risk Premia sleeve as well as Reinsurance (although this class is still relatively new with just over four years of history).

Manager Performance (Net-of-Fees) | As of September 30, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Total Plan	8,403,241,872	100.0	3.9	13.8	4.9	8.2	7.4	Jul-11
<i>Policy Benchmark</i>			<i>3.9</i>	<i>15.6</i>	<i>5.3</i>	<i>8.3</i>	<i>7.4</i>	
Excess Return			0.0	-1.8	-0.4	-0.1	0.0	
Total Plan ex Overlay	8,394,878,540	99.9	3.9	13.9	--	--	5.9	May-22
Aggressive Growth	1,277,643,638	15.2	3.2	12.7	5.4	14.6	9.9	Jul-15
<i>Aggressive Growth Benchmark</i>			<i>5.7</i>	<i>27.5</i>	<i>5.5</i>	<i>14.2</i>	<i>9.2</i>	
Excess Return			-2.5	-14.8	-0.1	0.4	0.7	
Private Equity	840,570,372	10.0	1.2	7.7	9.1	14.1	10.7	Jul-18
<i>Private Equity Benchmark</i>			<i>4.0</i>	<i>26.8</i>	<i>11.3</i>	<i>17.5</i>	<i>16.8</i>	
Excess Return			-2.8	-19.1	-2.2	-3.4	-6.1	
Micro Cap Equity	437,073,266	5.2	7.2	22.9	2.8	13.0	8.6	Jan-15
<i>Russell Microcap Index</i>			<i>8.3</i>	<i>24.6</i>	<i>-3.7</i>	<i>8.5</i>	<i>6.3</i>	
Excess Return			-1.1	-1.7	6.5	4.5	2.3	
Acuitas - Active	437,073,266	5.2	7.2	22.9	2.8	13.0	10.5	Jan-15
<i>Russell Microcap Index</i>			<i>8.3</i>	<i>24.6</i>	<i>-3.7</i>	<i>8.5</i>	<i>6.3</i>	
Excess Return			-1.1	-1.7	6.5	4.5	4.2	
Traditional Growth	2,665,525,436	31.7	7.0	31.0	7.8	11.4	9.6	Jul-15
<i>Traditional Growth Benchmark</i>			<i>7.0</i>	<i>31.0</i>	<i>7.9</i>	<i>11.5</i>	<i>9.7</i>	
Excess Return			0.0	0.0	-0.1	-0.1	-0.1	
NT ACWI ex US Trust Fund - Passive	1,131,147,578	13.5	8.0	25.2	4.3	7.6	5.7	Jul-15
<i>MSCI AC World ex USA (Net)</i>			<i>8.1</i>	<i>25.4</i>	<i>4.1</i>	<i>7.6</i>	<i>5.6</i>	
Excess Return			-0.1	-0.2	0.2	0.0	0.1	
NT Russell 3000 Index Fund - Passive	1,534,377,858	18.3	6.2	35.2	10.3	15.2	13.1	Jul-15
<i>Russell 3000 Index</i>			<i>6.2</i>	<i>35.2</i>	<i>10.3</i>	<i>15.3</i>	<i>13.1</i>	
Excess Return			0.0	0.0	0.0	-0.1	0.0	

Manager Performance (Net-of-Fees) | As of September 30, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Stabilized Growth	1,799,562,644	21.4	2.3	5.5	5.1	6.1	6.2	Jan-17
<i>Stabilized Growth Benchmark</i>			2.0	4.2	5.5	5.9	5.9	
Excess Return			0.3	1.3	-0.4	0.2	0.3	
Global Options	456,264,174	5.4	3.6	17.6	6.8	7.5	6.9	Jan-17
<i>Global Options Benchmark</i>			5.1	16.9	6.4	7.3	6.4	
Excess Return			-1.5	0.7	0.4	0.2	0.5	
Gateway	226,545,588	2.7	3.7	18.1	6.0	--	5.3	Jul-21
<i>Global Options Benchmark</i>			5.1	16.9	6.4	--	5.9	
Excess Return			-1.4	1.2	-0.4	--	-0.6	
Geode	229,718,586	2.7	3.5	17.2	7.6	7.9	7.1	Jan-17
<i>Global Options Benchmark</i>			5.1	16.9	6.4	7.3	6.4	
Excess Return			-1.6	0.3	1.2	0.6	0.7	
Real Assets	695,390,987	8.3	1.0	-5.7	3.4	4.2	4.4	Jul-17
<i>Real Assets Custom Benchmark</i>			-0.4	-7.7	2.8	3.4	4.3	
Excess Return			1.4	2.0	0.6	0.8	0.1	
Private Credit	647,907,483	7.7	2.9	11.1	7.4	9.7	9.3	Jul-19
<i>S&P LSTA Leveraged Loan +2% (Q Lag)</i>			2.4	13.3	8.3	7.6	7.7	
Excess Return			0.5	-2.2	-0.9	2.1	1.6	

Manager Performance (Net-of-Fees) | As of September 30, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Diversifying Strategies	2,509,446,093	29.9	2.4	5.4	1.6	2.8	2.7	Jul-15
<i>Diversifying Strategies Benchmark</i>			1.7	5.2	1.9	2.9	2.5	
Excess Return			0.7	0.2	-0.3	-0.1	0.2	
Diversifying Strategies ex Overlay	2,501,082,761	29.8	2.4	5.8	1.8	2.9	3.0	Jan-16
Tail Risk Overlay	8,363,332	0.1	-27.0	-82.4	--	--	-83.3	May-23
BlackRock US Inflation Link Bond - Passive	423,527,417	5.0	4.1	9.9	-0.5	2.7	3.0	Feb-16
<i>Blmbg. U.S. TIPS Index</i>			4.1	9.8	-0.6	2.6	2.9	
Excess Return			0.0	0.1	0.1	0.1	0.1	
Sun Life - Enhanced Index	473,468,335	5.6	7.8	15.5	-8.3	-4.3	0.3	Dec-16
<i>Blmbg. U.S. Government: Long Term Bond Index</i>			7.8	15.4	-8.3	-4.2	0.3	
Excess Return			0.0	0.1	0.0	-0.1	0.0	
Capstone	141,467,364	1.7	3.5	2.8	--	--	0.5	Aug-23
<i>CBOE EurekaHedge Long Volatility Hedge Fund Index</i>			2.6	-2.7	--	--	-0.4	
Excess Return			0.9	5.5	--	--	0.9	
Trend Following	785,655,804	9.3	-3.5	-7.3	4.7	6.4	3.9	Feb-17
<i>CS Mgd Futures 15% Vol</i>			-5.5	-8.4	2.8	3.8	1.3	
Excess Return			2.0	1.1	1.9	2.6	2.6	
AlphaSimplex - Active	390,321,099	4.6	-7.8	-9.1	7.9	8.5	6.5	Feb-17
<i>CS Mgd Futures 15% Vol</i>			-5.5	-8.4	2.8	3.8	1.3	
Excess Return			-2.3	-0.7	5.1	4.7	5.2	
Mount Lucas - Active	395,334,705	4.7	1.0	-5.7	1.3	4.1	1.1	Feb-17
<i>CS Mgd Futures 15% Vol</i>			-5.5	-8.4	2.8	3.8	1.3	
Excess Return			6.5	2.7	-1.5	0.3	-0.2	

Manager Performance (Net-of-Fees) | As of September 30, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Alternative Risk Premia	244,781,837	2.9	1.3	12.1	5.3	1.8	1.2	Oct-18
<i>Custom ARP Benchmark</i>			1.9	7.6	5.6	4.4	4.4	
Excess Return			-0.6	4.5	-0.3	-2.6	-3.2	
Kepos - Active	244,781,837	2.9	1.3	12.1	6.9	3.2	3.0	Nov-18
<i>Custom ARP Benchmark</i>			1.9	7.6	5.6	4.4	4.4	
Excess Return			-0.6	4.5	1.3	-1.2	-1.4	
Reinsurance	432,182,004	5.1	7.2	16.6	6.9	--	3.5	Jul-20
<i>Reinsurance Benchmark</i>			6.8	17.3	10.2	--	9.0	
Excess Return			0.4	-0.7	-3.3	--	-5.5	
Nephila	141,219,173	1.7	6.6	17.8	8.7	--	2.6	Jul-20
<i>Reinsurance Benchmark</i>			6.8	17.3	10.2	--	9.0	
Excess Return			-0.2	0.5	-1.5	--	-6.4	
Pillar	290,962,831	3.5	7.5	16.0	6.2	--	5.8	Jul-20
<i>Reinsurance Benchmark</i>			6.8	17.3	10.2	--	9.0	
Excess Return			0.7	-1.3	-4.0	--	-3.2	
Cash and Cash Equivalents	151,064,061	1.8	1.4	5.4	3.3	2.1	1.2	Jul-11
<i>ICE BofA 0-1 Yr. U.S. Treasury Notes & Bonds</i>			1.6	5.6	3.2	2.3	1.3	
Excess Return			-0.2	-0.2	0.1	-0.2	-0.1	

Cash received an explicit allocation during Q1 2023, benchmark was updated to reflect this change effective as of July 1, 2023.

Manager Performance Commentary

→ Individual managers had mixed results in terms of their relative performance in the third quarter of 2024. During the quarter, six of the EUTF's thirteen full-reporting managers (i.e., non-lagged performance) outperformed or matched their respective benchmarks.

Passive/Enhanced Mandates

→ The EUTF's U.S. Equity, Non-U.S. Equity, and Fixed Income passive/enhanced strategies performed in-line with expectations during the quarter and across all trailing periods.

Active Mandates

→ Acuitas, the EUTF's sole Micro Cap Equity manager, produced positive absolute returns for the quarter at 7.2%, though trailed the index by (1.1%). While the manager has underperformed over the most recent quarter and trailing 1-year period, Acuitas continues to meaningfully outperform the index across all longer trailing periods. The relative underperformance over the quarter was attributable to overweight allocations to the energy, industrials, and technology sectors. Despite the short-term underperformance, Acuitas has outperformed by 4.2% per annum since inception of the strategy.

→ Geode trailed the Custom Global Options benchmark over the most recent quarter, though the fund continues to outperform across all longer trailing time periods. The recent underperformance is generally attributed to the portfolio's more diversified options portfolio. The strategy uses local index options (i.e., non-USD based) for non-US equity positions which has been a modest headwind for the strategy given foreign currency movements.

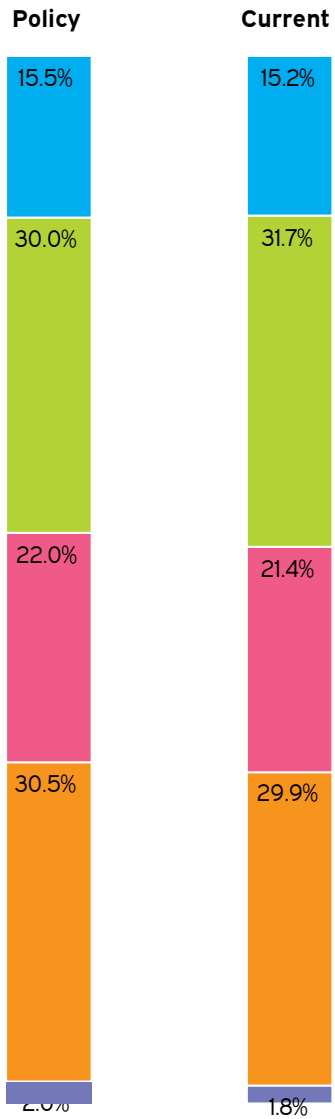
- Gateway also underperformed its benchmark over the most recent quarter while they outpaced the benchmark over the trailing 1-year period. They have marginally lagged since inception owing to the more diversified portfolio of option strikes and tenors (i.e., maturities) compared to the benchmark's more concentrated/less diversified option positions. This is a unique nuance of strategies such as Gateway's where diversified option portfolios may lag the more concentrated index over certain periods but is expected to outperform over longer 5+ year periods.
- The EUTF funded one Tail Risk Hedging manager (LongTail Alpha) and one Long Volatility manager (Capstone) in May and August 2023, respectively. These managers were funded in order to complement the portfolio's Long Treasury exposure as primary diversifiers during the initial legs of material market selloffs. At this point, the track records of both managers are still relatively new. Capstone outperformed the benchmark over the quarter and 1-year period, adding value relative to the broader universe of long volatility managers over these time periods. Comparisons to benchmarks in these segments, particularly during periods where public equities and bonds provide positive returns, is less important. Rather, examining these managers during periods of market stress is crucial to their review, which has not occurred during their time in the EUTF's portfolio.
- With respect to the EUTF's Systematic Trend Following managers, AlphaSimplex trailed its benchmark by (2.3%) over the quarter whereas Mount Lucas outperformed the index by 6.5%. Both managers were impacted by similar trends, particularly volatile interest rate, US Dollar, and commodity movements. AlphaSimplex accesses more markets/instruments, which was a detractor from performance over the quarter compared to Mount Lucas and the Credit Suisse benchmark. The divergences between the managers simply represent relative position sizing differences across similar trades as well as timing differences of when the managers entered/exited similar positions. AlphaSimplex underperformed across the 1-year period but has materially outperformed across longer periods. Mount Lucas has had a recent turnaround, materially outperforming over the most recent quarter and trailing 1-year period but has trailed the benchmark since inception by (0.2%). Throughout their tenures with the

EUTF, both managers have tended to outperform the benchmark at different points in time, providing a nice diversification construct for the EUTF. It is important to highlight that the benchmark is not a “passive” benchmark in the usual sense, but rather, it is a transparent rules-based index that is similar to another third-party manager’s strategy. As systematic managers, the portfolios of AlphaSimplex and Mount Lucas are managed based on pre-set rules, very similar to an index. Relative performance is thus almost exclusively driven by slight variances in their rules versus the benchmark’s rules. These rules primarily pertain to the trend periods/lookbacks that they follow, the markets that they trade, and the volatility levels that they target. It is important to highlight that short-term performance differences between these managers and the index should not be overly scrutinized.

- The Inflation Linked Bond (TIPS) portfolio, managed by BlackRock, mirrored its benchmark performance over the most recent quarter. The portfolio, which transitioned to a passive implementation in mid-2023, has closely tracked the benchmark, net of fees, over all periods examined.
- With respect to Alternative Risk Premia, Kepos produced a positive absolute return for the quarter at 1.3%, though they lagged the benchmark by (0.6%). Kepos has produced a meaningfully positive return on a trailing 1-year basis and has outperformed its benchmark by 4.5% over this period. Value, Momentum, and Carry within Commodities have driven the vast majority of the strategy’s positive returns in 2024 YTD. Despite a relatively poor start to their tenure at the EUTF, Kepos has been producing strong, uncorrelated returns for the EUTF over the last three years and currently stands as one of the top ARP managers in the segment.
- Performance of Private Markets segments is addressed in their dedicated performance reports.
- The EUTF’s Reinsurance portfolio produced positive absolute returns over the most recent quarter with mixed relative performance, with Pillar outperforming and Nephila marginally underperforming. On a calendar year-to-date basis, there have been very few natural catastrophes that have impacted manager and index

performance, but this did change in October 2024 and will be discussed in the Q4 report. The composite returned 16.6% over the trailing 1-year period, which slightly trailed the benchmark but has provided a significant return contribution for the Diversifying Strategies class and the Total Portfolio in aggregate. The longer-term track records of both Pillar and Nephila remain impaired (compared to the benchmark), generally from the impacts of Hurricane Ian in Fall 2022. On a forward-looking basis, both managers entered 2024 with premium levels near 2023 levels, which represented some of the highest levels in nearly two decades. This pricing phenomenon continues to support the attractiveness of the segment on a forward-looking basis, and this is expected to continue in 2025.

Total Plan | As of September 30, 2024



	Balance (\$)	Current Allocation (%)	Policy (%)	Difference (%)	Policy Range (%)
Aggressive Growth	1,277,643,638	15.2	15.5	-0.3	13.5 - 17.5
Traditional Growth	2,665,525,436	31.7	30.0	1.7	23.0 - 35.0
Stabilized Growth	1,799,562,644	21.4	22.0	-0.6	21.0 - 25.0
Diversifying Strategies	2,509,446,093	29.9	30.5	-0.6	17.0 - 43.0
Cash and Equivalents	151,064,061	1.8	2.0	-0.2	0.0 - 3.0
Total	8,403,241,872	100.0	100.0	0.0	

Managers/Funds on Watch – Performance Monitoring

Manager/Funds on Watch – Performance Monitoring

Manager/Fund	Concern	Strategic Class	Next Review	Beg. Date of Watch Status	Months Since Beg. Date	Current Status	
						Net Performance Since Beg. Date	Net Performance vs. Benchmark
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

N.A. = not applicable at this time

→ No Funds on Watch as of 9/30/24

Manager Watch List Criteria¹

Asset Class	Short term (Rolling 12 month periods)	Medium term (Rolling 36 month periods)	Long term (Rolling 60 month periods)
US Microcap	Portfolio Return < Benchmark Return -4.8% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -2.0% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -1.1% at 2 consecutive calendar qtr end dates.
Passive Domestic Equity	Portfolio Return < Benchmark Return -0.2% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.1% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.1% at 2 consecutive calendar qtr end dates.
Passive International Equity	Portfolio Return < Benchmark Return -0.6% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.3% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.25% at 2 consecutive calendar qtr end dates.
Passive REITs	Portfolio Return < Benchmark Return -0.5% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.25% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.2% at 2 consecutive calendar qtr end dates.
Global Options	Portfolio Return < Benchmark Return -2.0% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.8% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.5% at 2 consecutive calendar qtr end dates.
Inflation Linked Securities	Portfolio Return < Benchmark Return -0.8% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.3% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.2% at 2 consecutive calendar qtr end dates.
Long Treasuries	Portfolio Return < Benchmark Return -0.4% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.2% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.1% at 2 consecutive calendar qtr end dates.
Alternative Risk Premia	Absolute Return < -7.2% at 2 consecutive calendar qtr end dates.	Absolute Return < -2.6% at 2 consecutive calendar qtr end dates.	Absolute Return < -1.1% at 2 consecutive calendar qtr end dates.
Systematic Trend Following	Absolute Return < -12.4% at 2 consecutive calendar qtr end dates.	Absolute Return < -5.8% at 2 consecutive calendar qtr end dates.	Absolute Return < -3.6% at 2 consecutive calendar qtr end dates.
Reinsurance	Absolute Return < -11.5% at 2 consecutive calendar qtr end dates.	Absolute Return < -4.5% at 2 consecutive calendar qtr end dates.	Absolute Return < -2.2% at 2 consecutive calendar qtr end dates.
Short-term IG Bonds	Portfolio Return < Benchmark Return -0.2% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.1% at 2 consecutive calendar qtr end dates.	Portfolio Return < Benchmark Return -0.05% at 2 consecutive calendar qtr end dates.

¹ Managers are evaluated net of manager fees

**Performance Attribution v. Policy
Benchmark – Net-Of-Fees**

Performance Attribution – 3Q 2024¹

	Policy		Portfolio		Impact on Return			Total
	Allocation*	Return	Allocation**	Return	Weighting	Selection	Interaction	
Aggressive Growth	15.5%	5.7	15.3%	3.2	(0.0)	(0.4)	0.0	(0.4)
Traditional Growth	30.0%	7.0	31.3%	7.0	0.0	(0.0)	(0.0)	0.0
Stabilized Growth	22.0%	2.0	21.3%	2.3	0.0	0.1	(0.0)	0.1
Diversifying Strategies	30.5%	1.7	30.0%	2.4	0.0	0.2	(0.0)	0.2
Cash	2.0%	1.6	2.1%	1.4	(0.0)	(0.0)	(0.0)	(0.0)
Total	100.0%	3.9	100.0%	3.9	0.1	(0.1)	(0.0)	(0.1)

*Policy allocation calculated using average allocations during the quarter (month-end data).

**Portfolio allocation calculated using average allocations during the quarter (month-end data).

→ Over the most recent quarter, the Total Portfolio mirrored its policy benchmark returns, net of fees. The *Aggressive Growth* class was the primary detractor to results over the period with Private Equity's underperformance weighing on relative returns, while the relative outperformance of Trend Following and Reinsurance within the *Diversifying Strategies* class were the primary contributors.

¹ The summation of attribution effects may not equal the actual portfolio excess return. This is a result of daily market movements vs. monthly market values and quarterly attribution calculations.

Performance Attribution – Trailing 12-Month¹

	Policy		Portfolio		Impact on Return			Total
	Allocation*	Return	Allocation**	Return	Weighting	Selection	Interaction	
Aggressive Growth	15.5%	27.5	15.3%	12.7	(0.0)	(2.3)	0.0	(2.3)
Traditional Growth	29.3%	31.0	30.5%	31.0	0.2	(0.0)	(0.0)	0.2
Stabilized Growth	22.8%	4.2	21.3%	5.5	0.2	0.3	(0.0)	0.4
Diversifying Strategies	30.1%	5.2	30.0%	5.4	0.0	0.1	(0.0)	0.1
Cash	2.4%	5.6	2.9%	5.4	(0.1)	(0.0)	(0.0)	(0.1)
Total	100.0%	15.6	100.0%	13.8	0.3	(2.0)	0.0	(1.7)

*Policy allocation calculated using average allocations during the year (month-end data).

**Portfolio allocation calculated using average allocations during the year (month-end data).

→ Over the trailing 1-year period, the Total Portfolio trailed its policy benchmark by (1.8%), net of fees. Private Equity within *Aggressive Growth* was the primary detractor, specifically selection within the Private Equity sub-class, although this is directly related to benchmarking a long-term asset class to a public market index that exhibits short-term volatility. Real Assets within *Stabilized Growth* as well as Trend Following and Alternative Risk Premia within *Diversifying Strategies* were the primary contributors to relative results for the period.

¹ The summation of attribution effects may not equal the actual portfolio excess return. This is a result of daily market movements vs. monthly market values and quarterly attribution calculations.

Manager Fund/Fee Analysis

Manager Fund/Fee Analysis

	Northern Trust Common Russell 3000 Index Fund	Northern Trust Common MSCI ACWI ex USA Index Fund	BlackRock Inflation Linked Bond Strategy	Acuitas Investments Micro Cap	Sun Life Long Treasuries	Geode Global Options	Gateway Global Options	Capstone
Investment Vehicle	Commingled	Commingled	Commingled	Separate	Separate	Separate	Separate	Separate
Annual Fee (bps)	2	5	12	85	2	14	20	143
Estimated Annual Fee	\$306,876	\$565,574	\$473,527	\$3,715,123	\$94,694	\$320,662	\$453,091	\$1,764,674
Quartile Rank	1st	1st	1st	1st	1st	1st	1st	N/A
Mandate & Universe								
Mandate Size	\$1,534 million	\$1,131 million	\$424 million	\$437 million	\$473 million	\$230 million	\$227 million	\$141 million
Universe Name	eA Passive US All Cap Equity Commingled Funds	eA Passive International Equity Commingled Funds	eA Inflation Protection Bond Commingled Funds	eA Micro Cap Equity Separate Acct	eA US Long Duration Govt/Credit	eA Covered Call / Buy-Write	eA Covered Call / Buy-Write	---
Percentiles								
Low	1	2	10	38	12	31	31	---
5th Percentile	1	2	13	54	14	33	33	---
25th Percentile	2	5	18	87	19	36	36	---
Median	3	6	25	100	21	50	50	---
75th Percentile	4	8	30	110	23	54	54	---
95th Percentile	11	15	53	144	27	100	100	---
High	59	28	61	151	35	108	108	---
# of Observations	109	15	13	66	54	21	16	---

Source: eVestment Alliance

Manager Fund/Fee Analysis

	AlphaSimplex Systematic Trend Following	Mount Lucas Systematic Trend Following	Kepos Capital Alt. Risk Premia	Real Assets	Private Credit	Private Equity
Investment Vehicle	Commingled	Separate	Commingled	Commingled	Commingled	Commingled
Annual Fee (bps)	40*	19	85*	---	---	---
Estimated Annual Fee	\$1,561,284	\$751,136	\$2,080,646	6,982,209**	\$6,598,048**	\$8,453,300***
Quartile Rank	1st	1st	1st	---	---	---
Mandate & Universe						
Mandate Size	\$390 million	\$395 million	\$245 million	\$695 million	\$648 million	\$841 million
Universe Name	2019 STF Manager Survey		EUTF-specific 2018 ARP Search*	---	---	---
Percentiles						
Low	25	25	51	---	---	---
5th Percentile	25	25	70	---	---	---
25th Percentile	68	68	85	---	---	---
Median	88	88	108	---	---	---
75th Percentile	105	105	135	---	---	---
95th Percentile	170	170	165	---	---	---
High	200+	200+	165	---	---	---
# of Observations	21	21	19	---	---	---

Source: eVestment Alliance, Meketa surveys, etc.

*Includes various fund operating costs (i.e., total expense ratio).

**Does not include performance fees, fund operating costs, or potential fee offsets. Estimated based on fee schedules and committed vs. called capital parameters (where applicable).

Summary Analysis

	Nephila Reinsurance	Pillar Reinsurance	Tail Risk Hedge
Investment Vehicle	Commingled	Commingled	Separate
Annual Fee (bps)	150 ¹	110 ¹	8 ²
Estimated Annual Fee	\$1,987,703	\$2,978,341	\$830,087 ²
Quartile Rank	---	---	---
Mandate & Universe			
Mandate Size	\$33 million	\$270 million	\$5 million
Universe Name	---		
Percentiles			
Low	---	---	
5th Percentile	---	---	
25th Percentile	---	---	
Median	---	---	
75th Percentile	---	---	
95th Percentile	---	---	
High	---	---	
# of Observations	---	---	

→The EUTF's managers are highly competitive for the size and type of each mandate. All 10 of the EUTF's liquid managers rank in the top quartile (lowest fees).

→The EUTF's estimated aggregate annual fee³ at the total plan level as of September 30, 2024 is 47.9 basis points (or \$40,269,810). These figures do not include custodial⁴ (Northern Trust), investment consulting⁴ (Meketa and Callan), or potential private markets carry/performance fees. The actual paid fees will vary based on market value changes throughout a given year.

¹ Does not include performance fees, fund operating costs or potential fee offsets.

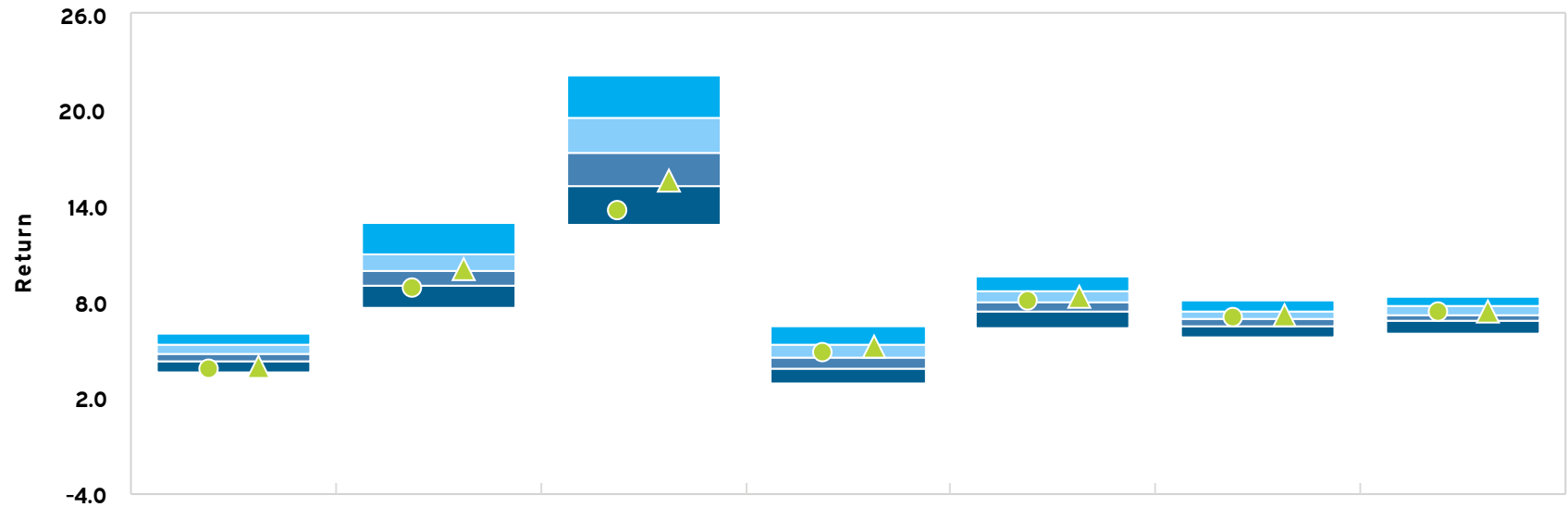
² Fee is based on targeted notional value (50% of Global Equity exposure) of Tail Risk Hedge program

³ Includes estimated private markets fees.

⁴ Combined annual fees for Northern Trust's accounting and performance measurement services, Meketa's all-in fee for General and Private Equity consulting, and Callan's all-in fee for Private Real Assets and Private Credit consulting is \$768,715. Each year, it is anticipated that Northern Trust's costs will be offset by revenue generated from securities lending.

Total Fund Peer Group Rankings (Net-of-Fees) | As of September 30, 2024

InvMetrics Public DB > \$1B Net Return Comparison Ending September 30, 2024



	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception
● Total Plan	3.9 (86)	8.9 (76)	13.8 (90)	4.9 (40)	8.2 (40)	7.1 (49)	7.4 (39)
▲ Policy Benchmark	3.9 (84)	10.0 (43)	15.6 (71)	5.3 (26)	8.3 (37)	7.1 (44)	7.4 (39)
5th Percentile	6.1	12.9	22.2	6.5	9.6	8.1	8.4
1st Quartile	5.3	11.0	19.5	5.3	8.7	7.5	7.8
Median	4.8	9.9	17.4	4.6	8.0	6.9	7.2
3rd Quartile	4.3	9.0	15.3	3.8	7.4	6.5	6.8
95th Percentile	3.7	7.6	12.9	2.9	6.3	5.9	6.1
Population	71	71	71	68	67	65	60

Parentheses contain percentile rankings.
Calculation based on monthly periodicity.

Risk Return Statistics

3 Yrs

5 Yrs

Total Plan

Total Plan

RETURN SUMMARY STATISTICS

Maximum Return	3.6	7.4
Minimum Return	-4.6	-8.1
Return	4.9	8.2
Excess Return	1.6	6.0
Excess Performance	-0.4	-0.1

RISK SUMMARY STATISTICS

Beta	0.9	1.0
Down Capture	96.7	97.6
Up Capture	95.1	97.9

RISK/RETURN SUMMARY STATISTICS

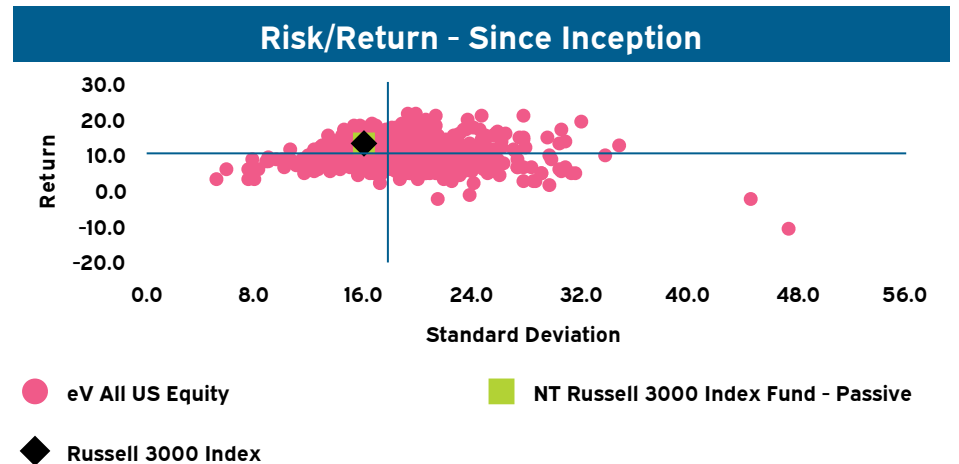
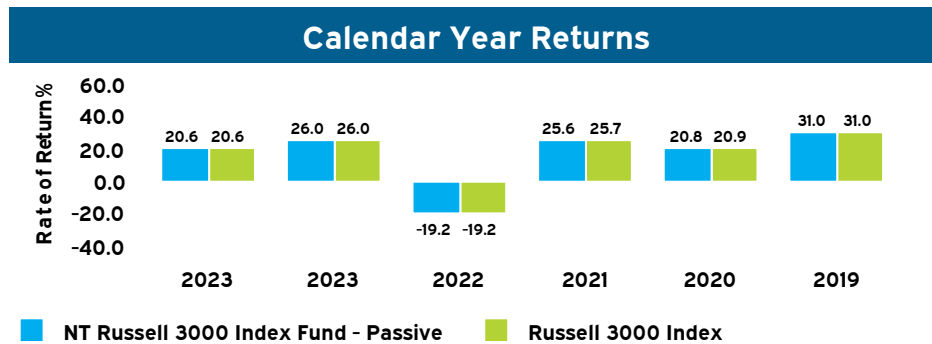
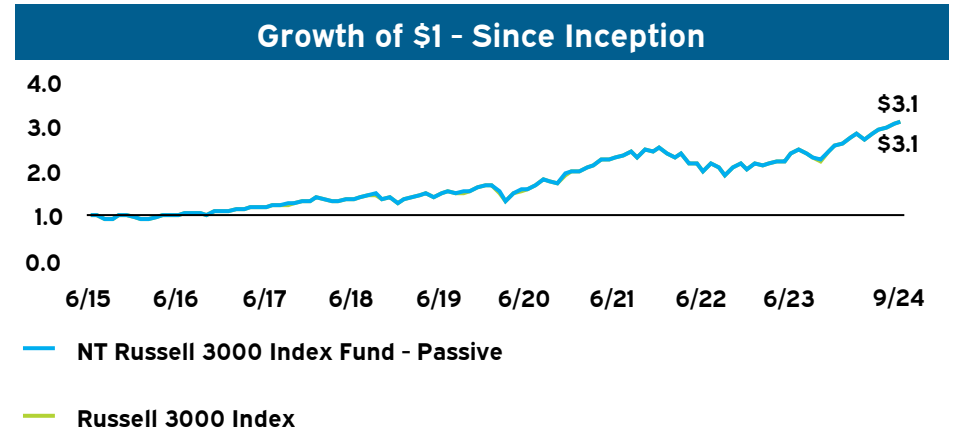
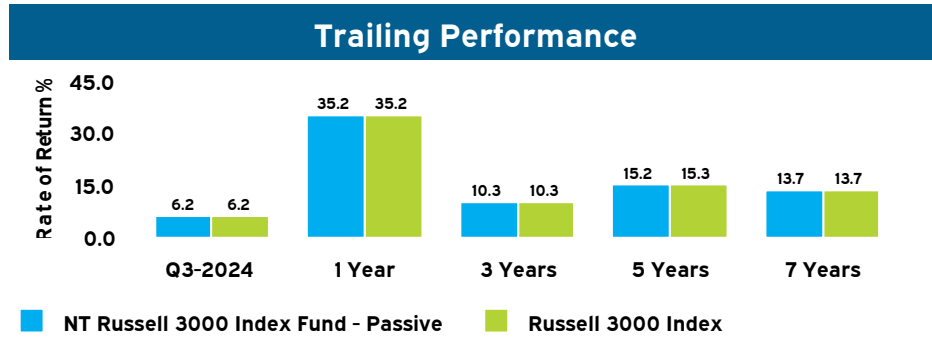
Standard Deviation	7.2	8.6
Sortino Ratio	0.3	1.0
Alpha	-0.1	0.2
Sharpe Ratio	0.2	0.7
Excess Risk	7.1	8.7
Tracking Error	2.0	1.7
Information Ratio	-0.2	-0.1

CORRELATION STATISTICS

R-Squared	0.9	1.0
Actual Correlation	1.0	1.0

NT Russell 3000 Index Fund - Passive | As of September 30, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
NT Russell 3000 Index Fund - Passive	0.01	1.00	0.10	0.74	0.03	1.00	99.98	99.93
Russell 3000 Index	0.00	1.00	-	0.54	0.00	1.00	100.00	100.00

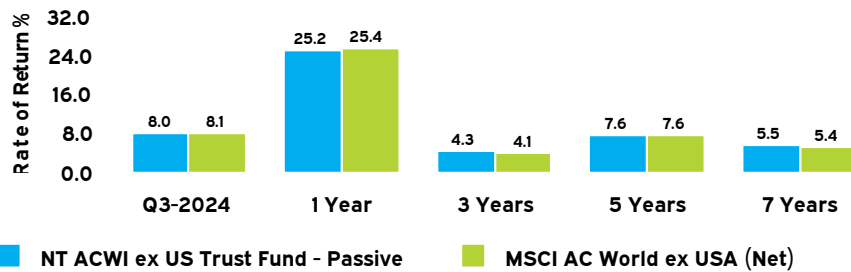


	SI Return	SI Standard Deviation
NT Russell 3000 Index Fund - Passive	13.08	16.03
Russell 3000 Index	13.07	16.04

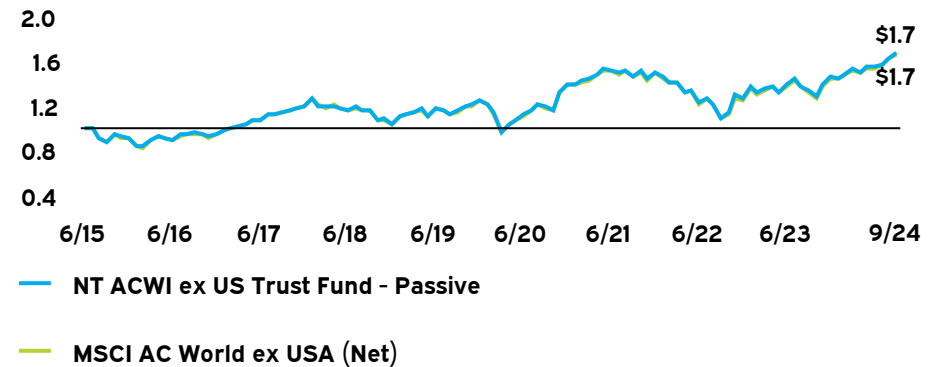
NT ACWI ex US Trust Fund - Passive | As of September 30, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
NT ACWI ex US Trust Fund - Passive	0.01	1.01	0.07	0.32	1.38	0.99	101.51	101.57
MSCI AC World ex USA (Net)	0.00	1.00	-	0.29	0.00	1.00	100.00	100.00

