



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

May 14, 2024

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

DATE: May 20, 2024, Monday
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 – March 5, 2024
- III. Executive Session
 - A. Private Real Assets 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. Co-Investment Update [Authorized under HRS 92-5(a)(8) and HRS 87A-31(g)]
 - D. Review of Minutes – March 5, 2024 [Authorized under HRS 92-5(a)(8) and 92-9(b)]
- IV. New Business
 - A. Quarterly Performance Report – Q1 2024
 - B. Quarterly Private Equity Report and Annual Portfolio Review – Q4 2023
 - C. Quarterly Private Real Assets Report – Q4 2023
 - D. Quarterly Private Credit Report – Q4 2023
 - E. OPEB Asset-Liability Study Part 2

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.

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:

- [Click here to join the meeting](#) or copy and paste the following URL into your browser:
https://teams.microsoft.com/l/meetup-join/19%3ameeting_MTczMzdkMDUtMzFjNC00ZjE3LWI4YjltMTIwZDBkMmNmY2Mz%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
 - 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: 801 756 756#

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, March 5, 2024

TRUSTEES PRESENT

Mr. Robert Yu, Vice-Chairperson
Ms. Jacqueline Ferguson-Miyamoto
Mr. Wesley Machida (via video conference)
Ms. Sabrina Nasir (via video conference)
Ms. Maureen Wakuzawa
Mr. James Wataru
Mr. Ryan Yamane (via video conference, excused at 11:52 a.m.)

TRUSTEES ABSENT

Mr. Christian Fern, Chairperson

ATTORNEY (via video conference)

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

EUTF STAFF

Mr. Derek Mizuno, Administrator
Mr. David Okamoto, Chief Investment Officer
Mr. Joao Marco Maffini
Mr. Brett Tatsuno
Ms. Desiree Yamauchi

CONSULTANTS (via video conference, unless otherwise noted)

Ms. Catherine Beard, Callan LLC
Mr. Colin Bebee, Meketa Investment Group (in person)
Mr. Constantine Braswell, Callan LLC
Mr. Daniel Brown, Callan LLC
Mr. Jonathan Camp, Meketa Investment Group
Mr. Tad Fergusson, Meketa Investment Group
Mr. Inwoo Hwang, Meketa Investment Group
Ms. Jan Mende, Callan LLC (in person)
Mr. Aaron Quach, Callan LLC
Mr. Avery Robinson, Callan LLC
Ms. Stephanie Sorg, Meketa Investment Group (in person)

OTHERS PRESENT (via video conference)

Joe Ebisa, With Intelligence

I. CALL TO ORDER

The meeting of the Investment Committee was called to order at 9:01 a.m. by Trustee Robert Yu, Vice-Chairperson, in the Hawaii Employer-Union Health Benefits Trust Fund (EUTF) Board Room, City Financial Tower, 201 Merchant Street, Suite 1700, Honolulu, Hawaii, on Monday, March 5, 2024.

II. REVIEW OF MINUTES – DECEMBER 11, 2023

The Investment Committee reviewed the draft minutes of December 11, 2023.

MOTION was made and seconded to approve the minutes of December 11, 2023, as circulated. (Ferguson-Miyamoto/Wataru) The motion passed unanimously. (Employer Trustees-4/Employee-Beneficiary Trustees-3)

III. EXECUTIVE SESSION

MOTION was made and seconded to move into Executive Session at 9:03 a.m. (Ferguson-Miyamoto/Wataru) The motion passed unanimously. (Employer Trustees-4/Employee-Beneficiary Trustees-3)

The regular meeting reconvened at 10:38 a.m.

Vice-Chairperson Yu reported that the following occurred during Executive Session:

- Approved a recommendation to the Board to commit funds to a private equity fund, subject to contract negotiations.

HAWAII EMPLOYER-UNION HEALTH BENEFITS TRUST FUND

Investment Committee Meeting

March 5, 2024 Minutes

Page 2

- 1 • Approved a recommendation to the Board to commit funds to a private credit fund, subject to
- 2 contract negotiations.
- 3 • Approved a recommendation to the Board pertaining to private real assets manager.
- 4 • Approved a recommendation pertaining to investment consulting services.
- 5 • Reviewed and discussed the December 11, 2023 Executive Session Minutes.
- 6

7 MOTION was made and seconded to approve the Executive Session minutes of December 11, 2023, as
8 circulated. (Ferguson-Miyamoto/Wakuzawa) The motion passed unanimously. (Employer Trustees-4/
9 Employee-Beneficiary Trustees-3)

10
11 IV. NEW BUSINESS

12 A. Quarterly Performance Report – Q4 2023

13 Mr. Colin Bebee and Ms. Stephanie Sorg of Meketa Investment Group (Meketa) highlighted
14 significant points in the Q4 Performance Report. The OPEB Trust Fund portfolio finished the
15 quarter at \$7.2 billion and gained 4.5% and 9.3% (net of fees) for the quarter and 1-year,
16 underperforming the policy benchmark of 5.0% and 10.6%, respectively. Since inception (June 23,
17 2011), the portfolio has returned 7.2% (net of fees) versus the policy benchmark return of 7.1%.

18
19 During the quarter, all public managers with the exception of Acuitas (Microcap), Northern Trust
20 (Non-US Public Equity), BlackRock (TIPS), AlphaSimplex (Trend Following), Mount Lucas
21 (Trend Following), Kepos (Alternative Risk Premia), and Pillar (Reinsurance) performed in line
22 with or above their benchmarks. Acuitas underperformed due to underweight allocations in the
23 financials and healthcare sectors but has delivered strong outperformance since inception. Northern
24 Trust and BlackRock are both passive strategies, so they have closely tracked the benchmark over
25 longer periods. AlphaSimplex and Mount Lucas lagged their benchmark due to slight variances in
26 their trading rules versus the index and were especially affected by recent US Dollar depreciation.
27 Kepos underperformed due to exposures to the carry factor across currencies and commodities.
28 Pillar produced solid absolute returns during the quarter and the calendar year but underperformed
29 the benchmark as publicly traded catastrophe bonds, which make up the bulk of the index, strongly
30 appreciated.

31
32 Mr. Bebee reported that the EUTF Trust Fund finished the quarter at \$561.4 million, up 5.0% and
33 8.1% for the quarter and 1-year, respectively (net of fees). Since inception (October 1, 2013), the
34 portfolio has returned 3.5% (net of fees).

35
36 During Meketa's presentation, the Committee, Meketa, and EUTF staff discussed the performance
37 of the Diversifying Strategies strategic class and how the overall portfolio is positioned to deal
38 with potential market risks in the coming years.

39
40 B. Manager Watch Status Recommendation

41 Mr. Bebee prepared a memorandum and presented a recommendation to the Committee to remove
42 AlphaSimplex from Watch Status. AlphaSimplex manages an active Systematic Trend Following
43 strategy within the EUTF's Diversifying Strategies class.

44
45 On October 19, 2022, AlphaSimplex notified Meketa that the firm would be acquired by Virtus
46 Partners (Virtus), a publicly traded asset manager that operated a multi-boutique structure. On
47 November 16, 2022, Meketa recommended that the EUTF place AlphaSimplex on watch, effective
48 November 1, 2022. Virtus completed the acquisition of AlphaSimplex in April 2023 from Natixis,
49 a large French financial services firm. Meketa has monitored AlphaSimplex's operations

HAWAII EMPLOYER-UNION HEALTH BENEFITS TRUST FUND

Investment Committee Meeting

March 5, 2024 Minutes

Page 3

1 throughout 2023 and believes the new ownership arrangement had no material impact on the
2 strategy and team.

3
4 MOTION was made and seconded to recommend to the Board removal of AlphaSimplex from
5 Watch Status. (Ferguson-Miyamoto/Wataru) The motion passed unanimously. (Employer
6 Trustees-4/Employee-Beneficiary Trustees-3)

7
8 C. Quarterly Real Assets Report and Annual Portfolio Review – Q3 2023

9 Ms. Jan Mende of Callan, LLC highlighted significant points in the Real Assets Annual
10 Performance Review. Since reporting for private market investments is lagged by one quarter, the
11 report covers performance through third-quarter 2023. At the end of the quarter, Private Real
12 Assets reported a market value of \$606.2 million (8.9% of the total portfolio), with a since
13 inception return of 6.3% (net of fees), outperforming the asset class benchmark of 5.9%.

14
15 During Callan’s presentation, the Committee, Callan, and EUTF staff discussed recent sector
16 trends within real estate and infrastructure.

17
18 D. Quarterly Private Equity Report – Q3 2023

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

20
21 E. Quarterly Private Credit Report – Q3 2023

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

23
24 F. OPEB Asset-Liability Study Part 2 – Capital Market Assumptions

25 Mr. Bebee presented Part 2 of the OPEB Asset-Liability (A/L) study. Part 2 focused on the
26 methodology behind Capital Market Assumptions and the long-term risk and return expectations
27 for the OPEB Trust. Meketa also modeled OPEB’s liabilities (projected future benefit payments)
28 and how the funded status could change under various return scenarios assuming the current asset
29 allocation and funding policy. The Committee discussed the current funding policy and agreed that
30 alternative scenarios (i.e., if the employers are not able to meet their funding requirements) should
31 also be explored for comparison. At the next Investment Committee meeting, a new long-term
32 strategic asset allocation will be recommended for approval at that meeting or a subsequent
33 meeting.

34
35 Trustee Ryan Yamane was excused from the meeting at 11:52 a.m.

36
37 V. FUTURE AGENDA ITEMS DISCUSSION AND POSSIBLE MEETING DATES

38 Mr. David Okamoto reported that the next Investment Committee meeting is scheduled for Monday,
39 May 20, 2024.

40
41 VI. ADJOURNMENT

42 MOTION was made and seconded for the Investment Committee to adjourn the meeting at 11:55 a.m.
43 (Wataru/Ferguson-Miyamoto) The motion passed unanimously. (Employer Trustees-3/Employee-
44 Beneficiary Trustees-3)

45
46 Respectfully submitted,

47
48
49
50 _____
Robert Yu, Vice-Chairperson

HAWAII EMPLOYER-UNION HEALTH BENEFITS TRUST FUND

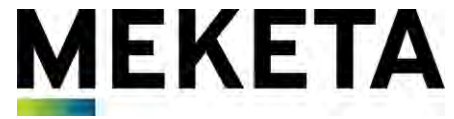
Investment Committee Meeting

March 5, 2024 Minutes

Page 4

- 1
- 2 Documents Distributed:
- 3 1. Draft December 11, 2023 Investment Committee Minutes. (3 pages)
- 4 2. EUTF, Q4 2023 Quarterly Report, prepared by Meketa Investment Group, dated March 5, 2024. (105
- 5 pages)
- 6 3. Memorandum to Hawaii Employer-Union Health Benefits Trust Fund (“EUTF”) from Meketa
- 7 Investment Group, Regarding AlphaSimplex Group (“AlphaSimplex”) – Watch Status Update, dated
- 8 March 5, 2024. (4 pages)
- 9 4. EUTF, Real Assets Annual Performance Review, prepared by Callan LLC, dated March 5, 2024. (22
- 10 pages)
- 11 5. EUTF, Private Equity Q3 2023 Quarterly Report, prepared by Meketa Investment Group, dated March 5,
- 12 2024. (16 pages)
- 13 6. EUTF, 3Q 2023 Private Credit Portfolio Review, prepared by Callan LLC, dated March 5, 2024. (21
- 14 pages)
- 15 7. EUTF Asset-Liability Study Part 1B, prepared by Meketa Investment Group, dated March 5, 2024. (40
- 16 pages)

DRAFT



Hawaii Employer-Union Health Benefits Trust Fund

May 20, 2024

Q1 2024 Quarterly Report

1. Introduction/Portfolio Review
2. Portfolio Detail
 - Managers/Funds on Watch – Performance Monitoring
 - Performance Attribution v. Policy Benchmark – Net-Of-Fees
 - Manager Fund/Fee Analysis
3. EUTF Trust Fund Portfolio Review
4. Economic & Market Update as of March 31, 2024
5. Appendix

Introduction/Portfolio Review

	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	S.I.	Inception Date
Total Plan - Gross	3.8	7.2	10.4	5.4	8.1	7.0	7.4	Jul-11
Total Plan - Net	3.7	7.1	10.3	5.2	7.9	6.8	7.3	Jul-11
<i>Policy Benchmark¹</i>	<i>4.1</i>	<i>7.8</i>	<i>11.5</i>	<i>5.2</i>	<i>7.9</i>	<i>6.8</i>	<i>7.3</i>	
Excess Return vs. Net ²	-0.4	-0.7	-1.2	0.0	0.0	0.0	0.0	
<i>InvMetrics All Public DB Plans > \$1B Median³</i>	<i>3.8</i>	<i>8.9</i>	<i>11.5</i>	<i>4.5</i>	<i>7.7</i>	<i>6.7</i>	<i>7.3</i>	
Population	68	51	46	42	41	35	31	
Reference								
Original 50/50 Benchmark	2.8	8.3	10.7	2.4	5.7	5.5	5.9	Jul-11
65/35 Bench (blend) ⁴	6.1	13.2	19.1	5.7	9.7	8.8	9.4	Jul-11

Summary of Cash Flows (\$'000's)

	QTD	FYTD	Since Inception	Inception Date
Total Plan				07/01/2011
Beginning Market Value	7,222,104	6,309,001	--	
Net Cash Flow	131,924	821,304	5,329,927	
Net Investment Change	249,462	423,626	1,777,981	
Income	28,443	83,703	585,669	
Ending Market Value	7,628,104	7,628,104	7,628,104	

1 See Appendix for Policy Benchmark (blend) definition.

2 Net-of-fees vs Policy Benchmark.

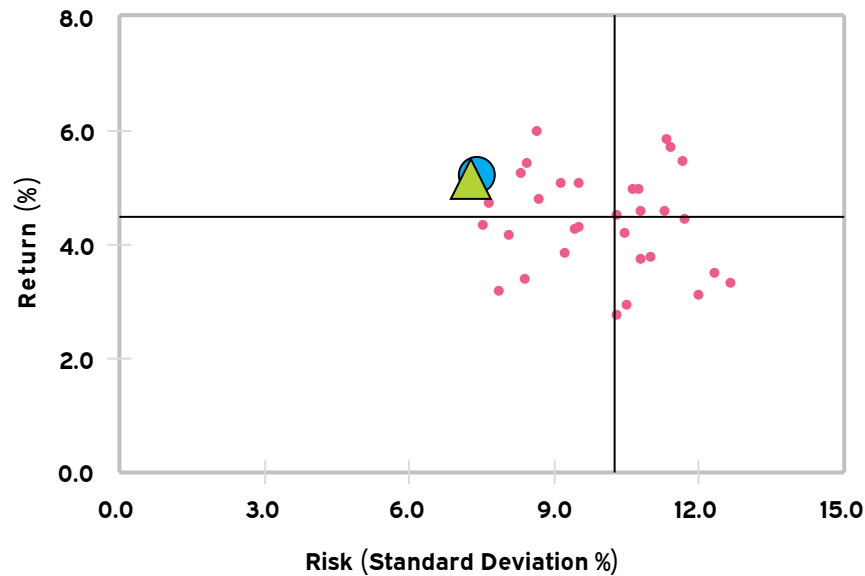
3 Investment Metrics (IM) - Public DB > \$1 Billion Universe includes BNY Mellon Public DB > \$1 Billion Universe and IM client data.

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 first quarter of 2024 saw gains across public equity markets, largely driven by continued strength in economic data, while shifting rate cut expectations weighed on fixed income markets.
- The EUTF Total Portfolio ended the quarter with a value of approximately \$7.6 billion.
- The EUTF Total Portfolio, net of fees, matched the Policy Benchmark over the trailing 3-, 5- and 10-year periods as well as since inception, though the portfolio lagged over the most recent quarter and trailing 1-year periods. Over longer-term periods, outperformance within the Aggressive Growth class has been a meaningful contributor to the Total Portfolio's outperformance. The Total Portfolio trailed the benchmark over the trailing 1-year period, largely due to 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 the trailing quarter and 1-year period, 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 matching the Median Public Fund since inception.

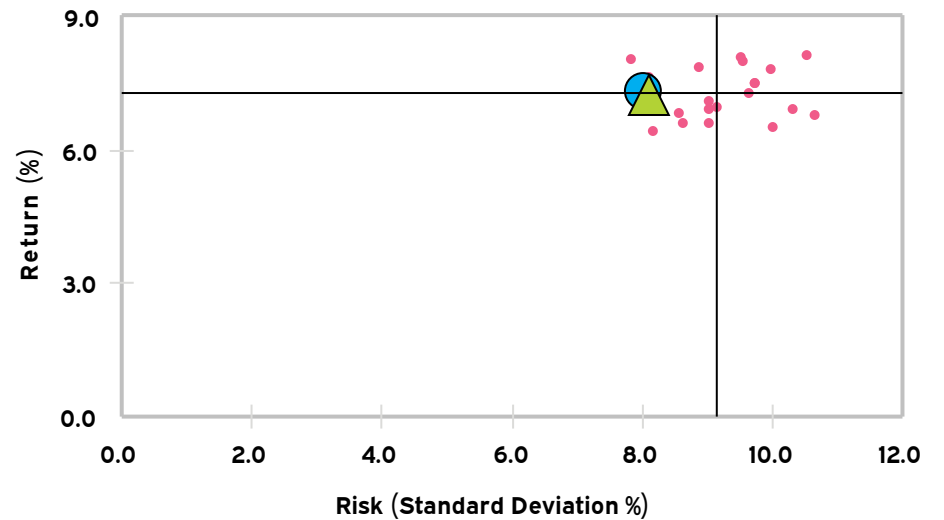
→ The most recent 2022 Strategic Allocation Review built off decisions from the 2020, 2018, and 2016 reviews. A common theme from each of these reviews was the build-out of private markets exposures. This evolution is in process and will continue over a multi-year period. The Total Portfolio is continually transitioning to new long-term policy targets as outlined in the approved Evolving Policy Plan. As of Q1 2024, the Total Portfolio allocation closely mirrored the policy targets but was underweight in Stabilized Growth. The 2023/2024 Asset-Liability Study is expected to be completed in Q2 2024 which will contain a new long-term strategic allocation policy that is approved by the EUTF Board.

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



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

**Annualized Return vs. Annualized Standard Deviation
Since Inception Ending March 31, 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	5.2	7.4	0.4
Policy Benchmark	5.2	7.3	0.4
InvMetrics All Public DB Plans > \$1B Median	4.5	10.3	0.2

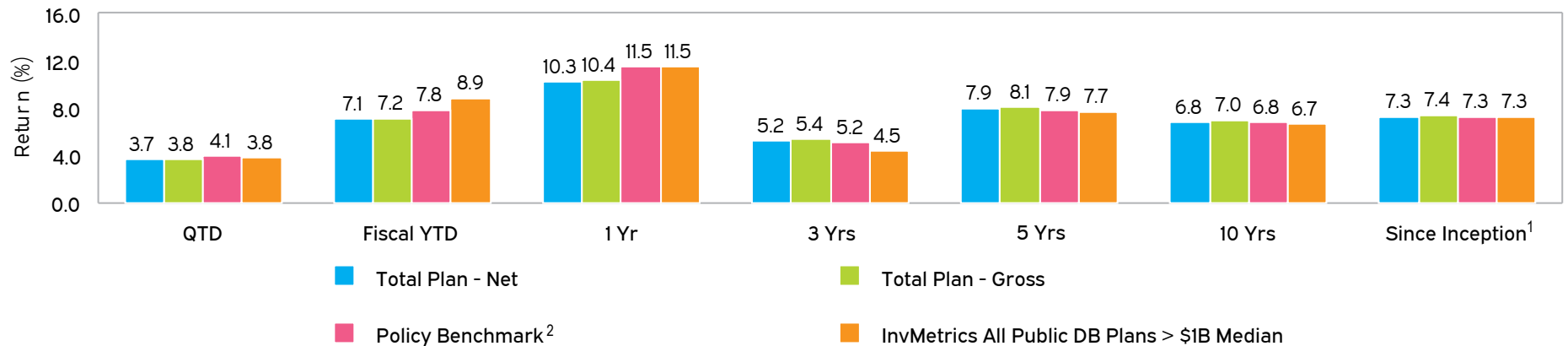
Annualized Risk-Return				
	S.I. Return	S.I. Standard Deviation	S.I. Sharpe Ratio	Inception Date
Total Plan	7.3	8.0	0.8	07/01/2011
Policy Benchmark	7.3	8.1	0.8	
InvMetrics All Public DB Plans > \$1B Median	7.3	9.1	0.7	

Growth Over Time - S.I. to Date (Net) As of March 31, 2024

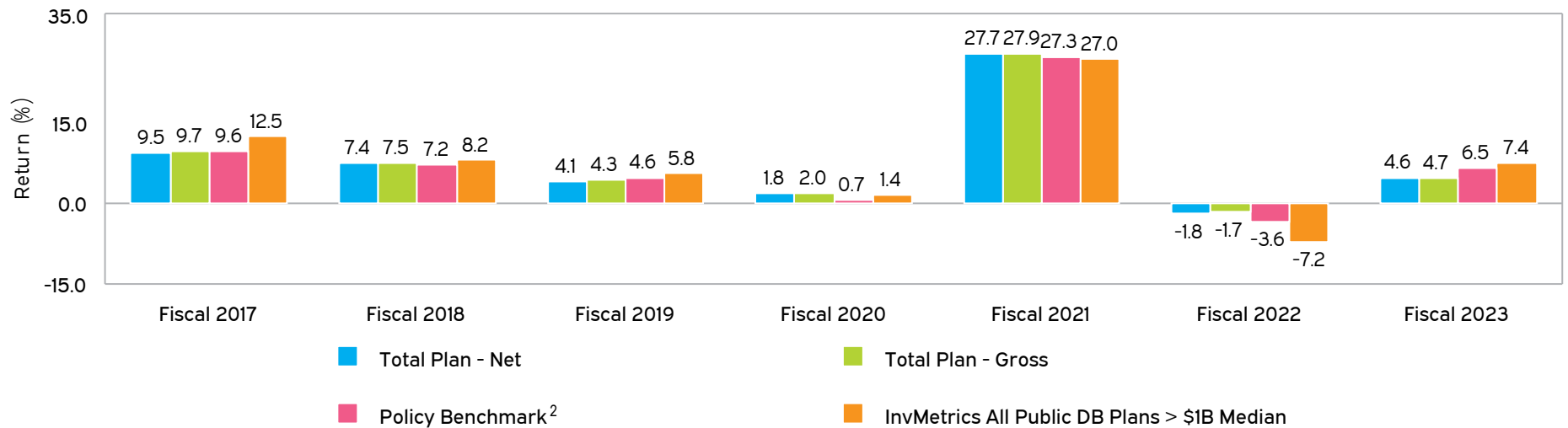


Portfolio Detail

Trailing Period Performance (annualized) Ending March 31, 2024



Fiscal Year - Periods Ending March 31, 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 March 31, 2024

	Market Value \$	% of Portfolio	Policy(%)	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since 6/30/11
Total Plan	7,628,103,998	100.0	100.0	3.7	10.3	5.2	7.9	6.8	7.3
<i>Policy Benchmark</i>				<i>4.1</i>	<i>11.5</i>	<i>5.2</i>	<i>7.9</i>	<i>6.8</i>	<i>7.3</i>
Excess Return				-0.4	-1.2	0.0	0.0	0.0	0.0
Aggressive Growth	1,161,421,232	15.2	15.5	3.7	10.0	8.2	13.6	--	--
<i>Aggressive Growth Benchmark</i>				<i>10.2</i>	<i>26.7</i>	<i>3.6</i>	<i>11.1</i>	--	--
Excess Return				-6.5	-16.7	4.6	2.5	--	--
Traditional Growth	2,314,718,670	30.3	29.0	7.7	21.9	6.6	10.2	--	--
<i>Traditional Growth Benchmark</i>				<i>7.8</i>	<i>22.4</i>	<i>6.8</i>	<i>10.3</i>	--	--
Excess Return				-0.1	-0.5	-0.2	-0.1	--	--
Stabilized Growth	1,595,866,822	20.9	23.0	0.3	2.8	5.5	5.7	--	--
<i>Stabilized Growth Benchmark</i>				<i>0.2</i>	<i>2.2</i>	<i>6.4</i>	<i>5.8</i>	--	--
Excess Return				0.1	0.6	-0.9	-0.1	--	--
Diversifying Strategies	2,273,362,875	29.8	30.0	2.7	5.3	2.3	3.6	--	--
<i>Diversifying Strategies Benchmark</i>				<i>0.6</i>	<i>1.5</i>	<i>2.6</i>	<i>4.0</i>	--	--
Excess Return				2.1	3.8	-0.3	-0.4	--	--

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 it underperformed over the most recent quarter and trailing 1-year period. Within the class, Private Equity has produced mixed results whereas Micro Cap Equity has outperformed over all applicable 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, outperforming over the trailing 1-year period, underperforming over the trailing 3-year period, and closely mirroring the index over the recent quarter, trailing 5-year period, and since inception. Real Assets outpaced the benchmark over the trailing 1-year period but lagged in the most recent quarter, while Global Options has matched or outperformed versus its benchmark across all periods. Private Credit has been a strong contributor since inception, though recently

has struggled, trailing the index over the most recent quarter as well as the trailing 1-year period. This recent underperformance is due to a similar benchmarking challenge as with Private Equity.

→ The Diversifying Strategies class outpaced its benchmark over the most recent quarter and trailing 1-year period, though it lagged its benchmark over all longer periods. The outperformance over the most recent quarter is largely attributable to the Trend Following and Alternate Risk Premia sleeves. 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 under four years of history).

Manager Performance (Net-of-Fees) | As of March 31, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Total Plan	7,628,103,998	100.0	3.7	10.3	5.2	7.9	7.3	Jul-11
<i>Policy Benchmark</i>			4.1	11.5	5.2	7.9	7.3	
Excess Return			-0.4	-1.2	0.0	0.0	0.0	
Total Plan ex Overlay	7,622,485,328	99.9	3.8	10.4	--	--	4.8	May-22
Aggressive Growth	1,161,421,232	15.2	3.7	10.0	8.2	13.6	10.0	Jul-15
<i>Aggressive Growth Benchmark</i>			10.2	26.7	3.6	11.1	8.4	
Excess Return			-6.5	-16.7	4.6	2.5	1.6	
Private Equity	736,506,179	9.7	1.7	5.4	17.0	14.8	10.8	Jul-18
<i>Private Equity Benchmark</i>			12.9	29.7	11.8	18.6	15.5	
Excess Return			-11.2	-24.3	5.2	-3.8	-4.7	
Micro Cap Equity	424,915,053	5.6	7.5	19.3	2.6	12.1	8.8	Jan-15
<i>Russell Microcap Index</i>			4.7	17.8	-4.9	6.9	6.4	
Excess Return			2.8	1.5	7.5	5.2	2.4	
Acuitas - Active	424,915,053	5.6	7.5	19.3	2.6	12.1	10.8	Jan-15
<i>Russell Microcap Index</i>			4.7	17.8	-4.9	6.9	6.4	
Excess Return			2.8	1.5	7.5	5.2	4.4	
Traditional Growth	2,314,718,670	30.3	7.7	21.9	6.6	10.2	9.1	Jul-15
<i>Traditional Growth Benchmark</i>			7.8	22.4	6.8	10.3	9.2	
Excess Return			-0.1	-0.5	-0.2	-0.1	-0.1	
NT ACWI ex US Trust Fund - Passive	953,703,618	12.5	4.5	12.8	2.0	6.0	5.0	Jul-15
<i>MSCI AC World ex USA (Net)</i>			4.7	13.3	1.9	6.0	4.9	
Excess Return			-0.2	-0.5	0.1	0.0	0.1	
NT Russell 3000 Index Fund - Passive	1,361,015,052	17.8	10.0	29.3	9.8	14.3	12.7	Jul-15
<i>Russell 3000 Index</i>			10.0	29.3	9.8	14.3	12.7	
Excess Return			0.0	0.0	0.0	0.0	0.0	

Manager Performance (Net-of-Fees) | As of March 31, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Stabilized Growth	1,595,866,822	20.9	0.3	2.8	5.5	5.7	6.1	Jan-17
<i>Stabilized Growth Benchmark</i>			<i>0.2</i>	<i>2.2</i>	<i>6.4</i>	<i>5.8</i>	<i>6.0</i>	
Excess Return			0.1	0.6	-0.9	-0.1	0.1	
Global Options	409,579,235	5.4	4.8	14.3	5.5	6.7	6.5	Jan-17
<i>Global Options Benchmark</i>			<i>4.0</i>	<i>11.0</i>	<i>5.5</i>	<i>6.3</i>	<i>5.8</i>	
Excess Return			0.8	3.3	0.0	0.4	0.7	
Gateway	203,108,238	2.7	5.1	14.7	--	--	3.9	Jul-21
<i>Global Options Benchmark</i>			<i>4.0</i>	<i>11.0</i>	<i>--</i>	<i>--</i>	<i>4.5</i>	
Excess Return			1.1	3.7	--	--	-0.6	
Geode	206,470,997	2.7	4.5	13.9	6.4	7.0	6.7	Jan-17
<i>Global Options Benchmark</i>			<i>4.0</i>	<i>11.0</i>	<i>5.5</i>	<i>6.3</i>	<i>5.8</i>	
Excess Return			0.5	2.9	0.9	0.7	0.9	
Real Assets	630,805,925	8.3	-4.4	-9.6	5.5	4.5	4.5	Jul-17
<i>Real Assets Custom Benchmark</i>			<i>-3.9</i>	<i>-10.0</i>	<i>5.6</i>	<i>--</i>	<i>--</i>	
Excess Return			-0.5	0.4	-0.1	--	--	
Private Credit	555,481,662	7.3	2.8	11.3	8.2	--	9.1	Jul-19
<i>S&P LSTA Leveraged Loan +2% (Q Lag)</i>			<i>3.4</i>	<i>15.6</i>	<i>7.9</i>	<i>--</i>	<i>7.3</i>	
Excess Return			-0.6	-4.3	0.3	--	1.8	

Manager Performance (Net-of-Fees) | As of March 31, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Diversifying Strategies	2,273,362,875	29.8	2.7	5.3	2.3	3.6	2.7	Jul-15
<i>Diversifying Strategies Benchmark</i>			0.6	1.5	2.6	4.0	2.8	
Excess Return			2.1	3.8	-0.3	-0.4	-0.1	
Diversifying Strategies ex Overlay	2,267,744,205	29.7	2.7	5.7	2.4	3.7	3.0	Jan-16
Tail Risk Overlay	5,618,670	0.1	-32.5	--	--	--	-82.9	May-23
BlackRock US Inflation Link Bond - Passive	363,864,904	4.8	0.0	0.5	-0.5	2.5	2.5	Feb-16
<i>Blmbg. U.S. TIPS Index</i>			-0.1	0.5	-0.5	2.5	2.5	
Excess Return			0.1	0.0	0.0	0.0	0.0	
Sun Life - Enhanced Index	422,393,700	5.5	-3.4	-6.1	-7.9	-2.8	-0.4	Dec-16
<i>Blmbg. U.S. Government: Long Term Bond Index</i>			-3.2	-6.0	-8.0	-2.8	-0.5	
Excess Return			-0.2	-0.1	0.1	0.0	0.1	
Capstone	126,658,753	1.7	-0.5	--	--	--	-2.8	Aug-23
<i>CBOE Eureka hedge Long Volatility Hedge Fund Index</i>			-1.9	--	--	--	-3.4	
Excess Return			1.4	--	--	--	0.6	
Trend Following	767,110,380	10.1	6.3	7.3	8.4	9.0	5.1	Feb-17
<i>CS Mgd Futures 15% Vol</i>			1.1	-3.8	6.4	5.8	2.3	
Excess Return			5.2	11.1	2.0	3.2	2.8	
AlphaSimplex - Active	398,883,085	5.2	10.7	8.5	12.3	13.7	8.6	Feb-17
<i>CS Mgd Futures 15% Vol</i>			1.1	-3.8	6.4	5.8	2.3	
Excess Return			9.6	12.3	5.9	7.9	6.3	
Mount Lucas - Active	368,227,295	4.8	2.0	5.7	4.4	4.1	1.5	Feb-17
<i>CS Mgd Futures 15% Vol</i>			1.1	-3.8	6.4	5.8	2.3	
Excess Return			0.9	9.5	-2.0	-1.7	-0.8	

Manager Performance (Net-of-Fees) | As of March 31, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	Inception (%)	Inception Date
Alternative Risk Premia	195,959,671	2.6	11.0	17.8	5.4	1.1	1.0	Oct-18
<i>Custom ARP Benchmark</i>			1.8	7.3	4.6	4.1	4.1	
Excess Return			9.2	10.5	0.8	-3.0	-3.1	
Kepos - Active	195,959,671	2.6	11.0	17.8	6.3	3.0	3.0	Nov-18
<i>Custom ARP Benchmark</i>			1.8	7.3	4.6	4.1	4.1	
Excess Return			9.2	10.5	1.7	-1.1	-1.1	
Reinsurance	391,756,797	5.1	2.8	16.7	2.3	--	1.3	Jul-20
<i>Reinsurance Benchmark</i>			4.6	19.2	8.5	--	8.0	
Excess Return			-1.8	-2.5	-6.2	--	-6.7	
Nephila	128,851,925	1.7	3.0	20.2	3.3	--	0.5	Jul-20
<i>Reinsurance Benchmark</i>			4.6	19.2	8.5	--	8.0	
Excess Return			-1.6	1.0	-5.2	--	-7.5	
Pillar	262,904,872	3.4	2.8	14.9	2.4	--	3.8	Jul-20
<i>Reinsurance Benchmark</i>			4.6	19.2	8.5	--	8.0	
Excess Return			-1.8	-4.3	-6.1	--	-4.2	
Cash and Cash Equivalents	282,734,399	3.7	1.3	4.9	2.4	1.8	1.0	Jul-11
<i>ICE BofA 0-1 Yr. U.S. Treasury Notes & Bonds</i>			1.1	5.0	2.3	2.0	1.1	
Excess Return			0.2	-0.1	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 fourth quarter of 2023. During the quarter, nine 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 strong returns on both absolute and relative to benchmark bases over the most recent quarter, returning 7.5% and 2.8% respectively. In addition to the most recent quarter's results, Acuitas continues to meaningfully outperform across all trailing periods. The outperformance over the quarter was attributable to the stock selection within financials and consumer discretionary sectors, though underweights to biotech and pharmaceuticals weighed on an otherwise strong quarter. Acuitas has outperformed by 4.4% per annum since inception of the strategy.

→ Geode outpaced the Custom Global Options benchmark over the most recent quarter, as well as across all longer trailing time periods. The recent outperformance is generally attributed to the portfolio's more diversified options portfolio. Despite outperforming, the strategy uses local index options (i.e., non-USD based) for non-US equity positions which has been a headwind for the strategy as the US Dollar appreciated relative to foreign currencies.

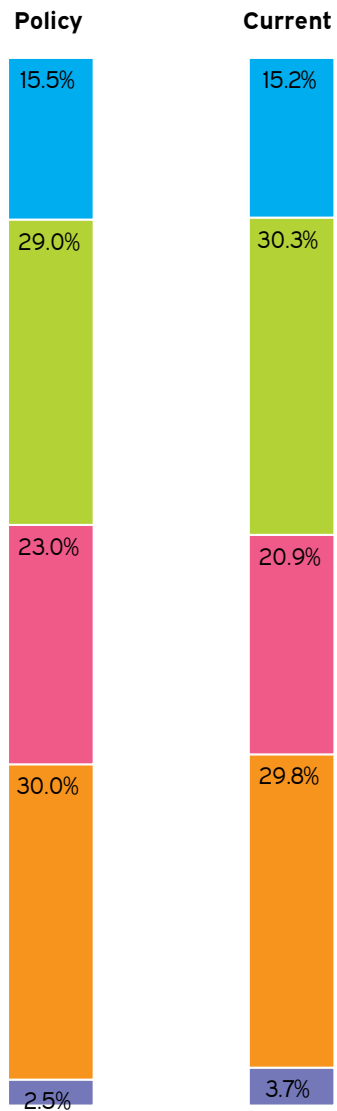
- Gateway meaningfully outperformed versus its benchmark over the most recent quarter and outpaced the benchmark over the trailing 1-year, though it has lagged since inception owing to its more diversified portfolio of option strikes and tenors (i.e., maturities) compared to the benchmark's more concentrated/less 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 in their infancy. However, the primary takeaway is that there has not been a large enough market drawdown or increase in volatility to trigger any expected positive payoff.
- With respect to the EUTF's Systematic Trend Following managers, AlphaSimplex outpaced its benchmark by 9.6% over the quarter whereas Mount Lucas beat the index by 0.9%. Both managers were positively impacted by similar trends, particularly positive equity, US Dollar, and commodity movements. AlphaSimplex accesses more markets/instruments, which provided an additional tailwind for these trends compared to Mount Lucas. 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 outperformed across the 3-year and longer periods, whereas Mount Lucas materially outperformed over the trailing 1-year period but has lagged across other periods (including by 90 basis points since inception). Throughout their tenures with the EUTF, both managers have tended to outperform the benchmark over longer periods of time, however, the benchmark's recent strong performance in 2022 and 2023 (relative to the universe of managers) has weighed on relative returns as of late. 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, marginally outpaced 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 outpaced the benchmark by 9.2% over the quarter. Momentum (across equities, currencies, and commodities) as well as Carry (across similar segments) were the largest contributors over the most recent quarter. 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 was funded in July 2020 and now has nearly 4 years of history. In the most recent quarter, both managers produced positive absolute returns while underperforming relative to the index. Part of the underperformance over the most recent quarter is due to differences in how private funds accrue premiums/returns (i.e., based on timing/probability of events, which are focused on summer months) compared to the index as well as due to higher/different risk exposures within the index. The composite returned 16.7% over the trailing 1-year period, and although this slightly trailed the benchmark, this 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 to the attractiveness of the segment on a forward-looking basis.

Total Plan | As of March 31, 2024



	Current Balance (\$)	Current Allocation (%)	Policy (%)	Difference (%)	Policy Range (%)
Aggressive Growth	1,161,421,232	15.2	15.5	-0.3	13.5 - 17.5
Traditional Growth	2,314,718,670	30.3	29.0	1.3	23.0 - 35.0
Stabilized Growth	1,595,866,822	20.9	23.0	-2.1	21.0 - 25.0
Diversifying Strategies	2,273,362,875	29.8	30.0	-0.2	17.0 - 43.0
Cash and Equivalents	282,734,399	3.7	2.5	1.2	0.0 - 3.0
Total	7,628,103,998	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

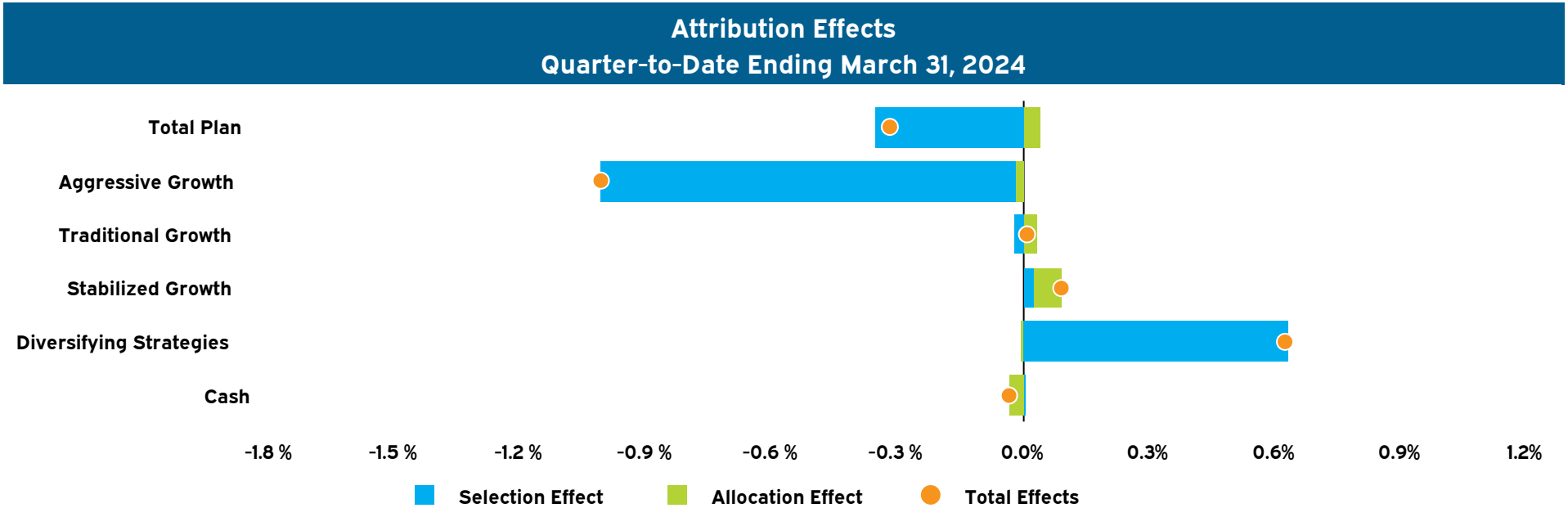
N.A. = not applicable at this time

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.

