

Investment Committee Meeting August 19, 2024

Meeting Items

- Agenda
- Educational Presentation: Benchmarking Update
- Total Fund Performance Review for period ending June 30, 2024
- Private Credit Portfolio Review for period ending March 31, 2024
- Approval of Minutes – May 28, 2024

Board Packet Documents are available to the public for inspection on the Employees' Retirement System's Website: <https://ers.ehawaii.gov/board-and-committee-agendas-and-meeting-packets>, and in the Employees' Retirement System's Office, 201 Merchant Street, Suite 1400, Honolulu, HI 96813

NOTICE OF REGULAR MEETING

AGENCY: Investment Committee of the Board of Trustees of the Employees' Retirement System of the State of Hawaii

DATE: Monday, August 19, 2024; 9:00 a.m.

PLACE: City Financial Tower, 201 Merchant Street, Suite 1200, Honolulu, Hawaii 96813

The meeting will be conducted pursuant to HRS § 92-3.7, under which Members of the Investment Committee of the Board of Trustees may participate via interactive conference technology; and members of the public may also participate via interactive conference technology or in person at the meeting place stated above.

Members of the public may also attend the meeting in person to testify or provide testimony by teleconference either audio or video, at the following link and phone number:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_MWY3MWRiODEtNzJiOC00YTl5LWI2Y2MtNzE5OGZjYzE3Yjg4%40thread.v2/0?context=%7b%22Tid%22%3a%223847dec6-63b2-43f9-a6d0-58a40aaa1a10%22%2c%22Oid%22%3a%228f795840-377f-479d-bb5d-6ec41c4a01bc%22%7d

or

[+1 808-829-4853,183542755#](tel:+18088294853183542755) United States, Honolulu
Phone Conference ID: 183 542 755#

Individuals testifying at the meeting are requested to limit their testimony to three minutes or an amount of time otherwise designated by the Chairperson.

In the event audiovisual communication cannot be maintained with participating Trustees and quorum is lost, the meeting shall be automatically recess for up to 30 minutes, during which time, an attempt to restore audiovisual communication will be made. If such attempt is unsuccessful, all Trustees, members of the public, staff and other interested individuals may continue to participate in the meeting via telephone using the above listed telephone and conference ID numbers, whereby audio-only communication will be established for all participants and the meeting will continue. If reconvening the meeting is not possible because neither audiovisual nor audio-only communication can be re-established, the meeting will be terminated.

AGENDA

CALL TO ORDER/QUORUM

Motion to hold the meeting allowing Trustees and members of the public to participate by interactive conference technology, pursuant to HRS § 92-3.7, with at least one meeting location open to the public that has audiovisual connection.

PUBLIC COMMENT

Members of the public may submit written testimony on these agenda items via e-mail or postal mail with receipt recommended by 4:30 p.m. on Friday, August 16, 2024, in order to ensure it is distributed in time for consideration. Please address written testimony if by e-mail to diana.gomes@hawaii.gov or by postal mail to: Employees' Retirement System of the State of Hawaii, Investment Committee, 201 Merchant Street, Suite 1400, Honolulu, Hawaii 96813.

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PRESENTATIONS

1. Educational Presentation: Benchmarking Update

Kristin Varela, ERS Chief Investment Officer and Meketa Investment Group, Inc

Pursuant to HRS § 88-27.5(a)(1) and HRS § 92-5(a)(4), the Board of Trustees may enter into Executive Session to conduct discussions and deliberations relating to, and if appropriate, to make a decision on investments or prospective investments by the system that requires the consideration of information or records that are exempt from disclosure under HRS Chapter 92F, including information and records that are proprietary information or confidential business information, and to consult with the Board's attorneys on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities with respect to this matter.

2. Total Fund Performance Review for period ending June 30, 2024.

Kristin Varela, ERS Chief Investment Officer and Meketa Investment Group, Inc.

Pursuant to HRS § 88-27.5(a)(1) and HRS § 92-5(a)(4), the Board of Trustees may enter into Executive Session to conduct discussions and deliberations relating to, and if appropriate, to make a decision on investments or prospective investments by the system that requires the consideration of information or records that are exempt from disclosure under HRS Chapter 92F, including information and records that are proprietary information or confidential business information, and to consult with the Board's attorneys on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities with respect to this matter.

3. Rotating Alternative Asset Class Review: Private Credit Portfolio review for period ending March 31, 2024.

Andrew Chen, ERS Investment Officer and Meketa Investment Group, Inc.

Pursuant to HRS § 88-27.5(a)(1) and HRS § 92-5(a)(4), the Board of Trustees may enter into Executive Session to conduct discussions and deliberations relating to, and if appropriate, to make a decision on investments or prospective investments by the system that requires the consideration of information or records that are exempt from disclosure under HRS Chapter 92F, including information and records that are proprietary information or confidential business information, and to consult with the Board's attorneys on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities with respect to this matter.

REPORTS BY STAFF

1. Chief Investment Officer Update

Procurement update: Global Custody Services and Securities Lending Request for Expression of Interest 2024.

APPROVAL OF MINUTES – May 28, 2024

EXECUTIVE SESSION

1. Executive Session, pursuant to HRS 88-27.5(a)(1), and 92-5(a)(4), to conduct discussions and deliberations relating to, and if appropriate, to make a decision on investments or prospective investments by the system that require the consideration of information or records that are exempt from disclosure under HRS Chapter 92F, including information and records that are proprietary information or confidential business information, and to consult with the Board's attorneys on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities with respect to Updates on Status or Issues Related to Confidential ERS Investment Portfolio activity to include (1) Closure of Weiss Asset

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Management, (2) Townsend Organizational Update, (3) Climate Action 100+ inquiry, (4) Manager activity and organizational updates, and (5) Investment Office staffing updates.

2. Executive Session, pursuant to HRS 88-27.5(a)(1) and HRS 92-5(a)(8), to Review and Approval of Executive Session Minutes of May 28, 2024.

ADJOURNMENT

If you require auxiliary aid/service or other accommodation due to a disability, contact Diana Gomes at (808) 586-0175 or diana.gomes@hawaii.gov as soon as possible, preferably by Friday, August 16, 2024, and the ERS will try to obtain the auxiliary aid/service or accommodation, but cannot guarantee that the request can be fulfilled.

Upon request, this notice can be made available in large print.

MEKETA

INVESTMENT GROUP

Employees' Retirement System of the State of Hawaii

August 19, 2024

Benchmark Update



Employees' Retirement System of the State of Hawaii

Introduction

Introduction

- Four major events occurred in the last ~14 months:
 - 2022/2023 Asset-Liability Study & new long-term allocation targets (*June 2023*)
 - Approval of new asset class and Total Fund benchmarks (*August 2023*)
 - Implementation of new long-term allocation targets (*January 2024*)
 - Reconfiguration of asset class composites (*Q1 2024*)

- As a result of these events, the reporting structure of performance results has meaningful changed.

- This presentation seeks to provide a quick review of the new policy structure, asset class composites, and the process by which benchmarks have been updated and audited.



Employees' Retirement System of the State of Hawaii

Long-term Policy Portfolio

Asset-Liability Results and Corresponding Benchmarks

- In June 2023, the ERS Board adopted a new long-term policy portfolio.
- In August 2023, the ERS Board approved the new asset class and Total Fund benchmarks.

		Long-term Asset Class Policy Weight	Corresponding Benchmark
Global Equity	Public Equity	20%	MSCI ACWI IMI
	Private Equity	19%	MSCI ACWI IMI (qtr lag)
Global Credit	Liquid Credit	4%	Bloomberg Global High Yield Index (hedged) S&P LSTA Leveraged Loan 100 Index
	Private Credit	8%	Bloomberg Global High Yield Index (qtr lag) (hedged) S&P LSTA Leveraged Loan 100 Index (qtr lag)
Real Assets	Real Estate	9%	FTSE EPRA NAREIT Global REITS Index GD (qtr lag)
	Infrastructure	7%	Dow Jones Brookfield Global Infrastructure Index (qtr lag)
	Timberland and Agriculture	3%	S&P Global Timber & Forestry Index (qtr lag) S&P GSCI Agriculture Index (qtr lag)
Liquid Defensive	Systematic Trend Following	8%	Mount Lucas Global Index EV 15 Vol
	Long US Treasuries	4%	Bloomberg US Treasury: Long Index
	Intermediate Duration Government Bonds	14%	Bloomberg US Treasury: Intermediate Index
	Diversifying	---	---
Illiquid Diversifying	Reinsurance/similar	4%	Swiss Re Global Catastrophe Bonds Index (hedged)



Employees' Retirement System of the State of Hawaii

Composites

Asset Class Composites

- Over the last 10+ years, the ERS has utilized a variety of different asset class composites.
- A new “era” of composites occurred in 2014 with the adoption of a risk-based, functional framework.
- Subsequent to 2014, additional composite changes occurred. Examples include:
 - Embedding Real Estate within Stabilized Growth (Core RE) and Private Growth (Non-Core RE) as a result of the 2015 Asset-Liability Study.
 - Reversing the above decision to re-combine Real Estate as a result of the 2019 Asset-Liability Study.
 - Several iterations of sub-components within the Crisis Risk Offset/Diversifying Strategies Class.
 - Creation of Global Equity (i.e., public and private equity) and Global Credit (i.e., public and private credit) composites.
- As a result of the evolving asset class composites, properly mapping historical policy benchmarks to the 2024 structure has required an audit process by ERS Staff and Meketa.
- **Importantly, none of these changes impacted the Total Fund Benchmark.**



Employees' Retirement System of the State of Hawaii

Composites

Audit Process

- Beginning with the Q1 2024 performance report, new composites were created by BNY that accurately reflect the composite performance had they existed in the new construct on a historical basis (with most dating back to 2013/2014 or more recent if newer).
- In order to provide benchmark comparisons, Meketa and ERS Staff reviewed historical benchmark constructs and the ERS's Investment Policy Statement in order to create benchmarks that reflect Board-approved decisions on a historical basis.
- Corresponding audit documentation will be compiled and stored for ERS records.



Employees' Retirement System of the State of Hawaii

Composite Levels

Composite Levels

→ To aid in the benchmark update and audit process, ERS Staff instructed BNY to create “levels” of composites.

Level	Example Composites
1	Total Fund
2	Broad Growth Diversifying Strategies
3	Global Equity Global Credit Real Assets Illiquid Diversifying Liquid Defensive
4	Private Equity Real Estate Systematic Trend Following
5	Active Public Equity Non-Core Real Estate
6	Opportunistic Real Estate Core Infrastructure

BLUE = complete list of composites

BLACK = example/subset of composites

→ The historical returns of the Total Fund benchmark were unchanged.

→ The majority of the benchmark re-compositions occurred at Levels 3 & 4 with marginal updates to Level 2.



Employees' Retirement System of the State of Hawaii

Example Benchmark Construct

Example Benchmark Structure: Real Estate Benchmark Structure:

		Real Estate Benchmark			
		Start Date	End Date	Weight (%)	
Level 4	Core Real Estate Benchmark	7/1/2013	6/30/2016	100	
	Core Real Estate Benchmark	7/1/2016	6/30/2017	80	
	Non-Core Real Estate Benchmark	7/1/2016	6/30/2017	20	
	Core Real Estate Benchmark	7/1/2017	6/30/2018	73	
	Non-Core Real Estate Benchmark	7/1/2017	6/30/2018	27	
	Core Real Estate Benchmark	7/1/2018	6/30/2019	66	
	Non-Core Real Estate Benchmark	7/1/2018	6/30/2019	34	
	Core Real Estate Benchmark	7/1/2019	6/30/2020	60	
	Non-Core Real Estate Benchmark	7/1/2019	6/30/2020	40	
	Core Real Estate Benchmark	7/1/2020	6/30/2021	53.3	
	Non-Core Real Estate Benchmark	7/1/2020	6/30/2021	46.7	
	Core Real Estate Benchmark	7/1/2021	6/30/2022	55.7	
	Non-Core Real Estate Benchmark	7/1/2021	6/30/2022	44.3	
	Core Real Estate Benchmark	7/1/2022	12/31/2023	57.1	
	Non-Core Real Estate Benchmark	7/1/2022	12/31/2023	42.9	
		FTSE EPRA NAREIT Global REITS Index GD (qtr lag)	1/1/2024	---	100
Level 5	Core Real Estate Benchmark				
		Start Date	End Date	Weight (%)	
	NCREIF Property Index (Net) (Quarter Lag)	7/1/2013	6/30/2020	100	
	NCREIF ODCE (Net) (Quarter Lag)	7/1/2020	12/31/2023	100	
	FTSE EPRA NAREIT Global REITS Index GD (qtr lag)	1/1/2024	---	100	
	Non-Core Real Estate Benchmark				
		Start Date	End Date	Weight (%)	
	NCREIF Property Index (Net) (qtr lag)	7/1/2013	6/30/2016	100	
	Private Equity Benchmark	7/1/2016	6/30/2020	100	
	NCREIF ODCE + 1% (qtr lag)	7/1/2020	12/31/2023	100	
FTSE EPRA NAREIT Global REITS Index GD (qtr lag)	1/1/2024	---	100		



Employees' Retirement System of the State of Hawaii

Naming Conventions

Benchmark Naming Conventions

→ There are two important categories of benchmark naming convention changes:

→ Description of Total Fund-oriented Benchmarks

- *Actuarial Rate*: This has been renamed to "Return Benchmark"
- *Total Fund/Policy Benchmark*: This has been renamed to "Market Benchmark"
- *Median Peer*: This has been renamed to "Peer Benchmark"

→ Description of Composite Benchmarks

- There are two categories of benchmarks that will appear in performance reports:
 - "Policy Benchmark" refers to a benchmark that has existed throughout time and was not created retroactively.
 - "Historical Benchmark" refers to a benchmark whose components/weights reflect historical Board decisions but is now presented (with retroactive data) for newly created composites.



Conclusion

- The new policy construct took effect on January 1, 2024.
- As a result, new asset class composites and benchmarks were implemented.
- In order to provide the ERS Investment Committee and Board with proper benchmark return comparisons, retroactive benchmarks were created that reflect prior Board-approved decisions/policies.
 - These historical benchmarks were analyzed by both ERS Staff and Meketa in order to ensure they aligned with policies that were in-place through the various historical periods.
 - Audit documentation will be available for ERS files that reflect the source data for the retroactive benchmark creations.
- Most importantly, the Total Fund Benchmark was unchanged on a historical basis.



Employees' Retirement System of the State of Hawaii

Important Notice

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Certain information contained in this document constitutes "forward-looking statements," which can be identified by the use of forward-looking terminology such as "may", "will", "should", "expect", "anticipate", "target", "project", "estimate", "intend", "continue" or "believe" or the negatives thereof or other variations thereon or comparable terminology. Due to various risks and uncertainties, actual events or results or the actual performance of the Funds and investments may differ materially from those reflected or contemplated in such forward-looking statements."



Employees' Retirement System of the State of Hawaii

August 19, 2024

2024 Q2 Performance Report

1. Introduction
2. ERS Portfolio Review
3. Plan Sponsor Peer Group Analysis
4. Appendix

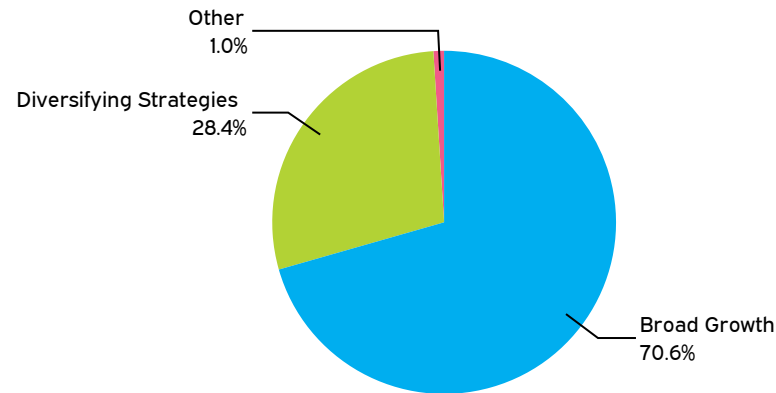
Introduction

Portfolio Valuation			
	Quarter-to-Date	Calendar Year-to-Date	One Year
Total Fund			
Beginning Market Value	23,271,069,490	22,880,493,536	22,231,227,557
Net Cash Flow	-8,112,380	126,067,447	-71,590,865
Capital Appreciation	333,108,146	589,504,273	1,436,428,564
Ending Market Value	23,596,065,256	23,596,065,256	23,596,065,256

ERS Total Fund Relative Performance									
	Inception	30 Yrs	20 Yrs	10 Yrs	5 Yrs	3 Yrs	1 Yr	YTD	QTD
Total Fund	7.6	7.4	7.0	6.7	7.7	4.3	7.4	3.6	1.4
Return Benchmark	7.7	7.7	7.5	7.1	7.0	7.0	7.0	3.4	1.7
Excess Return	-0.1	-0.3	-0.5	-0.4	0.7	-2.7	0.4	0.2	-0.3
Total Fund	7.6	7.4	7.0	6.7	7.7	4.3	7.4	3.6	1.4
Market Benchmark	7.9	7.7	7.0	6.5	7.7	5.3	13.1	8.8	2.0
Excess Return	-0.3	-0.3	0.0	0.2	0.0	-1.0	-5.7	-5.2	-0.6
Total Fund	7.6	7.4	7.0	6.7	7.7	4.3	7.4	3.6	1.4
Peer Benchmark	7.6	7.5	6.8	6.4	7.1	3.0	9.6	5.1	1.0
Excess Return	0.0	-0.1	0.2	0.3	0.6	1.3	-2.2	-1.5	0.4
Total Fund Rank	50	53	37	33	33	14	85	87	25

Total Fund performance consists of net of fees returns. Fiscal year begins on July 1. Inception date is June 1, 1990. Current Market Benchmark composition (effective January 1, 2024) is 70% Broad Growth Benchmark and 30% Diversifying Strategies Benchmark. Please see the Appendix for current and historical custom benchmark compositions. Return Benchmark represents the ERS's actuarial assumption rate. Peer Benchmark represents the plan sponsor peer group InvMetrics Public DB >\$1B Net universe and includes BNY Mellon Total Public Fund >\$1B universe and Investment Metrics client data.

Asset Allocation vs. Target As of June 30, 2024					
	Current Balance (\$)	Current Allocation (%)	Policy (%)	Difference (%)	Policy Range (%)
Broad Growth	16,651,581,424	70.6	70.0	0.6	60.0 - 80.0
Global Equity	9,488,912,423	40.2	39.0	1.2	19.0 - 59.0
Global Credit	2,753,175,150	11.7	12.0	-0.3	6.0 - 18.0
Real Assets	4,409,493,852	18.7	19.0	-0.3	9.0 - 29.0
Diversifying Strategies	6,708,444,865	28.4	30.0	-1.6	20.0 - 40.0
Liquid Defensive/Diversifying	5,782,980,167	24.5	26.0	-1.5	15.0 - 30.0
Illiquid Diversifying	925,464,698	3.9	4.0	-0.1	0.0 - 9.0
Other	236,038,967	1.0	0.0	1.0	0.0 - 0.0
Other	236,038,967	1.0	0.0	1.0	0.0 - 0.0
Total	23,596,065,256	100.0	100.0	0.0	



Target allocation effective January 1, 2024. "Other" includes ERS Operating Account, Parametric Overlay program, and transitional or residual proceeds from liquidating or terminated accounts.

Hawaii ERS vs. Public Fund Peers

→ On a risk-unadjusted basis, the ERS Total Portfolio outperformed the Median Public Fund Peer Group¹ during the quarter and over the trailing 3-, 5-, 10-, and 20-year periods.

Risk-Adjusted Performance² of Hawaii ERS vs. Median Public Fund

	Since Inception	30 Yrs	20 Yrs	10 Yrs	5 Yrs	3 Yrs	1 Yr / FYTD	CYTD	QTD
Total Fund	7.6	7.4	7.0	6.7	7.7	4.3	7.4	3.6	1.4
<i>Risk-Adjusted Peer Median³</i>	<i>7.6</i>	<i>7.2</i>	<i>6.0</i>	<i>4.7</i>	<i>4.3</i>	<i>1.3</i>	<i>3.6</i>	<i>2.5</i>	<i>0.5</i>
Excess Return	0.1	0.2	1.0	2.0	3.4	3.0	3.8	1.1	0.9

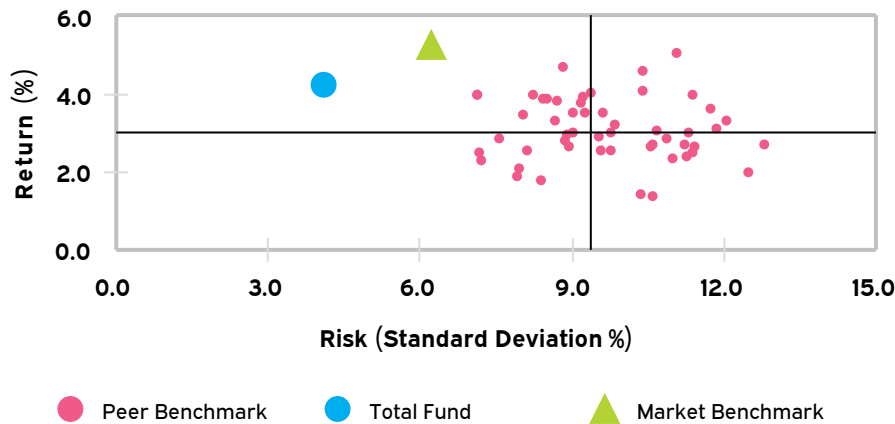
→ On a risk-adjusted basis, the ERS Total Portfolio has consistently, and materially, outperformed relative to the Median Public Fund over all time periods. This is indicative of a more efficient (i.e., higher return per unit of risk) portfolio that was explicitly constructed by the ERS over the last several asset-liability studies.

¹ Peer universe data from Investment Metrics (IM) Public Defined Benefit >\$1B Net Universe includes Investment Metrics client data and plan sponsor peer group data from BNY Mellon.

² Performance shown is net of fees since October 1, 2014, and a mix of net and gross of fees prior to October 1, 2014.

³ The risk-adjusted median normalizes the median fund to the ERS's exhibited volatility. Calculated as: risk-adjusted median return = unadjusted median return × (ERS volatility ÷ median fund volatility), where volatility is measured as standard deviation. Figures for periods greater than one year are annualized. Fiscal Year begins on July 1. Inception date is June 1, 1990.