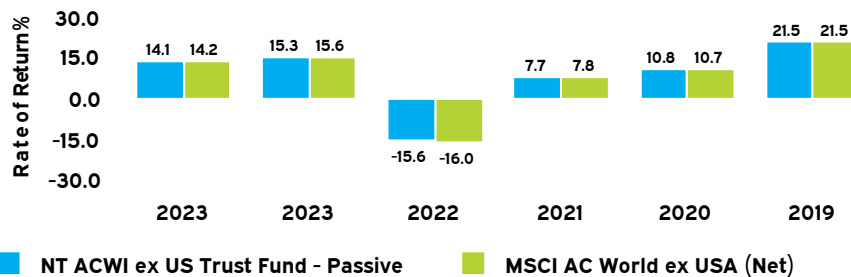
Trailing Performance



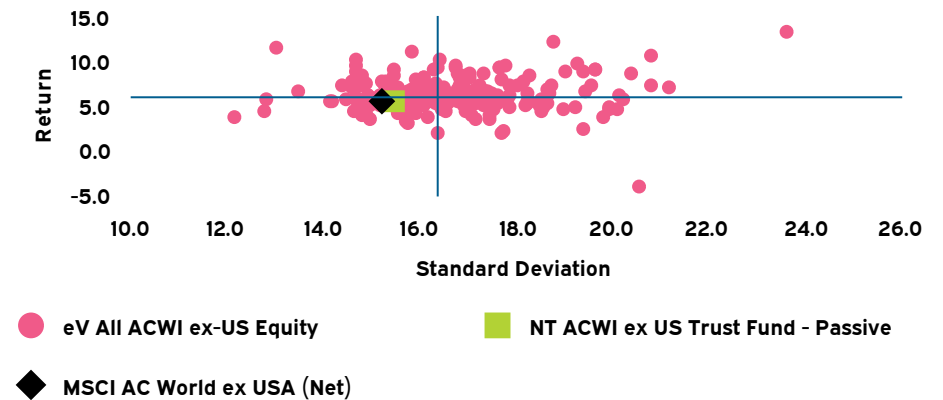
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception

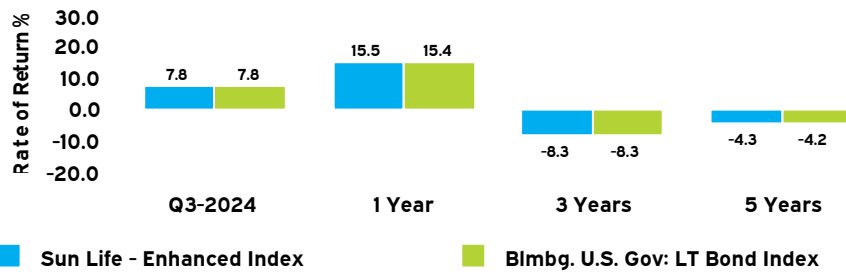


	SI Return	SI Standard Deviation
NT ACWI ex US Trust Fund - Passive	5.71	15.45
MSCI AC World ex USA (Net)	5.65	15.21

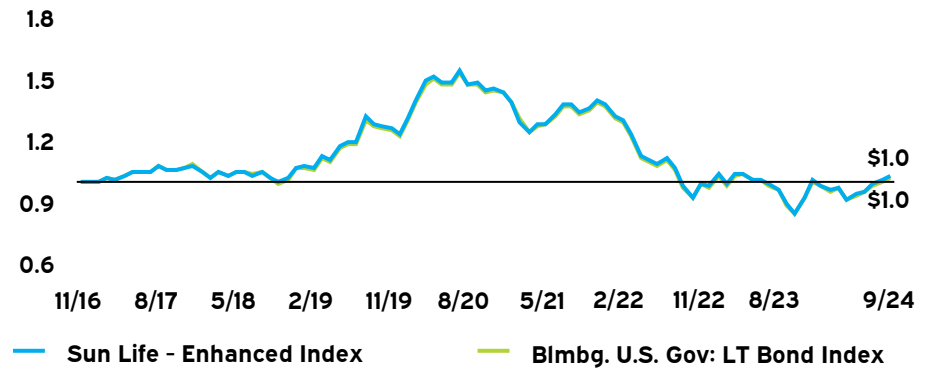
Sun Life - Enhanced Index | As of September 30, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Sun Life - Enhanced Index	0.09	1.01	0.12	-0.06	0.82	1.00	100.62	100.09
Blmbg. U.S. Gov: LT Bond Index	0.00	1.00	-	0.27	0.00	1.00	100.00	100.00

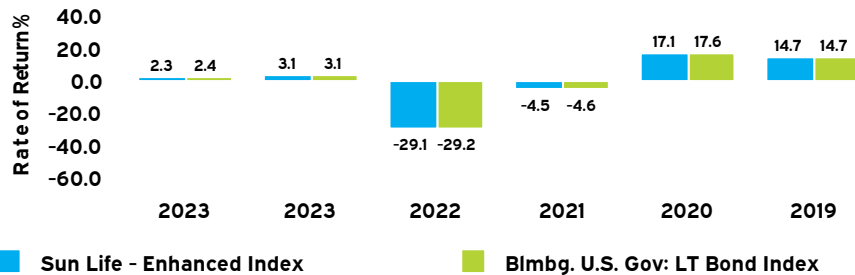
Trailing Performance



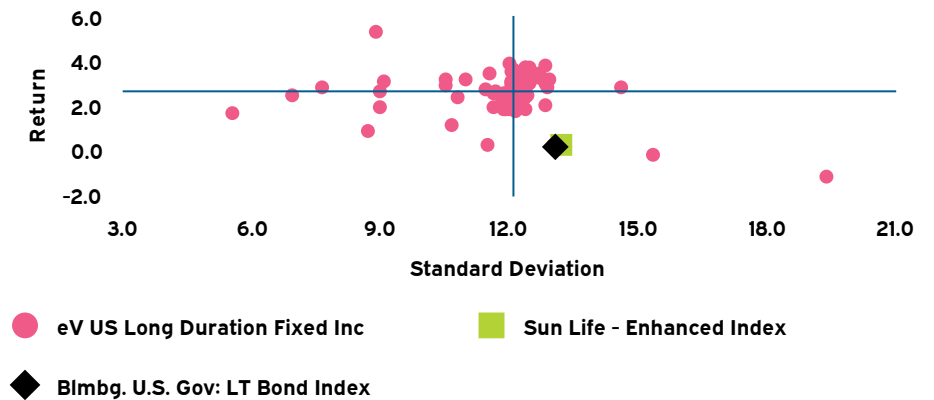
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception

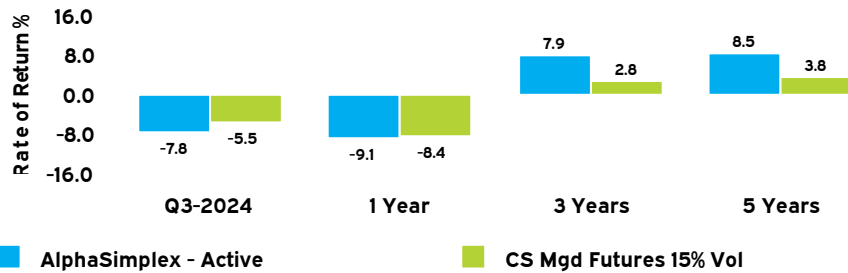


	SI Return	SI Standard Deviation
Sun Life - Enhanced Index	0.34	13.19
Blmbg. U.S. Gov: LT Bond Index	0.26	13.09

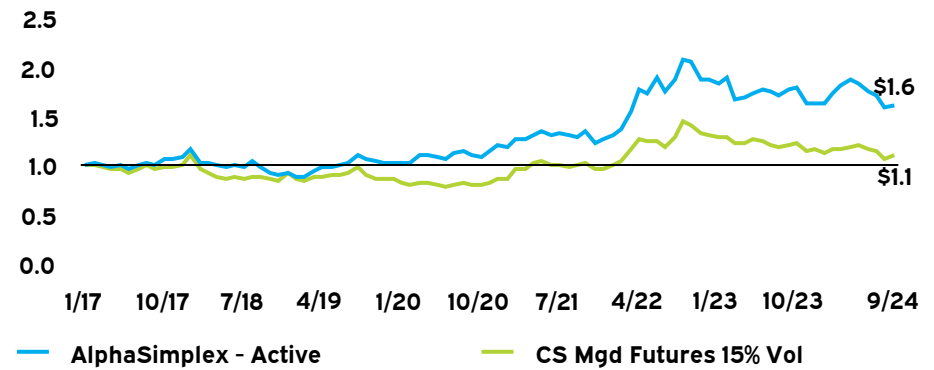
AlphaSimplex - Active | As of September 30, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
AlphaSimplex - Active	5.56	0.93	0.60	0.34	8.80	0.71	108.96	82.15
CS Mgd Futures 15% Vol	0.00	1.00	-	0.42	0.00	1.00	100.00	100.00

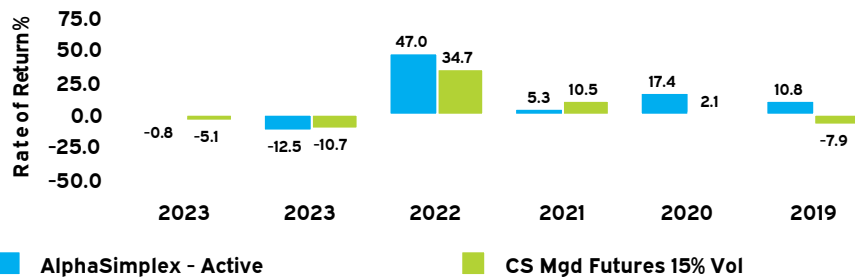
Trailing Performance



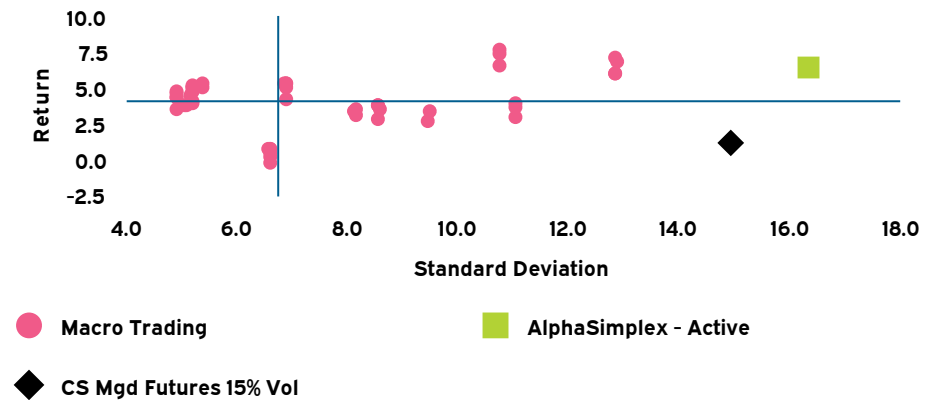
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception

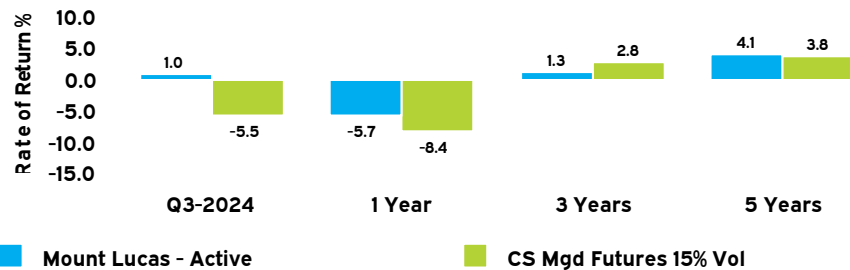


	SI Return	SI Standard Deviation
AlphaSimplex - Active	6.50	16.33
CS Mgd Futures 15% Vol	1.31	14.92

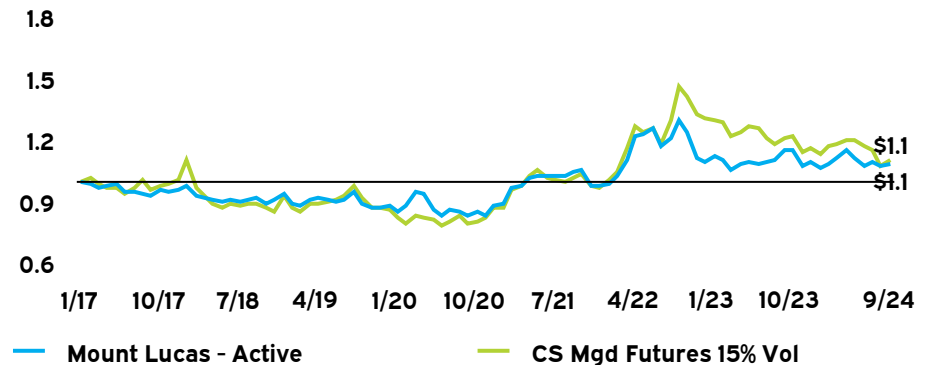
Mount Lucas - Active | As of September 30, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Mount Lucas - Active	0.33	0.63	-0.06	-0.02	9.41	0.60	61.99	60.09
CS Mgd Futures 15% Vol	0.00	1.00	-	0.42	0.00	1.00	100.00	100.00

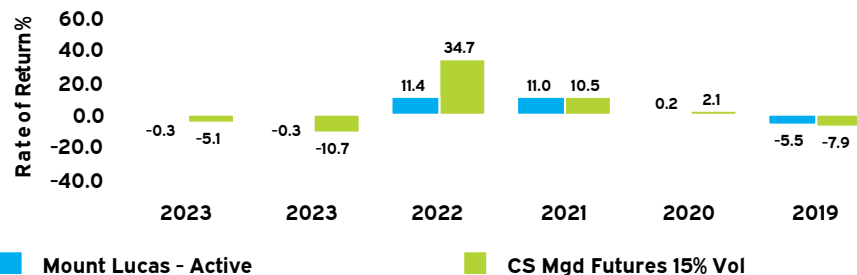
Trailing Performance



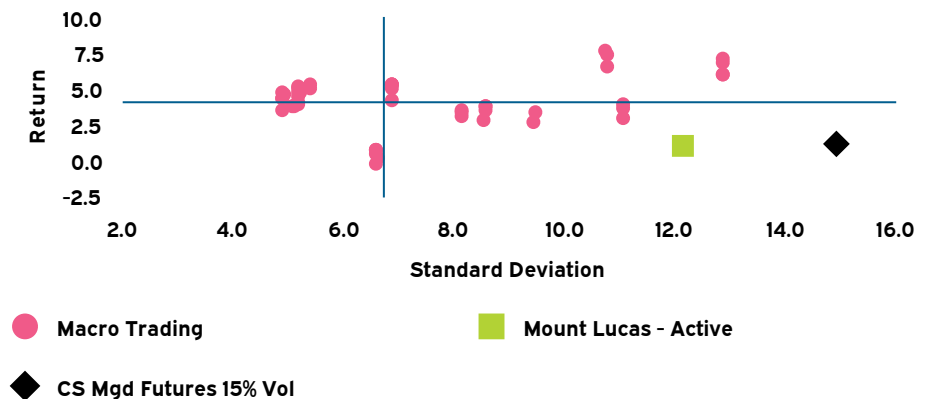
Growth of \$1 - Since Inception



Calendar Year Returns



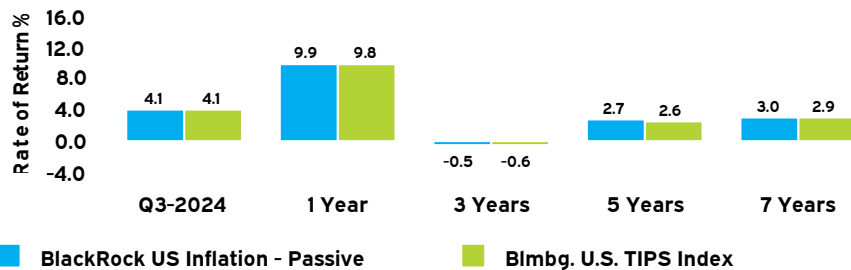
Risk/Return - Since Inception



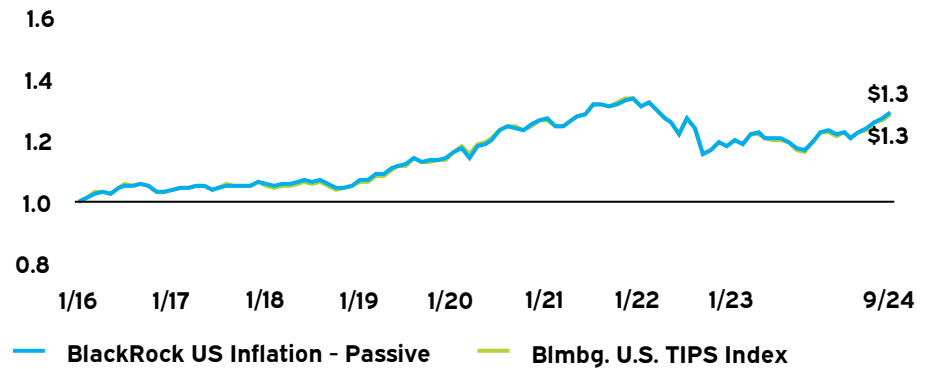
	SI Return	SI Standard Deviation
Mount Lucas - Active	1.11	12.16
CS Mgd Futures 15% Vol	1.31	14.92

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
BlackRock US Inflation - Passive	0.04	1.00	0.08	0.23	0.50	0.99	100.06	99.31
Blmbg. U.S. TIPS Index	0.00	1.00	-	0.47	0.00	1.00	100.00	100.00

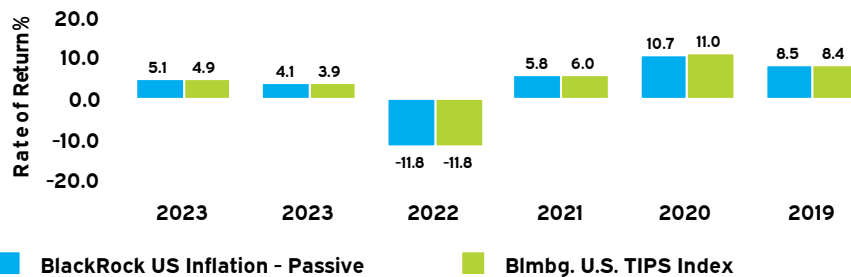
Trailing Performance



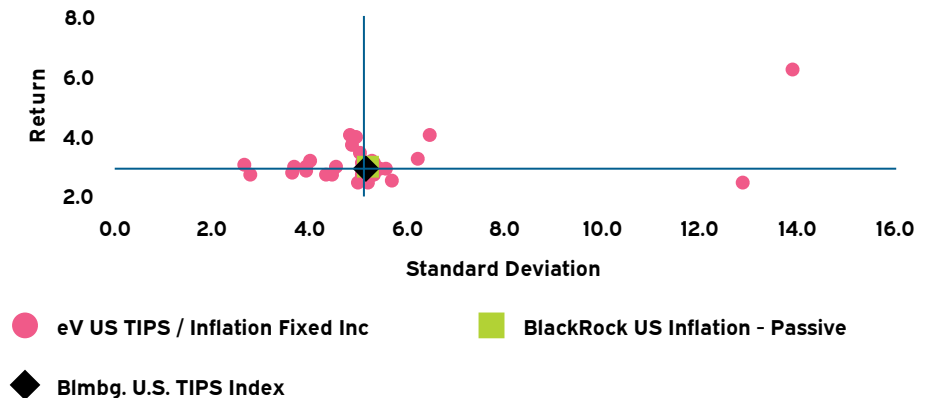
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception

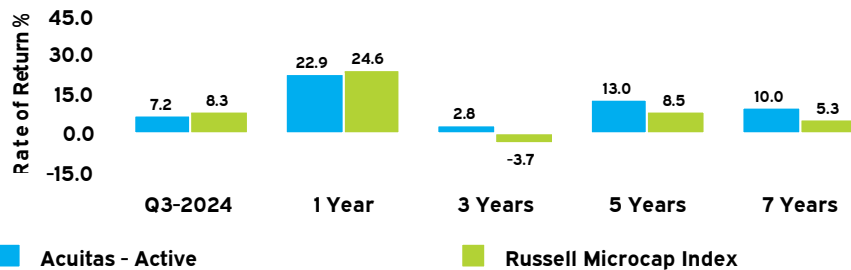


	SI Return	SI Standard Deviation
BlackRock US Inflation - Passive	2.97	5.18
Blmbg. U.S. TIPS Index	2.93	5.14

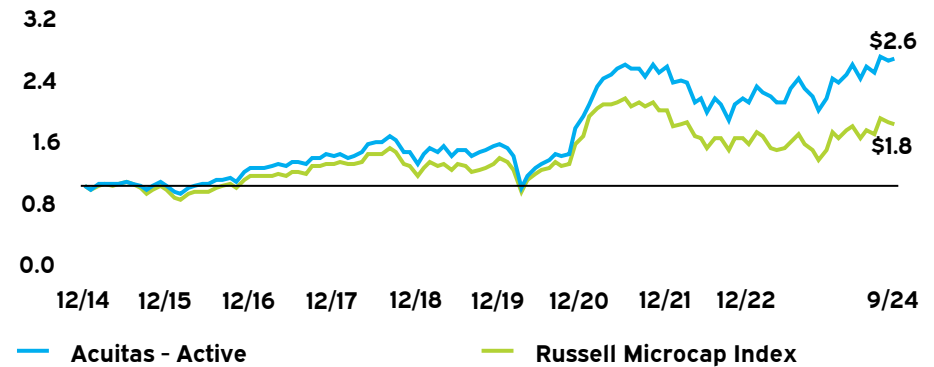
Acuitas - Active | As of September 30, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Acuitas - Active	4.40	0.95	0.61	0.49	6.42	0.92	100.52	85.09
Russell Microcap Index	0.00	1.00	-	0.35	0.00	1.00	100.00	100.00

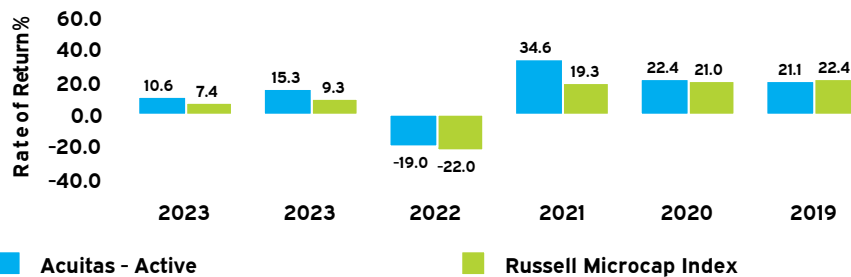
Trailing Performance



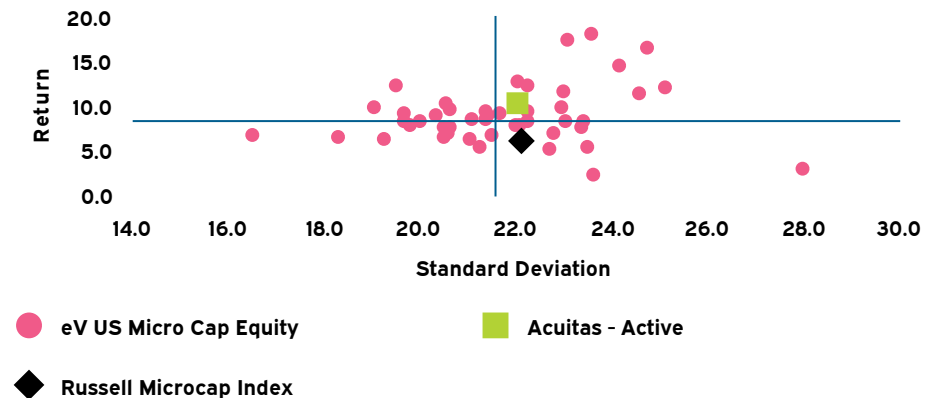
Growth of \$1 - Since Inception



Calendar Year Returns

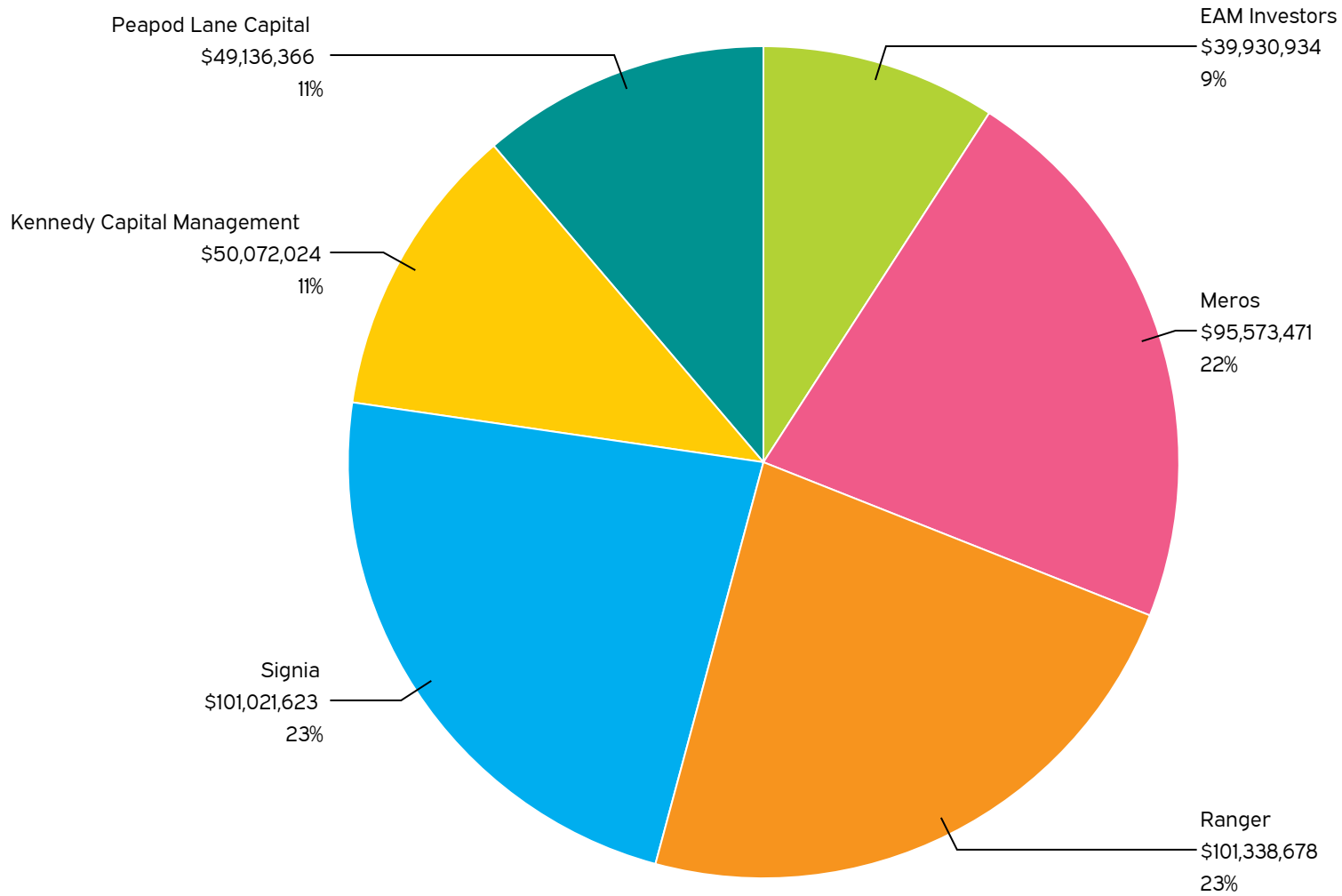


Risk/Return - Since Inception



	SI Return	SI Standard Deviation
Acuitas - Active	10.51	22.02
Russell Microcap Index	6.32	22.09

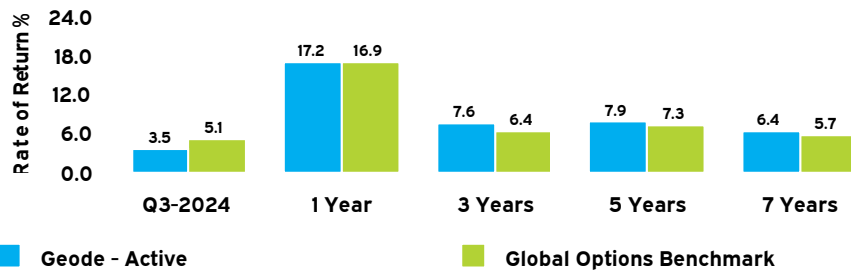
Sep-2024 : \$437,073,266



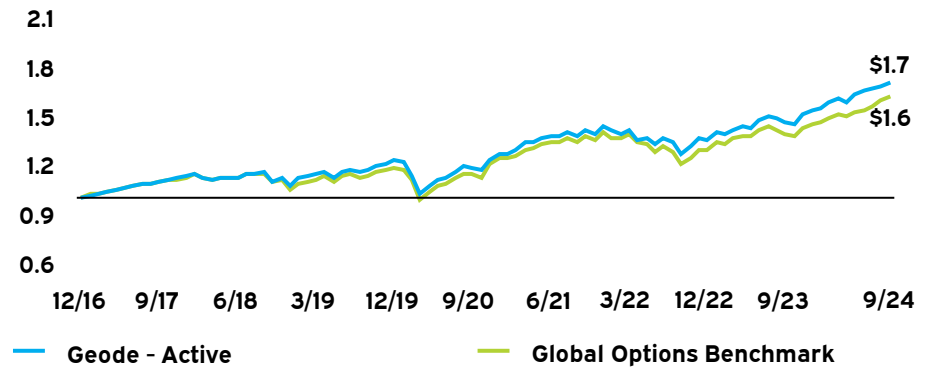
Geode - Active | As of September 30, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Geode - Active	1.00	0.95	0.35	0.61	1.99	0.95	102.46	96.17
Global Options Benchmark	0.00	1.00	-	0.49	0.00	1.00	100.00	100.00

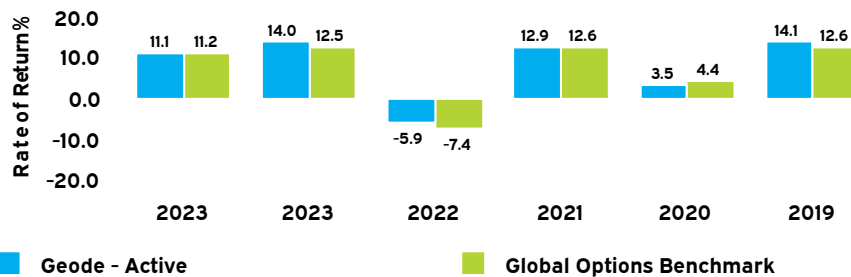
Trailing Performance



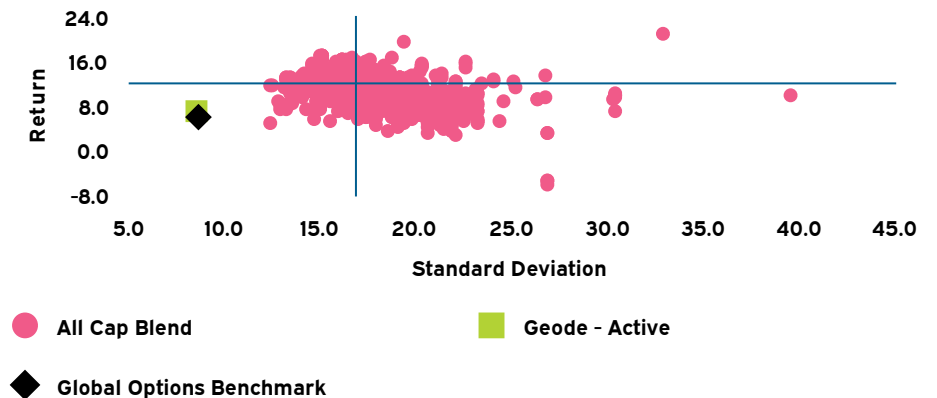
Growth of \$1 - Since Inception



Calendar Year Returns



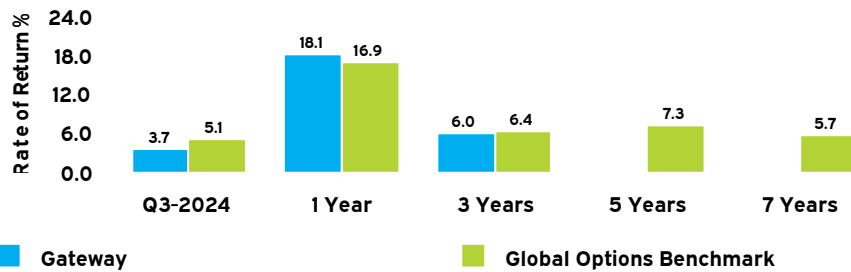
Risk/Return - Since Inception



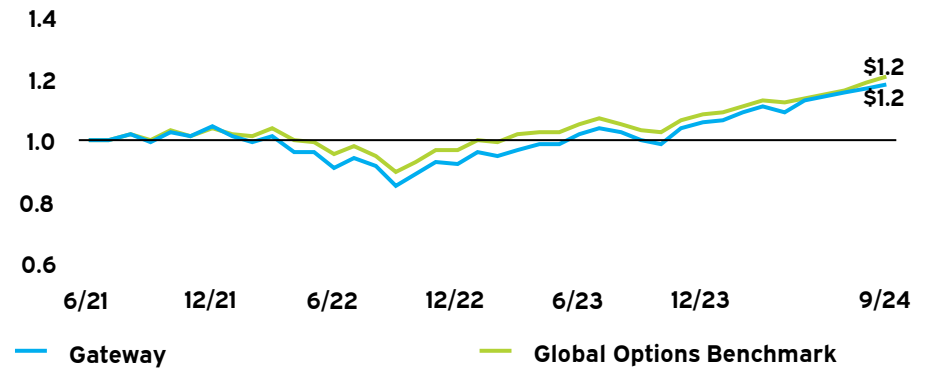
	SI Return	SI Standard Deviation
Geode - Active	7.13	8.50
Global Options Benchmark	6.37	8.67

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Gateway	-1.65	1.20	-0.15	0.26	2.75	0.95	115.92	131.63
Global Options Benchmark	0.00	1.00	-	0.49	0.00	1.00	100.00	100.00

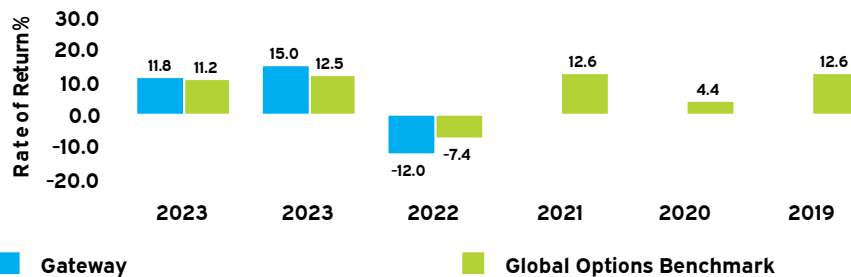
Trailing Performance



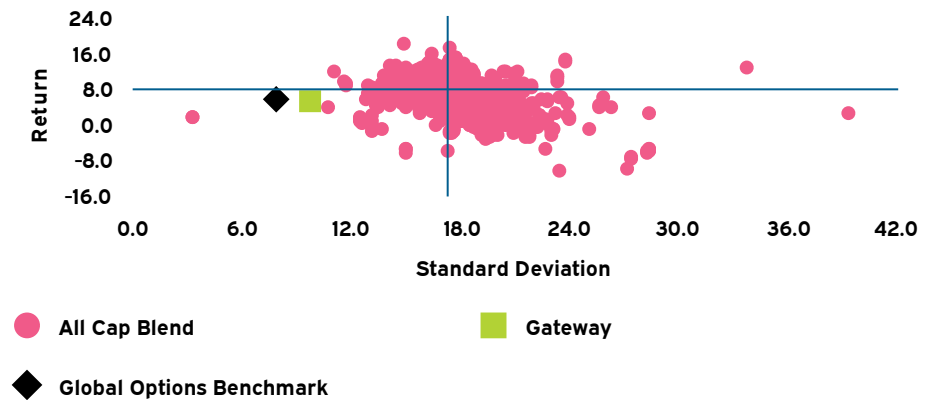
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception



	SI Return	SI Standard Deviation
Gateway	5.32	9.74
Global Options Benchmark	5.94	7.87