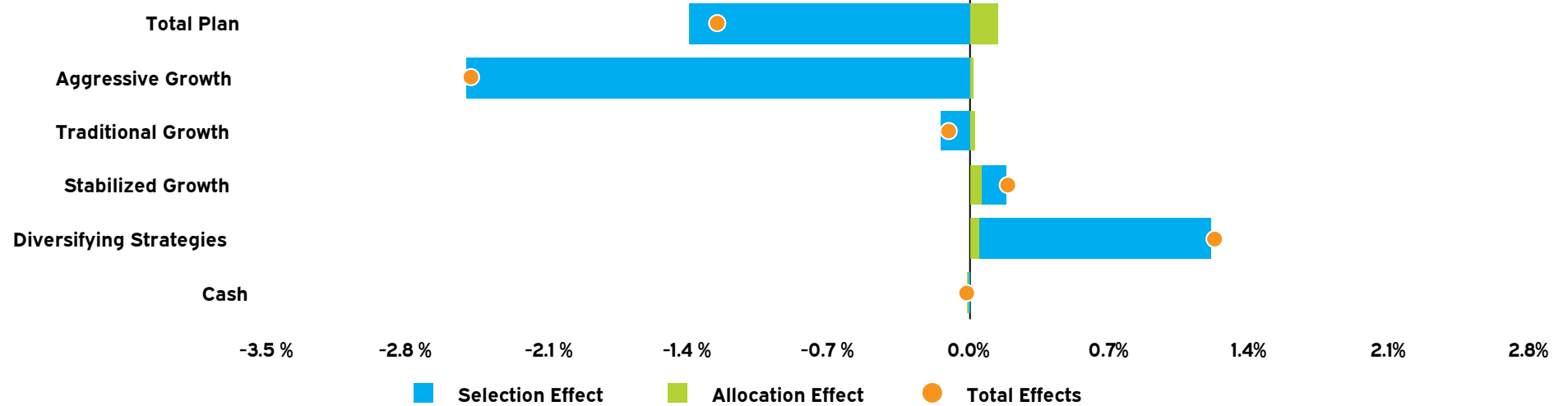
¹ Managers are evaluated net of manager fees

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



	Wtd. Actual Return (%)	Wtd. Index Return (%)	Excess Return (%)	Selection Effect (%)	Allocation Effect (%)	Total Effect (%)
Aggressive Growth	3.7	10.2	-6.5	-1.0	0.0	-1.0
Traditional Growth	7.7	7.8	-0.1	0.0	0.0	0.0
Stabilized Growth	0.3	0.2	0.1	0.0	0.1	0.1
Diversifying Strategies	2.7	0.6	2.1	0.6	0.0	0.6
Cash	1.3	1.3	0.0	0.0	0.0	0.0
Total Plan	3.7	4.1	-0.3	-0.4	0.0	-0.3

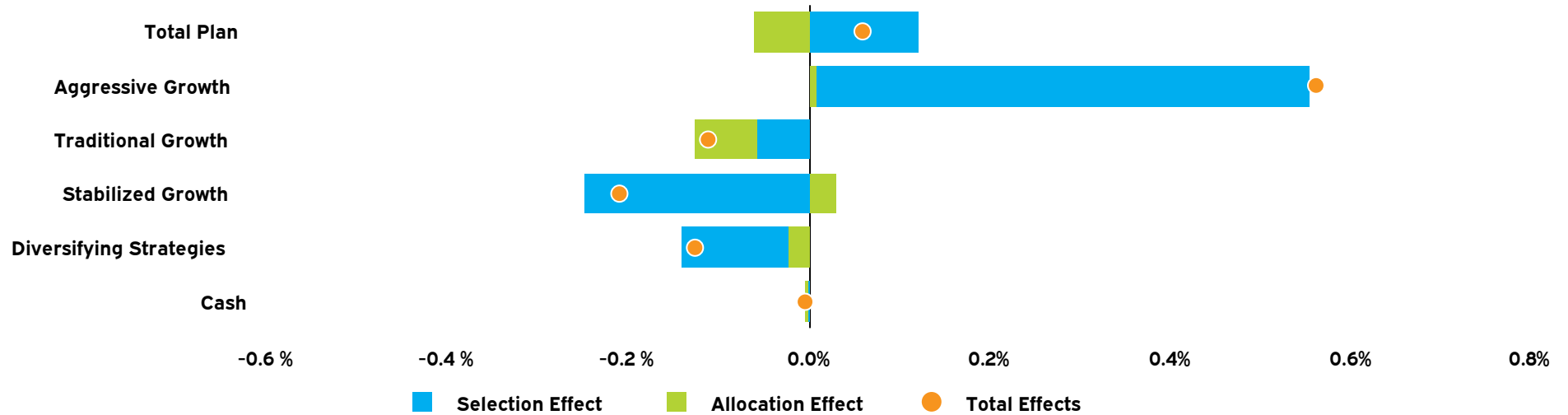
Attribution Effects 1 Year Ending March 31, 2024



Attribution Summary 1 Year Ending March 31, 2024

	Wtd. Actual Return (%)	Wtd. Index Return (%)	Excess Return (%)	Selection Effect (%)	Allocation Effect (%)	Total Effect (%)
Aggressive Growth	10.0	26.7	-16.6	-2.5	0.0	-2.5
Traditional Growth	21.9	22.4	-0.5	-0.1	0.0	-0.1
Stabilized Growth	2.8	2.2	0.6	0.1	0.1	0.2
Diversifying Strategies	5.3	1.5	3.8	1.2	0.1	1.3
Cash	3.9	4.0	-0.1	0.0	0.0	0.0
Total Plan	10.3	11.5	-1.3	-1.4	0.1	-1.3

Attribution Effects 3 Year Ending March 31, 2024



Attribution Summary 3 Year Ending March 31, 2024

	Wtd. Actual Return (%)	Wtd. Index Return (%)	Excess Return (%)	Selection Effect (%)	Allocation Effect (%)	Total Effect (%)
Aggressive Growth	8.2	3.6	4.6	0.5	0.0	0.6
Traditional Growth	6.6	6.8	-0.1	-0.1	-0.1	-0.1
Stabilized Growth	5.5	6.4	-0.9	-0.2	0.0	-0.2
Diversifying Strategies	2.3	2.6	-0.3	-0.1	0.0	-0.1
Cash	1.3	1.3	0.0	0.0	0.0	0.0
Total Plan	5.2	5.2	0.1	0.1	-0.1	0.1

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	\$272,203	\$476,852	\$413,865	\$3,611,778	\$84,479	\$292,765	\$406,216	\$1,616,588
Quartile Rank	1st	1st	1st	1st	1st	1st	1st	N/A
Mandate & Universe								
Mandate Size	\$1,361 million	\$954 million	\$364 million	\$425 million	\$422 million	\$206 million	\$203 million	\$127 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	90	19	36	36	---
Median	3	6	25	100	21	50	50	---
75th Percentile	4	8	30	110	24	52	52	---
95th Percentile	11	15	53	145	27	102	102	---
High	59	28	61	151	35	109	109	---
# of Observations	109	15	13	65	55	17	17	---

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*	25	85*	---	---	---
Estimated Annual Fee	\$1,595,532	\$920,568	\$1,665,657	6,065,361**	\$5,674,372**	\$8,453,300***
Quartile Rank	1st	1st	1st	---	---	---
Mandate & Universe						
Mandate Size	\$399 million	\$368 million	\$196 million	\$631 million	\$555 million	\$737 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	\$1,932,779	\$2,891,954	\$830,087 ²
Quartile Rank	---	---	---
Mandate & Universe			
Mandate Size	\$129 million	\$261 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 March 31, 2024 is 48.8 basis points (or \$37,204,356). 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.

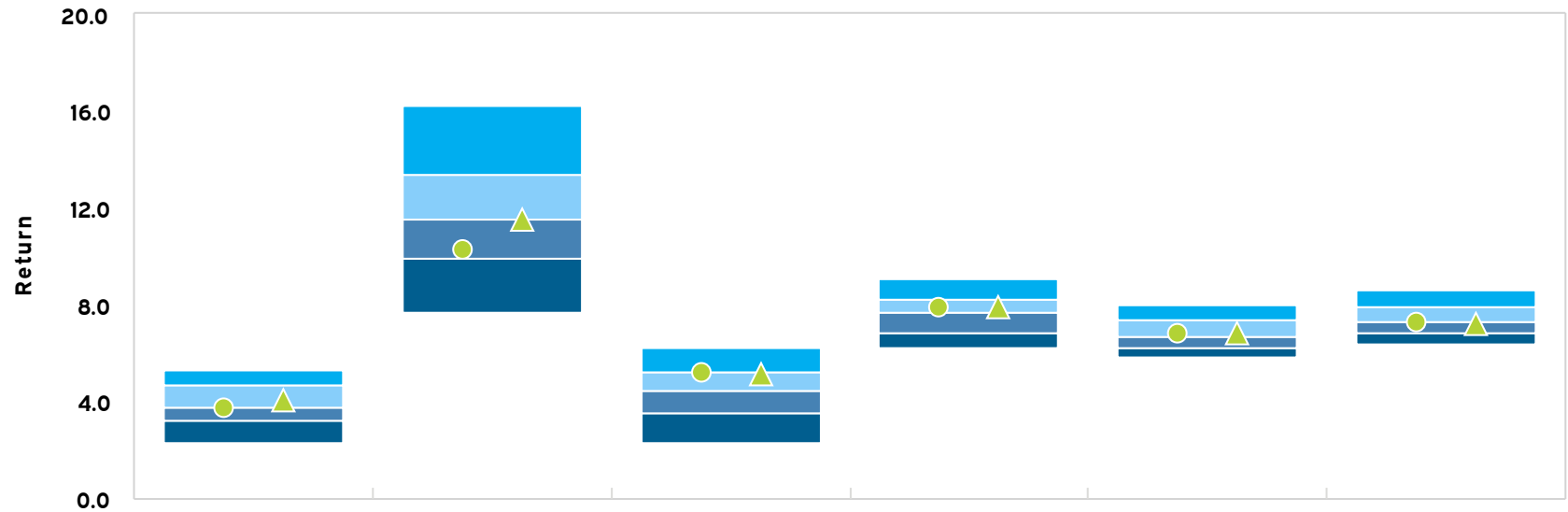
¹ Does not include performance fees, fund operating costs or potential fee offsets.

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.

InvMetrics Public DB > \$1B Net Return Comparison Ending March 31, 2024



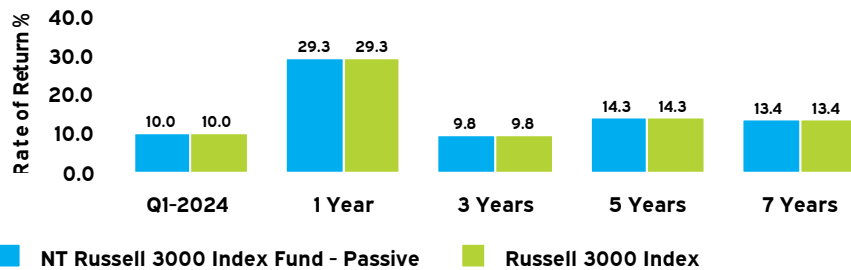
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception
● Total Plan	3.7 (51)	10.3 (70)	5.2 (25)	7.9 (39)	6.8 (44)	7.3 (50)
▲ Policy Benchmark	4.1 (44)	11.5 (49)	5.2 (26)	7.9 (40)	6.8 (44)	7.3 (55)
5th Percentile	5.3	16.2	6.2	9.1	8.0	8.6
1st Quartile	4.7	13.4	5.2	8.3	7.3	7.9
Median	3.8	11.5	4.5	7.7	6.7	7.3
3rd Quartile	3.3	10.0	3.6	6.9	6.2	6.9
95th Percentile	2.3	7.7	2.3	6.2	5.8	6.4
Population	68	46	42	41	35	31

Parenttheses contain percentile rankings.
Calculation based on monthly periodicity.

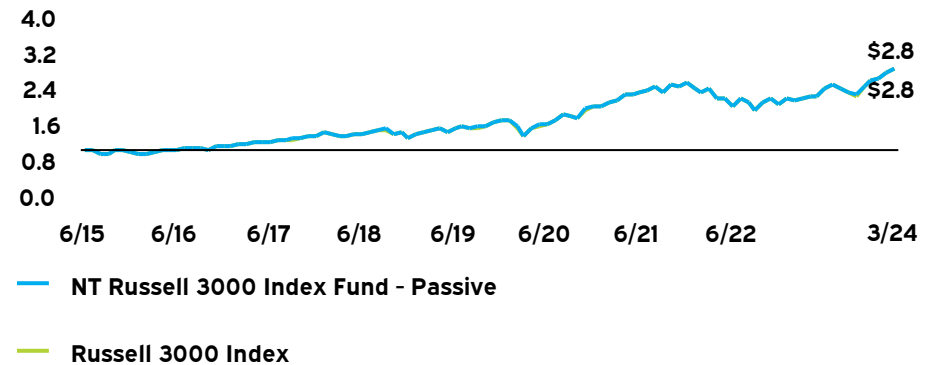
	Risk Return Statistics	
	3 Yrs	5 Yrs
	Total Plan	Total Plan
RETURN SUMMARY STATISTICS		
Maximum Return	3.6	7.4
Minimum Return	-4.6	-8.1
Return	5.2	7.9
Excess Return	2.8	6.1
Excess Performance	0.1	0.0
RISK SUMMARY STATISTICS		
Beta	1.0	1.0
Down Capture	100.6	98.3
Up Capture	100.8	99.3
RISK/RETURN SUMMARY STATISTICS		
Standard Deviation	7.4	8.8
Sortino Ratio	0.6	1.0
Alpha	0.2	0.3
Sharpe Ratio	0.4	0.7
Excess Risk	7.4	8.9
Tracking Error	2.0	1.7
Information Ratio	0.0	0.0
CORRELATION STATISTICS		
R-Squared	0.9	1.0
Actual Correlation	1.0	1.0

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
NT Russell 3000 Index Fund - Passive	0.01	1.00	0.17	0.72	0.03	1.00	99.98	99.94
Russell 3000 Index	0.00	1.00	-	0.53	0.00	1.00	100.00	100.00

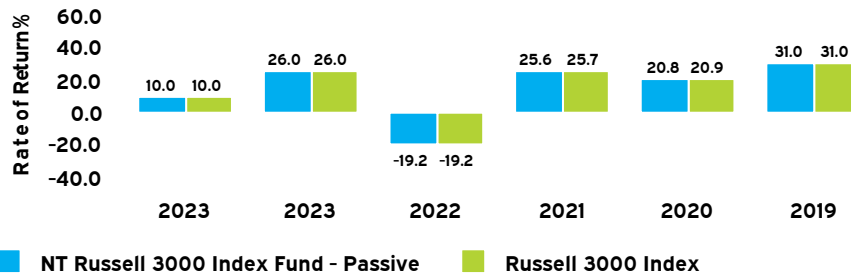
Trailing Performance



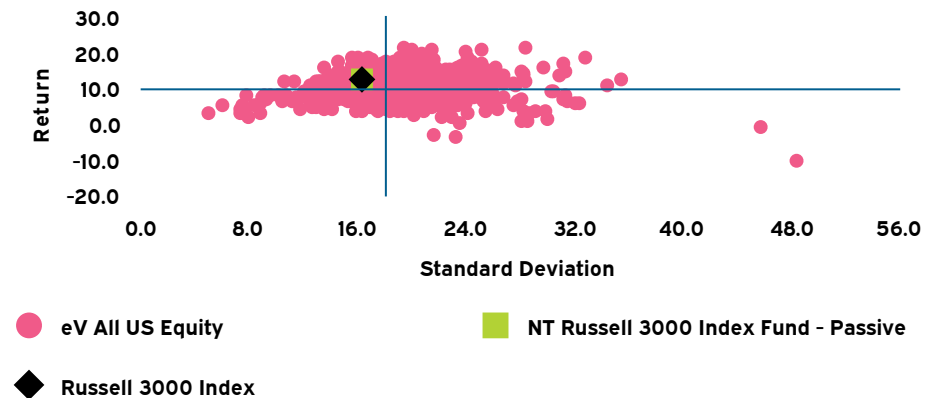
Growth of \$1 - Since Inception



Calendar Year Returns



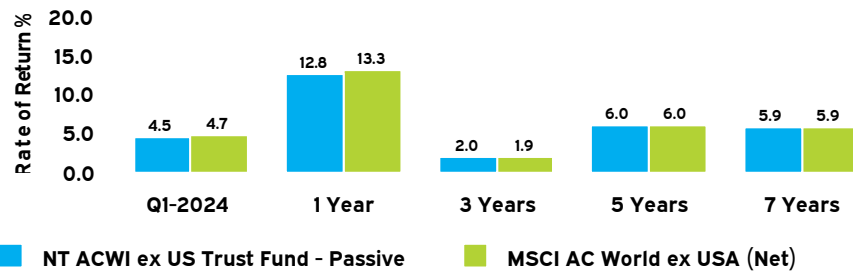
Risk/Return - Since Inception



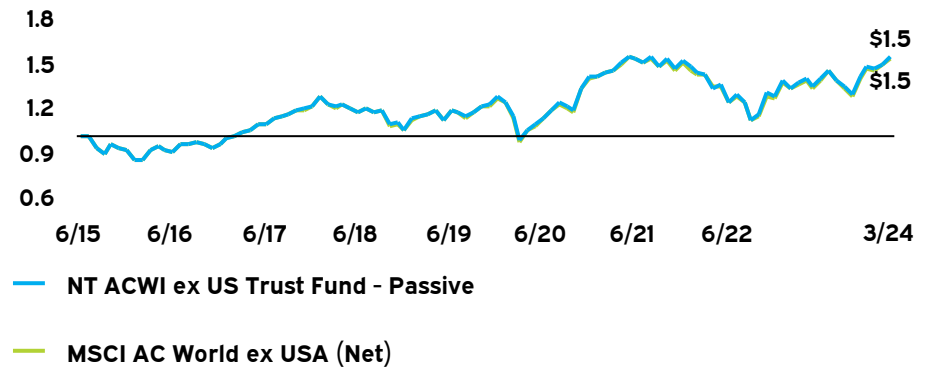
	SI Return	SI Standard Deviation
NT Russell 3000 Index Fund - Passive	12.69	16.31
Russell 3000 Index	12.68	16.32

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
NT ACWI ex US Trust Fund - Passive	0.02	1.01	0.06	0.29	1.42	0.99	101.53	101.54
MSCI AC World ex USA (Net)	0.00	1.00	-	0.24	0.00	1.00	100.00	100.00

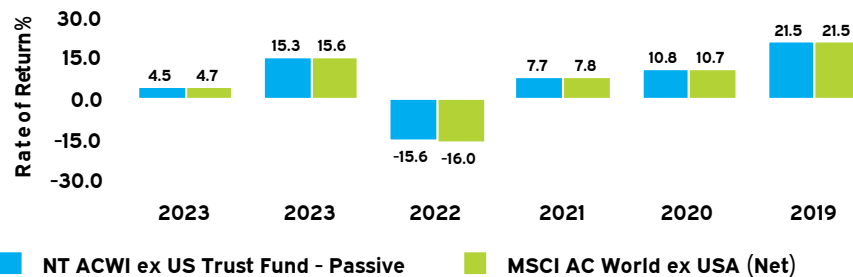
Trailing Performance



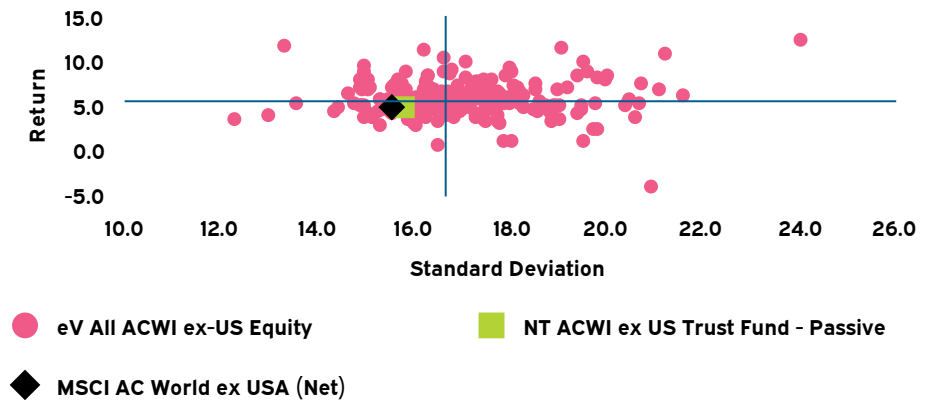
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception

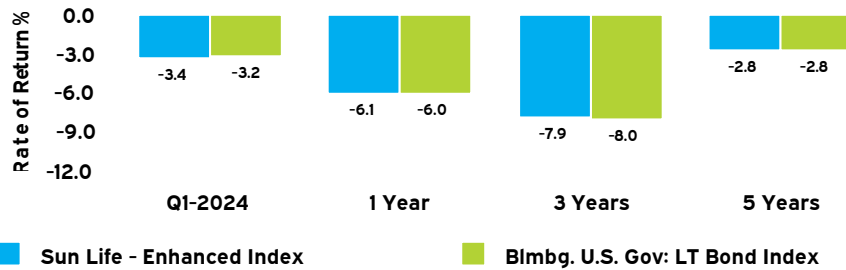


	SI Return	SI Standard Deviation
NT ACWI ex US Trust Fund - Passive	4.99	15.79
MSCI AC World ex USA (Net)	4.93	15.55

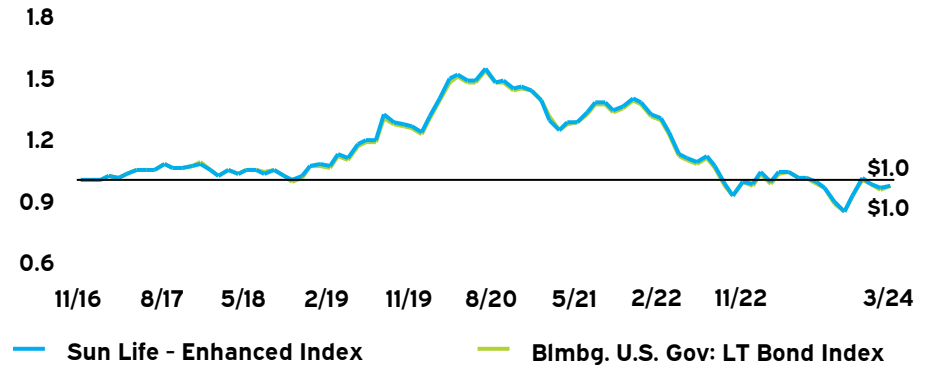
Sun Life - Enhanced Index | As of March 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Sun Life - Enhanced Index	0.10	1.01	0.12	-0.10	0.84	1.00	100.65	100.07
Blmbg. U.S. Gov: LT Bond Index	0.00	1.00	-	0.26	0.00	1.00	100.00	100.00

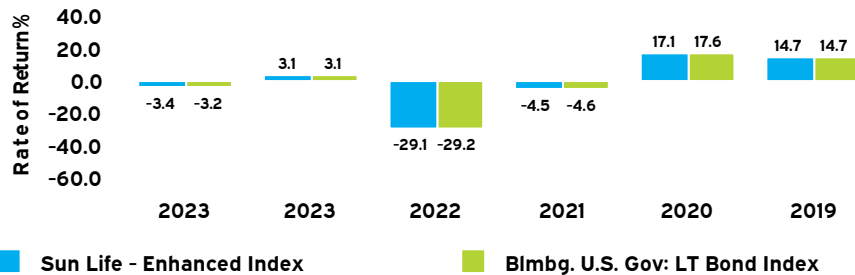
Trailing Performance



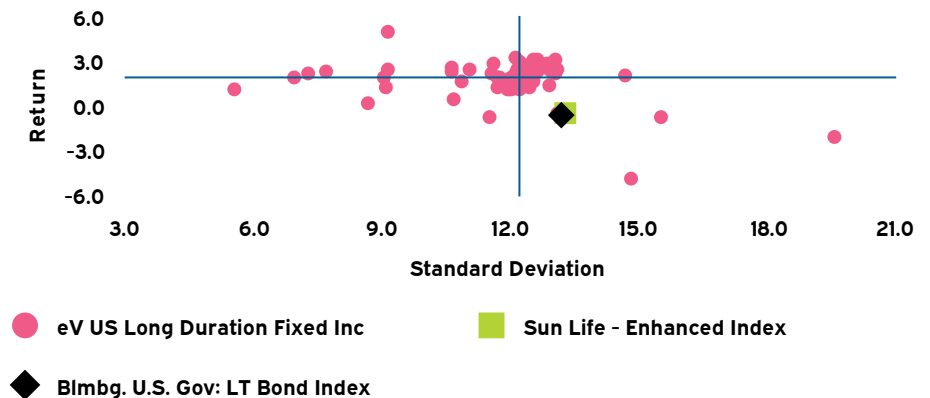
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception



	SI Return	SI Standard Deviation
Sun Life - Enhanced Index	-0.41	13.29
Blmbg. U.S. Gov: LT Bond Index	-0.50	13.18

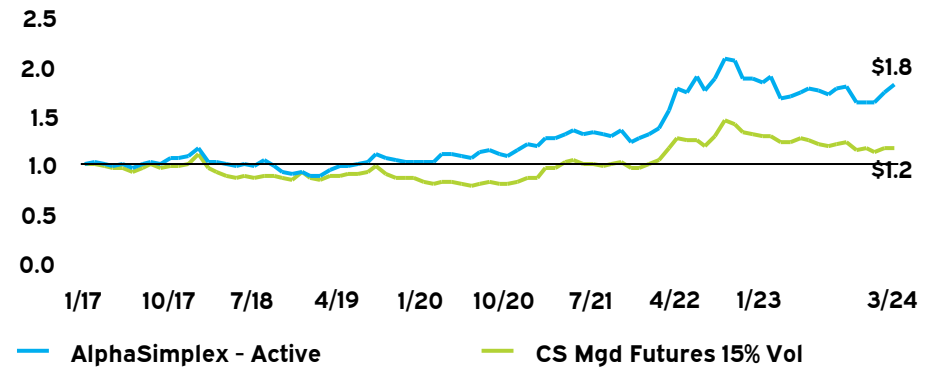
AlphaSimplex - Active | As of March 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
AlphaSimplex - Active	6.72	0.91	0.69	0.47	8.98	0.71	109.42	77.73
CS Mgd Futures 15% Vol	0.00	1.00	-	0.45	0.00	1.00	100.00	100.00

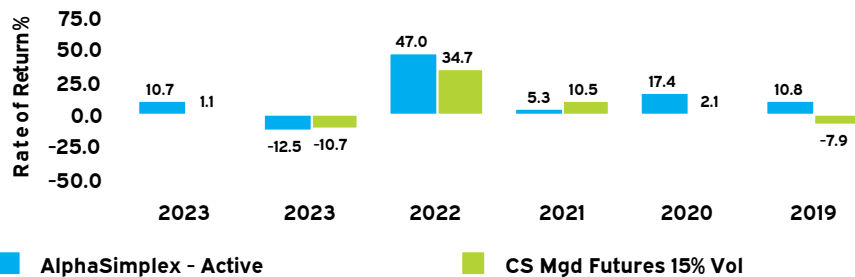
Trailing Performance



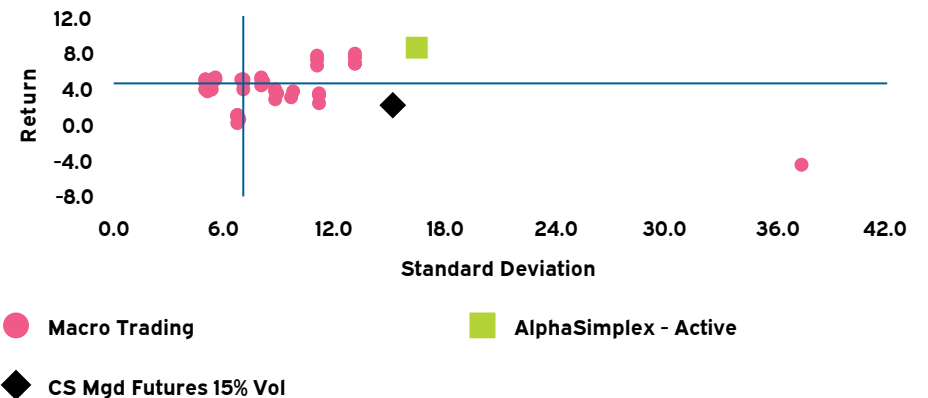
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception



	SI Return	SI Standard Deviation
AlphaSimplex - Active	8.61	16.41
CS Mgd Futures 15% Vol	2.30	15.16

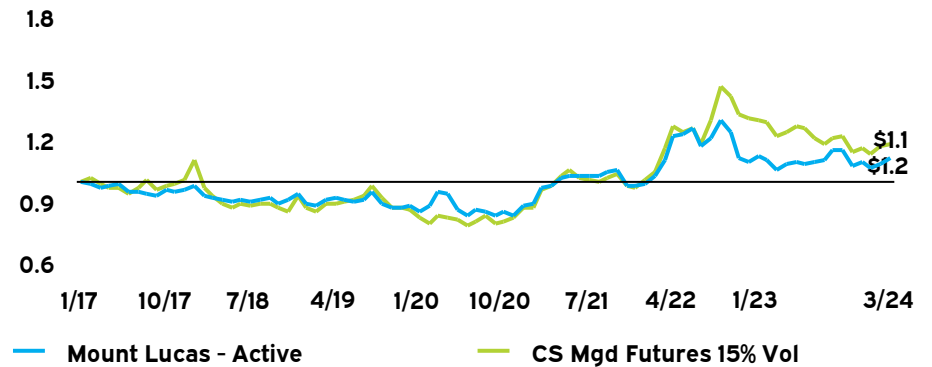
Mount Lucas - Active | As of March 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Mount Lucas - Active	0.07	0.64	-0.12	0.03	9.39	0.62	62.76	62.16
CS Mgd Futures 15% Vol	0.00	1.00	-	0.45	0.00	1.00	100.00	100.00

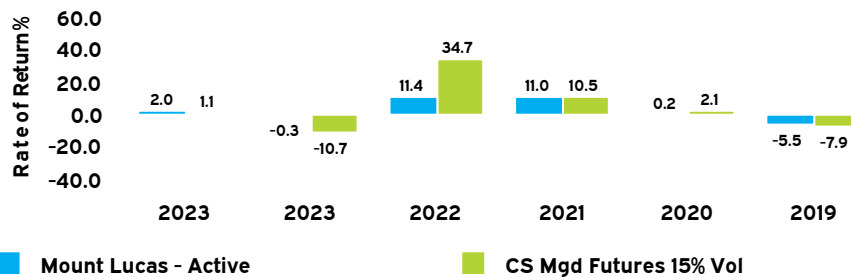
Trailing Performance



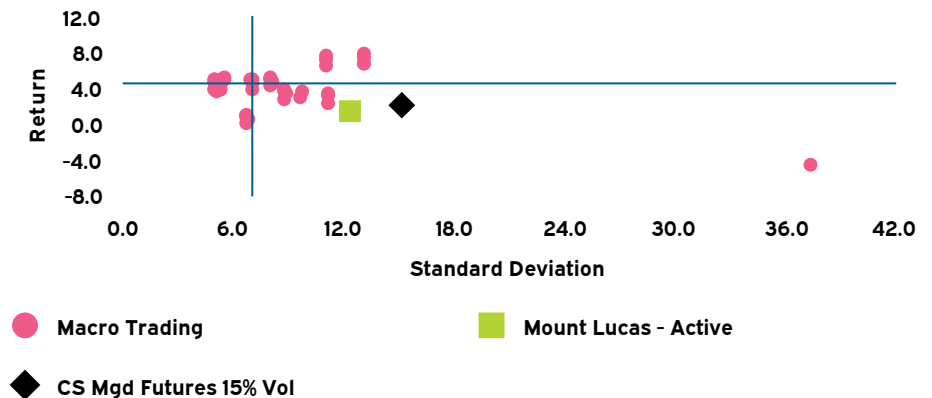
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception

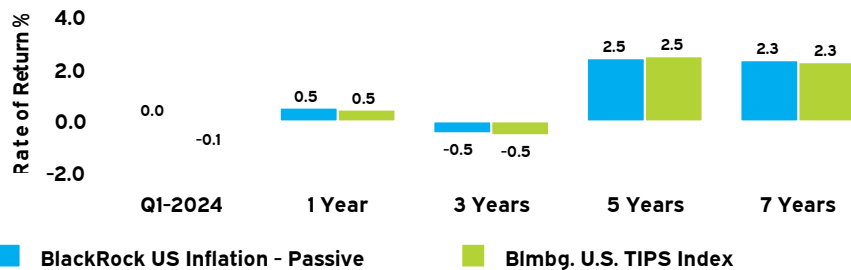


	SI Return	SI Standard Deviation
Mount Lucas - Active	1.50	12.33
CS Mgd Futures 15% Vol	2.30	15.16

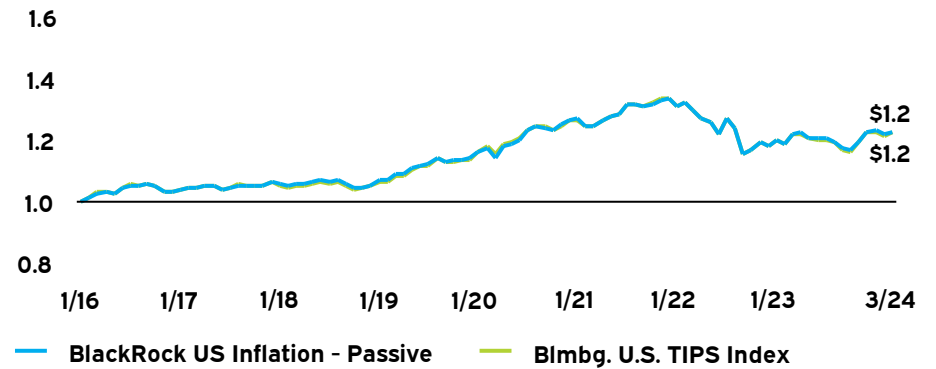
BlackRock US Inflation - Passive | As of March 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
BlackRock US Inflation - Passive	0.02	1.00	0.06	0.19	0.52	0.99	100.04	99.47
Blmbg. U.S. TIPS Index	0.00	1.00	-	0.46	0.00	1.00	100.00	100.00

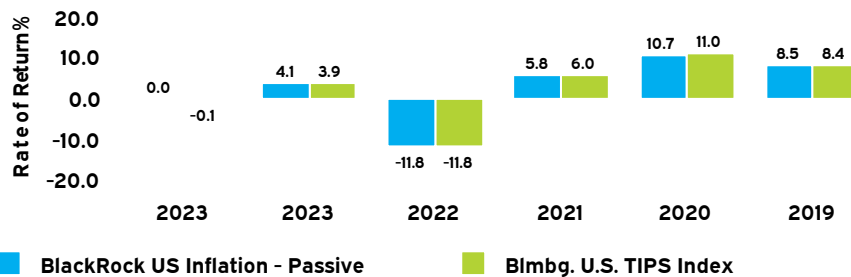
Trailing Performance



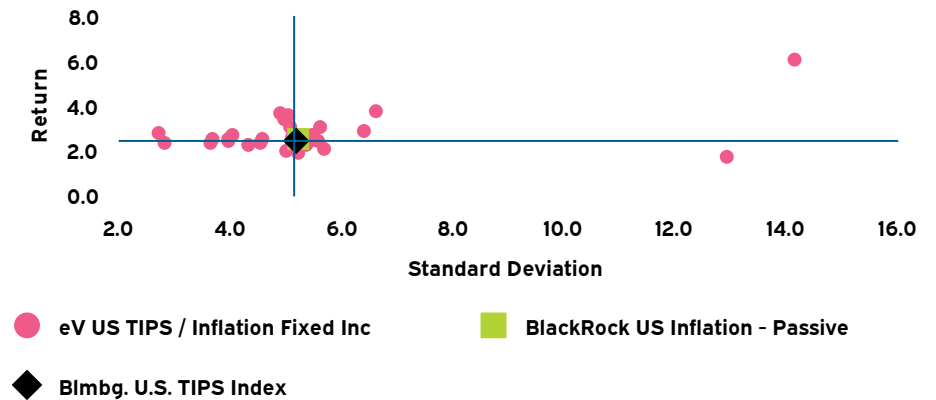
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception

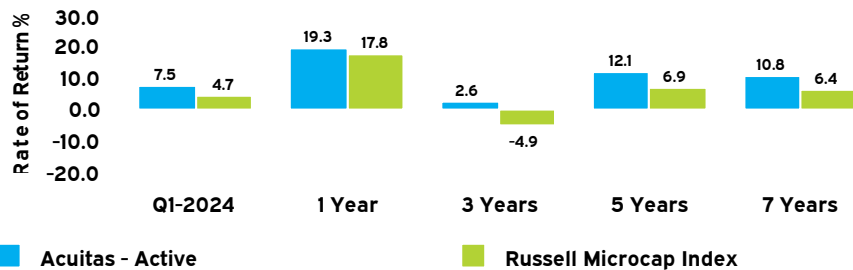


	SI Return	SI Standard Deviation
BlackRock US Inflation - Passive	2.54	5.22
Blmbg. U.S. TIPS Index	2.51	5.18

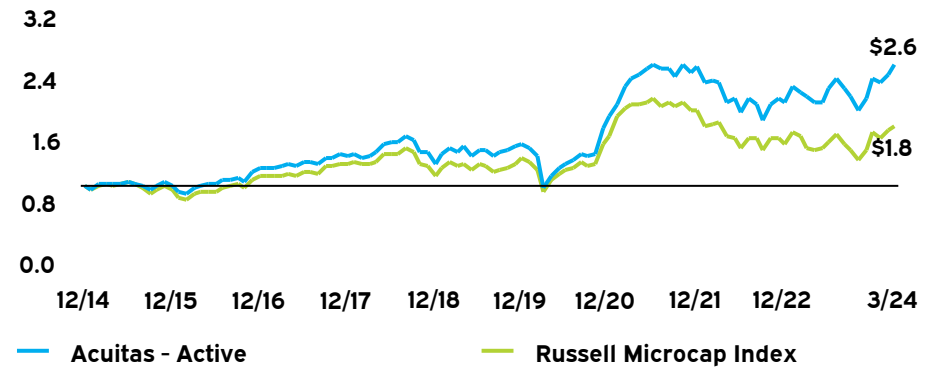
Acuitas - Active | As of March 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Acuitas - Active	4.56	0.96	0.64	0.51	6.44	0.92	101.29	85.20
Russell Microcap Index	0.00	1.00	-	0.35	0.00	1.00	100.00	100.00

