

Due to the termination of the statewide COVID-19 State of Emergency by the Governor of California, effective March 1, 2023, all meetings of the Oakland Police & Fire Retirement System Board and its Committees will be conducted in person.

Meetings are held in wheelchair accessible facilities.

The Board may take action on items not on the agenda only if findings pursuant to the Sunshine Ordinance and Brown Act are made that the matter is urgent or an emergency.

For additional information, contact the Retirement Unit by calling (510) 238-7295. or send an email to mvisaya@oaklandca.gov



AGENDA

AUDIT COMMITTEE MEMBERS

John C. Speakman
Chairperson

R. Steven Wilkinson
Member

Martin J. Melia
Member

**In the event a quorum of the Board participates in the Committee meeting, the meeting is noticed as a Special Meeting of the Board; however, no final Board action can be taken. In the event that the Audit Committee does not reach quorum, this meeting is noticed as an informational meeting between staff and the Chair of the Audit Committee.*

MEETING of the AUDIT & OPERATIONS COMMITTEE of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM (“PFRS”)

WEDNESDAY, OCTOBER 25, 2023

10:00 AM

ONE FRANK H. OGAWA PLAZA, HEARING ROOM 1
OAKLAND, CA 94612

OBSERVE

- To observe the meeting by video conference, please click on this link: <https://us02web.zoom.us/j/82880493983> at the noticed meeting time.
- To listen to the meeting by phone, please call the numbers below at the noticed meeting time: Dial (for higher quality, dial a number based on your current location):
- iPhone one-tap: US: +16699006833, 82880493983# or +13462487799, 82880493983#
- US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 301 715 8592 or +1 312 626 6799 or +1 929 205 6099
- International numbers available: <https://us02web.zoom.us/j/82880493983>
- Webinar ID: 828 8049 3983.
If asked for a participant ID or code, press #.

PUBLIC COMMENTS

There are two ways to submit public comments:

- Speaker Card: All persons wishing to address the Board must complete a speaker’s card, stating their name and the agenda item they wish to address, including “Open Forum”.
- eComment: To send your comment directly to staff BEFORE the meeting starts, please email to mvisaya@oaklandca.gov with “PFRS Board Meeting Public Comment” in the subject line for the corresponding meeting. Please note that eComment submission **closes two (2) hours before posted meeting time**.

If you have any questions, please email Maxine Visaya, Administrative Assistant II at mvisaya@oaklandca.gov

ORDER OF BUSINESS

1. **Subject:** **OAKLAND POLICE AND FIRE RETIREMENT SYSTEM (“PFRS”)
AUDIT & OPERATIONS COMMITTEE MEETING MINUTES**
 From: Staff of the PFRS Board
 Recommendation: **APPROVE** the September 27, 2023 Audit & Operations Committee
 Meeting Minutes

2. **Subject:** **ADMINISTRATIVE EXPENSES REPORT**
 From: Staff of the PFRS Board
 Recommendation: **ACCEPT** informational report regarding PFRS administrative
 expenses as of August 31, 2023

3. **REVIEW OF PENDING AUDIT COMMITTEE MEETING AGENDA ITEMS**
4. **OPEN FORUM**
5. **FUTURE SCHEDULING**
6. **ADJOURNMENT**

A MEETING OF THE AUDIT & OPERATIONS COMMITTEE of the Oakland Police and Fire Retirement System (“PFRS”) was held Wednesday, September 27, 2023, at One Frank Ogawa Plaza, Hearing Room 1, Oakland, California.

Committee Members	▪ John C. Speakman	Chairperson
	▪ Martin J. Melia	Member (Excused)
	▪ R. Steven Wilkinson	Member
Additional Attendees	▪ David Jones	PFRS Secretary & Plan Administrator
	▪ Téir Jenkins	PFRS Investment & Operations Manager
	▪ Maxine Visaya	PFRS Staff Member
	▪ Selia Warren	PFRS Legal Counsel

The meeting was called to order at 10:07 a.m. Pacific

1. PFRS AUDIT & OPERATIONS COMMITTEE MEETING MINUTES

Member Wilkinson made a motion to approve the June 28, 2023, Audit & Operations Committee Meeting minutes, second by Chairperson Speakman. Motion passed.

[SPEAKMAN – Y / MELIA – EXCUSED / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

2. PFRS AUDIT & OPERATIONS COMMITTEE MEETING MINUTES

Member Wilkinson made a motion to approve the August 30, 2023, Audit & Operations Committee Meeting minutes, second by Chairperson Speakman. Motion passed.

[SPEAKMAN – Y / MELIA – EXCUSED / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

3. ADMINISTRATIVE EXPENSES REPORT – PFRS Investment & Operations Manager Jenkins presented an informational report regarding PFRS’ administrative expenditures as of July 31, 2023. PFRS has an approved annual budget of approximately \$3.7 million and expensed approximately \$88,000 to date for fiscal year 2023/2024. Membership consisted of 650 retired members and beneficiaries, which included 403 Police Members and 247 Fire Members.

MOTION: Member Wilkinson made a motion to accept the administrative expenses report as of July 31, 2023, and forward to the Board, second by Chairperson Speakman. Motion passed.

[SPEAKMAN – Y / MELIA – EXCUSED / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

4. MANNER OF PFRS BOARD & COMMITTEE MEETINGS

PFRS Investment & Operations Manager Jenkins presented an informational report regarding the manner of PFRS Board & Committee Meetings and Staff seeks Board instruction as how to proceed.

MOTION: Member Wilkinson made a motion to accept the informational report regarding the manner of PFRS Board & Committee Meetings, second by Chairperson Speakman. Motion passed.

[SPEAKMAN – Y / MELIA – EXCUSED / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

5. REVIEW OF PENDING AUDIT COMMITTEE MEETING AGENDA ITEMS

PFRS Plan Administrator & Secretary Jones reported on the two (2) items on the Audit and Operations Committee Agenda pending list. Item 1) Status Report of the Ad Hoc Committee regarding the Actuarial Funding Date of July 1, 2026: These meetings are on hold pending an update from PFRS Legal Counsel. Item 2) Monitor & Update PFRS Board of Upcoming City Council Agendas Regarding Discussion of the 2026 Actuarial Funding Date: No updates at this time. Legal Counsel Warren advised the matter to be considered by the Ad Hoc Committee is sitting with her office & the Office of the City Attorney and an official opinion is pending.

6. OPEN FORUM – No Report.

7. FUTURE SCHEDULING

The next Audit & Operations Committee Meeting will be held in-person and is tentatively scheduled to occur October 25, 2023.