EUTF Trust Fund Portfolio Review

EUTF Trust Fund Portfolio Review (Net-of-Fees) | As of September 30, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	S.I.	Inception Date
Total EUTF Trust Fund	596,162,497	100.0	3.4	14.1	3.9	4.8	4.0	Oct-13
<i>CPI - All Urban Consumers (Unadjusted)</i>			0.4	2.4	4.8	4.2	2.7	
Excess Return			3.0	11.7	-0.9	0.6	1.3	
EUTF Trust Fund - Retirees	412,844,269	69.3	3.3	14.5	4.5	5.9	6.1	Jul-19
Northern Trust Intl	61,574,876	10.3	8.0	25.2	4.3	7.5	6.8	Jul-19
<i>MSCI AC World ex USA (Net)</i>			8.1	25.4	4.1	7.6	6.8	
Excess Return			-0.1	-0.2	0.2	-0.1	0.0	
Northern Trust Total Stock	84,241,983	14.1	6.2	35.2	10.4	15.3	14.7	Jul-19
<i>Russell 3000 Index</i>			6.2	35.2	10.3	15.3	14.7	
Excess Return			0.0	0.0	0.1	0.0	0.0	
Alpha Simplex	60,053,589	10.1	-7.8	-9.1	7.9	8.5	9.5	Jul-19
<i>CS Mgd Futures 15% Vol</i>			-5.5	-8.4	2.8	3.8	3.7	
Excess Return			-2.3	-0.7	5.1	4.7	5.8	
Kepos	18,599,902	3.1	1.3	12.1	6.9	3.2	3.3	Jul-19
<i>Custom ARP Benchmark</i>			1.9	7.6	5.6	4.4	4.4	
Excess Return			-0.6	4.5	1.3	-1.2	-1.1	
Sun Life	38,127,862	6.4	7.8	15.7	-8.3	-4.3	-2.7	Jul-19
<i>Blmbg. U.S. Government: Long Term Bond Index</i>			7.8	15.4	-8.3	-4.2	-2.7	
Excess Return			0.0	0.3	0.0	-0.1	0.0	
Vanguard Short Term Bond Index - Passive	19,144,317	3.2	3.8	9.7	--	--	7.0	Jun-23
<i>Blmbg. U.S. Corporate 1-5 Year Index</i>			3.7	9.7	--	--	7.2	
Excess Return			0.1	0.0	--	--	-0.2	
Vanguard Short Term Bond Index - Passive	131,101,740	22.0	3.8	9.7	1.6	2.2	2.4	Jul-19
<i>Blmbg. U.S. Corporate 1-5 Year Index</i>			3.7	9.7	1.6	2.3	2.4	
Excess Return			0.1	0.0	0.0	-0.1	0.0	

EUTF Trust Fund Portfolio Review (Net-of-Fees) | As of September 30, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	S.I.	Inception Date
EUTF Trust Fund - Actives	183,318,228	30.7	3.4	13.1	2.9	3.0	3.0	Jun-19
Northern Trust Intl	20,151,287	3.4	8.0	25.2	--	--	17.0	Jan-23
<i>MSCI ACWI ex US</i>			8.1	25.4	--	--	17.2	
Excess Return			-0.1	-0.2	--	--	-0.2	
Northern Trust Total Stock	27,528,146	4.6	6.2	35.2	--	--	27.0	Jan-23
<i>Russell 3000 Index</i>			6.2	35.2	--	--	27.0	
Excess Return			0.0	0.0	--	--	0.0	
Alpha Simplex	19,962,055	3.3	-7.8	-9.1	--	--	-7.7	Jan-23
<i>CS Mgd Futures 15% Vol</i>			-5.5	-8.4	--	--	-9.0	
Excess Return			-2.3	-0.7	--	--	1.3	
Kepos	6,256,889	1.0	1.3	12.1	--	--	13.7	Jan-23
<i>Custom ARP Benchmark</i>			1.9	7.6	--	--	7.3	
Excess Return			-0.6	4.5	--	--	6.4	
Lombard Odier	1,356	0.0						
<i>Custom ARP Benchmark</i>			1.9	7.6	--	--	7.3	
Excess Return			--	--	--	--	--	
Sun Life	12,598,032	2.1	7.8	16.0	--	--	3.6	Jan-23
<i>Blmbg. U.S. Government: Long Term Bond Index</i>			7.8	15.4	--	--	3.2	
Excess Return			0.0	0.6	--	--	0.4	
Vanguard Short Term Bond Index - Passive	6,056,667	1.0	3.8	9.7	--	--	7.0	Jun-23
<i>Blmbg. U.S. Corporate 1-5 Year Index</i>			3.7	9.7	--	--	7.2	
Excess Return			0.1	0.0	--	--	-0.2	
Vanguard Short Term Bond Index - Passive	90,763,796	15.2	3.8	9.7	1.6	2.2	2.3	Jun-19
<i>Blmbg. U.S. Corporate 1-5 Year Index</i>			3.7	9.7	1.6	2.3	2.5	
Excess Return			0.1	0.0	0.0	-0.1	-0.2	

EUTF Trust Fund Portfolio Review (Net-of-Fees) | As of September 30, 2024

Excess Funds - Retirees		
	QTD	1 Yr
Retirees Cash Flow		
Beginning Market Value	399,791	371,717
Net Contributions	-15	-11,765
Fees/Expenses	-14	-56
Income	2,488	9,285
Gain/Loss	10,594	43,663
Ending Market Value	412,844	412,844

Excess Funds - Actives		
	QTD	1 Yr
Actives Cash Flow		
Beginning Market Value	177,316	162,013
Net Contributions	-7	-7
Fees/Expenses	-4	-16
Income	1,291	4,756
Gain/Loss	4,722	16,572
Ending Market Value	183,318	183,318

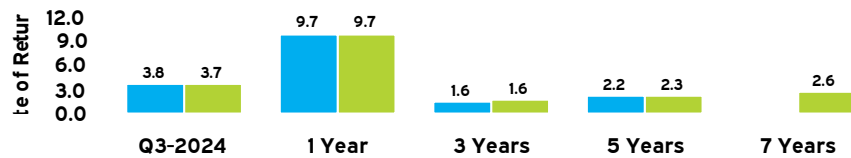
EUTF Trust Fund Retirees - Quarterly Asset Allocation		
	09/30/2024	06/30/2024
	(%)	(%)
Alpha Simplex	14.5	15.4
Kepos	4.5	4.8
Northern Trust Intl	14.9	14.5
Northern Trust Total Stock	20.4	20.7
Sun Life	9.2	9.3
Vanguard Short Term Bond Index - Passive	4.6	4.4
Vanguard Short Term Bond Index - Passive	31.8	30.9

EUTF Trust Fund Actives - Quarterly Asset Allocation		
	09/30/2024	06/30/2024
	(%)	(%)
Alpha Simplex	10.9	11.3
Kepos	3.4	3.5
Lombard Odier	0.0	0.0
Northern Trust Intl	11.0	10.8
Northern Trust Total Stock	15.0	15.5
Sun Life	6.9	6.9
Vanguard Short Term Bond Index - Passive	3.3	3.3
Vanguard Short Term Bond Index - Passive	49.5	48.8

Vanguard Short Term Bond Index - Passive | As of September 30, 2024

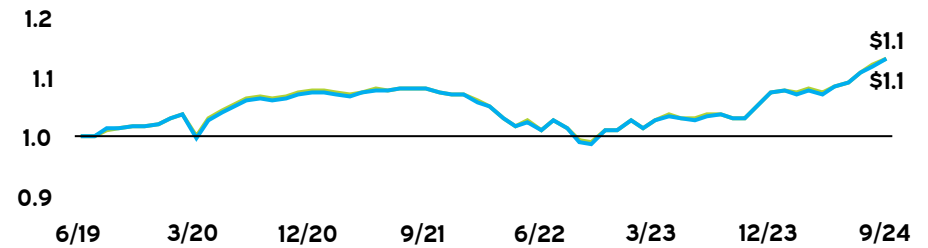
	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Vanguard Short Term Bond Index - Passive	-0.05	1.01	-0.15	0.03	0.20	1.00	99.46	99.88
Blmbg. U.S. Corporate 1-5 Year Index	0.00	1.00	-	0.76	0.00	1.00	100.00	100.00

Trailing Performance



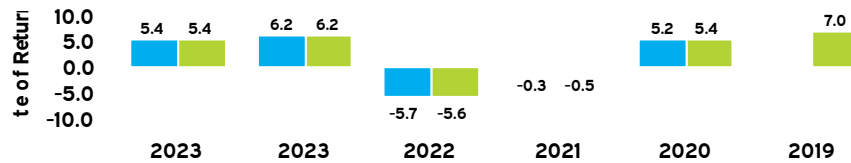
- Vanguard Short Term Bond Index - Passive
- Blmbg. U.S. Corporate 1-5 Year Index

Growth of \$1 - Since Inception



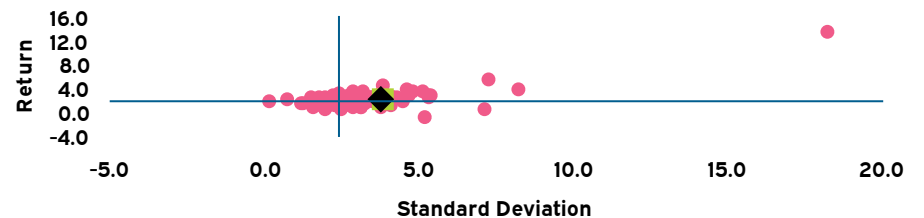
- Vanguard Short Term Bond Index - Passive
- Blmbg. U.S. Corporate 1-5 Year Index

Calendar Year Returns



- Vanguard Short Term Bond Index - Passive
- Blmbg. U.S. Corporate 1-5 Year Index

Risk/Return - Since Inception



- eV US Short Duration Fixed Inc
- Vanguard Short Term Bond Index - Passive
- Blmbg. U.S. Corporate 1-5 Year Index

SI Return SI Standard Deviation

Vanguard Short Term Bond Index - Passive	2.35	3.82
Blmbg. U.S. Corporate 1-5 Year Index	2.38	3.78

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 market's 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 .

Attribution - a means to ascribe values to specific categories based on underlying characteristics.

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.

Breakeven Inflation - The difference between the yield of a nominal bond and an Inflation-linked bond of like maturity. It represents the amount of annualized inflation expected over the life of a bond by the marketplace, but it can also be thought of as the amount of annualized inflation required for being indifferent to holding the nominal or the ILB. If actual inflation turns out to be higher (lower) than the breakeven rate, the ILB will have a higher (lower) return than a nominal of like maturity. The market shortcut is to subtract the real yield from the nominal yield: Breakeven Inflation = Nominal Yield - Real Yield.

Breakeven Inflation Curve - The difference between nominal and real yields of like maturities at every available point along the yield curve.

Credit Quality - A measure of a bond issuer's ability to repay interest and principal in a timely manner.

Current Yield - Annual income (interest or dividends) divided by the current price of the security.

Dividend Yield - Annualized dividend rate divided by last closing price.

Down Market Capture Ratio - Is the portion of the market's performance that was captured by the manager using only periods where the market return is negative. A down market capture of less than 100% is considered desirable.

Duration - A measure of the price sensitivity of a fixed-income security to a change in interest rates. Calculation is based on the weighted average of the present value for all cash flows.

Earnings Growth Rate - rate of change in earnings over the latest 5-year period as expressed in an annual percentage.

Excess Standard Deviation (annualized) - The annualized standard deviation of the difference between the performance of a portfolio and its benchmark. Also referred to as tracking error.

Fair Value Pricing - Is a daily price adjustment made to the value of a security to more accurately reflect the true market value of a security. A fund will use fair value pricing if the value of a security is materially affected by events occurring before the fund's pricing time but after the close of the primary markets or exchanges on which the security is traded. It is an industry-wide practice required by the Securities and Exchange Commission.

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

Inflation-linked Bonds (ILBs) - A bond whose principal is increased (decreased) in proportion to the amount of inflation (deflation) from the date of issue to the date of maturity, and whose coupons are paid on the inflation-adjusted principal. At maturity, the inflation-adjusted principal is redeemed. The mechanics of an ILB imply that its cash flows and principal at maturity are unknown and are determined by the path of inflation over its life.

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.

Market Capitalization - Is calculated as the product of price and shares outstanding.

Median Market Capitalization - The midpoint of market capitalization (market price multiplied by the number of shares outstanding) of the stocks in a portfolio. Half the stocks in the portfolio will have higher market capitalizations; half will have lower.

Nominal Yield - The interest rate stated on the face of a bond, which represents the percentage of interest to be paid by the issuer on the face value of the bond. (Also known as the coupon rate.)

Price/Book (P/B) Ratio - The price per share of a stock divided by its book value (i.e. net worth) per share. For a portfolio, the ratio is the weighted average price/book ratio of the stocks it holds.

Price/Earnings (P/E) Ratio - The share price of a stock divided by its per-share earnings over the past year. For a portfolio, the weighted average P/E ratio of the stocks in the portfolio. P/E is a good indicator of market expectations about a company's prospects; the higher the P/E, the greater the expectations for a company's future growth.

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.

Real Yield - Return from an investment adjusted for the effects of inflation.

Semi Standard Deviation (Downside) - Is a measure of risk using only the variance of returns below a target rate, such as the benchmark.

Sharpe Ratio - A measure of a portfolio's excess return relative to the total variability of the portfolio. The higher the portfolio's Sharpe Ratio, the better the portfolio's returns have been relative to the risk it has taken on.

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

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.

Up Market Capture Ratio - Is the portion of the market's performance that was captured by the manager using only periods where the market return is positive. An up market capture of greater than 100% is considered desirable.

Unrealized Gain/Loss - The increased or decreased market value of an asset that is still being held compared with its cost of acquisition.

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.

Weighted Average Life (WAL) - The average number of years for which each dollar of unpaid principal on a loan or mortgage remains outstanding. Once calculated, WAL tells how many years it will take to pay half of the outstanding principal. The time weightings are based on the principal paydowns - the higher the dollar amount, the more weight that corresponding time period will have. For example, if the majority of the repayment amount is in 10 years the WAL will be closer to 10 years. Let's say there's an outstanding bond with five years of \$1,000 annual payments. The

weighted average life would be three years, assuming payment is made at the end of each year. This indicates that after three years over half of the payments will be made.

Yield Curve - A representation on a chart of the yields on bonds with identical credit ratings but different maturities. On the yield curve, the maturities are represented on the x-axis, and the yield is represented on the y-axis. That is, if the yield curve trends upward, it indicates that interest rates for long-term debt securities are higher than short-term debt securities; this is called a normal yield curve. A negative yield curve indicates that interest rates for short-term debt securities are higher, and a flat yield curve indicates that they are roughly the same. Yield curves are most commonly plotted with U.S. Treasuries with different maturities; this is used to predict future trends in interest rates.

Yield Curve Management - Any investment strategy that seeks to profit from changes in the yield curve of US Treasury securities. For example, one may buy a bond at a certain interest rate expecting prevailing interest rates to decline. If and when they do, the price of the bond one holds will increase, allowing one to sell the bond for a profit.

Yield to Maturity - The rate of return an investor would receive if the securities held by a portfolio were held to their maturity dates.

Definitions of Benchmarks

The Bloomberg Barclays Capital U.S. 1-5 Year Corporate Index includes US dollar-denominated, securities issued by industrial, utility and financial companies, with maturities between 1 and 5 years. Each security must be rated investment-grade (Baa3/BBB- or higher) in quality by at least two of the following ratings agencies: Moody's, S&P, Fitch. If only one of the three ratings agencies rates a security, the rating must be investment grade. The index typically has a weighted average duration between three and five years which is considered to be intermediate-term in duration.

The Bloomberg Barclays Capital U.S. Aggregate Bond Index consists of taxable fixed income securities that are SEC-registered and US dollar denominated. The index covers the broad US investment grade fixed coupon rate bond market with index components for government and corporate securities, residential mortgage-backed securities, commercial mortgage-backed securities and asset-backed securities. Government and corporate securities include non-US issuers, although non-US issuers represent only a small portion of the index. Each security in the index must have at least one year to final maturity regardless of call features. Each security must be rated investment-grade (Baa3/BBB- or higher) in quality by at least two of the following ratings agencies: Moody's, S&P, Fitch. If only one of the three ratings agencies rates a security, the rating must be investment grade. The index typically has a weighted average duration between three and five years which is considered to be intermediate-term in duration.

The Bloomberg Barclays Capital U.S. Government: Long Index is a subset of the Bloomberg Barclays Capital U.S. Aggregate Index. In particular, securities within the index must be issued and/or guaranteed by the U.S. Government and/or U.S. Agencies and have at least ten years until maturity. The index primarily consists of U.S. Treasury bonds.

The Bloomberg Barclays Capital U.S. TIPS Index (BC U.S. TIPS) consists of all publicly issued US dollar denominated Inflation-Protection securities (TIPS) issued by the US Treasury that have at least one year to final maturity. The principal value of a TIPS increases with inflation and decreases with deflation, as measured by changes in the urban, non-seasonally adjusted consumer price index (CPI-U) calculated by the Bureau of Labor Statistics. The CPI-U index is a measure of the average change in prices paid by urban consumers for a fixed basket of goods and services. The principal value of a TIPS security is adjusted by a published index ratio reflecting the changes in the reference CPI-U index. TIPS securities have a stated fixed coupon rate of interest payable semi-annually that is applied to the inflation-adjusted principal value. Over the past several years, approximately one-third of the weighted market value of the index has been represented by issues in each of the maturity ranges of one-to-five years, five-to-ten years, and in excess of ten years. The index is considered to be intermediate-term in duration.

The Credit Suisse Managed Futures Liquid Index (15% Volatility) was designed to exist as a relatively straight-forward index/representation for capturing trend following returns. The strategy utilizes 16 moving average crossover signals to detect trends across various time horizons and assets. The strategy includes allocations to global equity indices, currencies, commodities, and interest rates (18 instruments in total). The index targets an annualized volatility of 15% but will allow for up to 22.5% (upper limit) prior to rebalancing. Credit Suisse compiles this same index at alternative levels of volatility.

The CBOE S&P 500 PutWrite Index (PUT) sells S&P 500 Index (SPX) put options against collateralized cash reserves held in a money market account. The PUT strategy is designed to sell a sequence of one-month, at-the-money, S&P 500 Index puts and invest cash at one- and three-month U.S. Treasury bill rates. The number of puts sold varies from month to month, but is limited so that the amount held in U.S. Treasury bills can finance the maximum possible loss from final settlement of the SPX puts. The short positions in put options are held until expiration, at which point a new one-month put option is sold.

The Custom ARP Benchmark is 3-Month U.S. Treasury Bills + 2% per annum (i.e., cash + 2%).

The FTSE All-World ex US Index comprises large- and mid-cap stocks in Developed and Emerging Markets (46 countries) excluding the US. The index attempts to replicate the industry composition of each local market and includes representative sampling of large, medium, and small capitalization companies. The index is calculated with net dividends reinvested in US dollars.

The FTSE Global All Cap ex US Index comprises large, mid, and small cap stocks globally excluding the US. The index is derived from the FTSE Global Equity Index Series, which covers 98% of the world's investable market capitalization. The index attempts to replicate the industry composition of each local market and includes representative sampling of large, medium, and small capitalization companies. The index is calculated with net dividends reinvested in US dollars.

The ICE Bank of America Merrill Lynch 3-Month T-Bill Index is comprised of a single 3-month T-Bill issue purchased at the beginning of the month and held for a full month. At the end of the month that T-Bill is sold and rolled into a newly selected issue. The issue selected at each month-end rebalancing is the outstanding T-Bill that matures closest to, but not beyond, three months from the rebalancing date.

The MSCI All Country World ex USA Index ND (MSCI ACWI ex US ND) is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets excluding the US. The MSCI ACWI ex USA consists of 45 country indexes comprising 22 developed and 23 emerging market country indexes. The developed market country indexes included are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom. The emerging market country indexes included are: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Poland, Qatar, Russia, South Africa, Taiwan,

Thailand, Turkey and United Arab Emirates. Net total return indexes reinvest dividends after the deduction of withholding taxes, using (for international indexes) a tax rate applicable to non-resident institutional investors who do not benefit from double taxation treaties.

The MSCI U.S. Broad Market Index GD represents the universe of companies in the US equity market, including large-, mid-, small- and micro-cap companies. This index targets for inclusion 99.5% of the capitalization of the US equity market. The MSCI US Broad Market Index is the aggregation of the MSCI US Investable Market 2500 and Micro Cap Indices. Gross total return indexes reinvest as much as possible of a company's dividend distributions. The reinvested amount is equal to the total dividend amount distributed to persons residing in the country of the dividend-paying company. Gross total return indexes do not, however, include any tax credits.

The MSCI U.S. REIT Index is a free float-adjusted market capitalization weighted index that is comprised of equity REITs that are included in the MSCI US Investable Market 2500 Index, with the exception of specialty equity REITs that do not generate a majority of their revenue and income from real estate rental and leasing operations. The index represents approximately 85% of the US REIT universe.

The NCREIF ODCE Index: The NCREIF Fund Index - Open-End Diversified Core Equity ("NFI-ODCE") is a capitalization-weighted index of the leveraged performance of open-ended funds which invest in core real estate properties (office, retail, industrial, apartment, hotel, and other property types) on behalf of various institutional investors.

The Private Equity Benchmark is the Russell 3000 Index plus a 3% annual premium (i.e., illiquidity premium).

The Russell 3000 Index measures the performance of the largest 3,000 publicly held US companies based on total market capitalization, which represents approximately 98% of the investable US equity market.

The Russell Microcap Index measures the performance of the microcap segment of the US equity market. Microcap stocks make up less than 3% of the US equity market (by market cap) and consist of the smallest 1,000 securities in the small cap Russell 2000 Index, plus the next 1,000 smallest eligible securities by market cap.

The S&P/LSTA Leveraged Loan Index is a market capitalization-weighted index of the largest broadly syndicated leveraged loans (i.e., floating-rate bank loans to corporations) within the United States.

The Swiss Global Reinsurance Catastrophe Benchmark is a market value-weighted basket of natural catastrophe bonds tracked by Swiss Re Capital Markets, calculated on a weekly basis.

EUTF Benchmark Definitions

Total Fund Benchmark

Time Period	Total Fund Policy Benchmark
Through 2/29/12	25% MSCI U.S. Broad Market Index 15% FTSE All-World ex U.S. Index 35% Bloomberg Barclays Capital U.S. Aggregate Bond Index 15% Bloomberg Barclays Capital US TIPS Index 10% MSCI U.S. REIT Index
3/1/12 – 6/30/14	28% MSCI U.S. Broad Market Index 17% FTSE All-World ex U.S. Index 15% Bloomberg Barclays Capital U.S. Aggregate Bond Index 19% Bloomberg Barclays Capital U.S. TIPS Index 21% MSCI U.S. REIT Index
7/1/14 – 12/31/14	28% MSCI U.S. Broad Market Index 17% FTSE Global All Cap ex U.S. Index 15% Bloomberg Barclays Capital U.S. Aggregate Bond Index 19% Bloomberg Barclays Capital U.S. TIPS Index 21% MSCI U.S. REIT Index
1/1/15 – 5/31/2015	24% MSCI U.S. Broad Market Index 19% FTSE Global All Cap ex U.S. Index 15% Bloomberg Barclays Capital U.S. Aggregate Bond Index 17% Bloomberg Barclays Capital U.S. TIPS Index 16% MSCI U.S. REIT Index 9% Russell Microcap Index

Time Period	Total Fund Policy Benchmark
6/1/15 – 10/31/2016	24% Russell 3000 Index 19% MSCI All Country World Index ex USA ND 15% Bloomberg Barclays Capital US Aggregate Bond Index 17% Bloomberg Barclays Capital US TIPS Index 16% MSCI US REIT Index 9% Russell Microcap Index
11/1/2016 – 11/30/2016	24% Russell 3000 Index 19% MSCI ACWI ex U.S. Index ND 10.5% Bloomberg Barclays Capital U.S. Aggregate Bond Index 4.5% Bloomberg Barclays Capital U.S. Government: Long Index 17% Bloomberg Barclays Capital U.S. TIPS Index 16% MSCI U.S. REIT Index 9% Russell Microcap Index
12/1/2016 – 12/31/2016	21% Russell 3000 Index 20% MSCI ACWI ex U.S. Index ND 10.5% Bloomberg Barclays Capital U.S. Aggregate Bond Index 4.5% Bloomberg Barclays Capital U.S. Government: Long Index 16% Bloomberg Barclays Capital U.S. TIPS Index 16% MSCI U.S. REIT Index 9% Russell Microcap Index 3% Custom Global Options Benchmark
1/1/2017 – 1/31/2017	20% Russell 3000 Index 20% MSCI ACWI ex U.S. Index ND 10.5% Bloomberg Barclays Capital U.S. Aggregate Bond Index 4.5% Bloomberg Barclays Capital U.S. Government: Long Index 13% Bloomberg Barclays Capital U.S. TIPS Index 16% MSCI U.S. REIT Index 9% Russell Microcap Index 7% Custom Global Options Benchmark

Time Period	Total Fund Policy Benchmark
2/1/2017 – 2/28/2017	20% Russell 3000 Index 20% MSCI ACWI ex U.S. Index ND 4.5% Bloomberg Barclays Capital U.S. Aggregate Bond Index 4.5% Bloomberg Barclays Capital U.S. Government: Long Index 6% Credit Suisse Managed Futures Liquid Index (15% Volatility) 13% Bloomberg Barclays Capital U.S. TIPS Index 16% MSCI U.S. REIT Index 9% Russell Microcap Index 7% Custom Global Options Benchmark
3/1/2017 – 6/30/2017	20% Russell 3000 Index 20% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 6% Bloomberg Barclays Capital U.S. Government: Long Index 6% Credit Suisse Managed Futures Liquid Index (15% Volatility) 13% Bloomberg Barclays Capital U.S. TIPS Index 16% MSCI U.S. REIT Index 9% Russell Microcap Index 7% Custom Global Options Benchmark
7/1/2017 – 7/31/17	20% Russell 3000 Index 20% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 6% Bloomberg Barclays Capital U.S. Government: Long Index 6% Credit Suisse Managed Futures Liquid Index (15% Volatility) 13% Bloomberg Barclays Capital U.S. TIPS Index 13% MSCI U.S. REIT Index 3% Private Markets Transition Benchmark* 9% Russell Microcap Index 7% Custom Global Options Benchmark

Time Period	Total Fund Policy Benchmark
8/1/2017 – 9/30/2017	20% Russell 3000 Index 20% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 7% Bloomberg Barclays Capital U.S. Government: Long Index 7% Credit Suisse Managed Futures Liquid Index (15% Volatility) 11% Bloomberg Barclays Capital U.S. TIPS Index 13% MSCI U.S. REIT Index 3% Private Markets Transition Benchmark* 9% Russell Microcap Index 7% Custom Global Options Benchmark
10/1/2017 – 12/31/2017	20% Russell 3000 Index 20% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 7% Bloomberg Barclays Capital U.S. Government: Long Index 7% Credit Suisse Managed Futures Liquid Index (15% Volatility) 11% Bloomberg Barclays Capital U.S. TIPS Index 13% MSCI U.S. REIT Index 3% NCREIF ODCE Index Net (quarter lag) 3% Private Markets Transition Benchmark* 9% Russell Microcap Index 7% Custom Global Options Benchmark
4/1/2018 – 6/30/2018	20% Russell 3000 Index 20% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 7% Bloomberg Barclays Capital U.S. Government: Long Index 7% Credit Suisse Managed Futures Liquid Index (15% Volatility) 10.5% Bloomberg Barclays Capital U.S. TIPS Index 9% MSCI U.S. REIT Index 7% NCREIF ODCE Index Net (quarter lag) 9% Russell Microcap Index 0.5% Private Markets Transition Benchmark* 7% Custom Global Options Benchmark

Time Period	Total Fund Policy Benchmark
7/1/2018 – 9/30/2018	20% Russell 3000 Index 20% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 7% Bloomberg Barclays Capital U.S. Government: Long Index 7% Credit Suisse Managed Futures Liquid Index (15% Volatility) 10.5% Bloomberg Barclays Capital U.S. TIPS Index 8% MSCI U.S. REIT Index 7% NCREIF ODCE Index Net (quarter lag) 9% Russell Microcap Index 1.0% Private Markets Transition Benchmark* 0.5% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark
10/1/2018 – 10/31/2018	20% Russell 3000 Index 20% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 7% Bloomberg Barclays Capital U.S. Government: Long Index 7% Credit Suisse Managed Futures Liquid Index (15% Volatility) 8% Bloomberg Barclays Capital U.S. TIPS Index 8% MSCI U.S. REIT Index 8% NCREIF ODCE Index Net (quarter lag) 9% Russell Microcap Index 0.5% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 2.5% Custom Alternative Risk Premia Benchmark

Time Period	Total Fund Policy Benchmark
11/1/2018 – 12/31/2018	19% Russell 3000 Index 19% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 7% Bloomberg Barclays Capital U.S. Government: Long Index 7% Credit Suisse Managed Futures Liquid Index (15% Volatility) 8% Bloomberg Barclays Capital U.S. TIPS Index 7% MSCI U.S. REIT Index 8% NCREIF ODCE Index Net (quarter lag) 9% Russell Microcap Index 0.5% Private Markets Transition Benchmark* 0.5% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark
1/1/2019 – 3/31/2019	19% Russell 3000 Index 19% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 7% Bloomberg Barclays Capital U.S. Government: Long Index 7% Credit Suisse Managed Futures Liquid Index (15% Volatility) 8% Bloomberg Barclays Capital U.S. TIPS Index 7% MSCI U.S. REIT Index 8.5% NCREIF ODCE Index Net (quarter lag) 9% Russell Microcap Index 0.5% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark

Time Period	Total Fund Policy Benchmark
4/1/2019 – 6/30/2019	19% Russell 3000 Index 19% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 7% Bloomberg Barclays Capital U.S. Government: Long Index 7% Credit Suisse Managed Futures Liquid Index (15% Volatility) 8% Bloomberg Barclays Capital U.S. TIPS Index 5% MSCI U.S. REIT Index 8.5% NCREIF ODCE Index Net (quarter lag) 9% Russell Microcap Index 0.5% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 2.0% Private Markets Transition Benchmark*
7/1/2019 – 9/30/2019	19% Russell 3000 Index 19% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 7% Bloomberg Barclays Capital U.S. Government: Long Index 8% Credit Suisse Managed Futures Liquid Index (15% Volatility) 7% Bloomberg Barclays Capital U.S. TIPS Index 4% MSCI U.S. REIT Index 10% NCREIF ODCE Index Net (quarter lag) 9% Russell Microcap Index 1% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 1% Private Markets Transition Benchmark*

Time Period	Total Fund Policy Benchmark
10/1/2019 – 12/31/2019	19% Russell 3000 Index 19% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 6% Bloomberg Barclays Capital U.S. Government: Long Index 8% Credit Suisse Managed Futures Liquid Index (15% Volatility) 7% Bloomberg Barclays Capital U.S. TIPS Index 4% MSCI U.S. REIT Index 10% NCREIF ODCE Index Net (quarter lag) 9% Russell Microcap Index 1% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 1% Private Markets Transition Benchmark* 1% Custom Private Credit Index
1/1/2020- 3/31/20	19% Russell 3000 Index 19% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 6% Bloomberg Barclays Capital U.S. Government: Long Index 8% Credit Suisse Managed Futures Liquid Index (15% Volatility) 6% Bloomberg Barclays Capital U.S. TIPS Index 4% MSCI U.S. REIT Index 10% NCREIF ODCE Index Net (quarter lag) 9% Russell Microcap Index 2% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 1% Private Markets Transition Benchmark* 1% Custom Private Credit Index

Time Period	Total Fund Policy Benchmark
4/1/2020-6/30/2020	19% Russell 3000 Index 19% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 6% Bloomberg Barclays Capital U.S. Government: Long Index 9% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 3% MSCI U.S. REIT Index 10% NCREIF ODCE Index Net (quarter lag) 8% Russell Microcap Index 2% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 1% Private Markets Transition Benchmark* 2% Custom Private Credit Index
7/1/2020-9/30/2020	18.5% Russell 3000 Index 18.5% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 6% Bloomberg Barclays Capital U.S. Government: Long Index 8% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 3% MSCI U.S. REIT Index 10% NCREIF ODCE Index Net (quarter lag) 8% Russell Microcap Index 3% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 3% Custom Private Credit Index 2% Reinsurance Benchmark

Time Period	Total Fund Policy Benchmark
10/1/2020-12/31/2020	18.0% Russell 3000 Index 18.0% MSCI ACWI ex U.S. Index ND 3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 6% Bloomberg Barclays Capital U.S. Government: Long Index 8% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 3% MSCI U.S. REIT Index 10% NCREIF ODCE Index Net (quarter lag) 8% Russell Microcap Index 3% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 3% Custom Private Credit Index 2% Reinsurance Benchmark 1% Private Markets Transition Benchmark*
1/1/2021-3/31/2021	21.1% Russell 3000 Index 15.4% MSCI ACWI ex U.S. Index ND 6% Bloomberg Barclays Capital U.S. Government: Long Index 9% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 2% MSCI U.S. REIT Index 10% NCREIF ODCE Index Net (quarter lag) 7.5% Russell Microcap Index 4% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 3.5% Custom Private Credit Index 4% Reinsurance Benchmark 0.5% Private Markets Transition Benchmark*

Time Period	Total Fund Policy Benchmark
4/1/2021-6/30/2021	20.8% Russell 3000 Index 15.2% MSCI ACWI ex U.S. Index ND 6% Bloomberg Barclays Capital U.S. Government: Long Index 9% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 2% MSCI U.S. REIT Index 9.5% NCREIF ODCE Index Net (quarter lag) 0.5% NCREIF ODCE Index net + 2% (quarter lag) 7.5% Russell Microcap Index 4.5% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 3.5% Custom Private Credit Index 4% Reinsurance Benchmark 0.5% Private Markets Transition Benchmark*
7/1/2021-9/30/2021	20.3% Russell 3000 Index 14.7% MSCI ACWI ex U.S. Index ND 6% Bloomberg Barclays Capital U.S. Government: Long Index 9% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 2% MSCI U.S. REIT Index 9.5% NCREIF ODCE Index Net (quarter lag) 0.5% NCREIF ODCE Index net + 2% (quarter lag) 7.5% Russell Microcap Index 5% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 3.5% Custom Private Credit Index 4% Reinsurance Benchmark 1% Private Markets Transition Benchmark*

Time Period	Total Fund Policy Benchmark
10/01/2021-12/31/2021:	20.3% Russell 3000 Index 14.7% MSCI ACWI ex U.S. Index ND 6% Bloomberg Barclays Capital U.S. Government: Long Index 9% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 1.5% MSCI U.S. REIT Index 9.5% NCREIF ODCE Index Net (quarter lag) 0.5% NCREIF ODCE Index net + 2% (quarter lag) 7.5% Russell Microcap Index 6% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 3.5% Custom Private Credit Index 4% Reinsurance Benchmark 0.5% Private Markets Transition Benchmark*
1/1/2022-3/31/2022	19.1% Russell 3000 Index 13.9% MSCI ACWI ex U.S. Index ND 6% Bloomberg Barclays Capital U.S. Government: Long Index 9% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 1% MSCI U.S. REIT Index 9.5% NCREIF ODCE Index Net (quarter lag) 0.5% NCREIF ODCE Index net + 2% (quarter lag) 7.5% Russell Microcap Index 6.5% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 3.5% Custom Private Credit Index 5% Reinsurance Benchmark 1.5% Private Markets Transition Benchmark*

Time Period	Total Fund Policy Benchmark
4/1/2022-6/30/2022	17.4% Russell 3000 Index 12.6% MSCI ACWI ex U.S. Index ND 6% Bloomberg Barclays Capital U.S. Government: Long Index 9.5% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 1% MSCI U.S. REIT Index 9.5% NCREIF ODCE Index Net (quarter lag) 0.5% NCREIF ODCE Index net + 2% (quarter lag) 7.5% Russell Microcap Index 7.5% Russell 3000 + 3% (quarter lag) 7% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 4% Custom Private Credit Index 5% Reinsurance Benchmark 2.5% Private Markets Transition Benchmark*
7/1/2022-9/30/2022	17.4% Russell 3000 Index 12.6% MSCI ACWI ex U.S. Index ND 6% Bloomberg Barclays Capital U.S. Government: Long Index 10% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 0.5% MSCI U.S. REIT Index 8.5% NCREIF ODCE Index Net (quarter lag) 0.5% NCREIF ODCE Index net + 2% (quarter lag) 6% Russell Microcap Index 9% Russell 3000 + 3% (quarter lag) 6.5% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 5% Custom Private Credit Index 5% Reinsurance Benchmark 3% Private Markets Transition Benchmark*

Time Period	Total Fund Policy Benchmark
10/1/2022-12/31/2022	17.4% Russell 3000 Index 12.6% MSCI ACWI ex U.S. Index ND 5.5% Bloomberg Barclays Capital U.S. Government: Long Index 10% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 8% NCREIF ODCE Index Net (quarter lag) 1% NCREIF ODCE Index net + 2% (quarter lag) 6% Russell Microcap Index 9.5% Russell 3000 + 3% (quarter lag) 6.5% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 6% Custom Private Credit Index 1.5% CPI + 3% 5% Reinsurance Benchmark 1% Private Markets Transition Benchmark*
1/1/2023-3/31/2023	17.4% Russell 3000 Index 12.6% MSCI ACWI ex U.S. Index ND 5.5% Bloomberg Barclays Capital U.S. Government: Long Index 10% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 8% NCREIF ODCE Index Net (quarter lag) 1% NCREIF ODCE Index net + 2% (quarter lag) 6% Russell Microcap Index 10% Russell 3000 + 3% (quarter lag) 6.5% Custom Global Options Benchmark 5% Custom Alternative Risk Premia Benchmark 6.5% Custom Private Credit Index 1.5% CPI + 3% 5% Reinsurance Benchmark 0% Private Markets Transition Benchmark*

Time Period	Total Fund Policy Benchmark
4/1/2023-6/30/2023	17.4% Russell 3000 Index 12.6% MSCI ACWI ex U.S. Index ND 5.5% Bloomberg Barclays Capital U.S. Government: Long Index 10% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 8% NCREIF ODCE Index Net (quarter lag) 1% NCREIF ODCE Index net + 2% (quarter lag) 5.5% Russell Microcap Index 10% Russell 3000 + 3% (quarter lag) 6% Custom Global Options Benchmark 2.5% Custom Alternative Risk Premia Benchmark 2.5% ICE BofA 0-1 US Treasury Notes & Bonds 6.5% Custom Private Credit Index 1.5% CPI + 3% 5% Reinsurance Benchmark 0.5% Private Markets Transition Benchmark*
7/1/2023-6/30/2024	16.8% Russell 3000 Index 12.2% MSCI ACWI ex U.S. Index ND 5.5% Bloomberg Barclays Capital U.S. Government: Long Index 10% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 8% NCREIF ODCE Index Net (quarter lag) 1% NCREIF ODCE Index net + 2% (quarter lag) 5% Russell Microcap Index 10.5% Russell 3000 + 3% (quarter lag) 5.5% Custom Global Options Benchmark 2.5% Custom Alternative Risk Premia Benchmark 7% Custom Private Credit Index 1.5% CPI + 3% 5% Reinsurance Benchmark 2% CBOE EurekaHedge Long Volatility Index 2.5% ICE BofA 0-1 US Treasury Notes & Bonds