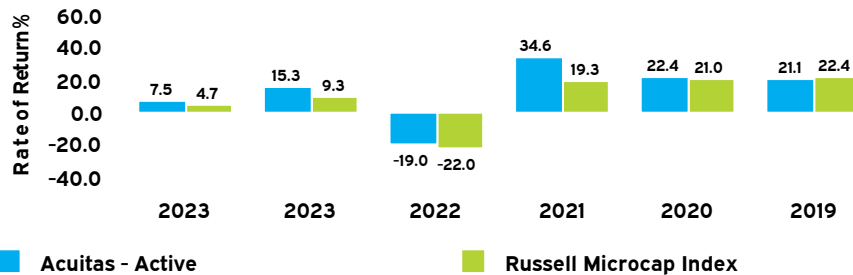
Trailing Performance



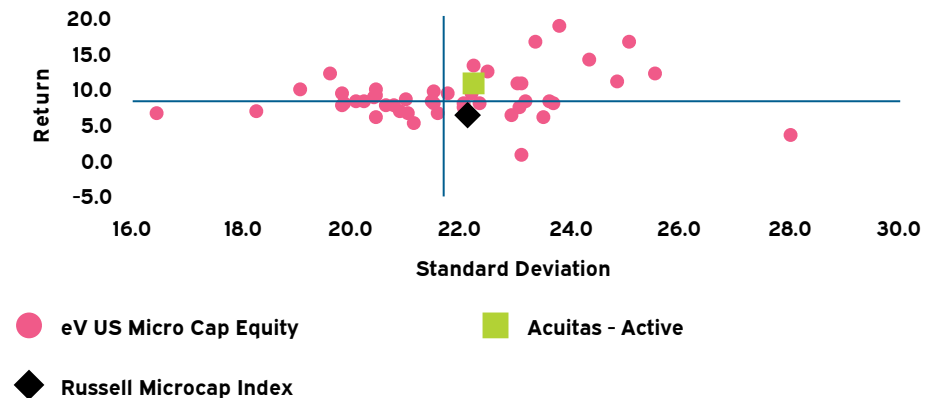
Growth of \$1 - Since Inception



Calendar Year Returns

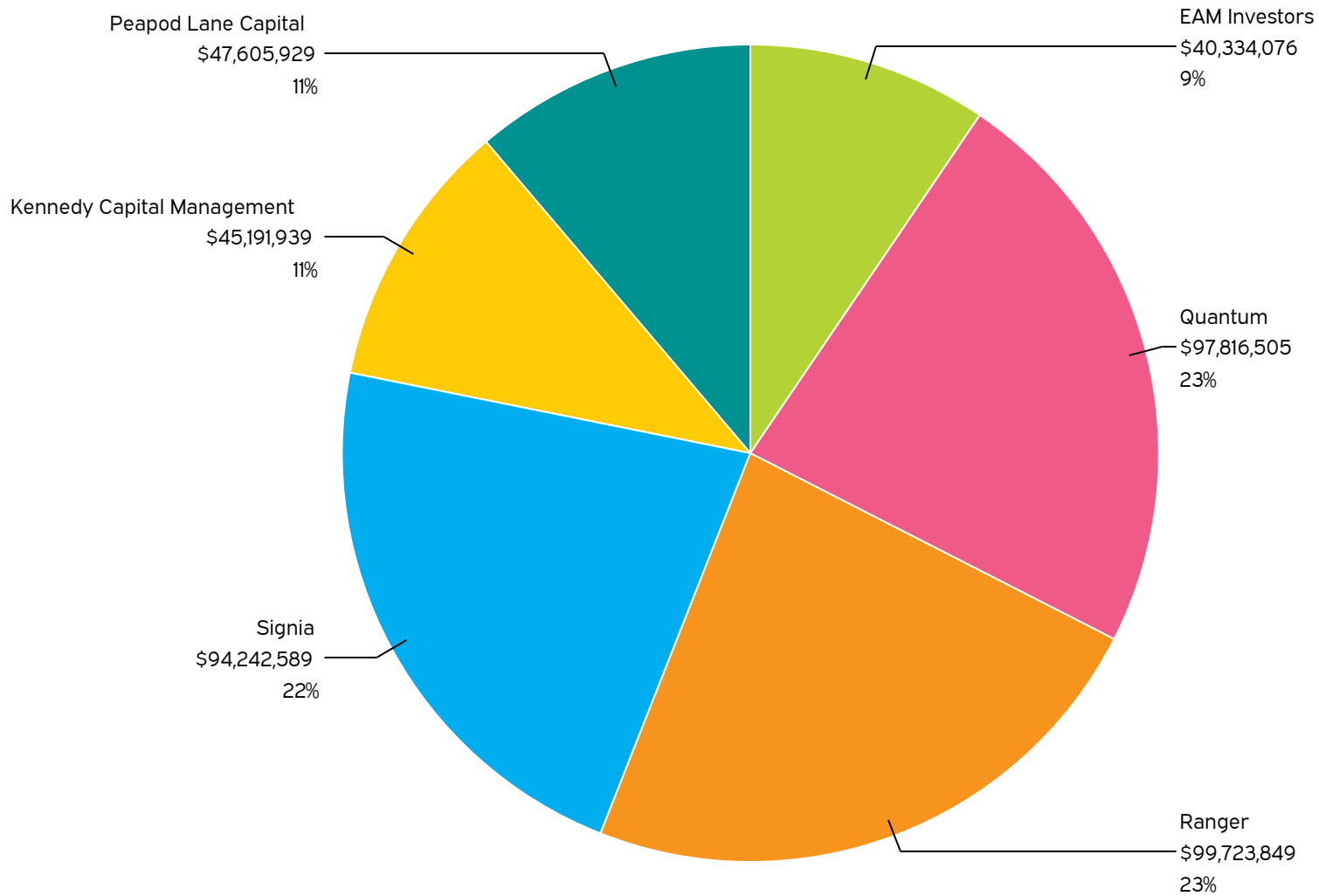


Risk/Return - Since Inception



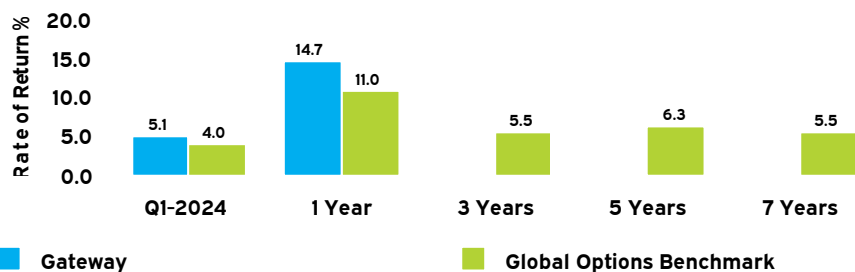
	SI Return	SI Standard Deviation
Acuitas - Active	10.77	22.20
Russell Microcap Index	6.38	22.11

Mar-2024 : \$424,915,053

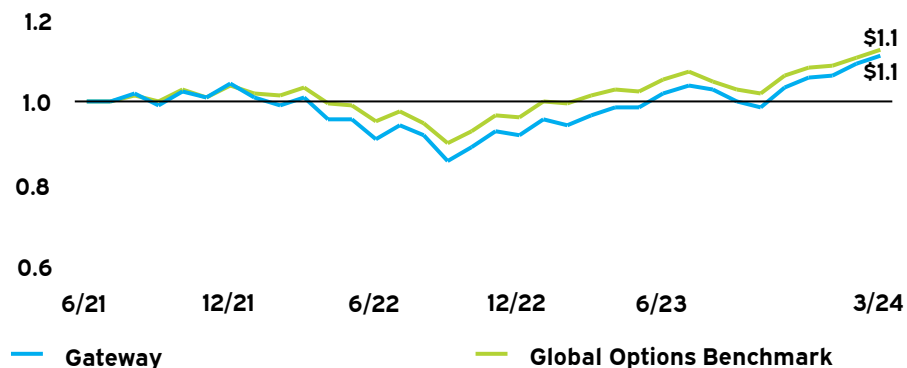


	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Gateway	-1.30	1.21	-0.12	0.16	2.72	0.96	117.41	128.82
Global Options Benchmark	0.00	1.00	-	0.48	0.00	1.00	100.00	100.00

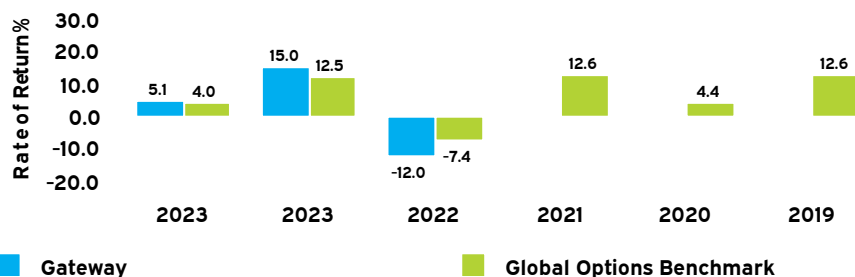
Trailing Performance



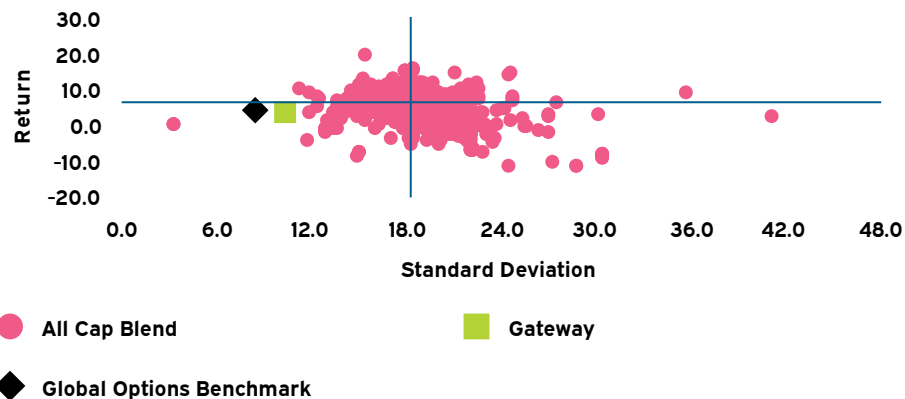
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception

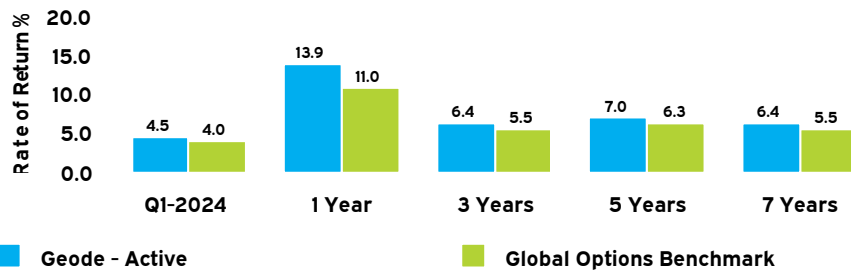


	SI Return	SI Standard Deviation
Gateway	3.94	10.34
Global Options Benchmark	4.48	8.40

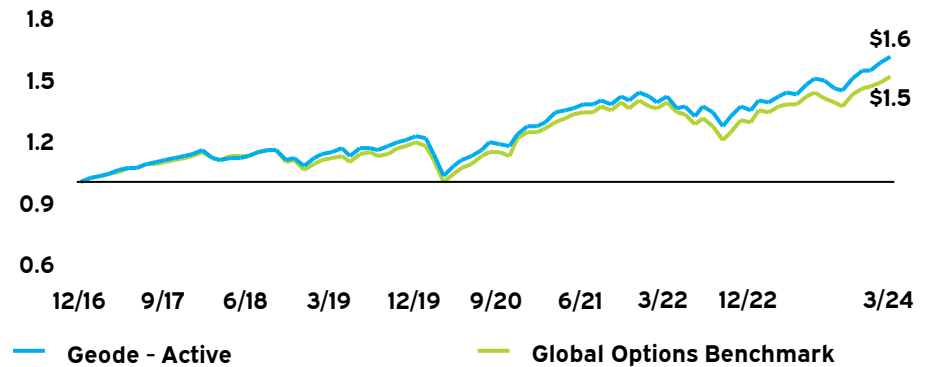
Geode - Active | As of March 31, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Geode - Active	1.11	0.95	0.42	0.58	1.95	0.95	102.62	95.23
Global Options Benchmark	0.00	1.00	-	0.48	0.00	1.00	100.00	100.00

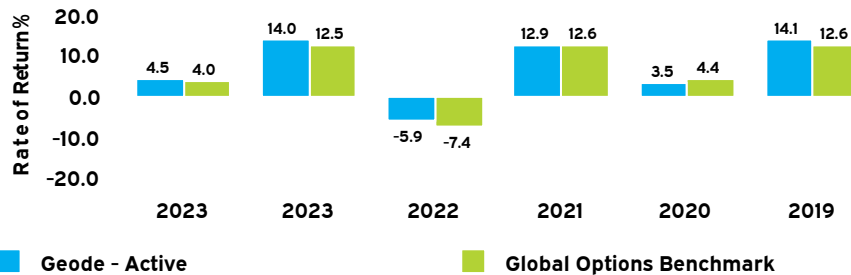
Trailing Performance



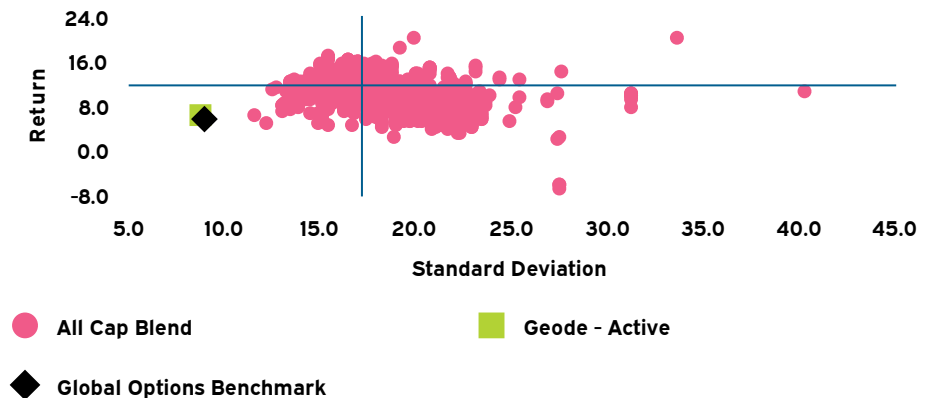
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception



	SI Return	SI Standard Deviation
Geode - Active	6.74	8.71
Global Options Benchmark	5.85	8.91

EUTF Trust Fund Portfolio Review

EUTF Trust Fund Portfolio Review (Net-of-Fees) | As of March 31, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	S.I.	Inception Date
Total EUTF Trust Fund	573,326,906	100.0	4.5	10.7	3.2	5.0	3.8	Oct-13
<i>CPI - All Urban Consumers (Unadjusted)</i>			1.8	3.5	5.6	4.2	2.8	
Excess Return			2.7	7.2	-2.4	0.8	1.0	
EUTF Trust Fund - Retirees	397,289,129	69.3	4.6	11.3	4.1	--	5.9	Jul-19
Northern Trust Intl	57,390,708	10.0	4.5	12.8	1.9	--	5.6	Jul-19
<i>MSCI AC World ex USA (Net)</i>			4.7	13.3	1.9	--	5.6	
Excess Return			-0.2	-0.5	0.0	--	0.0	
Northern Trust Total Stock	80,220,666	14.0	10.0	29.3	9.8	--	14.2	Jul-19
<i>Russell 3000 Index</i>			10.0	29.3	9.8	--	14.2	
Excess Return			0.0	0.0	0.0	--	0.0	
Alpha Simplex	67,176,172	11.7	10.6	8.5	12.3	--	13.2	Jul-19
<i>CS Mgd Futures 15% Vol</i>			1.1	-3.8	6.4	--	5.5	
Excess Return			9.5	12.3	5.9	--	7.7	
Kepos	19,287,515	3.4	11.0	17.8	6.3	--	3.3	Jul-19
<i>Custom ARP Benchmark</i>			1.8	7.3	4.6	--	4.0	
Excess Return			9.2	10.5	1.7	--	-0.7	
Sun Life	33,740,916	5.9	-3.5	-5.9	-7.9	--	-4.1	Jul-19
<i>Blmbg. U.S. Government: Long Term Bond Index</i>			-3.2	-6.0	-8.0	--	-4.1	
Excess Return			-0.3	0.1	0.1	--	0.0	
Vanguard Short Term Bond Index - Passive	17,293,707	3.0	0.6	--	--	--	4.4	Jun-23
<i>Blmbg. U.S. Corporate 1-5 Year Index</i>			0.6	--	--	--	4.8	
Excess Return			0.0	--	--	--	-0.4	
Vanguard Short Term Bond Index - Passive	122,179,445	21.3	0.6	5.0	0.3	--	1.6	Jul-19
<i>Blmbg. U.S. Corporate 1-5 Year Index</i>			0.6	5.1	0.3	--	1.6	
Excess Return			0.0	-0.1	0.0	--	0.0	

EUTF Trust Fund Portfolio Review (Net-of-Fees) | As of March 31, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	S.I.	Inception Date
EUTF Trust Fund - Actives	176,037,777	30.7	3.6	9.7	1.8	--	2.5	Jun-19
Northern Trust Intl	18,956,497	3.3	4.5	12.8	--	--	16.1	Jan-23
<i>MSCI ACWI ex US</i>			4.7	13.3	--	--	16.5	
Excess Return			-0.2	-0.5	--	--	-0.4	
Northern Trust Total Stock	26,557,897	4.6	10.0	29.3	--	--	29.8	Jan-23
<i>Russell 3000 Index</i>			10.0	29.3	--	--	29.8	
Excess Return			0.0	0.0	--	--	0.0	
Alpha Simplex	22,624,999	3.9	10.7	8.5	--	--	-2.5	Jan-23
<i>CS Mgd Futures 15% Vol</i>			1.1	-3.8	--	--	-7.8	
Excess Return			9.6	12.3	--	--	5.3	
Kepos	6,154,142	1.1	11.0	17.8	--	--	18.1	Jan-23
<i>Custom ARP Benchmark</i>			1.8	7.3	--	--	7.2	
Excess Return			9.2	10.5	--	--	10.9	
Lombard Odier	1,322	0.0						
<i>Custom ARP Benchmark</i>			1.8	7.3	--	--	7.1	
Excess Return			--	--	--	--	--	
Sun Life	11,335,490	2.0	-3.4	-5.4	--	--	0.4	Jan-23
<i>Blmbg. U.S. Government: Long Term Bond Index</i>			-3.2	-6.0	--	--	-0.2	
Excess Return			-0.2	0.6	--	--	0.6	
Vanguard Short Term Bond Index - Passive	5,779,653	1.0	0.6	--	--	--	4.4	Jun-23
<i>Blmbg. U.S. Corporate 1-5 Year Index</i>			0.6	--	--	--	4.8	
Excess Return			0.0	--	--	--	-0.4	
Vanguard Short Term Bond Index - Passive	84,627,777	14.8	0.6	5.0	0.3	--	1.6	Jun-19
<i>Blmbg. U.S. Corporate 1-5 Year Index</i>			0.6	5.1	0.3	--	1.8	
Excess Return			0.0	-0.1	0.0	--	-0.2	

EUTF Trust Fund Portfolio Review (Net-of-Fees) | As of March 31, 2024

Excess Funds - Retirees		
	QTD	1 Yr
Retirees Cash Flow		
Beginning Market Value	391,435	318,366
Net Contributions	-11,750	38,250
Fees/Expenses	-16	-52
Income	2,070	8,421
Gain/Loss	15,550	32,304
Ending Market Value	397,289	397,289

Excess Funds - Actives		
	QTD	1 Yr
Actives Cash Flow		
Beginning Market Value	169,924	160,513
Net Contributions	-	-
Fees/Expenses	-4	-16
Income	1,097	4,178
Gain/Loss	5,021	11,363
Ending Market Value	176,038	176,038

EUTF Trust Fund Retirees - Quarterly Asset Allocation		
	03/31/2024	12/31/2023
	(%)	(%)
Alpha Simplex	16.9	15.9
Kepos	4.9	4.4
Northern Trust Intl	14.4	15.7
Northern Trust Total Stock	20.2	21.7
Sun Life	8.5	10.5
Vanguard Short Term Bond Index - Passive	4.4	4.5
Vanguard Short Term Bond Index - Passive	30.8	27.3

EUTF Trust Fund Actives - Quarterly Asset Allocation		
	03/31/2024	12/31/2023
	(%)	(%)
Alpha Simplex	12.9	12.0
Kepos	3.5	3.3
Lombard Odier	0.0	0.0
Northern Trust Intl	10.8	11.6
Northern Trust Total Stock	15.1	15.7
Sun Life	6.4	7.5
Vanguard Short Term Bond Index - Passive	3.3	3.7
Vanguard Short Term Bond Index - Passive	48.1	46.3

Vanguard Short Term Bond Index - Passive | As of March 31, 2024

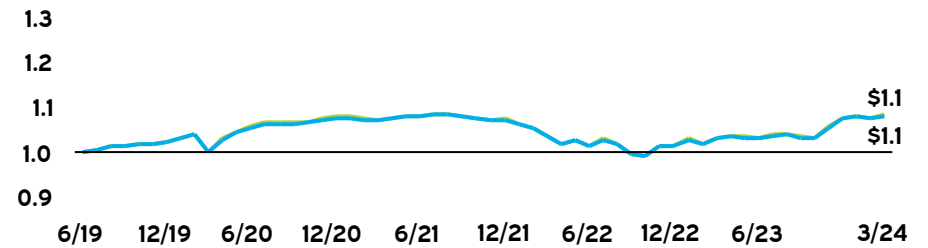
	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Vanguard Short Term Bond Index - Passive	-0.05	1.01	-0.20	-0.08	0.20	1.00	99.37	100.10
Blmbg. U.S. Corporate 1-5 Year Index	0.00	1.00	-	0.75	0.00	1.00	100.00	100.00

Trailing Performance



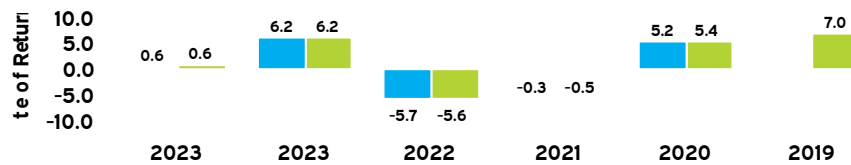
- Vanguard Short Term Bond Index - Passive
- Blmbg. U.S. Corporate 1-5 Year Index

Growth of \$1 - Since Inception



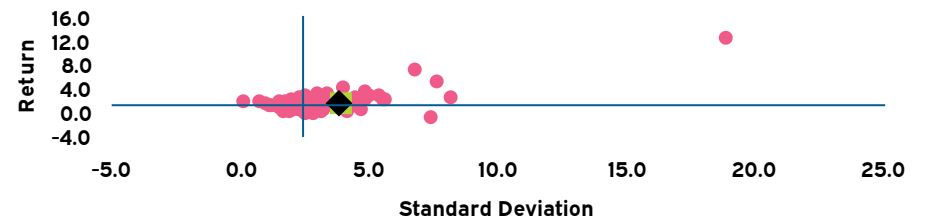
- Vanguard Short Term Bond Index - Passive
- Blmbg. U.S. Corporate 1-5 Year Index

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

	SI Return	SI Standard Deviation
Vanguard Short Term Bond Index - Passive	1.60	3.87
Blmbg. U.S. Corporate 1-5 Year Index	1.64	3.84

Economic and Market Update

Data as of March 31, 2024

Commentary

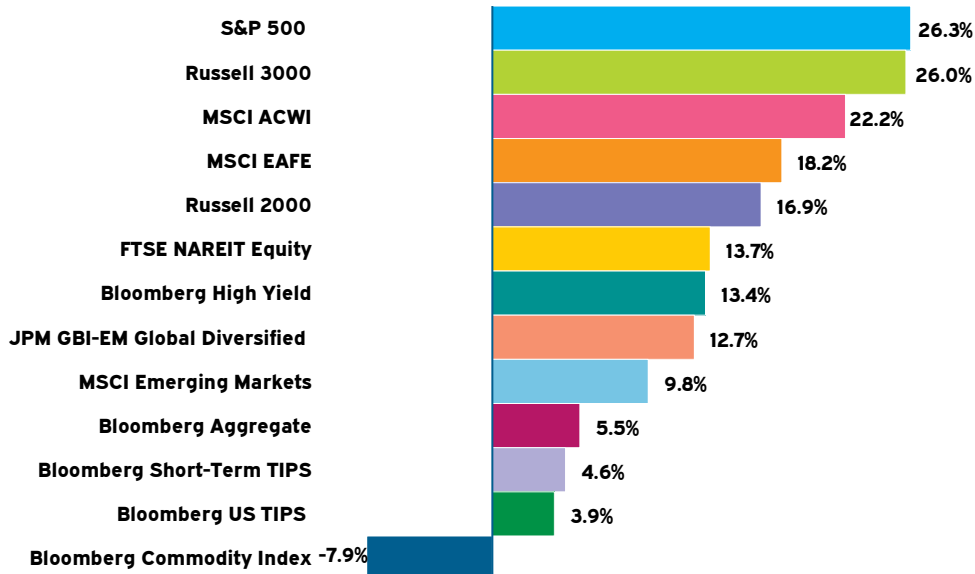
→ Resilient economic data drove global equities higher and pushed out the timing of the expected first Fed rate cut, weighing on bonds.

- Major central banks have largely paused interest rate hikes with expectations that many will still cut rates, but the uneven pace of falling inflation and economic growth could desynchronize the pace of rate cuts.
- In general, inflation pressures have eased in most countries from their pandemic peaks, but some uncertainty remains and levels are still above most central bank targets. Headline inflation in the US rose in March (3.2% to 3.5%) by more than expected, while core inflation was unchanged (3.8%) when it was predicted to decline to 3.7%. Notably, prices in China were up only slightly in March, as the impacts of the recent holiday faded.
- US equity markets (Russell 3000 index) rose 10.0% in the first quarter after a very strong 2023 (+26.0%). The technology sector continued to perform well, with energy gaining on geopolitical tensions.
- Non-US developed equity markets increased 5.8% in the quarter, helped by Japanese equities which hit multi-decade highs. A strengthening US dollar drove the weaker relative results for US investors with returns in local currency terms 4.2% higher (10.0% versus 5.8%).
- Emerging market equities (+2.4%) had the weakest equity returns, depressed by China (-2.2%). While policy efforts to support mainland stock prices helped to stabilize Chinese equities, recent efforts by the US to discourage investments in China weighed on results. The stronger dollar also hurt performance in emerging markets for US investors with returns in local currency terms 2.1% higher.
- Rising interest rates weighed on bonds with the broad US bond market declining 0.8% for the quarter.

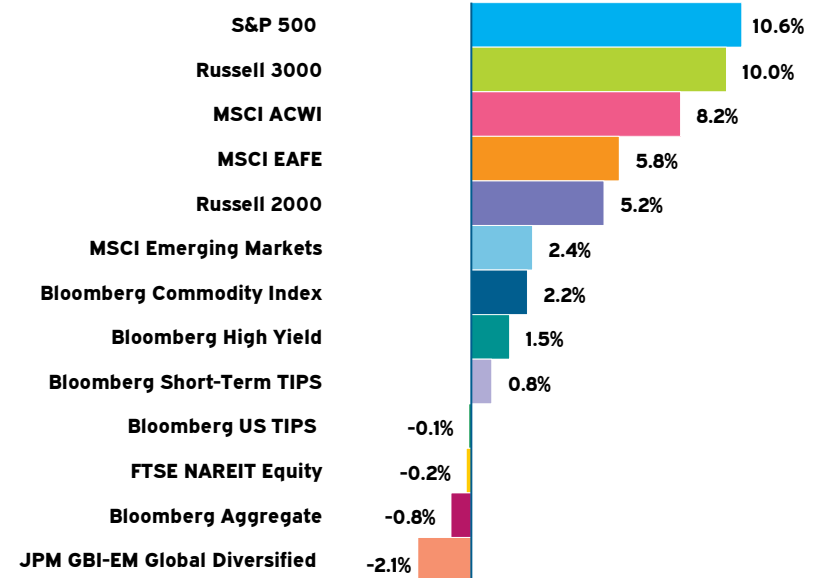
→ Looking to the rest of this year, the paths of inflation and monetary policy, China's economic disorder and slowing economic growth, the many looming elections, and the wars in Ukraine and Israel will be key.

Index Returns¹

2023



Q1 2024



→ In the first quarter, global equity markets continued their strong performance from 2023 with the US leading the way.

→ Resilient economic data weighed on bond markets domestically and dashed hopes of a near-term cut in interest rates.

¹ Source: Bloomberg. Data is as of March 31, 2024.

Domestic Equity Returns¹

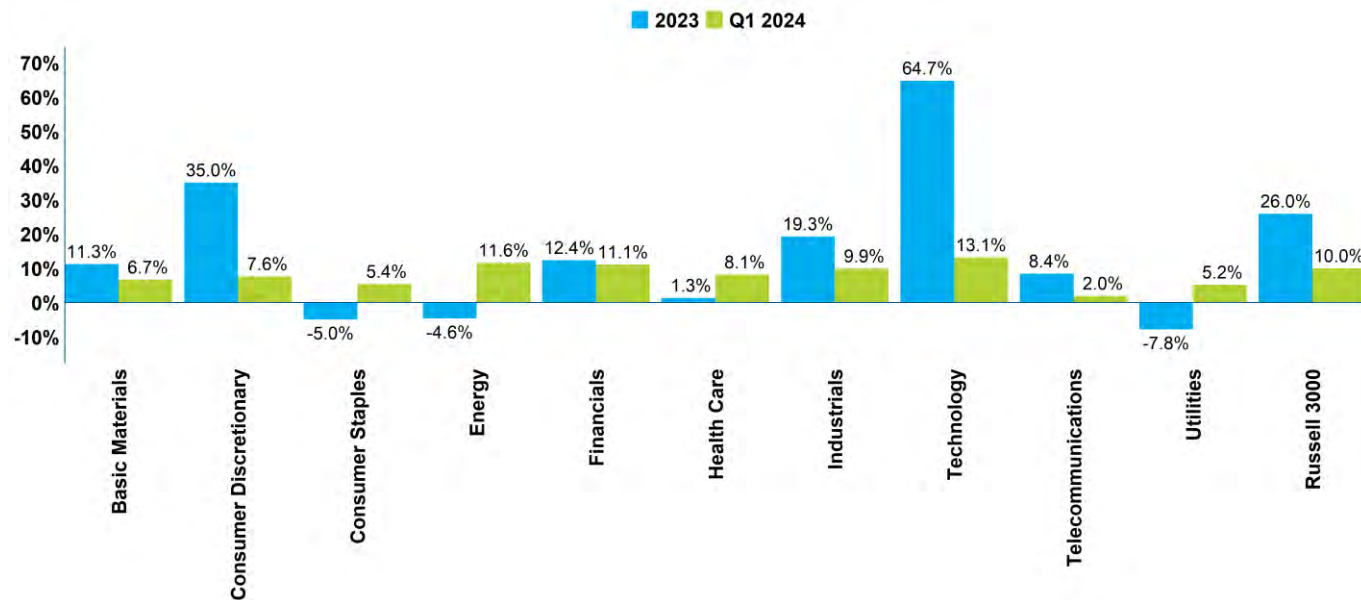
Domestic Equity	March (%)	Q1 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	3.2	10.6	29.9	11.5	15.1	13.0
Russell 3000	3.2	10.0	29.3	9.8	14.3	12.3
Russell 1000	3.2	10.3	29.9	10.5	14.8	12.7
Russell 1000 Growth	1.8	11.4	39.0	12.5	18.5	16.0
Russell 1000 Value	5.0	9.0	20.3	8.1	10.3	9.0
Russell MidCap	4.3	8.6	22.3	6.1	11.1	9.9
Russell MidCap Growth	2.4	9.5	26.3	4.6	11.8	11.4
Russell MidCap Value	5.2	8.2	20.4	6.8	9.9	8.6
Russell 2000	3.6	5.2	19.7	-0.1	8.1	7.6
Russell 2000 Growth	2.8	7.6	20.3	-2.7	7.4	7.9
Russell 2000 Value	4.4	2.9	18.8	2.2	8.2	6.9

US Equities: The Russell 3000 increased an impressive 10.0% in the first quarter of the year.

- US equities continued their ascent after a strong finish to 2023. The gains were driven by strong economic data and corporate earnings, despite signs of interest rates remaining higher for longer.
- Growth stocks outperformed value stocks across the market cap spectrum. Technology stocks continued to be a key driver of results, with NVIDIA and Microsoft alone contributing nearly 30% of the quarter's gains.
- Large cap stocks produced almost double the return of their small cap peers during the first quarter. The underperformance of small cap financials contributed to this dynamic as fear of further turmoil for regional banks resurfaced.

¹ Source: Bloomberg. Data is as of March 31, 2024.

Russell 3000 Sector Returns¹



- All sectors posted positive returns in the first quarter. The technology sector (13.1%) continued to lead the way due to the influence of the so-called “Magnificent Seven”.
- Technology was followed by energy (11.6%) and financials (11.1%), driven respectively by increased geopolitical tensions and the strong economic environment. Traditionally defensive sectors like consumer staples (5.4%) and utilities (5.2%) joined the rally but trailed other sectors.

¹ Source: Bloomberg. Data is as of March 31, 2024.

Foreign Equity Returns¹

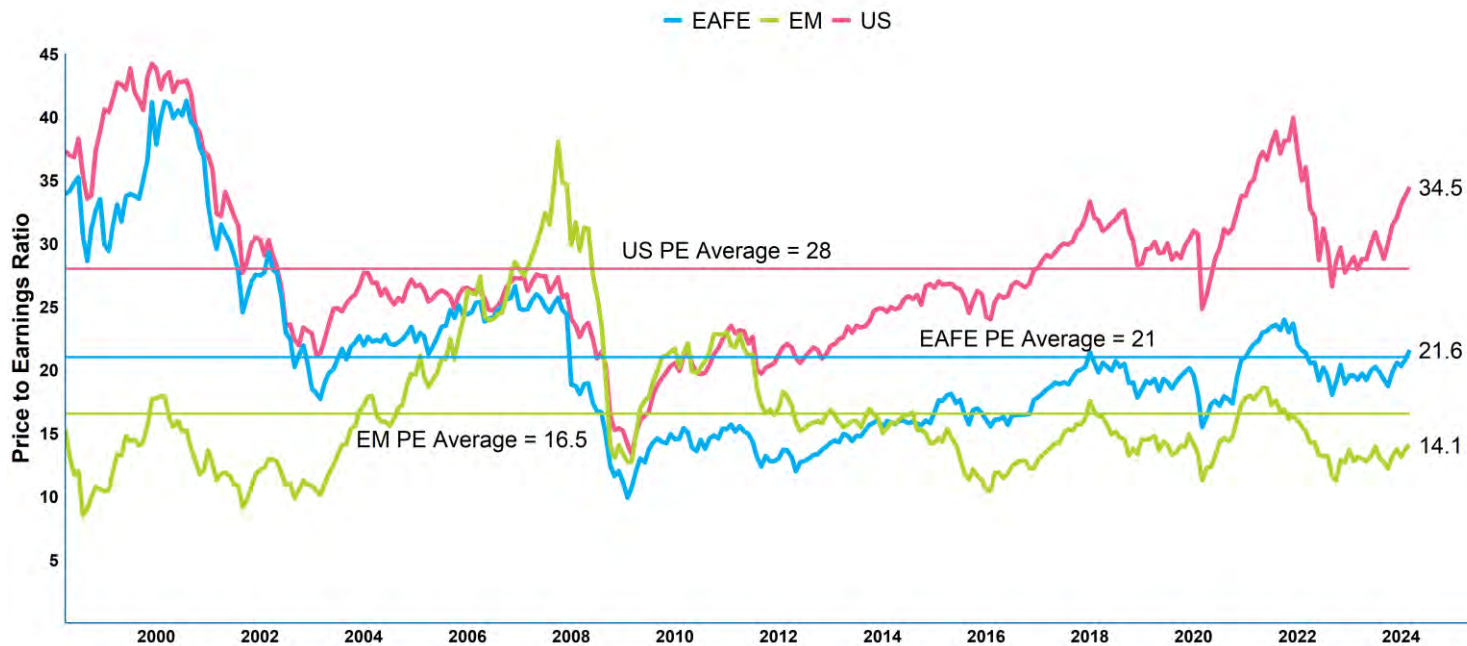
Foreign Equity	March (%)	Q1 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	3.1	4.7	13.3	1.9	6.0	4.3
MSCI EAFE	3.3	5.8	15.3	4.8	7.3	4.8
MSCI EAFE (Local Currency)	4.0	10.0	18.8	9.4	9.4	7.7
MSCI EAFE Small Cap	3.7	2.4	10.4	-1.4	4.9	4.7
MSCI Emerging Markets	2.5	2.4	8.2	-5.1	2.2	2.9
MSCI Emerging Markets (Local Currency)	3.0	4.5	10.6	-2.4	4.4	5.7
MSCI EM ex. China	3.0	4.0	20.5	2.2	6.4	4.2
MSCI China	0.9	-2.2	-17.1	-18.9	-6.3	1.2

Foreign Equity: Developed international equities (MSCI EAFE) gained 5.8% during the quarter and emerging market equities (MSCI EM) rose 2.4%.

- Developed international equity markets matched the US for the quarter in local terms but the appreciation of the dollar decreased returns for US investors by over 4.0% (5.8% versus 10.0%). Eurozone and UK equities had gains for the quarter, but Japan was the real standout performer, with the TOPIX returning 18.1% in local terms and the Nikkei breaking the 40,000 level for the first time.
- Emerging market equities again trailed developed markets largely due to China falling 2.2%. Slowing growth, issues in the property sector, and recent efforts by the US to discourage investments into China all weighed on results. Outside of China, interest rate sensitive markets like Brazil were particularly impacted by expectations of delayed interest rate cuts by the Fed. Stripping out China, emerging markets returned 4.0% in the quarter.

¹ Source: Bloomberg. Data is as of March 31, 2024.

Equity Cyclically Adjusted P/E Ratios¹



- At the end of the first quarter, the US equity price-to-earnings ratio increased further above its 21st century average, as price appreciation exceeded earnings growth.
- International market valuations also rose in the quarter and remain well below the US. In the case of developed markets, valuations are now slightly above the long-term average, while emerging market valuations remain well below its long-term average.

¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years. Data is as of March 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.

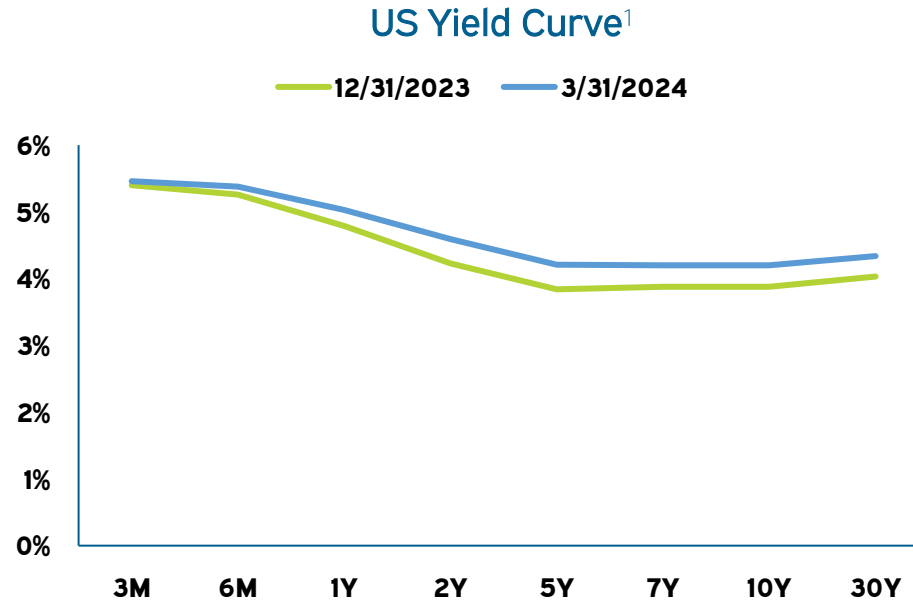
Fixed Income Returns¹

Fixed Income	March (%)	Q1 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	1.0	-0.5	2.7	-2.1	0.7	1.8	5.1	6.0
Bloomberg Aggregate	0.9	-0.8	1.7	-2.5	0.4	1.5	4.8	6.2
Bloomberg US TIPS	0.8	-0.1	0.5	-0.5	2.5	2.2	4.6	6.8
Bloomberg Short-term TIPS	0.6	0.8	3.2	2.3	3.2	2.1	4.8	2.4
Bloomberg High Yield	1.2	1.5	11.2	2.2	4.2	4.4	7.7	3.7
JPM GBI-EM Global Diversified (USD)	0.0	-2.1	4.9	-1.6	0.1	-0.3	6.4	5.0

Fixed Income: The Bloomberg Universal index fell 0.5% in the first quarter.

- Strong economic growth and inflation readings above forecasts shifted interest rate expectations pushing back the anticipated start date of rate cuts as well as the number of cuts for 2024.
- In this environment the broad US bond market (Bloomberg Aggregate) fell 0.8% with TIPS declining only slightly (0.1%).
- High yield bonds (1.5%) led the way for the quarter as risk appetite continues to be robust and overall yields remain attractive despite the recent tightening of spreads to Treasury equivalents.