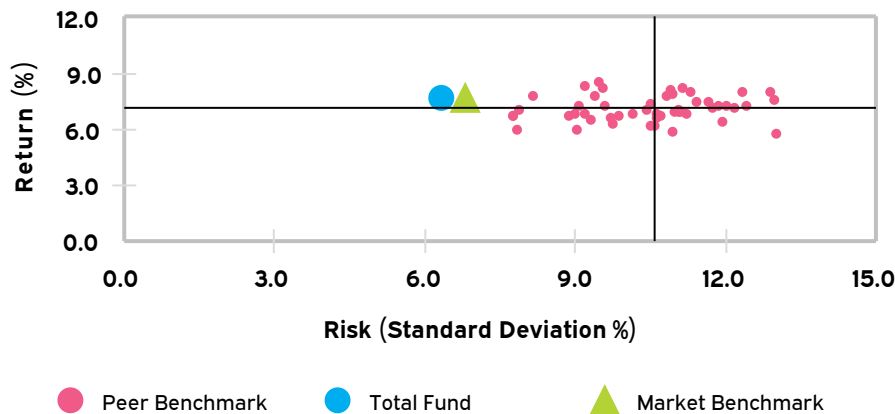
**Annualized Return vs. Annualized Standard Deviation
3 Years Ending June 30, 2024**



Annualized Risk-Return

	3 Years Return	3 Years Standard Deviation	3 Years Sharpe Ratio
Total Fund	4.3	4.1	0.3
Market Benchmark	5.3	6.2	0.4
Peer Benchmark Median	3.0	9.4	0.0

**Annualized Return vs. Annualized Standard Deviation
5 Years Ending June 30, 2024**

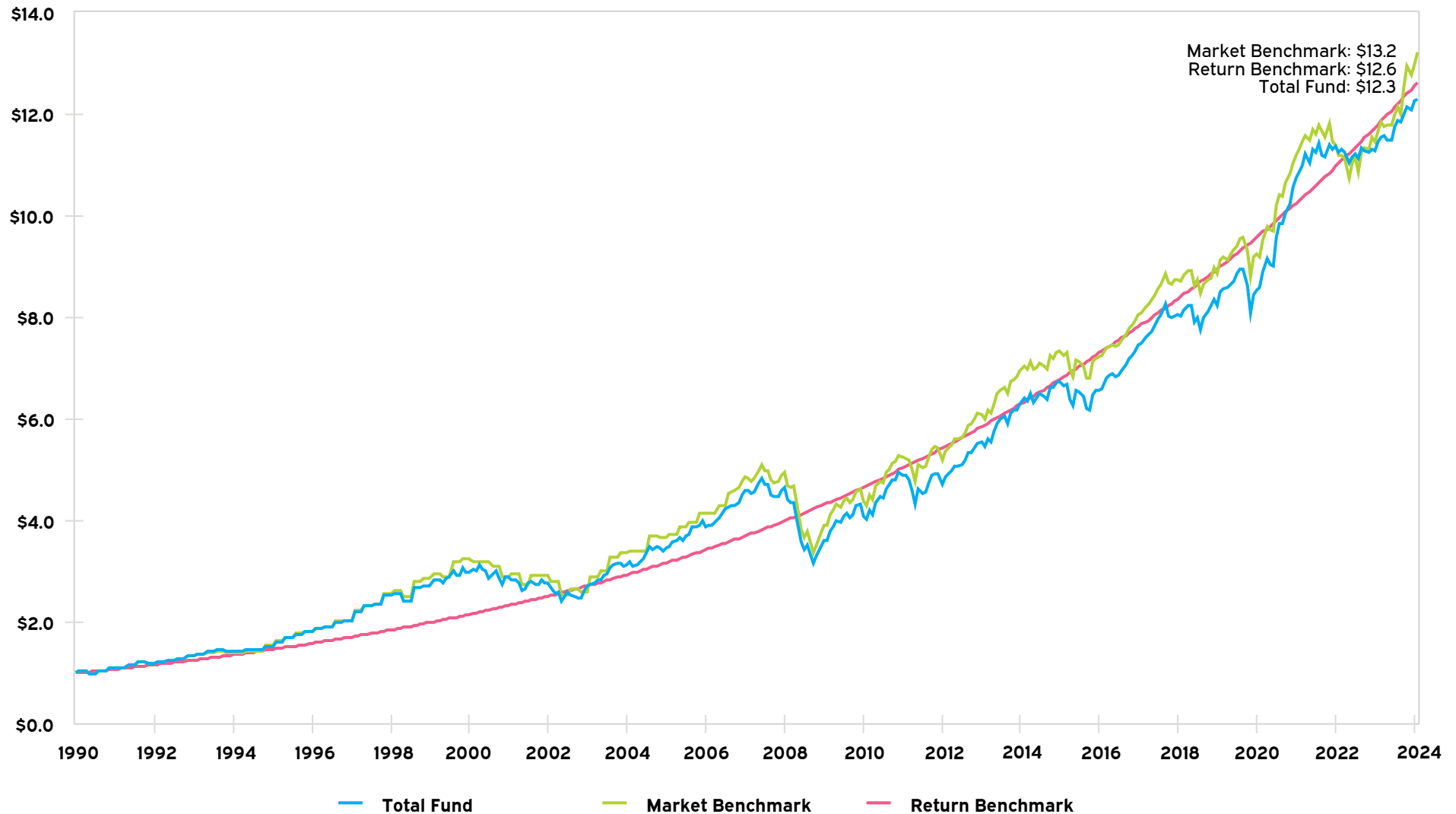


Annualized Risk-Return

	5 Years Return	5 Years Standard Deviation	5 Years Sharpe Ratio
Total Fund	7.7	6.3	0.8
Market Benchmark	7.7	6.8	0.8
Peer Benchmark Median	7.1	10.6	0.5

Peer Benchmark represents the plan sponsor peer group InvMetrics Public DB >\$1B Net universe and includes BNY Mellon Total Public Fund >\$1B universe and Investment Metrics client data.

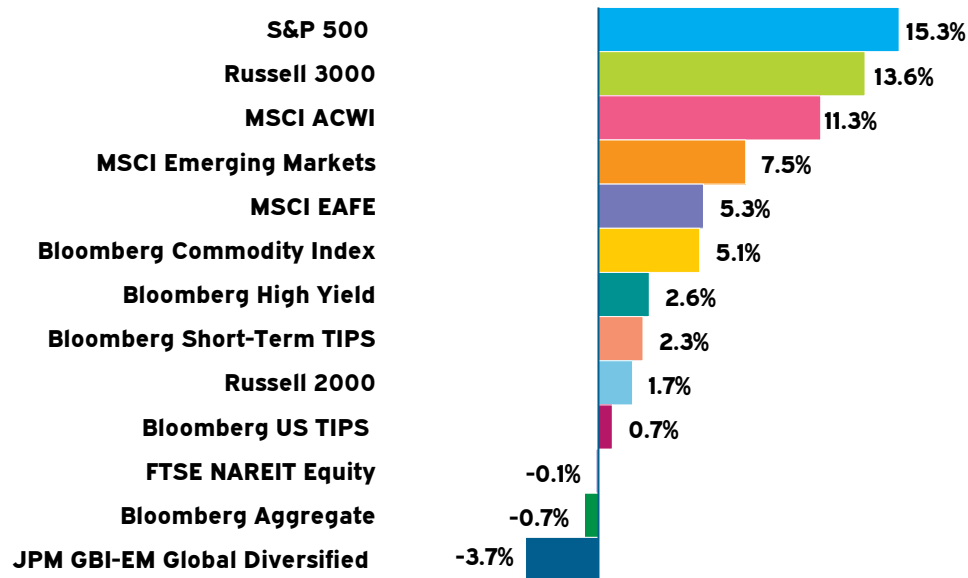
Since Inception Growth of \$1



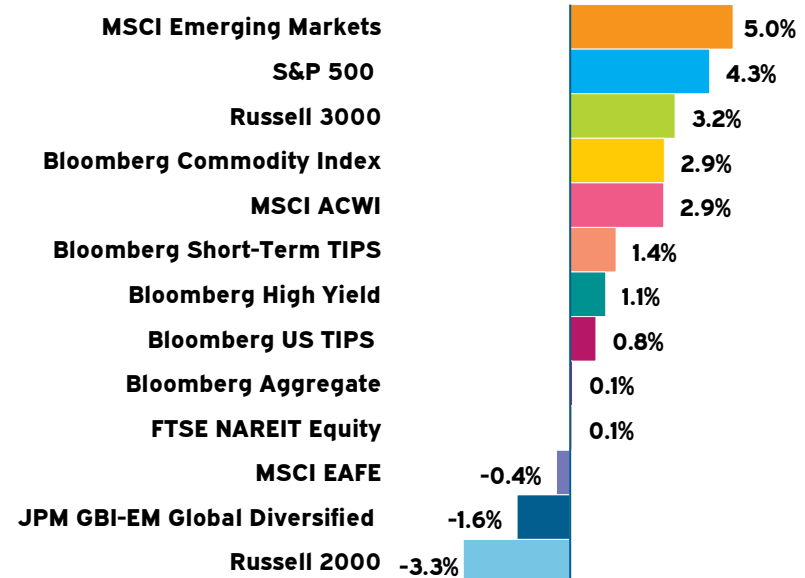
Inception date is June 1, 1990. Return Benchmark represents the ERS's actuarial assumption rate, which is 7.0% since July 2016, 7.65% from July 2015 to July 2016, 7.75% July 2011 to July 2015, 8.00% prior to July 2011.

Index Returns¹

YTD



Q2



→ Declining inflation, resilient growth, and strong corporate earnings supported most asset classes in the second quarter.

→ Mid-way through 2024, US stocks have significantly outperformed other asset classes on a year-to-date basis.

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

Summary

Key Trends:

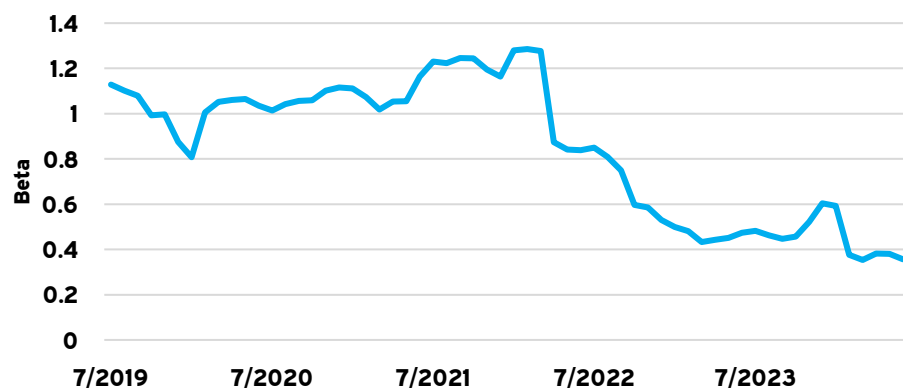
- According to the International Monetary Fund's (IMF) April report, global growth this year is expected to match the 2023 estimate at around 3.2% with most major economies predicted to avoid a recession. Continued strong economic growth does run the risk of inflation and interest rates staying higher for longer.
- Key economic data in the US has largely weakened and come in below expectations, causing markets to expect between two and three rate cuts this year. Uncertainty remains though regarding the timing and pace of interest rate cuts in the coming year.
- We have started to see some divergences in monetary policy with other central banks, such as the European Central Bank (ECB), starting to cut interest rates while the Fed remains on hold. This disparity will likely influence investment flows and currencies.
- 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 ongoing weakness in the real estate sector. Japan's recent tightening of monetary policy along with changes in corporate governance in the country could influence relative results.

Macro Risk Analytics – Key Takeaways

- “Growing but slowing” is the general overview of economic activity within the United States. While economic activity (i.e., corporate earnings, GDP, income growth, unemployment, etc.) remains relatively resilient, pockets of weakness have begun to show in certain data releases. With strong market moves across liquid markets in recent periods, valuations for several asset classes still exhibit elevated levels. Central bank actions, particularly their approach to lowering/raising interest rates, remain one of the most critical market drivers.
- Meketa’s Market Sentiment Indicator remained **green** (i.e., positive) during Q2.
- The Actual Portfolio’s beta (on a 12-month basis relative to the Policy Portfolio) remained stabled in Q2 but is at extremely low levels. Related, trailing 12-month volatility for the Actual Portfolio and Policy Portfolio remain at a relatively wide spread. Of note, a new policy benchmark was implemented on 1/1/2024.

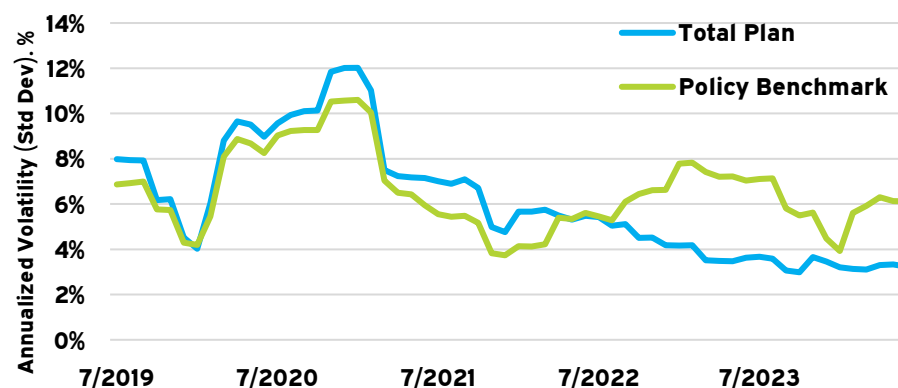
12 Month Rolling Beta vs. Policy Benchmark

Jul 19 - Jun 24

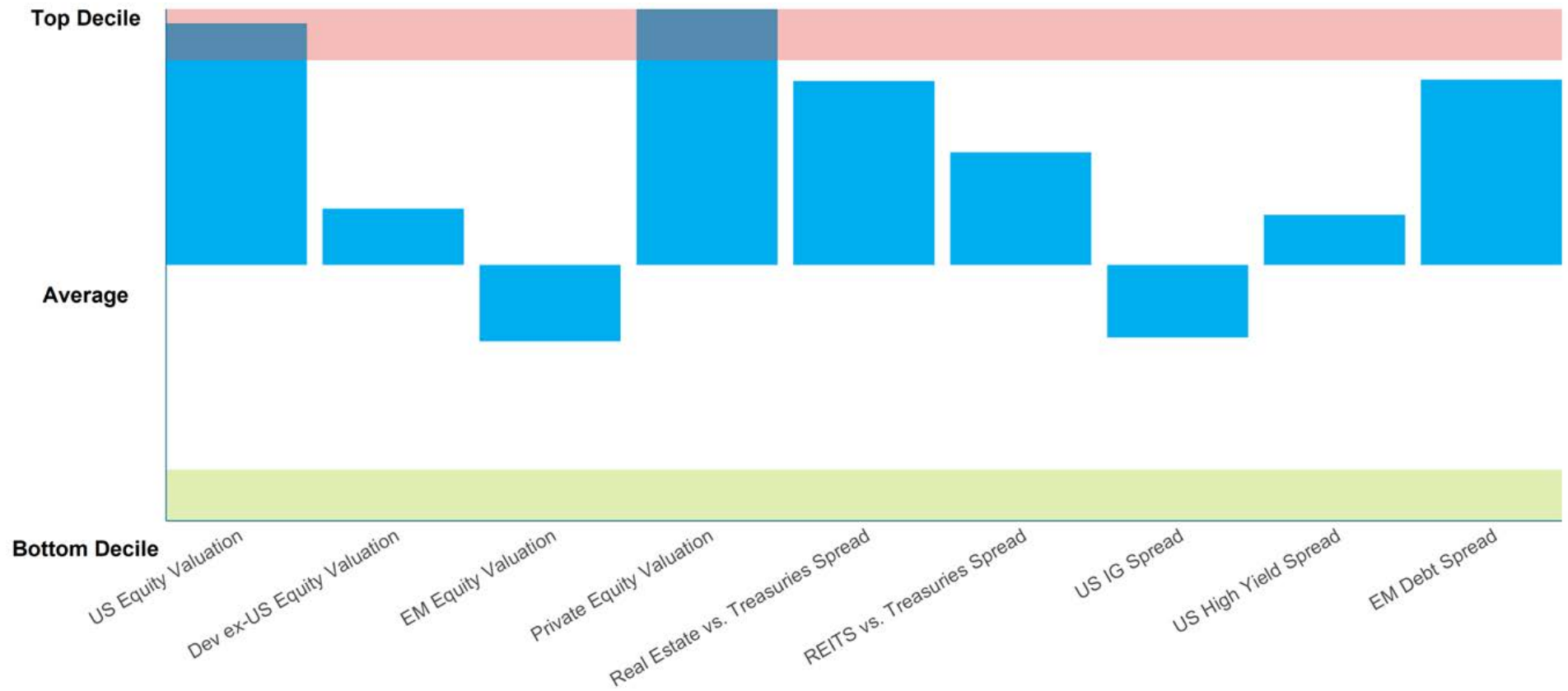


12 Month Rolling Risk

Jul 19 - Jun 24

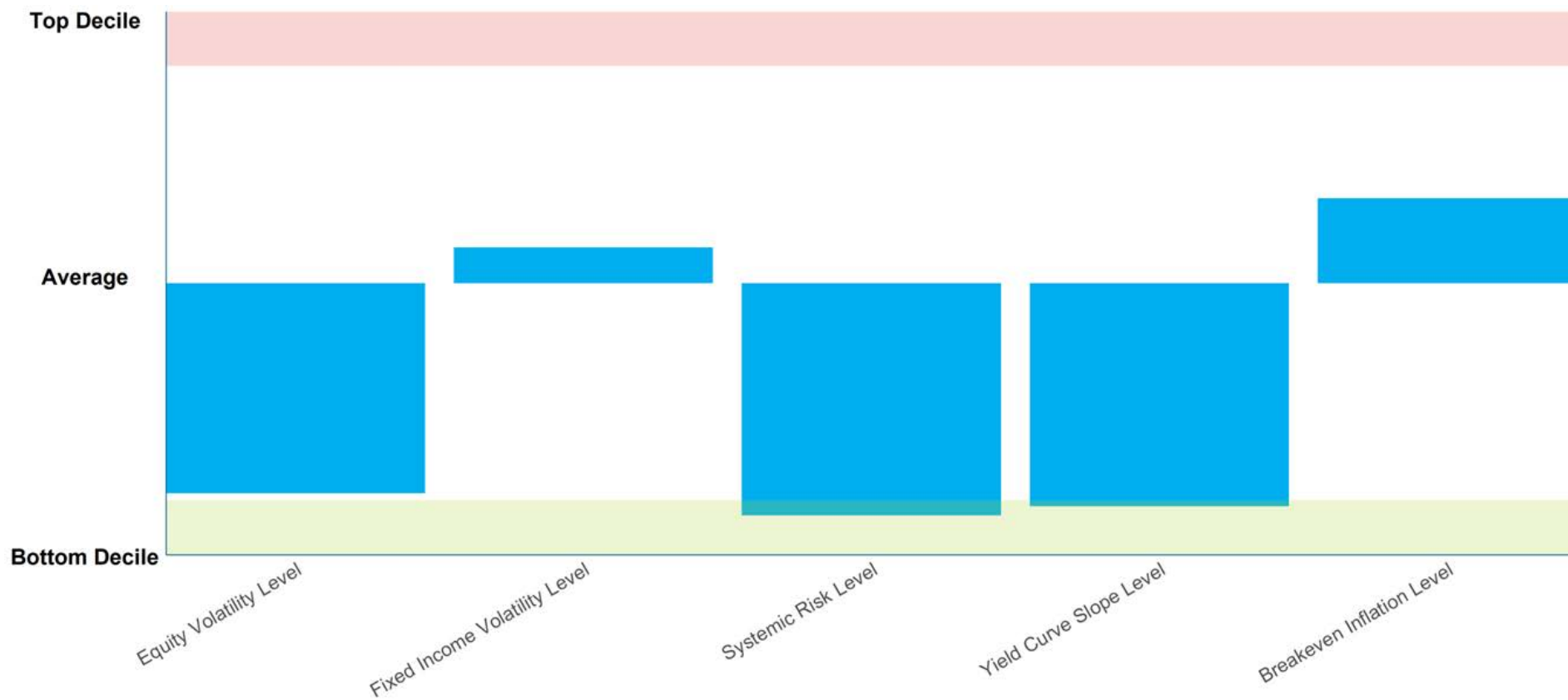


Valuation Metrics Dashboard (current measures relative to history)

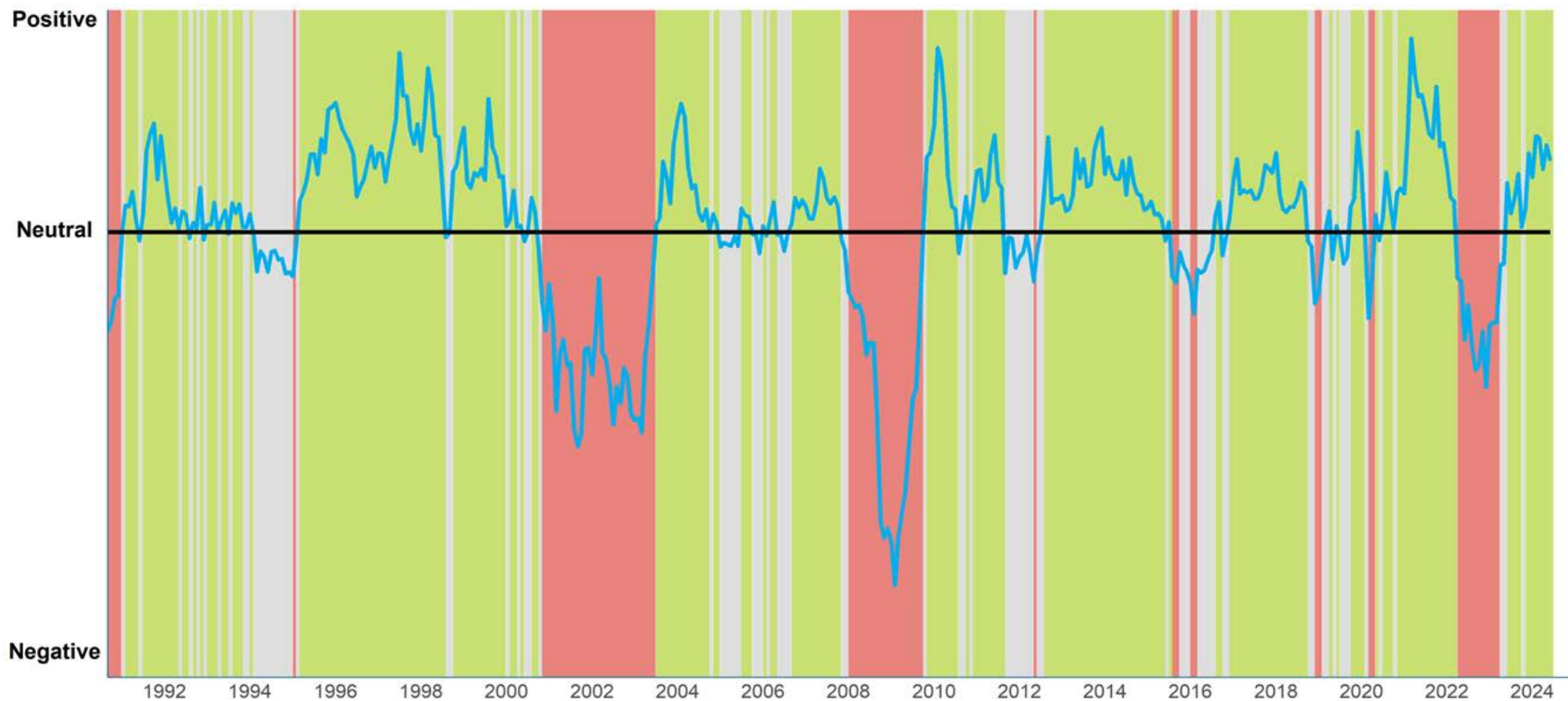


Other Market Metrics Dashboard

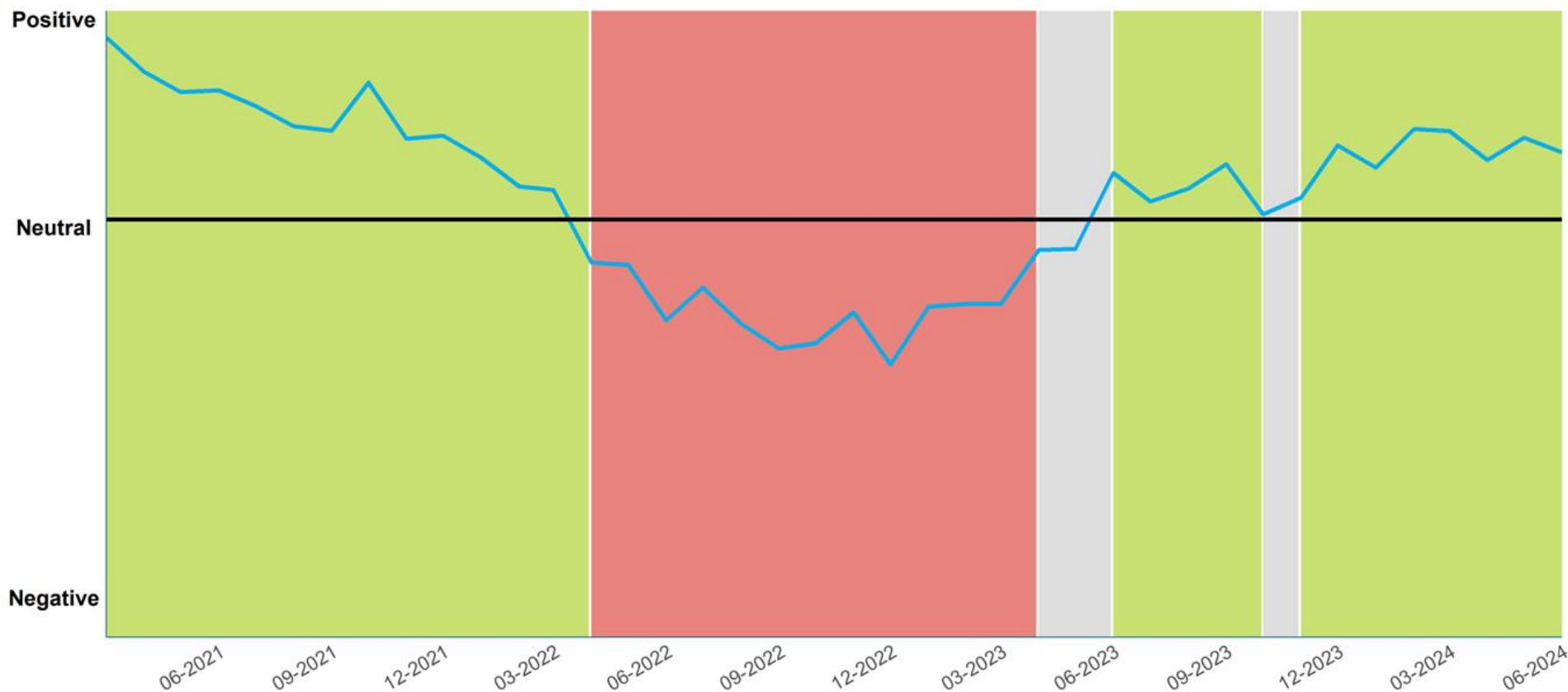
(current measures relative to history)