Time Period	Total Fund Policy Benchmark
7/1/2024-Present	17.4% Russell 3000 Index 12.6% MSCI ACWI ex U.S. Index ND 5.5% Bloomberg Barclays Capital U.S. Government: Long Index 10% Credit Suisse Managed Futures Liquid Index (15% Volatility) 5% Bloomberg Barclays Capital U.S. TIPS Index 5.5% NCREIF ODCE Index Net (quarter lag) 1.5% NCREIF ODCE Index net + 2% (quarter lag) 5% Russell Microcap Index 10.5% Russell 3000 + 3% (quarter lag) 5.5% Custom Global Options Benchmark 3.0% Custom Alternative Risk Premia Benchmark 7% Custom Private Credit Index 0.5% Private Markets Transition Benchmark 2.0% CPI + 3% 5% Reinsurance Benchmark 2% CBOE EurekaHedge Long Volatility Index 2.0% ICE BofA 0-1 US Treasury Notes & Bonds

*Private Markets Transition Benchmark = a static 0% return during the initial funding quarter

Strategic Class Benchmarks

Time Period	Aggressive Growth Class Benchmark
1/1/2015 – 3/31/2018	100% Russell Microcap Index
4/1/2018 – 6/30/2018	94.7% Russell Microcap Index 5.3% Private Markets Transition Benchmark*
7/1/2018 – 3/31/2019	94.7% Russell Microcap Index 5.3% Russell 3000 + 3% (quarter lag)
4/1/2019 – 6/30/2019	90% Russell Microcap Index 5% Russell 3000 + 3% (quarter lag) 5% Private Markets Transition Benchmark*
7/1/2019 – 9/30/2019	90% Russell Microcap Index 10% Russell 3000 + 3% (quarter lag)
10/1/2019 – 12/31/2019	81.8% Russell Microcap Index 9.1% Russell 3000 + 3% (quarter lag) 9.1% Private Markets Transition Benchmark*
1/1/2020 – 6/30/2020	81.8% Russell Microcap Index 18.2% Russell 3000 + 3% (quarter lag)
7/1/2020 – 9/30/2020	72.7% Russell Microcap Index 27.3% Russell 3000 + 3% (quarter lag)
10/1/2020 – 12/31/2020	65.2% Russell Microcap Index 26.1% Russell 3000 + 3% (quarter lag) 8.7% Private Markets Transition Benchmark*
1/1/2021 – 3/31/2021	62.5% Russell Microcap Index 33.3% Russell 3000 + 3% (quarter lag) 4.2% Private Markets Transition Benchmark*
4/1/2021 – 6/30/2021	60.0% Russell Microcap Index 36.0% Russell 3000 + 3% (quarter lag) 4.0% Private Markets Transition Benchmark*
7/1/2021 – 9/30/2021	55.6% Russell Microcap Index 37.0% Russell 3000 + 3% (quarter lag) 7.4% Private Markets Transition Benchmark*

Time Period	Aggressive Growth Class Benchmark
10/01/2021 – 12/31/2021	53.57% Russell Microcap Index 42.86% Russell 3000 + 3% (quarter lag) 3.57% Private Markets Transition Benchmark*
1/1/2022 – 3/31/2022	50.0% Russell Microcap Index 43.33% Russell 3000 + 3% (quarter lag) 6.67% Private Markets Transition Benchmark*
4/1/2022 – 6/30/2022	45.45% Russell Microcap Index 45.45% Russell 3000 + 3% (quarter lag) 9.1% Private Markets Transition Benchmark*
7/1/2022 – 9/30/2022	38.71% Russell Microcap Index 58.06% Russell 3000 + 3% (quarter lag) 3.23% Private Markets Transition Benchmark*
10/1/2022 – 12/31/2022	37.5% Russell Microcap Index 59.375% Russell 3000 + 3% (quarter lag) 3.125% Private Markets Transition Benchmark*
1/1/2023 – 3/31/2023	37.5% Russell Microcap Index 62.5% Russell 3000 + 3% (quarter lag) 0% Private Markets Transition Benchmark*
4/1/2023 – 6/30/2023	34.38% Russell Microcap Index 62.5% Russell 3000 + 3% (quarter lag) 3.12% Private Markets Transition Benchmark*
7/1/2023-Present	32.26% Russell Microcap Index 67.74% Russell 3000 + 3% (quarter lag)

Time Period	Traditional Growth Class Benchmark
6/30/2011 – 2/28/2012	50% MSCI U.S. Broad Market Index 30% FTSE All-World ex U.S. Index 20% MSCI U.S. REIT Index
3/1/2012 – 6/30/2014	42.4% MSCI U.S. Broad Market Index 25.8% FTSE All-World ex U.S. Index 31.8% MSCI U.S. REIT Index
7/1/2014 – 12/31/2014	42.4% MSCI U.S. Broad Market Index 25.8% FTSE Global All Cap ex U.S. Index 31.8% MSCI U.S. REIT Index

Time Period	Traditional Growth Class Benchmark
1/1/2015 – 5/31/2015	40.7% MSCI U.S. Broad Market Index 32.2% FTSE Global All Cap ex U.S. Index 27.1% MSCI U.S. REIT Index
6/1/2015 – 11/30/2016	40.7% Russell 3000 Index 32.2% MSCI ACWI ex U.S. Index 27.1% MSCI U.S. REIT Index
12/1/2016 – 12/31/2016	36.8% Russell 3000 Index 35.1% MSCI ACWI ex U.S. Index 28.1% MSCI U.S. REIT Index
1/1/2017 – 6/30/2017	35.7% Russell 3000 Index 35.7% MSCI ACWI ex U.S. Index 28.6% MSCI U.S. REIT Index
7/1/2017 – 9/30/2017	37.7% Russell 3000 Index 37.7% MSCI ACWI ex U.S. Index 24.6% MSCI U.S. REIT Index
10/1/2017 – 12/31/2017	38.8% Russell 3000 Index 38.8% MSCI ACWI ex U.S. Index 22.4% MSCI U.S. REIT Index
1/1/2018 – 6/30/2018	40.8% Russell 3000 Index 40.8% MSCI ACWI ex U.S. Index 18.4% MSCI U.S. REIT Index
7/1/2018 – 10/31/2018	41.7% Russell 3000 Index 41.7% MSCI ACWI ex U.S. Index 16.6% MSCI U.S. REIT Index
11/1/2018 – 3/31/2019	42.2% Russell 3000 Index 42.2% MSCI ACWI ex U.S. Index 15.6% MSCI U.S. REIT Index
4/1/2019 – 6/30/2019	44.2% Russell 3000 Index 44.2% MSCI ACWI ex U.S. Index 11.6% MSCI U.S. REIT Index
7/1/2019 – 6/30/2020	45.2% Russell 3000 Index 45.2% MSCI ACWI ex U.S. Index 9.5% MSCI U.S. REIT Index

Time Period	Traditional Growth Class Benchmark
7/1/2020 - 9/30/2020	46.3% Russell 3000 Index 46.3% MSCI ACWI ex U.S. Index 7.5% MSCI U.S. REIT Index
10/1/2020 - 12/31/2020	46.2% Russell 3000 Index 46.2% MSCI ACWI ex U.S. Index 7.7% MSCI U.S. REIT Index
1/1/2021 - 3/31/2021	54.8% Russell 3000 Index 40.0% MSCI ACWI ex U.S. Index 5.2% MSCI U.S. REIT Index
4/1/2021 - 6/30/2021	54.7% Russell 3000 Index 40.0% MSCI ACWI ex U.S. Index 5.3% MSCI U.S. REIT Index
7/1/2021 - 9/30/2021	54.9% Russell 3000 Index 39.7% MSCI ACWI ex U.S. Index 5.4% MSCI U.S. REIT Index
10/01/2021 - 12/31/2021	55.6% Russell 3000 Index 40.3% MSCI ACWI ex U.S. Index 4.1% MSCI U.S. REIT Index
1/1/2022 - 3/31/2022	56.18% Russell 3000 Index 40.88% MSCI ACWI ex U.S. Index 2.94% MSCI U.S. REIT Index
4/1/2022 - 6/30/2022	56.13% Russell 3000 Index 40.645% MSCI ACWI ex U.S. Index 3.225% MSCI U.S. REIT Index
7/1/2022 - 9/30/2022	57.05% Russell 3000 Index 41.31% MSCI ACWI ex U.S. Index 1.64% MSCI U.S. REIT Index
10/1/2022 - 6/30/2023	58% Russell 3000 Index 42% MSCI ACWI ex U.S. Index 4.1% MSCI U.S. REIT Index
7/1/2023- 6/30/2024	57.93% Russell 3000 Index 42.07% MSCI ACWI ex U.S. Index
7/1/2024- Present	58.00% Russell 3000 Index 42.00% MSCI ACWI ex U.S. Index

Time Period	Stabilized Growth Class Benchmark
12/1/2016 – 6/30/2017	100.0% Custom Global Options Benchmark
7/1/2017 – 9/30/2017	70.0% Custom Global Options Benchmark 30.0% Private Markets Transition Benchmark*
10/1/2017 – 12/31/2017	60.9% Custom Global Options Benchmark 13.0% Private Markets Transition Benchmark* 26.1% NCREIF ODCE Index Net (quarter lag)
1/1/2018 – 3/31/2018	50.0% Custom Global Options Benchmark 17.9% Private Markets Transition Benchmark* 32.1% NCREIF ODCE Index Net (quarter lag)
4/1/2018 – 6/30/2018	50.0% Custom Global Options Benchmark 50.0% NCREIF ODCE Index Net (quarter lag)
7/1/2018 – 9/30/2018	46.7% Custom Global Options Benchmark 6.6% Private Markets Transition Benchmark* 46.7% NCREIF ODCE Index Net (quarter lag)
10/1/2018 – 10/31/2018	46.7% Custom Global Options Benchmark 53.3% NCREIF ODCE Index Net (quarter lag)
11/1/2018 – 12/31/2018	45.2% Custom Global Options Benchmark 3.2% Private Markets Transition Benchmark* 51.6% NCREIF ODCE Index Net (quarter lag)
1/1/2019 – 3/31/2019	45.2% Custom Global Options Benchmark 54.8% NCREIF ODCE Index Net (quarter lag)
4/1/2019 – 6/30/2019	41.2% Custom Global Options Benchmark 8.8% Private Markets Transition Benchmark* 50.0% NCREIF ODCE Index Net (quarter lag)
7/1/2019 – 9/30/2019	38.9% Custom Global Options Benchmark 5.6% Private Markets Transition Benchmark* 55.6% NCREIF ODCE Index Net (quarter lag)
10/1/2019 – 12/31/2019	38.9% Custom Global Options Benchmark 5.6% Custom Private Credit Benchmark 55.6% NCREIF ODCE Index Net (quarter lag)
1/1/2020 – 6/30/2020	36.8% Custom Global Options Benchmark 5.26% Custom Private Credit Benchmark 5.3% Private Markets Transition Benchmark* 52.6% NCREIF ODCE Index Net (quarter lag)

Time Period	Stabilized Growth Class Benchmark
7/1/2020 - 9/30/2020	35.0% Custom Global Options Benchmark 15.0% Custom Private Credit Benchmark 50.0% NCREIF ODCE Index Net (quarter lag)
10/1/2020 - 12/31/2020	34.2% Custom Global Options Benchmark 14.6% Custom Private Credit Benchmark 2.4% Private Markets Transition Benchmark* 48.8% NCREIF ODCE Index Net (quarter lag)
1/1/2021 - 3/31/2021	34.2% Custom Global Options Benchmark 17.1% Custom Private Credit Benchmark 48.8% NCREIF ODCE Index Net (quarter lag)
4/1/2021 - 12/31/2021	34.2% Custom Global Options Benchmark 17.1% Custom Private Credit Benchmark 46.3% NCREIF ODCE Index Net (quarter lag) 2.4% NCREIF ODCE Index Net + 2% (quarter lag)
1/1/2022 - 3/31/2022	33.3% Custom Global Options Benchmark 16.7% Custom Private Credit Benchmark 45.2% NCREIF ODCE Index Net (quarter lag) 2.4% NCREIF ODCE Index Net + 2% (quarter lag) 2.4% Private Markets Transition Benchmark
4/1/2022 - 6/30/2022	31.8% Custom Global Options Benchmark 18.2% Custom Private Credit Benchmark 43.2% NCREIF ODCE Index Net (quarter lag) 2.3% NCREIF ODCE Index Net + 2% (quarter lag) 4.6% Private Markets Transition Benchmark
7/1/2022 - 9/30/2022	28.3% Custom Global Options Benchmark 21.7% Custom Private Credit Benchmark 37% NCREIF ODCE Index Net (quarter lag) 2.2% NCREIF ODCE Index Net + 2% (quarter lag) 6.5% Private Markets Transition Benchmark
10/1/2022 - 12/31/2022	27.7% Custom Global Options Benchmark 25.5% Custom Private Credit Benchmark 34% NCREIF ODCE Index Net (quarter lag) 4.3% NCREIF ODCE Index Net + 2% (quarter lag) 6.4% Consumer Price Index + 3%

Time Period	Stabilized Growth Class Benchmark
1/1/2023 – 3/31/2023	27.7% Custom Global Options Benchmark 27.7% Custom Private Credit Benchmark 34% NCREIF ODCE Index Net (quarter lag) 4.3% NCREIF ODCE Index Net + 2% (quarter lag) 6.4% Consumer Price Index + 3%
4/1/2023 – 6/30/2023	25.53% Custom Global Options Benchmark 27.66% Custom Private Credit Benchmark 34.04% NCREIF ODCE Index Net (quarter lag) 4.26% NCREIF ODCE Index Net + 2% (quarter lag) 2.13% Private Markets Transition Benchmark 6.38% Consumer Price Index +3%
7/1/2023 – 6/30/2024	23.91% Custom Global Options Benchmark 30.43% Custom Private Credit Benchmark 34.78% NCREIF ODCE Index Net (quarter lag) 4.35% NCREIF ODCE Index Net + 2% (quarter lag) 6.52% Consumer Price Index +3%
7/1/2023 – Present	25.00% Custom Global Options Benchmark 31.82% Custom Private Credit Benchmark 25.00% NCREIF ODCE Index Net (quarter lag) 6.82% NCREIF ODCE Index Net + 2% (quarter lag) 9.09% Consumer Price Index +3% 2.27% Private Markets Transition Benchmark

Time Period	Diversifying Class Benchmark
6/30/2011 – 2/28/2012	70.0% Bloomberg Barclays Capital U.S. Aggregate Bond Index 30.0% Bloomberg Barclays Capital U.S. TIPS Index
3/1/2012 – 12/31/2014	44.1% Bloomberg Barclays Capital U.S. Aggregate Bond Index 55.9% Bloomberg Barclays Capital U.S. TIPS Index
1/1/2015 – 10/31/2016	46.9% Bloomberg Barclays Capital U.S. Aggregate Bond Index 53.1% Bloomberg Barclays Capital U.S. TIPS Index
11/1/2016 – 11/30/2016	32.8% Bloomberg Barclays Capital U.S. Aggregate Bond Index 53.1% Bloomberg Barclays Capital U.S. TIPS Index 14.1% Bloomberg Barclays Capital U.S. Government Long Index
12/1/2016 – 12/31/2016	33.9% Bloomberg Barclays Capital U.S. Aggregate Bond Index 51.6% Bloomberg Barclays Capital U.S. TIPS Index 14.5% Bloomberg Barclays Capital U.S. Government Long Index
1/1/2017 – 1/31/2017	37.5% Bloomberg Barclays Capital U.S. Aggregate Bond Index 46.4% Bloomberg Barclays Capital U.S. TIPS Index 16.1% Bloomberg Barclays Capital U.S. Government Long Index
2/1/2017 – 2/28/2017	16.1% Bloomberg Barclays Capital U.S. Aggregate Bond Index 46.4% Bloomberg Barclays Capital U.S. TIPS Index 16.1% Bloomberg Barclays Capital U.S. Government Long Index 21.4% Credit Suisse Managed Futures Liquid Index (15% Volatility)
3/1/2017 – 7/31/2017	10.7% Bloomberg Barclays Capital U.S. Aggregate Bond Index 46.5% Bloomberg Barclays Capital U.S. TIPS Index 21.4% Bloomberg Barclays Capital U.S. Government Long Index 21.4% Credit Suisse Managed Futures Liquid Index (15% Volatility)
8/1/2017 – 3/31/2018	10.7% Bloomberg Barclays Capital U.S. Aggregate Bond Index 39.3% Bloomberg Barclays Capital U.S. TIPS Index 25.0% Bloomberg Barclays Capital U.S. Government Long Index 25.0% Credit Suisse Managed Futures Liquid Index (15% Volatility)
4/1/2018 – 9/30/2018	10.9% Bloomberg Barclays Capital U.S. Aggregate Bond Index 38.1% Bloomberg Barclays Capital U.S. TIPS Index 25.5% Bloomberg Barclays Capital U.S. Government Long Index 25.5% Credit Suisse Managed Futures Liquid Index (15% Volatility)

Time Period	Diversifying Class Benchmark
10/1/2018 – 10/31/2018	10.9% Bloomberg Barclays Capital U.S. Aggregate Bond Index 29.1% Bloomberg Barclays Capital U.S. TIPS Index 25.5% Bloomberg Barclays Capital U.S. Government Long Index 25.5% Credit Suisse Managed Futures Liquid Index (15% Volatility) 9.0% ICE BofA Merrill Lynch 3-month T-Bills + 2%
11/1/2018 – 6/30/2019	10.0% Bloomberg Barclays Capital U.S. Aggregate Bond Index 26.7% Bloomberg Barclays Capital U.S. TIPS Index 23.3% Bloomberg Barclays Capital U.S. Government Long Index 23.3% Credit Suisse Managed Futures Liquid Index (15% Volatility) 16.7% ICE BofA Merrill Lynch 3-month T-Bills + 2%
7/1/2019 – 9/30/2019	10.0% Bloomberg Barclays Capital U.S. Aggregate Bond Index 23.3% Bloomberg Barclays Capital U.S. TIPS Index 23.3% Bloomberg Barclays Capital U.S. Government Long Index 26.7% Credit Suisse Managed Futures Liquid Index (15% Volatility) 16.7% ICE BofA Merrill Lynch 3-month T-Bills + 2%
10/1/2019 – 12/31/2019	10.3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 24.1% Bloomberg Barclays Capital U.S. TIPS Index 20.7% Bloomberg Barclays Capital U.S. Government Long Index 27.6% Credit Suisse Managed Futures Liquid Index (15% Volatility) 17.2% ICE BofA Merrill Lynch 3-month T-Bills + 2%
1/1/2020- 6/30/2020	10.7% Bloomberg Barclays Capital U.S. Aggregate Bond Index 21.4% Bloomberg Barclays Capital U.S. TIPS Index 21.4% Bloomberg Barclays Capital U.S. Government Long Index 28.6% Credit Suisse Managed Futures Liquid Index (15% Volatility) 17.9% ICE BofA Merrill Lynch 3-month T-Bills + 2%
7/1/2020-12/31/2020	10.3% Bloomberg Barclays Capital U.S. Aggregate Bond Index 17.2% Bloomberg Barclays Capital U.S. TIPS Index 20.7% Bloomberg Barclays Capital U.S. Government Long Index 27.6% Credit Suisse Managed Futures Liquid Index (15% Volatility) 17.2% ICE BofA Merrill Lynch 3-month T-Bills + 2% 6.9% Swiss RE Global Cat Bond Index

Time Period	Diversifying Class Benchmark
1/1/2021- 12/31/2021	17.2% Bloomberg Barclays Capital U.S. TIPS Index 20.7% Bloomberg Barclays Capital U.S. Government Long Index 31.0% Credit Suisse Managed Futures Liquid Index (15% Volatility) 17.2% ICE BofA Merrill Lynch 3-month T-Bills + 2% 13.8% Swiss RE Global Cat Bond Index
1/1/2022 – 3/31/2022	16.7% Bloomberg Barclays Capital U.S. TIPS Index 20% Bloomberg Barclays Capital U.S. Government Long Index 30% Credit Suisse Managed Futures Liquid Index (15% Volatility) 16.7% ICE BofA Merrill Lynch 3-month T-Bills + 2% 16.7% Swiss RE Global Cat Bond Index
4/1/2022 – 9/30/2022	16.4% Bloomberg Barclays Capital U.S. TIPS Index 19.7% Bloomberg Barclays Capital U.S. Government Long Index 31.2% Credit Suisse Managed Futures Liquid Index (15% Volatility) 16.4% ICE BofA Merrill Lynch 3-month T-Bills + 2% 16.4% Swiss RE Global Cat Bond Index
10/1/2022 – 12/31/2022	16.1% Bloomberg Barclays Capital U.S. TIPS Index 19.4% Bloomberg Barclays Capital U.S. Government Long Index 32.3% Credit Suisse Managed Futures Liquid Index (15% Volatility) 16.1% ICE BofA Merrill Lynch 3-month T-Bills + 2% 16.1% Swiss RE Global Cat Bond Index
1/1/2023 – 3/31/2023	16.4% Bloomberg Barclays Capital U.S. TIPS Index 18% Bloomberg Barclays Capital U.S. Government Long Index 32.8% Credit Suisse Managed Futures Liquid Index (15% Volatility) 16.4% ICE BofA Merrill Lynch 3-month T-Bills + 2% 16.4% Swiss RE Global Cat Bond Index
4/1/2023 – 6/30/2023	16.4% Bloomberg Barclays Capital U.S. TIPS Index 18% Bloomberg Barclays Capital U.S. Government Long Index 32.8% Credit Suisse Managed Futures Liquid Index (15% Volatility) 8.2% ICE BofA Merrill Lynch 3-month T-Bills + 2% 16.4% Swiss RE Global Cat Bond Index 8.2% ICE BofA 0-1 US Treasury Notes & Bonds

Time Period	Diversifying Class Benchmark
7/1/2023 – 6/30/2024	16.67% Bloomberg Barclays Capital U.S. TIPS Index 18.33% Bloomberg Barclays Capital U.S. Government Long Index 33.33% Credit Suisse Managed Futures Liquid Index (15% Volatility) 8.33% ICE BofA Merrill Lynch 3-month T-Bills + 2% 16.67% Swiss RE Global Cat Bond Index 6.67% CBOE EurekaHedge Long Volatility Index
7/1/2024 – Present	16.39% Bloomberg Barclays Capital U.S. TIPS Index 18.03% Bloomberg Barclays Capital U.S. Government Long Index 32.79% Credit Suisse Managed Futures Liquid Index (15% Volatility) 9.84% ICE BofA Merrill Lynch 3-month T-Bills + 2% 16.39% Swiss RE Global Cat Bond Index 6.56% CBOE EurekaHedge Long Volatility Index

*Private Markets Transition Benchmark = a static 0% return during the initial funding quarter

Custom Strategy/Mandate Benchmarks

Time Period	Custom Global Options Benchmark
12/1/2016 – Current	50.0% CBOE S&P 500 PutWrite Index (PUT) 25.0% MSCI ACWI Ex. U.S. Index ND 25.0% ICE BofA Merrill Lynch 3-month T-Bill Index

Time Period	Custom Alternative Risk Premia Benchmark
10/1/2018 – Current	100% ICE BofA Merrill Lynch 3-month T-Bills + 2%

Time Period	Custom Private Credit Benchmark
10/1/2019 – Current	S&P/LSTA Leveraged Loan Index + 2% (quarter lag)

Time Period	Custom Reinsurance Benchmark
7/1/2020 – Current	Swiss RE Global Catastrophe Index

Description of Funds/Managers

Northern Trust Common Russell 3000 Index Fund - Lending

Objective: The primary objective of the Northern Trust Russell 3000 Equity Index Fund is to approximate the risk and return characteristics of the Russell 3000 Index. This Index is commonly used to represent the broad U.S. equity market.

Strategy: To achieve its objective, the Fund employs a replication technique which generally seeks to hold each index constituent in its proportional index weight. The Fund may make limited use of futures and/or options for the purpose of maintaining equity exposure. This Fund may participate in securities lending.

Northern Trust Common ACWI Ex-US Index Fund - Lending

Objective: The primary objective of the Northern Trust All Country World ex-US Equity Index Fund is to approximate the risk and return characteristics of the MSCI All Country World ex-US (MSCI ACWI ex-US) Index. This Index is commonly used to represent the large and medium cap segment of the non-U.S. equity developed and emerging markets.

Strategy: To achieve its objective, the Fund employs a replication technique which generally seeks to hold each index constituent in its proportional index weight. The Fund may make limited use of futures and/or options for the purpose of maintaining equity exposure. This Fund may participate in securities lending.

BlackRock Inflation Linked Bond Fund

Objective: Seeks to approximate the risk and return characteristics of the Bloomberg US TIPS Index..

Strategy: Invests at least 80% of its assets in inflation-indexed bonds of varying maturities issued by U.S. and non-U.S. governments, their agencies or instrumentalities, and U.S. and non-U.S. corporations.

Vanguard Short-Term Corporate Bond Index Fund (VSTBX)

Objective: Seeks to provide current income with high credit quality while tracking the performance of a market-weighted corporate bond index with a short-term dollar-weighted average maturity.

Strategy: The Fund employs a passively managed and is diversified across the short-term investment-grade US corporate bond market. The Fund invests by sampling the index, meaning that it holds a range of securities that, in aggregate, approximates the full index in terms of key risk factors

and other characteristics. All of the Fund's investments will be selected through the sampling process and at least 80% of the Fund's assets will be invested in bonds included in the index. The Fund maintains a maturity, yield, and duration characteristics that are in-line with the benchmark.

Acuitas Investments (Separate Account)

Acuitas employs a multi-manager platform for investments in the microcap segment. The EUTF portfolio currently consists of 6 managers (Signia, Ranger, Peapod Lane, EAM, Kennedy, and Meros), with a mix of core, value, and growth strategies that ultimately lead to an overall core style (100-200 stocks). The team focuses on manager research, and in particular, seeks managers that have lower assets and are at the beginning of their performance cycle. Their process focuses on the underlying managers' discipline, preferred characteristics, trading style, and consistency. The team has real-time access to all underlying portfolio and is constantly monitoring positions for risk/return characteristics and factor exposures. The team proactively adjusts manager weights in order to avoid unintended bets and deviations. The strategy directly involves one portfolio manager and three analysts, but each underlying strategy involves additional teams.

Gateway (Separate Account)

Gateway manages a global equity-oriented options-based portfolio that provides exposure to global equities and the volatility risk premium. The strategy is solely cash-secured put writing, coupled with discretionary rebalancing as the markets/volatility change. Gateway sells a diversified basket of put options that are roughly at-the-money on average with a weighted average time-to-expiration of 30-50 days.

Geode (Separate Account)

Geode manages a global equity-oriented options-based portfolio that provides exposure to global equities and the volatility risk premium. The strategy can be considered half covered calls and half cash-secured put-writing. Geode sells put and call options on seven global indices, with either equities (calls) or cash (puts) serving as the collateral. The team sells options that are slightly out-of-the-money and diversifies the portfolio across maturities, with approximately 25% of the options positions expiring each week.

Sun Life (Separate Account)

Ryan Labs manages a long duration U.S. Treasury-based mandate. This is an enhanced strategy that is benchmarked to the Bloomberg Barclays Capital U.S. Government: Long Index. As an enhanced index strategy, Ryan Labs seeks to add value over time by allocating a larger portion of the portfolio to U.S. Agency bonds when their yields versus U.S. Treasuries (i.e., yield spread) is materially attractive. This is the only active management decision that Ryan Labs makes, as they seek to stay in-line with the benchmark on a duration basis and do not hold any sectors (e.g., credit) outside of the benchmark.

Kepos (Commingled Fund)

Kepos manages an Alternative Risk Premia mandate that targets a 10% long-term volatility level. The proposed strategy seeks to harvest value, carry, and momentum across broad asset classes (e.g., equity, fixed income, currencies, and commodities). Additionally, Kepos incorporates a single-stock-oriented portfolio that harvests similar risk premia across developed public equities. Kepos generally utilizes a risk-balanced approach across the risk premia that they gain exposure to within the portfolio.

AlphaSimplex Group (Commingled Fund)

AlphaSimplex manages a systematic trend following mandate that targets a 15% long-term volatility level. The strategy varies its volatility target in the range of 9%-19% at any given time. AlphaSimplex utilizes short, medium, and long-term trends and incorporates models that adapt the risk budget according to the relative strength of underlying signals. The strategy primarily utilizes moving averages and regression-based approaches for measuring trends, but machine learning methods are also incorporated in order to modify trend horizon confidence levels. The strategy trades in more than 70 markets/assets across both futures and forwards and emphasizes diversification across the four major market segments (equities, commodities, currencies, and fixed income).

Mount Lucas Management (Separate Account)

Utilizing 3-month and 12-month moving averages of prices, Mount Lucas will buy (go long) a position if its price is above the relevant moving average and will sell (go short) a position if its price is below the relevant moving average. The strategy utilizes 28 futures markets across global fixed income, commodities, currencies, and stock indices. Each of these four market segments are approximately equally risk-weighted based on their historical volatilities. Mount Lucas does not target a specific volatility level but rather utilizes a notional exposure target of 3.5X (note: this target will vary at times if the 3-month and 12-month signals for a specific futures instrument are in opposite directions and thus cancel out). This methodology is expected to achieve a long-term average volatility near 15%.

Pillar Enso (Commingled Fund)

This manager invests in various forms of insurance-linked securities (e.g., catastrophe bonds, collateralized reinsurance, etc.) where returns/premiums are generally sourced from natural catastrophe insurance policies or derivatives thereof.

Nephila (Commingled Fund)

This manager invests in various forms of insurance-linked securities (e.g., catastrophe bonds, collateralized reinsurance, etc.) where returns/premiums are generally sourced from natural catastrophe insurance policies or derivatives thereof.

Longtail Alpha (Separate Account)

This manager seeks to provide diversification, and specifically protection, relative to the portfolio's public equity holdings. In particular, this manager invests in put options that are roughly 20-30% out-of-the-money with maturities of approximately 0-3 months. These instruments are expected to provide convex, positive returns during periods of material equity market volatility and/or drawdowns. These exposures are refreshed on a recurring basis subject to an annual premium/cost budget.

Capstone (Separate Account)

This manager provides a protection-oriented portfolio that consists of a diverse set of derivative positions that exhibit a "long volatility" bias. More specifically, this manager invests in a dynamic portfolio of positions with the goal of providing convex, positive returns during larger equity market drawdowns that occur over relatively compressed time periods. The portfolio seeks to minimize the cost of the insurance-like positions by rotating into the cheapest hedges on a continual basis.

Performance Attribution Glossary

Performance Attribution - The process of comparing a portfolio’s performance with its benchmark, and identify and quantify sources of differential returns (also called active returns).

Differential Returns / Active Returns / Value Added – The difference between the return on a portfolio and the return on the benchmark.

Impact on Return

Attribution Segment	Definition	Formula	Where:
Weighting (also called allocation, sector allocation, or pure sector allocation)	The effects of portfolio manager decisions to over/underweight each sector	<p style="text-align: center;">Allocation</p> $(w_i - W_i) \times (b_i - b)$	w_i = portfolio segment weight W_i = benchmark segment weight b_i = benchmark segment return b = total benchmark return
Selection (also called within-sector selection)	The effects of portfolio manager decision to buy specific securities	<p style="text-align: center;">Selection</p> $(r_i - b_i) \times W_i$	r_i = portfolio segment return b_i = benchmark segment return W_i = benchmark segment weight
Interaction (also called allocation/selection interaction)	The effects of portfolio managers decisions to security selection can inadvertently cause sector over/underweighting.	<p style="text-align: center;">Interaction</p> $(r_i - b_i) \times (w_i - W_i)$	r_i = portfolio segment return b_i = benchmark segment return w_i = portfolio segment weight W_i = benchmark segment weight

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November 19, 2024



Hawaii Employer-Union Benefits Trust Fund (EUTF)

2Q 2024

Private Credit Portfolio Review

Pete Keliuotis
Alternatives Consulting

Francis Griffin
Alternatives Consulting

Daniel Brown
Alternatives Consulting

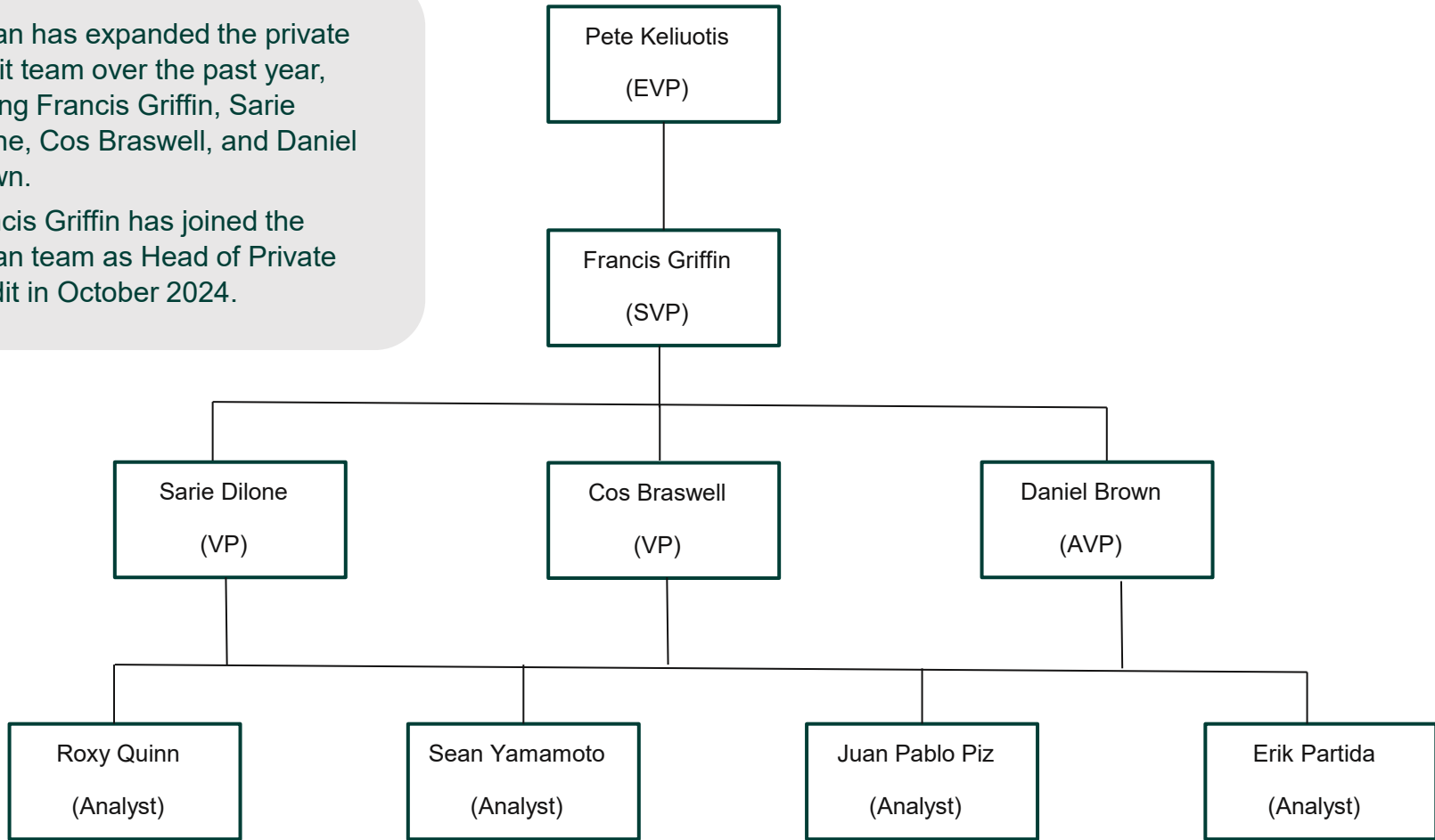
Cos Braswell
Alternatives Consulting

Callan

Callan Private Credit Team

Private Credit Organization Chart

- Callan has expanded the private credit team over the past year, adding Francis Griffin, Sarie Dilone, Cos Braswell, and Daniel Brown.
- Francis Griffin has joined the Callan team as Head of Private Credit in October 2024.



Private Credit Team



Cos Braswell
Daniel Brown
Sarie Dilone

Francis Griffin*
Pete Keliuotis, CFA (Manager)

Juan Pablo Piz
Erik Partida

Roxanne Quinn
Sean Yamamoto

*Not pictured.