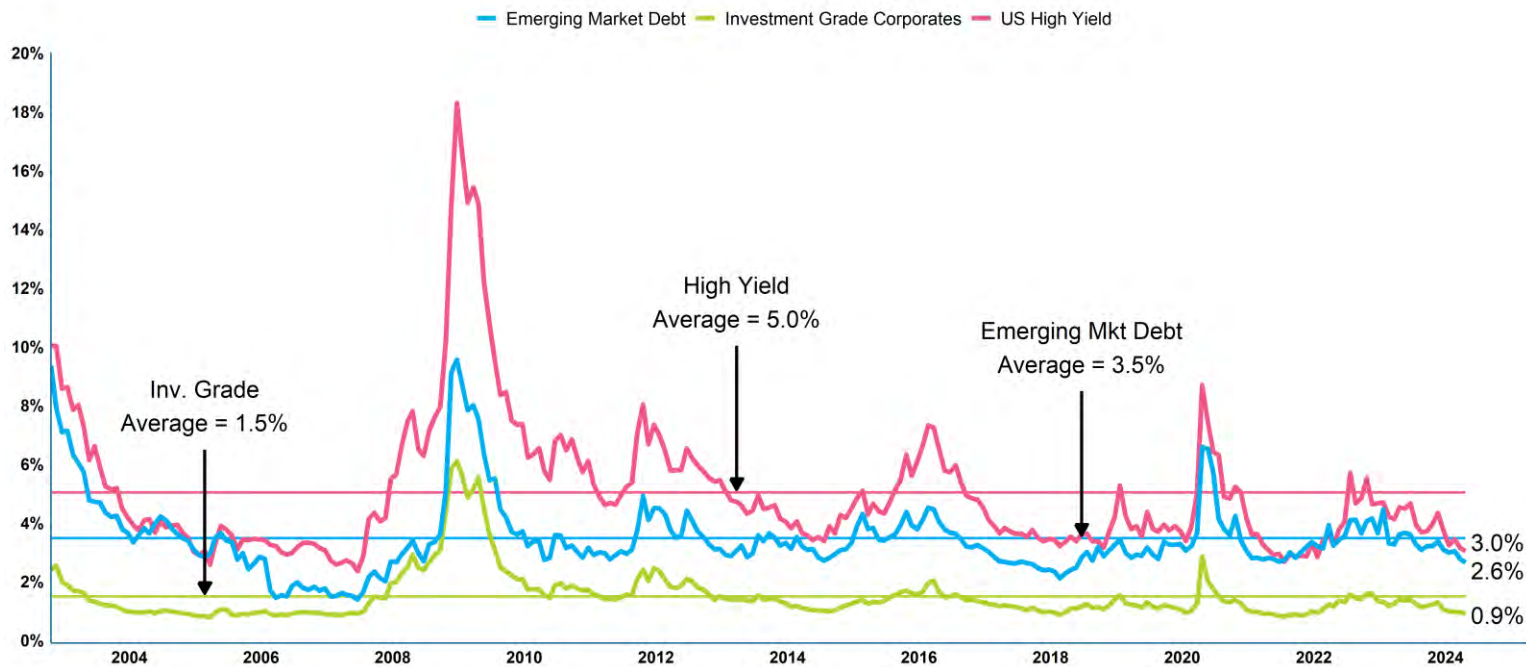
¹ Source: Bloomberg. JPM GBI-EM data is from InvestorForce. Data is as of March 31, 2024. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively.



- Overall interest rates moved higher over the quarter due to the strong economic data and the related shifts in monetary policy expectations.
- The more policy sensitive two-year Treasury yield rose from 4.3% to 4.6% in the first quarter while the ten-year Treasury yield increased from 3.9% to 4.2%.
- The yield curve remained inverted at quarter-end despite a recent flattening trend. The yield spread between the two-year and ten-year Treasury was -0.4% at the end of the quarter.

¹ Source: Bloomberg. Data is as of March 31, 2024.

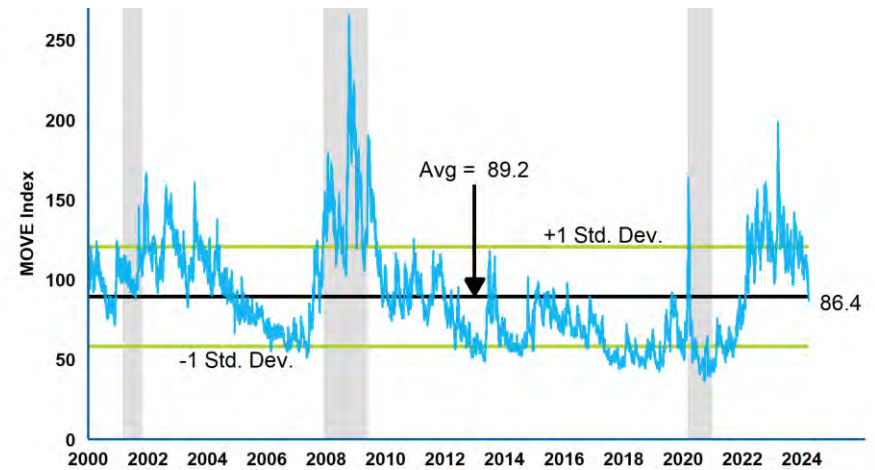
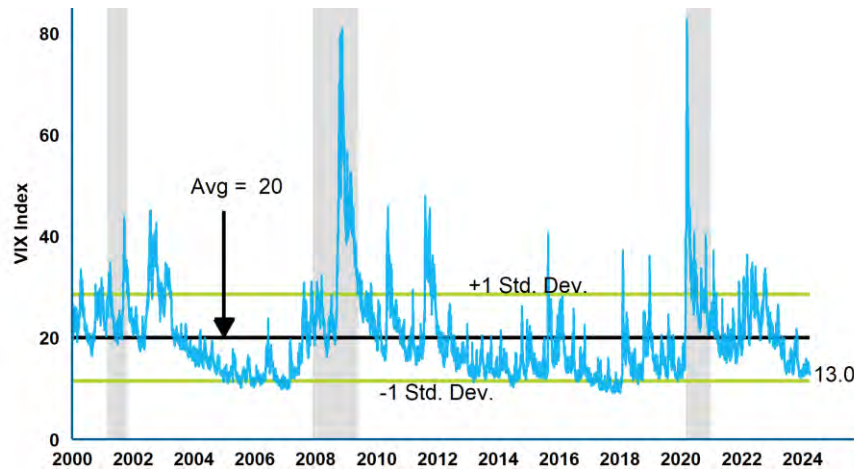
Credit Spreads vs. US Treasury Bonds¹



- A positive economic outlook along with expectations of lower interest rates has led to an increased risk appetite. This has benefited credit, with spreads (the added yield above a comparable maturity Treasury) narrowing.
- This trend continued in the first quarter particularly for riskier bonds. High yield spreads fell from 3.2% to 3.0% and emerging market spreads dropped from 3.0% to 2.6%. Spreads for investment grade corporate bonds fell only slightly over the quarter (1.0% to 0.9%).
- All spreads remain below their respective long-run averages, particularly within high yield.

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

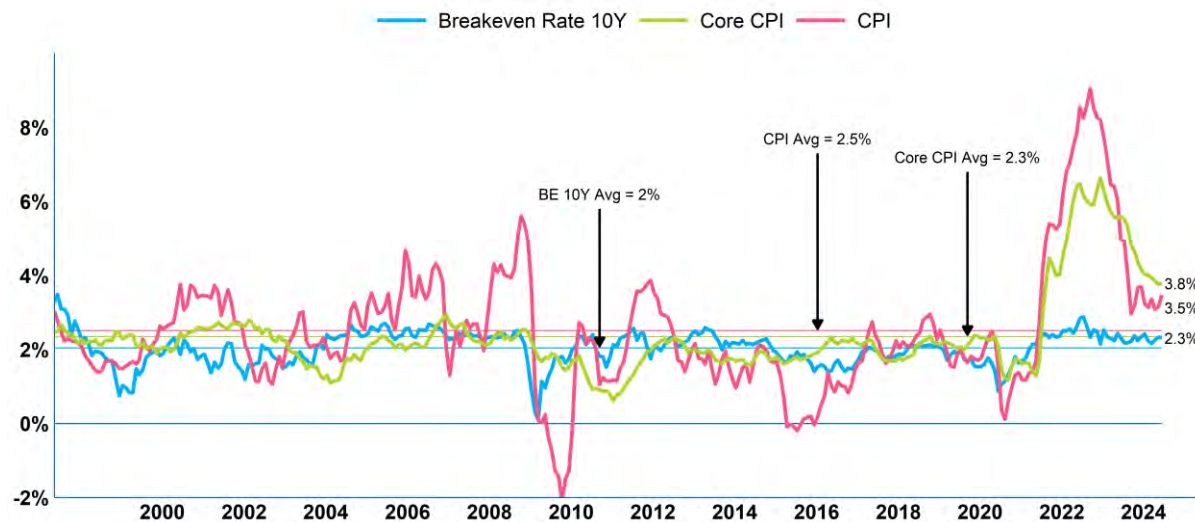
Equity and Fixed Income Volatility¹



- Volatility in equities (VIX) finished the quarter close to one standard deviation below the long-term average as the focus shifted late last year to peaking policy rates and the potential for a soft landing.
- Volatility in the bond market (MOVE) fell significantly over the quarter to a level below the long run average (86.4 versus 89.2). Declining volatility surrounding policy expectations and the more positive growth outlook both contributed to lower volatility in the bond market.

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

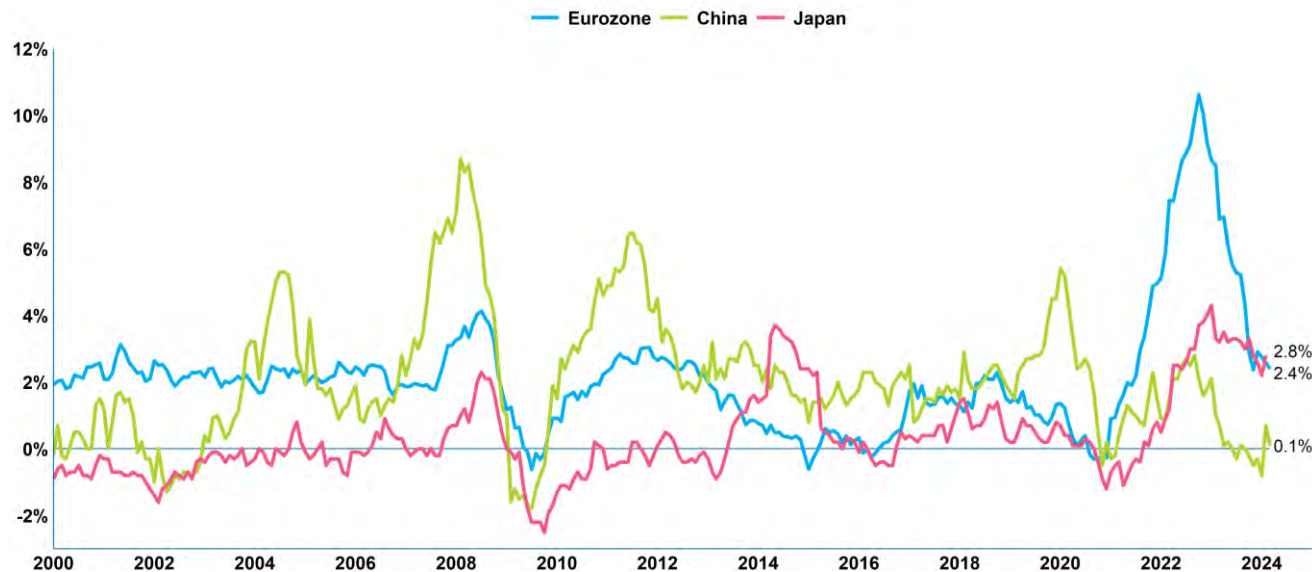
US Ten-Year Breakeven Inflation and CPI¹



- Year-over-year headline inflation rose in March (3.2% to 3.5%) and came in slightly above expectations. Prices in service sectors, particularly shelter, remain a key driver of inflation staying above the Fed’s 2% average target, with a recent rise in energy prices contributing too.
- Month-over-month inflation rose 0.4% which was the same as February, but above expectations of a 0.3% reading.
- Core inflation (excluding food and energy) remained at 3.8% but also came in above expectations. Core goods prices dropped, while core services including shelter and transportation prices continued to show persistence.
- Inflation expectations (breakevens) have remained relatively stable despite the significant volatility in inflation.

¹ Source: FRED. Data is as March 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.

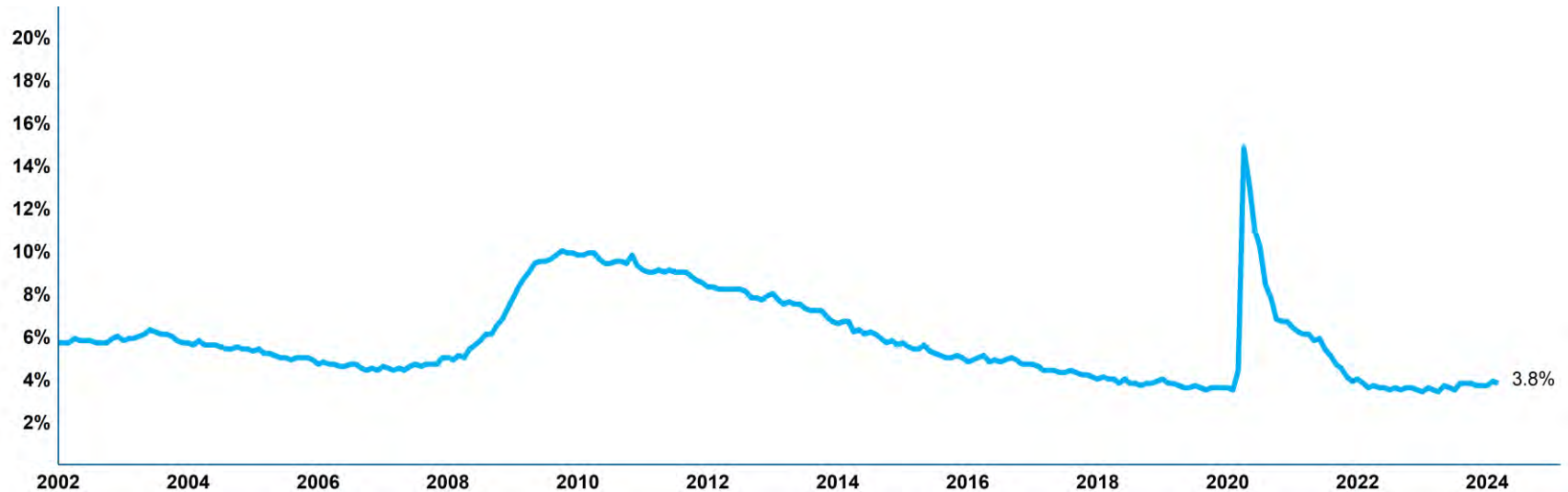
Global Inflation (CPI Trailing Twelve Months)¹



- Outside the US, inflation is also easing across major economies from the recent peaks.
- In the eurozone, prices experienced a dramatic decline last year but remain above the central bank's 2% target. In March, inflation fell further (2.6% to 2.4%), a level below the 3.5% year-over-year reading in the US.
- Inflation in Japan has slowly declined from the early 2023 peak of 4.3%, but it remains near levels not seen in a decade. In the most recent reading, inflation rose from 2.4% to 2.8% largely due to the falling impact of government energy subsidies introduced at the same time last year.
- The impacts from spending during the Lunar New Year holiday in China waned in March with inflation falling to just about 0%.

¹ Source: Bloomberg. Data is March 31, 2024, except Japan which is as of February 28, 2024.

US Unemployment¹

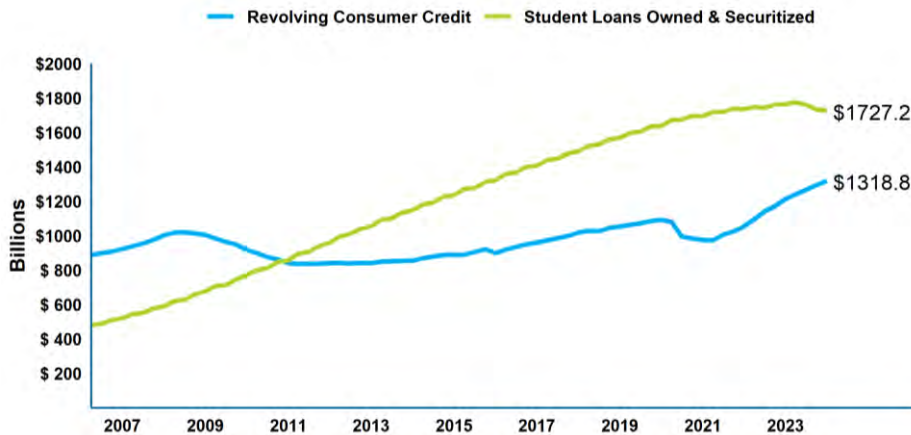


- Overall, the US labor market remains healthy, with the unemployment rate low, wage growth now positive in real terms, and initial claims for unemployment staying subdued.
- Each of the payroll readings over the quarter exceeded expectations. In March, the number of jobs added in the US was 303,000 compared to a 214,000 forecast. The healthcare (72,000), government (71,000), and construction (39,000) sectors added the most jobs.
- The unemployment rate fell from 3.9% to 3.8%, while wage growth dropped slightly from 4.3% to 4.1% compared to a year prior, a level well off the 6.0% peak but above inflation levels.
- Quit rates have declined, and layoffs are stable, with 1.4 job openings per unemployed worker.

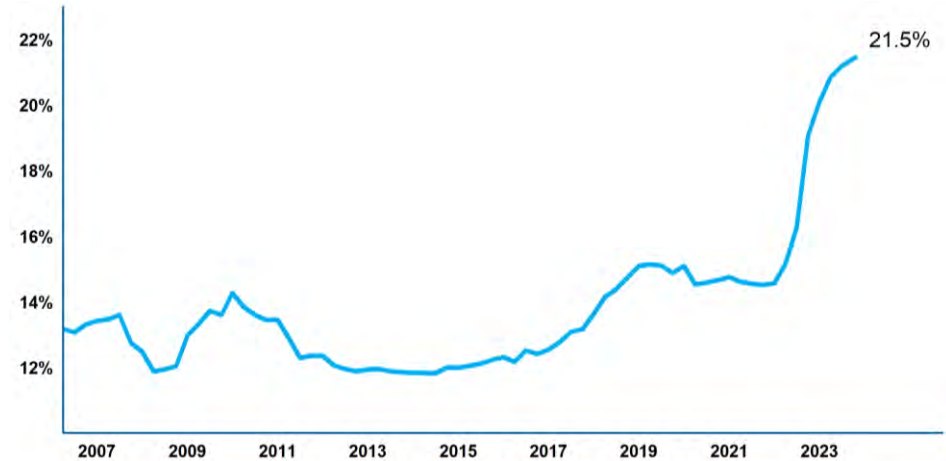
¹ Source: FRED. Data is as March 31, 2024.

US Consumer Under Stress?¹

Revolving Consumer Credit & Student Loans (\$B)



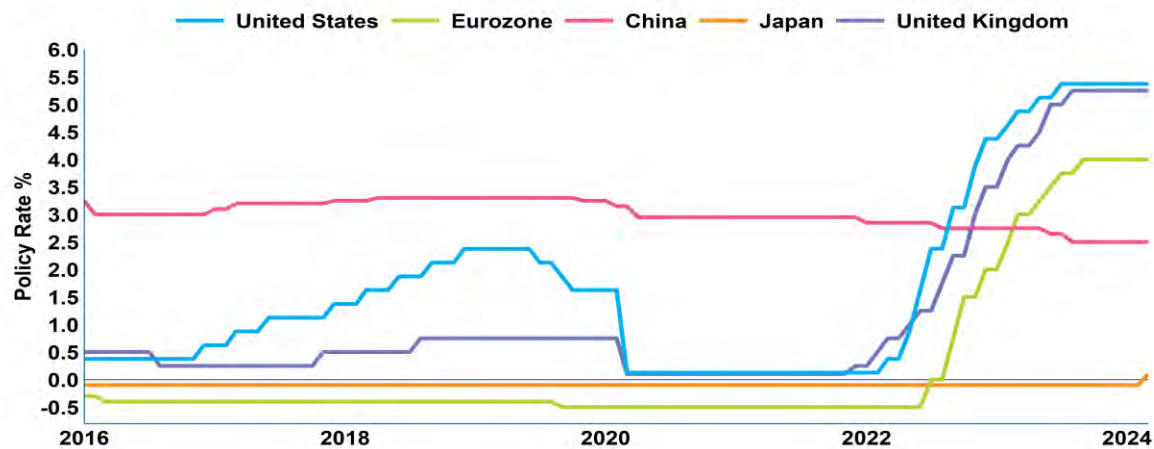
Consumer Credit Card Interest Rates (%)



- Despite the strong labor market and higher wages, pressures have started to build on the US consumer. This is an important consideration as consumer spending has been a key driver of economic growth.
- Revolving consumer credit surged to new highs in 2023 even as credit card interest rates hit levels not seen before (the prior peak was around 19% in the 1980s). Recently, we have also seen payment delinquencies on credit cards and auto loans start to increase, particularly for younger people.
- The return of student loan repayments after a three-year pandemic-related reprieve could add to pressures on consumers' budgets. This might be partially mitigated by recently initiated repayment and forgiveness programs.
- As we look ahead, the strength of the US consumer will remain key as this sector makes up most of the domestic economy (GDP).

¹ Source: FRED. Data is as of December 31, 2023. Revolving Consumer Credit data is seasonally adjusted to remove distortions during the holiday season.

Policy Rates¹



- The Fed has been on hold since July 2023 when it raised rates to a range of 5.25%-5.50%. Markets are now pricing in fewer than two rate cuts this year down from close to seven late last year, as economic data has come in better than expectations and inflation persists. Market pricing for the first rate cut has also dramatically changed from an original expectation of a March cut to the probability priced below 50% for a rate cut at all remaining Fed meetings in 2024.
- The European and UK central banks also recently paused their rate increases on slowing inflation. It appears that the ECB could be one of the first central banks to cut rates with expectations close to 90% for a June cut.
- Given the return of inflation driven by wage growth the Bank of Japan (BOJ) recently ended the final negative interest rate policy, stopped purchasing ETFs, and moved away from its yield curve control.
- The central bank in China has maintained interest rates at record low levels and continues to inject liquidity into the banking system, as weaker-than-expected economic data appears to indicate a widespread slowdown.

¹ Source: Bloomberg. Data is as of March 31, 2024.

US Dollar vs. Broad Currencies¹



- The dollar increased by close to 3% over the quarter versus a basket of major trading partners.
- Strong economic data in the US may delay policy rate cuts this year, which could contribute to continued upward pressure on the dollar as other countries pivot to rate cuts.

¹ Source: Bloomberg. Data as of March 31, 2024.

Summary

Key Trends:

- According to the IMF, global growth this year is expected to match the 2023 estimate at around 3.1% with most major economies predicted to avoid a recession. Continued strong economic growth does run the risk of inflation and interest rates staying higher for longer.
- Key economic data in the US is still coming in above forecasts with expectations dramatically evolving for the timing and pace of interest rate cuts. If data remains strong the Federal Reserve may keep rates elevated increasing the risk of an economic slowdown.
- Outside the US we could see other central banks start cutting rates ahead of the Fed, with the ECB particularly in focus. The risk of policy errors remains elevated as central banks try to further reduce inflation toward targets while not tipping their economies into recession.
- US consumers could feel pressure as certain components of inflation (e.g., shelter) remain high, borrowing costs are elevated, and the job market may weaken.
- 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.
- Equity valuations remain lower in emerging and developed markets, but risks remain, including China's economic uncertainty and on-going weakness in the real estate sector which could spill over into key trading partners' economies. Japan's recent tightening of monetary policy along with changes in corporate governance in the country could influence relative results.

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-Present	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

*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- Present	57.93% Russell 3000 Index 42.07% 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 – Present	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%

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 – Present	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

*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 4 managers (Monarch, Signia, Ranger, and Quantum), 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.

Lombard Odier (Commingled Fund)

Lombard Odier manages an Alternative Risk Premia mandate that targets a 10% long-term volatility level. The proposed strategy seeks to harvest value, carry, and momentum risk premia/factors across a diverse set of assets (e.g., fixed income, currencies, and commodities). The strategy does not gain exposure to each of these risk premia across every asset type but rather focuses on those risk premia within an asset class that are the most robust. Additionally, the strategy contains a single-stock-oriented portfolio that harvests value, momentum, quality, defensive, and ESG-related factors, among others, across the developed world.

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	Allocation $(w_i - W_i) \times (b_i - b)$	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	Selection $(r_i - b_i) \times W_i$	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.	Interaction $(r_i - b_i) \times (w_i - W_i)$	r _i = portfolio segment return b _i = benchmark segment return w _i = portfolio segment weight W _i = benchmark segment weight

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Hawaii Employer-Union Health Benefits Trust Fund (EUTF)

May 20, 2024

Private Equity Q4 2023
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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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.

Industry Trends

- **Fundraising activity continues to be slow.** Fundraising activity for private equity funds in the fourth quarter of 2023 decreased by 29% compared to the previous quarter, with \$162 billion raised, and represents the lowest amount of capital raised for a quarter in over five years. The fourth quarter showed continued signs of moderation in the private equity fundraising market as the slowdown in private equity exit volumes has weighed on the amount of capital that some LPs have available to deploy. While the overall equity market backdrop has improved sentiment, the proportion of investors looking to commit smaller amounts of fresh capital to private equity over the next 12 months is increasing. Buyout (53% of all private equity capital raised), Growth Equity (17%), Secondaries (13%), and Venture Capital (11%) represented the most popular private equity sub-strategies during the fourth quarter of 2023.
- **Risk metrics mixed in the buyout market.** Relative to 2022, the median private equity buyout purchase price multiple increased from 12.9x EBITDA to 13.6x EBITDA in 2023. This represents a 6% increase from 2022 relative to the 1% decrease observed in 2022 from 2021. 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 not willing to exit deals at lower valuations despite the imbalance between expectations of buyers and sellers through most of the year. Although purchase price multiples remain elevated, global buyout deal flow (i.e., # of deals) was down 19% in 2023 compared to the previous year. However, private equity deal value picked up in the final quarter of 2023, representing a 17% increase in deal value compared to the same quarter in 2022 and a 58% increase from the previous quarter.
- **“Dry Powder” remains high.** Dry powder levels have increased by approximately 24% from Q4 2022 and remain at all-time highs. Despite macroeconomic worries, GPs still have ample dry powder to deploy, which helps support deal flow even as debt financing has become more expensive and more restrictive.
- **Private equity performance improving.** As of September 30, 2023, one-year private equity returns increased from the prior quarter, generating a 5.1% IRR over the trailing 12 months through Q3 2023. This compares to the trailing 12-month return of 4.6% as of Q2 2023 and a one-year return of 3.5% at Q3 2022. Overall, private equity returns have proven resilient but still remain far below the highs of recent years. One-year returns remain negative for Venture funds at a -7.6% IRR but have increased for all strategies relative to Q2 2023 marks. In general, however, performance has been strong in each vintage year since the Global Financial Crisis.

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 December 31, 2023, the Private Equity Program had \$1.4 billion in commitments across 23 partnerships and one co-investment, generating a net since inception Internal Rate of Return (IRR) of 14.7%. While posting attractive absolute results to date, this performance reflects continued market slowing with the net since inception IRR declining from 15.0% in the prior quarter and from 19.3% one year earlier.

The Private Equity Program’s reported value represented 10.2% of total Plan assets as of Q4 2023. 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%. 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.

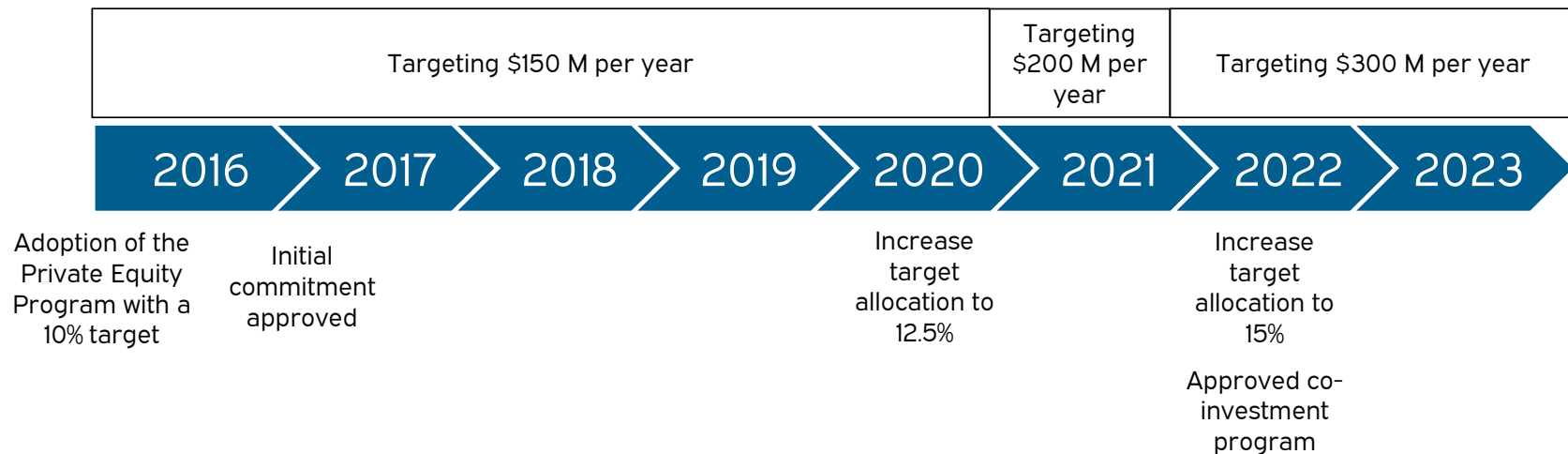
EUTF Private Equity Program – One Year Change as of December 31, 2023

	Committed	Contributed	Distributed	Market Value	% of Total Assets	Target PE Allocation	Multiple	Since Inception IRR*
Beginning of Period	\$1,116.9	\$526.5	\$90.5	\$600.0	10.1	10.0	1.3x	19.3
End of Period	\$1,406.9	\$633.6	\$107.8	\$735.2	10.2	10.5	1.3x	14.7
Change	\$290.0	\$107.1	\$17.3	\$135.2	0.1	0.5	---	(4.6)

*initial capital call was on April 20, 2018.

Program Timeline

Since the adoption of the Private Equity Program in 2016, consistent and disciplined progress has been made towards the long-term objectives. Consistent investment planning, updated annually to reflect market dynamics and higher target allocations for the private equity asset class, has resulted in increasing annual commitment targets over time. In addition, the Program has grown in complexity with the adoption of a co-investment program in 2022 to facilitate the cost-efficient deployment of capital into a relatively expensive asset class.



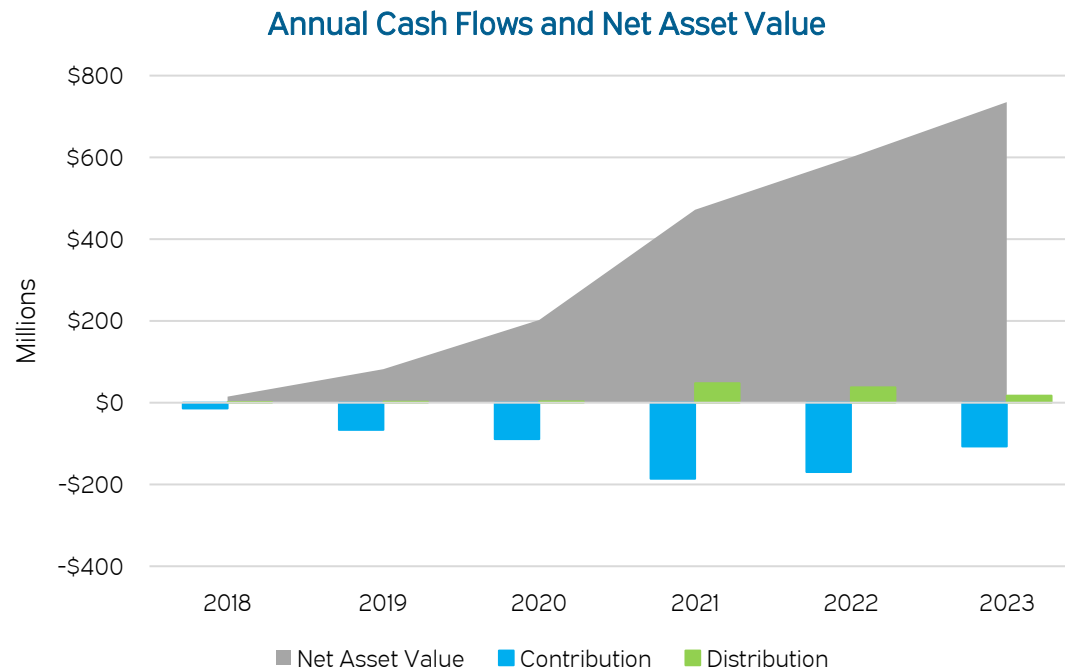
Road Map

As the Private Equity Program has evolved and the annual commitment targets have increased, the number of partnerships per year has correspondingly increased. The Program targets allocations across Buyout (60%), Venture Capital/Growth Equity (20%) and Debt Related (20%). Consistent commitment activity across calendar years has provided diversification across vintage year, sector, and investment manager.

	Buyouts / Diversified	Venture Capital/ Growth Equity	Debt Related
2016	Landmark XVI \$75 M		
2017	Wellspring VI \$50 M	Apollo IX \$42 M	
2018	WCAS XIII \$50 M	Stepstone IX \$39 M	Strategic Value SSF IV \$50 M
2019	Veritas VII \$50 M	Apax X \$50 M	Warburg Pincus China-SEA II \$50 M
2020	K5 \$50 M	Kohlberg IX \$50 M	Stepstone X \$40 M
2021	Reverence V \$75 M	WCAS XIV \$75 M	Strategic Value SSF V \$50 M
2022	Veritas VIII \$75 M	Apax XI \$75 M	Kohlberg X \$75 M
2023	K6 \$75 M	Freeman Spogli \$75 M	Wynnchurch VI \$65 M
		Stepstone XI \$75 M	Nexus IV \$75 M

Program Growth

The Private Equity Program has exhibited consistent growth of net asset value, continuing to progress towards long term target allocations. While consistently committing capital over time, market dynamics slowed investment activity in 2022 and 2023 as highlighted by decreasing annual contributions. Significant unfunded commitments, of approximately \$800 million, remain to be invested as of the end of 2023.



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 and relative results over longer periods as of Q4 2023, outperforming the policy benchmark over the latest three-year, five-year and since inception periods. Shorter term results are reflective of the benchmark mismatch of utilizing a public equity index for private equity performance, as the Program underperformed the policy benchmark by 4.3% over the latest one-year period as of December 31, 2023. 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	7.0	13.1	14.6	---	14.7
Russell 3000 + 300 bps**	11.3	4.6	7.3	---	7.2
Difference	(4.3)	8.5	7.3	---	7.5

* 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 December 31, 2023, approximately 45% of the Plan's committed capital for closed partnerships had been drawn down. Some less mature partnerships are exhibiting the j-curve, as fees and expenses result in initial negative results.

Active Program Partnerships: As of December 31, 2023

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	58.5	30.7	48.3**	1.3x	16.6
Strategic Value Special Situations Fund IV	Distressed Debt	2017	50.0	45.0	16.0	60.0	1.7x	14.7
Wellspring Capital Partners VI	Buyout	2018	50.0	49.9	11.4	68.4	1.6x	16.8
Apollo Investment Fund IX	Buyout	2018	42.0	40.1	16.6	42.9	1.5x	20.7
StepStone VC Global Partners IX-B	Venture Capital	2019	39.9	34.0	2.1	51.1**	1.6x	14.6
Welsh, Carson, Anderson & Stowe XIII	Buyout	2019	50.0	45.9	18.0	49.4	1.5x	22.5
Warburg Pincus China-Southeast Asia II	Growth Equity	2019	50.0	26.0	4.1	24.7	1.1x	5.1
Apax X	Buyout	2019	50.0	47.1	5.4	54.5	1.3x	15.7
Veritas Capital Fund VII	Buyout	2020	50.0	47.5	0.0	67.2	1.4x	14.8
Kohlberg Investors IX	Buyout	2020	50.0	44.2	1.5	63.2	1.5x	24.9
K5 Private Investors	Buyout	2020	50.0	27.5	1.5	29.9	1.1x	8.0
StepStone VC Global Partners X	Venture Capital	2020	40.0	27.2	0.0	27.3**	1.0x	0.1
Strategic Value Special Situations Fund V	Distressed Debt	2021	50.0	26.3	0.2	33.1	1.3x	14.9
Reverence Opportunities Fund V	Buyout	2021	75.0	25.5	0.2	28.0	1.1x	8.6
Welsh, Carson, Anderson & Stowe XIV	Buyout	2022	75.0	19.6	0.0	15.7	0.8x	-35.8
Veritas Capital Fund VIII	Buyout	2022	75.0	41.7	0.0	41.3	1.0x	-1.2
Apax XI	Buyout	2022	75.0	---	---	0.3	NM	NM
StepStone VC Global Partners XI	Venture Capital	2022	75.0	7.5	0.0	6.7**	0.9x	-10.8
Kohlberg Investors X	Buyout	---	75.0	---	---	0.8	---	---
EUTF Co-Investment Program***	Buyout	2022	20.0	20.2	---	22.5	1.1x	11.1
K6 Private Investors	Buyout	2023	75.0	---	---	---	---	---
Nexus Special Situations IV	Debt Related	2023	75.0	---	---	---	---	---
Freeman Spogli IX	Buyout	2023	75.0	---	---	---	---	---
Wynnchurch VI	Buyout	2023	65.0	---	---	---	---	---
Total Private Equity Program	---	---	1,406.9	633.5	107.7	735.2	1.3x	14.7

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

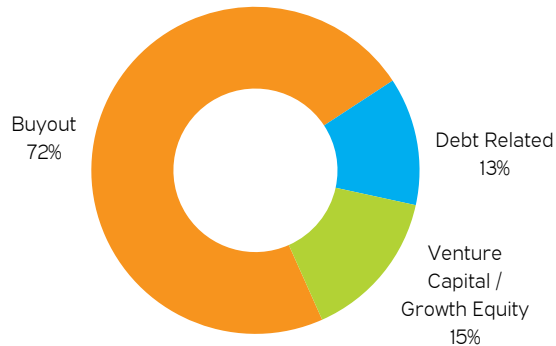
** Estimate provided by Ares Management, while the StepStone values are cash flow adjusted from September 30, 2023.

*** Consists of one co-investment to date, after disciplined consideration of approximately ten opportunities to date.

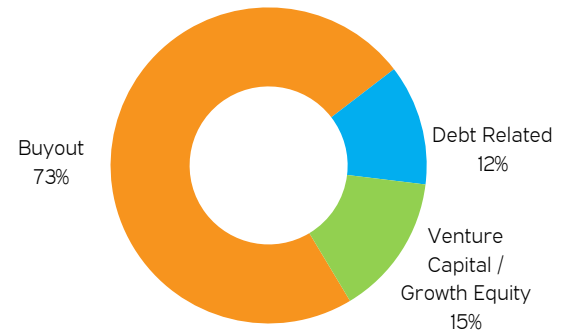
Portfolio Sector Diversification

The EUTF Private Equity Program is slightly above target for buyout exposure, while underweight debt related and venture capital/growth equity as of December 31, 2023. Deviations are to be expected with sector diversification continuing to evolve as additional commitments are made and capital is invested.