Market Sentiment Indicator (All History)

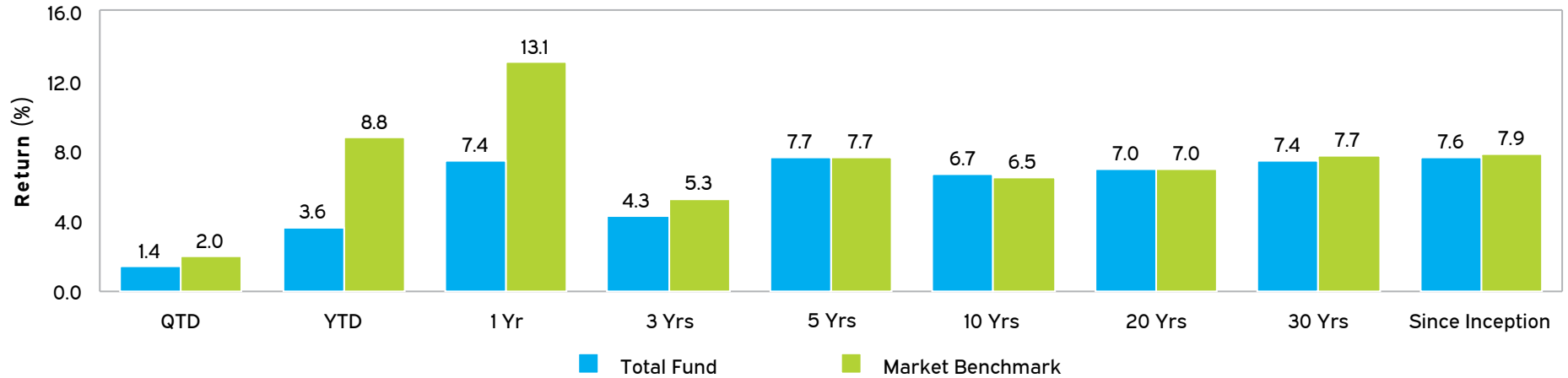


Market Sentiment Indicator (Last Three Years)

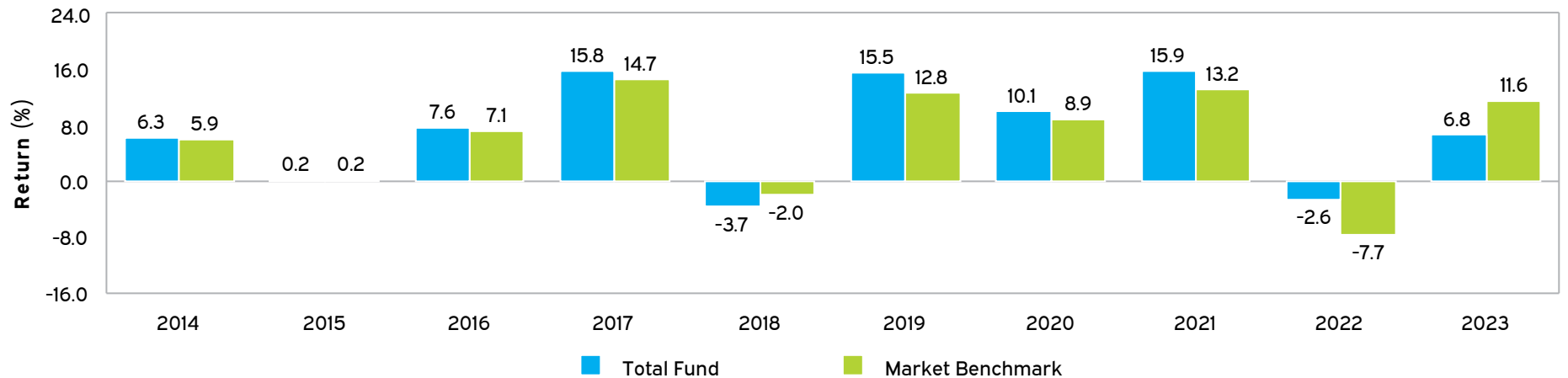


ERS Portfolio Review

Trailing Performance



Calendar Year Performance



Performance shown is net of fees. Inception date is 6/1/1990. Please see the Appendix for the Market Benchmark's composition history.

Performance Attribution¹ vs. Policy Benchmark – Quarter ending June 30, 2024

	Policy		Portfolio		Impact on Return		
	Allocation (%) ²	Return	Allocation (%)	Return	Weighting	Implementation	Total
Broad Growth	70.0	3.1	67.7	1.8	(0.0)	(0.9)	(0.9)
Global Equity	39.2	5.0	39.1	1.7	(0.0)	(1.3)	(1.3)
Global Credit	11.9	2.1	10.5	2.7	(0.0)	0.1	0.1
Real Assets	18.9	(0.4)	18.1	1.5	(0.0)	0.4	0.4
Diversifying Strategies	30.0	(0.6)	28.1	1.0	0.1	0.4	0.5
Liquid Defensive/Diversifying	26.1	(0.9)	24.1	0.8	0.1	0.4	0.4
Illiquid Diversifying	3.9	1.2	4.1	2.1	0.0	0.0	0.1
Other Assets	0.0	0.0	4.2	(0.1)	(0.1)	0.0	(0.1)
Total	100.0	2.0	100.0	1.5	0.0	(0.5)	(0.5)

¹ Performance attribution data is calculated and provided by BNY Mellon. BNY Mellon calculates performance attribution using gross of fees performance; net of fees calculation is not available. Total impacts may not sum to excess return due to rounding, rebalancing, and measurement frequencies.

² Policy allocation weights refer to the benchmark composition and may not match the policy target weights at all times.

Performance Attribution¹ vs. Policy Benchmark –Calendar Year-to-Date ending June 30, 2024

	Policy		Portfolio		Impact on Return		
	Allocation (%) ²	Return	Allocation (%)	Return	Weighting	Implementation	Total
Broad Growth	70.0	12.8	66.6	4.7	(0.0)	(5.4)	(5.5)
Global Equity	39.2	15.2	38.7	6.2	(0.0)	(3.4)	(3.4)
Global Credit	11.9	6.6	10.3	5.8	0.1	0.0	0.1
Real Assets	18.9	12.2	17.6	1.1	(0.1)	(2.0)	(2.1)
Diversifying Strategies	30.0	0.0	28.3	2.6	0.3	0.5	0.7
Liquid Defensive/Diversifying	26.1	(0.8)	24.0	2.4	0.3	0.5	0.8
Illiquid Diversifying	3.9	5.8	4.4	4.1	(0.1)	(0.0)	(0.1)
Other Assets	0.0	0.0	5.0	2.0	(0.3)	0.0	(0.3)
Total	100.0	8.9	100.0	3.8	(0.1)	(4.9)	(5.1)

¹ Performance attribution data is calculated and provided by BNY Mellon. BNY Mellon calculates performance attribution using gross of fees performance; net of fees calculation is not available. Total impacts may not sum to excess return due to rounding, rebalancing, and measurement frequencies.

² Policy allocation weights refer to the benchmark composition and may not match the policy target weights at all times.

Asset Class Performance Summary					
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)
Total Fund	1.4	7.4	4.3	7.7	7.4
<i>Market Benchmark</i>	<i>2.0</i>	<i>13.1</i>	<i>5.3</i>	<i>7.7</i>	<i>7.2</i>
Broad Growth	1.8	8.8	4.3	8.7	8.4
<i>Broad Growth Historical Benchmark</i>	<i>3.1</i>	<i>17.4</i>	<i>6.3</i>	<i>9.1</i>	<i>8.6</i>
Global Equity	1.7	11.9	5.7	11.7	11.2
<i>Global Equity Historical Benchmark</i>	<i>5.0</i>	<i>21.8</i>	<i>6.0</i>	<i>11.5</i>	<i>10.6</i>
Global Credit	2.7	11.7	4.7	6.7	6.0
<i>Global Credit Historical Benchmark</i>	<i>2.1</i>	<i>13.9</i>	<i>4.6</i>	<i>5.8</i>	<i>5.5</i>
Real Assets	1.5	0.9	5.5	6.4	6.8
<i>Real Assets Historical Benchmark</i>	<i>-0.4</i>	<i>9.3</i>	<i>10.4</i>	<i>7.0</i>	<i>7.0</i>
Diversifying Strategies	0.8	4.7	4.4	4.1	4.3
<i>Diversifying Strategies Historical Benchmark</i>	<i>-0.6</i>	<i>3.6</i>	<i>2.7</i>	<i>3.6</i>	<i>3.7</i>
Liquid Defensive/Diversifying	0.6	3.7	4.4	4.0	4.2
<i>Liquid Defensive Historical Benchmark</i>	<i>-0.9</i>	<i>1.5</i>	<i>0.1</i>	<i>2.4</i>	<i>2.3</i>
Illiquid Diversifying	2.0	10.8	3.5	--	--
<i>Illiquid Diversifying Historical Benchmark</i>	<i>1.2</i>	<i>12.0</i>	<i>7.6</i>	--	--

Total Fund performance shown is net of fees.

Relevant valuations may not have been available for all underlying Global Equity, Real Assets, and Diversifying Strategies managers at the time this report was produced; in such cases, most recent available data is used. Benchmarks for Broad Growth and its underlying components contain lagged index returns. Please see the Appendix for current and historical custom benchmark compositions.

Asset Class Performance Summary						
	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Global Equity	9,488,912,423	100.0	1.7	11.9	5.7	11.7
<i>Global Equity Historical Benchmark</i>			<i>5.0</i>	<i>21.8</i>	<i>6.0</i>	<i>11.5</i>
Public Equity	4,886,393,257	51.5	1.2	16.5	3.6	10.0
<i>MSCI AC World IMI Index (Net)</i>			<i>2.4</i>	<i>18.4</i>	<i>4.7</i>	<i>10.4</i>
Active Public Equity	3,430,246,011	36.2	0.3	14.6	2.4	9.2
Alliance Bernstein	623,243,840	6.6	1.5	14.2	2.2	--
Longview	800,163,927	8.4	-1.4	10.8	6.9	9.9
Parametric Equity Overlay	169,854,809	1.8	--	--	--	--
Wellington (Mid-Large Cap)	504,105,587	5.3	-2.2	20.4	3.5	--
<i>MSCI AC World IMI Index (Net)</i>			<i>2.4</i>	<i>18.4</i>	<i>4.7</i>	<i>10.4</i>
Wasatch	492,558,428	5.2	0.9	12.6	-2.6	10.1
Wellington (Small Cap)	674,177,237	7.1	2.1	17.1	3.3	9.4
<i>MSCI ACWI Small Cap (Net)</i>			<i>-1.6</i>	<i>10.6</i>	<i>-0.8</i>	<i>7.3</i>
Hillhouse China A Shares	166,142,183	1.8	3.9	3.6	--	--
<i>MSCI China A Onshore Index (Net)</i>			<i>-2.6</i>	<i>-10.6</i>	<i>-14.9</i>	<i>-0.6</i>
Passive Public Equity	1,456,147,246	15.3	3.3	20.9	6.3	11.5
BlackRock Alpha Tilt	648,970,609	6.8	3.8	22.5	7.0	11.7
Legal & General	807,176,637	8.5	3.0	19.6	5.7	11.1
<i>MSCI AC World IMI Index (Net)</i>			<i>2.4</i>	<i>18.4</i>	<i>4.7</i>	<i>10.4</i>

Performance shown is net of fees. Please see the Appendix for current and historical custom benchmark compositions.

Global Equity | As of June 30, 2024

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Private Equity	4,602,519,165	48.5	2.1	7.3	10.2	15.6
<i>Private Equity Historical Benchmark</i>			<i>7.8</i>	<i>23.9</i>	<i>8.2</i>	<i>12.5</i>
Hamilton Lane	4,264,365,335	44.9	2.3	7.8	10.3	15.8
HITIP I Stafford	10,128,264	0.1	1.2	21.9	-0.7	-3.0
HITIP II Stafford	40,695,080	0.4	-4.2	-8.9	8.1	8.7
HITIP III Stafford	37,422,048	0.4	-6.1	-8.6	0.2	--
Other Equity	249,908,438	2.6	1.3	3.7	10.0	13.0

Performance shown is net of fees. Please see the Appendix for current and historical custom benchmark compositions.

Asset Class Performance Summary						
	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Global Credit	2,753,175,150	100.0	2.7	11.7	4.7	6.7
<i>Global Credit Historical Benchmark</i>			<i>2.1</i>	<i>13.9</i>	<i>4.6</i>	<i>5.8</i>
Private Credit	1,625,625,777	59.0	2.6	9.6	5.5	--
Real Estate Credit	230,276,037	8.4	0.3	3.3	--	--
Avenue Asia	113,332,958	4.1	9.5	13.7	--	--
Carval Credit	226,147,063	8.2	2.3	9.2	5.6	--
Fortress Lending	146,178,517	5.3	3.4	16.2	--	--
Jefferies Direct Lending II Lafayette	26,138,448	0.9	10.3	22.2	--	--
Square USA	65,546,455	2.4	3.5	6.8	--	--
NB Private Debt Fund V (A), L.P OHA	20,258,701	0.7	3.0	--	--	--
Tactical	164,116,714	6.0	1.5	8.9	7.1	--
Orthogon Partners III	3,071,904	0.1	-12.9	-14.8	--	--
PIMCO Private Income Fund	106,489,208	3.9	2.7	7.3	--	--
SilverRock Credit	266,467,709	9.7	1.6	15.1	7.2	--
SilverRock 2022	257,602,062	9.4	2.4	5.2	--	--
<i>Private Credit Historical Benchmark</i>			<i>2.3</i>	<i>14.6</i>	<i>5.0</i>	<i>--</i>
Public Credit	1,127,549,372	41.0	2.8	16.6	4.9	6.6
HPS Credit	935,938,035	34.0	1.3	15.0	4.4	6.7
Parametric Credit Overlay	191,611,337	7.0	--	--	--	--
<i>Public Credit Historical Benchmark</i>			<i>1.7</i>	<i>11.7</i>	<i>3.7</i>	<i>5.1</i>

Performance shown is net of fees. Please see the Appendix for current and historical custom benchmark compositions.

Asset Class Performance Summary						
	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Real Assets	4,409,493,852	100.0	1.5	0.9	5.5	6.4
<i>Real Assets Historical Benchmark</i>			<i>-0.4</i>	<i>9.3</i>	<i>10.4</i>	<i>7.0</i>
Real Estate	2,024,625,077	45.9	-0.4	-4.3	4.6	6.1
<i>Real Estate Historical Benchmark</i>			<i>-1.5</i>	<i>8.5</i>	<i>10.2</i>	<i>6.2</i>
Core Real Estate	1,083,676,185	24.6	-0.6	-3.5	5.7	7.3
<i>Core Real Estate Historical Benchmark</i>			<i>-1.5</i>	<i>8.2</i>	<i>9.8</i>	<i>7.2</i>
NonCore Real Estate	940,948,892	21.3	-0.2	-5.2	3.5	4.9
<i>NonCore Real Estate Historical Benchmark</i>			<i>-1.5</i>	<i>8.8</i>	<i>10.7</i>	<i>4.4</i>
Agriculture	389,151,663	8.8	0.7	3.1	--	--
<i>Agriculture Historical Benchmark</i>			<i>0.9</i>	<i>0.7</i>	<i>--</i>	<i>--</i>
Timber	232,086,998	5.3	17.0	17.1	13.8	7.4
<i>Timber Historical Benchmark</i>			<i>3.9</i>	<i>17.7</i>	<i>13.6</i>	<i>8.5</i>
Infrastructure	1,763,630,114	40.0	2.1	7.3	7.1	12.7
<i>Infrastructure Historical Benchmark</i>			<i>-0.4</i>	<i>15.7</i>	<i>12.0</i>	<i>10.0</i>
Private Infrastructure	599,330,986	13.6	2.6	6.0	6.7	12.5
Core Infrastructure Value-Add	414,175,203	9.4	2.3	--	--	--
Infrastructure	185,155,783	4.2	3.3	--	--	--
Public Infrastructure	466,571,893	10.6	-0.1	--	--	--
Other Real Assets	697,727,235	15.8	3.2	6.6	--	--

Performance shown is net of fees. Both performance and benchmark data for Real Assets component are sourced from BNY Mellon's time-weighted data. Please see the Appendix for current and historical custom benchmark compositions.

Asset Class Performance Summary						
	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Liquid Defensive/Diversifying	5,782,980,167	100.0	0.6	3.7	4.4	4.0
<i>Liquid Defensive Historical Benchmark</i>			<i>-0.9</i>	<i>1.5</i>	<i>0.1</i>	<i>2.4</i>
Defensive Return Capture	639,681,004	11.1	-1.4	-2.8	2.6	--
CRO FRM Master Account	904	0.0				
Lombard Odier	14,236,594	0.2	-0.3	-1.8	0.2	-2.7
P/E Global Macro	214,094,459	3.7	0.3	9.3	15.8	3.4
Saba	181,763,110	3.1	-5.1	-16.6	--	--
36 South Cap Adv	229,585,937	4.0	1.0	-4.8	--	--
<i>Defensive Return Capture Historical Benchmark</i>			<i>0.6</i>	<i>4.2</i>	<i>4.4</i>	<i>4.0</i>
Discretionary Alpha	1,104,060,866	19.1	1.0	9.7	5.5	3.5
Aequim Relative Value Arbitrage	292,871,068	5.1	1.6	8.3	10.1	--
Aristeia Relative Value Arbitrage	224,580,037	3.9	-0.4	6.9	4.5	--
Melqart Relative Value Arbitrage	225,079,055	3.9	-1.2	16.2	--	--
Monashee Relative Value Arbitrage	196,585,025	3.4	-0.6	8.9	-2.0	--
Myam Asian Opportunity	164,945,680	2.9	7.0	16.4	--	--
<i>Discretionary Alpha Historical Benchmark</i>			<i>0.6</i>	<i>4.2</i>	<i>4.3</i>	<i>4.0</i>
Intermediate Duration Treasury	1,726,339,385	29.9	0.6	--	--	--
Bank of Hawaii	275,709,614	4.8	0.5	3.3	-1.5	0.3
First Hawaiian Bank	169,666,877	2.9	0.5	3.1	-1.7	0.1
Parametric Treasury Overlay	135,185,189	2.3	--	--	--	--
SLC Intermediate Treasury	1,145,777,705	19.8	0.7	--	--	--
<i>Blmbg. U.S. Treasury: Intermediate</i>			<i>0.6</i>	<i>3.4</i>	<i>-1.4</i>	<i>0.3</i>

Performance shown is net of fees. Please see the Appendix for current and historical custom benchmark compositions.

Liquid Defensive/Diversifying | As of June 30, 2024

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Long Duration Treasury	636,756,963	11.0	-1.3	-5.1	-6.4	-0.1
SLC Long Treasury	636,756,963	11.0	-1.3	-5.0	-9.1	--
<i>Long Treasury Historical Benchmark</i>			<i>-1.8</i>	<i>-5.6</i>	<i>-9.3</i>	<i>-3.0</i>
Systematic Trend Following	1,676,141,949	29.0	1.3	2.2	9.9	10.1
AlphaSimplex	244,943,102	4.2	1.2	-3.3	11.3	13.8
Aspect	258,935,340	4.5	2.2	6.3	19.2	13.2
Brevan Howard Disc Global Macro	255,439,449	4.4	-0.9	-7.2	--	--
Broad Reach	206,524,635	3.6	4.1	6.3	--	--
Crabel Advanced Trend	243,220,131	4.2	2.7	0.0	5.5	9.4
Graham Quant Macro	266,753,936	4.6	2.6	25.0	16.2	11.5
Mount Lucas	200,325,356	3.5	-1.8	-3.3	0.4	3.5
<i>MLM Global Index EV Blend 15V</i>			<i>-3.1</i>	<i>0.0</i>	<i>2.3</i>	<i>4.4</i>

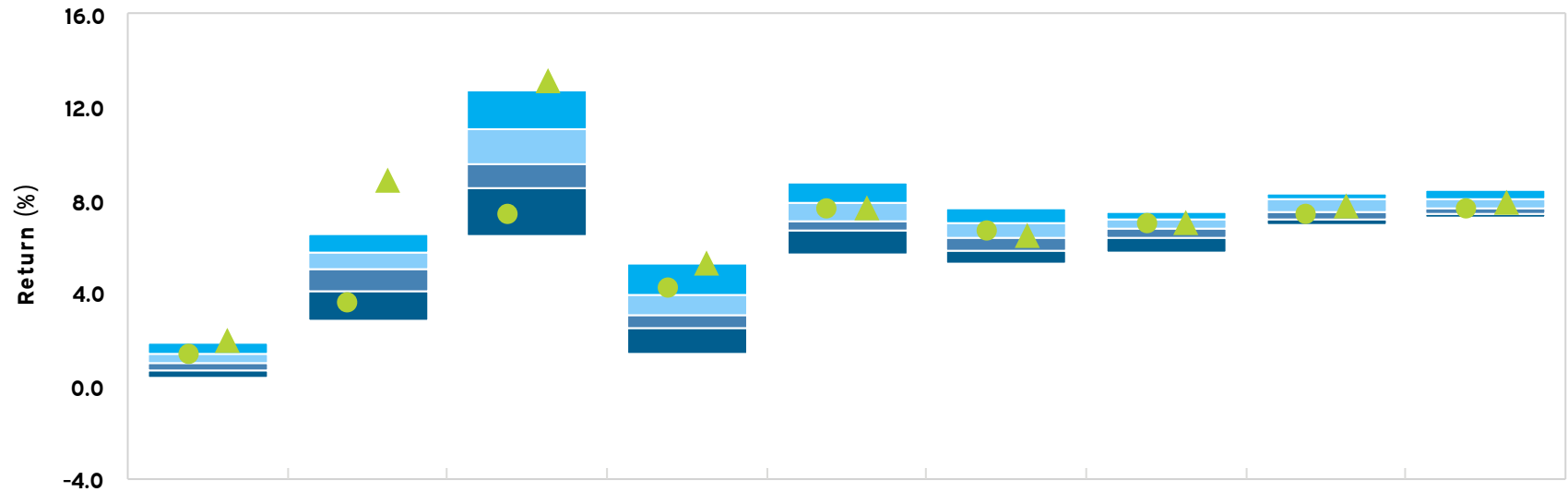
Performance shown is net of fees. Please see the Appendix for current and historical custom benchmark compositions.