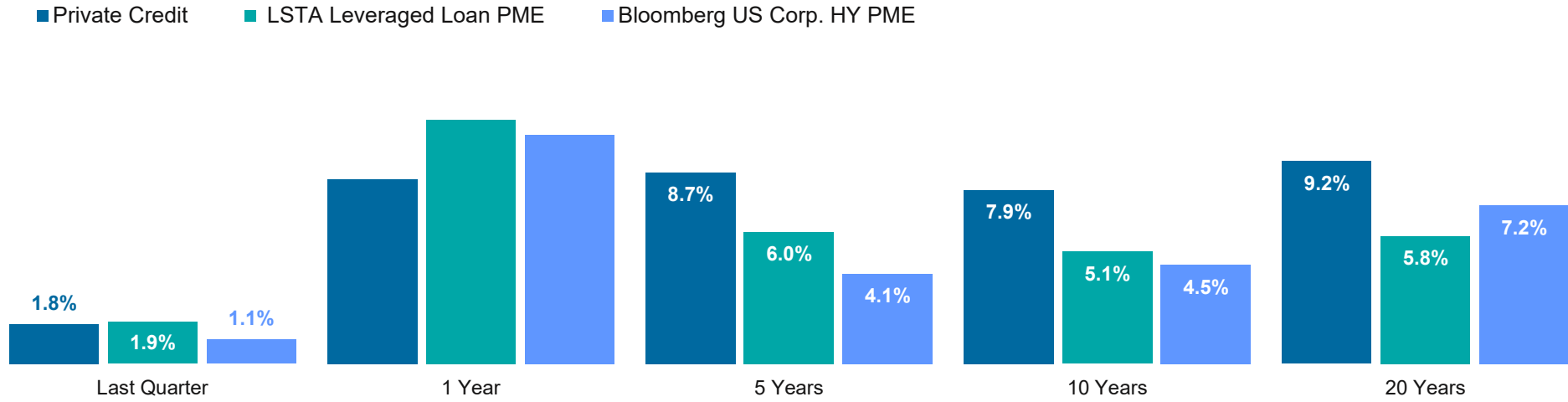
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Private Credit Market Environment

Private Credit Market Overview

Outperformed leveraged loans over 5, 10, and 20 years ended 2Q24

Pooled Horizon Net IRRs as of 6/30/24



Pooled Horizon Net IRRs by Strategy as of 6/30/24

Strategy	Last Quarter	1 Year	5 Years	10 Years	20 Years
Senior Debt	1.2%	7.5%	7.1%	7.1%	7.3%
Subordinated	2.3%	9.4%	11.2%	10.9%	11.2%
Credit Opportunities	1.8%	8.5%	8.5%	7.2%	9.0%
Total Private Credit	1.8%	8.4%	8.7%	7.9%	9.2%

Private credit performance varies across sub-asset class and underlying return drivers. Over the past 10 years the asset class has generated a net IRR of 7.9% as of June 30, 2024, outperforming leveraged loans and high-yield bonds.

Higher-risk strategies (Subordinated Debt and Credit Opportunities) have performed better than lower-risk strategies (Senior Debt).

Source: LSEG/Cambridge

Private Credit Fundraising Landscape

Activity by dollars picked up in 2Q24

The number of funds closed in 2Q24 was the lowest we've seen in years; however, aggregate capital raised is in line with the last few years and outpaced historical quarters.

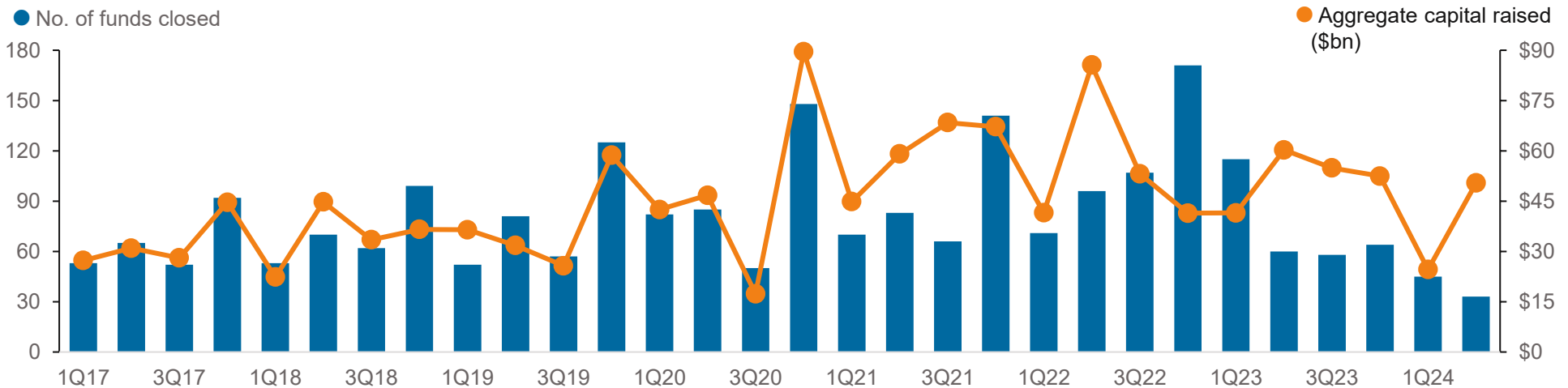
While direct lending continues to dominate fundraises, we are noticing increased interest in specialty finance strategies for more mature PC portfolios.

Private credit stayed in high demand among Callan clients, and several large pension plans are looking to increase their allocations from 2%–3% to 5%–10%.

Largest Funds Holding Closes in 2Q24

Name	Amount (\$millions)	Strategy
West Street Loan Partners V	\$13,100	Direct Lending - Senior Debt
HPS Specialty Loan Fund VI	\$10,400	Direct Lending - Senior Debt
CAPZA 6 Private Debt	\$2,702	Direct Lending - Unitranche Debt
Blue Torch Credit Opportunities Fund III	\$2,332	Direct Lending

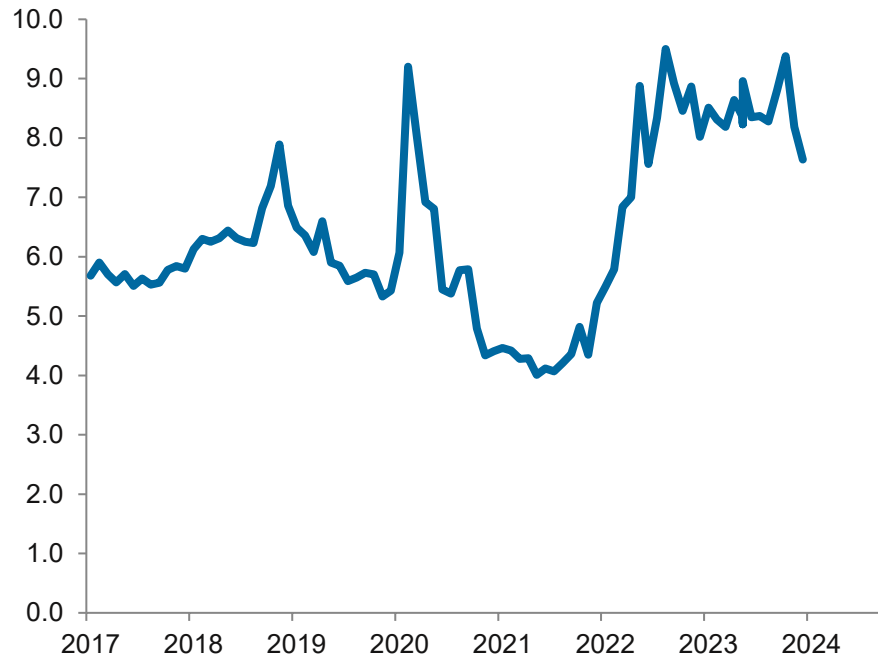
Quarterly Private Credit Fundraising



Source: Preqin

2Q 2024 Yield Spreads

High Yield Effective Yields Ended 06/30/24



US Corporate High Yield Spreads Ended 06/30/24

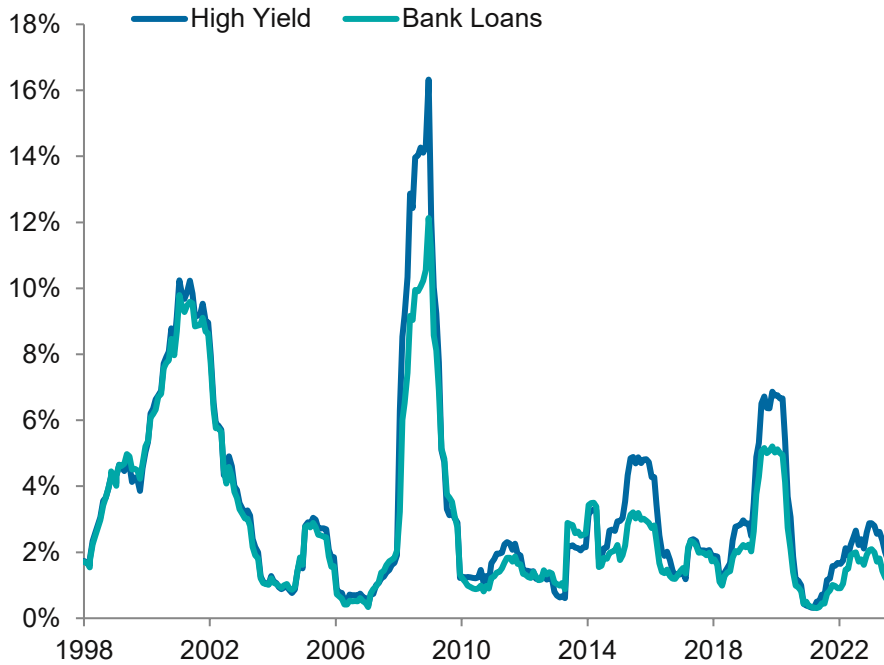


- U.S. sub-investment grade corporate yields rose dramatically at the beginning of 2022 with yields peaking in September. This was a combination of higher interest rates due to tighter Fed policy and a widening of high yield spreads. Effective yields continued to drop in the first half of 2024.
- Spreads contracted during the first half of 2024, a continuation from late 2023, due to stronger credit conditions as the U.S. economic outlook improved.

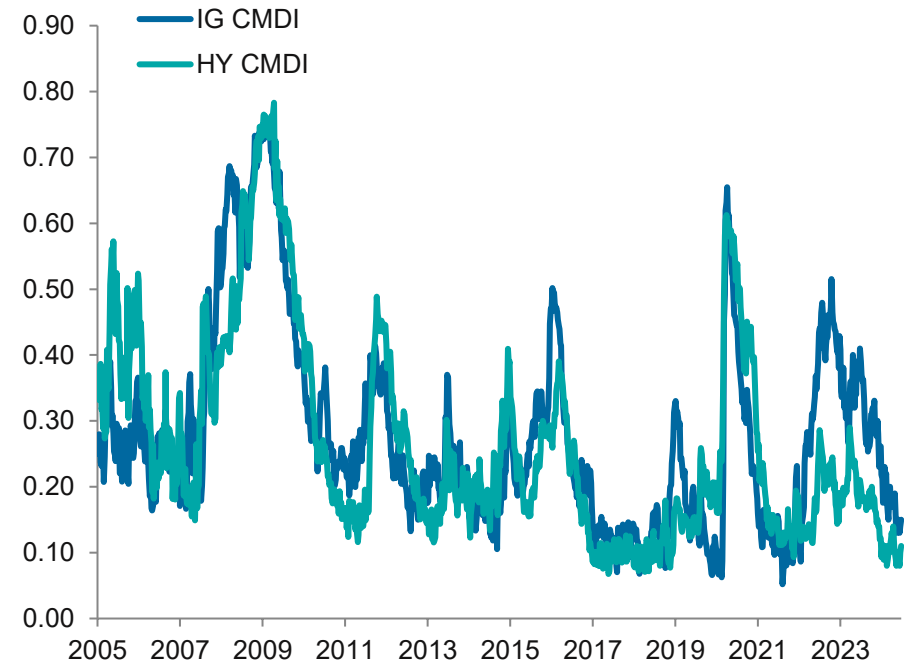
Sources: Bank of America, Federal Reserve Bank of St. Louis, Bloomberg Barclays

2Q 2024 Distressed and Opportunistic Debt

US Corporate Default Rates Ended 06/30/24



Corporate Bond Market Distress Index (CMDI) Ended 06/30/24

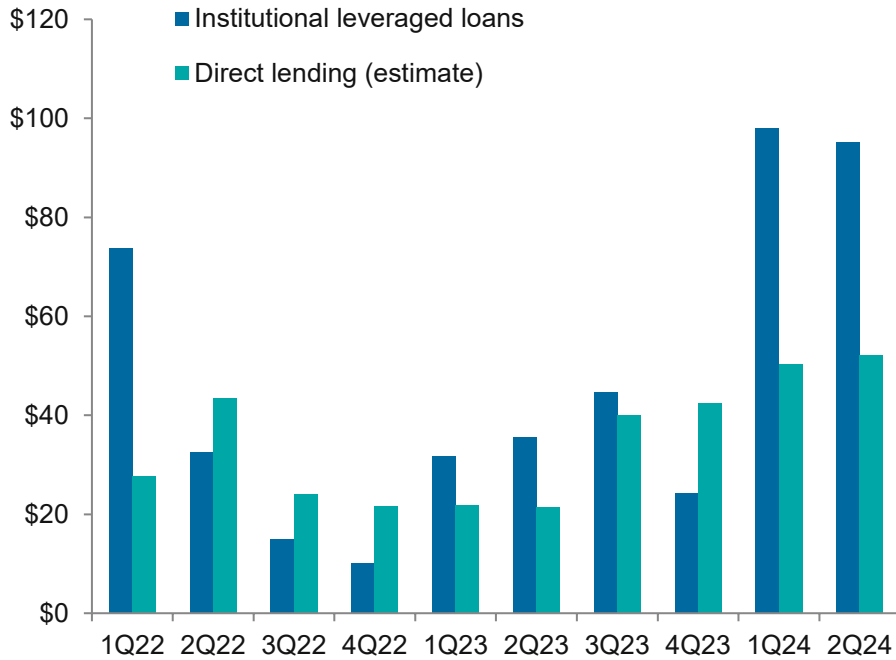


- Default rates for U.S. corporate bonds and loans in 2024 continued to drop in 2024, falling below the historical average of 3% to 4%.
- The Corporate Bond Market Distress Index (CMDI) rose rapidly during 2022, especially for investment grade bonds, but has fallen rapidly since then. In 2024, both the IG distress and HY bond indicator moved downward, a trend that has proceeded since last year.
- These indicators point to a strong credit environment and absence of distressed investment opportunities.

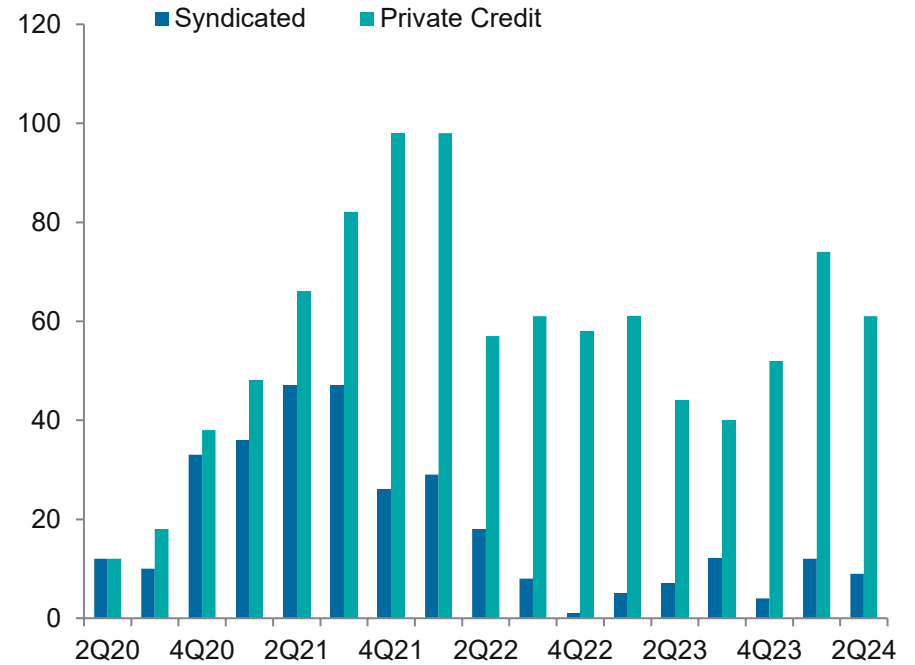
Source: Federal Reserve Bank of New York, JPM

2Q 2024 LBO Financings

New-issue Volume for PE-backed Borrowers



Financed LBOs (BSL vs Private Debt)

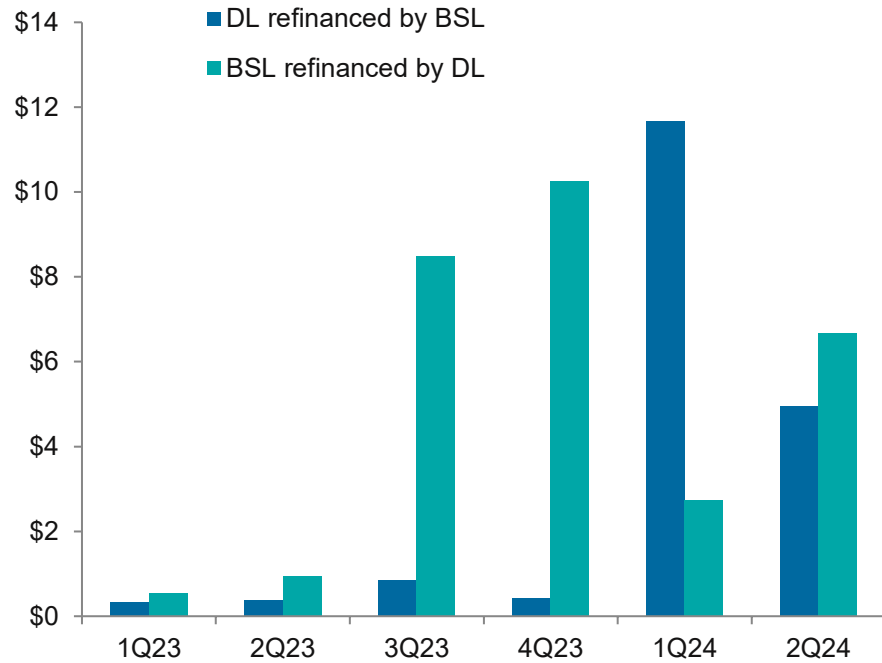


- Direct lending volume for sponsored borrowers reached multi-year highs in Q2, with expectations of stronger deal activity in the second half of 2024. Direct lenders are consistently securing \$1 billion+ deals despite the resurgence of the syndicated loan market, while lower middle market deals also contribute to buyout financing demand.
- Refinancings dominated the private credit market in Q2, driven by stronger covenant packages and borrowers capitalizing on the recent drop in interest rates. Spreads in the lower middle market remain more stable compared to the syndicated loan market.

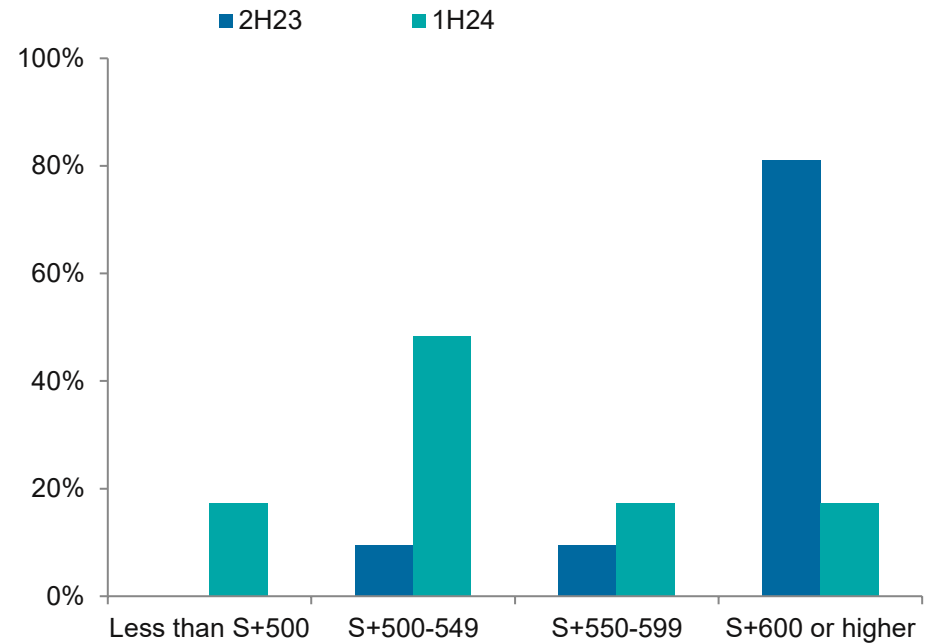
Source: Pitchbook

2Q 2024 Borrowing & Refinancings Volume

Syndicated Loans & Direct Lending Takeouts



Distribution of spreads: New-issue Sponsored Direct Lending



- After the acceleration of the reopening of the syndicated loan market in the Q1 2024, the volume of private credit loans taken out by broadly syndicated loans slowed in the second quarter.
- Despite lower M&A activity, spreads on private credit and broadly syndicated loans for acquisition-related deals are converging, though loans with spreads of S+600 were less common in H1 2024 than in 2023.

Source: Pitchbook

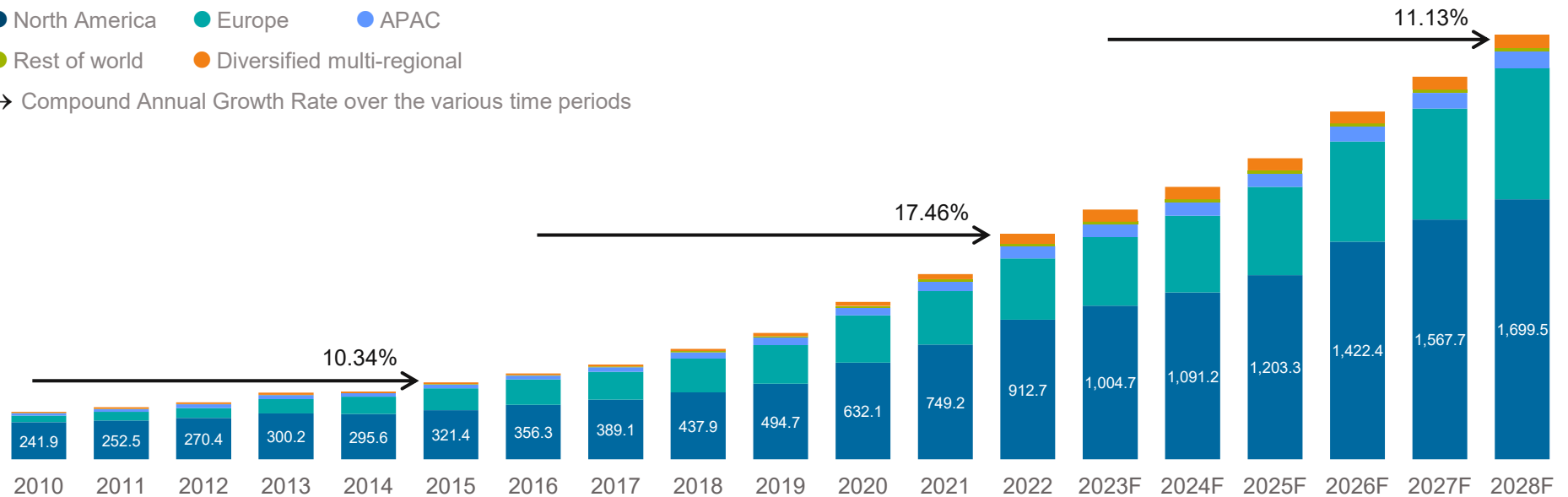
Projected Private Credit Market Growth by Strategy

- Private credit AUM stood at over \$1.5 trillion at the end of 2023, with Prequin forecasting the asset class could grow to over \$2.5 trillion by 2028 at a 11.13% compound annual growth rate (CAGR) from 2023 to 2028.
- Private credit AUM growth is expected to remain steady across geographies. While CAGR grew at about 17.5% from 2016 to 2022, CAGR is forecasted at 11.1% from 2024 to 2028.
- About 90% of investors expect either to maintain or increase their allocation in the next year.
- Direct lending is expected to grow steadily through 2028 as investors increase their private credit allocations. Distressed exposure should grow a bit more slowly with other strategies such as specialty finance and other niche diversifiers growing more quickly.

Private Credit AUM* by Primary Region Focus

- North America
- Europe
- APAC
- Rest of world
- Diversified multi-regional

→ Compound Annual Growth Rate over the various time periods



*AUM figures exclude funds denominated in yuan renminbi

Source: Prequin

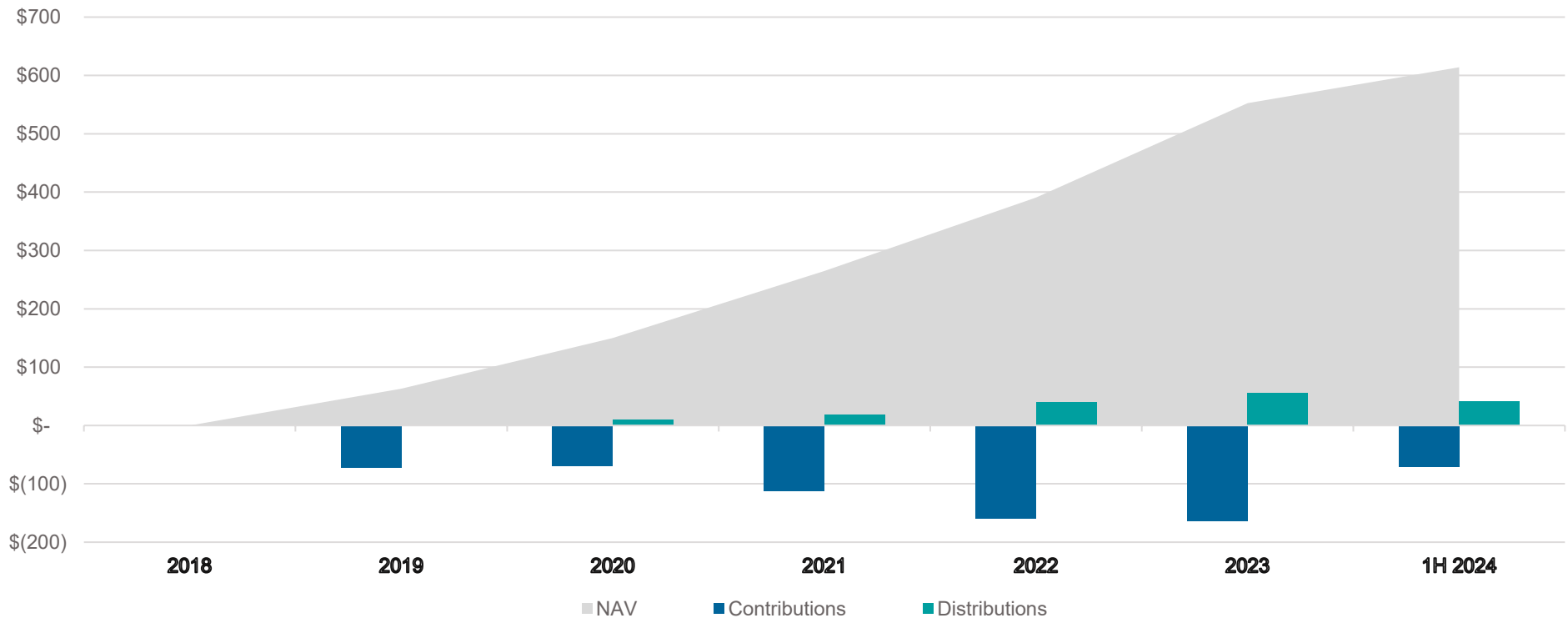
Callan

**2Q 2024 Private Credit Portfolio
Performance Review**

Hawaii EUTF Private Credit Program Growth

While continuing to progress towards their long-term target allocations, EUTF's Private Credit Program has shown consistent growth in net asset value. In the first half of 2024, investment activity has been slow respective to recent annual pacing.

Annual Cash Flows and Net Asset Value



Hawaii EUTF Horizon Returns

As of June 30, 2024

Horizon Net IRRs

As of 06/30/24

Strategy	1 Year	3 Years	Since Inception
Hawaii EUTF Private Credit	12.3%	8.8%	10.1%
LSTA Leveraged Loan Benchmark+200 bps	13.2%	9.4%	9.6%

- The EUTF Private Credit portfolio posted a double-digit return during the past year but underperformed the benchmark by 90 bps. The index outperformance was due to a continued rally in liquid below-investment grade bonds spurred by moderating interest rates and a narrowing of credit spreads. Private credit strategies are also benefiting from these trends, but fair values do not adjust as quickly as more liquid assets.
- Three-year absolute performance has been strong, with the Hawaii EUTF portfolio returning 8.8%, but slightly underperforming its benchmark, annually.
- Since inception, the portfolio has generated a net annualized IRR of 10.1%, 50 bps above the benchmark and exceeding the long-term expected return of the portfolio.

2Q 2024 Hawaii EUTF Private Credit Performance Summary

- Hawaii EUTF has a 10% long-term (7.5% short-term) allocation to Private Credit
 - As of June 30, 2024 the actual allocation to Private Credit was 7.6%.
- The Private Credit portfolio NAV ended the second quarter at \$614 million, an increase of \$161 million from 06/30/23. Commitments totaled \$1.2 billion, up \$300 million year-over-year.
- The portfolio is in its investment period, with 54.1% of capital paid-in, vs. 52.4% on 06/30/23. Distributions were up 89.7% over the past year.
- The Private Credit portfolio is performing in line with expectations, generating an 10.1% net IRR since inception, an improvement of 1.1% from a year ago.
- All cumulative performance metrics improved over the past year.

Total Private Credit

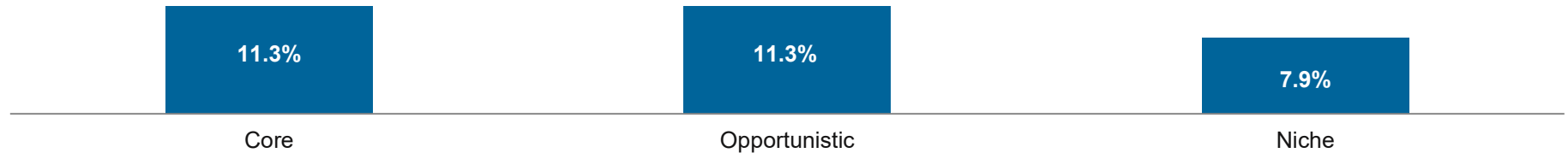
	06/30/2023	06/30/2024	YoY Change
Committed*	\$900,000,000	\$1,200,000,000	\$300,000,000
Paid-In	\$471,315,489	\$648,811,515	\$177,496,026
Uncalled	\$483,345,202	\$629,816,460	\$146,471,258
Distributed	\$87,535,811	\$166,066,978	\$78,531,167
NAV	\$453,525,164	\$614,037,097	\$160,511,933
DPI	0.19x	0.26x	0.07x
RVPI	0.96x	0.95x	(0.01x)
TVPI	1.15x	1.20x	0.05x
IRR	9.0%	10.1%	1.14%

Private Credit Performance By Strategy

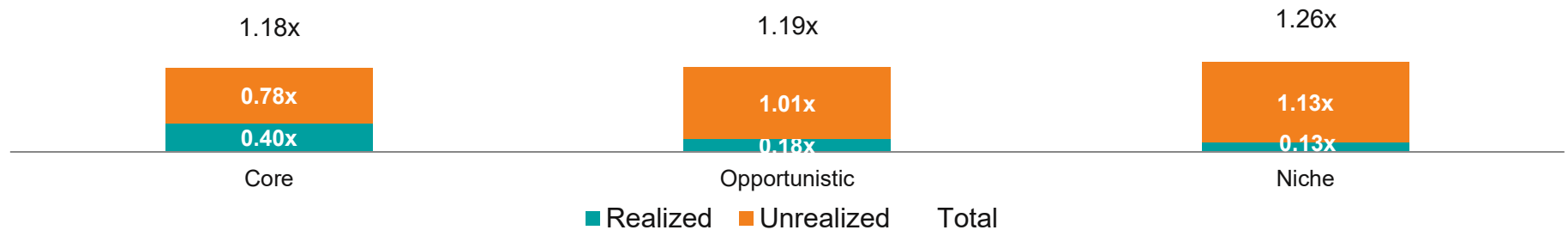
As of June 30, 2024

Portfolio Performance by Strategy Type	Commitments	Contributions	Unfunded Commitments	Distributions	Net Asset Value	Total Value	Net DPI	Net TVPI	Net IRR	S&P LSTA + 200 PME
Core	\$475	\$248	\$272	\$100	\$194	\$294	0.40x	1.18x	11.3%	10.2%
Opportunistic	\$500	\$264	\$257	\$49	\$266	\$315	0.18x	1.19x	11.3%	10.2%
Niche	\$225	\$136	\$101	\$18	\$154	\$172	0.13x	1.26x	7.9%	8.5%
Private Credit	\$1,200	\$649	\$630	\$166	\$614	\$780	0.26x	1.20x	10.1%	9.6%

Net IRR by Strategy



Net TVPI by Strategy

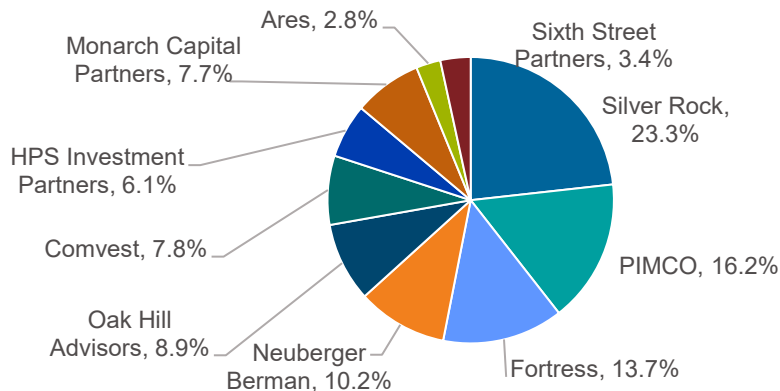


Portfolio Diversification By GP

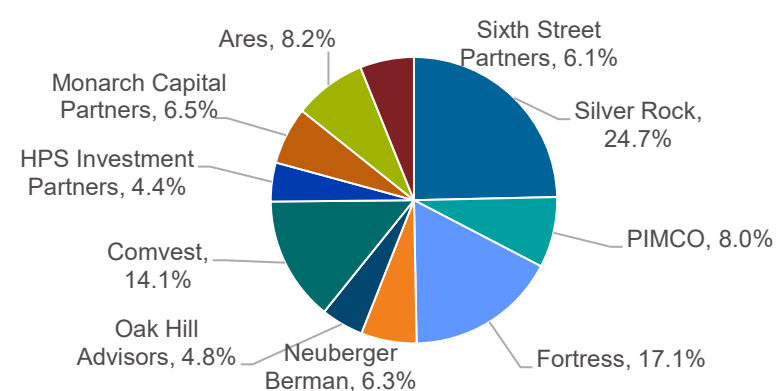
As of June 30, 2024

Portfolio Exposure By GP	Net Asset Value	%	Unfunded Commitments	%	Potential Exposure	%
Silver Rock	\$143	23.3%	\$164	26.1%	\$307	24.7%
PIMCO	\$99	16.2%	\$0	0.0%	\$99	8.0%
Fortress	\$84	13.7%	\$128	20.4%	\$212	17.1%
Neuberger Berman	\$62	10.2%	\$16	2.5%	\$78	6.3%
Oak Hill Advisors	\$55	8.9%	\$5	0.8%	\$60	4.8%
Comvest	\$48	7.8%	\$127	20.2%	\$175	14.1%
Monarch Capital Partners	\$48	7.7%	\$34	5.4%	\$81	6.5%
HPS Investment Partners	\$38	6.1%	\$16	2.6%	\$54	4.4%
Sixth Street Partners	\$21	3.4%	\$54	8.6%	\$75	6.1%
Ares	\$17	2.8%	\$85	13.5%	\$102	8.2%
Private Credit Portfolio	\$614		\$630		\$1,244	

Net Asset Value



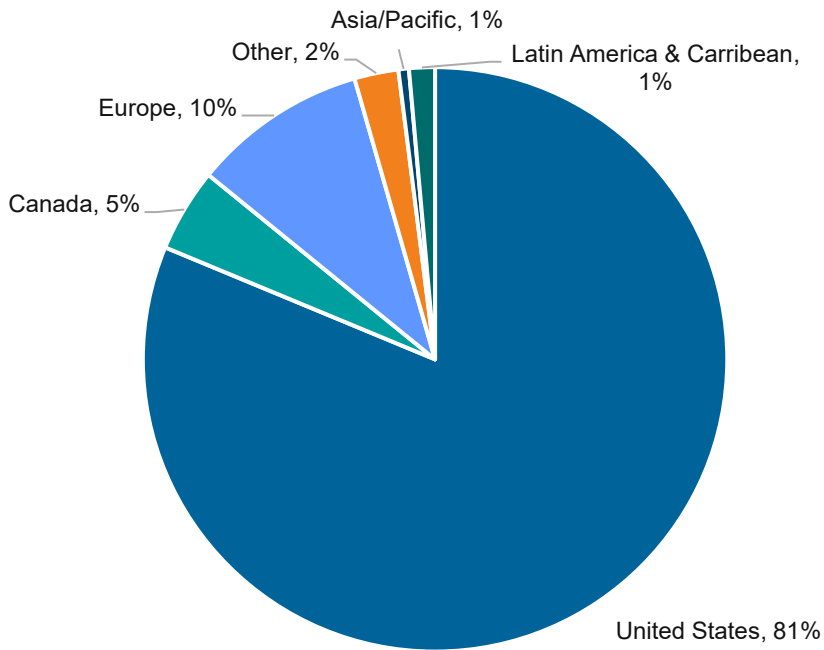
Potential Exposure



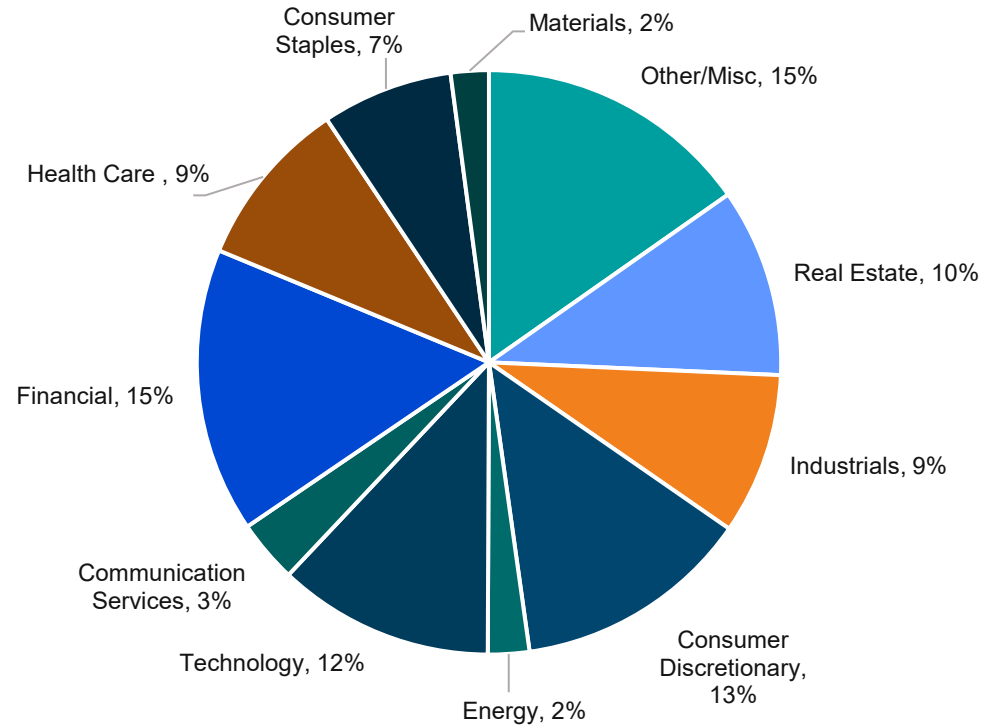
Portfolio Diversification

As of June 30, 2024

Geography Diversification (by % NAV)



Industry Diversification (by % NAV)



2023-2024 Private Credit Commitment Summary

As of June 30, 2024

2023 Vintage Private Credit Commitments

2023 Commitment Total:	\$250 million
Sixth Street Partners TAO	\$75 million
Monarch Capital Partners VI	\$75 million
Fortress Lending Fund IV	\$100 million

2024 Vintage Private Credit Commitments

2024 Commitment Total:	\$200 million
Comvest Credit Partners VII	\$100 million
Silver Rock Tactical Allocation Fund–2024	\$100 million

- In 2023, two \$75 million commitments were approved for Sixth Street Partners TAO, a multi-strategy credit fund, and Monarch Capital Partners VI, a diversified distressed debt fund. These strategies will provide exposure to both corporate and non-corporate credit opportunities. In November, a \$100 million commitment was approved for Fortress Lending Fund IV, a re-up with a diversified lending strategy providing exposure to both corporate direct lending and asset-based finance opportunities.
- In 2024, two \$100 million commitments were approved for Comvest Credit Partners VII, an existing lower-middle market direct lending manager, and Silver Rock Tactical Allocation Fund – Vintage 2024, an existing opportunistic manager.