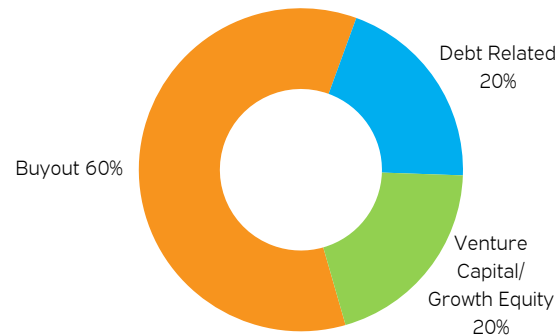
Sector Diversification: Market Value



Sector Diversification: Committed



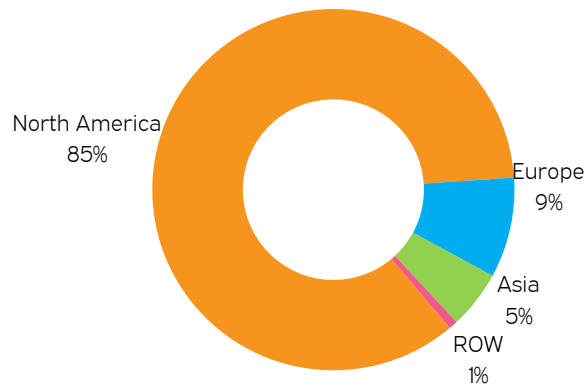
Sector Diversification: Target



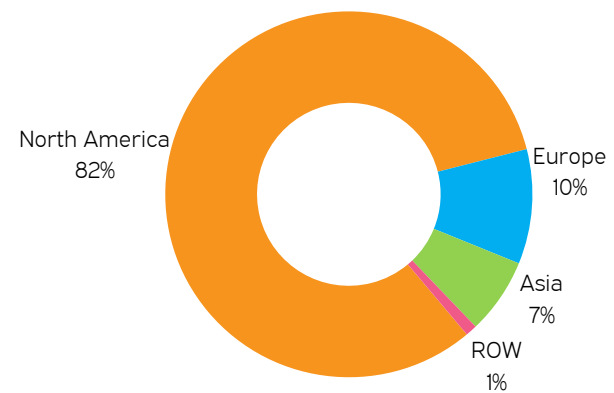
Portfolio Geographic Diversification

On a geographic basis, the Portfolio is domestically oriented with 85% of capital deployed in partnerships targeting North America but is diversified globally with 9% 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

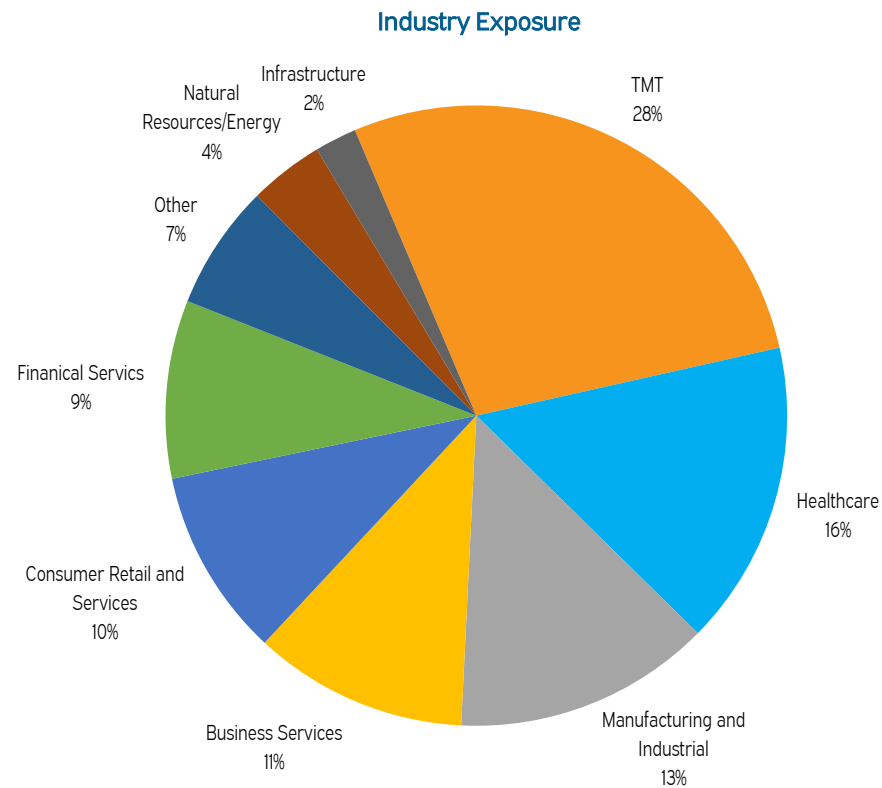


Geographic Diversification: Committed



Industry Diversification

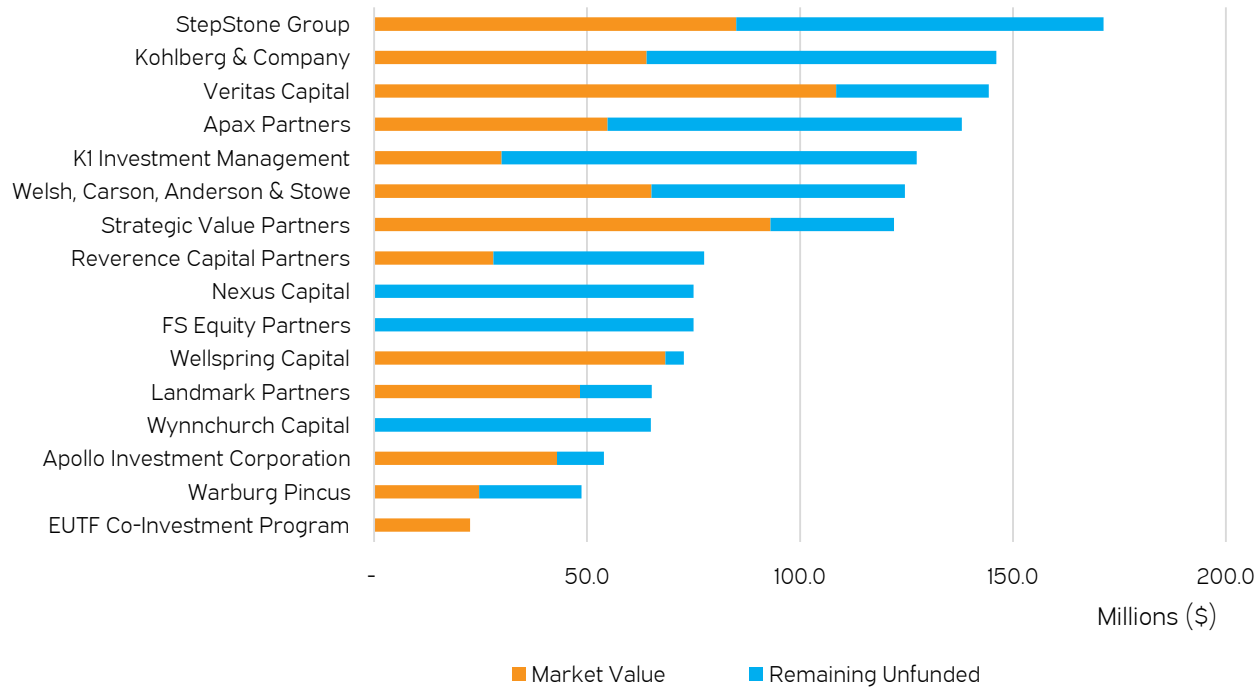
The Private Equity Program is diversified across industry. In aggregate, the exposures are tilted toward higher growth segments of the market with the Technology, Media & Telecom (“TMT”) sector representing the largest proportion of the portfolio, followed by Healthcare.



Firm Diversification

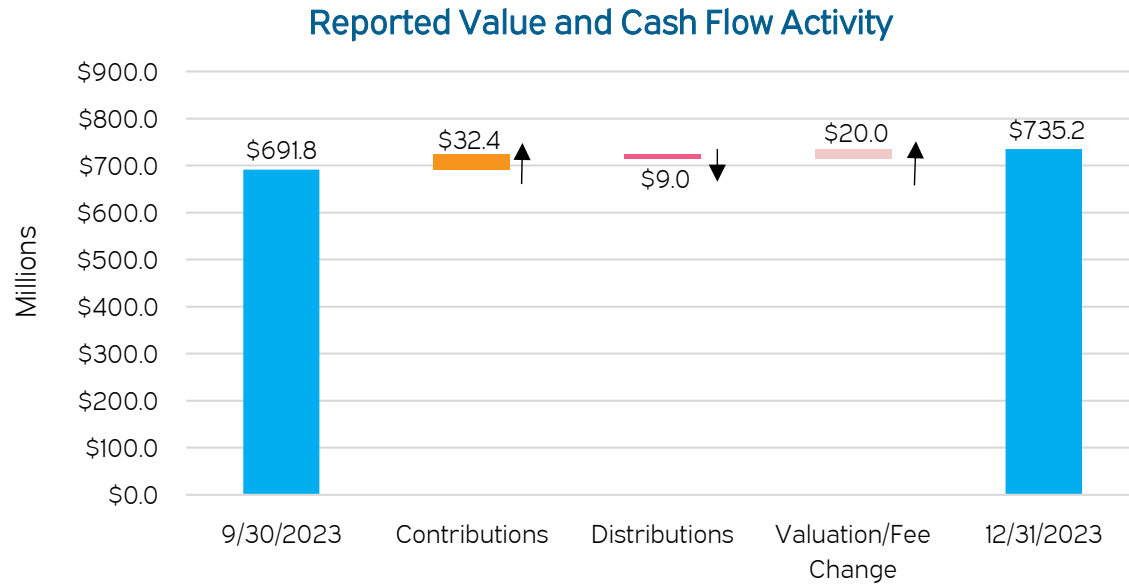
As of December 31, 2023, the Private Equity Program is constructed with 23 partnerships and one co-investment across 15 firms. On a total exposure basis (market value plus unfunded commitments), Stepstone Group, with three venture capital fund-of-funds commitments, is the largest exposure at \$171 million. Kohlberg & Company, with two buyout commitments, is the second largest exposure at \$146 million followed by Veritas Capital, with two buyout commitments, as the third largest exposure at \$144 million. These exposures represent 11.2%, 9.6%, and 9.4% of the Private Equity Program's total exposure, respectively.

Total Exposure



Private Equity Cash Flows

The value of the portfolio increased by \$44 million over the latest quarter driven by contributions and appreciation. During the quarter, \$32.4 million of contributions were made to underlying managers and \$20.0 million of valuation increases were reflected while \$9.0 million was distributed.



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 December 31, 2023, \$1,406.9 million of commitments have been closed across 23 partnerships and one co-investment. The table below lists commitment activity over the past three years.

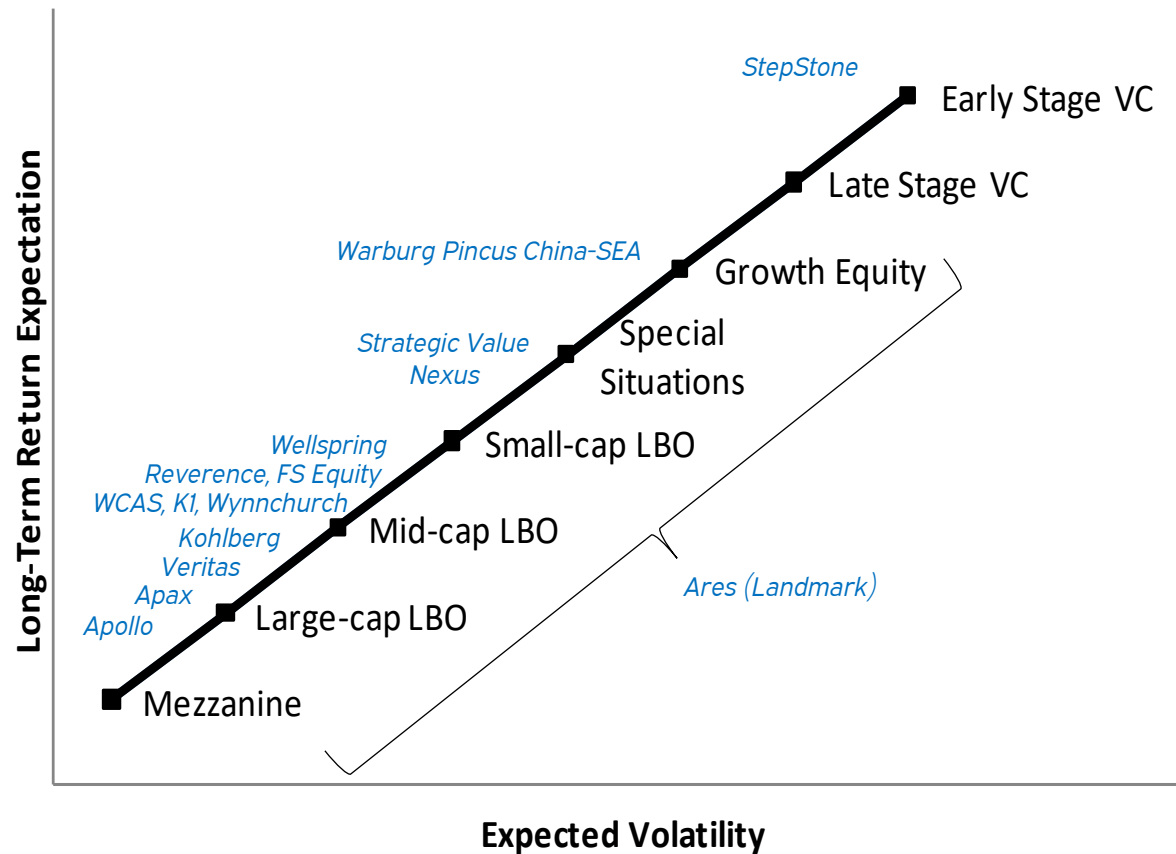
Private Equity Program Commitments: Trailing Three Years

Fund	Type	Commitment (\$mm)	Approval Date	Initial Funding
Strategic Value Special Situations Fund V	Distressed Debt/Special Situations	50	2/16/2021	5/13/2021
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	---
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	---
Freeman Spogli IX	Buyout	75	12/11/2023	---
Wynnchurch VI	Buyout	65*	12/11/2023	---

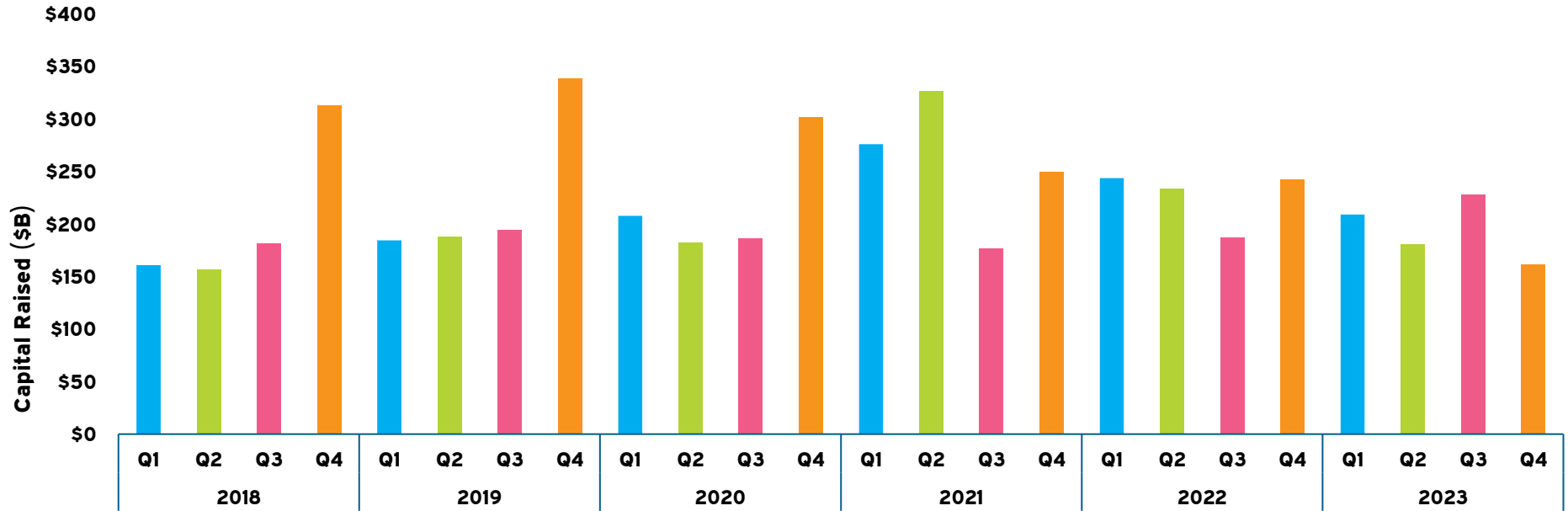
*Over-subscribed and cut back from \$75 million commitment request.

Subsequent to quarter end a \$75 million commitment was approved to Veritas IX, targeting buyout transactions of technology and technology-enabled companies providing solutions to governments and commercial customers worldwide.

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.



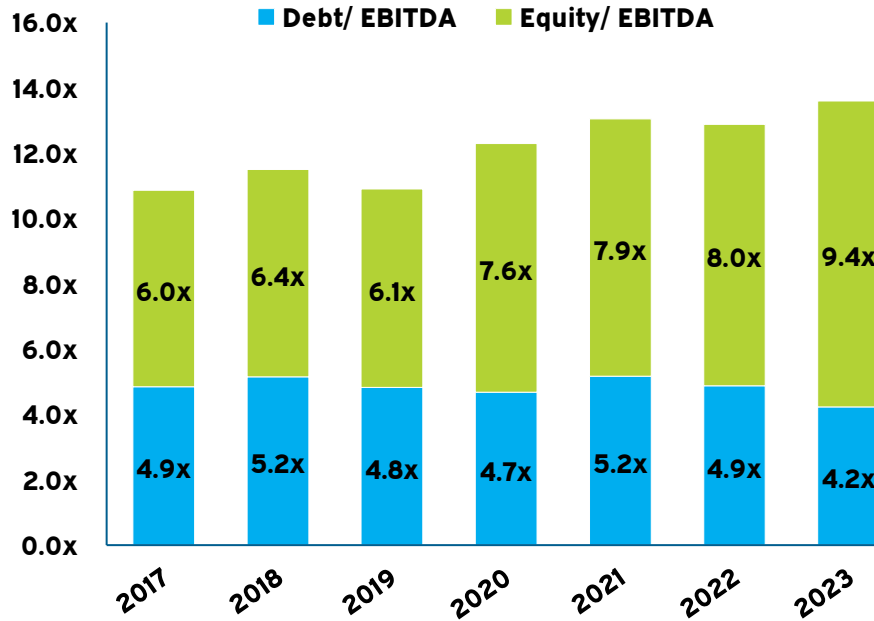
**Private Equity
Global Fundraising¹**



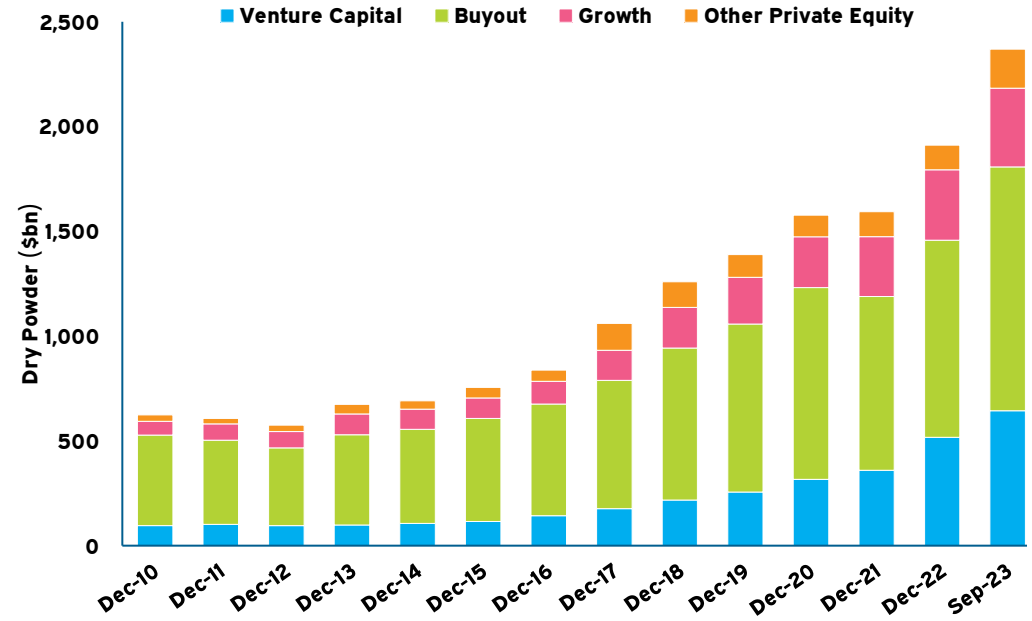
Fundraising activity for private equity funds in the fourth quarter of 2023 decreased by 29% compared to the previous quarter, with \$162 billion raised, and represents the lowest amount of capital raised for a quarter in over five years. The fourth quarter showed continued signs of moderation in the private equity fundraising market as the slowdown in private equity exit volumes has weighed on the amount of capital that some LPs have available to deploy. While the overall equity market backdrop has improved sentiment, the proportion of investors looking to commit smaller amounts of fresh capital to private equity over the next 12 months is increasing. A total of 66% of private equity investors tracked by Preqin plan to deploy less than \$50 million, an increase from 62% in the preceding year. According to Preqin data, there were over 10,600 funds raising in the market as of January 2024, with aggregate capital targeted of over \$1.6 trillion. Both metrics are pushing record highs, and therefore, paint a continued picture of highly competitive fundraising. As a result, funds have been spending more time on the road than ever, with 61% of private equity funds (and 63% of venture capital funds) closed through Q4 in 2023 having been in market for more than 18 months compared to an average of 41% (and 37% for venture capital) from 2018-2022. Overall, with fewer funds closing on larger amounts of capital, the fundraising environment continues to point towards a continuation of the recent trend for consolidation.

¹ Preqin

Purchase Price Breakdown, All LBOs¹



Dry Powder by Fund Type²

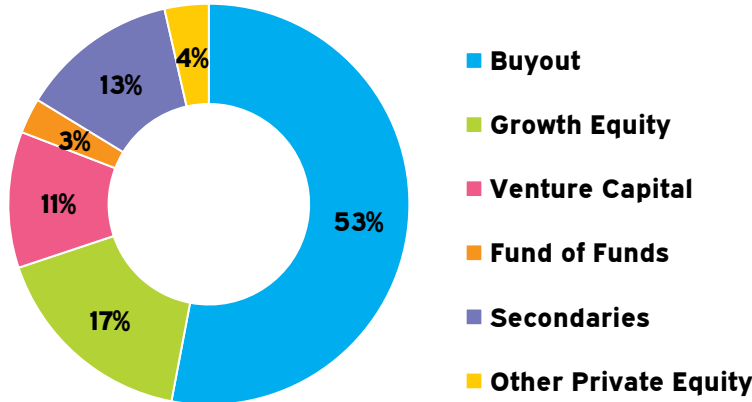


Relative to 2022, the median private equity buyout purchase price multiple increased from 12.9x EBITDA to 13.6x EBITDA in 2023. This represents a 6% increase from 2022 relative to the 1% decrease observed in 2022 from 2021. Due to the higher interest rate environment, recent deals, in aggregate, have 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 not willing to exit deals at lower valuations despite the imbalance between expectations of buyers and sellers through most of the year. Although purchase price multiples remain elevated, global buyout deal flow (i.e., # of deals) was down 19% in 2023 compared to the previous year. However, private equity deal value picked up in the final quarter of 2023, representing a 17% increase in deal value compared to the same quarter in 2022 and a 58% increase from the previous quarter. Deal volume increased slightly in the fourth quarter relative to the prior quarter, as well. Improved financing conditions and more realistic pricing expectations between buyers and sellers have contributed to deals flowing again. Dry powder levels as of Q3 2023, have increased by approximately 24% from Q4 2022 and remain at all-time highs. Despite macroeconomic worries, GPs still have ample dry powder to deploy, which helps support deal flow even as debt financing has become more expensive and more restrictive.

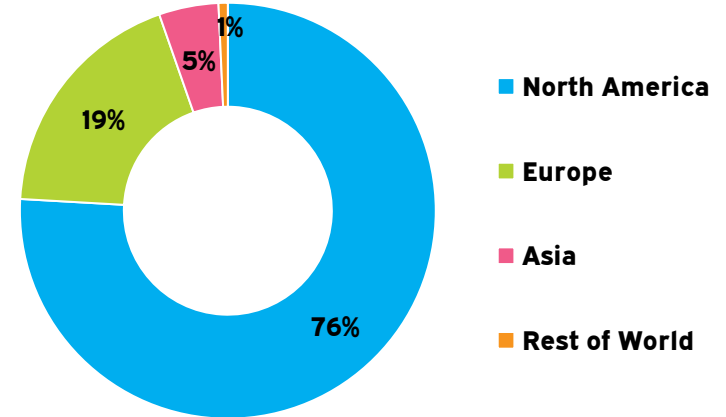
¹ Preqin. Data pulled on April 15, 2024.

² Global Private Equity Dry Powder Split by Strategy. Provided by Preqin on April 5, 2024. There is a six-month lag in Preqin's dry powder data with September 30, 2023, representing the latest figures, which were released in April 2024.

Capital Raised by Strategy¹



Capital Raised by Geography²



Buyout (53% of all private equity capital raised), Growth Equity (17%), Secondaries (13%), and Venture Capital (11%) represented the most popular private equity sub-strategies during the fourth quarter of 2023. Buyout funds decreased from 63% of capital raised in Q3 2023 to 53% in the fourth quarter of 2023. Growth Equity increased the most of any strategy in Q4 2023 from 10% of capital raised to 17%. Secondaries, as a percentage of total capital raised, also increased by 3% as the denominator effect and subdued private equity exit environment increased the number of LPs looking to trim allocations in the secondaries market. As of the fourth quarter of 2023, some investors anticipate higher returns for secondaries given the heightened demand for liquidity and 29% of investors were planning to target secondaries strategies over the next 12-month period, a 5% increase since the same quarter last year. However, secondaries funds in market still make up a relatively small percentage of the overall offering at 3% of all funds in market (but tend to be among the largest by 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 fourth quarter compared to the previous quarter.

North America-focused vehicles continued to represent the majority of funds raised during the fourth quarter, representing 76% of total capital. This represents a substantial increase from the 63% of aggregate capital raised in the prior quarter, which is consistent with Preqin forecasts predicting the region to continue growing its share of the global market through 2028. Conversely, as a percentage of total capital raised, commitments to Europe decreased from 29% to 19%. Asia-focused funds remained low, only representing 5% of total capital raised. As China-focused funds had made up the lion's share of funds raised in the region in recent years, the limited capital raised by Asia-focused funds recently highlights investors' risk aversion toward China among geopolitical and economic challenges. Investor appetite for Rest of World remained low with \$1.2 billion of aggregate capital raised across nine funds during the quarter.

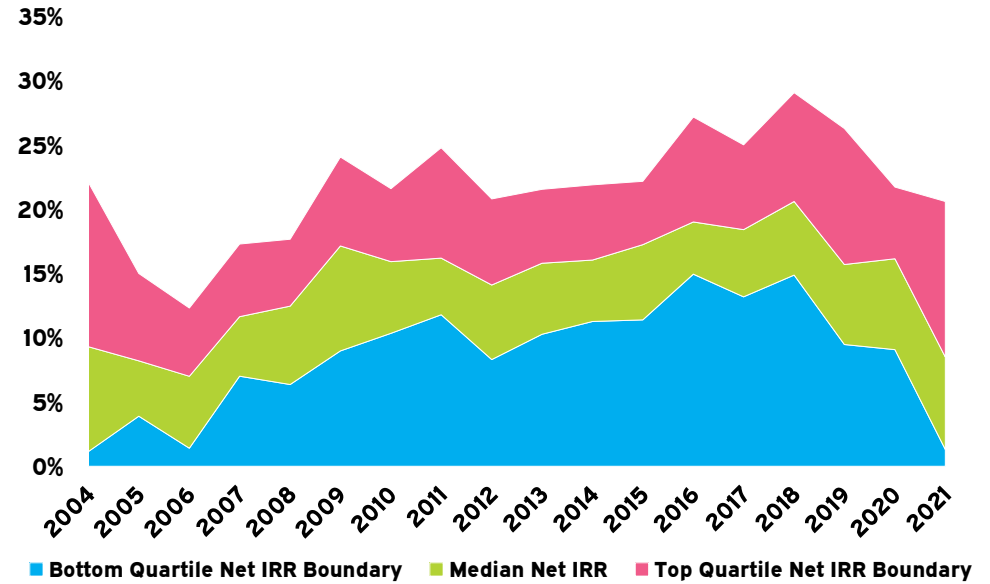
¹ Preqin

² Preqin

Private Equity Performance by Horizon¹

Horizon	Private Equity	Buyout	Venture Capital	Growth Equity
1 Year to 9/2023	5.1%	8.1%	(7.6)%	1.6%
3 Years to 9/2023	17.0	18.5	9.9	10.7
5 Years to 9/2023	15.4	16.3	11.6	13.9

Private Equity Performance by Vintage Year²



As of September 30, 2023, one-year private equity returns increased from the prior quarter, generating a 5.1% IRR over the trailing 12 months through Q3 2023. This compares to the trailing 12-month return of 4.6% as of Q2 2023 and a one-year return of 3.5% at Q3 2022. Overall, private equity returns have proven resilient but still remain far below the highs of recent years. One-year returns remain negative for Venture funds at a -7.6% IRR but have increased for all strategies relative to Q2 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 Buyout outperforming both Growth Equity and Venture funds across longer time periods as of Q3 2023. Lastly, the spread between first and third quartile performance in private equity has increased since the Global Financial Crisis; 2007 vintage funds reported a 10.3% spread while 2021 vintage funds reported a 19.3% spread.

¹ Preqin Horizon IRRs as of 9/30/2023. Data as of 12/31/2023 is not yet available.

² Preqin, Private Equity – All, Quartile Returns as of 12/31/2023. Data pulled on April 15, 2024.

May 20, 2024



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

Real Assets 4Q 2023

Quarterly Performance Review

Avery Robinson

Senior Vice President

Jan Mende

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 4Q 2023 Quarterly Performance Review

Callan

Market Overview

U.S. Private Real Estate Performance: 4Q23

Income returns positive but 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.
- 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	-5.0%	-12.7%	4.0%	3.3%	6.3%
Income	0.7%	2.8%	2.8%	2.9%	3.3%
Appreciation	-5.7%	-15.2%	1.2%	0.4%	3.0%
NCREIF Property Index	-3.0%	-7.9%	4.6%	4.3%	6.8%
Income	1.1%	4.3%	4.1%	4.2%	4.6%
Appreciation	-4.1%	-11.8%	0.4%	0.1%	2.2%

Returns are geometrically linked

NCREIF Property Index Quarterly Returns by Region and Property Type



Source: NCREIF, ODCE return is net

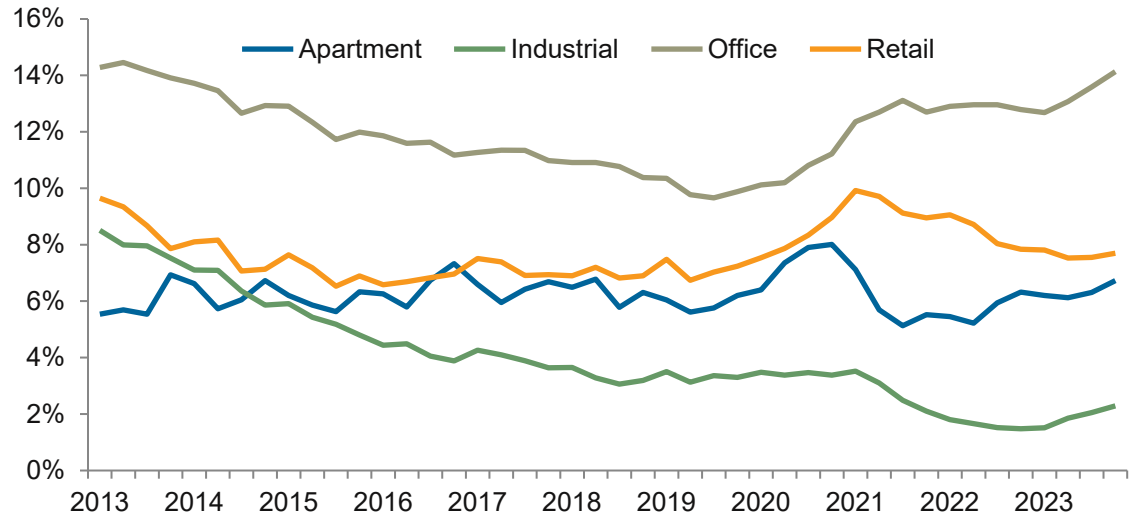
U.S. Private Real Estate Market Trends

Vacancy rates and NOI growth remain mixed

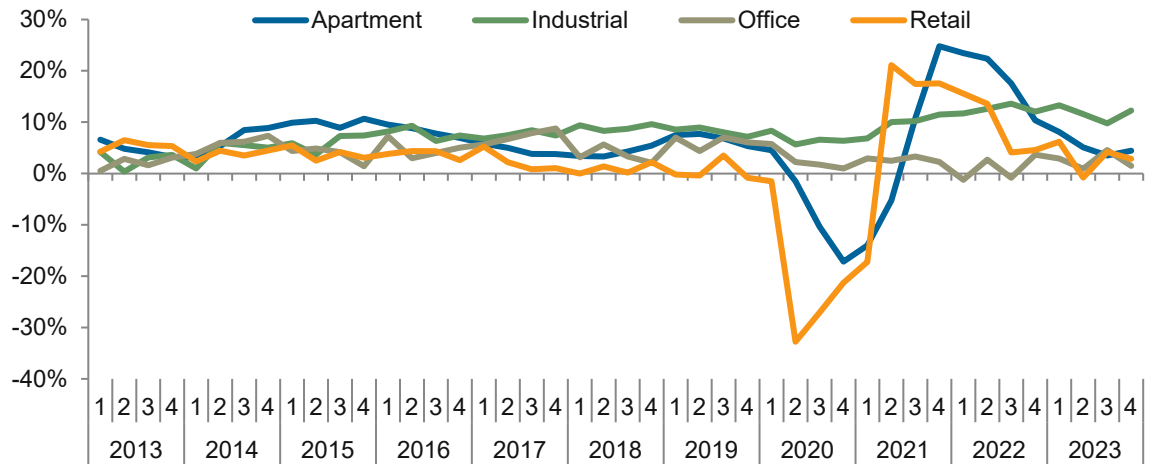
Mixed vacancy and NOI growth results

- Vacancy rates increased slightly in Apartment, Industrial, Office, and Retail.
- Vacancy rates are above long-term averages for Apartment, Office, and Retail, but below long-term averages for Industrial.
- Net operating income growth remains positive in all four sectors, increasing slightly in Apartment and Industrial but declining a bit in Office and Retail.
- Overall, fundamentals remain relatively strong in Apartment, Industrial, Grocery Anchored Retail, and most alternative sectors.

Vacancy by Property Type



NCREIF Property Index Rolling 4-Quarter NOI Growth by Property Type

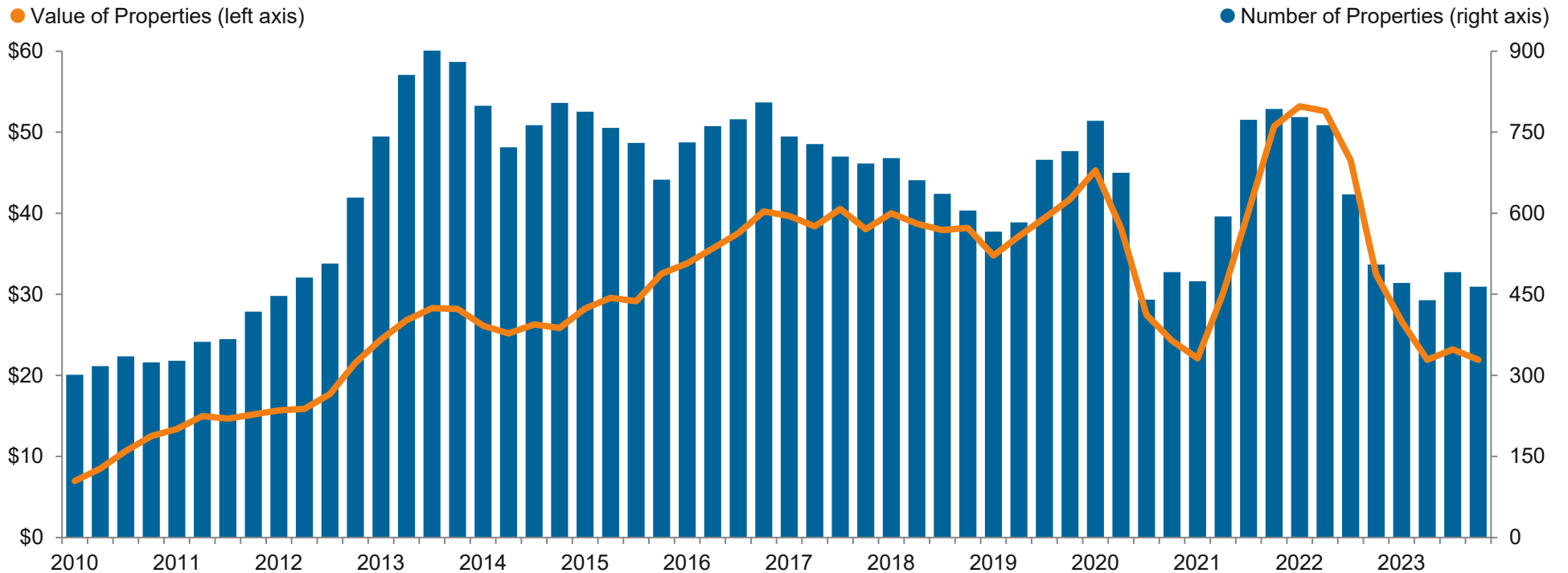


Source: NCREIF

U.S. Private Real Estate Market Trends

Pricing and transaction volumes decline through 4Q23

NCREIF Property Index Rolling 4-Quarter Transaction Totals



- Transaction volume continues to flatten on a rolling four-quarter basis and remains well below five-year averages.
- In 4Q23 transaction volume decreased slightly on a quarter-over-quarter basis. Transaction volume remains significantly lower compared to 2022.
- The 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

Real Estate Market Conditions

Headwinds



- ▶ **GDP uncertainty / recession risk:** Uncertain macroeconomic conditions continue to impact demand for real estate space.
- ▶ **Interest rates:** Higher interest rates put pressure on asset prices.
- ▶ **Inflation:** Higher insurance costs and maintenance costs, including labor and materials.
- ▶ **Debt maturities / banking sector risk:** Maturing debt in a higher interest rate environment and pressure for banks to shrink balance sheets.
- ▶ **Transaction activity down:** At the end of 2022 and continued into 2024, transactions significantly decreased given lack of price discovery and debt availability.

Tailwinds



- ▶ **Reduced construction starts:** Higher debt costs and macroeconomic uncertainty have limited new construction activity.
- ▶ **Highly amenitized properties:** Newer construction, especially office and multi-family properties, with more amenities are seeing stronger demand.
- ▶ **Industrial:** Companies are broadening supply chains for resilience and near-shoring is increasing demand.
- ▶ **Alternative property types:** Resilient income for medical office, student housing and storage has supported investment activity into these areas.
- ▶ **Strong demographic trends:** Growing and aging population, strong consumer spending, productivity from AI and other advancements strengthen fundamentals.

Recent Infrastructure Deal Volume and Sector Activity

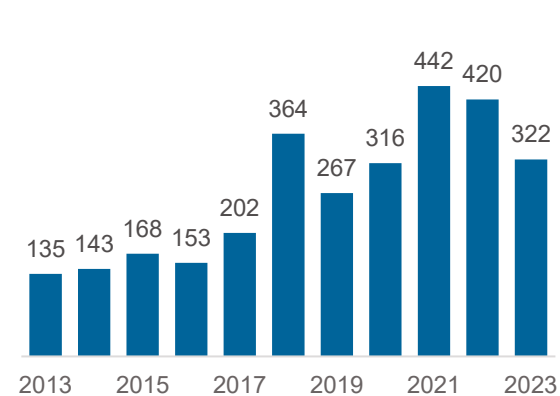
Infrastructure funds tend to deploy most capital in the European and North American markets

Highlights:

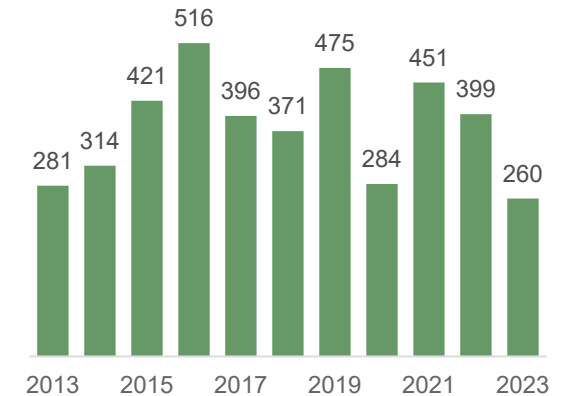
- Energy:** Two of the world's largest M&A deals in 2023 were Energy deals: Exxon's \$59.5bn acquisition of Pioneer and Chevron's \$53bn acquisition of Hess.
- Digital & Renewables:** Data centers, offering strong visibility and predictability on cash flows, show high potential, especially with the increased requirements for computing power and data processing, supporting growth. Green credentials are becoming key pushing towards 100% renewable and low power usage effectiveness.
- Transport:** Limited number of brownfield transactions or greenfield projects during Covid-19 crisis, but the sector is experiencing strong deal flow recovery.