Asset Class Performance Summary					
	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)
Illiquid Diversifying	925,464,698	100.0	2.0	10.8	3.5
<i>Illiquid Diversifying Historical Benchmark</i>			<i>1.2</i>	<i>12.0</i>	<i>7.6</i>
Idiosyncratic Return Capture	458,962,937	49.6	1.9	6.9	4.8
BlackStone Mauna	97,034,600	10.5	1.8	10.5	7.3
Cloverlay Leahi	194,248,420	21.0	3.9	5.0	--
Parabellum Partners III	42,225,623	4.6	-1.5	-1.5	--
Stable	125,454,294	13.6	0.6	3.9	--
<i>Idiosyncratic Return Capture Historical Benchmark</i>			<i>1.2</i>	<i>10.5</i>	<i>7.1</i>
Insurance Linked	466,501,761	50.4	2.2	16.1	2.5
Nephila Ulu	217,943,710	23.5	2.3	19.4	2.5
Pillar Enso	248,558,051	26.9	2.2	13.3	2.5
<i>Swiss Re Global Catastrophe Bond Index (Hedged)</i>			<i>1.2</i>	<i>14.7</i>	<i>8.5</i>

Performance shown is net of fees. Please see the Appendix for current and historical custom benchmark compositions.

Plan Sponsor Peer Group Analysis

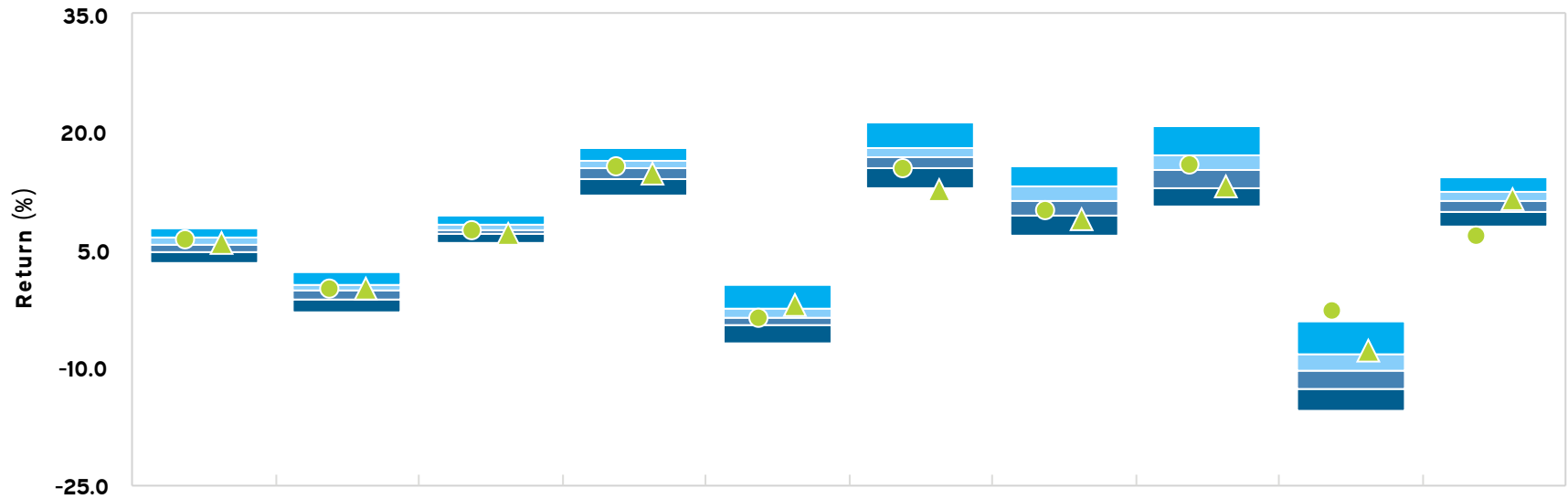
Peer Group Performance Comparison Trailing Periods Ending June 30, 2024



	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	20 Yrs	30 Yrs	Since Inception
● Total Fund	1.4 (25)	3.6 (87)	7.4 (85)	4.3 (14)	7.7 (33)	6.7 (33)	7.0 (37)	7.4 (53)	7.6 (50)
▲ Market Benchmark	2.0 (3)	8.8 (1)	13.1 (3)	5.3 (5)	7.7 (33)	6.5 (47)	7.0 (36)	7.7 (41)	7.9 (40)
5th Percentile	1.9	6.5	12.7	5.3	8.8	7.6	7.5	8.3	8.5
1st Quartile	1.4	5.8	11.1	3.9	7.9	7.1	7.2	8.0	8.0
Median	1.0	5.1	9.6	3.0	7.1	6.4	6.8	7.5	7.6
3rd Quartile	0.7	4.1	8.6	2.5	6.7	5.8	6.4	7.2	7.4
95th Percentile	0.3	2.8	6.5	1.4	5.7	5.2	5.8	6.9	7.2
Population	70	70	70	65	65	62	48	13	8

Calculation based on monthly periodicity. Fiscal year begins on July 1. The plan sponsor peer group, InvMetrics Public DB >\$1B Net universe, includes BNY Mellon Total Public Fund >\$1B universe and Investment Metrics client data. Parenthesized numbers represent peer group percentile ranking.

Peer Group Performance Comparison Calendar Year Returns



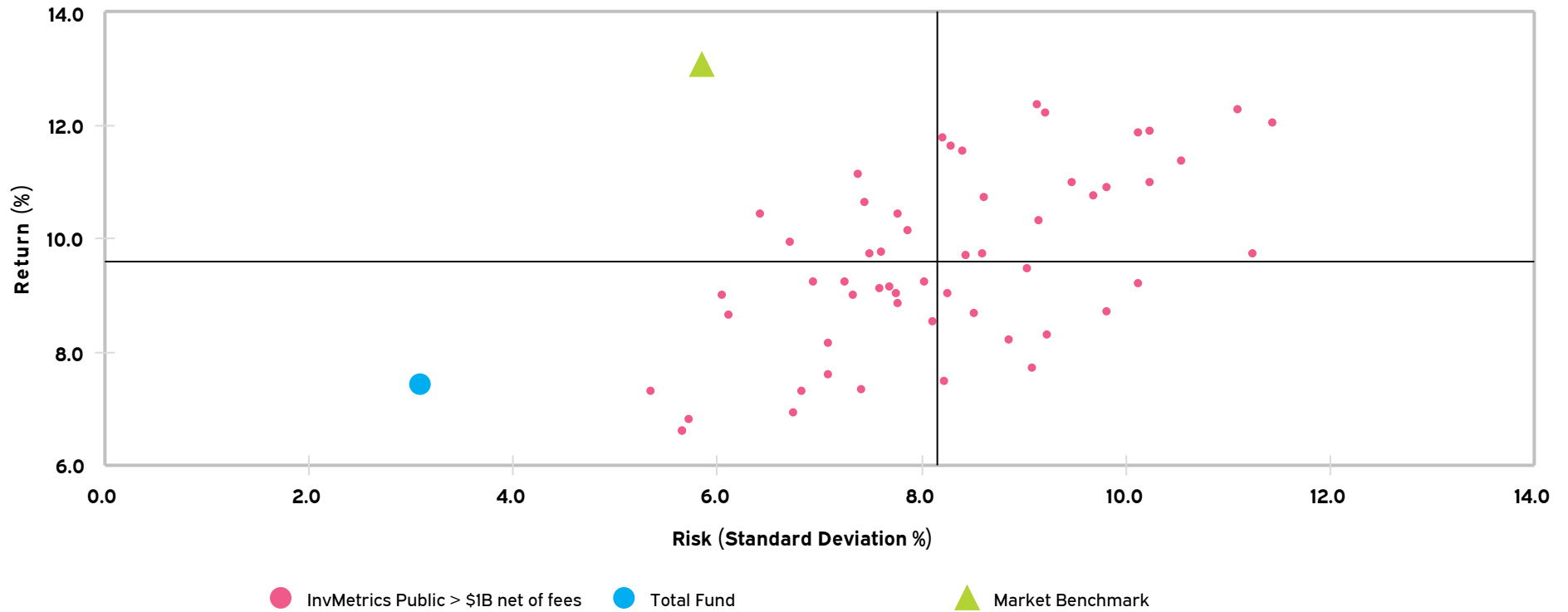
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
● Total Fund	6.3 (34)	0.2 (36)	7.6 (50)	15.8 (42)	-3.7 (55)	15.5 (77)	10.1 (70)	15.9 (44)	-2.6 (4)	6.8 (98)
▲ Market Benchmark	5.9 (42)	0.2 (37)	7.1 (71)	14.7 (61)	-2.0 (22)	12.8 (96)	8.9 (82)	13.2 (73)	-7.7 (20)	11.6 (42)
5th Percentile	7.9	2.2	9.5	18.0	0.5	21.2	15.7	20.7	-4.0	14.4
1st Quartile	6.6	0.7	8.2	16.3	-2.3	17.9	13.1	17.2	-8.2	12.5
Median	5.7	-0.2	7.6	15.4	-3.5	16.8	11.2	15.2	-10.3	11.3
3rd Quartile	4.7	-1.2	7.0	14.1	-4.5	15.5	9.3	13.0	-12.6	9.8
95th Percentile	3.4	-2.9	5.8	12.0	-6.8	12.9	6.8	10.6	-15.5	7.9
Population	166	167	171	176	166	189	214	205	173	175

Calculation based on monthly periodicity. The plan sponsor peer group, InvMetrics Public DB >\$1B Net universe, includes BNY Mellon Total Public Fund >\$1B universe and Investment Metrics client data. Parenthesized numbers represent peer group percentile ranking.

	Risk/Return Statistics									
	1 Yr		3 Yrs		5 Yrs		7 Yrs		10 Yrs	
	Total Fund	Benchmark	Total Fund	Benchmark	Total Fund	Benchmark	Total Fund	Benchmark	Total Fund	Benchmark
RETURN SUMMARY STATISTICS										
Return	7.4	13.1	4.3	5.3	7.7	7.7	7.4	7.2	6.7	6.5
Excess Performance	-5.7	0.0	-1.0	0.0	0.0	0.0	0.1	0.0	0.3	0.0
RISK SUMMARY STATISTICS										
Standard Deviation	3.1	5.9	4.1	6.2	6.3	6.8	6.3	6.4	6.5	6.5
Beta	0.4	1.0	0.5	1.0	0.8	1.0	0.9	1.0	0.9	1.0
RISK/RETURN SUMMARY STATISTICS										
Information Ratio	-1.2	-	-0.3	-	0.0	-	0.0	-	0.1	-
Sharpe Ratio	0.6	1.2	0.3	0.4	0.8	0.8	0.8	0.8	0.8	0.8
Tracking Error	4.4	0.0	3.9	0.0	3.4	0.0	3.0	0.0	2.6	0.0

Net of fees performance is shown or used in calculating the statistics on this page.

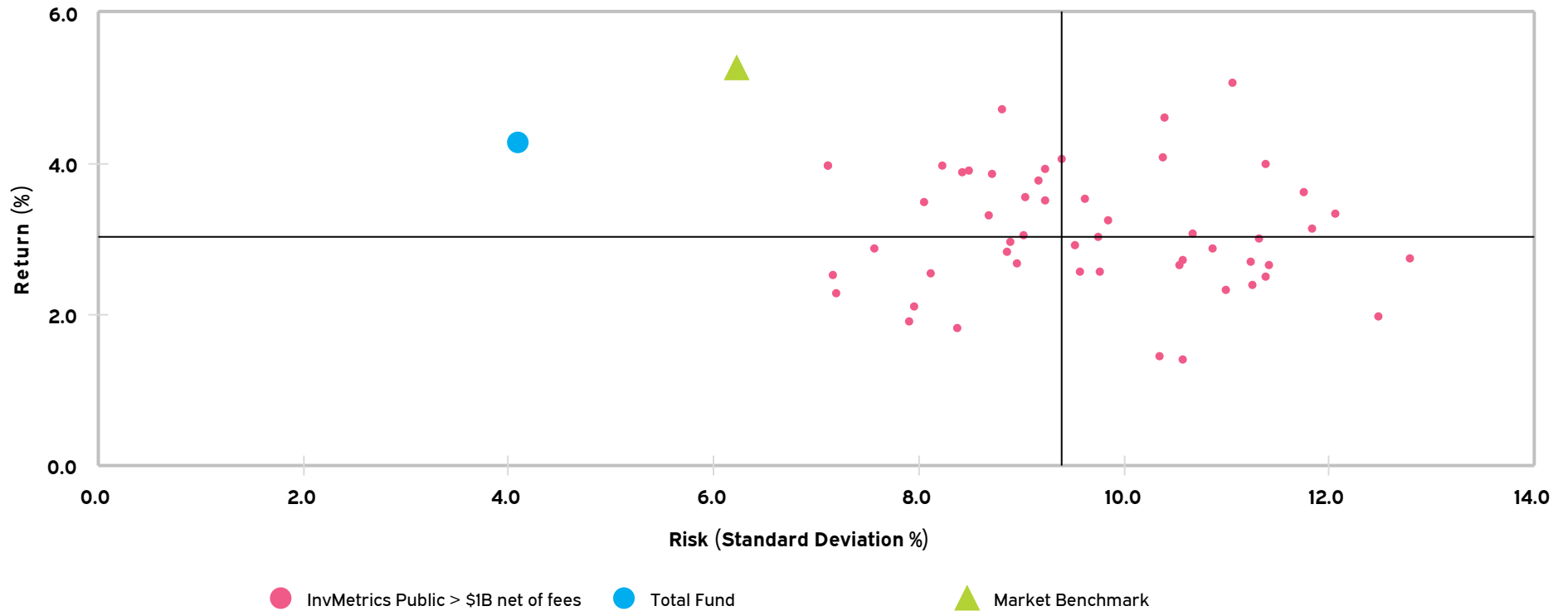
Annualized Return vs. Annualized Standard Deviation 1 Year ending June 30, 2024



	Return	Standard Deviation	Sharpe Ratio	Information Ratio
Total Fund	7.4 (85)	3.1 (1)	0.6 (26)	-1.2 (98)
Market Benchmark	13.1 (3)	5.9 (10)	1.2 (1)	-
Peer Benchmark Median	9.6	8.2	0.5	-0.5

Peer Benchmark represents the plan sponsor peer group Peer Benchmark Net universe and includes BNY Mellon Total Public Fund >\$1B universe and Investment Metrics client data. Parenthesized numbers represent peer group percentile ranking.

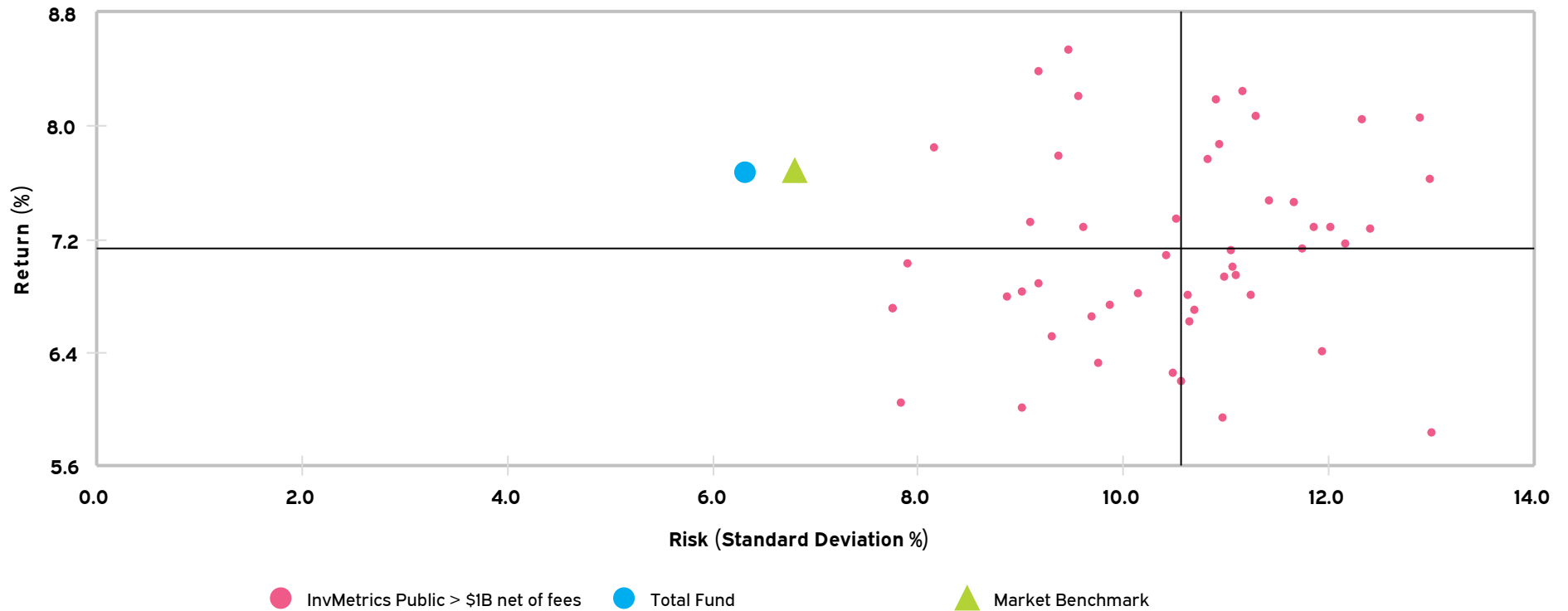
Annualized Return vs. Annualized Standard Deviation
3 Years ending June 30, 2024



	Return	Standard Deviation	Sharpe Ratio	Information Ratio
Total Fund	4.3 (14)	4.1 (1)	0.3 (9)	-0.3 (49)
Market Benchmark	5.3 (5)	6.2 (2)	0.4 (5)	-
Peer Benchmark Median	3.0	9.4	0.0	-0.3

Peer Benchmark represents the plan sponsor peer group Peer Benchmark Net universe and includes BNY Mellon Total Public Fund >\$1B universe and Investment Metrics client data. Parenthesized numbers represent peer group percentile ranking.

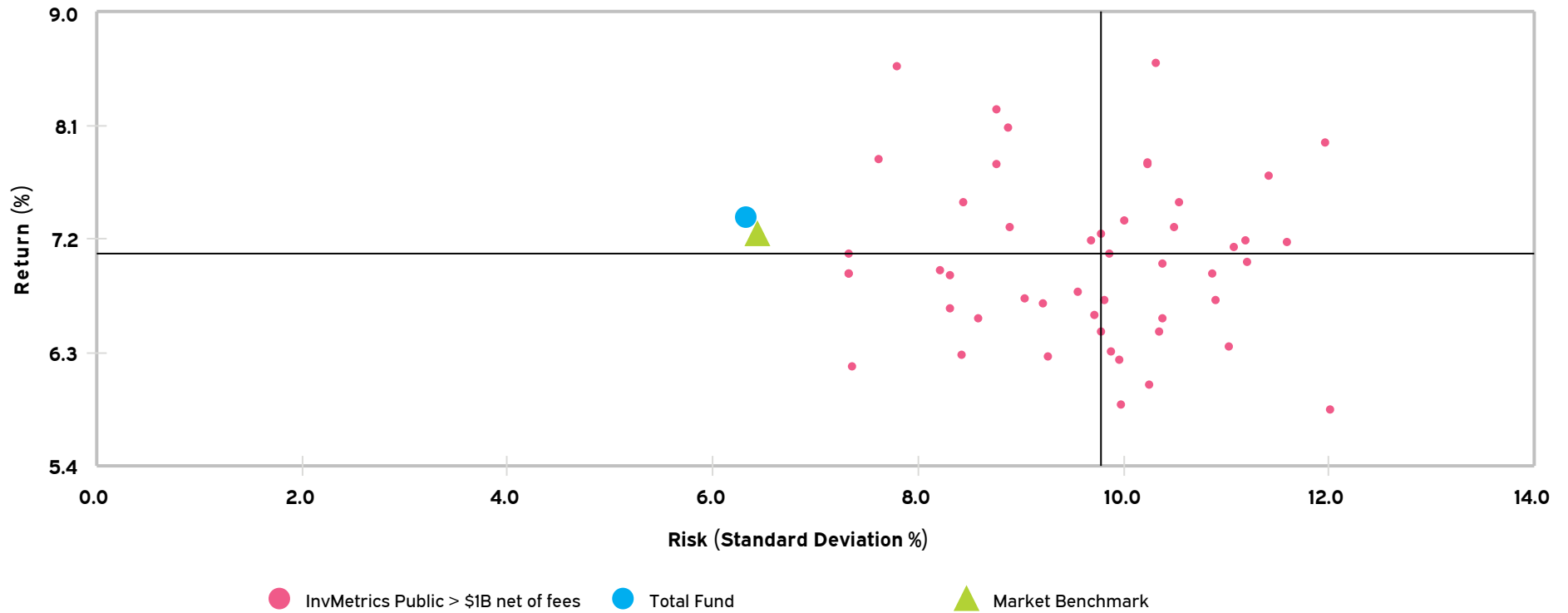
Annualized Return vs. Annualized Standard Deviation
5 Years ending June 30, 2024



	Return	Standard Deviation	Sharpe Ratio	Information Ratio
Total Fund	7.7 (33)	6.3 (1)	0.8 (3)	0.0 (48)
Market Benchmark	7.7 (33)	6.8 (1)	0.8 (7)	-
Peer Benchmark Median	7.1	10.6	0.5	0.0

Peer Benchmark represents the plan sponsor peer group Peer Benchmark Net universe and includes BNY Mellon Total Public Fund >\$1B universe and Investment Metrics client data. Parenthesized numbers represent peer group percentile ranking.

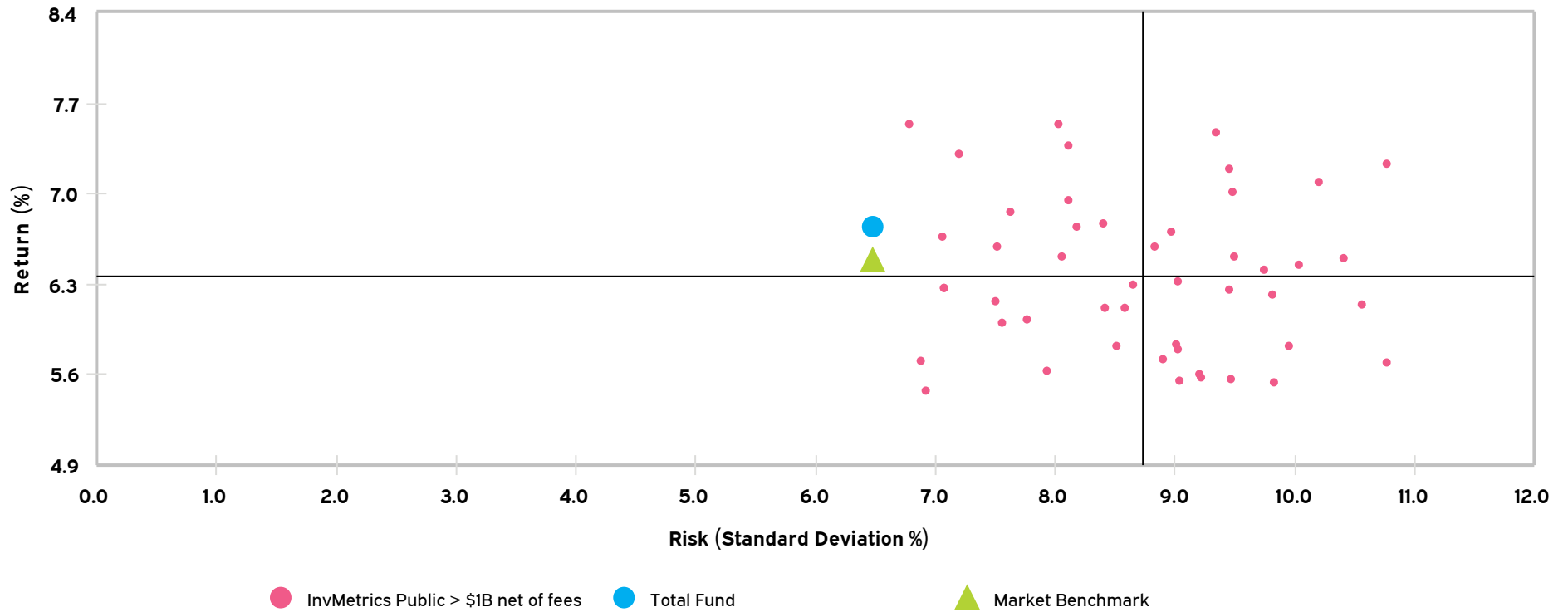
Annualized Return vs. Annualized Standard Deviation 7 Years ending June 30, 2024



	Return	Standard Deviation	Sharpe Ratio	Information Ratio
Total Fund	7.4 (36)	6.3 (1)	0.8 (7)	0.0 (48)
Market Benchmark	7.2 (41)	6.4 (1)	0.8 (8)	-
Peer Benchmark Median	7.1	9.8	0.5	0.0

Peer Benchmark represents the plan sponsor peer group Peer Benchmark Net universe and includes BNY Mellon Total Public Fund >\$1B universe and Investment Metrics client data. Parenthesized numbers represent peer group percentile ranking.