*Commitment timing based on board approval date, not legal closing date.

Performance Summary Table

As of June 30, 2024

	Vintage Year	Capital Commitments (\$000s)	Paid In Capital* (\$000s)	Uncalled Capital (\$000s)	% Paid In	Distributed Capital (\$000s)	Net Asset Value (\$000s)	Net TVPI	Net IRR
Fortress Lending Fund I	2019	\$50,000	\$54,704	\$9,917	109.41%	\$50,457	\$17,618	1.24x	9.7%
Fortress Lending Fund III	2022	\$75,000	\$63,256	\$28,482	84.34%	\$16,739	\$56,403	1.16x	10.5%
Fortress Lending Fund IV	2024	\$100,000	\$10,000	\$90,000	10.00%	\$0	\$9,951	NM	NM
Neuberger Berman Fund IV	2021	\$75,000	\$60,000	\$15,988	80.00%	\$12,865	\$62,421	1.25x	13.8%
Comvest Credit Partners VI	2022	\$75,000	\$55,374	\$32,249	73.83%	\$19,620	\$42,628	1.12x	12.5%
Comvest Credit Partners VII	2024	\$100,000	\$5,000	\$95,000	5.00%	\$0	\$5,016	NM	NM
Core		\$475,000	\$248,335	\$271,637	52.28%	\$99,681	\$194,037	1.18x	11.3%
Silver Rock TAF 2019A	2019	\$75,000	\$86,703	\$6,034	115.60%	\$44,425	\$66,839	1.28x	10.8%
Silver Rock TAF 2019 B	2021	\$25,000	\$7,817	\$19,755	31.27%	\$3,749	\$5,494	1.18x	11.0%
Silver Rock TAF 2022A	2022	\$100,000	\$61,730	\$38,270	61.73%	\$0	\$70,650	1.14x	13.4%
Silver Rock TAF 2024	2024	\$100,000	\$0	\$100,000	0.00%	\$0	\$0	NM	NM
OHA Tactical Investment Fund	2020	\$50,000	\$45,669	\$5,002	91.34%	\$646	\$54,667	1.21x	8.6%
Sixth Street TAO	2023	\$75,000	\$20,874	\$54,126	27.83%	\$0	\$21,120	NM	NM
Monarch CP VI	2023	\$75,000	\$41,250	\$33,750	55.00%	\$0	\$47,518	NM	NM
Opportunistic		\$500,000	\$264,043	\$256,937	52.81%	\$48,820	\$266,287	1.19x	11.3%
PIMCO Private Income Fund**	2019	\$75,000	\$75,000	\$0	100.00%	\$0	\$99,183	1.32x	7.2%
HPS European Asset Value Fund II	2020	\$50,000	\$46,195	\$16,481	92.39%	\$17,415	\$37,641	1.19x	9.5%
Ares Pathfinder Fund II	2022	\$100,000	\$15,238	\$84,762	15.24%	\$152	\$16,888	NM	NM
Niche		\$225,000	\$136,433	\$101,243	60.64%	\$17,566	\$153,713	1.26x	7.9%
Private Credit Portfolio		\$1,200,000	\$648,812	\$629,816	54.07%	\$166,067	\$614,037	1.20x	10.1%

– Private credit strategies had positive performance over the past twelve months. The inception-to-date net IRR of the portfolio increased from 9.0%, as of Q2 2023, to 10.1%. Performance since inception is in line with expectations.

*Note: Includes reinvestment of distributed capital **PIMCO PIF includes re-up commitment in 2021 of \$25 million

N/M: Not Meaningful – commitments too recent to generate meaningful performance

Hawaii EUTF Private Credit Commitments Through June 30, 2024

	Core		Opportunistic		Niche
2018					PIMCO Private Income Fund \$50 M
2019	Fortress Lending Fund I \$50 M		Silver Rock TAF 2019A \$50 M		HPS European Asset Value Fund II \$50 M
2020			Silver Rock TAF 2019A \$25 M	OHA Tactical Investment Fund \$50 M	
2021	Neuberger Berman Fund IV \$75 M	Fortress Lending Fund III \$75 M	Silver Rock TAF 2019 B \$25 M		PIMCO Private Income Fund \$25 M
2022	Comvest Credit Partners VI \$75 M		Silver Rock TAF 2022A \$100 M		Ares Pathfinder Fund II \$100 M
2023	Fortress Lending Fund IV \$100 M		Sixth Street TAO \$75 M	Monarch CP VI \$75 M	
2024	Comvest Credit Partners VII \$100 M		Silver Rock TAF 2024 \$100 M		

*Commitment timing based on board approval date, not legal closing date.

Callan

Appendix: Glossary of Terms

Private Credit Terms and Glossary

General Terms

Private Credit: Refers to credit and credit-related investments in companies and assets that are not quoted on the stock exchange. Investments are typically illiquid in nature. Ownership is typically accessed through limited partnership interests.

Vintage Year: The year in which a private credit partnership makes its first investment.

J Curve Effect: A common phenomenon associated with a developing private equity program where the return during the first several years can be moderately negative prior to larger positive returns developing (hence the “J” representation). The actual curve is depicted by plotting the return generated by a private credit fund against time (from inception to termination). In the early years of a developing program the payment of management fees out of drawn down capital does not produce an equivalent book value. Consequently, a private credit fund will initially show a negative return. For more detailed information on the “J-Curve Effect” ask to see Callan’s Whitepaper on the topic.

Bloomberg US Corporate High Yield Bond Index: Produced by Bloomberg, it measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody’s, Fitch and S&P is Ba1/BB+/BB+ or below. Bonds from issuers with an emerging markets country of risk, based on the indices’ EM country definition, are excluded. The US Corporate High Yield Index is a component of the US Universal and Global High Yield Indices. The index was created in 1986.

Morningstar LSTA Leveraged Loan Index: Produced by Morningstar, Inc., it measures the 100 largest facilities in the US leveraged loan market. Using a market-value weighting, the constituents have a weight cap of 2%.

Private Credit Performance represents horizon period IRR calculations comprised of Senior Debt, Subordinated Credit, and Credit Opportunities strategies from the Refinitiv/Cambridge database.

Private Credit Terms and Glossary

Cash Flow and Valuation Definitions

Commitment: The amount of a limited partner's obligation to a private equity fund.

Capital Contribution: The amount of the commitment that has been called by the general partner for company investments and also fees and expenses. Capital contributed is also referred to as paid-in capital.

Recycling/Reinvestment and Recalable Cash Flows: Private equity vehicles are usually characterized by the prohibition (unless stipulated by agreement) to reinvest proceeds or allow redemptions. This means that unless otherwise agreed to, private equity funds must distribute proceeds from investments to limited partners and cannot reinvest that capital. In some cases, distributions are "recalable", that is, after the fund distributes proceeds to its investors, it can draw down the same capital again, which makes it possible for the fund to draw capital in excess of its total committed capital.

Distributions include both recalable and non-recalable distributions. This means that a recalable distribution must be treated as an actual distribution and, if and when that distribution is called again, it must be treated as additional paid-in capital but must not reduce unfunded commitments or change cumulative committed capital.

It should be noted that recalable distributions have an impact on the metric calculations. For example, this recalable feature means that cumulative paid-in capital can be higher than cumulative committed capital. It also means that, all other things being equal, the DPI, RVPI, and TVPI multiples will be lower for funds with recalable distributions as the denominator will be increased. It also means that the PIC multiple (paid-in capital to cumulative committed capital) will be higher for funds with recalable distributions, all other things being equal. *(Source: GIPS Guidance Statement on Private Equity, January 2011)*

Distribution: The returns of cash or securities that an investor in a private equity fund receives.

Market Value or Net Asset Value (NAV): The carrying value of the investments as determined by the general partner of a partnership in accordance with a limited partnership's valuation policy.

Private Credit Terms and Glossary

Major Categories

Direct Lending: Origination or purchase of commercial loans used to finance general business operations, projects, or growth; often bilateral (single lender and borrower) or may involve a small group of lenders, as distinct from broadly syndicated loans

Mezzanine (Subordinated debt): An investment strategy that involves providing capital or financing that is below the senior debt and above the equity in terms of liquidation priority. Mezzanine is analogous to private high yield debt and typically includes preferred stock and warrants. The majority of return is provided through coupon payments and equity rights typically increase the return. Mezzanine debt is commonly structured as part of a Buyout transaction.

Distressed Credit: Investing in corporate bonds of companies that have either filed for bankruptcy or appear likely to do so in the near future. The strategy of distressed debt involves first becoming a major creditor of the target company by buying up a company's bonds at a deep discount to par. Securing a position as a key creditor allows for influence regarding the plan for reorganization of the company. In the event of liquidation distressed debt investors have a senior position to the equity holders for priority of repayment and normally recover the full par value of debt securities. Usually a reorganization allows the company to avoid or emerge from bankruptcy protection. In some instances distressed debt firms convert the debt obligations to equity in the company, and gain majority control of the newly capitalized business.

Multistrategy/Multi-Sector: Diversified approach across private credit subcategories, with allocations potentially changing opportunistically over time; requires deep resources across multiple credit sectors and geographies.

Private Credit Terms and Glossary

Performance Metrics

Internal Rate of Return (IRR): The CFA Institute GIPS approved methodology to calculate return performance of private equity investments. The IRR calculates the rate of return since inception (implied interest rate earned) of an investment based on the amount and timing of capital contributions (money invested), distributions (money returned from investments), and the current unrealized value of investments. The IRR is a capital- or dollar- weighted calculation and accounts for the timing and size of flows. IRR differs from the time-weighted return (TWR) calculation employed with equity and fixed income investments, where a series of interim period (e.g., quarterly) returns are linked together in an equal-weighted manner to derive a percentage return unaffected by cash flows.

TVPI: Total Value (Distributions + Net Asset Value) as a ratio of (divided by) paid-in capital. Notionally a TVPI ratio of 1.30 means that the investment has created a total gain of 30 cent for every dollar contributed. TVPI is composed of both returned capital and residual value (e.g., DPI of 0.60 + RVPI of 0.70 = TVPI of 1.30).

Public Market Equivalent (PME) TVPI: A TVPI calculated by applying the called capital and distributed capital of the private equity investment as an equivalent purchase and sale of the chosen benchmark. The calculated net asset value (NAV) is then used to calculate the benchmark's RVPI, which is subsequently added to the investors actual DPI to get a benchmark TVPI. The figure is intended to evaluate the investor's total value if they had moved money in and out of the chose benchmark instead of the partnership.

DPI: Distributions as a ratio of (divided by) paid-in capital (notionally a DPI ratio of 0.60 means that 60 cents has been distributed back to investors for every dollar contributed).

RVPI: Residual Value (NAV) as a ratio of (divided by) paid-in capital (notionally a RVPI ratio of 0.70 means that the remaining investment(s) is currently valued at 70 cents for every dollar contributed).

Private Credit Terms and Glossary

Performance Metrics (cont'd)

Public Market Equivalent (PME) IRR: An internal rate of return (IRR) calculated by applying the called capital and distributed capital of the private equity investment as an equivalent purchase and sale of the chosen benchmark. The calculated net asset value (NAV) is then used to calculate the benchmark's IRR. The figure is intended to evaluate the investor's return if they had moved money in and out of the chose benchmark instead of the partnership.

Cash Yield: Quarter's Distributed capital change divided by the quarter's beginning Net Asset Value. It values the percentage of realized appreciation/depreciation embedded in the NAV. For example, a cash yield of 5% means every dollar of residual value (NAV) has paid 5 cents to the investor this quarter.

\$ Unrealized Appreciation/ Depreciation: Quarter's Total Value change minus the quarter's Distribution capital change minus the quarter's Paid-In capital change. The dollar amount values the unrealized appreciation/depreciation embedded in the Net Asset Value.

% Unrealized Appreciation/Depreciation: Unrealized Appreciation/Depreciation in dollars divided by the quarter's starting Net Asset Value. It values the percentage of unrealized appreciation/depreciation embedded in the NAV. For example, unrealized appreciation of 2% means every dollar of residual value (NAV) has a gain of 2 cents that has yet to be paid to investors.

\$ Total Valuation Change: Quarter's Distributed capital change minus the quarter's Pain-In capital during the quarter plus the quarter's change in Net Asset Value. It values the total dollar amount of both realized and unrealized gains/losses that the investor received over the quarter.

Private Credit Terms and Glossary

Performance Metrics (cont'd)

% Total Valuation Change: Total Valuation Change in dollars divided by the quarter's starting Net Asset Value. It values the percentage of both realized and unrealized gains/ losses that the investor received over the quarter.

For example, total valuation change of 4% means every dollar of residual value (NAV) has a gain of 4 cents of which a portion has and a portion has not been paid to investors.

Pooled IRR: An IRR calculation that treats a database of multiple private credit partnerships (such as Thomson Reuters/Cambridge) as a single portfolio. The initial flow in the calculation represents the total market value of the database (if any). The subsequent cash inflows and outflows are incorporated, and the final cash flow is the ending valuation of the database holdings.

IRR Quartile: Drawn from a database of multiple private credit partnerships, the quartile is a breakpoint return that separates the partnerships' IRRs in a selected sample into 25% increments ranked from highest to lowest, e.g. 1st quartile is the highest 25% performing funds. Members may be separated into by specific vintage years and strategies.

TVPI Quartile: Drawn from a database of multiple private credit partnerships, the quartile is a breakpoint return that separates the partnerships' TVPIs in a selected sample into 25% increments ranked from highest to lowest, e.g. 1st quartile is the highest 25% performing funds. Members may be separated into by specific vintage years and strategies.

Hawaii Employer-Union Health Benefits Trust Fund (EUTF)

November 19, 2024

Private Equity Q2 2024
Quarterly Report

The data within this report is as of the date referenced above and is not lagged. All returns within this report are net of fund level asset management fees unless otherwise noted.

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Nothing herein is intended to serve as investment advice, a recommendation of any particular investment or type of investment, a suggestion of the merits of purchasing or selling securities, or an invitation or inducement to engage in investment activity.

In the course of preparing this report, Meketa has relied upon the accuracy and completeness of the data provided by the Hawaii Employer-Union Health Benefits Trust Fund (EUTF) investment managers. Meketa makes no representations or guarantees with respect to the accuracy of information provided to us by the managers. Meketa's conclusions do not constitute an audit of any investment, and are based on conditions prevailing at the date of this report and known to Meketa.

Private Equity Overview

Private equity is a long-term asset class with performance results influenced by various factors. While this report highlights several key exposures that contribute to performance, the EUTF Private Equity Program (the “Private Equity Program”) will continue to evolve.

As of June 30, 2024, the Private Equity Program had \$1.5 billion in commitments across 24 partnerships and one co-investment, generating a net since inception Internal Rate of Return (IRR) of 13.8%. While posting attractive absolute results to date, this performance reflects continued market slowing with the net since inception IRR declining from 14.5% in the prior quarter and from 16.4% one year earlier.

The Private Equity Program’s reported value represented 10.2% of total Plan assets as of Q2 2024. EUTF is utilizing evolving asset allocation targets to achieve the long-term target of 15.0% for private equity over a multi-year period with the current target allocation at 10.5%. Despite material unfunded commitments, continued commitment activity is required to achieve and maintain the long-term target allocation on a market value basis while diversifying the portfolio across economic cycles.

EUTF Private Equity Program – One Year Change as of June 30, 2024

	Committed	Contributed	Distributed	Market Value	% of Total Assets	Target PE Allocation	Multiple	Since Inception IRR*
Beginning of Period	\$1,116.9	\$592.3	\$96.0	\$679.8	10.8	10.5	1.3x	16.4
End of Period	\$1,481.9	\$696.4	\$139.4	\$802.1	10.2	10.5	1.4x	13.8
Change	\$365.0	\$104.1	\$43.4	\$122.2	(0.6)	---	0.1x	(2.6)

*initial capital call was on April 20, 2018.

Horizon Performance

EUTF’s policy benchmark for the private equity asset class is the Russell 3000 Index plus 300 basis points. The Private Equity Program has generated strong absolute results over longer periods as of Q2 2024, but has underperformed the policy benchmark. While outperforming the public market index over the latest five-year and since inception time periods, the Program is not currently achieving the 300 basis point premium. These results are reflective of the benchmark mismatch that can occur when utilizing a public equity index for benchmarking private equity performance. Recent strong public market returns, combined with muted private equity results, have exaggerated recent underperformance which has flowed through longer-term relative results. Performance volatility and benchmark mismatch is expected for a private equity program, particularly over shorter time periods and when compared to a public equity benchmark.

EUTF Private Equity Program Performance Russell 3000 + 300 bps (Benchmark)

	One Year (%)	Three Year (%)	Five Year (%)	Ten Year (%)	Since Inception* (%)
EUTF Private Equity	8.7	8.7	13.9	---	13.8
Russell 3000 + 300 bps**	24.8	13.0	16.6	---	16.7
Difference	(16.1)	(4.3)	(2.7)	---	(2.8)

* Program inception date is April 20, 2018.

**Utilizing the PME+ framework, which represents a net IRR value based on the actual timing and size of the private market program’s daily cash flows and the daily appreciation or depreciation of an equivalent public market index.

Private Equity Portfolio Detail

As of June 30, 2024, some less mature partnerships are exhibiting the j-curve, as fees and expenses result in initial negative results. Others, such as Warburg Pincus China-SEA II and StepStone VC Global Partners X/XI are facing market headwinds in regards to their investment focus on China and the venture capital markets, respectively. As private equity valuations have idled across sectors, venture capital has been particularly stagnant with the broad venture capital market posting a sub 1% return over the past three years. Results to date of Welsh, Carson, Anderson & Stowe XIV (WCAS XIV) and the EUTF Co-Investment Program are reflective of portfolios in the early stages of development, with all the transactions less than two years old. More specifically for WCAS XIV, seven of eight transactions are held at cost, or slightly above, with only one slightly below cost as of mid-year 2024.

Active Program Partnerships: As of June 30, 2024

Partnership	Type	Vintage Year	Committed Capital (\$mm)	Invested Capital (\$mm)	Distributed Capital (\$mm)	Reported Value (\$mm)	Investment Multiple	Since Inception Net IRR* (%)
Landmark Equity Partners XVI	Secondaries	07-19	75.0	60.8	32.1	47.4	1.3x	13.5
Strategic Value Special Situations Fund IV	Distressed Debt	2017	50.0	45.0	24.3	55.0	1.8x	14.5
Wellspring Capital Partners VI	Buyout	2018	50.0	57.4	28.8	60.4	1.6x	15.7
Apollo Investment Fund IX	Buyout	2018	42.0	40.3	20.0	40.8	1.5x	18.7
StepStone VC Global Partners IX-B	Venture Capital	2019	39.9	34.0	2.1	50.1	1.5x	12.2
Welsh, Carson, Anderson & Stowe XIII	Buyout	2019	50.0	48.1	18.0	52.4	1.5x	19.4
Warburg Pincus China-Southeast Asia II	Growth Equity	2019	50.0	29.0	4.1	26.8	1.1x	2.9
Apax X	Buyout	2019	50.0	48.0	5.5	55.1	1.3x	12.0
Veritas Capital Fund VII	Buyout	2020	50.0	47.6	0.0	66.2	1.4x	11.6
Kohlberg Investors IX	Buyout	2020	50.0	44.2	2.4	68.7	1.6x	24.3
K5 Private Investors	Buyout	2020	50.0	31.7	1.5	38.9	1.3x	12.9
StepStone VC Global Partners X	Venture Capital	2020	40.0	29.2	0.0	29.3	1.0x	0.1
Strategic Value Special Situations Fund V	Distressed Debt	2021	50.0	30.0	0.3	40.9	1.4x	17.1
Reverence Opportunities Fund V	Buyout	2021	75.0	33.1	0.3	45.8	1.4x	25.2
Welsh, Carson, Anderson & Stowe XIV	Buyout	2022	75.0	26.5	0.0	22.9	0.9x	-15.9
Veritas Capital Fund VIII	Buyout	2022	75.0	52.9	0.0	57.6	1.1x	8.0
Apax XI	Buyout	2022	75.0	1.7	0.0	1.9	1.1x	NM
StepStone VC Global Partners XI	Venture Capital	2022	75.0	12.0	0.0	11.9	1.0x	-0.4
Kohlberg Investors X	Buyout	2023	75.0	---	---	0.9	---	NM
EUTF Co-Investment Program**	Buyout	2022	20.0	20.2	0.0	22.1	1.1x	6.2

Private Equity Performance

Partnership	Type	Vintage Year	Committed Capital (\$mm)	Invested Capital (\$mm)	Distributed Capital (\$mm)	Reported Value (\$mm)	Investment Multiple	Since Inception Net IRR* (%)
K6 Private Investors	Buyout	2023	75.0	---	---	---	---	---
Nexus Special Situations IV	Debt Related	2023	75.0	4.8	0.0	7.4	1.5x	NM
Freeman Spogli IX	Buyout	2023	75.0	---	---	---	---	---
Wynnchurch VI	Buyout	2023	65.0	---	---	-0.4	---	---
Veritas Capital Fund IX	Buyout	2024	75.0	---	---	---	---	---
Total Private Equity Program	---	---	1,481.9	696.4	139.4	802.1	1.4x	13.8

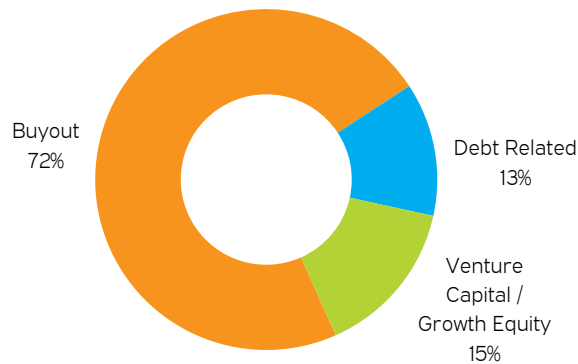
* Since inception IRRs for less mature partnerships (approximately one year from the initial capital call) are listed as "NM".

** Consists of one co-investment to date.

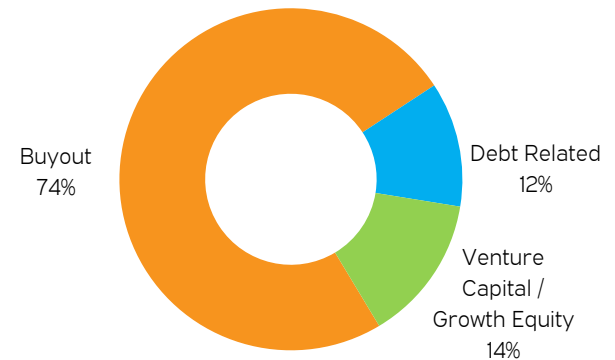
Portfolio Sector Diversification

The EUTF Private Equity Program is slightly above target for buyout exposure, while underweight debt related and venture capital/growth equity as of June 30, 2024. Deviations are to be expected with sector diversification continuing to evolve as additional commitments are made and capital is invested.

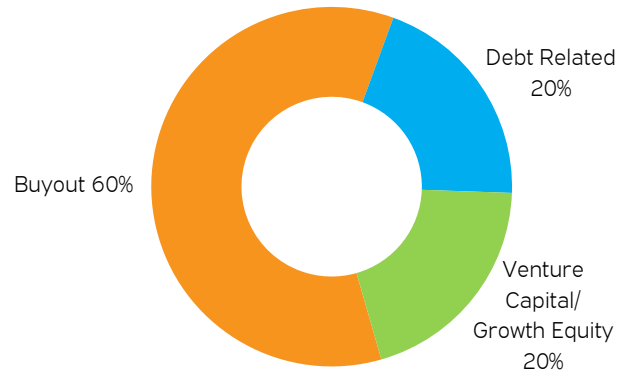
Sector Diversification: Market Value



Sector Diversification: Committed



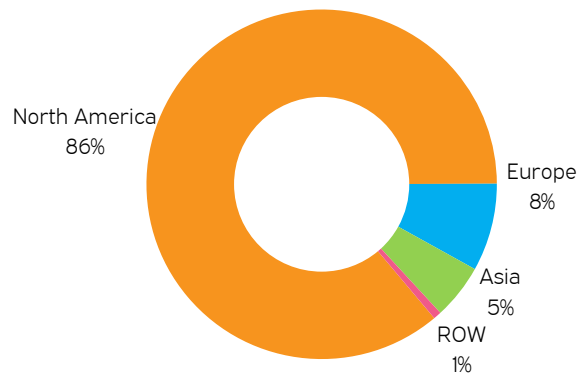
Sector Diversification: Target



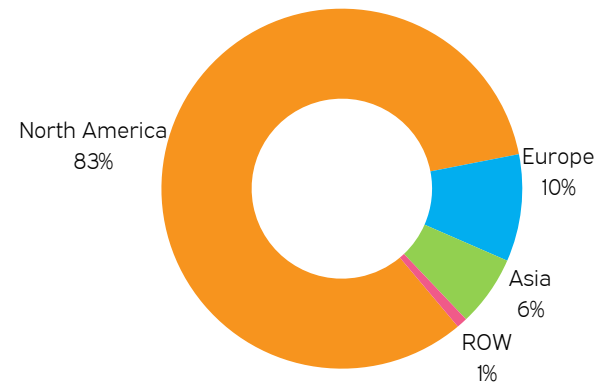
Portfolio Geographic Diversification

On a geographic basis, the Portfolio is domestically oriented with 86% of capital deployed in partnerships targeting North America but is diversified globally with 8% in Europe, and 6% in Asia/Rest of the World (ROW). Although there is no explicit target for geographic diversification, the expectation is to have meaningful exposure in North America with diversification across Europe and Asia.

Geographic Diversification: Market Value

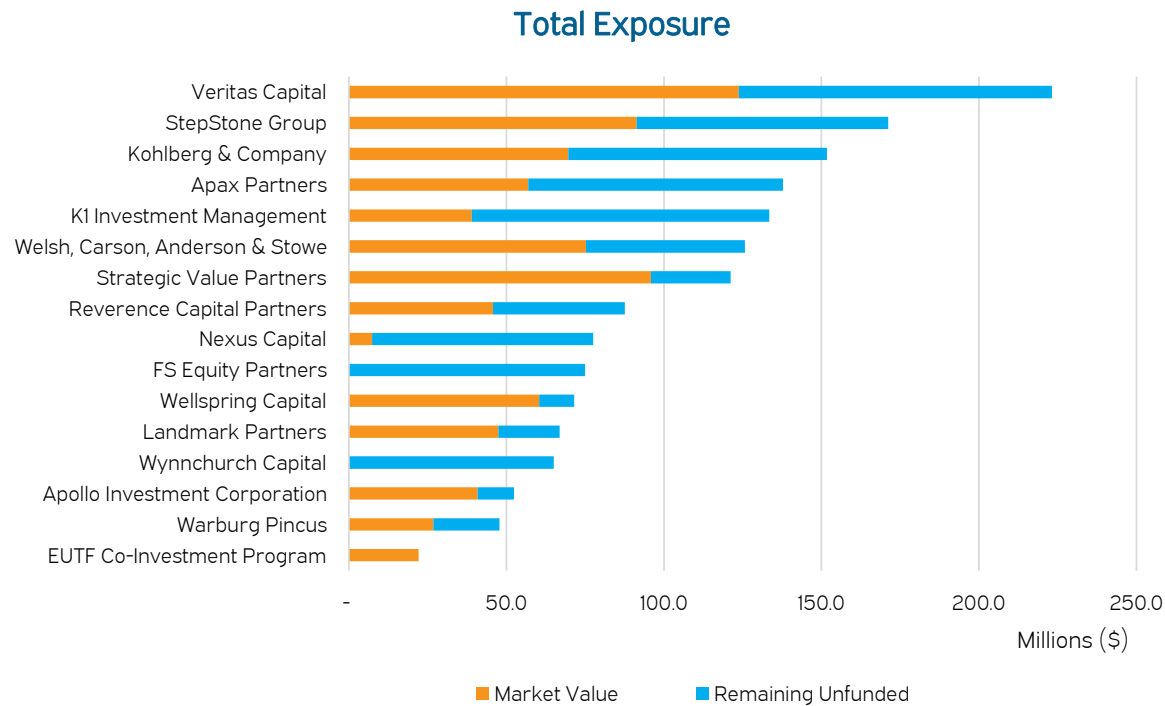


Geographic Diversification: Committed



Firm Diversification

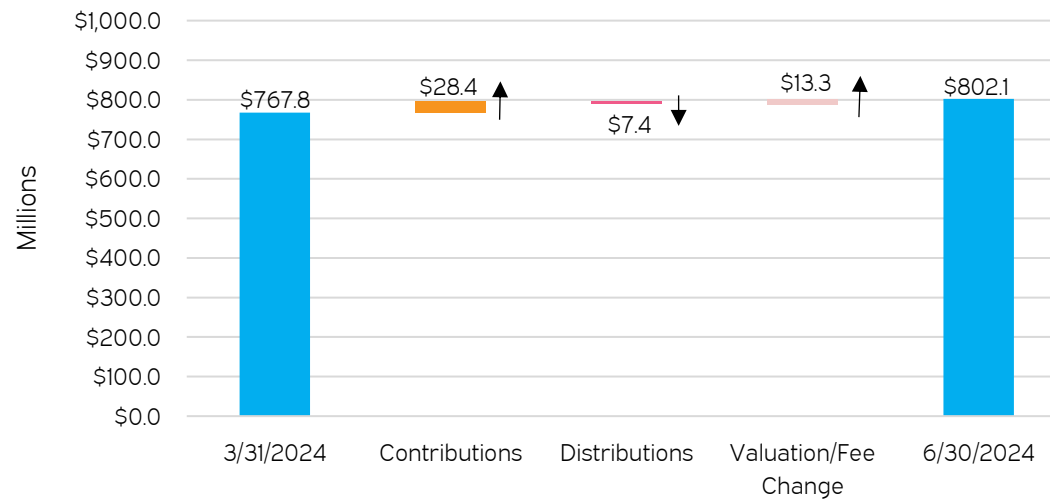
As of June 30, 2024, the Private Equity Program is constructed with 24 partnerships and one co-investment across 15 firms. On a total exposure basis (market value plus unfunded commitments), Veritas Capital, with three buyout funds, is the largest exposure at \$223 million. Stepstone Group, with three venture capital fund-of-funds commitments, is the second largest exposure at \$171 million followed by Kohlberg & Company, with two buyout commitments, is the third largest exposure at \$152 million. These exposures represent 13.7%, 10.5%, and 9.3% of the Private Equity Program’s total exposure, respectively.



Private Equity Cash Flows

The value of the portfolio increased by \$34 million over the latest quarter driven by contributions and appreciation. During the quarter, \$28.4 million of contributions were made to underlying managers and \$13.3 million of valuation increases were reflected while \$7.4 million was distributed.

Reported Value and Cash Flow Activity



Private Equity Program Construction

As private equity is a self-liquidating asset class, ongoing commitment activity is necessary to meet and maintain the target asset allocation level. As of June 30, 2024, \$1,481.9 million of commitments have been closed across 24 partnerships and one co-investment. The table below lists commitment activity over the past three years.

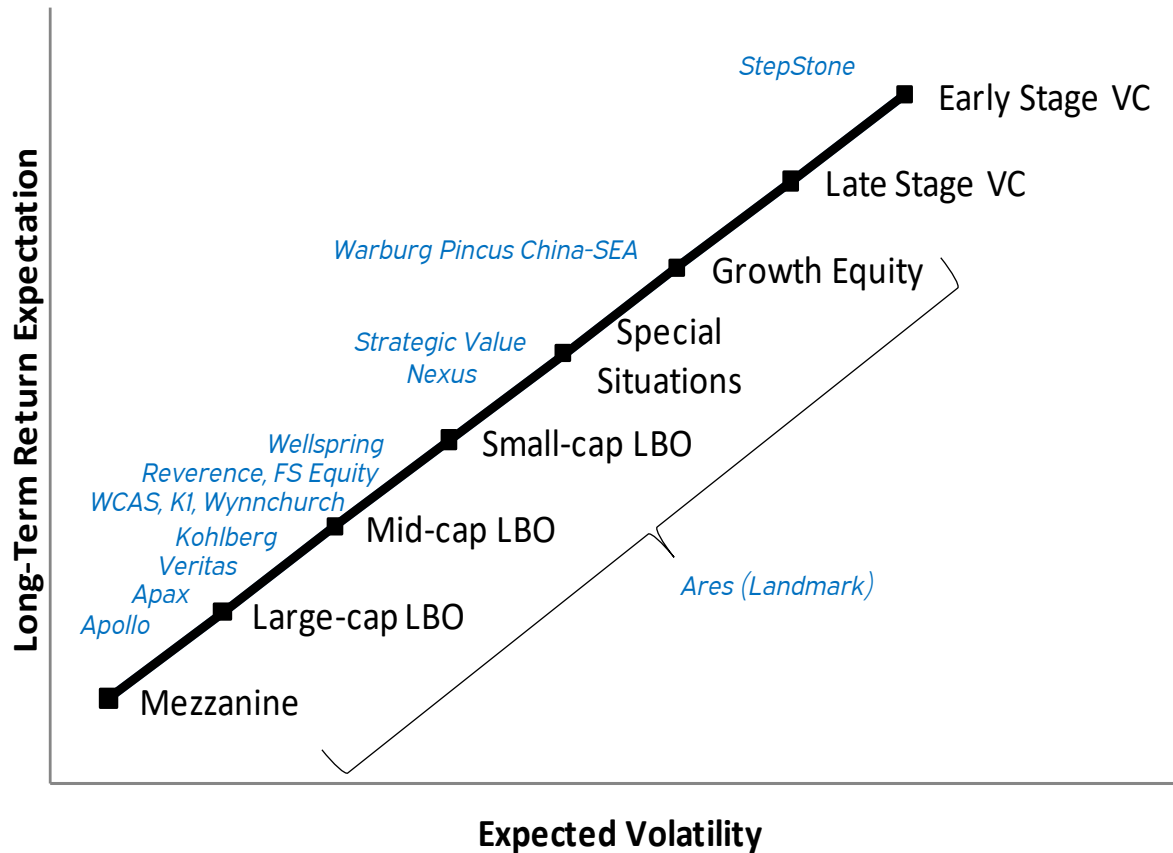
Private Equity Program Commitments: Trailing Three Years

Fund	Type	Commitment (\$mm)	Approval Date	Initial Funding
Reverence Capital Opportunities V	Middle-market Buyout, Financial Services	75	10/18/2021	6/7/2022
Welsh, Carson, Anderson Stowe XIV	Middle-market Buyout	75	12/20/2021	12/27/2022
Veritas Capital Fund VIII	Middle-market Buyout	75	3/31/2022	7/1/2022
Apax XI	Large Buyout	75	5/17/2022	1/5/2024
StepStone VC Global Partners XI	Venture Capital Fund of Funds	75	6/28/2022	10/14/2022
Kohlberg Investors X	Middle-market Buyout	75	10/19/2022	---
EUTF Co-Investment Program	Buyout	20	5/17/2022	12/9/2022
K6 Private Investors	Buyout	75	9/8/2023	---
Nexus Special Situations IV	Debt Related	75	9/8/2023	4/29/2024
Freeman Spogli IX	Buyout	75	12/11/2023	---
Wynnchurch VI	Buyout	65*	12/11/2023	---
Veritas Capital Fund IX	Large Buyout	75	3/12/2024	---

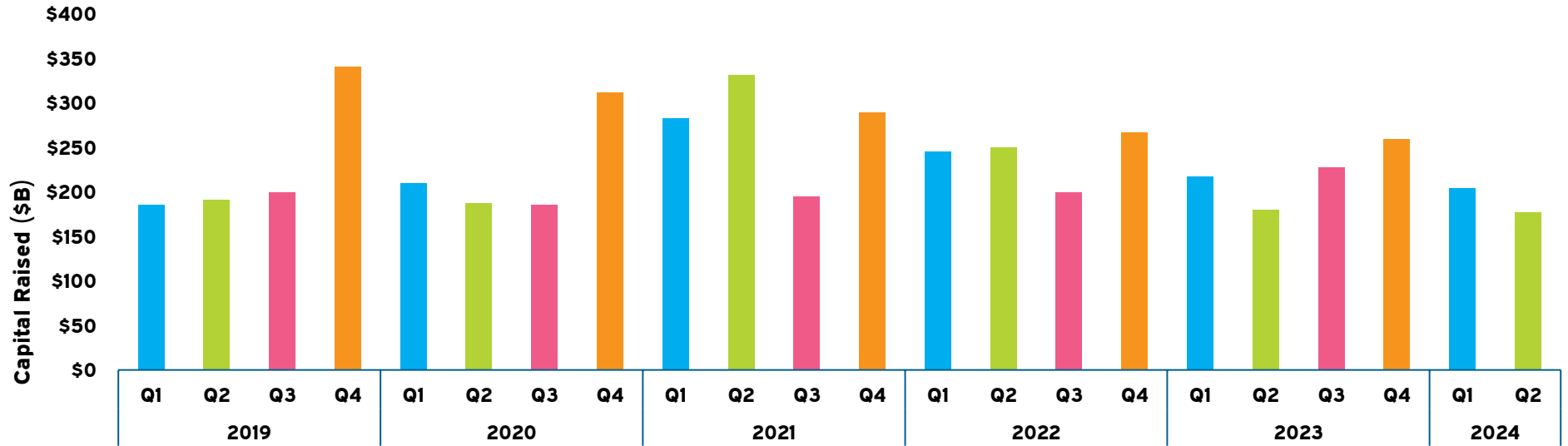
*Over-subscribed and cut back from \$75 million commitment request.