Europe

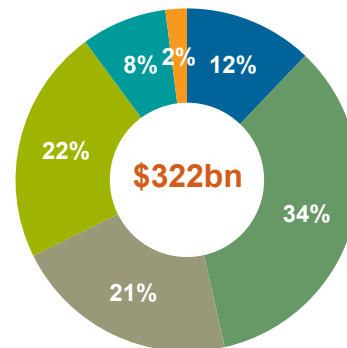
Infrastructure Deal Value (\$bn)



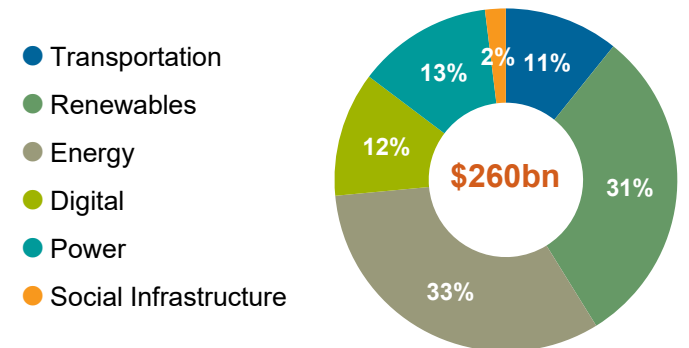
North America



2023 Deal Value Breakdown by Sector



62% energy, power, and renewables

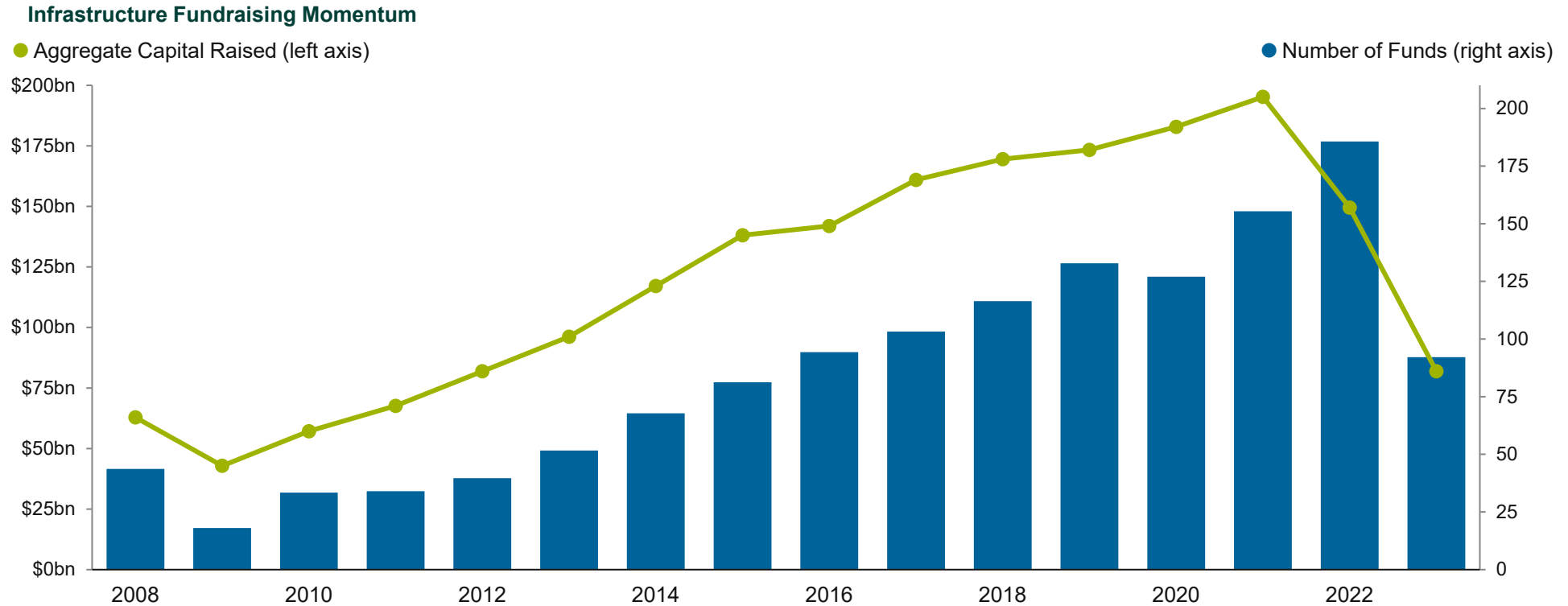


76% energy, power, and renewables

Source: Inframation–Infralogic, 2023 transactions financial close

Infrastructure Fundraising Momentum Slowed in 2023

Denominator impact led to fewer commitments in 2023, although this is expected to improve in 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.
- Dry powder is estimated at \$300 billion as of 4Q 2023.

Source: Institutional Infrastructure Investor data, Preqin, Infracore and 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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4Q 2023 Quarterly Performance Review

Hawaii EUTF Real Assets Allocation – December 31, 2023

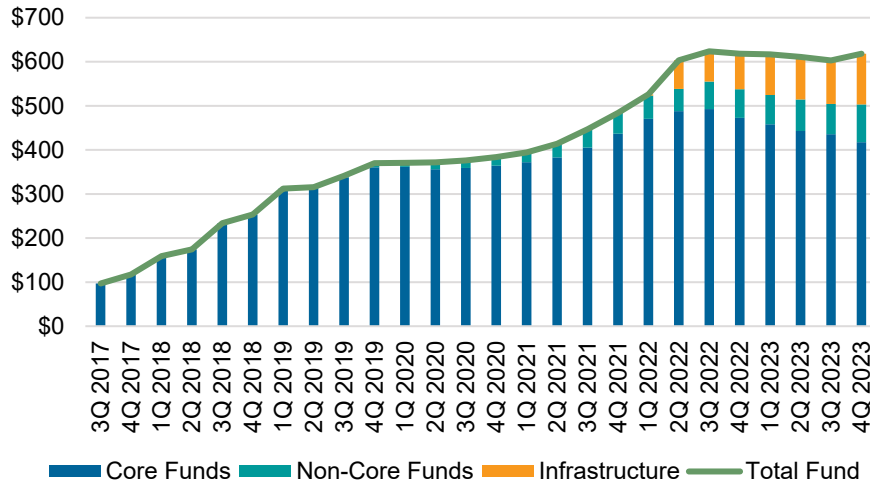
Core real estate anchors the program, unfunded commitments in non-core real estate & infrastructure

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

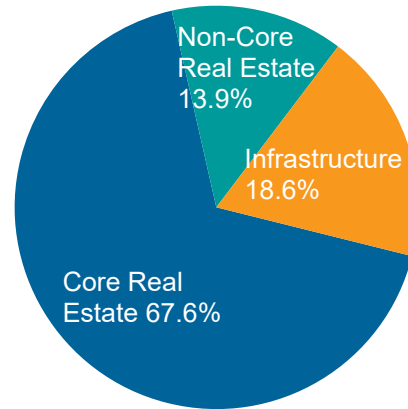
- Within Real Assets, there are three sub-categories, with target allocations as follows:
- 50% Core Real Estate
- 25% Non-Core Real Estate
- 25% Infrastructure

As of December 31, 2023	\$ Millions	(%)
Total Plan Assets	\$7,222.1	100.0%
Target Real Assets Allocation	\$866.7	12.0%
Plan's Real Assets Market Value	\$618.1	8.6%
Unfunded Commitments*	\$241.8	3.3%
Market Value & Unfunded Commitments	\$859.9	11.9%

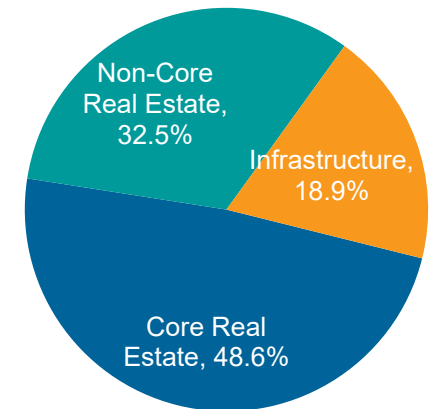
Historical Market Values by Strategy (in \$ millions)



Hawaii EUTF Market Value Q4 2023



Hawaii EUTF NAV + Unfunded as of Q4 2023



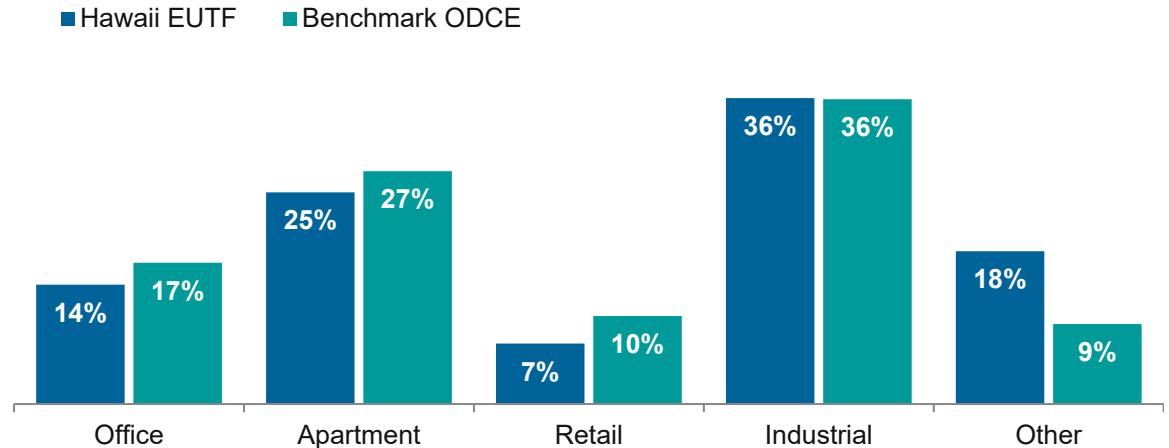
*In November of 2023, EUTF approved a commitment of \$50 million to Pantheon Global Infrastructure Fund IV, which is not reflected here as the commitment was funded in 1Q 2024.

Hawaii EUTF Real Estate Portfolio Diversification

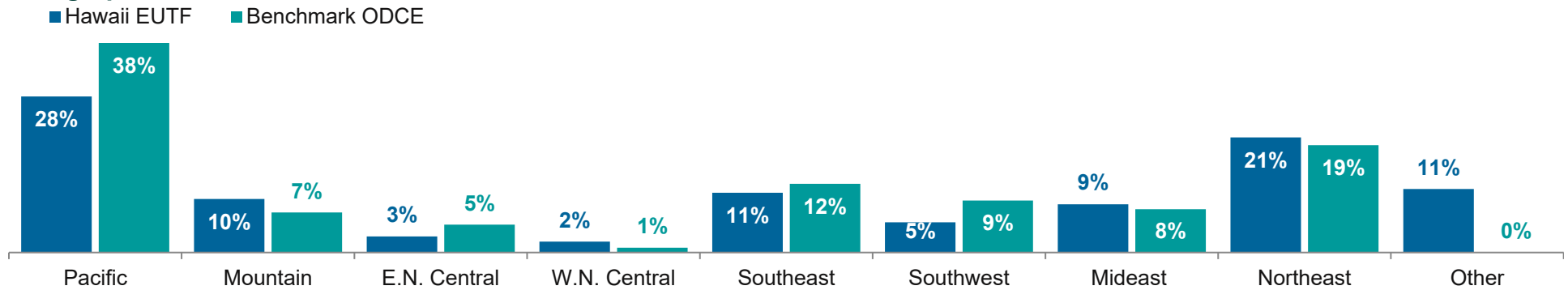
As of December 31, 2023

- The portfolio is well-diversified by geographic region, although there is an underweight to Pacific and overweight to Northeast.
- The portfolio has a 200 bps underweight to Apartments, as well as a 300 bps underweight to both Office and Retail. EUTF has a larger allocation to alternative property sectors relative to the benchmark.
- “Other” property types for EUTF include Self-Storage at 8.3%, Health Care at 4.2%, Hotels at 1.9%, Student Housing at 1.9%, and Mixed Use, Diversified, and Data Center at below 1.0%.
- “Other” geographic diversification reflects international exposure within the non-core portfolio.

Property Type Diversification



Geographic Diversification

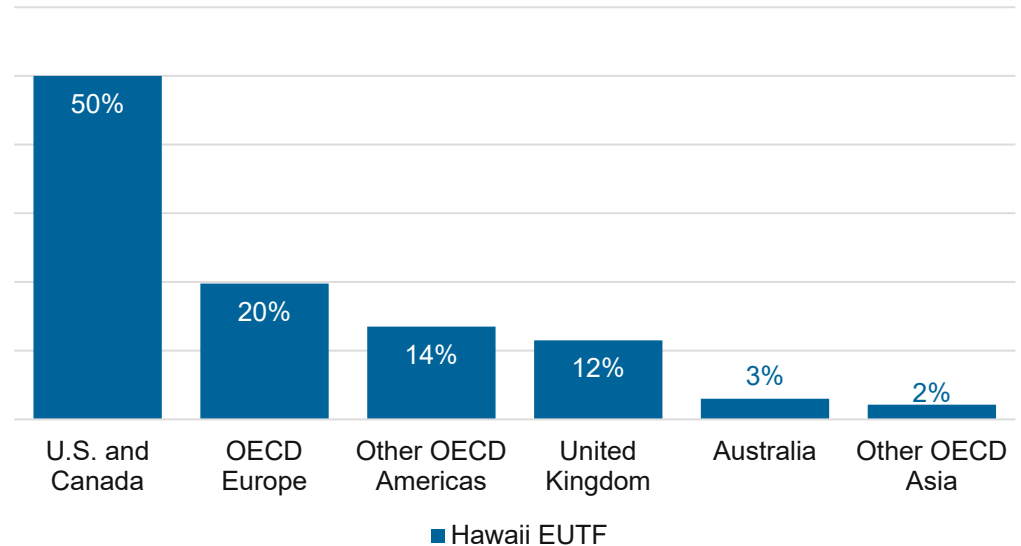


Hawaii EUTF Infrastructure Portfolio Diversification

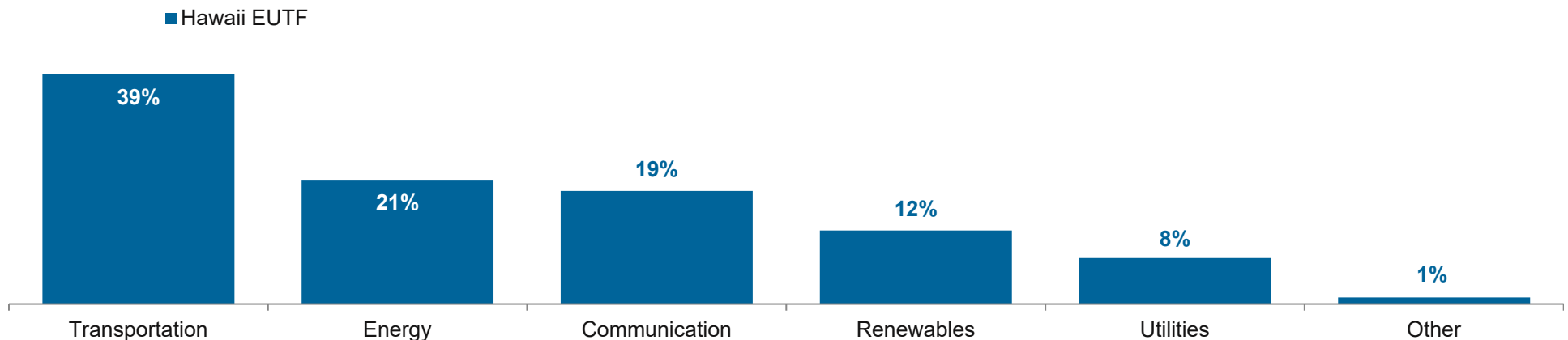
As of December 31, 2023

- All funds target global exposure in OECD* markets. I Squared Infrastructure Fund III also includes some emerging 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.

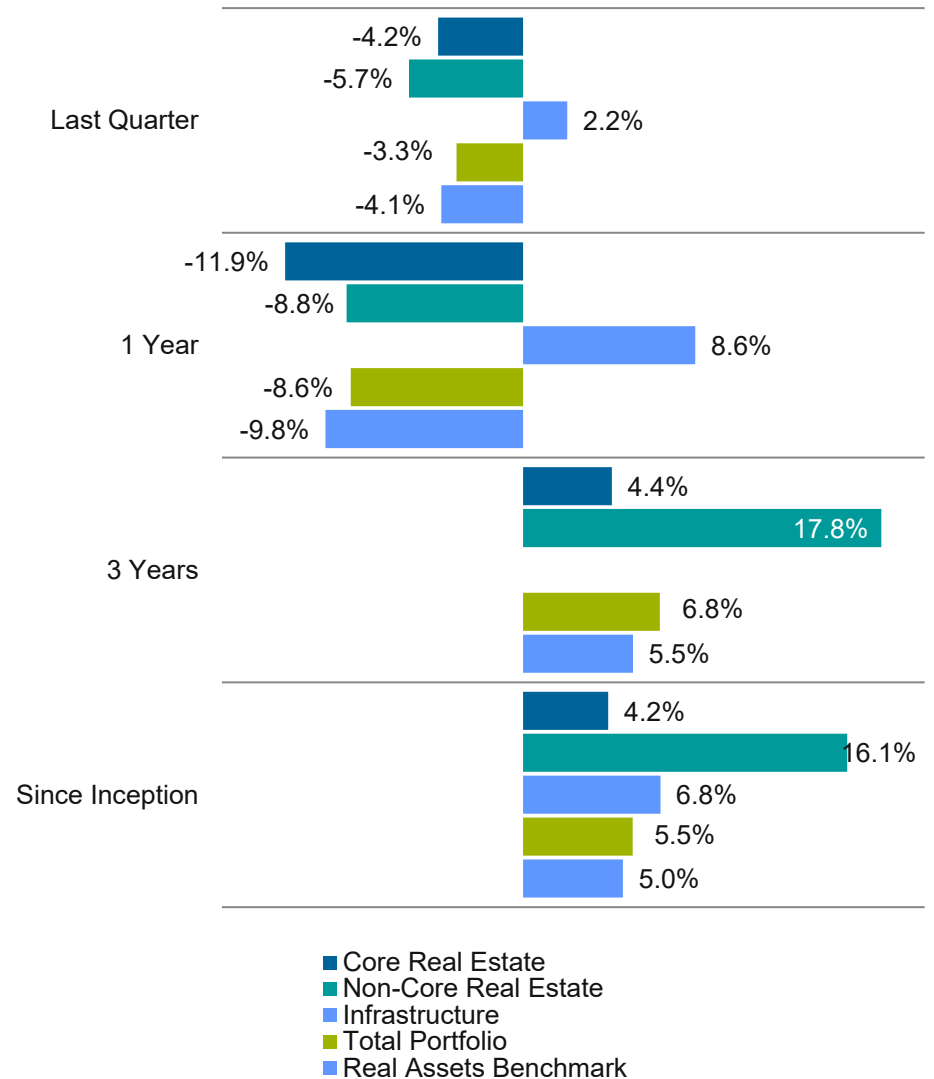
Geography: Other Non-OECD includes investments in Taiwan and India

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

Real Assets Time-Weighted Returns

Periods Ending December 31, 2023

- In the Core Real Estate Portfolio, ASB Allegiance underperformed the benchmark over the past quarter, while Heitman HART and Morgan Stanley Prime outperformed. The portfolio continued to experience write-downs across sectors, led by office.
- The Non-Core Real Estate Portfolio generated a slightly negative return over the past year, with Blackstone Real Estate Partners IX valuations reflecting broader capital market headwinds across sectors. The depreciation was partially offset by continued strong operating performance across logistics and student housing. Performance for Artemis Fund IV and Blackstone Real Estate Partners X is considered not meaningful; however, both funds were active with new investments during the year.
- The Infrastructure portfolio generated a positive return of 8.6% 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. Benchmark is the NFI-ODCE Value-Weight Index, a time-weighted return Index with an inception date of 12/31/1977. Full definition is contained in the Appendix.

Investment Performance

Time-Weighted Returns for Periods Ending December 31, 2023

Fund Name	Last Quarter	Last Year	Last 3 Years	Since Inception*
Core Portfolio	-4.2%	-11.9%	4.4%	4.2% (7/17)
NCREIF ODCE Index	-5.0%	-12.7%	4.0%	4.2% (7/17)
ASB Allegiance	-8.0%	-22.2%	-0.9%	1.7% (7/17)
Heitman HART	-4.4%	-11.8%	6.2%	3.8% (7/18)
Morgan Stanley PRIME	-2.2%	-5.8%	6.7%	5.8% (7/17)
Non-Core Portfolio	-5.7%	-8.8%	17.8%	16.1% (7/19)
NCREIF ODCE Index + 2.0%	-4.4%	-10.7%	6.0%	5.3% (7/19)
Artemis Fund IV	-3.1%	-27.9%	-	-27.9% (1/23)
Blackstone Real Estate Partners IX	-4.7%	-6.3%	19.3%	17.1% (7/19)
Blackstone Real Estate Partners X	N/M	N/M	-	N/M (4/23)
Infrastructure Portfolio	2.2%	8.6%	-	6.8% (1/22)
CPI + 3%	0.3%	6.3%	8.8%	7.8% (1/22)
IFM Global Infrastructure Fund	2.6%	8.9%	-	9.2% (4/22)
I Squared Fund III	7.4%	15.2%	-	18.3% (1/22)
Tiger TIP III	-1.9%	3.9%	-	5.1% (4/22)
Total Fund	-3.3%	-8.6%	6.8%	5.5% (7/17)
Total Real Assets Benchmark*	-4.1%	-9.8%	5.5%	5.0% (7/17)

The Total Real Estate Benchmark returns are calculated by weighting the benchmark returns for each asset class. * Current Quarter Target = 71.9% NCREIF NFI-ODCE Val Wt Nt, 16.3% CPI-W+3.0% and 11.8% 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

Real Assets Portfolio Performance

As of December 31, 2023

	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	\$401.1	\$0.0	100%	\$64.2	\$417.5	0.2x	1.0x	1.2x	4.0%
ASB Allegiance	2017	\$95.0	\$109.9	\$0.0	100%	\$11.0	\$108.5	0.1x	1.0x	1.1x	1.5%
Heitman HART	2018	\$71.5	\$83.4	\$0.0	100%	\$12.2	\$87.4	0.2x	1.0x	1.2x	3.8%
Morgan Stanley PRIME	2017	\$166.5	\$207.5	\$0.0	100%	\$41.0	\$221.6	0.2x	1.1x	1.3x	5.7%
Non-Core Real Estate		\$270.0	\$91.9	\$193.7	34%	\$21.0	\$85.7	0.2x	0.9x	1.2x	11.2%
Blackstone Real Estate IX	2019	\$55.0	\$60.2	\$8.7	110%	\$20.3	\$61.4	0.3x	1.0x	1.4x	16.5%
Artemis Fund IV	2022	\$70.0	\$9.0	\$61.6	13%	\$0.7	\$6.9	0.1x	0.8x	0.8x	-27.4%
Blackstone Real Estate X	2023	\$70.0	\$3.8	\$67.1	5%	\$0.0	\$3.2	N/M	N/M	N/M	N/M
TA Realty Fund XIII	2023	\$75.0	\$18.8	\$56.3	25%	\$0.0	\$14.3	N/M	N/M	N/M	N/M
Infrastructure		\$150.0	\$103.4	\$48.1	69%	\$1.5	\$114.8	0.0x	1.1x	1.1x	9.2%
IFM Global Infrastructure	2022	\$50.0	\$51.1	\$0.0	102%	\$1.1	\$58.3	0.0x	1.1x	1.2x	9.1%
I Squared Fund III	2020	\$50.0	\$19.8	\$30.3	40%	\$0.0	\$22.1	0.0x	1.1x	1.1x	13.7%
Tiger TIP III	2022	\$50.0	\$32.5	\$17.8	65%	\$0.3	\$34.5	0.0x	1.1x	1.1x	6.9%
Total		\$753.0	\$596.3	\$241.8	79%	\$86.7	\$618.1	0.2x	1.0x	1.2x	4.7%

Initial Capital Call Activity: During the quarter, the Real Assets Program funded the initial capital call for TA Realty Fund XIII.

New Commitments: In the fourth quarter of 2023, the Real Assets Program approved a new infrastructure commitment of \$50 million to Pantheon Global Infrastructure Fund IV.

*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.

Hawaii EUTF Real Assets Commitments

Additional commitments expected in 2024 for non-core real estate and infrastructure

	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

Note: Timing reflects year commitment was made

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Appendix and Glossary

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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May 20, 2024



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

4Q 2023

Private Credit Portfolio Review

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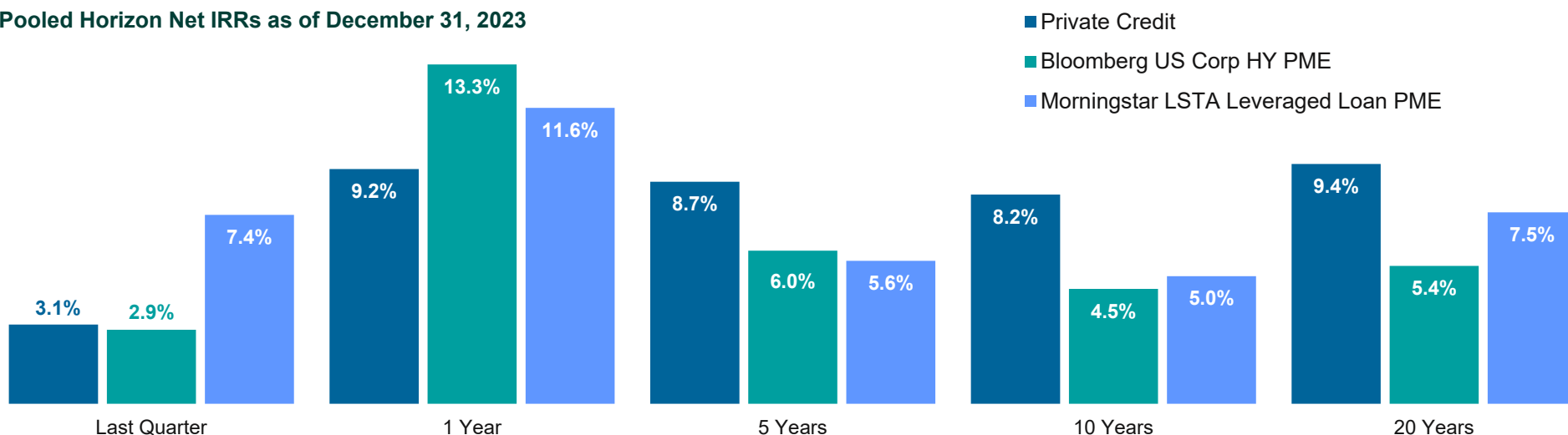
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Private Credit Market Environment

Private Credit Market Overview

Performance over time and compared to relevant indices

Pooled Horizon Net IRRs as of December 31, 2023



Pooled Horizon Net IRRs by Strategy as of December 31, 2023

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

Private credit performance varies across sub-asset class and underlying return drivers. Over the past ten years the asset class has generated a net IRR of 8.2%, outperforming leveraged loans as of December 31, 2023. Higher-risk strategies have performed better than lower-risk strategies.

Source: LSEG/Cambridge; index definitions provided in the Appendix.

4Q 2023 Private Credit Fundraising Landscape

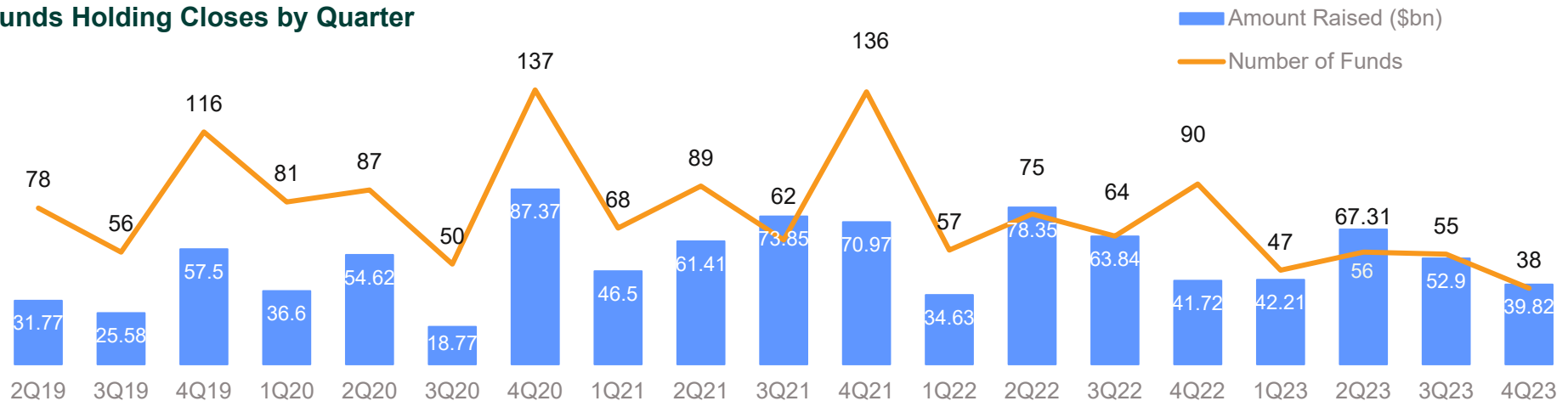
Activity fell at end of 2023

- Private credit remained in high demand across Callan's investor base, and a number of large defined benefit plans are looking to increase their existing private credit allocations from 2%–3% to 5%–10%.
- While we always work to build out diversified client portfolios, we think there is particularly interesting relative value in upper middle market sponsor-backed lending and asset-based lending.
- We are seeing an uptick in stress for some individual names in direct lending portfolios due to a combination of input cost inflation and increased interest expense.

Largest Funds Holding Closes in 2023

Name	Amount (\$millions)	Strategy
HPS Strategic Investment Partners V	\$17,000	Mezzanine Debt
GS Mezzanine Partners VIII	\$11,700	Mezzanine Debt
HPS Core Senior Lending Fund II	\$10,000	Direct Lending
Crescent Credit Solutions VIII	\$8,000	Mezzanine Debt

Funds Holding Closes by Quarter



Source: Preqin

4Q 2023 Yield Spreads

High Yield Effective Yields Ended 12/31/23



US Corporate High Yield Spreads Ended 12/31/23

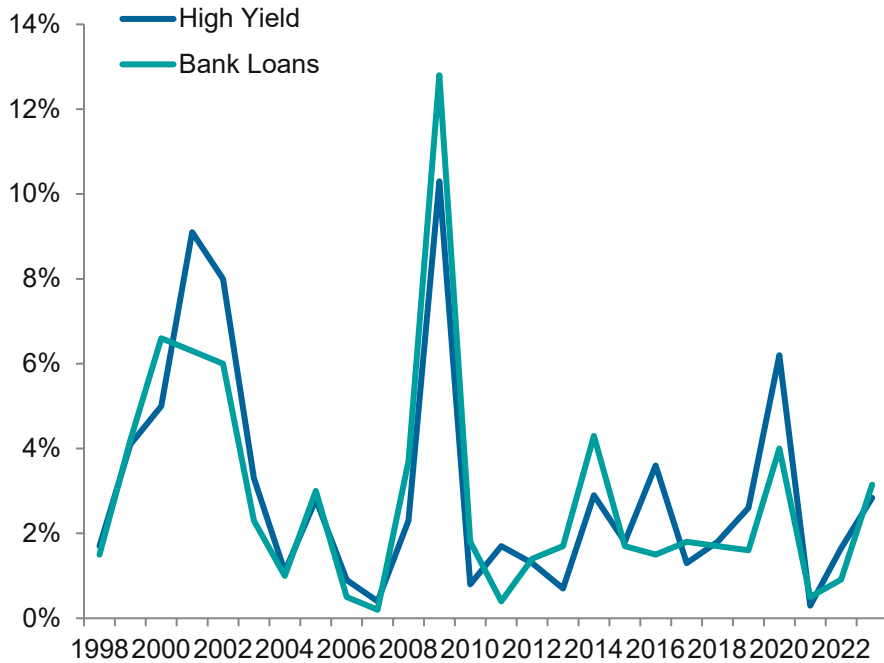


- U.S. sub-investment grade corporate yields rose dramatically at the beginning of 2022 with yields peaking in September. This was a combination of higher interest rates due to tighter Fed policy and a widening of high yield spreads. Effective yields came down sharply in the fourth quarter of 2023.
- Spreads contracted during the first half of 2023 due to stronger credit conditions as the U.S. economic outlook improved. While initially stabilizing in the third quarter of 2023, spreads contracted to close out the year.

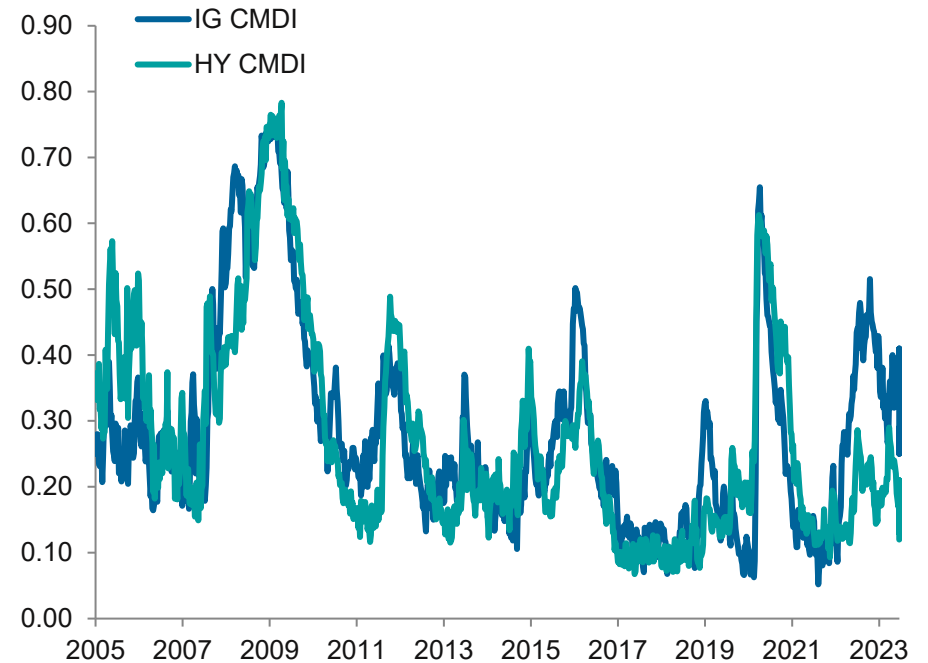
Sources: Bank of America, Federal Reserve Bank of St. Louis, Bloomberg Barclays

4Q 2023 Distressed and Opportunistic Debt

US Corporate Default Rates Ended 12/31/23



Corporate Bond Market Distress Index (CMDI) Ended 12/31/23



- Default rates for U.S. corporate bonds and loans ticked up in 2023 but remain slightly below the historical average of 3%–4%.
- The Corporate Bond Market Distress Index (CMDI) rose rapidly during 2022, especially for investment grade bonds, but has fallen since then. In 2023, both the IG distress and HY bond indicator noticed a sharp rise midyear but has since fallen.

Source: Federal Reserve Bank of New York, JPM

Callan

**4Q 2023 Private Credit Portfolio
Performance Review**

Hawaii EUTF Horizon Returns

As of December 31, 2023

Horizon Net IRRs

As of 12/31/23

Strategy	1 Year	3 Years	Since Inception
Hawaii EUTF Private Credit	12.2%	8.7%	9.7%
LSTA Leveraged Loan Benchmark+200 bps	15.4%	9.0%	9.4%

- The EUTF Private Credit portfolio posted a positive return during the most recent year, underperforming the benchmark by 320 bps. The index outperformance was due to a sharp rally in liquid below-investment grade bonds over the past year, in which private credit strategies also benefited from, but fair values did not adjust as quickly.
- Three-year absolute performance has been strong, with the Hawaii EUTF portfolio returning 8.7% but slightly underperforming its benchmark by 33 bps annually.
- Since inception, the portfolio has generated a net IRR of 9.7%, 33 bps above the benchmark and exceeding the long-term expected return of the portfolio.

4Q 2023 Hawaii EUTF Private Credit Performance Summary

- Hawaii EUTF has a 10% long-term (7.0% short-term) allocation to Private Credit
 - As of December 31, 2023 the actual allocation to Private Credit was 7.6%.
- The Private Credit portfolio NAV ended the fourth quarter at \$552 million, an increase of \$161 million from 12/31/22. Commitments totaled \$1 billion, up \$250 million year-over-year.
- The portfolio is in its investment period, with 57.8% of capital paid-in, vs. 55.1% on 12/31/22. Distributions were up 80.2% over the past year.
- The Private Credit portfolio is performing in line with expectations, generating an 9.7% net IRR since inception, an improvement of 1.6% from a year ago.

Total Private Credit

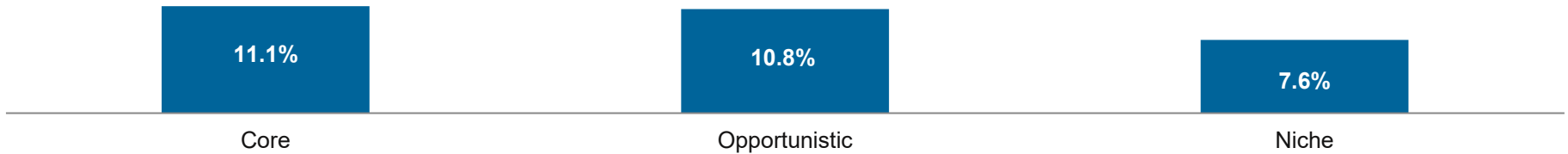
	12/31/2022	12/31/2023	YoY Change
Committed*	\$750,000,000	\$1,000,000,000	\$250,000,000
Paid-In	\$413,282,500	\$577,483,222	\$164,200,722
Uncalled	\$384,842,199	\$493,904,615	\$109,062,416
Distributed	\$68,773,272	\$123,946,565	\$55,173,293
NAV	\$390,681,619	\$552,416,579	\$161,734,960
DPI	0.17x	0.21x	0.05x
RVPI	0.95x	0.96x	0.01x
TVPI	1.11x	1.17x	0.06x
IRR	8.1%	9.7%	1.62%

Private Credit Performance By Strategy

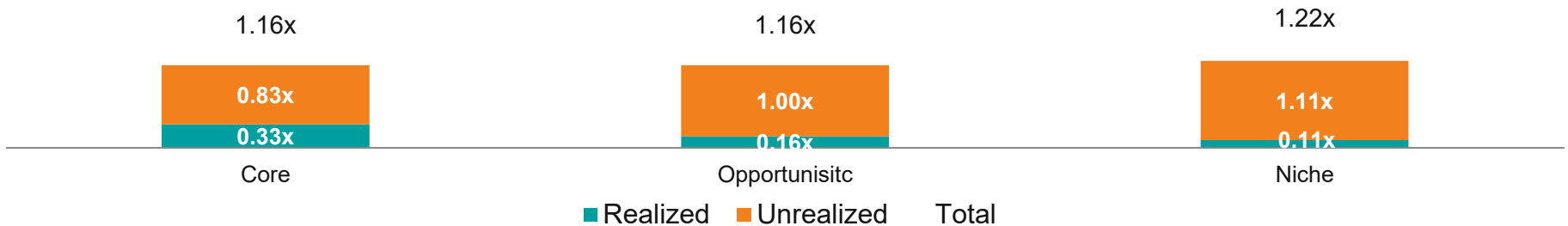
As of December 31, 2023

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	\$375	\$221	\$192	\$73	\$182	\$255	0.33x	1.16x	11.1%	9.9%
Opportunistic	\$400	\$228	\$193	\$36	\$228	\$264	0.16x	1.16x	10.8%	10.0%
Niche	\$225	\$128	\$109	\$15	\$142	\$157	0.11x	1.22x	7.6%	8.2%
Private Credit	\$1,000	\$577	\$494	\$124	\$552	\$676	0.21x	1.17x	9.7%	8.7%

Net IRR by Strategy



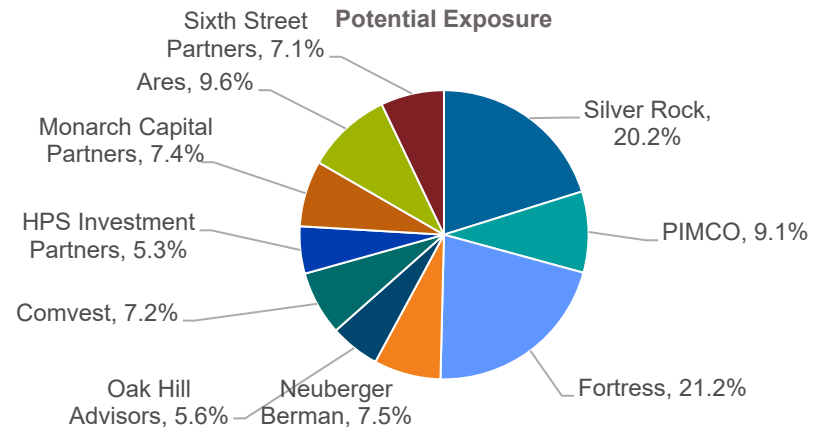
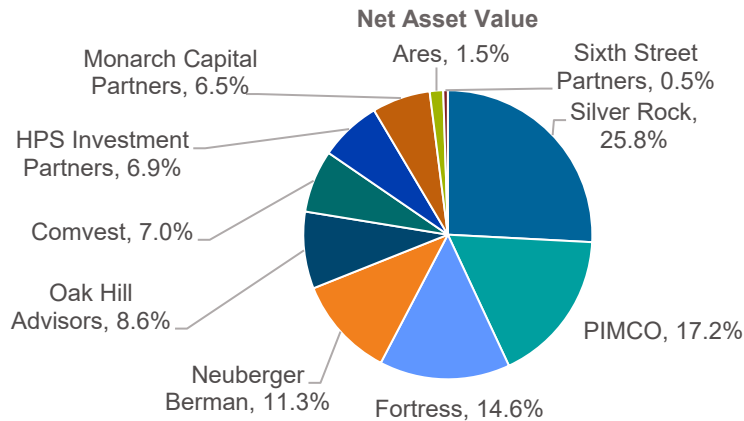
Net TVPI by Strategy



Portfolio Diversification By GP

As of December 31, 2023

Portfolio Exposure By GP	Net Asset Value	%	Unfunded Commitments	%	Potential Exposure	%
Silver Rock	\$143	25.8%	\$68	13.9%	\$211	20.2%
PIMCO	\$95	17.2%	\$0	0.0%	\$95	9.1%
Fortress	\$81	14.6%	\$141	28.5%	\$222	21.2%
Neuberger Berman	\$63	11.3%	\$16	3.2%	\$78	7.5%
Oak Hill Advisors	\$48	8.6%	\$11	2.2%	\$58	5.6%
Comvest	\$39	7.0%	\$36	7.3%	\$75	7.2%
HPS Investment Partners	\$38	6.9%	\$17	3.4%	\$55	5.3%
Monarch Capital Partners	\$36	6.5%	\$41	8.4%	\$77	7.4%
Ares	\$8	1.5%	\$92	18.7%	\$100	9.6%
Sixth Street Partners	\$2	0.5%	\$72	14.6%	\$75	7.1%
Private Credit Portfolio	\$552		\$494		\$1,046	



2022-2023 Private Credit Commitment Summary

As of December 31, 2023

2022 Vintage Private Credit Commitments*

2022 Commitment Total:	\$275 million
Silver Rock Tactical Allocation Fund – 2022	\$100 million
Comvest Credit Partners Fund VI	\$75 million
Ares Pathfinder Fund II	\$100 million

2023 Vintage Private Credit Commitments

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

- In 2021, \$200 million in commitments were closed, including to two existing GPs (Silver Rock co-investment and Fortress Lending Fund III) and one new GP (Neuberger Berman IV).
- In 2022, \$275 million in commitments were closed, including a re-investment with the Silver Rock Tactical Allocation Fund and a commitment to a new lower-middle market focused direct lending manager, Comvest Credit Partners Fund VI. A \$100 million commitment to Ares Pathfinder II was approved late in the year to further diversify the specialty finance (non-corporate) debt portion of the portfolio.
- 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.