Annualized Return vs. Annualized Standard Deviation
10 Years ending June 30, 2024



	Return	Standard Deviation	Sharpe Ratio	Information Ratio
Total Fund	6.7 (33)	6.5 (2)	0.8 (10)	0.1 (32)
Market Benchmark	6.5 (47)	6.5 (2)	0.8 (12)	-
Peer Benchmark Median	6.4	8.7	0.6	0.0

Peer Benchmark represents the plan sponsor peer group Peer Benchmark Net universe and includes BNY Mellon Total Public Fund >\$1B universe and Investment Metrics client data. Parenthesized numbers represent peer group percentile ranking.

Appendix

Definition of Benchmarks

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

Bloomberg Global High Yield is a multi-currency measure of the global high yield debt market. The Index is comprised of the US High Yield, the Pan-European High Yield, and Emerging Markets Hard Currency High Yield Indices. The high yield and emerging markets sub-components are mutually exclusive.

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

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

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

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

Bloomberg World Govt Inflation-Linked Bond (WGILB) measures the performance of the major government inflation-linked bond markets. The index is designed to include only those markets in which a global government linker fund is likely and able to invest. To be included a market must have aggregate issuance of \$4 billion or more and have minimum rating of A3/A- for G7 and euro-zone issuers, Aa3/AA- otherwise, using the middle rating from Moody's, S&P and Fitch ("two out of three" rule). The index is available in local currency and in most major currencies hedged or un-hedged.

Definition of Benchmarks (continued)

CBOE S&P 500 Buy Write Index (BXM) is a benchmark index designed to track the performance of a hypothetical buy-write strategy on the S&P 500 Index. Announced in April 2002, the BXM Index was developed by the CBOE in cooperation with Standard & Poor's. To help in the development of the BXM Index, the CBOE commissioned Professor Robert Whaley to compile and analyze relevant data from the time period from June 1988 through December 2001. Data on daily BXM prices now is available from June 30, 1986, to the present time (see below). The BXM is a passive total return index based on (1) buying an S&P 500 stock index portfolio, and (2) "writing" (or selling) the near-term S&P 500 Index (SPXSM) "covered" call option, generally on the third Friday of each month. The SPX call written will have about one month remaining to expiration, with an exercise price just above the prevailing index level (i.e., slightly out of the money). The SPX call is held until expiration and cash settled, at which time a new one-month, near-the-money call is written. Please visit the BXM FAQ for more information about the construction of the index.

CBOE S&P 500 Put Write Index (PUT) is a benchmark index designed to track the performance of a hypothetical cash-secured put-write strategy on the S&P 500 Index. Announced in June 2007, 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 Treasury Bill rates. The number of puts sold varies from month to month, but is limited so that the amount held in Treasury Bills can finance the maximum possible loss from final settlement of the S&P 500 Index puts.

ICE BofA 3-Month US Treasury Bills (90-Day T-bills) tracks the performance of US Treasury bills with 3-month maturity.

MLM Global Index is the first passive index of returns to futures investing. The objective of the Index strategy is to provide pure systematic trending following exposure in a consistent, efficient, and cost effective manner which captures the price risk premium offered by those who seek price certainty.

MSCI ACWI is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. The Index captures large and mid-cap representation across 47 country indices comprising 23 developed and 24 emerging market country indices. The developed market country indices 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, the United Kingdom and the United States. The emerging market country indices included are: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russia, Qatar, South Africa, Taiwan, Thailand, Turkey, and the United Arab Emirates.

MSCI ACWI ex US ND comprises both developed and emerging markets less the United States. The index consisted of 22 countries classified as developed markets and 24 classified as emerging markets. This series approximates the minimum possible dividend reinvestment. The dividend is reinvested after deduction of withholding tax, applying the rate to non-resident individuals who do not benefit from double taxation treaties. MSCI uses withholding tax rates applicable to Luxembourg holding companies, as Luxembourg applies the highest rates.

MSCI ACWI IMI captures large, mid, and small cap representation across 23 developed markets and 24 emerging markets countries. The Index is comprehensive, covering approximately 99% of the global equity investment opportunity set.

MSCI ACWI Minimum Volatility is a global equity (developed and emerging markets) index constructed by MSCI that utilizes an estimated security co-variance matrix to produce an index that has the lowest absolute volatility for a given set of constraints. The estimated security co-variance matrix is based on the relevant Barra multi-factor equity model.

Definition of Benchmarks (continued)

MSCI ACWI Small Cap is a free float-adjusted market capitalization weighted index captures the small cap representation across 23 developed markets and 24 emerging markets countries.

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

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

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

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

MSCI USA is a free float adjusted market capitalization index that is designed to measure large- and mid-cap US equity market performance. The MSCI USA Index is member of the MSCI Global Equity Indices and represents the US equity portion of the global benchmark MSCI ACWI Index.

MSCI World ex US ND is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets. The MSCI World Index consists of the following 22 developed market country indices: 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.

Morningstar Leveraged Loan (formerly **S&P Leveraged Loan**) is a capitalization-weighted syndicated loan index based upon market weightings, spreads, and interest payments. The Index covers the US market back to 1997.

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

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

NCREIF Timberland Index is a quarterly time series composite return measure of investment performance of a large pool of individual timber properties acquired in the private market for investment purposes only. All properties in the Timberland Index have been acquired, at least in part, on behalf of tax-exempt institutional investors - the great majority being pension funds. As such, all properties are held in a fiduciary environment.

Definition of Benchmarks (continued)

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

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

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

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

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

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

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

S&P 500 is an index of 500 stocks chosen for market size, liquidity and industry grouping, among other factors. The S&P 500 is designed to be a leading indicator of U.S. equities and is meant to reflect the risk/return characteristics of the large cap universe.

Plan Structure Evolution

Prior to 10/2014, Employees' Retirement System of the State of Hawaii ("ERS" or "Plan") had an allocation policy based asset classes (such as US Large Cap Equity, Developed International Equity, Real Estate). Since 10/2014, the ERS has adopted a risk-based, functional framework which uses strategic/functional classes designed to achieve a certain goal and/or be exposed to a specific set of macroeconomic risks through various underlying asset classes and strategies. Since then, the plan structure and the nomenclature of its components have evolved over time to fit the ERS's needs. This page summarizes this evolution since 10/2014 on a high level.

10/2014-06/2016	07/2016-03/2017	04/2017-06/2020	07/2020-12/2023	01/2024-Current
Total Fund → Broad Growth → Principal Protection → Real Return → Real Estate	Total Fund → Broad Growth → Principal Protection → Real Return	Total Fund → Broad Growth → Principal Protection → Real Return → Crisis Risk Offset (CRO)	Total Fund → Broad Growth → Diversifying Strategies	
Broad Growth → Growth-Oriented → Private Growth → Stabilized Growth	Broad Growth → Traditional Growth → Private Growth → Stabilized Growth		Broad Growth → Public Growth <ul style="list-style-type: none"> • Traditional Growth • Stabilized Growth → Private Growth → Real Assets	Broad Growth → Global Equity → Global Credit → Real Assets
Real Estate				
Real Return → Public Inflation-Linked → Private Inflation-Linked				
Principal Protection			Diversifying Strategies → Liquid Defensive <ul style="list-style-type: none"> • Treasury / Agency Duration • Systematic Trend • Defensive Return → Liquid Diversifying <ul style="list-style-type: none"> • Alternative Return • Relative Value → Illiquid Diversifying <ul style="list-style-type: none"> • Insurance-Linked • Idiosyncratic Return 	Diversifying Strategies → Liquid Defensive / Diversifying <ul style="list-style-type: none"> • Systematic Trend • Defensive Return • Intermediate Duration • Long Duration • Discretionary Alpha → Illiquid Diversifying <ul style="list-style-type: none"> • Insurance-Linked • Idiosyncratic Return
		Crisis Risk Offset (CRO) → Treasury Duration Capture → Systematic Trend Following → Alternative Return Capture		

Custom Benchmarks

This section includes the compositions of custom benchmarks currently in use. Policy Benchmarks for Total Fund, Broad Growth, and Diversifying Strategies are presented first, followed by the benchmarks of their lower-level composites sorted according to the Plan structure. Discontinued custom benchmarks are listed separately afterward and are noted as such when they appear in this section.

Total Fund Policy Benchmark

From	To	Total Fund Policy Benchmark
01/01/2024	Current	70% Broad Growth Benchmark, 30% Diversifying Strategies Benchmark
07/01/2022	12/31/2023	65% Broad Growth Benchmark, 35% Diversifying Strategies Benchmark
07/01/2021	06/30/2022	67.5% Broad Growth Benchmark, 32.5% Diversifying Strategies Benchmark
07/01/2020	06/30/2021	72% Broad Growth Benchmark, 28% Diversifying Strategies Benchmark
01/01/2019	06/30/2020	68% Broad Growth Benchmark, 16% Crisis Risk Offset Benchmark, 8% Principal Protection Benchmark, 8% Real Return Benchmark
01/01/2018	12/31/2018	72% Broad Growth Benchmark, 13% Crisis Risk Offset Benchmark, 8% Principal Protection Benchmark, 7% Real Return Benchmark
04/01/2017	12/31/2017	76% Broad Growth Benchmark, 10% Crisis Risk Offset Benchmark, 9% Principal Protection Benchmark, 5% Real Return Benchmark
07/01/2016	03/31/2017	83% Broad Growth Benchmark, 12% Principal Protection Benchmark, 5% Real Return Benchmark
10/01/2014	06/30/2016	76% Broad Growth Benchmark, 12% Principal Protection Benchmark, 5% Real Return Benchmark, 7% NCREIF Property Index (Qtr Lagged)
From	To	Total Fund Asset-Based Policy Benchmarks (prior to the Functional Allocation Framework)
07/01/2013	09/30/2014	30% Russell 3000, 26% MSCI AC World ex US (Net), 15% Bloomberg Universal, 5% Bloomberg Multiverse ex US (Hedged), 7% NCREIF Property Index (Qtr Lagged), 7% ERS Private Equity Performance, 5% ERS Real Return Performance, 5% CBOE S&P 500 BuyWrite (BXM)
07/01/2012	06/30/2013	30% Russell 3000, 26% MSCI AC World ex US (Net), 15.75% Bloomberg Universal, 5.25% Bloomberg Multiverse ex US (Hedged), 7% NCREIF Property Index (Qtr Lagged), 6% ERS Private Equity Performance, 5% ERS Real Return Performance, 5% CBOE S&P 500 BuyWrite (BXM)
10/01/2011	06/30/2012	35% Russell 3000, 18% MSCI World ex US, 3% MSCI Emerging Markets, 18% Bloomberg Universal, 6% Bloomberg Multiverse ex US (Hedged), 7% NCREIF Property Index (Qtr Lagged), 5% ERS Private Equity Performance, 5% ERS Real Return Performance, 3% CBOE S&P 500 BuyWrite (BXM)
07/01/2011	09/30/2011	41% Russell 3000, 14.5% MSCI World ex US, 2.5% MSCI Emerging Markets (Net), 21% Bloomberg Universal, 7% Bloomberg Multiverse ex US (Hedged), 9% NCREIF Property Index (Qtr Lagged), 5% ERS Alternative Investments Performance
01/01/2009	06/30/2011	41% Russell 3000, 14.5% MSCI EAFE Free, 2.5% MSCI Emerging Markets (Net), 21% Bloomberg Universal, 7% Bloomberg Multiverse ex US (Hedged), 9% NCREIF Property Index (Qtr Lagged), 5% ERS Alternative Investments Performance
06/01/1990	12/31/2008	34.9% S&P 500, 4.5% S&P 400 MidCap, 4.5% Russell 2000, 14.5% MSCI EAFE Free, 2.5% MSCI Emerging Markets, 21% Bloomberg Aggregate, 7% Bloomberg Multiverse ex US (Hedged), 7.5% NCREIF Property Index (Qtr Lagged), 3.6% ERS Alternative Investments Performance

Custom Benchmarks: Immediate Sub-Composites of Total Fund

Broad Growth Benchmark

From	To	Broad Growth Benchmark
01/01/2024	Current	56% Global Equity Benchmark, 17% Global Credit Benchmark, 27% Real Assets Benchmark
07/01/2022	12/31/2023	50% Public Growth Benchmark, 28% Private Growth Benchmark, 22% Real Assets Benchmark
07/01/2021	06/30/2022	66% Public Growth Benchmark, 20% Private Growth Benchmark, 14% Real Assets Benchmark
07/01/2020	06/30/2021	70% Public Growth Benchmark, 16% Private Growth Benchmark, 14% Real Assets Benchmark
01/01/2019	06/30/2020	41% Traditional Growth Benchmark, 41% Stabilized Growth Benchmark, 18% Private Growth Benchmark
01/01/2018	12/31/2018	43% Traditional Growth Benchmark, 43% Stabilized Growth Benchmark, 14% Private Growth Benchmark
07/01/2016	12/31/2017	45% Traditional Growth Benchmark, 45% Stabilized Growth Benchmark, 10% Private Growth Benchmark
01/01/2016	06/30/2016	77% Traditional Growth Benchmark, 17% Stabilized Growth Benchmark, 6% Private Growth Benchmark
10/01/2014	12/31/2015	78% Traditional Growth Benchmark, 17% Stabilized Growth Benchmark, 5% Private Growth Benchmark

For the historical components Traditional Growth Benchmark and Private Growth Benchmark please refer to Public Equity Benchmark and Private Equity Benchmark respectively. Public Growth Benchmark and Stabilized Growth Benchmark are no longer in use. Please see their historical compositions in the "Discontinued Custom Benchmarks" section.

Diversifying Strategies Benchmark

From	To	Diversifying Strategies Benchmark
01/01/2024	Current	87% Liquid Defensive Benchmark, 13% Illiquid Diversifying Benchmark
07/01/2022	12/31/2023	45% Liquid Defensive Benchmark, 40% Liquid Diversifying Benchmark, 15% Illiquid Diversifying Benchmark
04/01/2017	06/30/2022	50% Liquid Defensive Benchmark, 40% Liquid Diversifying Benchmark, 10% Illiquid Diversifying Benchmark

Liquid Diversifying Benchmark is no longer in use. Please see its historical compositions in the "Discontinued Custom Benchmarks" section.

Custom Benchmarks: Global Equity Composite

Global Equity Policy Benchmark

Global Equity composite was created effective on 01/01/2024 to aggregate the Public and Private Equity components which had previously existed within separate higher-level composites. Accordingly, the Global Equity Policy Benchmark was retroactively reconstructed for periods prior to 01/01/2024 reflecting the historical policy targets for the underlying Public and Private Equity components.

From	To	Global Equity Policy Benchmark
01/01/2024	Current	51.3% Public Equity Benchmark, 48.7% Private Equity Benchmark
07/01/2022	12/31/2023	54.3% Public Equity Benchmark, 45.7% Private Equity Benchmark
07/01/2021	06/30/2022	64.7% Public Equity Benchmark, 35.3% Private Equity Benchmark
07/01/2020	06/30/2021	70.8% Public Equity Benchmark, 29.2% Private Equity Benchmark
01/01/2019	06/30/2020	69.5% Public Equity Benchmark, 30.5% Private Equity Benchmark
01/01/2018	12/31/2018	75.4% Public Equity Benchmark, 24.6% Private Equity Benchmark
07/01/2016	12/31/2017	81.8% Public Equity Benchmark, 18.2% Private Equity Benchmark
01/01/2016	06/30/2016	92.8% Public Equity Benchmark, 7.2% Private Equity Benchmark
10/01/2014	12/31/2015	94.0% Public Equity Benchmark, 6.0% Private Equity Benchmark
07/01/2013	09/30/2014	88.9% Public Equity Benchmark, 11.1% Private Equity Benchmark

Public Equity Benchmark

From 10/2014 through 12/2023, public equity assets have resided within the Broad Growth strategic class with names such as "Traditional Growth" or "Traditional Equity". Thus, Public Equity Benchmark may be considered the successor of Traditional Growth and Traditional Equity Benchmarks. Please note that Public Equity Benchmark is different from the discontinued Public Growth Benchmark; its historical benchmark composition is included in the "Discontinued Custom Benchmarks" section.

From	To	Public Equity Benchmark
10/01/2014	Current	100% MSCI All Country World Investable Market Index (Net)
07/01/2012	09/30/2014	53.6% Russell 3000, 46.4% MSCI All Country World ex US (Net)
10/01/2011	06/30/2014	62.5% Russell 3000, 32.1% MSCI World ex US (Net), 5.4% MSCI Emerging Markets (Net)
07/01/2011	09/30/2011	70.7% Russell 3000, 25.0% MSCI World ex US (Net), 4.3% MSCI Emerging Markets (Net)
01/01/2009	06/30/2011	70.7% Russell 3000, 25.0% MSCI EAFE (Net), 4.3% MSCI Emerging Markets (Net)
03/01/2008	12/31/2008	57.3% S&P 500, 7.4% S&P Mid Cap 400, 7.4% Russell 2000, 23.8% MSCI EAFE (Net), 4.1% MSCI Emerging Markets (Net)

Custom Benchmarks: Global Equity Composite (Continued)

Private Equity Benchmark

From 10/2014 through 12/2023, private equity assets have resided within the Broad Growth strategic class as "Private Growth". Thus, Private Equity Benchmark may be considered the successor of Private Growth Benchmark.

From	To	Private Equity Benchmark
01/01/2024	Current	100% MSCI ACWI IMI (Net) (Quarter Lagged)
10/01/2014	12/31/2023	100% MSCI ACWI IMI (Net) +2% (Quarter Lagged)
10/01/2011	09/30/2014	Private Equity Actual Performance

Custom Benchmarks: Global Credit Composite

Global Credit Policy Benchmark

From	To	Global Credit Benchmark
01/01/2024	Current	33.3% Public Credit Benchmark, 66.7% Private Credit Benchmark
07/01/2021	12/31/2023	50% Public Credit Benchmark, 50% Private Credit Benchmark
07/01/2020	06/30/2021	25% Public Credit Benchmark, 75% Private Credit Benchmark
10/01/2014	06/30/2020	100% Public Credit Benchmark

Public Credit Policy Benchmark

From	To	Public Credit Benchmark
07/01/2021	Current	50% Bloomberg Global High Yield (Hedged), 50% Morningstar LSTA US Leveraged Loan 100 Index
07/01/2020	06/30/2021	50% Bloomberg Global High Yield (Hedged), 50% Morningstar LSTA US Leveraged Loan 100 Index*
10/01/2014	06/30/2020	50% Bloomberg Global Credit (Hedged) 33.3% Bloomberg Global High Yield (Hedged), 16.7% Morningstar LSTA US Leveraged Loan 100 Index*

Private Credit Policy Benchmark

From	To	Private Credit Benchmark
01/01/2024	Current	50% Bloomberg Global High Yield (Hedged) (Quarter Lagged), 50% Morningstar LSTA US Leveraged Loan 100 Index (Quarter Lagged)
07/01/2021	12/31/2023	25% Bloomberg Global High Yield (Hedged) +1% (Month Lagged), 25% Morningstar LSTA US Leveraged Loan 100 Index +1% (Month Lagged), 25% Bloomberg Global High Yield (Hedged) +1% (Quarter Lagged), 25% Morningstar LSTA US Leveraged Loan 100 Index +1% (Quarter Lagged)
07/01/2020	06/30/2021	50% Bloomberg Global High Yield (Hedged) +1% (Month Lagged), 50% Morningstar LSTA US Leveraged Loan 100 Index +1% (Month Lagged)*
11/01/2019	06/30/2020	100% Public Credit Benchmark

From 11/2019 to 06/2020, Private Credit Benchmark is the same as Public Credit Benchmark.

Notes on Component Indices

Historically, prior to 07/01/2021, Morningstar LSTA US Leveraged Loan Index (formerly known as "S&P LSTA US Leveraged Loan Index") was used in the places where Morningstar LSTA US Leveraged Loan 100 Index occurs on this page. Due to licensing issues, Morningstar LSTA US Leveraged Loan 100 Index is applied retroactively to periods prior to 07/2021. Compositions which historically used Morningstar LSTA US Leveraged Loan Index are marked on this page with an asterisk (*).

Custom Benchmarks: Real Assets Composite

Real Assets Policy Benchmark

Real Assets composite contains the following asset classes: Real Estate (Core and Non-Core), Agriculture (or Farmland), Timberland, Infrastructure (Private and Public), and Other Real Assets. They existed separately under various higher level composites at different points in the Plan's history prior to the Real Asset composite's inception in 07/2020.

Prior to 07/2016, **Real Estate** was an immediate sub-composite of Total Fund. From 07/2016 through 06/2020, Core Real Estate and Non-Core Real Estate were separately subsumed into Stabilized Growth and Private Growth categories respectively (which were both contained within Broad Growth). From 10/2014 to 07/2020, **Agriculture, Timber, and Infrastructure** constituted the Private Inflation-Linked component within Real Return, an immediate subordinate of Total Fund.

The Real Assets Policy Benchmark for periods prior to 07/2020 were retroactively reconstructed using the historical policy allocation targets for the underlying components.

From	To	Real Assets Policy Benchmark
01/01/2024	Current	47% Real Estate Benchmark, 7% Agriculture Benchmark, 9% Timber Benchmark, 37% Infrastructure Benchmark
07/01/2022	12/31/2023	70% Real Estate Benchmark, 10% Agriculture Benchmark, 10% Timber Benchmark, 10% Infrastructure Benchmark
07/01/2021	06/30/2022	70% Real Estate Benchmark, 8% Agriculture Benchmark, 12% Timber Benchmark, 10% Infrastructure Benchmark
07/01/2020	06/30/2021	75% Real Estate Benchmark, 5% Agriculture Benchmark, 12.5% Timber Benchmark, 7.5% Infrastructure Benchmark
01/01/2019	06/30/2020	52% Real Estate Policy Benchmark, 48% Real Return Benchmark
01/01/2018	12/31/2018	57% Real Estate Policy Benchmark, 43% Real Return Benchmark
04/01/2017	12/31/2017	70% Real Estate Policy Benchmark, 30% Real Return Benchmark
07/01/2016	06/30/2017	75% Real Estate Policy Benchmark, 25% Real Return Benchmark
01/01/2016	06/30/2016	80% Real Estate Policy Benchmark, 20% Real Return Benchmark
10/01/2014	12/31/2015	83% Real Estate Policy Benchmark, 17% Real Return Benchmark

Custom Benchmarks: Real Assets Composite (Continued)

Real Estate Policy Benchmark

Real Estate composite became effective in 01/2024 as an aggregate of the Core and Non-Core Real Estate components. The Real Estate Policy Benchmark was retroactively reconstructed for periods prior to 01/2024 reflecting the historical policy allocation targets for the underlying Core and Non-Core components.