Subsequent to quarter end a \$75 million commitment was made to Strategic Value Special Situations VI, a distress debt fund.

Commitments to date have been diversified across investment strategy and partnership size with varying risk and return expectations as graphically portrayed below by firm name.



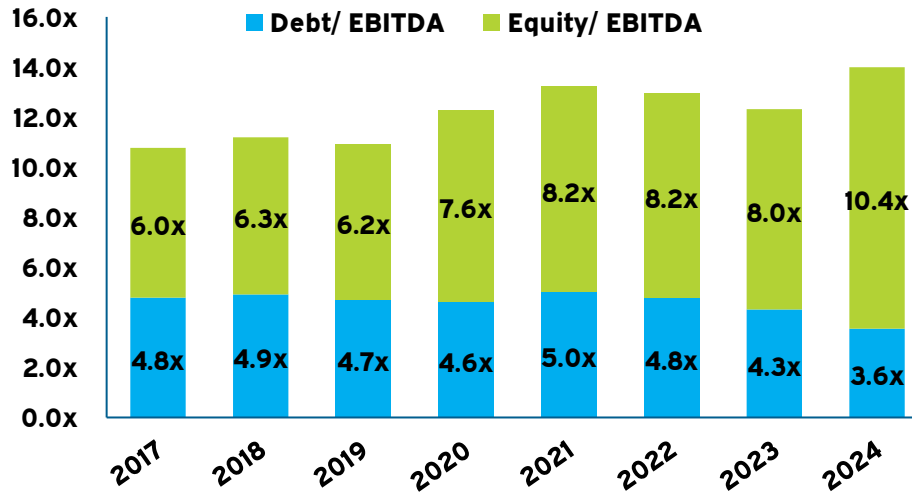
Private Equity
Global Fundraising¹



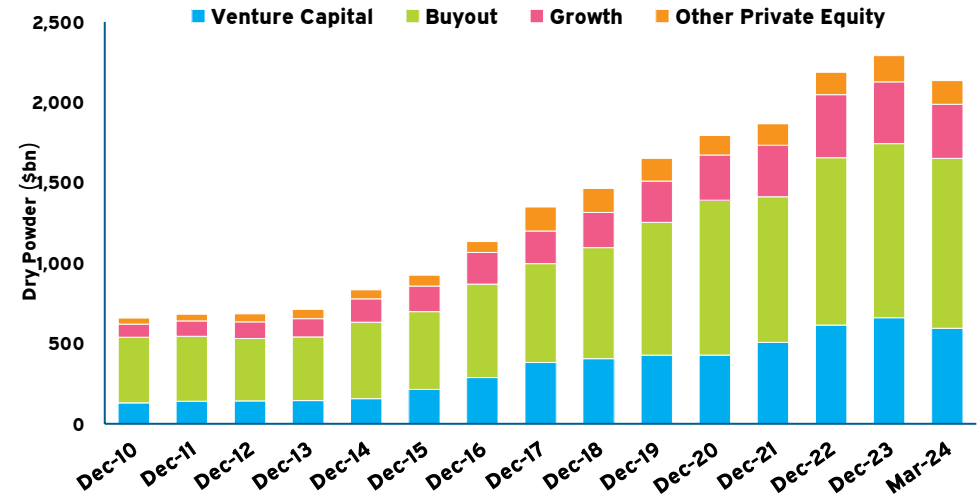
Fundraising activity for private equity funds in the second quarter of 2024 decreased by 13% compared to the previous quarter, with \$177.1 billion raised, and represents the lowest amount of capital raised for a second quarter over the last five years. The second quarter showed continued signs of moderation in the private equity fundraising market despite exit activity showing some progress with an increased number of exits and aggregate exit value relative to the prior quarter. Fewer than 400 funds closed in Q2 2024, the lowest total for a quarter over the last five years. After weaker-than-expected economic conditions in early July, the market expects the Fed to implement a few interest rate cuts this year which could provide stimulus to the corporate sector, including private equity. The general expectation of a smooth transition is likely to encourage continued investment in deals and fundraising throughout the remainder of 2024. According to Preqin data, there were over 8,000 funds raising in the market as of June 2024, with aggregate capital targeted of approximately \$1.5 trillion. Larger private equity funds (\$1 billion or more target) account for approximately two-thirds of the aggregate capital targeted, with approximately 10% of funds in market targeting 66% of capital targeted. Funds continue to spend more time on the road, with 69% of private equity funds (and 76% of venture capital funds) closed in H1 2024 having been in market for more than 18 months compared to an average of 44% (and 41% for venture capital) from 2019-2023. Overall, this quarter has once again confirmed the trend toward industry concentration. While only 377 funds closed (the lowest number in any quarter since 2019 and down 48% from the second quarter of 2023), the \$177.1 billion aggregate capital raised is down only 1.6% year-on-year.

¹ Preqin

Purchase Price Breakdown, All LBOs¹



Dry Powder by Fund Type²

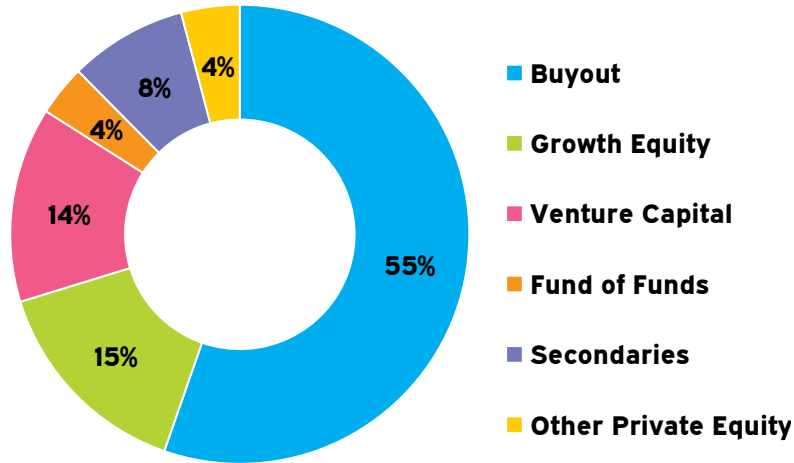


Relative to 2023, the median private equity buyout purchase price multiple has increased from 12.3x EBITDA to 14.0x EBITDA thus far in 2024. This represents a 14% increase from 2023 relative to the 5% decrease observed in 2023 from 2022. Due to the higher interest rate environment, recent deals, in aggregate, have been financed with more equity capital, as well. Overall, the increase in purchase price multiples on the year shows resilience to the downward pressure of higher interest rates and sellers' resistance to exit deals at lower valuations despite the continued imbalance between expectations of buyers and sellers through most of the year. Overall, total deal value increased relative to the first quarter, but fewer deals were completed. In the second quarter, the global private equity buyout average deal value increased to \$69.3 million, which remains below the historical average value of around \$78.4 million seen over the last five years before 2023 but above the 2023 average value of around \$58.9 million. Aggregate deal value reached \$120.1 billion in the second quarter, a 46% increase from the previous quarter's \$82.4 billion despite fewer deals being completed. The total number of deals was 1,733, down 9% from the 1,909 deals in the first quarter. Exit activity in the second quarter showed some progress compared with the first quarter with both the number of exits and aggregate exit value increasing. In the second quarter, there were a total of 515 exits, up by 2% from 505 exits in the prior quarter. The aggregate exit value grew by 47% to \$88.7 billion from \$60.4 billion in the previous quarter, resulting in an average exit value of \$172.3 million. In the first quarter, the average exit value was \$119.7 million. Dry powder levels as of Q1 2024 decreased by approximately 7% from Q4 2023 and sit at the lowest level since Q2 2022 but still remain elevated relative to historical data. Despite macroeconomic worries and decreased fundraising in 2023, GPs still have ample dry powder to deploy, which helps support deal flow even as debt financing has become more expensive and more restrictive.

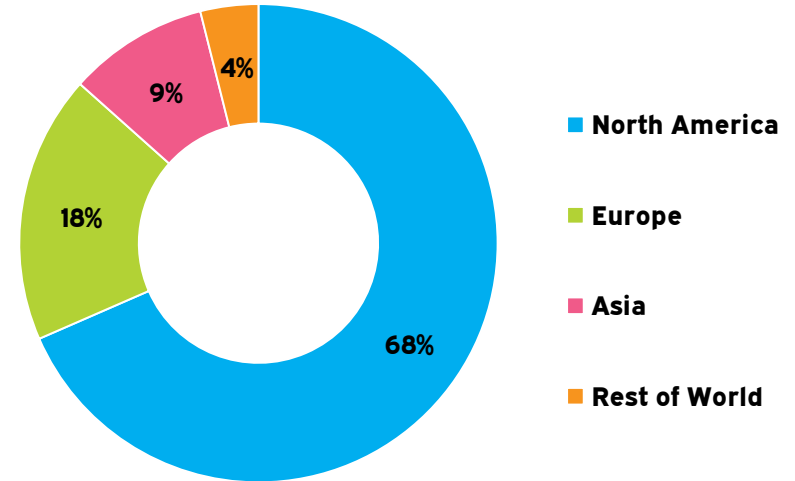
¹ Preqin. Data pulled on October 7, 2024.

² Global Private Equity Dry Powder Split by Strategy. Provided by Preqin on October 25, 2024. There is a six-month lag in Preqin's dry powder data with March 31, 2024, representing the latest figures, which were released in October 2024.

Capital Raised by Strategy¹



Capital Raised by Geography²



Buyout (55% of all private equity capital raised), Growth Equity (15%), and Venture Capital (14%) represented the private equity sub-strategies with the most capital raised during the second quarter of 2024. Buyout funds decreased from 64% of capital raised in Q1 2024 to 55% in the second quarter of 2024. Growth Equity increased the most of any strategy in Q2 2024, jumping up 5% of capital raised from the prior quarter. Secondaries, as a percentage of total capital raised, increased and demand remains as GPs and LPs seek liquidity solutions. Venture Capital, Fund of Funds, and Other Private Equity, which includes co-investment and hybrid vehicles, remained relatively consistent as a percentage of total capital raised through the second quarter compared to the previous quarter.

North America-focused vehicles continued to represent the highest geographic allocation of funds raised during the second quarter, representing 68% of total capital. This represents a substantial increase from the 49% of aggregate capital raised in the prior quarter, and North America accounted for 66% of the number of funds closed during the quarter. Conversely, as a percentage of total capital raised, commitments to Europe decreased from 41% to 18% and only represented 17% of funds closed. The divergence between North America and Europe represents a continued trend since mid-2022, which may be partly explained by the global dominance of the US public equity market and its increased volatility during 2022 and 2023, the subsequent denominator effect, and the swings in investor sentiment. Asia-focused funds increased as a percentage of total capital raised relative to the prior quarter, representing 9% of total capital raised, but still remain low compared with historical standards. Investor appetite for Rest of World also remains subdued with \$6.9 billion of aggregate capital raised across 21 funds (6% of funds closed) during the quarter.

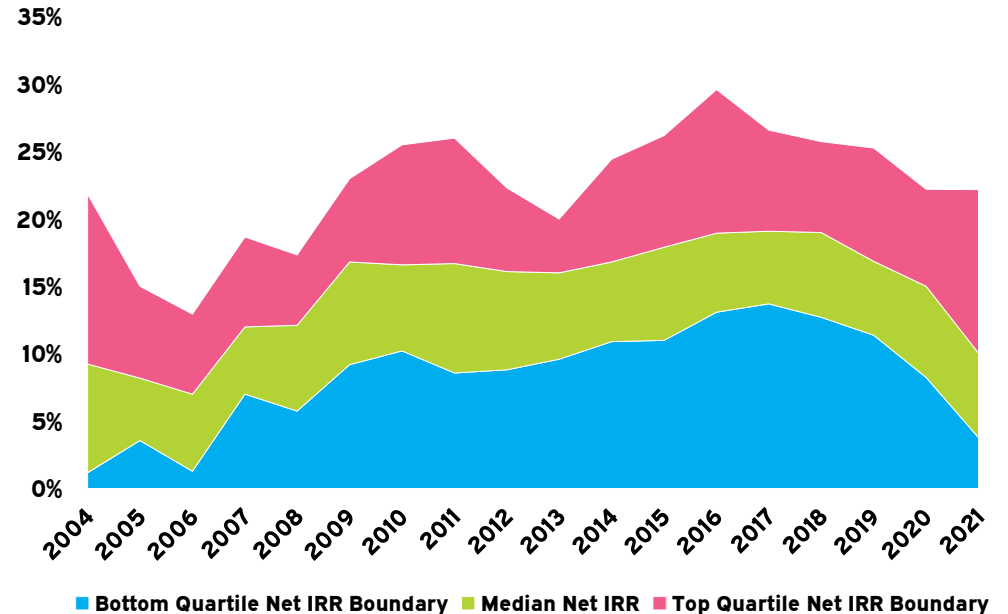
¹ Preqin

² Preqin

Private Equity Performance by Horizon¹

Horizon	Private Equity	Buyout	Venture Capital	Growth Equity
1 Year to 3/2024	8.9%	10.4%	1.2%	8.6%
3 Years to 3/2024	10.3	10.2	0.9	9.4
5 Years to 3/2024	15.4	15.2	11.5	17.9
10 Years to 3/2024	14.8	15.2	11.4	15.9

Private Equity Performance by Vintage Year²



As of March 31, 2024, one-year private equity returns increased from the prior quarter, generating an 8.9% IRR over the trailing 12 months through Q1 2024. This compares to the trailing 12-month return of 6.7% as of Q4 2023 and a one-year return of -4.7% at Q1 2023. Overall, private equity returns have proven resilient but remain below the highs of recent years. One-year returns returned positive for Venture funds at a 1.2% IRR and have increased for all strategies relative to Q4 2023 marks. In general, however, performance has been strong in each vintage year since the Global Financial Crisis. Buyout, Venture, and Growth funds have all generally performed well over the various time horizons on an absolute basis, with Growth Equity outperforming both Buyout and Venture funds across longer time periods as of Q1 2024. Lastly, the spread between first and third quartile performance in private equity has increased since the Global Financial Crisis; 2007 vintage funds reported an 11.7% spread while 2021 vintage funds reported an 18.4% spread.

¹ Preqin Horizon IRRs as of 3/31/2024. Data as of 6/30/2024 is not yet available.

² Preqin, Private Equity – All, Quartile Returns as of 6/30/2024. Data pulled on October 7, 2024.

November 19, 2024



**Hawaii Employer-Union Health
Benefits Trust Fund (EUTF)**

Real Assets 2Q 2024

Quarterly Performance Review

Avery Robinson

Senior Vice President

Aaron Quach

Vice President

Important Disclosures regarding the use of this document are included at the end of this document. These disclosures are an integral part of this document and should be considered by the user.

Hawaii EUTF Real Assets Portfolio Review

- Real Assets Market Overview
- Real Assets 2Q 2024 Quarterly Performance Review

Callan

Market Overview

U.S. Private Real Estate Performance: 2Q24

Appreciation returns negative once again

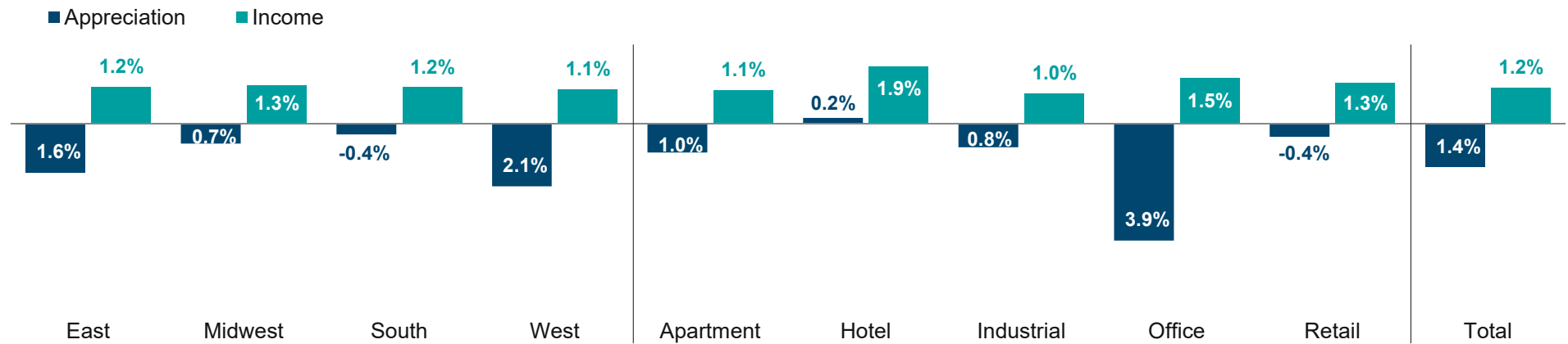
Valuations reflect higher interest rates

- Income returns were positive across sectors and regions.
- All property sectors and regions experienced negative appreciation, except for Hotels.
- Valuations are reflective of higher interest rates, which have put upward pressure on capitalization rate and discount rate assumptions.
- Return dispersion by manager within the ODCE Index was due to the composition of underlying portfolios.

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
NCREIF ODCE	-0.7%	-10.0%	1.0%	2.3%	5.5%
Income	0.8%	3.1%	2.8%	2.9%	3.2%
Appreciation	-1.5%	-12.8%	-1.8%	-0.7%	2.2%
NCREIF Property Index	-0.3%	-5.5%	2.3%	3.4%	6.1%
Income	1.2%	4.6%	4.2%	4.3%	4.5%
Appreciation	-1.4%	-9.8%	-1.8%	-0.8%	1.5%

Returns are geometrically linked

NCREIF Property Index Quarterly Returns by Region and Property Type



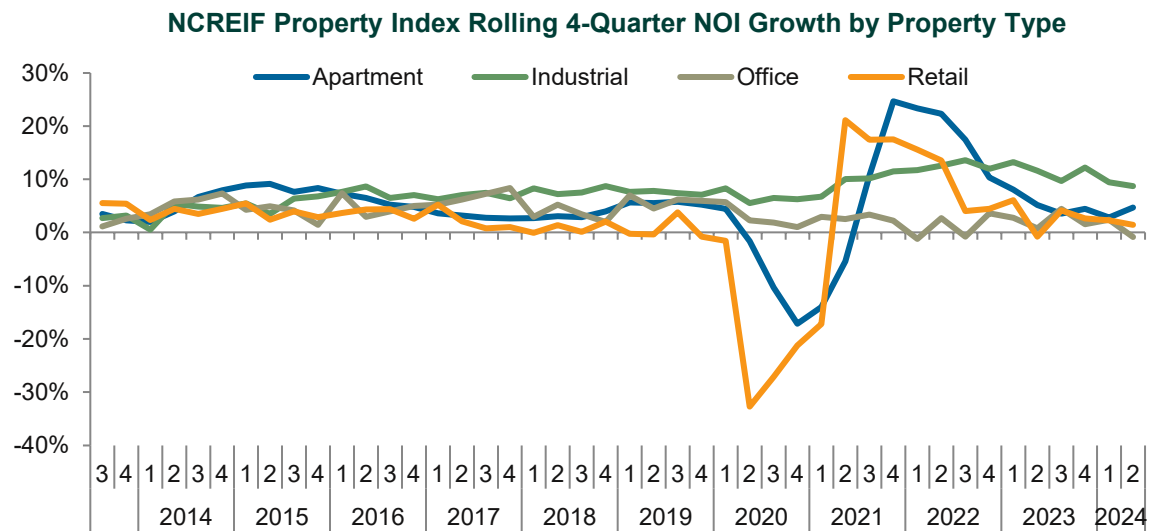
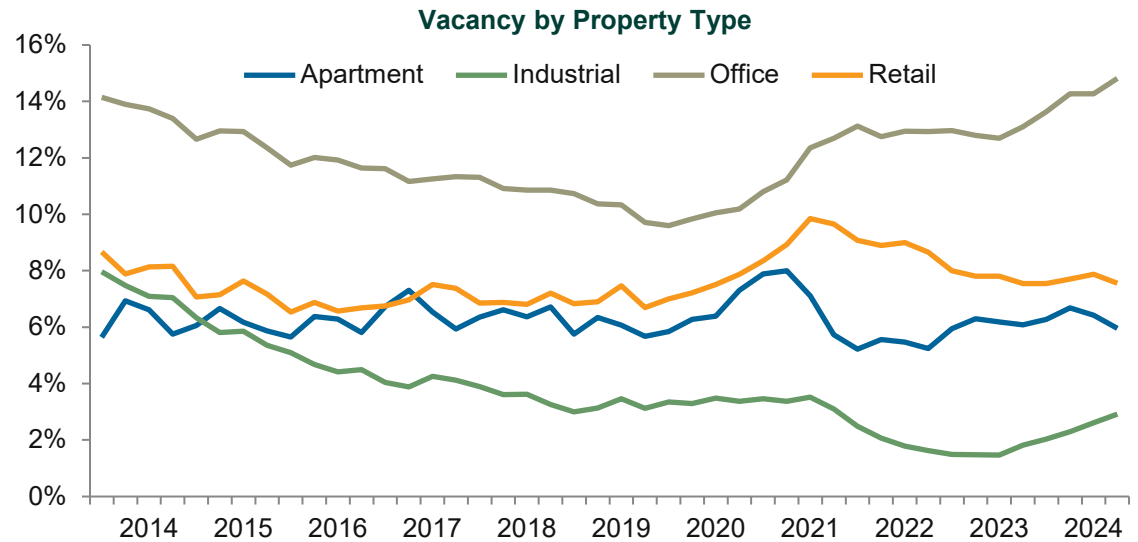
Source: NCREIF; ODCE return is net

U.S. Private Real Estate Market Trends

Vacancy rates and NOI growth remain mixed

Mixed vacancy and NOI growth results

- Vacancy rates increased slightly in Industrial and Office but decreased in Apartments and Retail.
- Vacancy rates are above long-term averages for Office, but below long-term averages for Apartment, Industrial, and Retail.
- Net operating income growth turned negative in office, while increasing further into positive territory for Apartments. In Industrial and Retail, net operating income growth decreased but remained positive.
- Overall, fundamentals remain relatively strong in Apartment, Industrial, Grocery-Anchored Retail, and most alternative sectors.

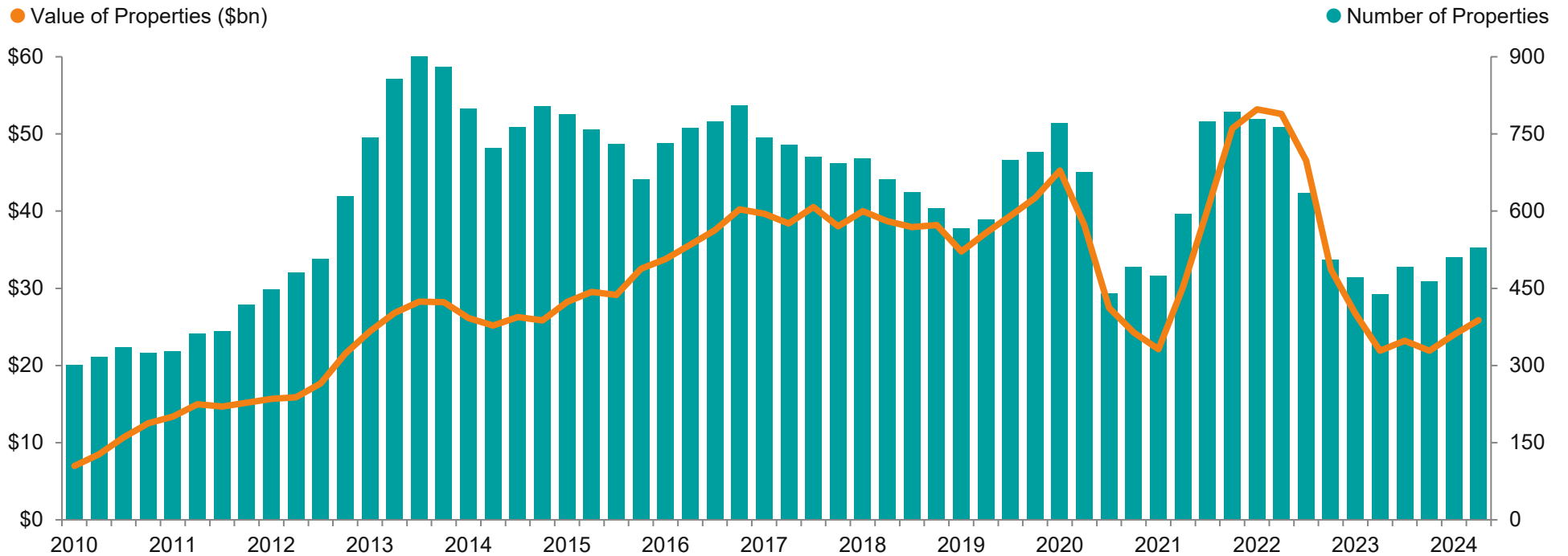


Source: NCREIF

U.S. Private Real Estate Market Trends

Pricing and transaction volumes remain low through 2Q24

NCREIF Property Index Rolling 4-Quarter Transaction Totals



- Transaction volume has flattened on a rolling four-quarter basis and remains well below five-year averages.
- In 2Q24, transaction volume increased slightly on a quarter-over-quarter basis. Transaction volume remains significantly lower compared to 2022.
- The volatile rise in interest rates is the driving force behind the slowdown in transactions. A bid-ask spread remains and price discovery continues to occur among market participants. Values continue to reset adjusting to current base rates.

Source: NCREIF

Office Market Conditions

Headwinds



Capital Markets: Cost and availability of debt, loan maturities and refinances impacting values

Demand Is Down: Work from home (WFH) and economic uncertainty

Capital Intensity: Cost to bring older stock up to standard is high. Taxes are increasing as city budgets are under pressure.

Obsolescence: Tenants favor newer, amenity-rich products. Most office not configured for conversion with high costs/regulations.

Valuations: Buyers and sellers cannot agree on pricing without a clear picture on future office occupancy as companies struggle with WFH. Asset values down 30%+.

Tailwinds



Capital Markets: Muted new supply expected

Demand for New Buildings: Demand exists for the right type of property.

Valuations: When valuations stabilize, buyers with capital may benefit from heavily discounted prices and distressed sellers.

Sub-sector Opportunities: Medical office has been more resilient and there are some opportunities for conversion of some office properties, and good land encumbered with office assets that may be available at the right price.

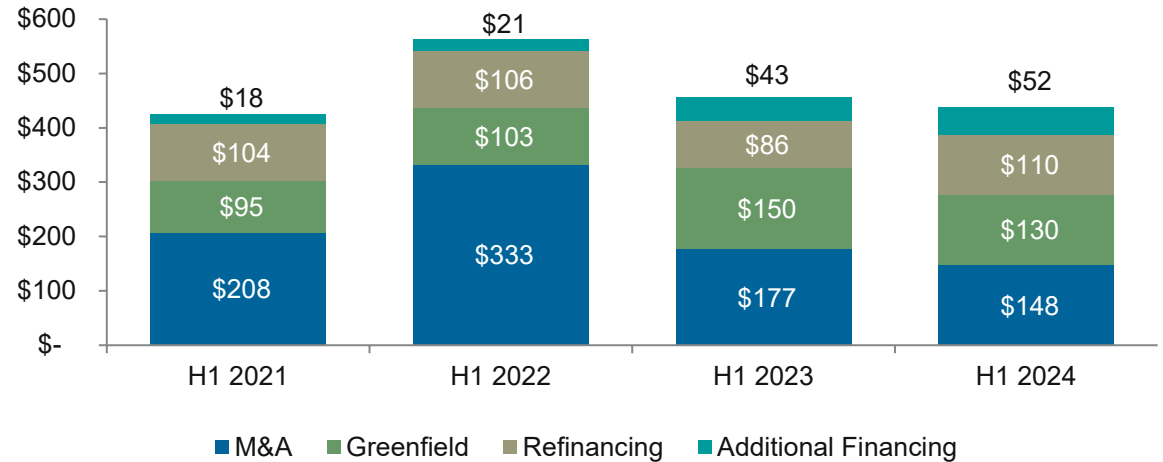
Recent Infrastructure Deal Volume and Sector Activity

Infrastructure deal volumes contracting, but pace is moderating

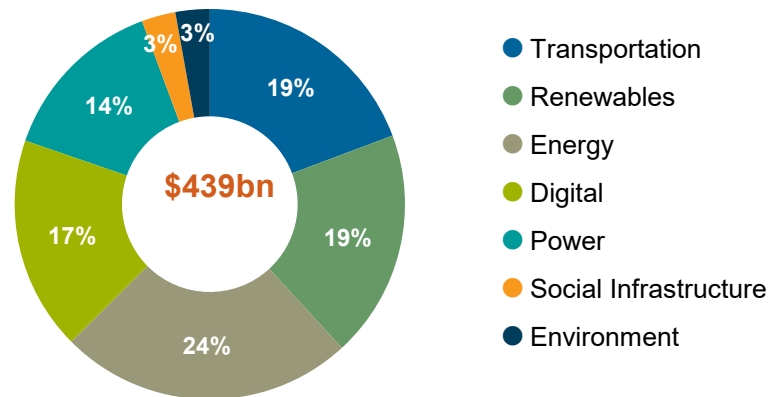
Highlights:

- The largest year-over-year increases in investment volumes are seen in transport, power, and digital infrastructure.
- Mergers and acquisitions activity in transport grew by 50%, due to deals in airports, rail leasing, and European train and bus operators.
- The share of energy deals has declined over time and its composition has changed over time as companies and investors look to decarbonize. There is an increased desire to invest in hydrogen, district heating networks, biogas, and biofuels.

Infrastructure Deal Value (\$bn)



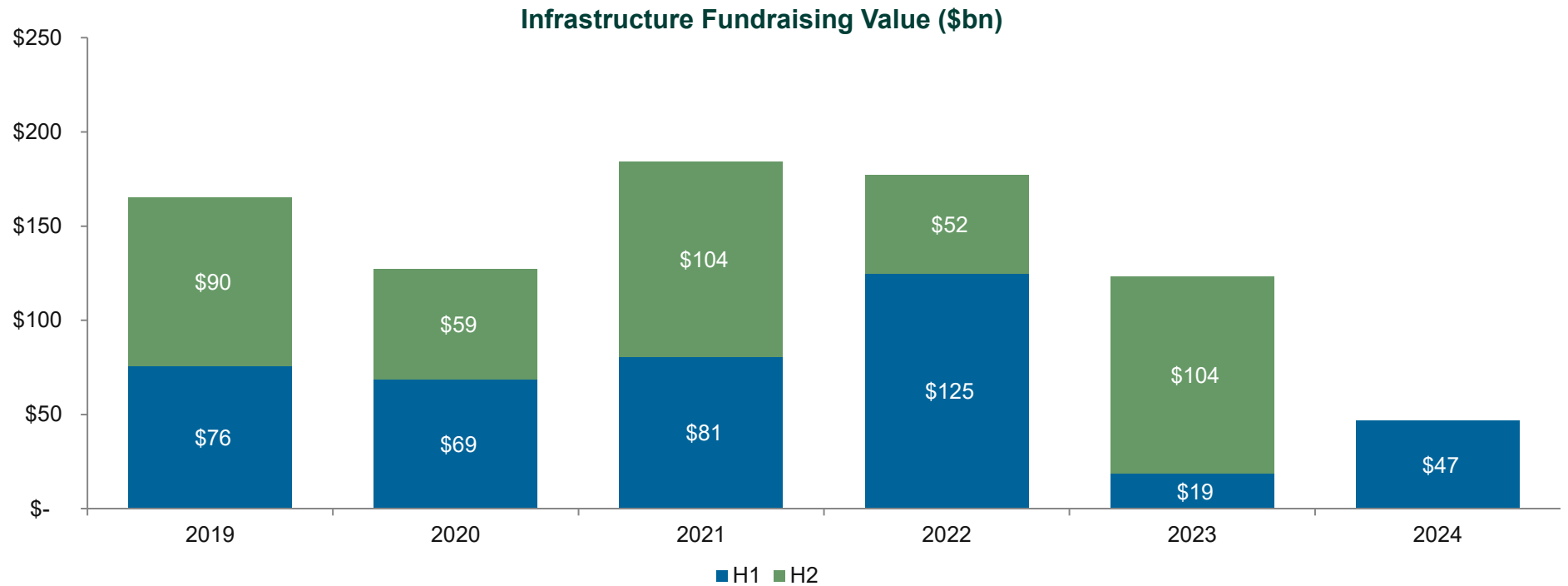
1H 2024 Deal Value Breakdown by Sector



Source: Inframation–Infralogic, CBRE, Callan Research

Infrastructure Fundraising Momentum Has Slowed Since 2021

Denominator impact led to fewer commitments in 2023, but has improved in 1H 2024



- Mega funds, targeting a fund size more than \$10 billion, have raised significant capital in recent years.
- The closed-end fund market continues to expand, with new offerings in infrastructure debt, energy transition, emerging markets and sector-specific strategies (e.g., digital and renewables).
- The open-end fund market is increasing, with multiple new funds coming to market since 2020.
- Infrastructure funds raised just over \$40 billion in the first half of 2024, a meaningful increase year-over-year.
- This momentum could persist in H2 2024 with at least 117 funds actively engaged in raising over \$196 billion

Source: Institutional Infrastructure Investor data, Prequin, Infralogic CBRE, Callan research

Infrastructure Market Conditions

Headwinds



- ▶ **GDP uncertainty / recession risk:** Uncertain macroeconomic conditions may impact demand for infrastructure assets. Investments reliant on growth may not achieve business plans.
- ▶ **Interest rates:** Higher interest rates put pressure on asset prices and may be slowing transaction activity.
- ▶ **Inflation:** Some infrastructure assets have inflation pass-through ability, although there can be a lag. Regulators may look unfavorably on higher prices to consumers over a longer term.
- ▶ **Debt maturities / banking sector risk:** Less impact than real estate to-date, but uncertain.

Tailwinds



- ▶ **Energy transition:** Renewables and transmission, NetZero targets, electrification, including EVs, Public policy support (Inflation Reduction Act).
- ▶ **Digitization:** Growth of AI and 5G, with associated data centers, small cell, tower and other infrastructure.
- ▶ **Supply Chain:** Expansion of supply chains to create more resilience and less reliance on a single supplier, while near-shoring is changing demand patterns for ports/logistics.
- ▶ **Aging Infrastructure:** Underinvestment across transport, utilities that may create attractive new opportunities with government incentives.
- ▶ **Travel rebound:** Airport traffic has improved beyond pre-pandemic trend.

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2Q 2024 Quarterly Performance Review

Hawaii EUTF Real Assets Allocation – June 30, 2024

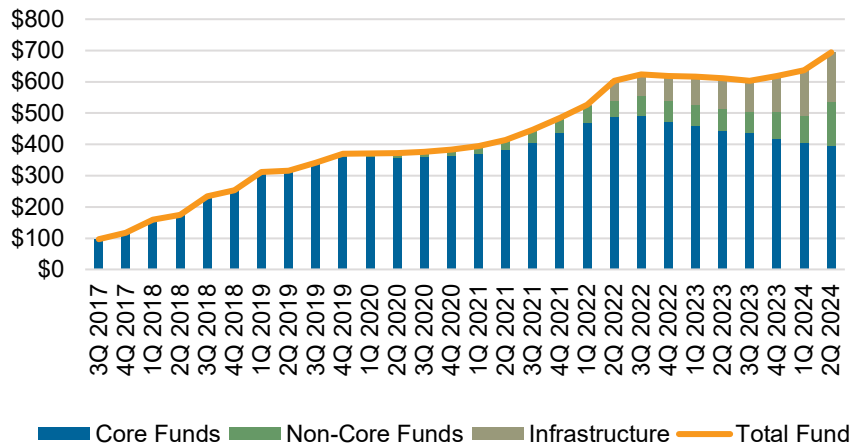
Core real estate anchors the program, unfunded commitments in non-core real estate & infrastructure

EUTF has a 12% Real Assets target (adopted June 2022).