8. ADJOURNMENT – Member Wilkinson made a motion to adjourn, second by Chairperson Speakman. Motion passed.

[SPEAKMAN – Y / MELIA – EXCUSED / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

The meeting adjourned at 10:15 a.m. Pacific

JOHN C. SPEAKMAN
COMMITTEE CHAIRPERSON

DATE

Table 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Administrative Budget Spent to Date (Preliminary)

As of August 31, 2023

	Approved Budget		August 2023		FYTD		Remaining		Percent Remaining	
Internal Administrative Costs										
PFRS Staff Salaries	\$	1,459,000	\$	103,518	\$	192,038	\$	1,266,962		86.8%
Board Travel Expenditures		52,500		1,765		2,030		50,470		96.1%
Staff Training		20,000		-		-		20,000		100.0%
Staff Training - Tuition Reimbursement		7,500		-		-		7,500		100.0%
Board Hospitality		3,600		345		345		3,255		90.4%
Payroll Processing Fees		40,000		-		-		40,000		100.0%
Miscellaneous Expenditures		45,000		471		471		44,529		99.0%
Internal Service Fees (ISF)		88,000		-		-		88,000		100.0%
Contract Services Contingency		50,000		-		-		50,000		100.0%
Internal Administrative Costs Subtotal :	\$	1,765,600	\$	106,098	\$	194,883	\$	1,570,717		89.0%
Actuary and Accounting Services										
Audit	\$	52,800	\$	-	\$	-	\$	52,800		100.0%
Actuary		49,400		-		-		49,400		100.0%
Actuary and Accounting Subtotal:	\$	102,200	\$	-	\$	-	\$	102,200		100.0%
Legal Services										
City Attorney Salaries	\$	212,100	\$	-	\$	-	\$	212,100		100.0%
Legal Contingency		150,000		-		-		150,000		100.0%
Legal Services Subtotal:	\$	362,100	\$	-	\$	-	\$	362,100		100.0%
Investment Services										
Money Manager Fees	\$	1,353,000	\$	-	\$	-	\$	1,353,000		100.0%
Custodial Fee		124,500		-		-		124,500		100.0%
Investment Consultant		100,000		-		-		100,000		100.0%
Investment Subtotal:	\$	1,577,500	\$	-	\$	-	\$	1,577,500		100.0%
Total Operating Budget	\$	3,807,400	\$	106,098	\$	194,883	\$	3,612,517		94.88%

Table 2

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Cash in Treasury (Fund 7100) - Preliminary

As of August 31, 2023

	August 2023	
Beginning Cash as of 8/1/2023	\$	10,423,651
Additions:		
City Pension Contribution - August	\$	3,396,917
Investment Draw	\$	1,000,000
Misc. Receipts		1,600
Total Additions:	\$	4,398,517
Deductions:		
Pension Payment (July Pension Paid on 8/1/2023)		(4,257,036)
Expenditures Paid		(182,947)
Total Deductions	\$	(4,439,983)
 Ending Cash Balance as of 8/31/2023*	 \$	 10,382,185

* On 9/1/2023, July pension payment of appx \$4,243,000 will be made leaving a cash balance of \$6,139,000.

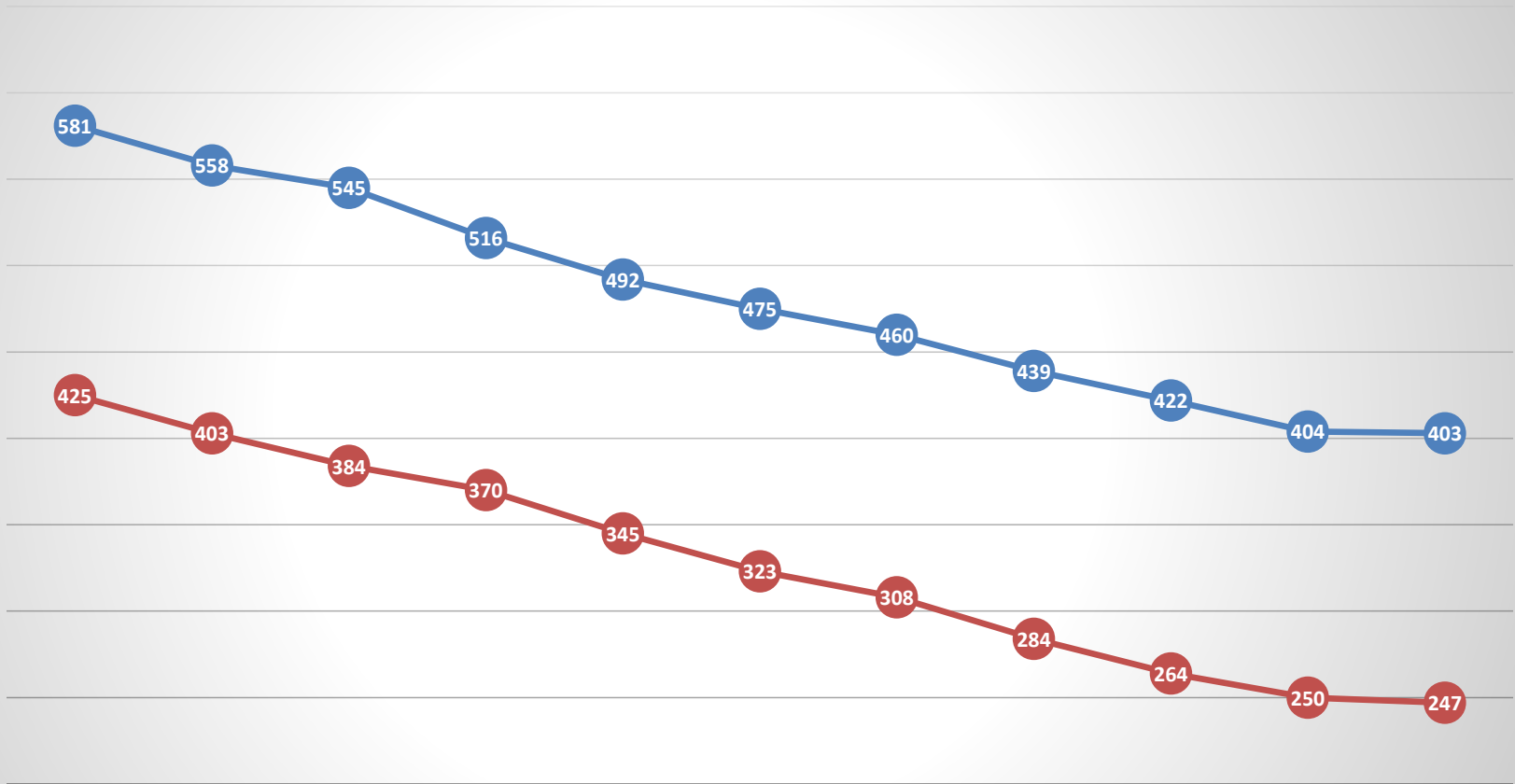
Table 3
CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Census
As of August 31, 2023