From	To	Real Estate Policy Benchmark
01/01/2024	Current	100% FTSE EPRA NAREIT Global REITs Index (Gross) (Quarter Lagged)
07/01/2022	12/31/2023	57.1% Core Real Estate Benchmark, 42.9% Non-Core Real Estate Benchmark
07/01/2021	06/30/2022	55.7% Core Real Estate Benchmark, 44.3% Non-Core Real Estate Benchmark
07/01/2020	06/30/2021	53.3% Core Real Estate Benchmark, 46.7% Non-Core Real Estate Benchmark
07/01/2019	06/30/2020	60% Core Real Estate Benchmark, 40% Non-Core Real Estate Benchmark
07/01/2018	06/30/2019	66% Core Real Estate Benchmark, 34% Non-Core Real Estate Benchmark
07/01/2017	06/30/2018	73% Core Real Estate Benchmark, 27% Non-Core Real Estate Benchmark
07/01/2016	06/30/2017	80% Core Real Estate Benchmark, 20% Non-Core Real Estate Benchmark
07/01/2013	06/30/2016	100% Core Real Estate Benchmark

Core Real Estate Benchmark

From	To	Core Real Estate Benchmark
01/01/2024	Current	100% FTSE EPRA NAREIT Global REITs Index (Gross) (Quarter Lagged)
07/01/2020	12/31/2023	100% NCREIF ODCE (Net) (Quarter Lagged)
07/01/2013	06/30/2020	100% NCREIF Property Index (Net) (Quarter Lagged)

Non-Core Real Estate Benchmark

From 07/2016-06/2020, this composite sat within Private Growth segment and was benchmarked against Private Equity Benchmark (formerly, "Private Growth Benchmark").

From	To	Non-Core Real Estate Benchmark
01/01/2024	Current	100% FTSE EPRA NAREIT Global REITs Index (Gross) (Quarter Lagged)
07/01/2020	12/31/2023	100% NCREIF ODCE (Net) +1% (Quarter Lagged)
07/01/2016	06/30/2020	100% Private Equity Benchmark
07/01/2013	06/30/2016	100% NCREIF Property Index (Net) (Quarter Lagged)

Custom Benchmarks: Real Assets Composite (Continued)

Agriculture Benchmark

From	To	Agriculture Benchmark
01/01/2024	Current	100% S&P GCSI Agriculture Index (Quarter Lagged)
10/01/2021	12/31/2023	100% NCREIF Farmland Index (Quarter Lagged)

Timber Benchmark

From	To	Timber Benchmark
01/01/2024	Current	100% S&P Global Timber & Forestry Index (Net) (Quarter Lagged)
09/01/1999	12/31/2023	100% NCREIF Timberland Index (Quarter Lagged)

Infrastructure Benchmark

From	To	Infrastructure Benchmark
01/01/2024	Current	100% Dow Jones Brookfield Global Infrastructure Index (Net) (Quarter Lagged)
12/01/2014	12/31/2023	100% Consumer Price Index (Seasonally Adjusted) +4%

Custom Benchmarks: Diversifying Strategies Composite

Liquid Defensive Benchmark

From	To	Liquid Defensive Benchmark
01/01/2024	Current	31% MLM Global Index EV (Blend), 15% Bloomberg US Treasury: Long Index, 54% Bloomberg US Treasury: Intermediate Index
07/01/2022	12/31/2023	40% MLM Global Index EV (Blend), 40% 90-Day T-Bill +2.5%, 15% Bloomberg US Treasury: Long Index, 5% Bloomberg US Intermediate Aggregate ex Credit Index
07/01/2021	06/30/2022	35% MLM Global Index EV (Blend), 20% 90-Day T-Bill+2.5%, 15% Bloomberg US Treasury: Long Index, 15% Bloomberg US Intermediate Aggregate ex Credit Index, 15% Bloomberg US TIPS 5+ Year Index
07/01/2016	06/30/2021	40% MLM Global Index EV (Blend), 30% Bloomberg US Treasury: Long Index, 30% Bloomberg US Intermediate Aggregate ex Credit Index

Defensive Return Capture Benchmark

Defensive Return Capture and Discretionary Alpha Benchmarks have the same underlying components since 07/01/2020.

From	To	Defensive Return Capture Benchmark
01/01/2024	Current	100% Bloomberg US Treasury: Intermediate Index
07/01/2020	12/31/2023	100% 90-Day T-Bill +2.5%

Discretionary Alpha Benchmark

Defensive Return Capture and Discretionary Alpha Benchmarks have the same underlying components since 07/01/2020.

From	To	Discretionary Alpha Benchmark
01/01/2024	Current	100% Bloomberg US Treasury: Intermediate Index
07/01/2020	12/31/2023	100% 90-Day T-Bill +2.5%

Intermediate Duration Treasury Policy Benchmark

From	To	Intermediate Duration Treasury Policy Benchmark
01/01/2024	Current	100% Bloomberg US Treasury: Intermediate Index
04/01/2017	12/31/2023	100% Bloomberg US Intermediate Aggregate ex Credit

Custom Benchmarks: Diversifying Strategies Composite (Continued)

Long Duration Treasury Policy Benchmark

From	To	Long Duration Treasury Policy Benchmark
04/01/2022	Current	100% Bloomberg US Treasury: Long Index
02/01/2021	03/31/2022	50% Bloomberg US Treasury: Long Index, 50% Bloomberg TIPS 5+ Year Index
04/01/2017	01/31/2021	100% Bloomberg US Treasury: Long Index

MLM Global Index EV (Blend)

MLM Global Index EV (Blend) is used as the benchmark for the Systematic Trend Following composite and as a component of other custom benchmarks.

From	To	MLM Global Index EV (Blend)
04/01/2019	Current	100% MLM Global Index EV (15V)
04/01/2017	03/31/2019	100% MLM Global Index LT 15V

Illiquid Diversifying Benchmark

From	To	Illiquid Diversifying Benchmark
01/01/2024	Current	100% Swiss RE Global Catastrophe Bond Hedged Index
07/01/2022	12/31/2023	65% 90-Day T-Bills +3.5%, 35% Swiss RE Global Catastrophe Bond Hedged Index
07/01/2021	06/30/2022	50% 90-Day T-Bills +3.5%, 50% Swiss RE Global Catastrophe Bond Hedged Index
04/01/2014	06/30/2021	65% 90-Day T-Bills +3.5%, 35% Swiss RE Global Catastrophe Bond Hedged Index

Idiosyncratic Return Capture Benchmark

From	To	Idiosyncratic Return Capture Benchmark
01/01/2024	Current	100% Swiss RE Global Catastrophe Bond Hedged Index
07/01/2020	12/31/2023	100% 90-Day T-Bills +3.5%

Discontinued Custom Benchmarks

This section includes only the discontinued custom benchmarks which have been a component of current custom benchmarks' history and does not include all the discontinued historical custom benchmarks. The items in this section are ordered alphabetically.

Crisis Risk Offset (CRO) Benchmark

Crisis Risk Offset (CRO) Benchmark was a component of Total Fund Policy Benchmark from 2017 to 2020. The composite consisted of Systematic Trend Following, Alternative Return Capture, and Treasury Duration Capture (in the form of long duration treasuries) components.

From	To	Crisis Risk Offset (CRO) Benchmark
04/01/2019	06/30/2020	35% MLM Global Index EV (Blend), 40% 90-day T-Bills +2.5%, 25% Bloomberg US Treasury: Long Index
04/01/2017	03/31/2019	45% MLM Global Index EV (Blend), 30% 90-day T-Bills +5%, 25% Bloomberg US Treasury: Long Index

Liquid Diversifying Benchmark

Liquid Diversifying Benchmark was a component of Diversifying Strategies Benchmark from 2017 through 2023.

From	To	Liquid Diversifying Benchmark
04/01/2017	12/31/2023	100% 90-Day T-Bills +2.5%

Options-Based Equity Benchmark

Options-Based Equity Benchmark was a component of Public Growth Benchmark from 2020 to 2022.

From	To	Options-Based Equity Benchmark
07/01/2020	06/30/2022	50% CBOE S&P 500 PutWrite (PUT), 35% CBOE MSCI EAFE PutWrite (PXEA), 15% CBOE MSCI Emerging Markets PutWrite (PXEF)

Principal Protection Benchmark

Principal Protection Benchmark was a component of Total Fund Policy Benchmark from 2014 to 2020. The composite primarily consisted of intermediate duration bonds.

From	To	Principal Protection Benchmark
01/01/2018	06/30/2020	55% Bloomberg US Intermediate ex Credit Index, 45% Bloomberg Global Intermediate ex Credit Index (Hedged)
10/01/2014	12/31/2017	100% Bloomberg Global Intermediate ex Credit Index (Hedged)

Discontinued Custom Benchmarks (Continued)

Public Growth Benchmark

Public Growth Benchmark was a component of Broad Growth Benchmark from 2020 through 2023. Please see Global Credit Benchmark and Traditional Growth Benchmark in the Current Custom Benchmarks section under Global Credit Benchmark and Public Equity Benchmark respectively.

From	To	Public Growth Benchmark
07/01/2022	12/31/2023	66.5% Traditional Growth Benchmark, 20% Global Credit Benchmark, 8% MSCI ACWI Minimum Volatility (Net), 5.5% ICE BofA All US Convertibles All Qualities (VXAO)
07/01/2021	06/30/2022	55.5% Traditional Growth Benchmark, 16% Options-Based Equity Benchmark, 15.5% Global Credit Benchmark, 9% MSCI ACWI Minimum Volatility (Net), 4% ICE BofA All US Convertibles All Qualities (VXAO)
07/01/2020	06/30/2021	55.5% Traditional Growth Benchmark, 20% Options-Based Equity Benchmark, 15.5% Global Credit Benchmark, 9% MSCI ACWI Minimum Volatility (Net)

Real Return Benchmark

Real Return Benchmark was a component of Total Fund Policy Benchmark from 2014 to 2020.

From	To	Real Return Benchmark
10/01/2014	06/30/2020	100% Consumer Price Index (Seasonally Adjusted) +3%

Stabilized Growth Benchmark

Stabilized Growth Benchmark was a component of Broad Growth Benchmark from 2014 to 2020.

From	To	Stabilized Growth Benchmark
01/01/2018	06/30/2020	8.5% Bloomberg Global Credit (Hedged), 5.67% Bloomberg Global High Yield (Hedged), 17% CBOE S&P 500 BuyWrite (BXM), 17% CBOE S&P 500 PutWrite (PUT), 2.83% Morningstar LSTA Leveraged Loan, 8.5% MSCI ACWI ex US (Net), 8.5% 90-day T-Bills, 17% MSCI ACWI Minimum Volatility (Net), 15% NCREIF ODCE Index (Net) (Quarter Lagged)
07/01/2016	12/31/2017	8.5% Bloomberg Global Credit (Hedged), 5.67% Bloomberg Global High Yield (Hedged), 17% CBOE S&P 500 BuyWrite (BXM), 17% CBOE S&P 500 PutWrite (PUT), 2.83% Morningstar LSTA Leveraged Loan, 8.5% MSCI ACWI ex US (Net), 8.5% 90-day T-Bills, 17% MSCI ACWI Minimum Volatility (Net), 15% NCREIF Property Index (Net) (Quarter Lagged)
10/01/2014	06/30/2016	30% Bloomberg Global Credit (Hedged), 20% Bloomberg Global High Yield (Hedged), 40% CBOE S&P 500 BuyWrite (BXM), 10% Morningstar LSTA Leveraged Loan Index

Performance Attribution Glossary

Performance Attribution is the process of comparing a portfolio's performance with its benchmark identifying and quantifying the sources of differential returns (also called active returns).

Differential Returns / Active Returns / Value Added are 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	$(w_i - W_i) \times (b_i - b)$	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	$(r_i - b_i) \times W_i$	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	$(r_i - b_i) \times (w_i - W_i)$	r_i = portfolio segment return b_i = benchmark segment return w_i = portfolio segment weight W_i = benchmark segment weight

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Employees' Retirement System of the State of Hawaii

August 19, 2024

2024 Private Credit Asset Class
Review & Pacing Update



Employees' Retirement System of the State of Hawaii

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2. Market Environment
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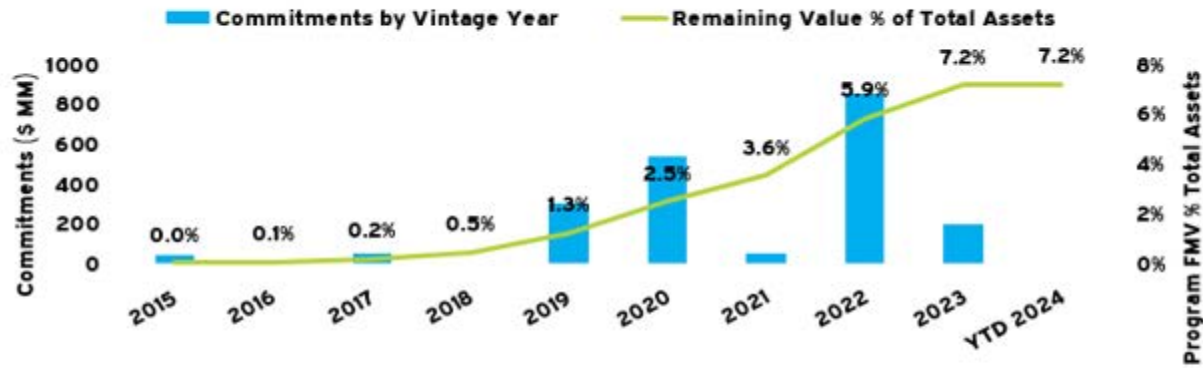


Overview



Employees' Retirement System of the State of Hawaii

Employees' Retirement System of the State of Hawaii has increased the target of the Private Debt Program to 8% of total assets, up from 5.2% (prior target). As of March 31, 2024, the Private Debt Program represented 7.2% of total assets, which accounts for funds transferred in July 2023. The Program targets a 9-11% net IRR while emphasizing yield-oriented opportunities that distribute income.



Program Status

No. of Investments	19
Committed (\$ MM)	2,305.3
Contributed (\$ MM)	1,746.8
Distributed (\$ MM)	418.4
Remaining Value (\$ MM)	1,683.0

Performance Since Inception

	Program
DPI	0.24x
TVPI	1.20x
IRR	9.0%

*All data as of March 31, 2024 unless otherwise noted.



Employees' Retirement System of the State of Hawaii

Overview

→ HIERS increased the target allocation to private credit in 2023

- Targeting 8% of total assets, up from the previous target of 5.2% of total assets
- Objective: 9-11% net IRR
 - Emphasizing yield-oriented opportunities
 - Focus on diversification across manager, strategy, collateral and geography

→ Program consists of 19 partnerships totaling \$2.3B commitments*

- Net ITD IRR of 9.0%
 - Compared to 6.0% for the policy benchmark (50% Bloomberg Global High Yield (Hedged) (Quarter Lagged), 50% Morningstar LSTA US Leveraged Loan 100 Index (Quarter Lagged))
**
- \$1.7 billion in capital contributions and \$418.8 million in distributions
- \$700M of commitments made across 3 funds in 2024***

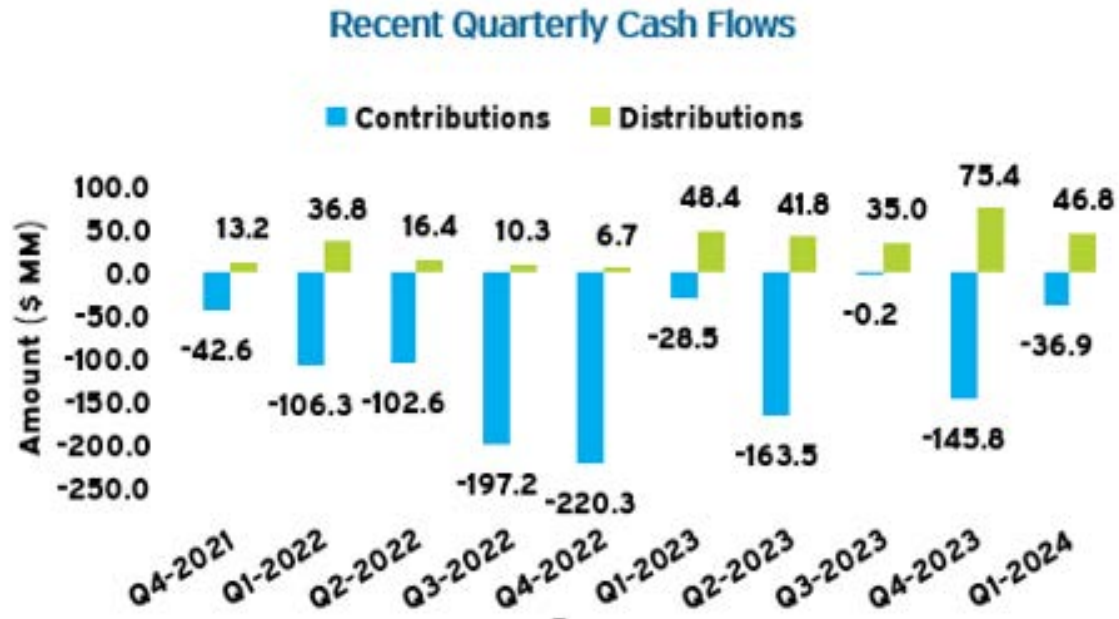
*All data as of March 31, 2024 unless otherwise noted.

**The benchmark has performance history dating back to 2019. Please see appendix for Private Credit Benchmark information.

***Inclusive of approved commitments through June 2024.



Employees' Retirement System of the State of Hawaii





Employees' Retirement System of the State of Hawaii

- Inception to date performance for the Private Debt Program is 9.0% as of March 31, 2024.
 - Real Estate investments have been a drag on performance for the Program, which are marked at a 5.8% IRR as of March 31, 2024. Overall, there are seven Real Estate funds in the Program representing \$315 million in contributions.
- The Program consists of 19 commitments representing \$2.3 billion in committed capital. The Program has made \$1.75 billion in contributions and received \$418 million in distributions to date.
 - Year-to-date, HIERS made \$700 million of commitments across 3 funds (\$300 million in Direct Lending; \$400 million in Special Situations).



Market Environment



Employees' Retirement System of the State of Hawaii

Investor Demand for Private Credit

→ Private Credit is now the second largest private markets asset class

- Investors continue to favor North America and Direct Lending
- Fund sizes continue to trend ups with the average fund exceeding \$1 billion

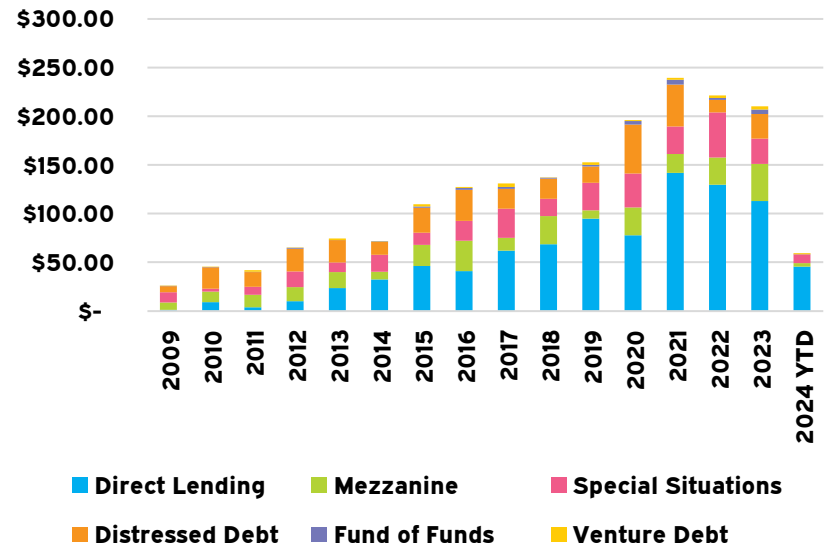
\$1.6T Global private credit AUM a/o March 2023

77% Higher Yield Opportunities*

\$2.7T Projected global private credit AUM by 2026

52% Higher Quality Investment Opportunities*

Global Private Debt Fund Raising, by Fund Strategy



From a BlackRock survey of 200+ institutions, representing \$15T AUM*

Source: Preqin as of October 2022; BlackRock Global Markets Survey 2023

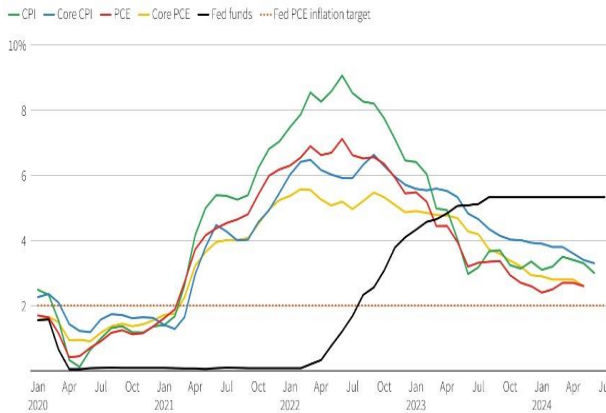


Employees' Retirement System of the State of Hawaii

Macro Factors

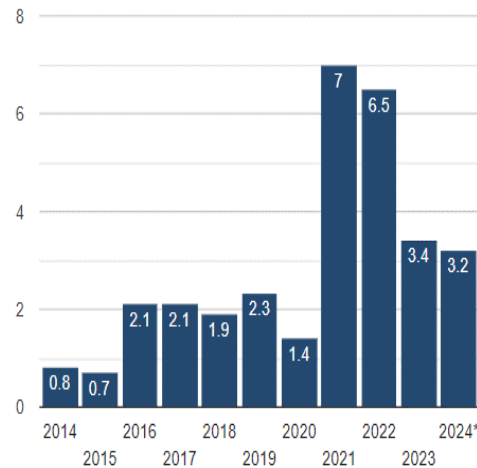
- While Fed Funds rates have flatlined moderating inflationary pressures have reignited investor speculation around the timing of potential rate cuts (Chart 1, Chart 2).
- Bank lending activity in aggregate across lines of business has seen diminished growth despite resurgent issuance in Q1 by banks in the broadly syndicated corporate loan market (Chart 3).
- On the consumer side, higher interest rates have led to increasing delinquencies for credit card and auto loans. One large private markets GP noted that credit card delinquencies for the youngest households (ages 18-29) are approaching levels last seen during the Great Financial Crisis.