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

Performance Summary Table

As of December 31, 2023

	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	\$54,545	\$12,576	109.09%	\$39,577	\$27,568	1.23x	9.9%
Fortress Lending Fund III	2022	\$75,000	\$60,256	\$28,124	80.34%	\$13,381	\$53,315	1.11x	9.5%
Fortress Lending Fund IV	2024	\$100,000	\$0	\$100,000	0.00%	\$0	\$0	NM	NM
Neuberger Berman Fund IV	2021	\$75,000	\$60,000	\$15,553	80.00%	\$8,863	\$62,653	1.19x	14.0%
Comvest Credit Partners VI	2022	\$75,000	\$46,012	\$35,923	61.35%	\$11,271	\$38,915	1.09x	11.6%
Core		\$375,000	\$220,813	\$192,177	58.88%	\$73,092	\$182,451	1.16x	11.1%
Silver Rock TAF 2019A	2019	\$75,000	\$86,703	\$6,034	115.60%	\$32,178	\$75,017	1.24x	10.7%
Silver Rock TAF 2019 B	2021	\$25,000	\$7,817	\$19,755	31.27%	\$3,397	\$5,469	1.13x	10.2%
Silver Rock TAF 2022A	2022	\$100,000	\$57,310	\$42,690	57.31%	\$0	\$62,054	1.08x	13.1%
OHA Tactical Investment Fund	2020	\$50,000	\$39,919	\$10,752	79.84%	\$646	\$47,704	1.21x	9.5%
Sixth Street TAO	2023	\$75,000	\$2,760	\$72,240	3.68%	\$0	\$2,484	0.90x	NM
Monarch CP VI	2023	\$75,000	\$33,750	\$41,250	45.00%	\$0	\$35,643	1.06x	NM
Opportunistic		\$400,000	\$228,260	\$192,719	57.07%	\$36,221	\$228,372	1.16x	10.8%
PIMCO Private Income Fund**	2019	\$75,000	\$75,000	\$0	100.00%	\$0	\$95,237	1.27x	7.0%
HPS European Asset Value Fund II	2020	\$50,000	\$45,747	\$16,670	91.49%	\$14,633	\$38,235	1.16x	9.6%
Ares Pathfinder Fund II	2022	\$100,000	\$7,662	\$92,338	7.66%	\$0	\$8,122	1.06x	NM
Niche		\$225,000	\$129,409	\$109,008	57.07%	\$14,633	\$141,594	1.22x	7.6%
Private Credit Portfolio		\$1,000,000	\$577,483	\$493,905	57.75%	\$123,947	\$552,417	1.17x	9.7%

- Private credit strategies had positive performance over the past twelve months. The inception-to-date net IRR of the portfolio increased from 8.1%, as of Q4 2022, to 9.7%. Performance over the past three years is in line with expectations.
- Top contributors to EUTF's portfolio performance have been Neuberger Berman's 2021 fund and Silver Rock's 2022A vintage fund. Performance for recent vintage year funds (2021-23) has generally been strong out of the gate.

*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 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				

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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

May 20, 2024

EUTF Asset-Liability Study

Part 2



1. Goals for Today
2. Process Review
3. Progress Update
4. Asset-Liability Analysis
5. Conclusion and Next Steps
6. Appendix

Goals for Today



Goals for Today

- This presentation seeks to conclude the asset-liability study and establish a new long-term strategic asset allocation policy for the OPEB Trust.
- A subset of major asset-liability metrics are analyzed across a series of portfolios:
 - Current Long-term Policy (“CLTP”)
 - Option A
 - Option B
 - Option C

} Staff/Consultant Recommendations (lower risk to higher risk)
- The ultimate goal for today is to select a new strategic policy allocation for the EUTF.
- We will review the major takeaways from the entire process as well as new asset-liability output for a series of proposed portfolio options.
- The process for designing and selecting an asset allocation is part art and science.
- There is no “right” asset allocation for all purposes.

Process Review



Strategic Allocation: The foundation for long-term portfolio structure

Key aspect:

Define risk & determine Board's tolerance for that risk

Tolerance for risk:

Heavily influences policy selection

Plan Assets

Heavily influence overall plan risk

~90%

% of Investment Risk and Return explained by asset allocation policy

EUTF has never completed an integrated asset-liability study*

* This is due to the evolution of the EUTF's funded status, particularly the change from pay-as-you-go to pre-funding.

3 key high-level steps to the A/L process:

1.

Develop an understanding of how the financial condition of the EUTF might vary based on outcomes of the investment portfolio.

2.

Set a consensus definition and view of the risk(s) the EUTF should bear.

3.

Once a view/tolerance for risk has been established, select an appropriate long-term investment strategy (i.e., a policy portfolio / strategic allocation).

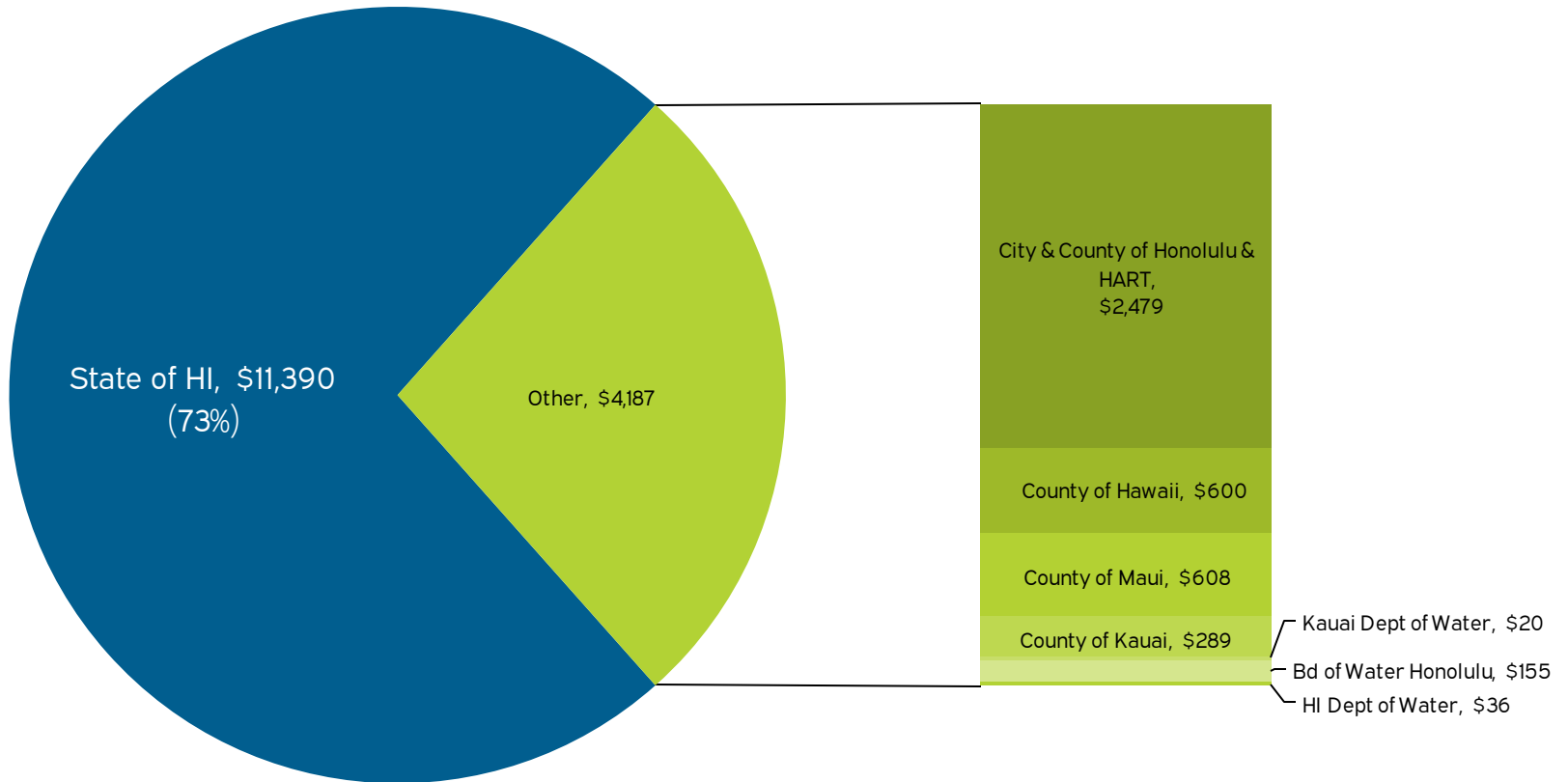


Hawaii Employer-Union Health Benefits Trust Fund

Review of Financial Condition

Review of Financial Condition

Total Actuarial Accrued Liability
\$15,576 Million



Source: Gabriel Roeder Smith & Company (GRS) – July 1, 2023 Actuarial Valuation Report



Hawaii Employer-Union Health Benefits Trust Fund

Review of Financial Condition

Review of Financial Condition

Actuarial Valuation – July 1, 2023									
\$ (millions)	State of Hawaii	City & County of Honolulu & HART	County of Hawaii	County of Maui	County of Kauai	Kauai – Dept of Water	Board of Water – Honolulu	Hawaii Dept of Water	Total
Discount Rate	7%	7%	7%	7%	7%	7%	7%	7%	7%
AAL	\$11,390	\$2,479	\$600	\$608	\$289	\$20	\$155	\$36	\$15,576
Actuarial Assets	\$4,479	\$1,230	\$328	\$464	\$214	\$16	\$124	\$28	\$6,882
Unfunded AAL	\$6,912	\$1,249	\$272	\$145	\$75	\$4	\$31	\$7	\$8,695
7/2015 Funded Ratio	2.4%	12.1%	19.6%	33.4%	32.0%	40.4%	37.0%	40.2%	6.7%
7/2017 Funded Ratio	8.6%	16.6%	24.4%	39.3%	40.1%	49.0%	49.0%	46.9%	12.8%
7/2019 Funded Ratio	16.1%	23.8%	30.7%	46.0%	48.1%	54.1%	53.9%	54.5%	20.1%
7/2021 Funded Ratio	30.0%	36.0%	42.2%	60.2%	60.2%	66.4%	65.1%	63.5%	33.6%
7/2022 Funded Ratio	35.0%	45.1%	50.4%	72.2%	71.2%	77.2%	76.5%	74.7%	39.9%
7/2023 Funded Ratio	39.3%	49.6%	54.7%	76.2%	74.2%	80.0%	79.9%	79.3%	44.2%
ARC – FY 2026	\$839	\$195	\$45	\$38	\$18	\$1	\$8	\$2	\$1,146

→ While significant improvement has occurred, EUTF’s long-term commitments (liabilities) are still materially larger than Fund assets.

→ The State of Hawaii represents the majority of total liabilities.

Source: Gabriel Roeder Smith & Company (GRS) – July 1, 2023 Actuarial Valuation Report

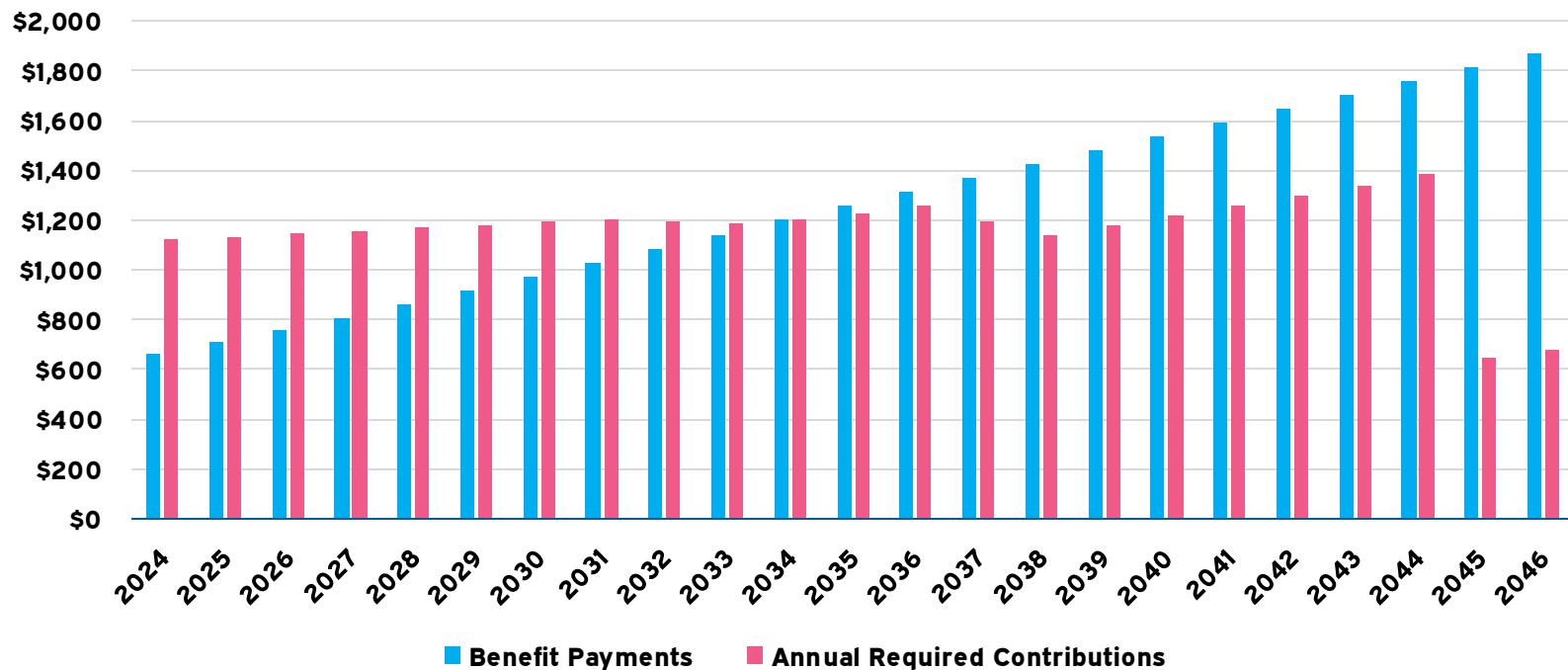


Hawaii Employer-Union Health Benefits Trust Fund

What is an asset-liability model?

→ An asset-liability model (ALM) analyzes the plan's unique cash flow expectations (benefit payments, contributions, expenses, etc.) and attempts to quantify the risks associated with these expectations.

Expected Plan Inflows & Outflows* (\$M)



* Expected benefit payments provided by GRS



Liability Structure

- Using GRS data and internal actuarial expertise, we modeled the main components of the EUTF's liability structure.¹
- As asset/portfolio returns are simulated, our liability model replicates the EUTF's funding policy, cash flows, and other inputs.
- This process allows for the optimization/objective function to directly incorporate the liability structure.

¹ Note that Meketa's modeling is not expected to produce the same results as any forecasting GRS has completed with the primary reason being our asset forecasts/simulations are stochastically modeled and use Meketa's capital market assumptions. Other less material modeling differences exist and can be discussed.



A/L Results Summary

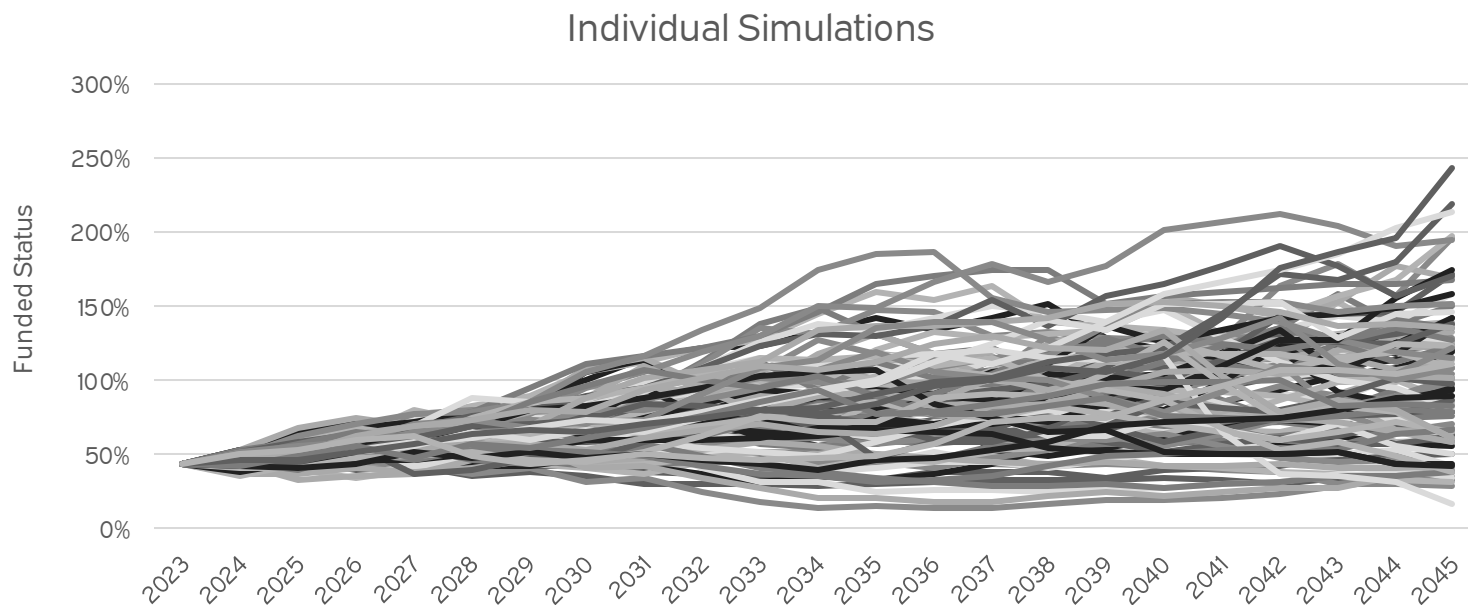
- Meketa has built the integrated asset-liability model and has examined simulation output with EUTF Staff.
- A multitude of portfolios have been analyzed in how they each interact with the liability structure over thousands of 20-year simulations.

Key Takeaways

- EUTF is currently well positioned to make progress towards full funding.
- Contributions (particularly large projected contributions relative to assets) remain the primary determinant of funding ratio success.
 - Even with asset volatility, the EUTF's funding policy results in low contribution volatility for the foreseeable future.
 - Lower contribution levels (e.g., 50% and 75%) do not materially alter what would be the "optimal" asset allocation.
- Given the cash-flow position, it is still appropriate for the EUTF to maintain a relatively high allocation to illiquid assets.
- If desired, the EUTF could assume a higher risk/return portfolio.



Hawaii Employer-Union Health Benefits Trust Fund Stochastic Forecast of the Current Policy Portfolio



→ Funded Status (assets divided by liabilities) are simulated in a variety of market environments.

→ Analysis reflects the current:

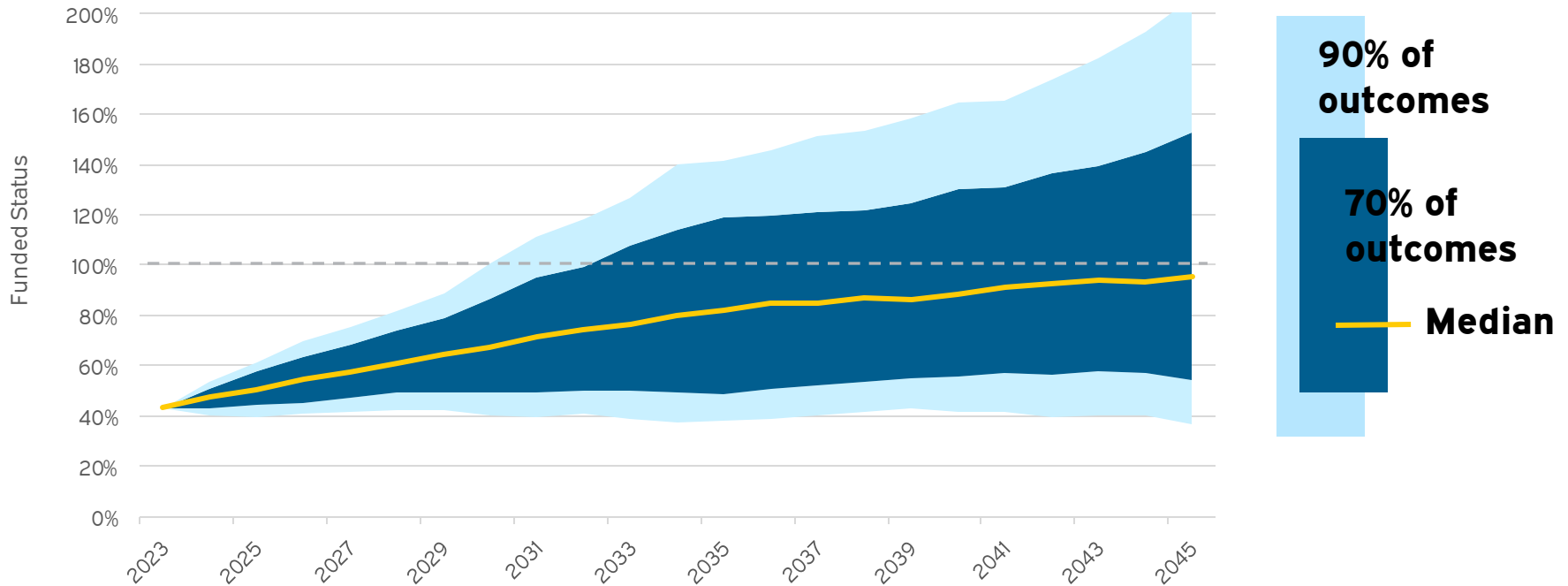
- Asset allocation
- Actuarial funded status
- Projected benefit payments
- Funding policy
- Hawaii EUTF plan provisions
- Statutory requirements
- Actuarial assumptions
- Meketa 2024 Capital Market Assumptions



Hawaii Employer-Union Health Benefits Trust Fund

Stochastic Forecast of the Current Asset Allocation (cont.)

Percentile Grouped Simulations



- The results of the “simulations” are used to develop percentiles of information.
- These percentiles guide the understanding of **Funded Status Risk**, given the current asset allocation.
- As an example, the median (50th Percentile) Funded Status in 2033 is 76% -> there is a 50% probability the Funded Status will be greater than 76% and 50% probability it will be less than 76%.

Progress Update



Progress Update

Key Requests/Considerations from March	
Topic	Updated Approach
<i>Exploration of contributions coming in below the actuarial determined contribution amount.</i>	<ul style="list-style-type: none">• We have included scenarios of 100%, 75%, and 50% contribution levels.• For these scenarios, the primary question is “would lower contributions lead us to a different asset allocation?”
<i>There was no strong trustee feedback regarding lower/higher levels of risk.</i>	<ul style="list-style-type: none">• It is often the case that trustees will indicate a preference for lower/higher risk portfolios during the initial asset-liability modeling exercise. The EUTF IC appeared neutral on this topic.• Given the results from the simulation output, Meketa and Staff have gravitated towards marginally increasing portfolio risk and return which may lower contributions in the future (due to actuarial gains) while benefiting from the funding policy tailwind during market downturns.



EUTF Asset Class Expected Returns and Volatilities

- Compared to 2022, changes in expected returns are mixed, particularly for *Growth* assets.
- Excluding Cash and Systematic Trend Following, *Diversifying Strategies* exhibit higher expected returns.
- Volatilities are generally the same or slightly lower than in 2022.

Component	Asset Class/Strategy	Expected Compound Return			Expected Volatility		
		2024	2022	2020	2024	2022	2020
Aggressive Growth	Private Equity	9.9	10.0	9.1	25.0	28.0	26.0
	US Microcap	8.7	7.6	8.0	22.0	24.0	22.0
Traditional Growth	Global Equity	7.2	7.2	7.6	17.0	18.0	17.0
Stabilized Growth	Global Options	5.8	5.8	6.1	13.0	13.0	13.0
	Real Assets*	6.5	7.7	7.4	14.4	14.4	13.45
	Private Credit	9.2	7.3	6.7	15.0	16.0	15.0
Diversifying Strategies	US TIPS	4.3	3.3	2.1	7.0	7.0	7.0
	Cash	2.4	3.1	1.1	1.0	1.0	1.0
	Long US Bonds	4.3	3.8	2.4	12.0	12.0	12.0
	ILS/Reinsurance	7.0	6.4	6.0	11.0	11.0	11.0
	Alternative Risk Premia	5.8	5.4	3.3	10.0	10.0	10.0
	Systematic Trend Following	3.8	5.6	3.3	15.0	15.0	15.0
	Long Volatility/Tail Risk						

Mo deleed conditionally based on global equity simulations.

*50% Core RE / 12.5% Value-add RE / 12.5% Opportunistic RE / 12.5% Core Infrastructure / 12.5% Non-core Infrastructure
 Font colors pertain to 2024 expectations being higher or lower compared to 2022. Black font implies no change.



Utilized Constraints

Component	Asset Class/Strategy	Minimum Weight (%)	Maximum Weight (%)	Actual Allocations (3/31/24) (%)	Current Long-term Policy (%)
<i>Aggressive Growth</i>	Private Equity	10.0	15.0	9.7	15.0
	US Microcap	0.0	5.0	5.6	3.0
<i>Traditional Growth</i>	Global Equity	20.0	40.0	30.3	27.5
<i>Stabilized Growth</i>	Global Options	0.0	5.0	5.4	0.0
	Real Assets	8.0	12.0	8.3	12.0
	Private Credit	5.0	10.0	7.3	10.0
<i>Diversifying Strategies</i>	US TIPS	0.0	15.0	4.8	5.0
	Long US Bonds	0.0	7.5	5.5	5.5
	ILS/Reinsurance	0.0	6.0	5.1	5.0
	Alternative Risk Premia	0.0	7.5	2.6	2.5
	Systematic Trend Following	0.0	12.5	10.1	10.0
	Long Volatility/Tail Risk	0.0	6.0	1.7	2.0
	Cash	0.0	2.5	3.7	2.5

→ The minimums primarily help address allocations that cannot be easily shifted away from prior to the next Strategic Review/Asset-Liability Study.

→ The maximums were put in place to: 1) protect against biases/concentrations that often show up with strategies that were historically very attractive, 2) encourage implementable allocations, and 3) match Private Equity and Private Credit maxes with current long-term targets in order to maintain attainability.



Hawaii Employer-Union Health Benefits Trust Fund

Recommended Options

Proposed Portfolios

→ Portfolios A, B, and C represent the recommendations from Staff/Meketa.

→ Portfolio A

- Similar risk as CLTP*.
- 2% shift from Real Assets to Long US Bonds.

→ Portfolio B

- Slightly higher risk than CLTP*.
- 2.5% shift from US TIPS to Global Equity. Similar shift from Cash to ARP.
- Marginal shift from Long US Bonds to ILS/Reinsurance.

→ Portfolio C

- Highest risk.
- General increase in public equity assets (Microcap and Global Equity).
- General decrease in US TIPS and Real Assets.

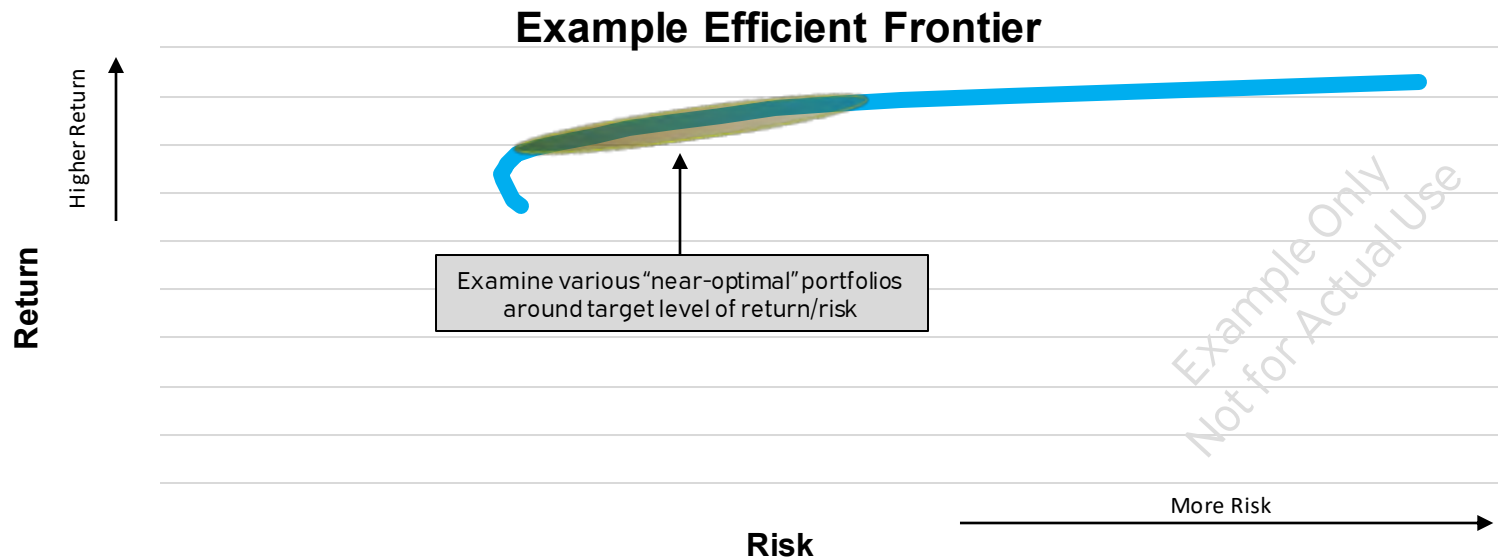
Strategic Class	CLTP*	A	B	C
Aggressive Growth	18.0%	18.0%	18.0%	19.0%
Traditional Growth	27.5%	27.5%	30.0%	33.0%
Stabilized Growth	22.0%	20.0%	22.0%	20.0%
Diversifying Strategies	32.5%	34.5%	30.0%	28.0%
Long-term Simulation Statistics	CLTP*	A	B	C
Expected Compound Return	7.3%	7.3%	7.5%	7.6%
Annual Standard Deviation	10.7%	10.5%	11.1%	11.5%
Expected Max Drawdown	35.4%	34.5%	37.0%	39.0%
Sharpe Ratio	0.46	0.47	0.46	0.45

Asset Class/Strategy	CLTP*	A	B	C
Private Equity	15.0%	15.0%	15.0%	15.0%
US Microcap	3.0%	3.0%	3.0%	4.0%
Global Equity	27.5%	27.5%	30.0%	33.0%
Global Options	0.0%	0.0%	0.0%	0.0%
Real Assets	12.0%	10.0%	12.0%	10.0%
Private Credit	10.0%	10.0%	10.0%	10.0%
US TIPS	5.0%	5.0%	2.5%	2.0%
Long US Bonds	5.5%	7.5%	5.0%	5.0%
ILS/Reinsurance	5.0%	5.0%	5.5%	5.5%
Alternative Risk Premia (ARP)	2.5%	2.5%	5.0%	3.5%
Systematic Trend Following	10.0%	10.0%	10.0%	10.0%
Tail Risk	0.25%	0.25%	0.25%	0.25%
Long Vol	1.75%	1.75%	1.75%	1.75%
Cash	2.5%	2.5%	0.0%	0.0%

*Current Long-term Policy

Examining the Efficient Frontier

- Strategic allocation optimizations produce an “efficient frontier,” which is a series of portfolios with the highest expected return for a given level of risk.
 - Note: the measure of “return” and “risk” can be reframed to be a variety of metrics.
- It is important to recognize that financial modeling is an imperfect exercise, and, thus, it is crucial to examine “near optimal” portfolios.
 - Portfolios with similar expected returns/risks as those on the efficient frontier but with moderately different allocations.

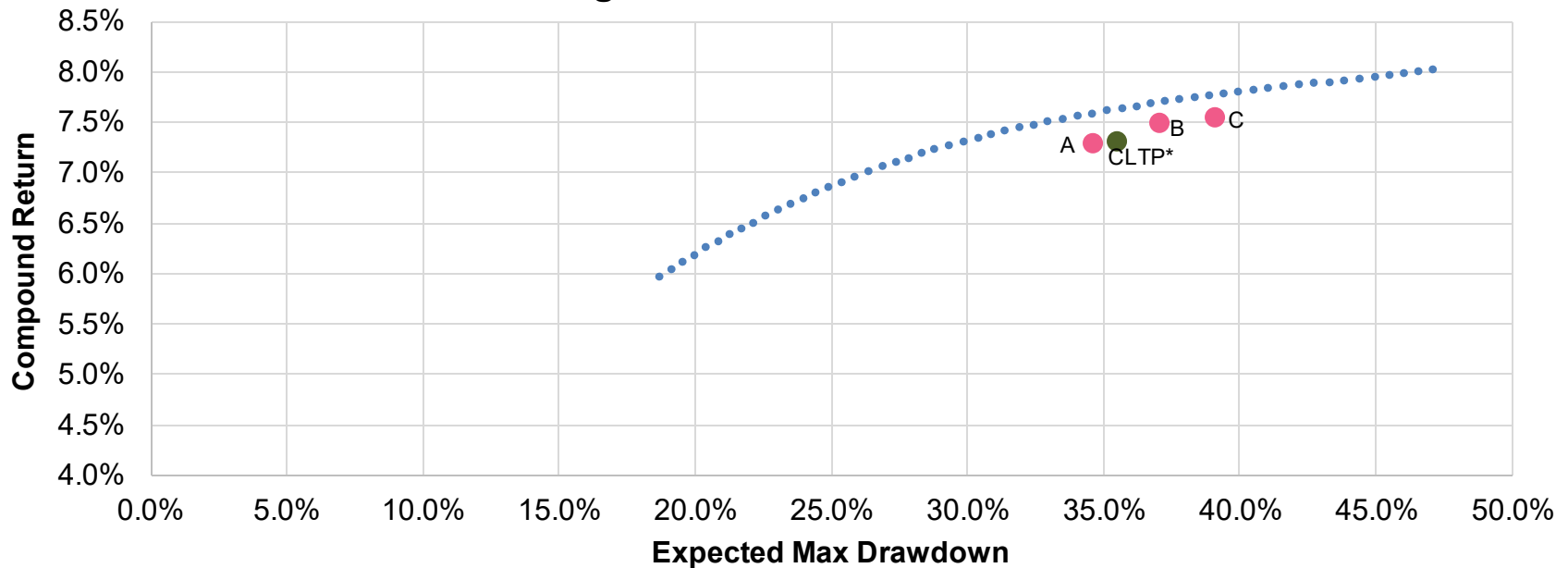




Examining the Asset-Only Efficient Frontier

- With the utilized CMAs and constraints, the current long-term policy (“CLTP”) as well as the proposed policy options are near the efficient frontier.
- Portfolios on the efficient frontier generally exhibit more material portfolio alterations with minimal improved efficiency.

Long-term Efficient Frontier



*Current Long-term Policy



Summary of Asset-Only Analysis

- The current long-term policy portfolio remains well-structured.
 - Any changes are marginal with respect to both portfolio allocations and expected risk/return improvements.
- While asset-only output is informative, best practices is to make portfolio allocation decisions based on asset-liability model output.
- Although asset-only output and asset-liability output are closely related (e.g., the same asset simulations are used in both), the presence of cash flows within a portfolio and their interaction with liabilities can lead to different results at the margin.
- The next section explores more asset-liability output, with a specific emphasis on the CLTP and portfolio options A, B, and C.

Asset-Liability Analysis



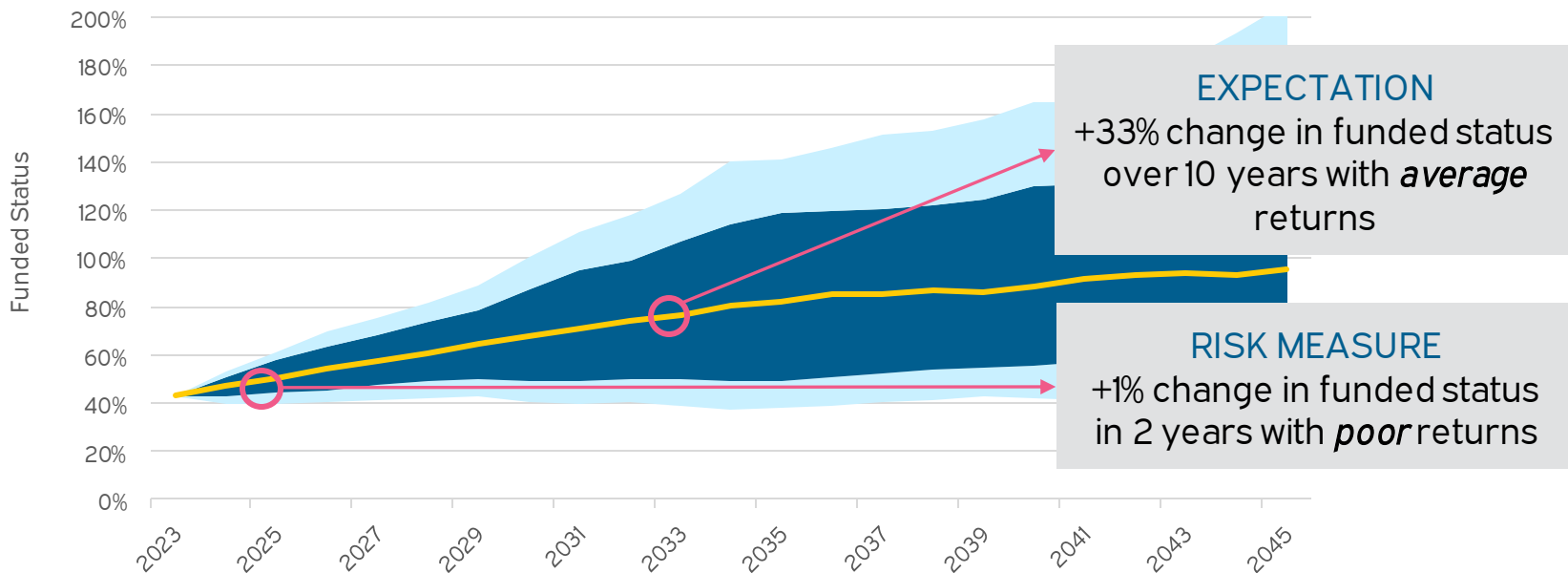
Hawaii Employer-Union Health Benefits Trust Fund

Funded Status Impacts

→ Key observations are determined during objective setting discussion and analyzed in a “Expectation/Risk Measure” framework.