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Retiree	276	156	432
Beneficiary	127	91	218
<i>Total Retired Members</i>	403	247	650
<i>Total Membership:</i>	403	247	650

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Service Retirement	269	118	387
Disability Retirement	125	118	243
Death Allowance	9	11	20
<i>Total Retired Members:</i>	403	247	650
<i>Total Membership as of August 31, 2023:</i>	403	247	650
<i>Total Membership as of June 30, 2023:</i>	404	250	654
<i>Annual Difference:</i>	-1	-3	-4

Oakland Police and Fire Retirement System Pension Plan Membership Count As of August 31, 2023 (FY 2014 - FY 2024)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 FYTD
Police	581	558	545	516	492	475	460	439	422	404	403
Fire	425	403	384	370	345	323	308	284	264	250	247
Total	1006	961	929	886	837	798	768	723	686	654	650



AGENDA REPORT

TO: Oakland Police and Fire
Retirement System Audit &
Operations Committee

FROM: David F. Jones
Plan Administrator & Secretary

SUBJECT: Audit Committee Agenda
Pending List

DATE: October 25, 2023

	SUBJECT	TENTATIVE SCHEDULED MTG DATE	STATUS
1	Status Report of the Ad Hoc Committee regarding Actuarial Funding date of July 1, 2026	TBD	Meeting was scheduled for 10/23/2023
2	Monitor & Update PFRS Board of Upcoming City Council Agendas Regarding Discussion of the July 1, 2026 Actuarial Funding Date	Ongoing	Ongoing

Respectfully submitted,

David F. Jones
Plan Administrator & Secretary
Police & Fire Retirement Systems

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Retirement Unit
150 Frank H. Ogawa Plaza
Oakland, California 94612

AGENDA

INVESTMENT COMMITTEE MEMBERS

Jaime T. Godfrey
Chairperson

R. Steven Wilkinson
Member

Robert W. Nichelini
Member

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MEETING of the INVESTMENT AND FINANCIAL MATTERS COMMITTEE of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM (“PFRS”)

WEDNESDAY, OCTOBER 25, 2023

10:30 AM

ONE FRANK H. OGAWA PLAZA, HEARING ROOM 1
OAKLAND, CA 94612

OBSERVE

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- US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 301 715 8592 or +1 312 626 6799 or +1 929 205 6099
- International numbers available: <https://us02web.zoom.us/j/82880493983>
- Webinar ID: 828 8049 3983.
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If you have any questions, please email Maxine Visaya, Administrative Assistant II at mvisaya@oaklandca.gov

ORDER OF BUSINESS

- 1. Subject:** POLICE AND FIRE RETIREMENT SYSTEM (“PFRS”) INVESTMENT AND FINANCIAL MATTERS COMMITTEE MEETING MINUTES

From: Staff of the PFRS Board

Recommendation: **APPROVE** the September 27, 2023 Investment and Financial Matters Committee Meeting Minutes

- 2. Subject:** INVESTMENT MANAGER PERFORMANCE UPDATE: PARAMETRIC PORTFOLIO ASSOCIATES, LLC

From: Parametric Portfolio Associates, LLC

Recommendation: **ACCEPT** informational report regarding a firm overview and managerial assessment; diversity and inclusion policy and practices; and investment strategy and portfolio performance of PFRS’ Covered Calls Investment Strategy Manager Parametric Portfolio Associates, LLC

- 3. Subject:** INVESTMENT MANAGER PERFORMANCE REVIEW: PARAMETRIC PORTFOLIO ASSOCIATES, LLC

From: Meketa Investment Group

Recommendation: **ACCEPT** Meketa Investment Group’s review and evaluation regarding a firm overview and managerial assessment; peer ranking; and investment portfolio performance of PFRS’ Covered Calls Investment Strategy Manager Parametric Portfolio Associates, LLC

- 4. Subject:** RESOLUTION 8085
RESOLUTION TO AUTHORIZE A ONE-YEAR EXTENSION OF THE PROFESSIONAL SERVICES AGREEMENT WITH PARAMETRIC PORTFOLIO ASSOCIATES, LLC FOR THE PROVISION OF COVERED CALLS INVESTMENT STRATEGY MANAGER SERVICES

From: Staff of the PFRS Board

Recommendation: **RECOMMEND BOARD APPROVAL** of Resolution No. 8085 authorizing a one-year extension of the professional services agreement with Parametric Portfolio Associates, LLC for the provision of Covered Calls Investment Strategy Manager Services for the City of Oakland Police and Fire Retirement System

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
INVESTMENT & FINANCIAL MATTERS COMMITTEE MEETING
OCTOBER 25, 2023

5. **Subject:** ECONOMIC AND INVESTMENT MARKET OVERVIEW
AS OF SEPTEMBER 30, 2023
From: Meketa Investment Group

Recommendation: **ACCEPT** informational report regarding the Global Investment Markets as of September 30, 2023
6. **Subject:** PRELIMINARY INVESTMENT FUND PERFORMANCE UPDATE
AS OF SEPTEMBER 30, 2023
From: Meketa Investment Group

Recommendation: **ACCEPT** informational report regarding the Preliminary Investment Fund Performance Update as of September 30, 2023
7. **Subject:** ASSET-LIABILITY STUDY OF THE PFRS FUND (2023)
From: Meketa Investment Group

Recommendation: **RECEIVE** and **DISCUSS** informational report regarding the 2023 Asset-Liability Study of the PFRS Fund. **RECOMMEND BOARD APPROVAL** of Meketa Investment Group’s recommended course of action moving forward

8. SCHEDULE OF PENDING INVESTMENT COMMITTEE MEETING AGENDA ITEMS
9. OPEN FORUM
10. FUTURE SCHEDULING
11. ADJOURNMENT

A MEETING OF THE INVESTMENT AND FINANCIAL MATTERS COMMITTEE of the Oakland Police and Fire Retirement System (“PFRS”) was held Wednesday, September 27, 2023, at One Frank H. Ogawa Plaza, Hearing Room 1, Oakland, CA.