CPI/Fed Funds (Chart 1)

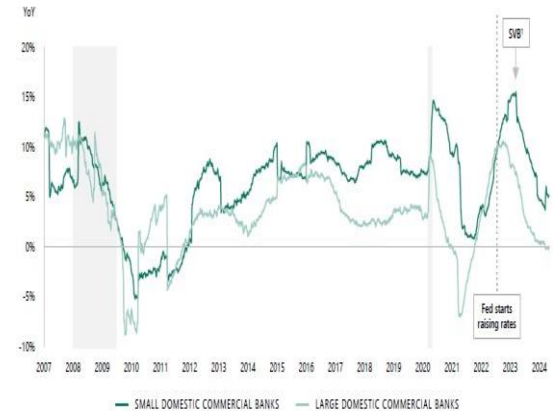


Note: CPI = Consumer Price Index; PCE = Personal Consumption Expenditures Price Index; Core = excluding food and energy; Fed funds = Fed policy rate
 Source: Federal Reserve (funds rate and target); Bureau of Labor Statistics (CPI); Bureau of Economic Analysis (PCE); inflation rates are annual

U.S. Inflation(Chart2)



Bank Lending Growth (Chart 3)



Source: Apollo, Reuters, Inflation Bloomberg



Employees' Retirement System of the State of Hawaii

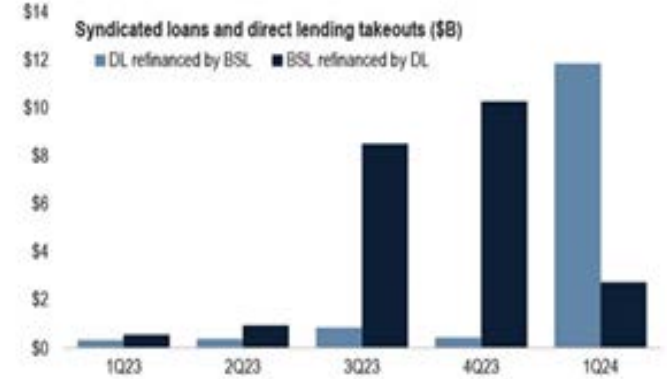
Direct Lending

- Direct Lending spreads have tightened approximately 100 bps from their peak last year (Table 1) as the broadly syndicated loan (BSL) market resurged in Q1 2024 with \$325 billion of leveraged loan activity. (Chart 1)
- While Direct Lending assets continue to grow, buyout demand continues to outstrip DL supply. (Chart 2)

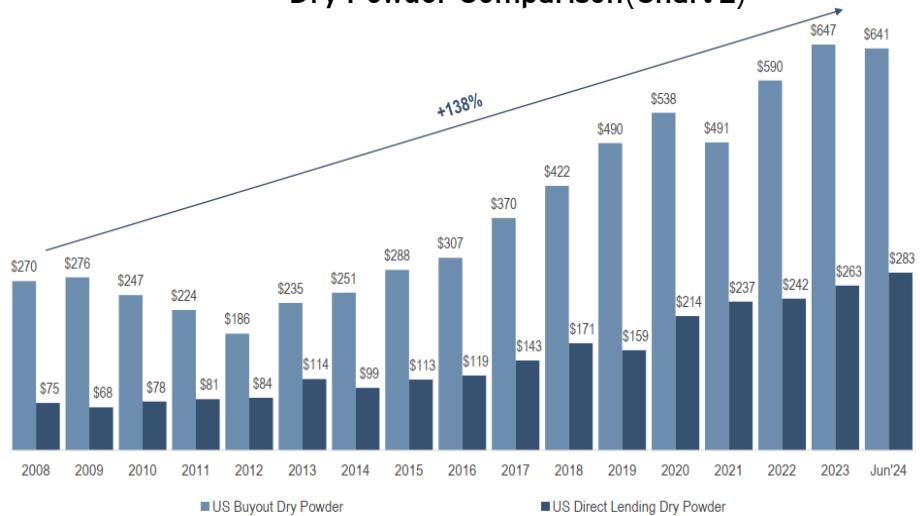
Direct Lending Pricing (Table 1)

	Q4 2021	Q4 2022	August 2024
Leverage	7.0-7.5x	4.75-5.75x	6.0-6.5x
3M SOFR	0.1%	4.1%	5.2%
Floor	1.0%	1.0%	1.0%
Spread	5.0-5.75%	6.0-7.0%	4.75-5.75%
OID	1.2%	2.3%	1.2%
Market Indicative Return	6.3-7.4%	10.8-12.1%	10.3-11.6%

Leveraged Loan Issuance (Chart 1)



Dry Powder Comparison (Chart 2)



Source: Lincoln; Pitchbook LCD U.S. Credit Markets Quarterly Wrap (Q1 2024)

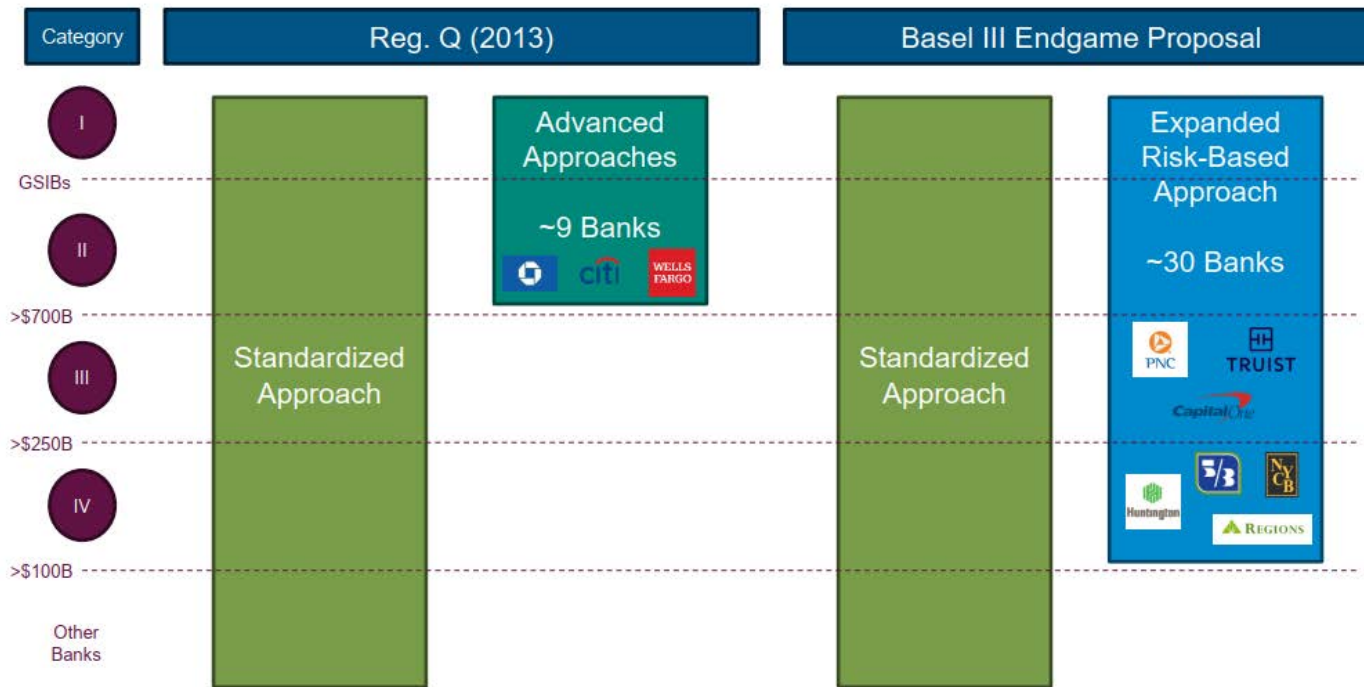


Employees' Retirement System of the State of Hawaii

Asset-Based/Specialty Finance

→ GPs are focused on the opportunities created by the Basel II Endgame, the expanded risk-based approach to Risk Weighted Assets for banks. Asset-Backed Financing likely will become more expensive for banks.

The new Expanded Risk-Based Approach will encompass significantly more institutions



Source: PIMCO

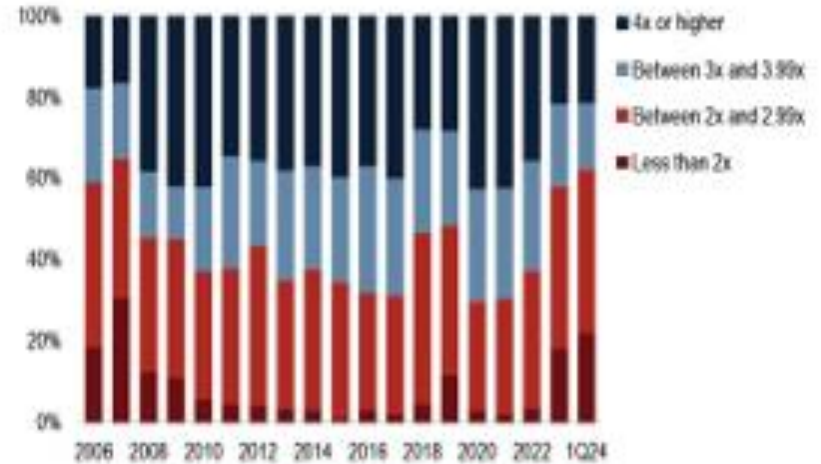


Employees' Retirement System of the State of Hawaii

Special Situations

- Interest coverage ratios showed further deterioration as the percentage with less than 2x coverage comprised 22% of this year's loans. (Chart 1)
- U.S. loan default rate ticked downwards in Q2 but remains elevated in comparison to recent time periods when distressed exchanges are included. (Chart 2)
- Substantial maturity wall will require more than \$1.1 trillion in refinancings between 2024-2028. (Chart 3)

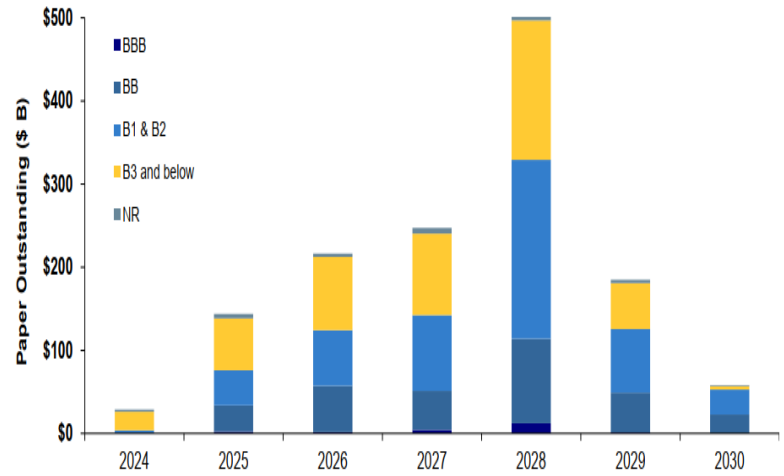
Interest Coverage Ratio (Chart 1)



U.S. Default Rate (Chart 2)



Wall of Maturities (Chart 3)



Source: :Pitchbook LCD U.S. Credit Markets Quarterly Wrap (Q1 2024) ; S&P Global Ratings Research



Activity and Performance Update



Employees' Retirement System of the State of Hawaii

MEKETA

Employees' Retirement System of the State of Hawaii Private Debt Program

Performance Analysis | As of March 31, 2024

By Strategy

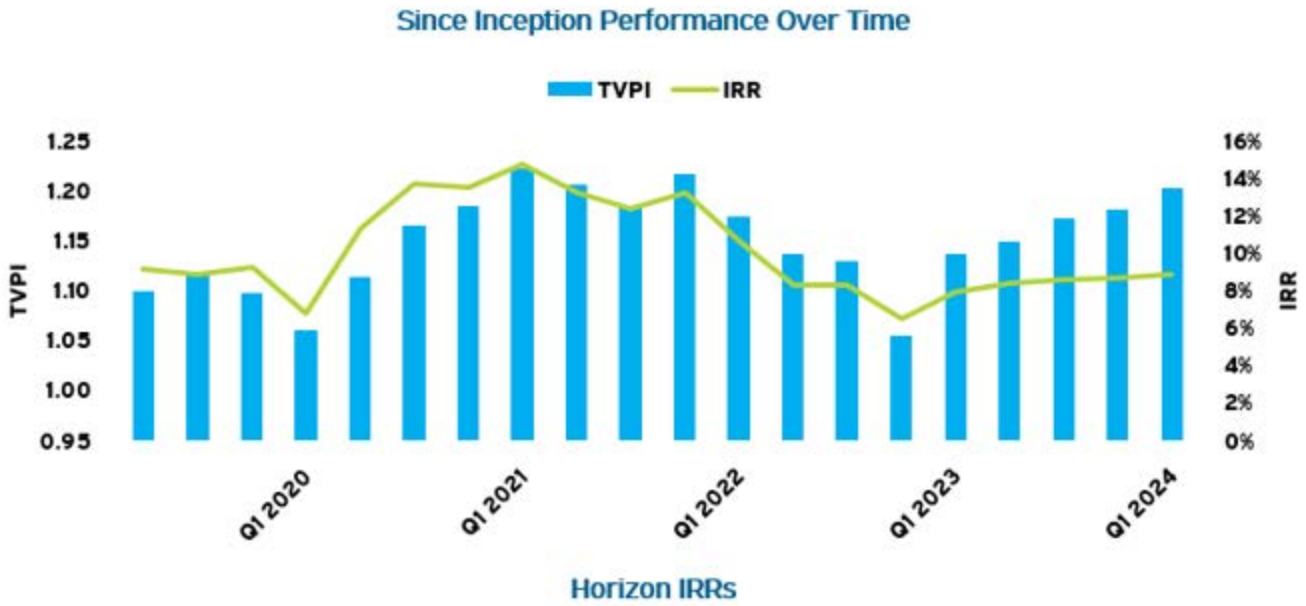
Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
Direct Lending	3	350.0	97.9	260.2	15.6	113.5	373.8	0.16	1.32	NM
Multi-strategy	2	300.0	269.4	71.2	44.3	257.0	328.2	0.16	1.12	6.2
Opportunistic	1	5.3	3.7	1.7	0.1	3.1	4.8	0.03	0.86	NM
Real Estate	7	350.0	314.9	70.5	152.0	227.8	298.2	0.48	1.21	5.8
Special Situations	6	1,300.0	1,061.0	281.7	206.3	1,081.5	1,363.3	0.19	1.21	10.2
Total	19	2,305.3	1,746.8	685.3	418.4	1,683.0	2,368.3	0.24	1.20	9.0

By Vintage

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
Open-end Fund	3	250.0	254.6	0.0	62.1	239.3	239.3	0.24	1.18	4.9
2015	1	40.0	32.0	8.0	37.9	4.0	12.0	1.18	1.31	10.0
2016	1	20.0	16.7	10.0	9.6	7.5	17.5	0.57	1.02	0.8
2017	1	50.0	66.5	5.0	42.6	38.4	43.4	0.64	1.22	7.7
2019	1	300.0	312.2	16.8	97.8	308.5	325.4	0.31	1.30	10.3
2020	4	540.0	450.5	94.7	101.6	441.8	536.5	0.23	1.21	8.5
2021	1	50.0	35.1	23.0	13.9	29.5	52.5	0.40	1.24	NM
2022	6	855.3	559.2	347.8	53.0	593.4	941.2	0.09	1.16	NM
2023	1	200.0	20.0	180.0	0.0	20.6	200.6	0.00	1.03	NM
Total	19	2,305.3	1,746.8	685.3	418.4	1,683.0	2,368.3	0.24	1.20	9.0



Employees' Retirement System of the State of Hawaii

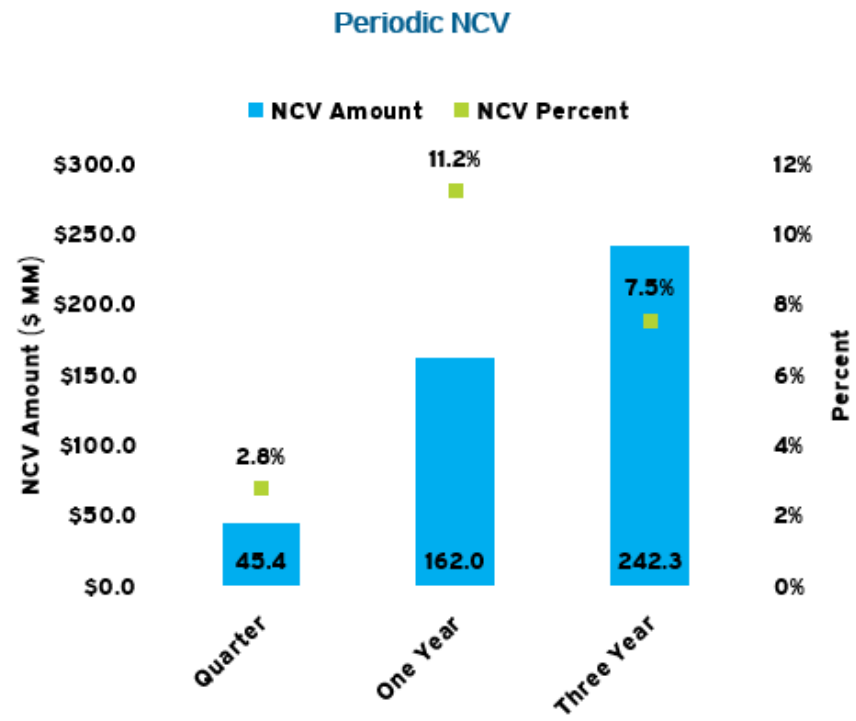


Horizon IRRs

Aggregate Portfolio	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Aggregate Portfolio	10.6	7.1	8.8	NM	9.0



Employees' Retirement System of the State of Hawaii

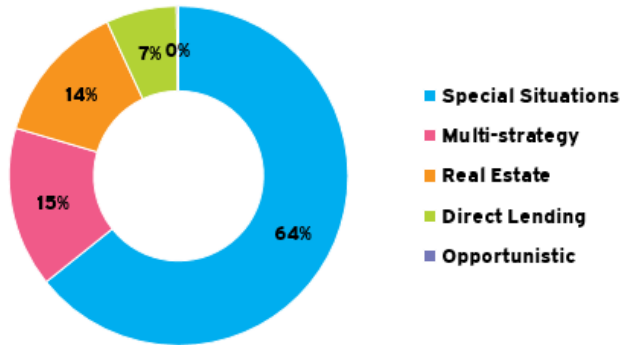




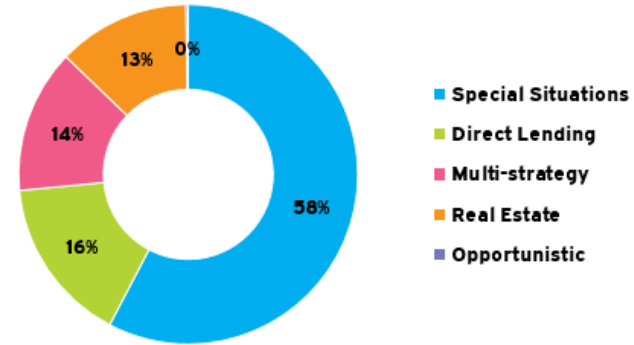
Employees' Retirement System of the State of Hawaii

Exposure By Strategy as of March 31, 2024

Percent of FMV

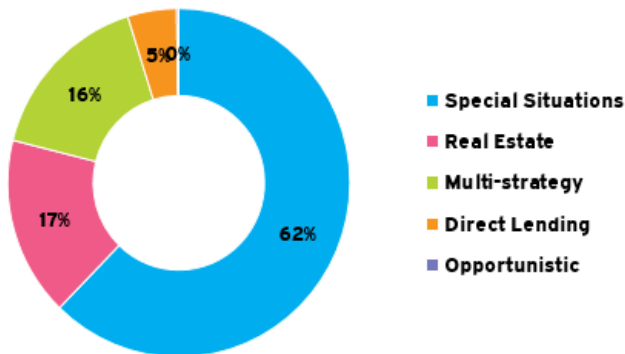


Percent of Exposure

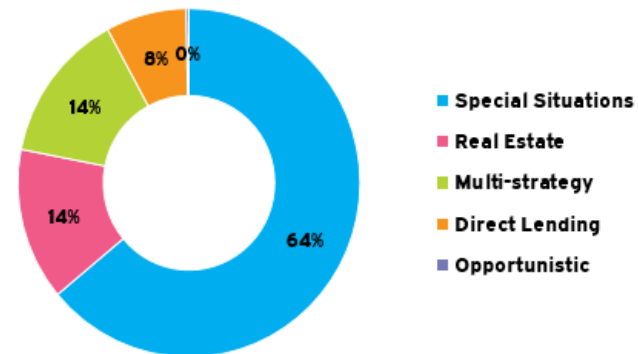


Exposure By Strategy as of March 31, 2023

Percent of FMV



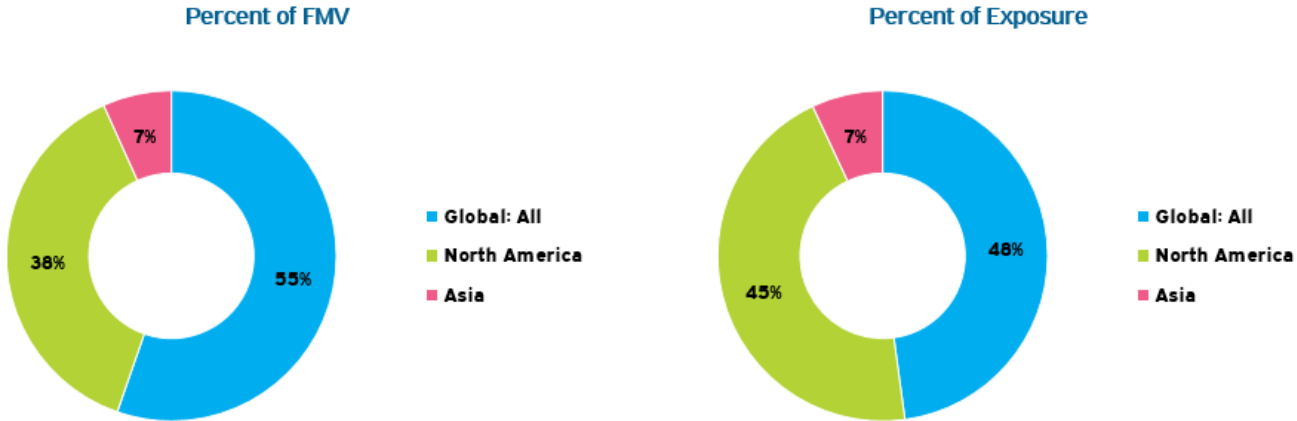
Percent of Exposure



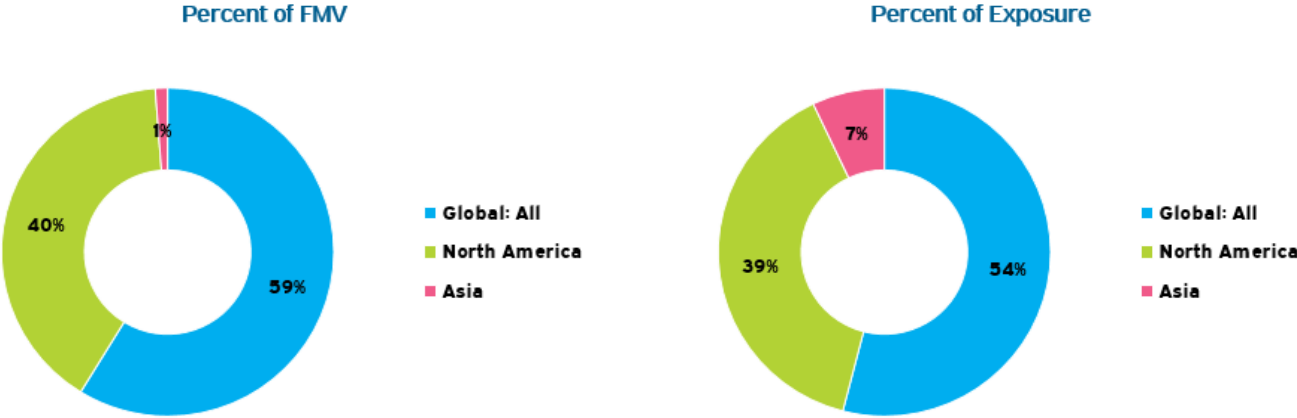


Employees' Retirement System of the State of Hawaii

Exposure By Geographic Focus as of March 31, 2024



Exposure By Geographic Focus as of March 31, 2023





Employees' Retirement System of the State of Hawaii

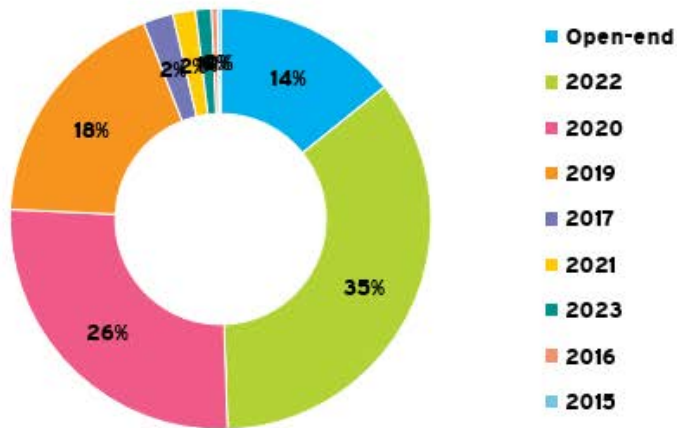


Employees' Retirement System of the State of Hawaii Private Debt Program

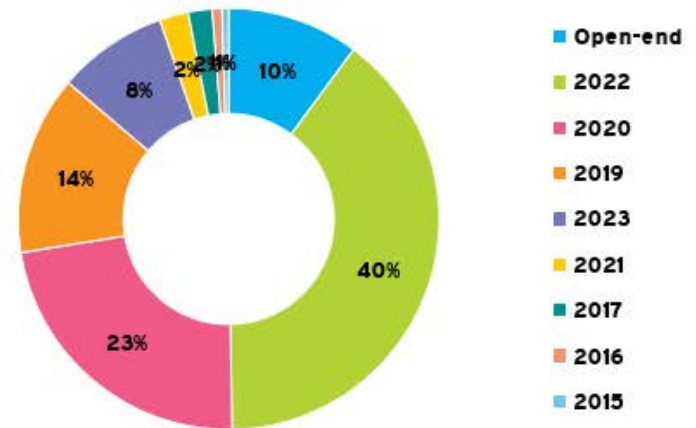
Fund Diversification | As of March 31, 2024