- **Expectation** – Outcome where all the underlying assumptions prove to be accurate over the long-term (Example: 50th percentile over a 10-year time horizon).
- **Risk Measure** – Outcome with a lower probability (Ex: 15th percentile) but a more detrimental impact, especially when that outcome occurs in the short-term (Ex: 2-year time horizon)

Percentile Grouped Simulations

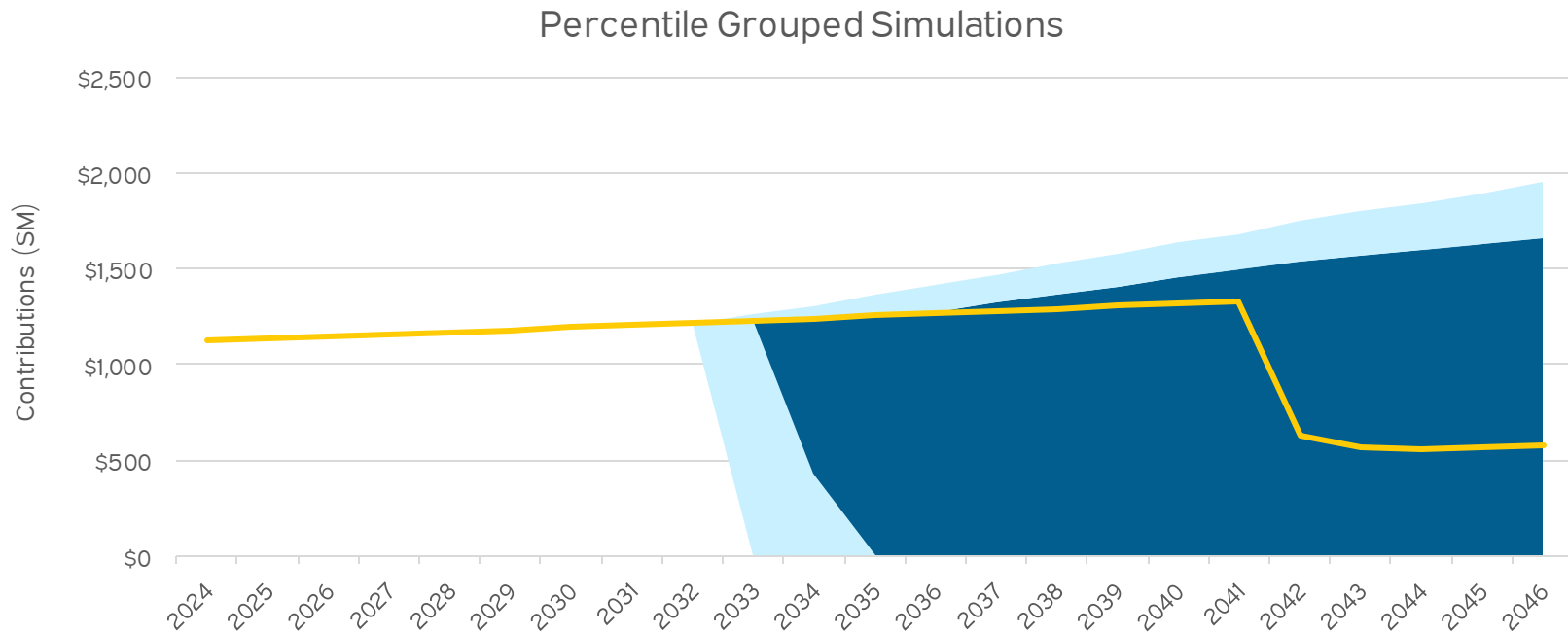




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Contribution Impacts

- The funding policy determines that annual contributions to the plan are between +1% and +5% of the prior year contributions, regardless of asset/liability gains/losses.
- As such, contributions expected to steadily increase over the next decade, at which point contributions will decrease if the plan achieves 100% funding.



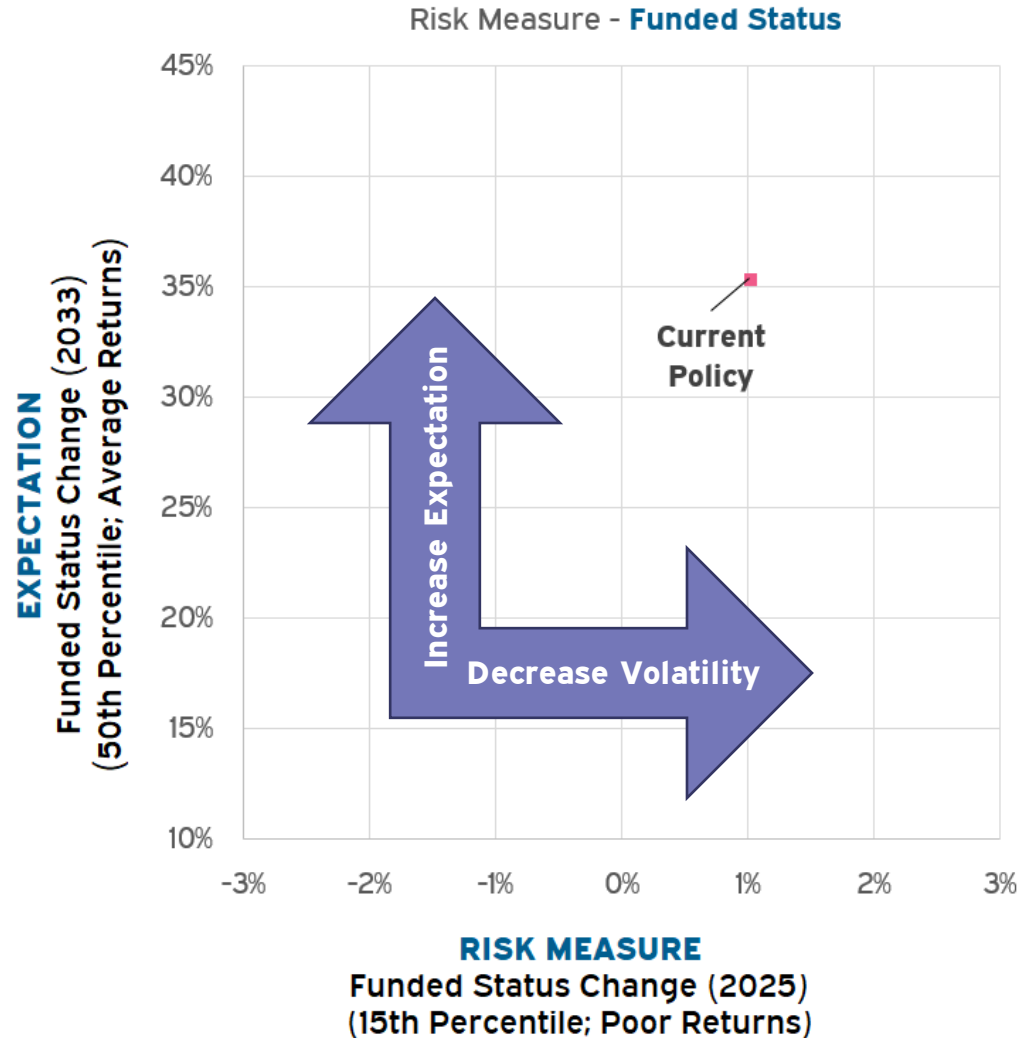


Hawaii Employer-Union Health Benefits Trust Fund

Optimization Step 1: Plot the Baseline (i.e., Current Policy)

Notes

- The goal of Optimization is to align the projected health of the OPEB Trust to match the objectives and risk tolerance of the Board.
- Market value funded status as of 6/30/2023 = 43%





Hawaii Employer-Union Health Benefits Trust Fund

Optimization Step 2: Create Asset Class Constraints

→ The example constraints below were developed to provide a spectrum of expectation and risk measure profiles.

Constraints	Current LT Policy	Min	Max
Private Equity	15%	10%	15%
US Microcap	3%	0%	5%
Global Equity	27.5%	20%	40%
Global Options	0%	0%	5%
Real Assets	12%	8%	12%
Private Credit	10%	5%	10%
US TIPS	5%	0%	15%
Long US Bonds	5.5%	0%	7.5%
ILS/Reinsurance	5%	0%	6%
Alternative Risk Premia (ARP)	2.5%	0%	7.5%
Systematic Trend Following	10%	0%	12.5%
Long Volatility/Tail Risk	2.0%	0%	6%
Cash	2.5%	0%	2.5%

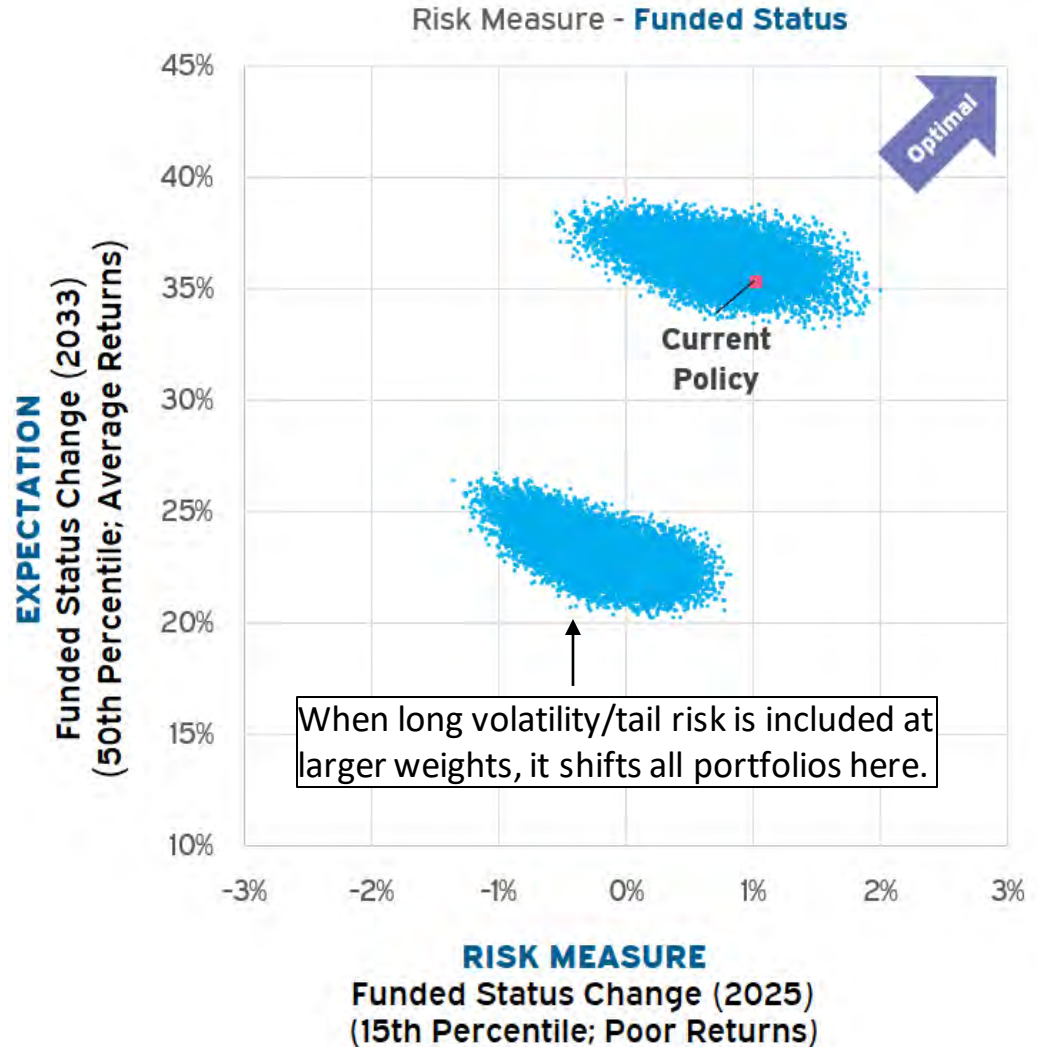


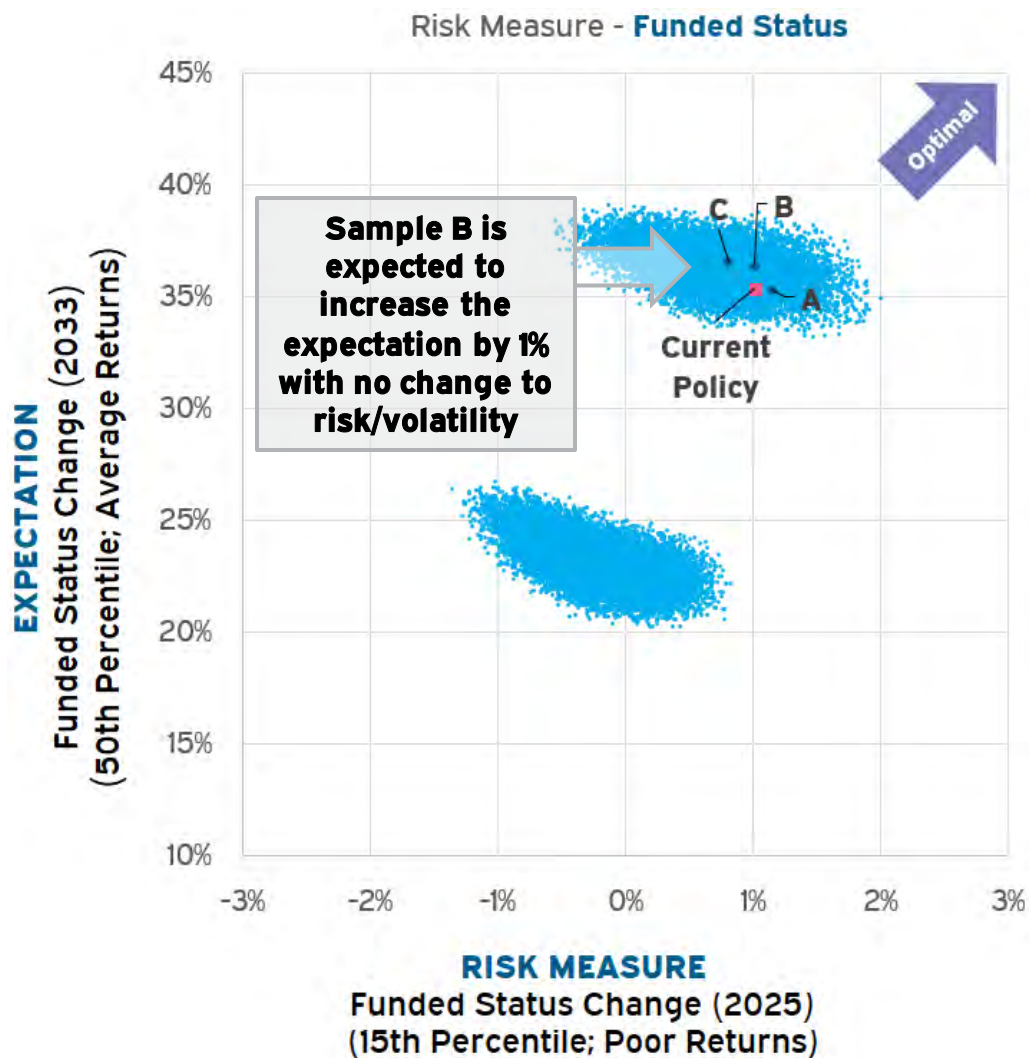
Hawaii Employer-Union Health Benefits Trust Fund

Optimization Step 3: Compare Current Policy to Alternative Asset Allocations

Notes

- The constraints are used to create thousands of combinations of asset allocations.
- The Current Policy is compared to these alternative asset allocations to determine if an alternative provides more optimal outcomes.
- Each blue dot represents a unique asset allocation within the asset class constraints shown on the prior slide.
- Market value funded status as of 6/30/2023 = 43%





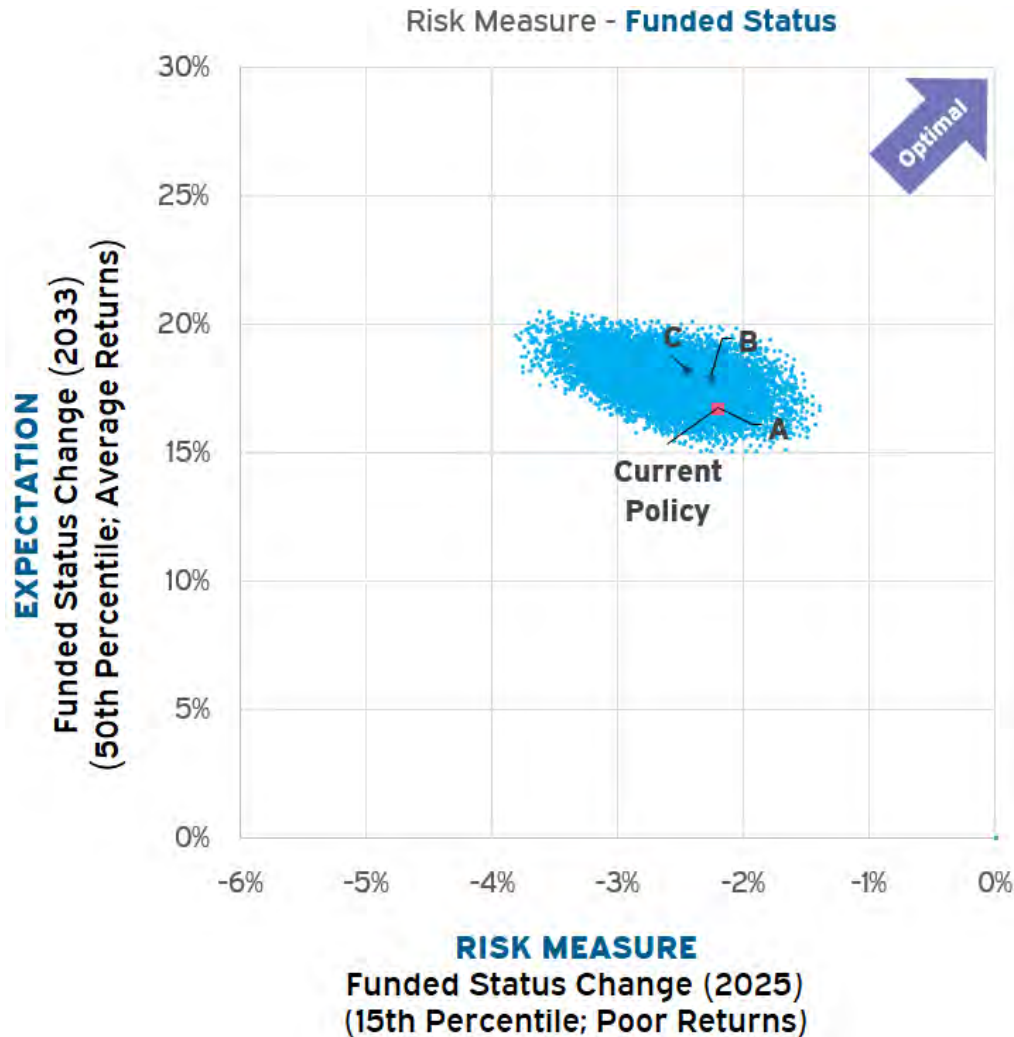
Notes

- Alternative asset allocations (Samples A to C) are identified as having beneficial funded status outcomes.
- Sample A is an example of a lower volatility alternative relative to Current Policy.
- Sample B & C are expected to provide a higher funded status expectation in 10 years relative to Current Policy.
- No outcome is “better” than another given each have beneficial quantitative outcomes.



Hawaii Employer-Union Health Benefits Trust Fund

Optimization Step 5a: Stress Test – 75% Contributions



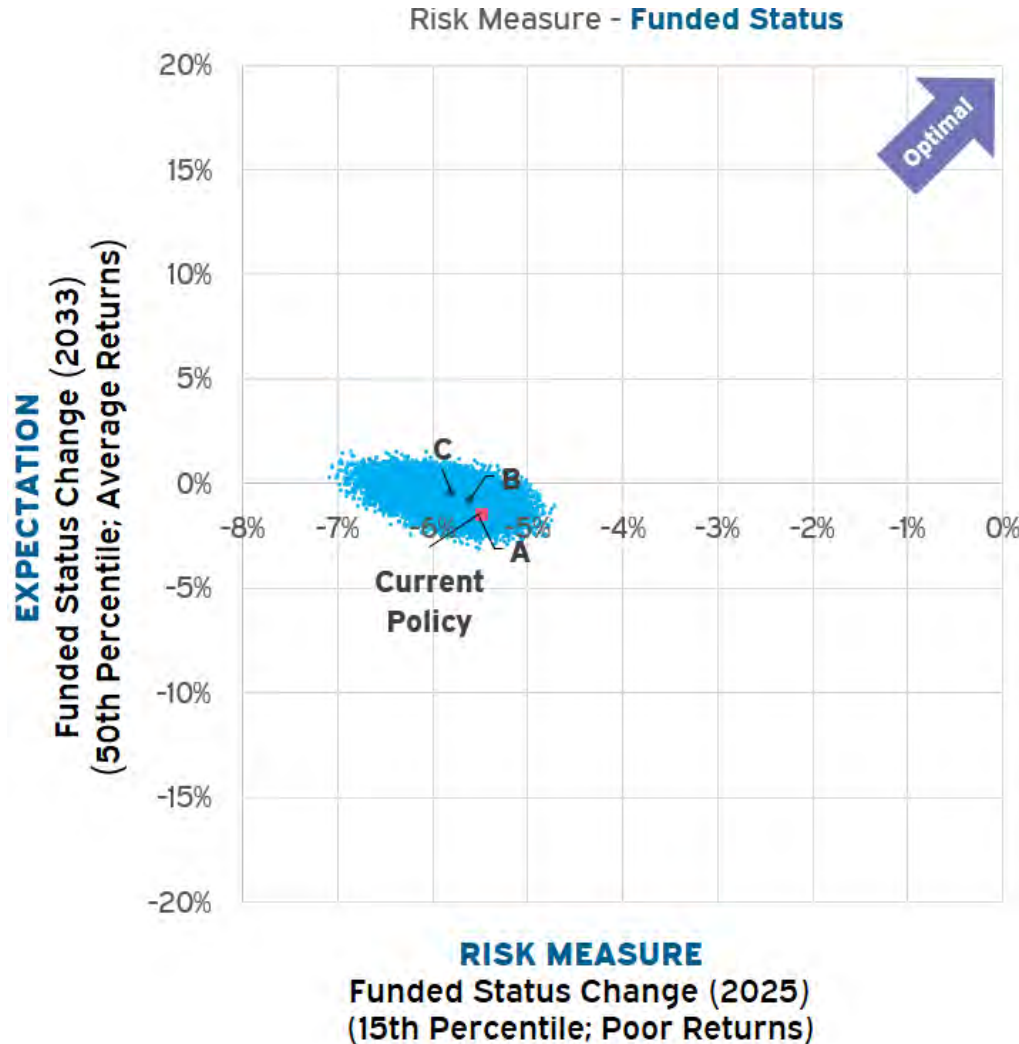
Notes

- Based on feedback from the Board, policies were analyzed assuming the Fund receives contributions of 75% of the actuarial recommendation every year.
- Assuming this funding policy, Current Policy funded status expected to increase by 17% over 10 years with average returns and expected to decrease by 2% in 2 years with poor returns.
- Alternative asset allocations are similarly impacted.



Hawaii Employer-Union Health Benefits Trust Fund

Optimization Step 5b: Stress Test – 50% Contributions



Notes

- Based on feedback from the Board, policies were analyzed assuming the Fund receives contributions of 50% of the actuarial recommendation every year.
- Current Policy funded status expected to decrease by 1% over 10 years with average returns and expected to decrease by ~6% in 2 years with poor returns.
- Alternative asset allocations are similarly impacted suggesting that reduced funding policies are not influential in current asset allocation recommendations.

Conclusion and Next Steps



Hawaii Employer-Union Health Benefits Trust Fund

Recommended Options

Proposed Portfolio = Option B

- Under both asset-only and integrated asset-liability models, the CLTP and A/B/C all exhibit attractive risk/return postures.
- Meketa and EUTF Staff would recommend the Investment Committee pursue Portfolio B as the new long-term policy portfolio.
- Portfolio B exhibits slightly higher risk/return under an asset-only perspective, but with the integrated asset-liability model it exhibits the potential for improved outcomes during good scenarios with de minimis changes during negative scenarios.

Strategic Class	CLTP*	A	B	C
Aggressive Growth	18.0%	18.0%	18.0%	19.0%
Traditional Growth	27.5%	27.5%	30.0%	33.0%
Stabilized Growth	22.0%	20.0%	22.0%	20.0%
Diversifying Strategies	32.5%	34.5%	30.0%	28.0%
Long-term Simulation Statistics	CLTP*	A	B	C
Expected Compound Return	7.3%	7.3%	7.5%	7.6%
Annual Standard Deviation	10.7%	10.5%	11.1%	11.5%
Expected Max Drawdown	35.4%	34.5%	37.0%	39.0%
Sharpe Ratio	0.46	0.47	0.46	0.45

Asset Class/Strategy	CLTP*	A	B	C
Private Equity	15.0%	15.0%	15.0%	15.0%
US Microcap	3.0%	3.0%	3.0%	4.0%
Global Equity	27.5%	27.5%	30.0%	33.0%
Global Options	0.0%	0.0%	0.0%	0.0%
Real Assets	12.0%	10.0%	12.0%	10.0%
Private Credit	10.0%	10.0%	10.0%	10.0%
US TIPS	5.0%	5.0%	2.5%	2.0%
Long US Bonds	5.5%	7.5%	5.0%	5.0%
ILS/Reinsurance	5.0%	5.0%	5.5%	5.5%
Alternative Risk Premia (ARP)	2.5%	2.5%	5.0%	3.5%
Systematic Trend Following	10.0%	10.0%	10.0%	10.0%
Tail Risk	0.25%	0.25%	0.25%	0.25%
Long Vol	1.75%	1.75%	1.75%	1.75%
Cash	2.5%	2.5%	0.0%	0.0%

*Current Long-term Policy



- EUTF is currently well positioned to make progress towards full funding.
- Contributions (particularly large projected contributions relative to assets) remain the primary determinant of funding ratio success.
 - Even with asset volatility, the EUTF's funding policy results in low contribution volatility for the foreseeable future.
 - Lower contribution levels (e.g., 50% and 75%) do not materially alter what would be the "optimal" asset allocation.
- Given the cash-flow position, it is still appropriate for the EUTF to maintain a relatively high allocation to illiquid assets.
- Meketa and EUTF Staff believe that marginally increasing the risk of the portfolio may allow for improved "positive" outcomes while not materially impacting "negative" outcomes due to the contribution policy dynamics.
- Based on the selected new long-term policy portfolio, Meketa and EUTF Staff will develop an *Evolving Policy Plan* to help guide the transition.
- A more concise strategic allocation review will be conducted in the Summer/Fall to address the structure of the EUTF Trust Fund.

Appendix



Efficient Frontier Detail (Asset-only metrics)

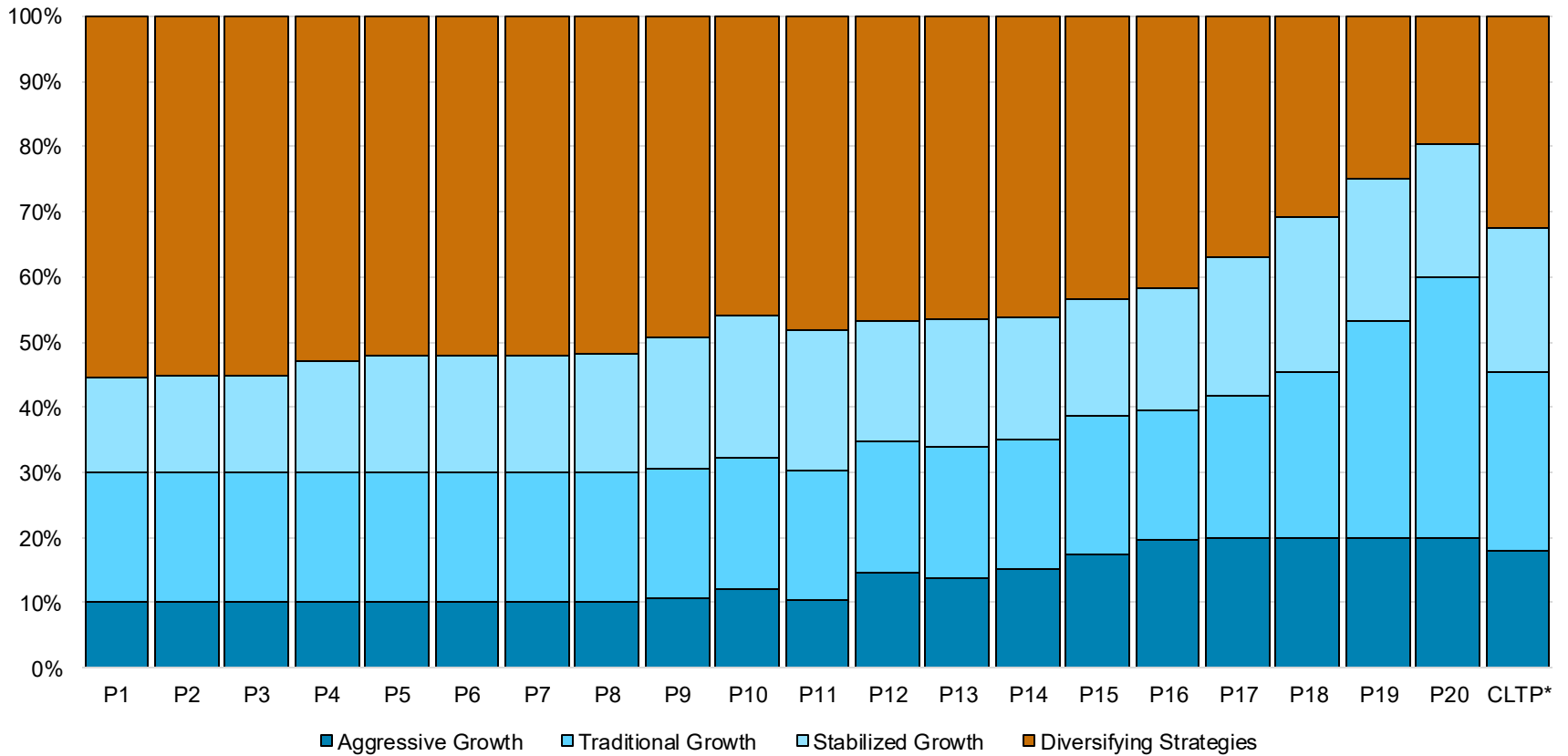
Strategic Class	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Aggressive Growth	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.6%	12.2%
Traditional Growth	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Stabilized Growth	14.5%	14.7%	15.0%	17.0%	17.9%	17.9%	18.0%	18.3%	20.0%	22.0%
Diversifying Strategies	55.5%	55.3%	55.0%	53.0%	52.1%	52.1%	52.0%	51.7%	49.3%	45.8%
Long-term Simulation Statistics	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Expected Compound Return	5.8%	6.0%	6.1%	6.2%	6.3%	6.4%	6.5%	6.7%	6.8%	6.9%
Annual Standard Deviation	7.3%	7.4%	7.5%	7.7%	7.8%	7.8%	7.9%	8.0%	8.3%	8.6%
Expected Max Drawdown	18.7%	18.9%	19.3%	19.9%	20.4%	21.1%	21.9%	22.8%	23.8%	25.8%
Sharpe Ratio	0.47	0.48	0.49	0.50	0.50	0.51	0.52	0.53	0.53	0.52

Strategic Class	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20
Aggressive Growth	10.3%	14.7%	13.8%	15.0%	17.4%	19.5%	20.0%	20.0%	20.0%	20.0%
Traditional Growth	20.0%	20.0%	20.0%	20.0%	21.2%	20.1%	21.6%	25.3%	33.2%	40.0%
Stabilized Growth	21.4%	18.5%	19.7%	18.7%	18.1%	18.6%	21.3%	23.8%	21.9%	20.3%
Diversifying Strategies	48.3%	46.8%	46.4%	46.3%	43.3%	41.8%	37.0%	30.8%	24.9%	19.7%
Long-term Simulation Statistics	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20
Expected Compound Return	7.0%	7.1%	7.2%	7.3%	7.5%	7.6%	7.7%	7.8%	7.9%	8.0%
Annual Standard Deviation	8.4%	8.9%	9.0%	9.3%	9.7%	10.0%	10.5%	11.2%	12.2%	13.0%
Expected Max Drawdown	26.3%	28.0%	29.1%	30.5%	32.5%	33.6%	35.7%	39.0%	43.7%	47.4%
Sharpe Ratio	0.54	0.53	0.54	0.53	0.52	0.52	0.51	0.48	0.45	0.43



Efficient Frontier Detail (Asset-only metrics)

Portfolio Allocations



*Current Long-term Policy



Hawaii Employer-Union Health Benefits Trust Fund

Asset-only Metrics

Efficient Frontier Detail (Asset-only metrics)

Asset Class/Strategy	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Private Equity	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.5%	10.1%
US Microcap	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	2.1%
Global Equity	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Global Options	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Real Assets	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.3%	10.0%	12.0%
Private Credit	6.5%	6.7%	7.0%	9.0%	9.9%	9.9%	10.0%	10.0%	10.0%	10.0%
US TIPS	15.0%	15.0%	15.0%	15.0%	14.3%	15.0%	15.0%	15.0%	14.8%	13.1%
Long US Bonds	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.4%	7.5%	7.5%	6.3%
ILS/Reinsurance	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	4.1%
Alternative Risk Premia (ARP)	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%
Systematic Trend Following	12.5%	12.4%	12.4%	12.5%	12.5%	11.5%	11.5%	11.6%	12.4%	12.5%
Tail Risk	1.0%	0.9%	0.7%	0.8%	0.7%	0.5%	0.4%	0.3%	0.3%	0.3%
Long Vol	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	1.8%	2.0%
Cash	5.0%	5.0%	4.9%	2.7%	2.6%	3.1%	3.2%	2.8%	0.0%	0.0%
Long-term Simulation Statistics	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Expected Compound Return	5.8%	6.0%	6.1%	6.2%	6.3%	6.4%	6.5%	6.7%	6.8%	6.9%
Annual Standard Deviation	7.3%	7.4%	7.5%	7.7%	7.8%	7.8%	7.9%	8.0%	8.3%	8.6%
Expected Max Drawdown	18.7%	18.9%	19.3%	19.9%	20.4%	21.1%	21.9%	22.8%	23.8%	25.8%
Sharpe Ratio	0.47	0.48	0.49	0.50	0.50	0.51	0.52	0.53	0.53	0.52



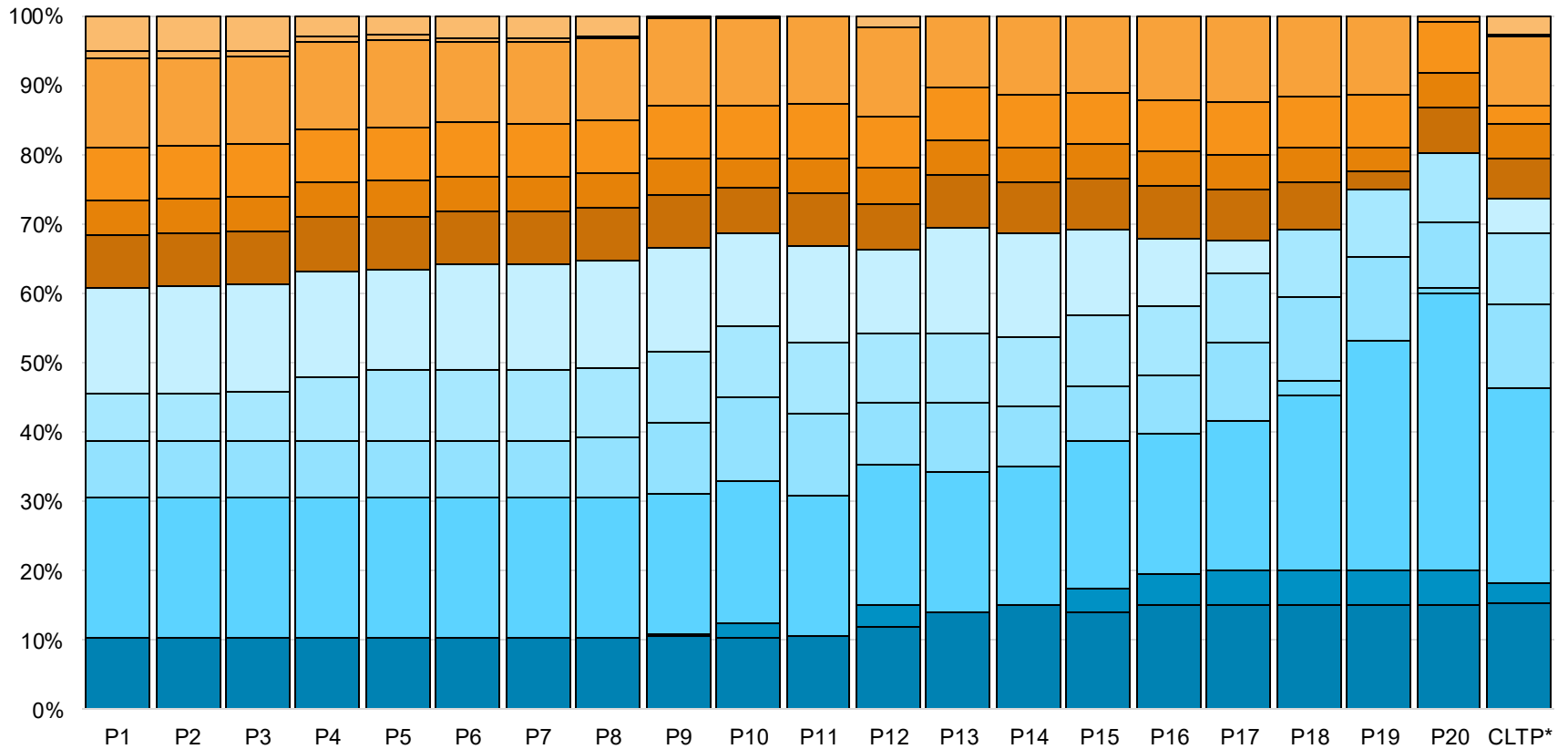
Efficient Frontier Detail (Asset-only metrics)

Asset Class/Strategy	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20
Private Equity	10.3%	11.7%	13.8%	15.0%	13.9%	15.0%	15.0%	15.0%	15.0%	15.0%
US Microcap	0.0%	3.0%	0.0%	0.0%	3.5%	4.5%	5.0%	5.0%	5.0%	5.0%
Global Equity	20.0%	20.0%	20.0%	20.0%	21.2%	20.1%	21.6%	25.3%	33.2%	40.0%
Global Options	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	2.1%	0.0%	0.8%
Real Assets	11.4%	8.5%	9.7%	8.7%	8.0%	8.6%	11.3%	12.0%	11.9%	9.5%
Private Credit	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	9.8%	10.0%	10.0%
US TIPS	13.8%	11.7%	15.0%	14.9%	12.6%	9.7%	4.5%	0.0%	0.0%	0.0%
Long US Bonds	7.5%	6.5%	7.5%	7.5%	7.2%	7.5%	7.5%	6.7%	2.4%	6.4%
ILS/Reinsurance	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.5%	5.0%
Alternative Risk Premia (ARP)	7.5%	7.4%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%
Systematic Trend Following	12.5%	12.5%	10.2%	11.4%	11.0%	12.1%	12.5%	11.6%	11.4%	0.8%
Tail Risk	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Long Vol	2.0%	2.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
Cash	0.0%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Long-term Simulation Statistics	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20
Expected Compound Return	7.0%	7.1%	7.2%	7.3%	7.5%	7.6%	7.7%	7.8%	7.9%	8.0%
Annual Standard Deviation	8.4%	8.9%	9.0%	9.3%	9.7%	10.0%	10.5%	11.2%	12.2%	13.0%
Expected Max Drawdown	26.3%	28.0%	29.1%	30.5%	32.5%	33.6%	35.7%	39.0%	43.7%	47.4%
Sharpe Ratio	0.54	0.53	0.54	0.53	0.52	0.52	0.51	0.48	0.45	0.43



Efficient Frontier Detail (Asset-only metrics)

Portfolio Allocations



*Current Long-term Policy



Total Portfolio Expected Return (Asset-only metrics)

- The current long-term policy portfolio was approved in August 2022 with a marginal change in February 2023 (2.5% was shifted from Alternative Risk Premia to Cash).
- With 2024 CMAs, the long-term expected return of the long-term policy portfolio is (20) bps lower than in August 2022 and (10) bps lower than in February 2023.
- Due to lower volatility assumptions, the two risk metrics (annual standard deviation and expected max drawdown) are projected to be lower as well.

EUTF Long-term Policy Portfolio: Asset-only Metrics			
Long-term Simulation Statistics	As of August 2022	As of February 2023	As of January 2024
Expected Compound Return	7.5%	7.4%	7.3%
Annual Standard Deviation	11.3%	11.2%	10.7%
Expected Max Drawdown	37.5%	37.5%	35.4%



How does Meketa optimize the asset allocation?

1 – Plot the Baseline

Plot the primary expectation and risk measures for the current long-term policy portfolio.

2 – Create Constraints

Asset classes are constrained to a minimum and maximum allocation to prevent impractical allocation recommendations

3 – Compare Alternatives

The Board agrees on tolerance for allocation levels for each existing or new asset classes

4 – Produce Samples

Meketa will provide samples of asset allocations that reflect the feedback received from the Board with regards to risk tolerance and return expectations

5 – Analyze Additional Risks

Repeat the process for additional risk measures that are important to the Board's decision making



Hawaii Employer-Union Health Benefits Trust Fund

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