Committee Members	▪ Jaime T. Godfrey	Chairperson (Excused)
	▪ Robert W. Nichelini	Member
	▪ R. Steven Wilkinson	Member & Acting Chairperson
Additional Attendees	▪ David F. Jones	PFRS Secretary & Plan Administrator
	▪ Téir Jenkins	PFRS Investment & Operations Manager
	▪ Maxine Visaya	PFRS Staff Member
	▪ Selia Warren	PFRS Legal Counsel
	▪ David Sancewich	Meketa Investment Group
	▪ DeWayne Louis	Versor Investments, LLC
	▪ Deepak Gurnani	Versor Investments, LLC

The meeting was called to order at 10:33 a.m. Pacific

1. APPROVAL OF INVESTMENT & FINANCIAL MATTERS COMMITTEE MEETING MINUTES

Member Nichelini made a motion to approve the July 26, 2023 Investment & Financial Matters Committee Meeting Minutes, second by Acting Chairperson Wilkinson. Motion Passed.

[GODFREY – EXCUSED / NICHELINI – Y / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

2. APPROVAL OF INVESTMENT & FINANCIAL MATTERS COMMITTEE MEETING MINUTES

Member Nichelini made a motion to approve the August 30, 2023 Investment & Financial Matters Committee Meeting Minutes, second by Acting Chairperson Wilkinson. Motion Passed.

[GODFREY – EXCUSED / NICHELINI – Y / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

3. INVESTMENT MANAGER PERFORMANCE UPDATE: VERSOR INVESTMENTS, LLC

DeWayne Louis and Deepak Gurnani of Versor Investments, LLC (Versor) presented an informational report regarding a firm overview and managerial assessment; diversity and inclusion policy and practices; and investment strategy and portfolio performance of PFRS’ Systematic Trend Following Investment Strategy.

Acting Chairperson Wilkinson, Investment & Operations Manager Jenkins, & Plan Administrator Jones made inquiries to further the discussion regarding the following topics: the firm’s investment strategy; use of AI technology in forecast modeling; future performance outlook; diversity and inclusion policy and practices; and a discrepancy in reported portfolio performance statistics provided by Versor vs. Meketa.

MOTION: Member Nichelini made a motion to accept the informational report from Versor and forward to the Board, second by Acting Chairperson Wilkinson. Motion passed.

[GODFREY – EXCUSED / NICHELINI – Y / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

4. INVESTMENT MANAGER PERFORMANCE REVIEW: VERSOR INVESTMENTS, LLC

David Sancewich of Meketa Investment Group (“Meketa”) presented an informational memo regarding a firm overview and managerial assessment; peer ranking; and investment portfolio performance of Versor, PFRS Systematic Trend Following Investment Strategy Manager. D. Sancewich advised Meketa has no organizational or performance concerns with Versor. Acting Chairperson Wilkinson requested Meketa provide an update regarding the discrepancy in reported portfolio performance statistics provided by Versor vs. Meketa.

MOTION: Member Nichelini made a motion to accept Meketa’s evaluation of Versor and forward to the Board, second by Acting Chairperson Wilkinson. Motion passed.

[GODFREY – EXCUSED / NICHELINI – Y / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

5. ECONOMIC AND INVESTMENT MARKET OVERVIEW AS OF AUGUST 31, 2023

David Sancewich of Meketa presented an informational report regarding the Economic and Investment Market Overview as of August 31, 2023, and highlighted Index Returns and current factors impacting outcomes.

MOTION: Member Nichelini made a motion to accept the informational report presented by Meketa regarding the Economic and Investment Market Overview as of August 31, 2023, and forward to the Board, second by Acting Chairperson Wilkinson. Motion passed.

[GODFREY – EXCUSED / NICHELINI – Y / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

6. PRELIMINARY INVESTMENT PERFORMANCE UPDATE AS OF AUGUST 31, 2023

David Sancewich of Meketa presented an informational report regarding the Preliminary Investment Performance Update as of August 31, 2023 and highlighted Allocation vs. Targets and Policy and Asset Class Performance Summary and current factors impacting outcomes.

MOTION: Member Nichelini made a motion to accept the informational report presented by Meketa regarding the Preliminary Investment Performance Update as of August 31, 2023, and forward to the Board, second by Acting Chairperson Wilkinson. Motion passed.

[GODFREY – EXCUSED / NICHELINI – Y / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

**7. \$13.2 MILLION DRAWDOWN FOR MEMBER RETIREMENT ALLOWANCES
QUARTER ENDING DECEMBER 31, 2023 (FISCAL YEAR 2023/2024)**

David Sancewich of Meketa presented an informational report and recommendation for a \$13.2 million drawdown, which included a \$10.2 Million contribution from the City of Oakland and a \$3.0 Million contribution from the PFRS Investment Fund, to be used to pay Member Retirement Allowances from October 1, 2023, through December 31, 2023 and for funds to be drawn from the Earnest Partners Portfolio. Member Nichelini noted contributions from “The City” are funded from a restricted fund that can only be used for PFRS and are not funded from the General Fund.

MOTION: Member Nichelini made a motion to accept the informational report and recommend Board approval of Meketa’s recommendation regarding the \$13.2 million drawdown to pay Member Retirement Allowances from October 1, 2023, through December 31, 2023, second by Acting Chairperson Wilkinson, second by Acting Chairperson Wilkinson. Motion passed.

[GODFREY – EXCUSED / NICHELINI – Y / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

**8. THERMAL COAL COMPANIES PROHIBITED FROM THE PFRS INVESTMENT PORTFOLIO
2023 UPDATE**

David Sancewich of Meketa presented an informational memo regarding an updated list of thermal coal companies prohibited from the PFRS Investment Portfolio.

MOTION: Member Nichelini made a motion to accept and recommend Board approval of Meketa Investment Group’s updated list of thermal coal companies prohibited from the PFRS Investment Portfolio, second by Acting Chairperson Wilkinson. Motion passed.

[GODFREY – EXCUSED / NICHELINI – Y / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

9. ASSET-LIABILITY STUDY OF THE PFRS FUND (2023)

Acting Chairperson Wilkinson forwarded this item to the Full Board meeting. No action was taken on this item.

10. SCHEDULE OF PENDING INVESTMENT COMMITTEE MEETING AGENDA ITEMS

David Sancewich of Meketa presented the 2023 Strategic Investment Agenda Plan for discussion and noted the continued discussion regarding the Asset Liability Study in the coming months. No changes or additions were proposed.