By Vintage

Percent of FMV



Percent of Exposure





Commitment Pacing and Investment Plan

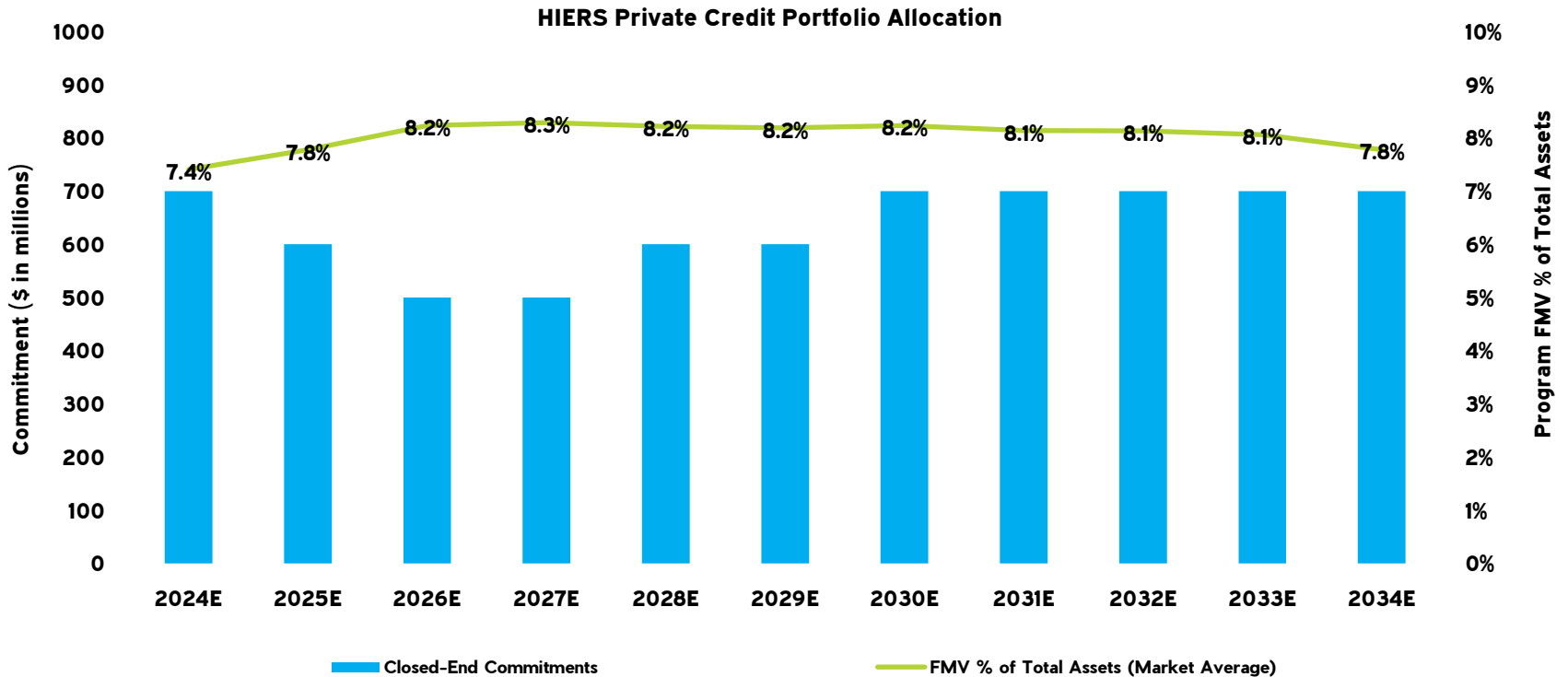


Employees' Retirement System of the State of Hawaii

Commitment Pacing and Investment Plan

Commitment Pacing

→ Annual commitment target of \$500-700 million per year



Assumptions: Long term target allocation of 8% to private credit. Total Plan growth rate of 5.5% growth rate. Portfolio data as of June 30, 2024.



Employees' Retirement System of the State of Hawaii

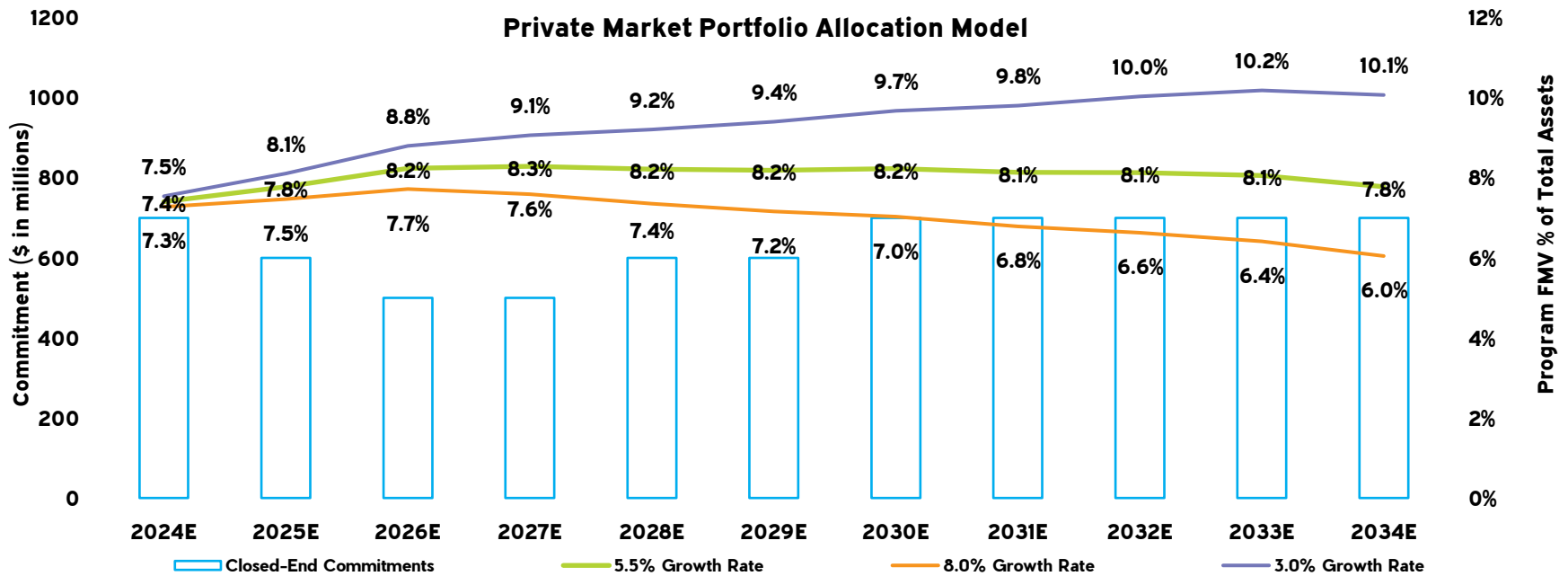
Commitment Pacing and Investment Plan

Scenario Analysis

- Actual allocation a function of multiple factors
 - Growth of the total portfolio a material input
- Update commitment pacing targets annually

Hawaii ERS

Private Market Portfolio Allocation Model





Summary



Employees' Retirement System of the State of Hawaii

Summary

→ Portfolio performing in-line with expectations.

- HIERS Private Credit has generated a since inception net IRR of 9.0% as of March 31, 2024.
- Program consists of 19 partnerships across \$2.3 billion of commitments.
- \$700 million of commitments in 2024 across 3 partnerships.

→ Annual commitment amount of \$600 million targeted in 2025.



Appendix



Employees' Retirement System of the State of Hawaii

Strategy Allocation – Meketa Private Credit Universe

Direct Lending

Capital Structure

- First Lien
- Unitranche
- Second Lien
- Mezzanine/Junior Debt

Geography

- U.S.
- Europe
- Asia/Emerging Markets
- Global

Industry

- Healthcare
- Franchise
- Technology

Asset-Based

Consumer

- Credit Cards
- Student Loans
- Auto Loans
- Consumer Installment

Commercial

- Accounts Receivables
- Trade Finance
- Small Balance

Hard Assets

- Equipment Leasing
- Mortgage Credit
- Solar/Renewable Energy
- Transportation

Soft Assets

- Intellectual Property
- Fund Finance

Special Situations

Distressed

- Corporate
- Mortgage
- Commercial Real Estate

Capital Solutions

- Rescue Financing
- Growth Financing

Non-Performing Loans

- Commercial Real Estate
- Residential Real Estate
- Consumer
- Small Medium Enterprises (SMEs)

Diversifying

- Infrastructure
- Capital Relief
- Royalties
- Secondaries

The above universe is meant to be representative of the broad private credit universe and is not specific to IL SURS. As a growing asset class, the opportunity set is expected to evolve over time.



Private Credit Policy Benchmark

From	To	Private Credit Benchmark
01/01/2024	Current	50% Bloomberg Global High Yield (Hedged) (Quarter Lagged), 50% Morningstar LSTA US Leveraged Loan 100 Index (Quarter Lagged)
07/01/2021	12/31/2023	25% Bloomberg Global High Yield (Hedged) +1% (Month Lagged), 25% Morningstar LSTA US Leveraged Loan 100 Index +1% (Month Lagged), 25% Bloomberg Global High Yield (Hedged) +1% (Quarter Lagged), 25% Morningstar LSTA US Leveraged Loan 100 Index +1% (Quarter Lagged)
07/01/2020	6/30/2021	50% Bloomberg Global High Yield (Hedged) +1% (Month Lagged), 50% Morningstar LSTA US Leveraged Loan 100 Index +1% (Month Lagged)
11/01/2019	6/30/2020	100% Public Credit Benchmark

Public Credit Policy Benchmark

From	To	Public Credit Benchmark
07/01/2021	Current	50% Bloomberg Global High Yield (Hedged), 50% Morningstar LSTA US Leveraged Loan 100 Index
07/01/2020	6/30/2021	50% Bloomberg Global High Yield (Hedged), 50% Morningstar LSTA US Leveraged Loan Index
10/01/2014	6/30/2020	50% Bloomberg Global Credit (Hedged) 33.3% Bloomberg Global High Yield (Hedged), 16.7% Morningstar LSTA US Leveraged Loan Index



Employees' Retirement System of the State of Hawaii

Disclaimer

The material contained in this report is confidential and may not be reproduced, disclosed, or distributed, in whole or in part, to any person or entity other than the intended recipient. The data are provided for informational purposes only, may not be complete, and cannot be relied upon for any purpose other than for discussion.

Meketa Investment Group has prepared this report on the basis of sources believed to be reliable. The data are based on matters as they are known as of the date of preparation of the report, and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available.

If we manage your assets on a discretionary basis, please contact us if there are any changes in your financial situation or investment objectives, or if you want to impose any reasonable restrictions on our management of your account or reasonably modify existing restrictions.

In general, the valuation numbers presented in this report are prepared by the custodian bank for listed securities, and by the fund manager or appropriate General Partner in the case of unlisted securities. The data used in the market comparison sections of this report are sourced from various databases. These data are continuously updated and are subject to change.

This report does not contain all the information necessary to fully evaluate the potential risks of any of the investments described herein. Because of inherent uncertainties involved in the valuations of investments that are not publicly traded, any estimated fair values shown in this report may differ significantly from the values that would have been used had a ready market for the underlying securities existed, and the differences could be material.

This document may contain certain forward-looking statements, forecasts, estimates, projections, and opinions ("Forward Statements"). No representation is made or will be made that any Forward Statements will be achieved or will prove to be correct. A number of factors, in addition to any risk factors stated in this material, could cause actual future results to vary materially from the Forward Statements. No representation is given that the assumptions disclosed in this document upon which Forward Statements may be based are reasonable. There can be no assurance that the investment strategy or objective of any fund or investment will be achieved, or that the client will receive a return of the amount invested.

In some cases Meketa Investment Group assists the client in handling capital calls or asset transfers among investment managers. In these cases we do not make any representations as to the managers' use of the funds, but do confirm that the capital called or transferred is within the amounts authorized by the client.

Because there is no readily accessible market for private markets assets (companies and partnerships), the values placed on private markets assets are calculated by General Partners using conservative and industry standard pricing procedures. Annually, an independent auditor reviews the pricing procedures employed by the General Partner of each partnership.

The values of companies and partnerships are audited at year-end, and are not audited at other quarter-end periods. While financial information may be audited, there is some discretion as to the method employed to price private companies and, therefore, private markets partnerships. At all times, Meketa Investment Group expects General Partners to utilize conservative and industry standard pricing procedures, and requires the General Partners to disclose those procedures in their reports. However, because of the inherent uncertainty of valuation, these estimated values may differ from the values that would be used if a ready market for the investments existed, and the differences could be significant.

MINUTES OF THE INVESTMENT COMMITTEE OF THE
BOARD OF TRUSTEES OF THE EMPLOYEES' RETIREMENT SYSTEM
OF THE STATE OF HAWAII

MAY 28, 2024

CITY FINANCIAL TOWER
201 MERCHANT STREET, SUITE 1200
HONOLULU, HAWAII 96813

Committee Member
Trustees present:
(via teleconference)

Mr. Lance Mizumoto, Chair
Mr. Vincent Barfield
Mr. Emmit Kane

In-person

Mr. Bennett Yap, Vice Chair

Visiting Trustees
present:
(via teleconference)

Dr. Genevieve Ley

Attorneys present:
(via teleconference)

Ms. Jenny Nakamoto, Deputy Attorney General
Ms. Lori Tanigawa, Deputy Attorney General

Staff present:
(City Financial Tower)

Mr. Thomas Williams, Executive Director
Ms. Kristin Varela, Chief Investment Officer
Mr. Anthony Goo, Deputy Chief Investment Officer
Mr. Aaron Au, Investment Officer – Illiquid Markets
Mr. Ian Wetzel, Investment Officer – Real Assets
Ms. Christine Chang, Investment Officer – Diversifying Strategies
Mr. Andrew Chen, Investment Officer - Credit
Ms. Gerri Konishi, Member Home Loan Assistant
Ms. Andrea Gaspar, Secretary
Ms. Lori Kim, Secretary
Ms. Diana Gomes, Secretary

Guest present:
(via teleconference)

Mr. Colin Bebee, Meketa Investment Group, Inc.
Mr. Jonathan Daffron, Man Group

Public present:
(via teleconference)

Mr. Joe Ebisa, With Intelligence

CALL TO ORDER

A quorum being present (Chair Mizumoto, Vice Chair Yap and Trustee Barfield), Chair Mizumoto called the Investment Committee meeting to order at 9:10 a.m. and requested Board members to identify themselves and confirm that no other individuals are present in the room. Committee members present confirmed. Chair Mizumoto read the following statement, "Motion to hold the meeting allowing Trustees and members of the public to participate by interactive conference technology, pursuant to HRS § 92-3.7, with at least one meeting location open to the public that has audiovisual connection." On a motion made by Vice Chair Yap, seconded by Trustee Barfield and unanimously carried, the Investment Committee meeting commenced.

PUBLIC COMMENT PERIOD

Chair Mizumoto called for public comment. There was no public comment.

PRESENTATIONS

Performance Report did not meet the new OIP time deadline for document submission; therefore, is not included in the meeting packet.

- MEKETA INVESTMENT GROUP, INC. – TOTAL FUND PERFORMANCE REVIEW FOR PERIOD ENDING MARCH 31, 2024

CIO Varela explained a lot of adjustments took place within the performance report due to bringing in the new benchmarks, renaming and reclassifying the composites which required a lot of detailed auditing. We have gone line by line to assure historical composition of our benchmarks integrated into the new benchmark system. This report is marked as a preliminary until the auditing process is completed. The auditing process, with guidance from Meketa along with our team, has taken longer than expected to complete the report.

Mr. Colin Bebee of Meketa Investment Group presented the Total Fund Performance Review. Mr. Bebee explained a lot of progress was made in the mapping process and in 2017, with the CRO class, was the last time this type of restructuring was done. The following is a summary of the presentation:

- The ERS Total Fund is on track to meeting its return target over the fiscal-year measurement period.
- The portfolio has closely met or exceeded the Total Fund Policy Benchmark over longer-term time horizons.
- Q1 2024 continued with extremely strong equity market returns and was up another 8% from 2023, a strong 15-month equity market period.
- On a risk-unadjusted basis, the portfolio outperformed the Median Public Fund Peer Group across all time periods. On a risk-adjusted basis, the ERS has closely matched the Median Public Fund Peer Group, over longer time horizons.
- Ending market value for the quarter ending March 31, 2024 is \$23,271,069,490.

- HAMILTON LANE – ALTERNATIVE ASSET CLASS REVIEW: PRIVATE EQUITY QUARTERLY REVIEW FOR PERIOD ENDING DECEMBER 31, 2023

Trustee Kane joined the meeting at 9:40 a.m.

Ms. Natalie Fitch and Mr. Paul Yett of Hamilton Lane presented the Private Equity Program Update. The following is a summary of the presentation:

- ERS portfolio outperformed its public benchmark by 370 bps since inception.
- Quarterly net IRR of 2.17% or net value increase of \$96.3 million.
- Portfolio generated double digit performance across all longer-term time periods.
- PE allocation of 19.2% slightly above 19.0% target and up 9.1% over the one-year period ending 12/31/2023.
- ERS portfolio outperformed the public market benchmark (MSCI ACWI IMI +200 bps) for all periods.
- Contributions outweighed distributions by \$116 million in 2023.
- Foundation managers continue to represent most of the portfolio value and outperformed the total portfolio by 265 bps.
- Hamilton Lane portfolio outperformed total portfolio by 375 bps.
- ERS on track to achieve the approved pacing plan.

- Private equity has had greater upside and less downside across all cycles.
- Private markets generally have had less volatility than public markets.
- On average, figures show private markets were more expensive than public markets in 2023.
- Slowing rate of distribution is consistent across private equity and private credit strategies.
- Private equity has out performed liquid equities over a 10-year time period.
- Private equity has done well during the most recent turbulent market conditions.

- MEKETA INVESTMENT GROUP, INC. – RISK BUDGETING EDUCATION (CONTINUED)

Mr. Colin Bebee of Meketa Investment Group presented the continuation of education on risk budgeting at the total portfolio level. The following is a summary of the presentation:

- Risk budgeting is managing a portfolio based on risk contributions/levels.
- Risk budgeting is closely related to the concept of active risk or tracking error and should be budgeted.
- Risk budgets guide the decisions that the ERS Staff makes at the implementation level relative to portfolio benchmarks.
- Risk budgeting is the process by which the Board/IC will be able to discuss, monitor, and set thresholds for various levels of active risk.
- The ERS portfolio is separated into Market Beta Risk and Active Risk.
- With new benchmarks in place, there will be consistent tracking error between the portfolio and the benchmark.
- ERS' public market benchmark establishes a baseline level of tracking error versus the Total Portfolio that includes private markets exposure.
- There is no standard or best practice way of doing risk budgeting.
- Given the complexity, Meketa and Staff suggest that ERS implement risk budgets in an incremental approach to achieve comfort. For example, at the first level the Staff is comfortable then would have the Investment Committee approve it and then introduced to the portfolio.
- Risk Budgeting is like having guard rails in place to direct decisions but also need the benchmarks in place.

- CIO UPDATE

CIO Varela reported that Lynn Kamimoto was hired as the new Risk Officer and onboarded on April 1, 2024. She is responsible for the internal build out for risk budgeting and work on building out the tools to effectively implement the system. Ms. Kamimoto worked in financial services since 2005 and served at Bank of Hawaii, Templeton Investment, Santa Clara County FCU and Hawaii USA FCU. She has a Bachelor's in Mechanical Engineering from MIT and hold a CFA and FRM.

APPROVAL OF MINUTES –
FEBRUARY 20, 2024

On a motion made by Trustee Barfield and seconded by Trustee Yap, and unanimously carried, the Investment Committee approved the minutes of February 20, 2024, meeting as presented.

[Before entering Executive Session, Chair Mizumoto read the names of all authorized participants. All unauthorized participants were asked to leave the meeting.]

ENTER EXECUTIVE SESSION

On a motion made by Trustee Barfield, seconded by Trustee Yap, and unanimously carried, the Investment Committee entered Executive Session at 10:55 a.m.

EXECUTIVE SESSION

[At the beginning of Executive Session, Chair Mizumoto asked each participant individually to confirm no unauthorized person is present or able to hear them at their remote locations or via another audio or audiovisual connection. All responded they were by themselves.]

EXECUTIVE SESSION, PURSUANT TO HRS § 88-27.5(A)(1), AND HRS § 92-5(A)(4), TO CONDUCT DISCUSSIONS AND DELIBERATIONS RELATING TO, AND IF APPROPRIATE, TO MAKE A DECISION ON INVESTMENTS OR PROSPECTIVE INVESTMENTS BY THE SYSTEM THAT REQUIRE THE CONSIDERATION OF INFORMATION OR RECORDS THAT ARE EXEMPT FROM DISCLOSURE UNDER HRS CHAPTER 92F, INCLUDING INFORMATION AND RECORDS THAT ARE PROPRIETARY INFORMATION OR CONFIDENTIAL BUSINESS INFORMATION, AND TO CONSULT WITH THE BOARD'S ATTORNEYS ON QUESTIONS AND ISSUES PERTAINING TO THE BOARD'S POWERS, DUTIES, PRIVILEGES, IMMUNITIES, AND LIABILITIES WITH RESPECT TO UPDATES ON STATUS OR ISSUES RELATED TO CONFIDENTIAL ERS INVESTMENT PORTFOLIO UPDATES REGARDING CHANGES IN (1) MANAGER PIPELINES AND ACTIVITY, (2) MANAGER ORGANIZATIONAL UPDATE (3) INVESTMENT OFFICE STAFFING UPDATES

APPROVAL OF EXECUTIVE SESSION MINUTES – FEBRUARY 20, 2024

On a motion made by Trustee Yap, seconded by Trustee Barfield and unanimously carried, the Investment Committee approved the confidential Executive Session minutes of the February 20, 2024, meeting as presented.

EXIT EXECUTIVE SESSION

On a motion made by Trustee Yap, seconded by Trustee Barfield, and unanimously carried, the Investment Committee exited Executive Session at 11:39 a.m.

**SUMMARY OF EXECUTIVE
SESSION**

Chair Mizumoto summarized what was discussed in Executive Session:

- Winding down of a fund manager and received capital.
- Acquisition of firm by one of our consultants.
- Executive Session minutes for February 20, 2024, were approved.

ADJOURNMENT

On a motion made by Trustee Barfield, seconded by Trustee Yap, and unanimously carried, Chair Mizumoto adjourned the meeting at 11:40 a.m.

**REDACTED
SIGNATURE**

Kristin Varela
Chief Investment Officer
KV/dlg