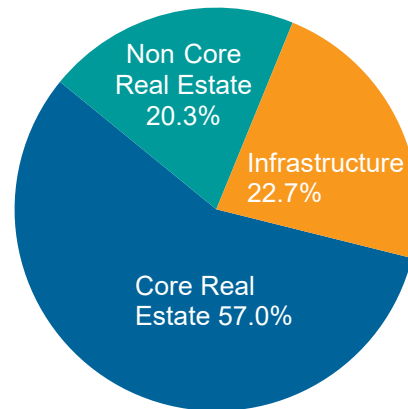
- Within Real Assets, there are three sub-categories, with target allocations as follows:
- 50% Core Real Estate
- 25% Non-Core Real Estate
- 25% Infrastructure

As of June 30, 2024	\$ Millions	(%)
Total Plan Assets	\$7,828.5	100.0%
Target Real Assets Allocation	\$939.4	12.0%
Plan's Real Assets Market Value	\$693.8	8.9%
Unfunded Commitments*	\$211.7	2.7%
Market Value & Unfunded Commitments	\$905.5	11.6%

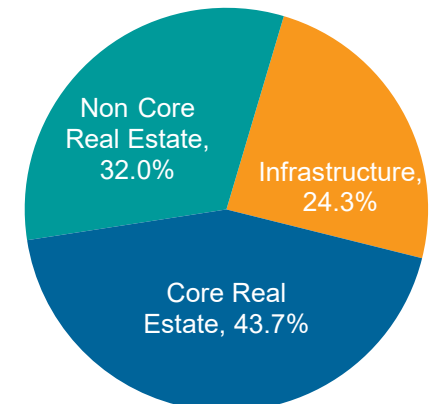
Historical Market Values by Strategy
(in \$ millions)



Hawaii EUTF Market Value Q2 2024



Hawaii EUTF NAV + Unfunded as of Q2 2024



*In May 2024, EUTF approved a commitment of \$75 million to Heitman Value Partners VI, which is not reflected here as the commitment has not yet been funded.

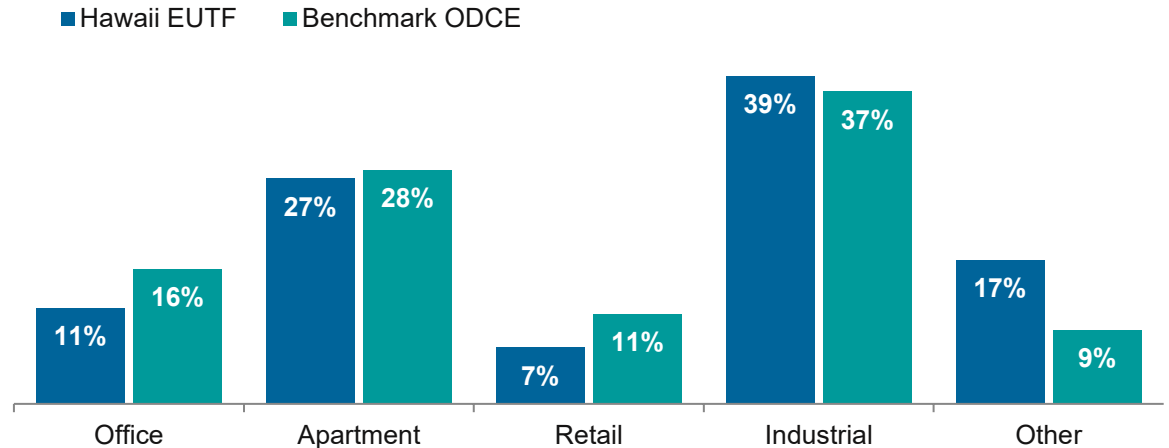
*In August 2024, EUTF approved a commitment of \$75 million to Pantheon Global Infrastructure Fund V, which is not reflected here as the commitment has not yet been funded.

Hawaii EUTF Real Estate Portfolio Diversification

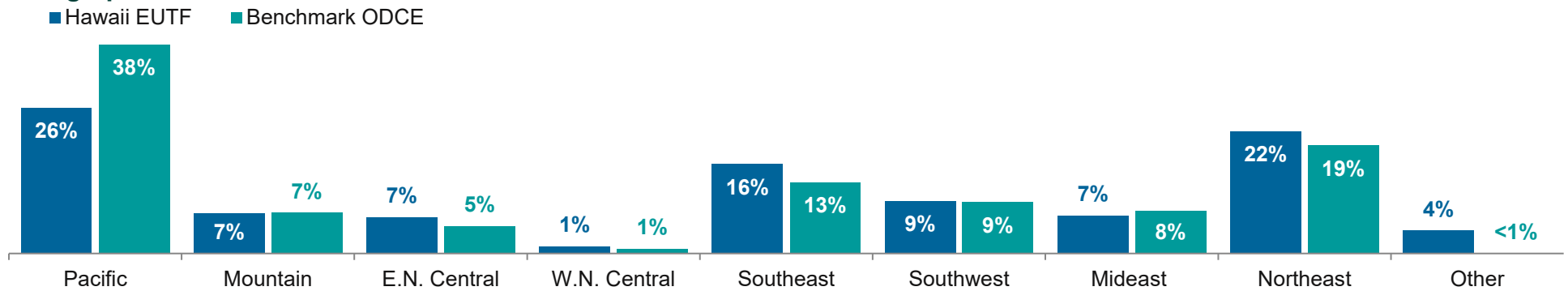
As of June 30, 2024

- The portfolio is well-diversified by geographic region. There is an underweight to Pacific and slight overweights to Southeast and Northeast.
- The portfolio has a 100 bps underweight to Apartments, as well as a 500 bps underweight to Office and a 400 bps underweight to Retail. EUTF has an 800 bps overweight to the ‘other’ property sectors relative to the benchmark.
- “Other” property types for EUTF include Self-Storage at 7.8%, Health Care at 3.8%, Hotels at 1.9%, Student Housing at 1.7%, and Mixed Use, Diversified, and Data Center below 1.0% each.
- “Other” geographic diversification reflects international exposure within the non-core portfolio.

Property Type Diversification



Geographic Diversification



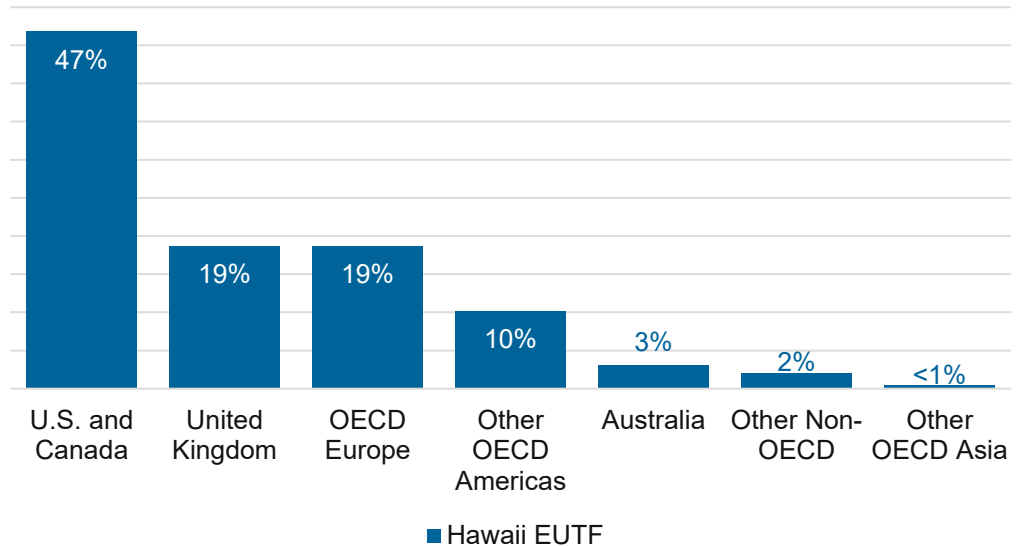
Geography: Other includes Australia, Canada, Japan, India, United Kingdom, Various Continental Europe

Hawaii EUTF Infrastructure Portfolio Diversification

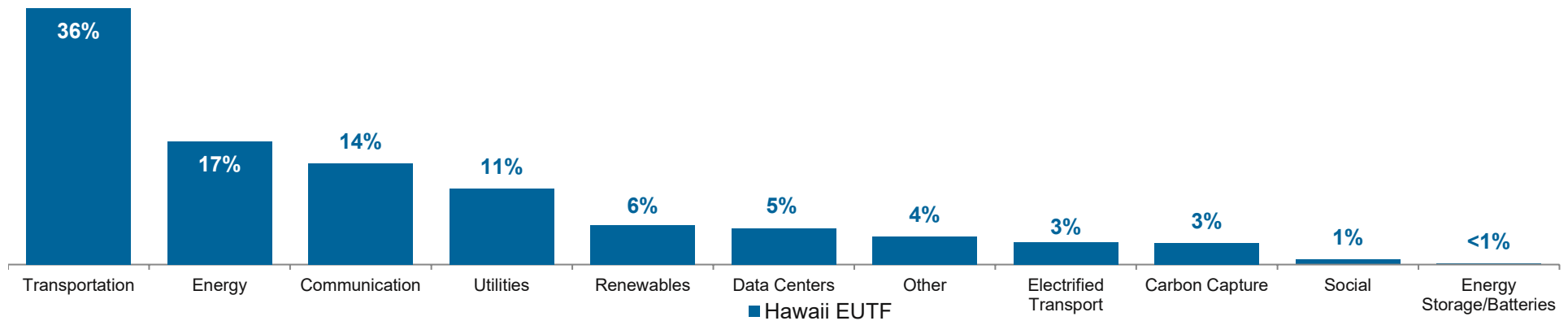
As of June 30, 2024

- All funds target global exposure in OECD* markets. I Squared Infrastructure Fund III also includes some growth markets exposure.
- IFM Global Infrastructure Fund is an open-end fund; it invests primarily across transport, utility, energy and midstream sectors.
- I Squared Infrastructure Fund III and Tiger Infrastructure Fund III are closed-end funds; both are completing their investment periods.
- Tiger and I Squared invest primarily across energy transition, communication, power, transport and energy infrastructure sectors.

Geographic Diversification



Sector Diversification



*Organization for Economic Co-operation and Development (“OECD”): 38 member countries that represent circa 80% of world trade.

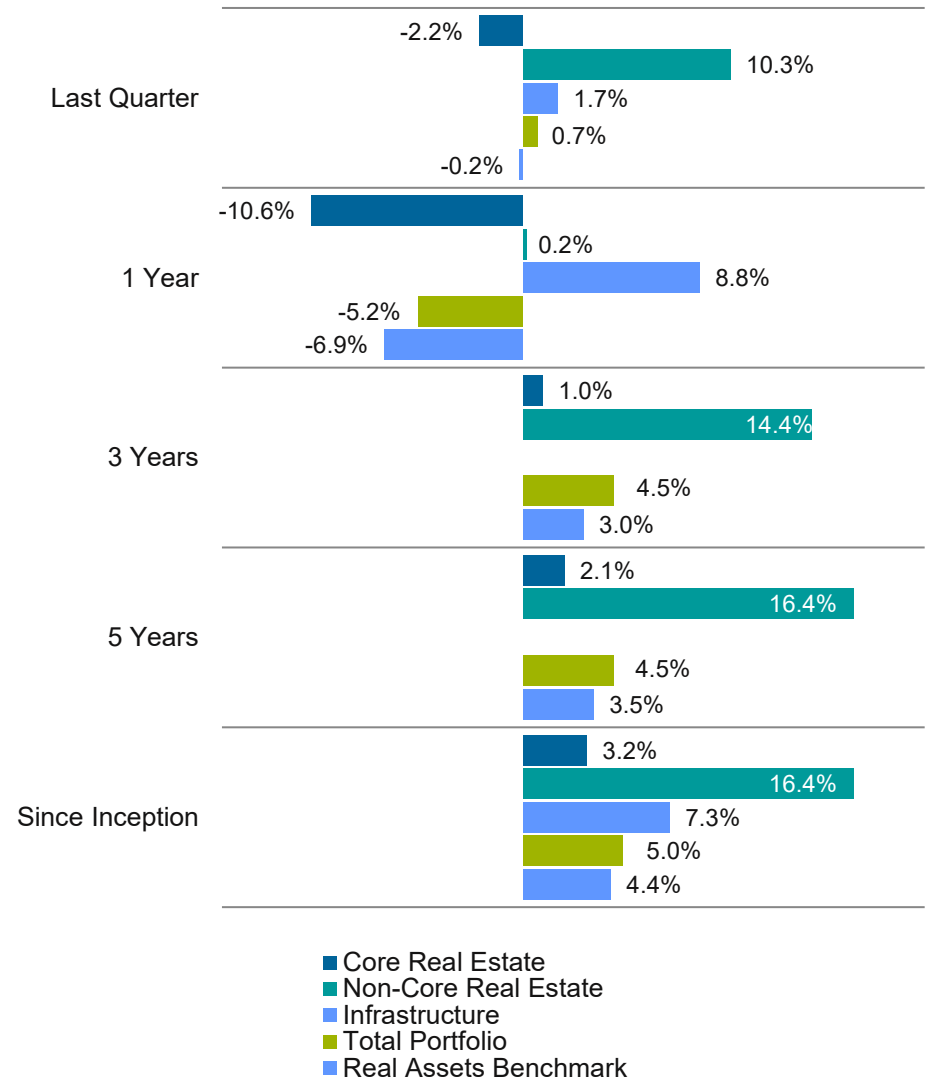
Geography: Other Non-OECD includes investments in Taiwan and India

Sector: Other includes cold storage, marine terminals, waste and utility-locating services

Real Assets Time-Weighted Returns

Periods Ending June 30, 2024

- In the Core Real Estate Portfolio, ASB Allegiance meaningfully underperformed the benchmark over the past quarter, while Heitman HART and Morgan Stanley Prime modestly outperformed. The portfolio continued to experience write-downs across sectors, led by office.
- The Non-Core Real Estate Portfolio generated a positive return over the past quarter. For the past year, the non-core real estate portfolio generated a slightly positive total return, despite valuations reflecting broader capital market headwinds across sectors.
- The Infrastructure portfolio generated a positive return of 1.7% over the quarter and 8.8% over the past year. Infrastructure valuations have been less impacted by market volatility than real estate valuations.



Performance numbers in this presentation are based on quarterly data collected from EUTF investment managers and calculated by Callan beginning in the first quarter of 2022. Quarterly performance history prior to the first quarter of 2022 was calculated and provided to Callan by the previous consultant, Meketa.

Since Inception data is as of 7/2017 for Core Real Estate, 7/2019 for Non-Core Real Estate, 1/2022 for Infrastructure, 7/2017 for Total Portfolio, and 7/2017 for Real Assets Benchmark. The Total Real Estate Benchmark returns are calculated by weighting the benchmark returns for each asset class. * Current Quarter Target = 63.6% NCREIF NFI-ODCE Val Wt Nt, 22.6% CPI-W+3.0% and 13.8% NCREIF NFI-ODCE Val WtNt+2.0%.

Investment Performance

Time-Weighted Returns for Periods Ending June 30, 2024

Fund Name	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Since Inception**
Core Portfolio	-2.2%	-10.6%	1.0%	2.1%	3.2% (7/17)
NCREIF ODCE Index	-0.7%	-10.0%	1.0%	2.3%	3.5% (7/17)
ASB Allegiance	-8.0%	-24.5%	-7.3%	-3.2%	-0.7% (7/17)
Heitman HART	-0.6%	-8.5%	3.1%	3.0%	3.0% (7/18)
Morgan Stanley PRIME	-0.2%	-3.9%	4.5%	4.5%	5.1% (7/17)
Non-Core Portfolio^	10.3%	0.2%	14.4%	16.4%	16.4% (7/19)
NCREIF ODCE + 2.0%	-0.2%	-8.0%	3.1%	4.3%	4.3% (7/19)
Artemis Fund IV	3.9%	-10.4%	-	-	-19.5% (1/23)
Blackstone BREP IX	-0.7%	-7.5%	12.2%	15.1%	15.1% (7/19)
Blackstone BREP X	5.9%	-7.0%	-	-	-12.9% (4/23)
TA Realty Fund XIII	N/M	-	-	-	N/M (10/23)
Infrastructure Portfolio	1.7%	8.8%	-	-	7.3% (1/22)
CPI + 3%	1.2%	5.9%	8.0%	7.3%	7.8% (1/22)
IFM Global Infrastructure Fund	1.0%	3.7%	-	-	7.1% (4/22)
I Squared Fund III	2.6%	16.5%	-	-	16.6% (1/22)
Pantheon Global Infra Fund IV	N/M	-	-	-	N/M (1/24)
Tiger TIP III	1.7%	8.6%	-	-	7.3% (4/22)
Total Fund	0.7%	-5.2%	4.5%	4.5%	5.0% (7/17)
Real Assets Benchmark*	-0.2%	-6.9%	3.0%	3.5%	4.4% (7/17)

The Total Real Estate Benchmark returns are calculated by weighting the benchmark returns for each asset class. * Current Quarter Target = 64.9% NCREIF NFI-ODCE Val Wt Nt, 21.7% CPI-W+3.0% and 13.3% NCREIF NFI-ODCE Val WtNt+2.0%. Note: N/M is not meaningful and used for funds with less than one year of investment performance for EUTF.

**Since inception performance represents the first full quarter of performance

^Non-Core Portfolio composite returns include TA Realty Fund XIII. Fund returns for TA Realty Fund XIII shown as not meaningful due to having less than 12 months of return history

Real Assets Portfolio Performance

As of June 30, 2024

	Vintage Year*	Capital Commitments (\$mm)	Paid-In Capital** (\$mm)	Uncalled Capital (\$mm)	% Paid-In	Distributed Capital (\$mm)	Net Asset Value (\$mm)	DPI	RVPI	TVPI	Net IRR
Core Real Estate		\$333.0	\$407.2	\$0.0	100%	\$71.3	\$395.5	0.2x	1.0x	1.2x	2.8%
ASB Allegiance	2017	\$95.0	\$110.3	\$0.0	100%	\$12.5	\$91.8	0.1x	0.8x	1.0x	-0.9%
Heitman HART	2018	\$71.5	\$85.0	\$0.0	100%	\$13.5	\$85.4	0.2x	1.0x	1.2x	3.0%
Morgan Stanley PRIME	2017	\$166.5	\$211.9	\$0.0	100%	\$45.4	\$218.3	0.2x	1.0x	1.2x	4.9%
Non-Core Real Estate		\$270.0	\$137.1	\$149.3	51%	\$21.4	\$140.7	0.2x	1.0x	1.2x	13.6%
Blackstone Real Estate IX	2019	\$55.0	\$60.6	\$8.7	111%	\$20.7	\$60.8	0.3x	1.0x	1.4x	13.6%
Artemis Fund IV	2022	\$70.0	\$17.4	\$53.3	25%	\$0.7	\$15.4	0.0x	0.9x	0.9x	-11.8%
Blackstone Real Estate X	2023	\$70.0	\$17.9	\$53.6	26%	\$0.0	\$17.6	0.0x	1.0x	1.0x	-7.3%
TA Realty Fund XIII	2023	\$75.0	\$41.3	\$33.8	55%	\$0.0	\$46.9	0.0x	1.1x	1.1x	N/M
Infrastructure		\$200.0	\$140.4	\$62.4	70%	\$2.1	\$157.6	0.0x	1.1x	1.1x	9.1%
IFM Global Infrastructure	2022	\$50.0	\$51.1	\$0.0	102%	\$1.1	\$58.3	0.0x	1.1x	1.2x	7.1%
I Squared Fund III	2020	\$50.0	\$24.0	\$26.2	48%	\$0.2	\$27.3	0.0x	1.1x	1.2x	12.5%
Pantheon PGIF IV	2024	\$50.0	\$27.8	\$23.4	56%	\$0.5	\$29.9	N/M	N/M	N/M	N/M
Tiger TIP III	2022	\$50.0	\$37.6	\$12.7	75%	\$0.3	\$42.1	0.0x	1.1x	1.1x	9.5%
Total		\$803.0	\$684.8	\$211.7	85%	\$94.8	\$693.8	0.1x	1.0x	1.2x	4.0%

New Commitments: The Real Assets Program approved a new non-core real estate commitment of \$75 million to Heitman Value Partners VI in the first quarter of 2024 and a new non-core infrastructure commitment of \$75 million to Pantheon Global Infrastructure Fund V in the the third quarter of 2024.

*Vintage Year represents first year EUTF's capital was called

**Paid-In Capital includes reinvestment of distributed capital N/M: Not Meaningful. Please refer to Appendix for definitions.

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Appendix and Glossary

Hawaii EUTF Real Assets Commitments

Additional non-core real estate and infrastructure commitments approved in 2024, but not yet funded

	Core Real Estate			Non Core Real Estate	Core Infrastructure	Non Core Infrastructure
2017	Heitman HART \$72 M	ASB Allegiance \$95 M	Morgan Stanley PRIME \$72 M			
2018			Morgan Stanley PRIME \$55 M	Blackstone Real Estate Partners IX \$55 M		
2019			Morgan Stanley PRIME \$40 M			
2020						
2021				Artemis Fund IV \$70 M	IFM Global Infrastructure Fund \$50 M	I Squared Fund III \$50 M
2022				Blackstone X \$70 M		Tiger TIP III \$50 M
2023				TA Realty Fund XIII \$75 M		Pantheon PGIF IV \$50 M
2024				Heitman Value Partners VI \$75 M		Pantheon PGIF V \$75 M

Note: Timing reflects year commitment was made

Definitions

Capitalization rate: Commonly known as cap rate, is a rate that helps in evaluating a real estate investment. $\text{Cap rate} = \text{Net operating income} / \text{Current market value (Sales price) of the asset}$.

Net operating income: Commonly known as NOI, is the annual income generated by an income-producing property after taking into account all income collected from operations, and deducting all expenses incurred from operations.

NCREIF ODCE Index: time-weighted return Index with an inception date of 12/31/1977. The Index is comprised of 36 open-end commingled funds. Inclusion within the Index requires (a) minimum of 80% of net fund assets invested in the multifamily, retail, industrial, office, or hotel property type, (b) maximum of 20% of net fund assets invested in real estate debt or private/public company equity, (c) at least 80% of net assets invested in properties with a minimum occupancy of 60%, (d) no more than 70% of real estate net assets invested in a single property type or region, (e) maximum of 40% leverage, and (f) at least 95% of net real estate assets invested within the U.S. market. In this report, the version of the NCREIF ODCE Index being used is the value weighted and net of fees.

NCREIF Property Index: time-weighted return Index with an inception date of 12/31/1977. The Index is comprised of over 10,000 individual properties. Inclusion within the Index requires (a) operating properties only, (b) property types apartments, hotels, industrial, office, and retail, (c) owned/controlled by a qualified tax-exempt institutional investor or its designated agent. The Index is reported on a non-leveraged basis even if the property is leveraged.

Definitions – Investment Styles

Core: Direct investments in operating, fully leased, office, retail, industrial, or multifamily properties using little or no leverage (normally less than 30%).

Value-Added: Core returning investments that take on moderate additional risk from one or more of the following sources: leasing, re-development, exposure to non-traditional property types, the use of leverage.

Opportunistic: Investments that take on additional risk in order to achieve a higher return. Typical sources of risks are: development, land investing, operating company investing, international exposure, high leverage, distressed properties.

Non Core: Includes both value added and opportunistic strategies

Closed-End Fund: A commingled fund with a stated maturity (termination) date with few or no additional investors after the initial formation of the fund. Closed-end funds typically purchase a portfolio of properties to hold for the duration of the fund and, as sales occur, typically do not invest the sales proceeds. (Source: NCREIF PREA Reporting Standards).

Commingled Funds: A term applied to all open-end and closed-end pooled investment vehicles designed for institutional tax-exempt investors. A commingled fund may be organized as a group trust, a partnership, a corporation, an insurance company separate account, or another multiple ownership entity.

Open-End Fund: A commingled fund with no finite life that allows continuous entry and exit of investors, typically on a quarterly basis, and engages in ongoing property operations as well as investment purchase and sale activities.

Real Estate Investment Trust (REIT): A corporation or business trust that combines the capital of many investors to acquire or provide financing for all forms of income-producing real estate. (Source: National Association of Real Estate Investment Trusts)

Definitions – Performance Monitoring

Vintage Year: Year of first drawdown

Paid-In Capital: Cash funded to the investment for acquisition and capital items (i.e., initial investment cost or significant capital improvements).

Uncalled Capital: Capital allocated to managers which remains to be called for investment. Amounts are as reported by managers.

Distributed Capital: Actual cash returned from the investment, representing distributions of income from operations. **Withdrawals:** Cash returned from the investment, representing returns of capital or net sales proceeds.

Net Asset Value: The value of an investment as determined by actual sales dollars invested and withdrawn plus the effects of appreciation and reinvestment; market value is equal to the ending cumulative balance of the cash flow statement (NAV).

Net IRR: IRR after advisory fees, incentive and promote. This includes actual cash flows and a reversion representing the LP Net Assets at market value as of the period end reporting date.

TVPI Multiple: The ratio of Total Value to Paid-in-Capital (TVPIC). It represents the Total Return of the investment to the original investment not taking into consideration the time invested. Total Value is computed by adding the Residual Value and Distributions. It is calculated net of all investment advisory and incentive fees and promote.

DPI Multiple: The ratio of distributions paid to the investor divided by the amount of contributions paid by the investor. It is calculated net of all investment advisory and incentive fees and promote. It is calculated net of all investment advisory and incentive fees and promote

RVPI Multiple: The ratio of net asset value divided by the amount of contributions paid by the investor.

Net IRR: The total net return for an investment or portfolio over the period of time the client has funds invested. Total portfolio Inception Returns include returns from investments no longer held in the current portfolio.

NCREIF Region Map

Geographic Regions and Divisions



Source: NCREIF

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MEMORANDUM

TO: Hawaii Employer-Union Health Benefits Trust Fund (“EUTF”)
FROM: Meketa Investment Group, Inc.
DATE: November 19, 2024
RE: EUTF Trust Fund Portfolio Objectives

Discussion

On August 20, 2024, the EUTF Investment Committee (“IC”) selected a new strategic allocation for the EUTF Trust Fund (adopted by the Board on September 24, 2024). The main focus of this process was to select a new policy structure for the assets “available for long-term investment.” During this discussion, Meketa and EUTF Staff indicated to the Investment Committee that one of the challenges of selecting a portfolio for the EUTF Trust Fund was a lack of a clear objective for the portfolio. Informally, the historical goal for the aggregate EUTF Trust Fund has been to outpace inflation over time. While this can remain a high-level objective for the portfolio, it does not provide for clear goals/constraints during the asset allocation optimization process, resulting in a more challenging decision-making process.

Based on IC feedback, Meketa and Staff spent time discussing, researching, and analyzing potential objectives/constraints for the EUTF Trust Fund, particularly the long-term component of the portfolio. At conclusion of this process, Meketa and Staff ended on the following objectives and constraints to be used in the optimization process in the future and adopted as policy:

- The long-term component of the EUTF Trust Fund should be based on the following objectives/constraints:
 - o Maximize return subject to:
 - Board/IC’s risk tolerance
 - 90% probability of exceeding inflation over ten years.

The table below highlights how the selected policy portfolio does/does not meet these objectives/constraints:

Return and Risk Objectives/Constraints
<ul style="list-style-type: none">- The selected policy portfolio for the long-term component exhibited a long-term expected return of 6.6% with an expected annual standard deviation of 9.4%.- Based on Meketa’s Capital Market Assumptions, inflation is expected to average 2.4% over the next ten years.- A 6.6% expected return and 9.4% expected annual standard deviation corresponds to a 90% probability of generating a 10-year return of 2.6% or more.

- 10th percentile return of 2.6% is greater than the expected inflation of 2.4%.
- The IC had material discussion regarding two portfolio options, and ultimately selected the higher risk portfolio (reflective of risk tolerance). Both options would have achieved the 90% probability objective.
- Other portfolio options that were originally under consideration by Meketa and EUTF Staff (e.g., portfolio #19 from the presented efficient frontier), would have failed the 90% probability test.

Should the usage/role of the EUTF Trust Fund change in the future, these objectives/constraints should be revisited. It is also prudent to revisit these objectives/constraints during each strategic allocation review, similar to a review of the actuarial position of the OPEB Trust portfolio during asset-liability studies.

Additionally, Meketa recommends the exploration of additional mechanisms in the performance report for better conveying results regarding the EUTF Trust Fund to the Board/IC. In particular, creating a “long-term component” composite within both the Actives and Retirees components that is benchmarked to a traditional policy benchmark (i.e., target weights * benchmark returns). Meketa and EUTF Staff will work on this with Northern Trust, with a goal of having this implemented by the Q1 2025 report.

Conclusion

Meketa and EUTF Staff recommend that the EUTF adopt specific objectives/constraints as policy for the long-term component of the EUTF Trust Fund. In particular:

- Maximize return subject to:
 - Board/IC’s risk tolerance
 - 90% probability of exceeding inflation over ten years.

Hawaii Employer-Union Health Benefits Trust Fund

November 19, 2024

Governance Discussion

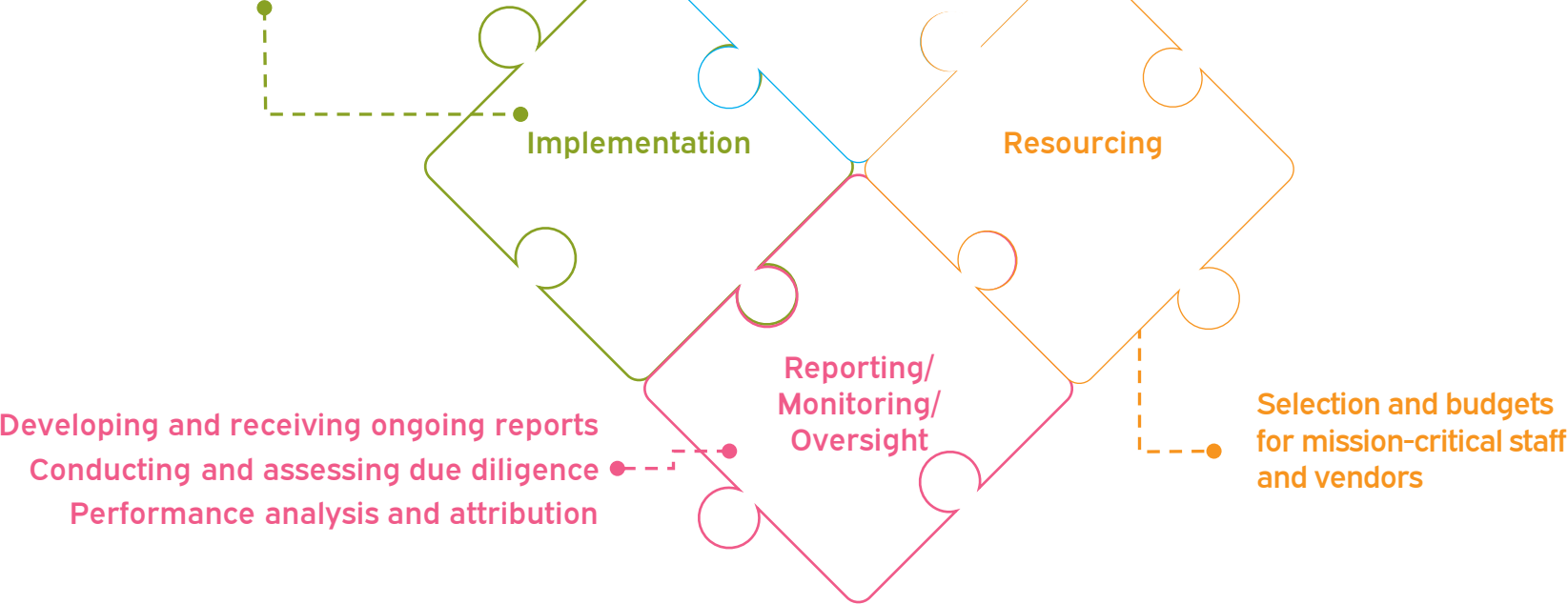
Goals of Today

- The goal of today is to provide the EUTF with a brief overview of a significant recent trend among large-scale institutional investors' procurement policies.
- "Delegated Authority" is a governance practice that a large number of public pensions have been receiving education on and/or directly implementing.
 - This largely pertains to granting manager selection authority directly to staff with varying degrees of Board/IC involvement in the final decision making.
 - The primary role of the Board/IC shifts to focus on oversight and monitoring.
- From Meketa's viewpoint, we see this trend continuing to gain traction in the United States.
 - It has already been a common governance practice among non-US plans (e.g., Canada, Europe, Australia, etc.) for decades.
 - Among the US investors who have adopted it, there has been little-to-no steps to reverse the process.
- Meketa recommends that the EUTF consider a marginal change to the manager interview process, which would represent a slight shift in-line with this trend.

Major Investment Decision Authority Areas*

- Selecting managers & investment vehicles
- Funding and de-funding investments
- Negotiating terms & conditions
- Day-to-day monitoring and compliance
- Rebalancing among portfolio classes and managers
- Adhering to guidelines and risk levels

- Setting implementation boundaries
- Portfolio construction and class blueprints
- Setting appropriate risk levels



- Developing and receiving ongoing reports
- Conducting and assessing due diligence
- Performance analysis and attribution

- Selection and budgets for mission-critical staff and vendors

* Presented framework draws heavily from "Investment Governance for Fiduciaries," CFA Institute Research Foundation, ©2019.

EUTF-Specific Considerations

- At a high level, managing an institutional investment portfolio involves two critical tasks:
1. Setting the overall construct/asset allocation (i.e., policy portfolio)
 2. Implementing the portfolio via manager/fund selection
- Delegated authority is not an all-or-nothing decision. Most plans, including EUTF, already have elements of delegated authority.
- With respect to #2 above (implementation), the EUTF IC has already shifted to a process where, for certain mandates, the EUTF IC only interviews the recommended manager (e.g., private markets) or does not interview the manager at all (e.g., private markets re-ups).
- Meketa believes that the EUTF would benefit from modifying the finalist interview process for liquid markets mandates to mirror those of the private markets.
- This would mean that the IC would only interview the recommended manager(s), rather than a pool of finalists that the IC then makes the selection from.
 - In the future, full delegated authority may be worthwhile for the EUTF, but it is not contemplated at this time.

Support for Delegated Authority Trend

- Fiduciary law supports delegated authority.
- For most public pensions, staff and consultants already conduct sourcing, filtering, and comprehensive due diligence on retained managers. This does not change.
- The frequency by which Boards/ICs do not follow staff/consultant manager recommendations is de minimis.
- The meeting time required to interview managers represents a material efficiency drag. Moreover, the ability of the Board/IC to add value at the final stage (~30-60 minute interviews) is challenging.
- Over the last 10+ years, a large number of peer systems have recognized the same efficiency and value-add challenges and have changed their governance models to address this.

Delegating elements of manager selection to investment staff is an industry-wide trend



Fiduciary Considerations

- Delegation of certain investment decisions (e.g., manager selection) can be aligned with fiduciary law if the delegation itself is done prudently and involves appropriate oversight and monitoring.
- *“The responsibility to be prudent covers a wide range of functions needed to operate a plan. Since you must carry out these functions in the same manner as a prudent person, it may be in your best interest to consult experts in such fields as investments and accounting.”*
 - IRS – Retirement Plan Fiduciary Responsibilities¹
- *“Prudence focuses on the process for making fiduciary decisions.”*
 - DOL – Meeting your Fiduciary Responsibilities²
- Under delegated investment frameworks, there is a shift at the Board/IC level to focus on monitoring.
 - “Duty to Monitor” implicitly increases in importance.

¹ <https://www.irs.gov/retirement-plans/retirement-plan-fiduciary-responsibilities>

² <https://www.dol.gov/sites/dolgov/files/ebsa/about-ebsa/our-activities/resource-center/publications/meeting-your-fiduciary-responsibilities.pdf>



Key Fiduciary Considerations

Duty of Prudence	Duty of Loyalty	Duty to Monitor	Duty to Diversify	Duty to Follow Plan Documents
<p>Examples where prudence is relevant:</p> <ul style="list-style-type: none">- Setting asset allocation- Documentation of processes- Retaining expert assistance- Reviewing performance- Managing risk- Delegation of authority	<ul style="list-style-type: none">- Discharge duties with respect to the funds solely in the interest of the participants and beneficiaries.	<ul style="list-style-type: none">- US supreme court held that fiduciaries have a continuing duty to monitor and remove imprudent investment options.- Board's role is to establish policies and procedures that day-to-day professionals can implement.- Adequate reporting is necessary for prudent monitoring.	<ul style="list-style-type: none">- Consider each investment within the context of the entire portfolio.- Create an "optimal" portfolio given the board's risk/return preferences.	<ul style="list-style-type: none">- A fiduciary shall discharge his or her duties with respect to the plan in accordance with the documents and instruments governing the plan.- Familiarity with plan documents is essential.

Conclusion

- Over the last 10+ years, a prominent theme among public pension systems has been the transition to a delegated authority implementation model – a governance framework that has been present at international plans for decades.
- Delegated authority is aligned with fiduciary law but requires corresponding policies and procedures. Moreover, those that adopt delegated authority tend to do so incrementally (e.g., one asset class then another).
 - The EUTF has already partially adopted this within private markets manager selection.
- Meketa believes that the EUTF would benefit from modifying the finalist interview process for liquid markets mandates to mirror those of the private markets.
 - This would mean that the IC would only interview the recommended manager(s), rather than a pool of finalists that the IC then makes the selection from.
 - The Multi-Asset Credit search that is currently being conducted for the EUTF Trust Fund would be appropriate for this process.
 - In the future, full delegated authority may be worthwhile for the EUTF, but it is not contemplated at this time.



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