11. OPEN FORUM – No Report

12. FUTURE SCHEDULING

The next Investment Committee Meeting will be held in-person and is tentatively scheduled to occur October 25, 2023.

13. ADJOURNMENT

Member Nichelini made a motion to adjourn, second by Acting Chairperson Wilkinson. Motion passed.

[GODFREY – EXCUSED / NICHELINI – Y / WILKINSON – Y]
(AYES: 2 / NOES: 0 / ABSTAIN: 0 / ABSENT: 0 / EXCUSED: 1)

The meeting adjourned at 11:29 a.m. Pacific

R. STEVEN WILKINSON
ACTING COMMITTEE CHAIRPERSON

DATE

DRAFT



Oakland Police & Fire Retirement System Covered Call Portfolio Review

October 25, 2023

Dan Ryan

Executive Director – Client Relationship Management
Parametric Portfolio Associates® LLC
(206) 381-7036
DRyan@paraport.com

Jim Roccas

Managing Director – Investment Strategy
Parametric Portfolio Associates® LLC
(203) 227-1700
JRoccas@paraport.com

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Firm Overview

Parametric Overview

We help institutional investors build, manage, and protect their portfolios.



Extensive, established investment capabilities

An industry pioneer in overlay solutions and custom indexing, Parametric is a trusted fiduciary for institutional asset owners.



Focus on transparency and repeatability

We provide research and rules-based solutions with a quantitative approach. Our solutions span global markets, asset classes, and instrument types.



Extension of staff partnership

We help investors solve specific portfolio challenges, implementing tailored solutions via a high-touch service model.

\$439B+

Firm wide AUM¹, including 185B+ in institutional assets

500+

Institutional client relationships

196

Investment professionals, including 105 CFA charterholders and 10 PhDs

30+

Years of investment experience across equities, fixed income, and derivatives

Asset figures are approximate as of 6/30/2023.

¹AUM includes overlay exposure, and both discretionary and non-discretionary assets of Parametric Portfolio Associates® LLC (the Firm).

Certain statements contained herein reflect the subjective view of Parametric and its personnel and as such cannot be independently verified. Please refer to the disclosures for additional information.



Institutional Capabilities

We offer a comprehensive platform for investors seeking to:

- ✓ Eliminate inefficiencies
- ✓ Create custom exposures
- ✓ Capitalize on market opportunities
- ✓ Address strategic and episodic risks

Efficient implementation

Flexible exposure management programs tailored to fit specific needs

Solution ideas

- Cash overlay
- Rebalancing
- Transition exposure
- Custom equity exposures
- Custom fixed income exposures
- Responsible investing (ESG)

Return enhancement

Systematic strategies that seek alpha across asset classes

Solution ideas

- Alternative risk premia
- Systematic alpha
- Portable alpha
- Commodity management
- Tax management

Risk mitigation

Customizable tools that address and manage specific portfolio risks

Solution ideas

- Tail-risk strategies
- Market and security hedging programs
- Asset and liability hedging
- Currency management

Investing involves market- and program-specific risks. All investments are subject to loss.

The Parametric Difference



Collaborative, client-centric approach

Clients are supported by a high-touch, consultative team with decades of experience structuring and executing custom strategies.



The next level of implementation refinement

Our investments in technology and thoughtful trade execution deliver highly competitive solutions across markets.



Comprehensive, transparent investment approach

Clients gain comprehensive exposure management tools with daily reporting delivered in a customizable format.

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Diversity, Equity, and Inclusion

Our mission

We aspire to be an industry leader in our representation of a truly diverse and inclusive workforce to reflect the communities in which we live and work.

Our principles



Accountability

Senior leadership teams take actions to improve diversity, equity, and inclusion.



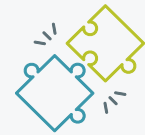
Advancement

Through training and education, we support all employees along their career journeys.



Representation

We boost representation through targeted recruitment, development, and retention.



Culture

We aim to foster an atmosphere of inclusion and belonging.

Helping our clients stay true to their DEI missions

We offer you customizable ways to pursue your missions through our wide array of responsible investing strategies, including portfolio construction and active ownership.

"Making sustained, meaningful progress in our firm's DEI agenda is a top priority for Parametric. Our employees deserve it, our clients expect it, and we perform better as a business because of it." —Brian Langstraat, CEO

Representative Client List as of June 30, 2023

> **Public**

East Bay Municipal Utility District
Fairfax County Employees' Retirement Systems
Houston Police Officers' Pension System
Manhattan & Bronx Surface Transit Operating Authority Pension Plan
Marin County Employees' Retirement Association
Massachusetts Pension Reserves Investment Management Board
New Mexico Public Employees' Retirement Association
Orange County Employees Retirement System
San Mateo County Employees' Retirement Association
Teachers' Retirement System of Louisiana
Utah School and Institutional Trust Funds Office
State of Wisconsin Investment Board

> **Endowments**

Carnegie Institution of Washington
Florida State University Foundation
Indiana University Foundation
Pepperdine University
Texas Christian University
Regents of the University of Michigan
University of Minnesota Foundation

> **Faith Based**

Catholic Diocese of Fort Worth
Covenant Ministries of Benevolence
Ministers & Missionaries' Benefit Board of American Baptist Churches
Pension Fund of the Christian Church
YMCA Retirement Fund

> **Healthcare**

Advocate Health and Hospitals Corporation
North Memorial Health Care
Trinity Health Pension

> **Taft-Hartley**

ABC-NABET Retirement Trust Fund
Boilermaker-Blacksmith National Pension Trust
Greater Pennsylvania Carpenters' Pension Fund
Chicago Laborers' Pension & Welfare Funds
International Union of Painters and Allied Trades Annuity Plan
SEIU Pension Plans Master Trust
Western Pennsylvania Teamsters & Employers Pension Fund

> **Foundations**

John D. & Catherine T. MacArthur Foundation
The McKnight Foundation
Strada Education Network, Inc.
Wisconsin Alumni Research Foundation

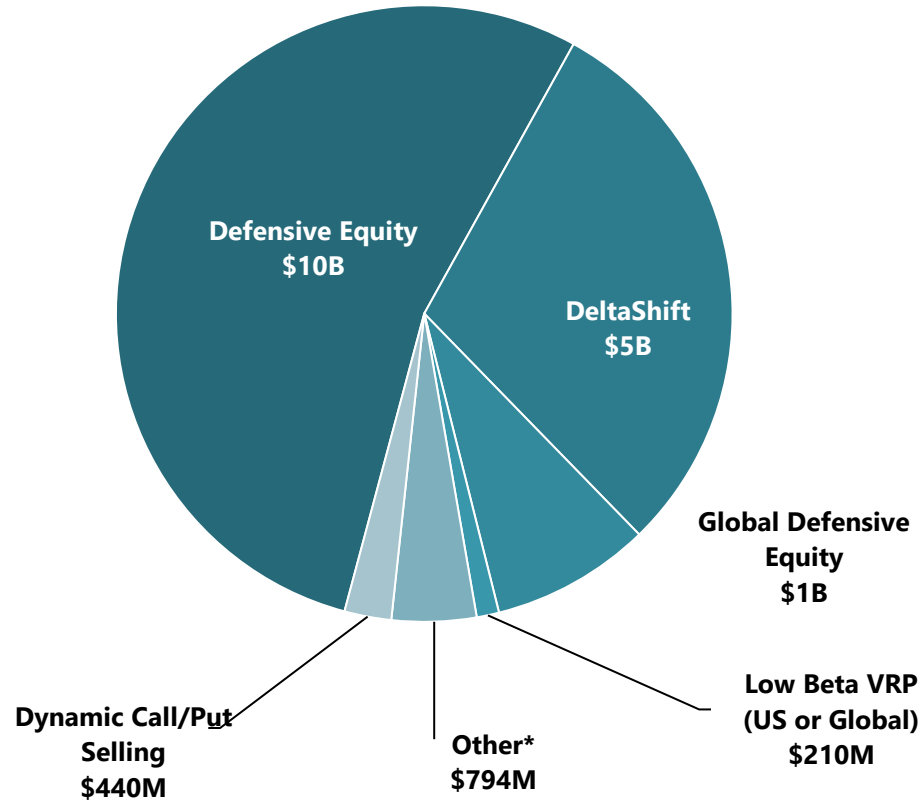
> **Corporate**

The Boeing Company
EverSource Energy
Raytheon Technologies Corporation

It is not known whether the listed clients approve or disapprove of the adviser. The partial list of clients included herein were selected as being representative of the different types of institutional clients and businesses serviced by Parametric. Performance-based data was not a determining factor in their selection.

Parametric Volatility Risk Premium Strategies

Assets by Strategy



Volatility Risk Premium Strategies Total Assets of \$18 Billion
Consists of Funded and Overlay Assets

*"Other" includes strategies Absolute Return VRP, BXM Replications, Elevated Beta VRP, Fixed Budget Put Buying, Multi-Asset Volatility Risk Premium, Options - Dynamic Hedged Equity, and Risk Managed Put Selling.

All numbers are approximate as of 6/30/2023 and include both discretionary and non-discretionary assets of the Firm.

Covered Call Investment Process

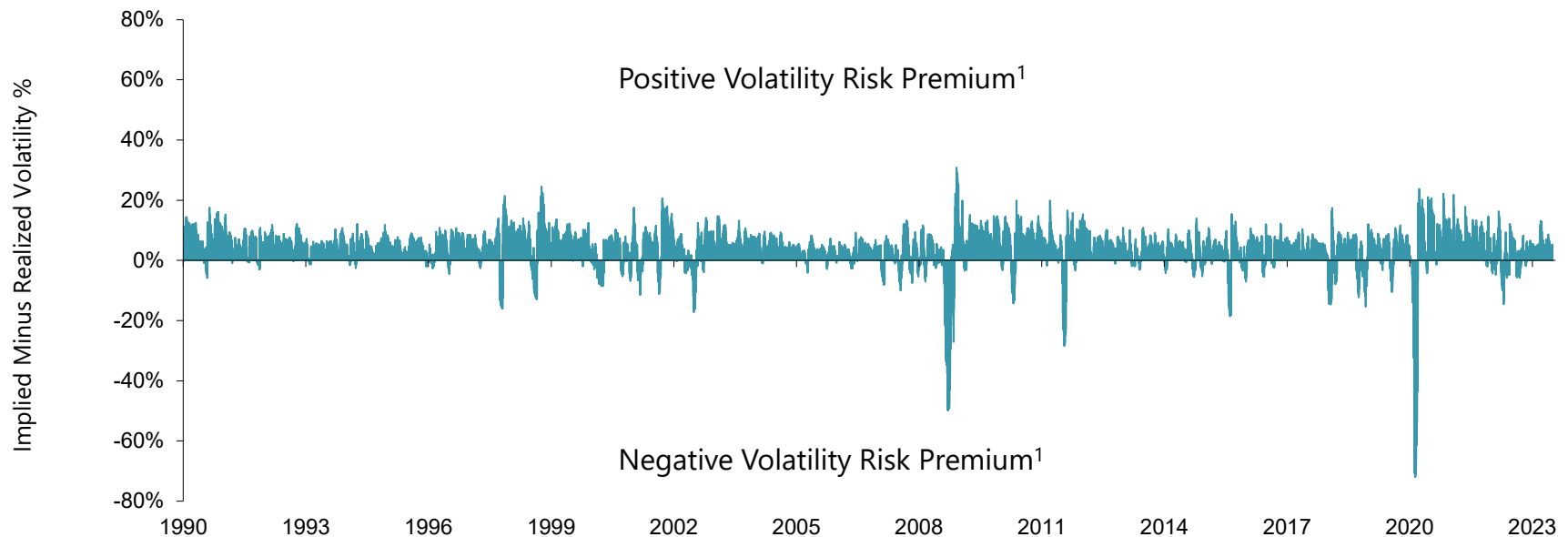
Investment Objectives

Parametric manages two covered call portfolios for Oakland Police and Fire: one utilizing the CBOE BXM BuyWrite Enhanced Replication strategy (“Enhanced BXM”) and one utilizing the Portfolio DeltaShift strategy (“DeltaShift”).

- **The Enhanced BXM objective** is to replicate the CBOE BXM Index with greater diversification than the published index.
- **The DeltaShift objective** is to monetize the existing volatility of the underlying large-cap portfolio and maintain partial upside equity participation that is often forgone in traditional call writing programs.
 - When equity markets are down, flat or moderately positive, DeltaShift seeks to add cash flow to the portfolio.
 - When equity markets are strong, DeltaShift may underperform the equity market.
 - DeltaShift is expected to deliver a positive return over market cycles, net of fees, as a result of the embedded volatility imbalance observed in the options market.

Empirical Data Supports Our Investment Thesis

S&P 500[®] Index options have traded with a positive volatility risk premium over 85% of the time since 1990.



Embedded risk premium creates opportunity to enhance return through option selling.

¹1990 to present represents longest period from which reliable data is available and accessible for S&P 500 Volatility Index. S&P 500[®] Index options relative valuation measured by taking daily observations of Implied Volatility (as measured by VIX Index) and subtracting the subsequent Realized Volatility of the S&P 500[®] over the subsequent 1 month (assuming 21 trading days). Options have historically traded about above subsequent realized volatility. Said another way, the option market tends to overestimate future volatility, which translates directly into higher prices for both puts and calls. VIX is the Chicago Board Options Exchange volatility index. VIX is calculated constantly throughout each trading day by observing the implied volatility derived from actual market prices of a wide array of put and call options with an average maturity of 30 days to expiration. For informational purposes only. It is not possible to invest directly in an index. All investments are subject to loss. Source: Parametric, Bloomberg; Date: 6/30/23.

Investment Objectives

DeltaShift and Enhanced BXM Investment Thesis

Equity index options have historically traded above “theoretical fair value”, and we expect this to continue.

- Option prices contain a “Volatility Risk Premium” (VRP) paid by option buyers to option sellers.
- The VRP is meaningful and likely to persist, it is a diversifying premium that most portfolios currently do not hold.
- A covered call portfolio can capture the VRP by selling covered options without introducing leverage.

Disciplined ▶ Liquid ▶ Transparent ▶ No Leverage

Investing in an options strategy involves risk. There is no guarantee that the investment objectives can be achieved. Please refer to the Appendix for additional information and disclosure.

Portfolio Construction & Overview

DeltaShift seeks to provide incremental return over an equity index or other base portfolio by systematically selling short-dated index call options. The additional return is received in exchange for potentially limiting upside participation in strong equity markets.

Standard portfolio construction & characteristics

- Long S&P 500[®] equity index portfolio (or other highly correlated equity portfolios)
- Systematic, rules-based call writing using exchange-traded, S&P 500[®] index call options
 - Option selection diversified across maturities and strike prices to mitigate risk
 - Favorable risk/reward trade-off
 - Early profit capture and risk reduction based on loss minimization implementation rules
- Expected to outperform the S&P 500[®] Index in down, sideways and moderately up markets, and expected to underperform in strong equity markets

DeltaShift Option Selection

When selling call options, we index the strike price to market volatility.

- Higher strike price in higher volatility environments; lower strike price in lower volatility environments
- At point of sale, call options expected to finish in the money approximately 1 in 4 times

In addition, DeltaShift incorporates the following factors in the option selection process:

- Liquidity – select options which helps to minimize market impact and transactions costs; exchange traded only — liquid, transparent and low cost
- Volatility – systematically select options which exhibit attractive risk vs. reward opportunities
- Maturity – select short-term options (1 – 3 months) to optimize time decay and minimize event risk; generally, short-dated options have higher implied volatility than longer dated options
- Diversification – select options with several different strikes and maturities; this reduces time/price specific risk

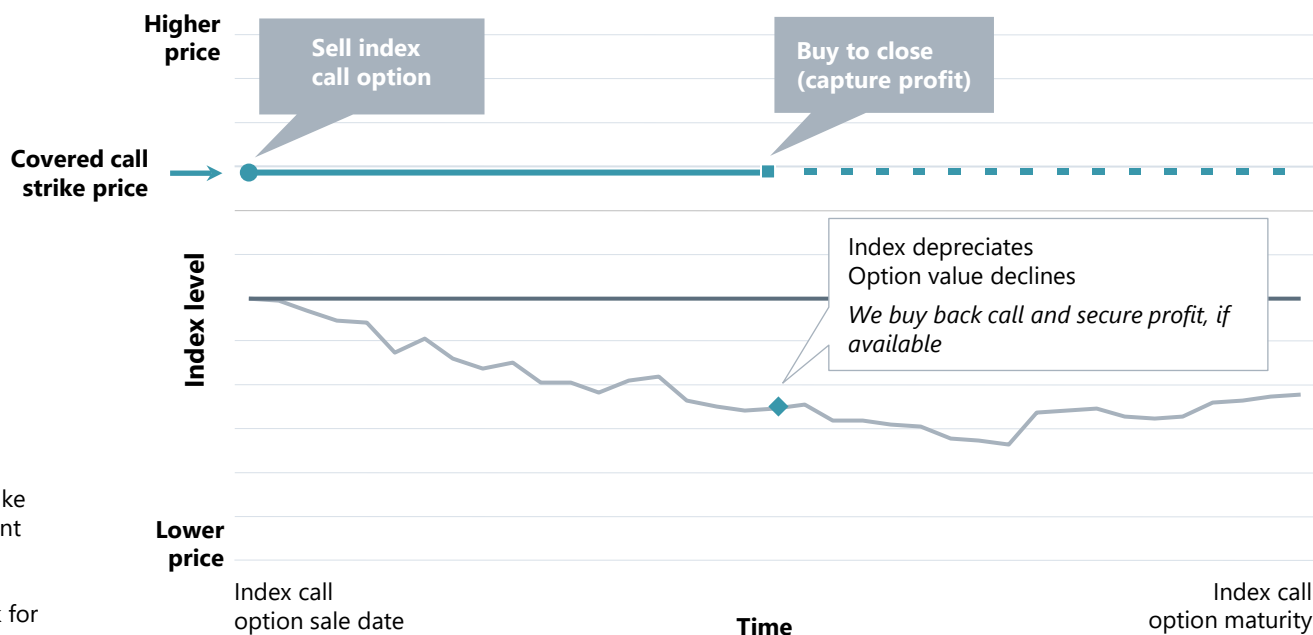
There is no guarantee that the investment objectives can be achieved. Investment management techniques require market liquidity in the specific option. Please refer to the Appendix for additional important information and disclosure.

DeltaShift Rules-Based Management

Portfolio management example: early profit capture

If the index option loses a significant amount of value due to index movement, change in volatility or excessive time decay, we seek to take profits and minimize risk.

Illustrative index price path
index depreciates



- 1/15/20 sold an option with 3/13/20 expiration and 3385 strike price. Received \$15,873 in upfront premium.
- 2/25/20 Bought the option back for \$1,444
- Profit: \$14,429 (over 90%).

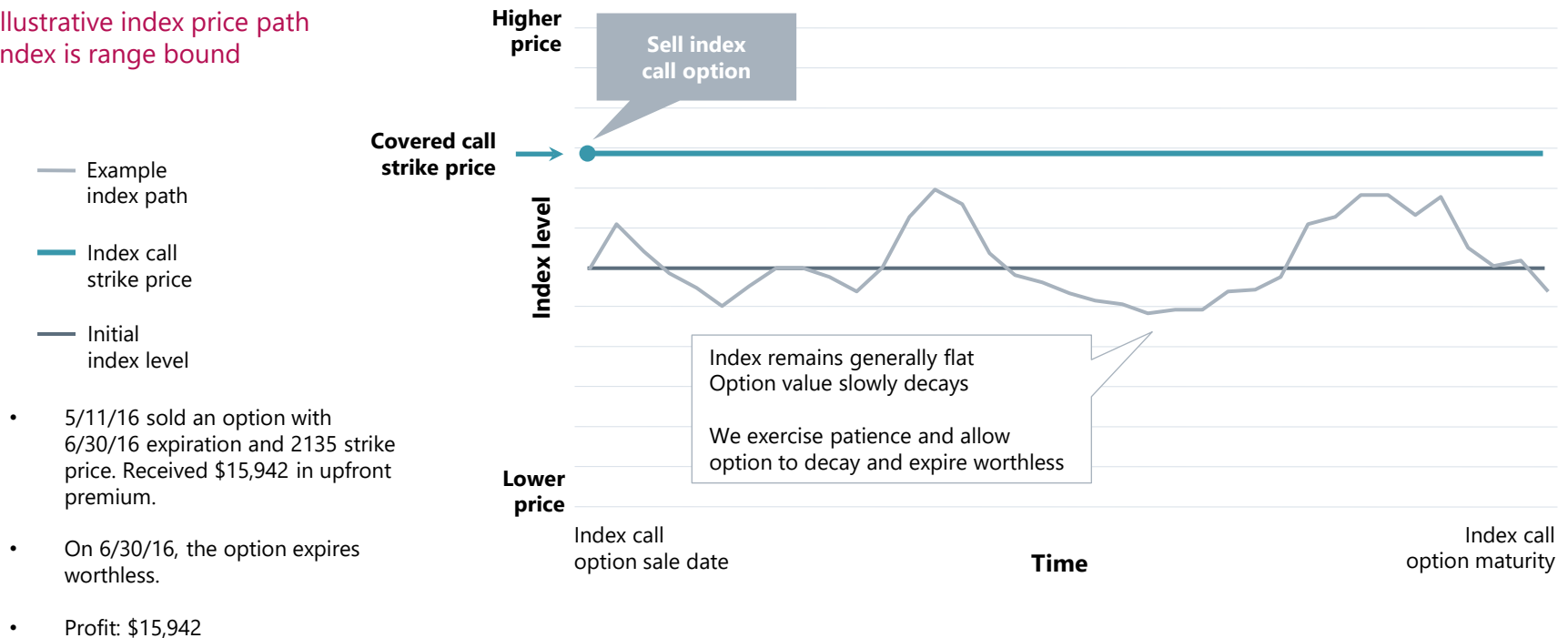
Illustrative index path. No representation is being made that an actual index will have a similar price path as this illustrative example. The example is provided for illustrative purposes only to show trading mechanics on a conceptual basis.

DeltaShift Rules-Based Management

Portfolio management example: allow option to expire worthless

If the index remains within “expected” range, the option’s value “decays” each day. This is known as time decay. If the index remains below the option strike, we will let the option expire worthless.

Illustrative index price path
index is range bound



Illustrative index path. No representation is being made that an actual index will have a similar price path as this illustrative example. The example is provided for illustrative purposes only to show trading mechanics on a conceptual basis.

DeltaShift Rules-Based Management

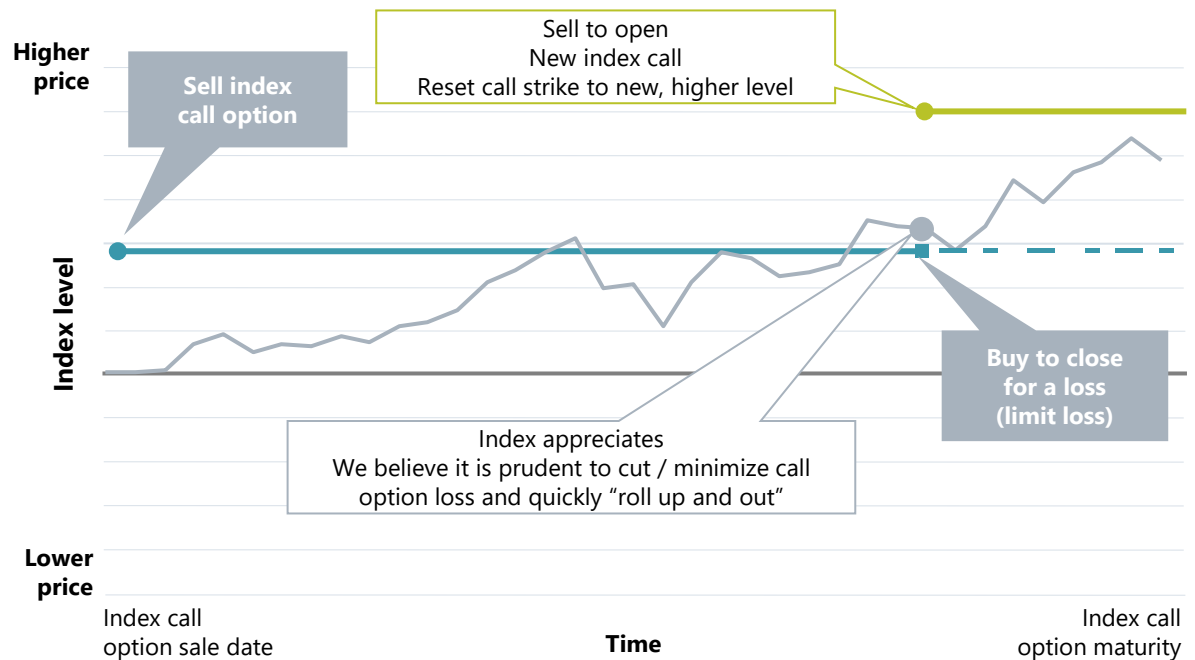
Portfolio management example: risk management / loss mitigation

If underlying index appreciates from the initial index level and the risk vs. reward exposure becomes unfavorable, due to the convexity in options pricing, we seek to mitigate the risk by repurchasing the sold call option (generally for a loss) and sell a new, higher strike option by rolling the option “up and out” (up to a higher strike price and out to a longer maturity).

Illustrative index price path:
index appreciates

- Example index path
- Initial index level
- Index call strike price
- New index call strike price

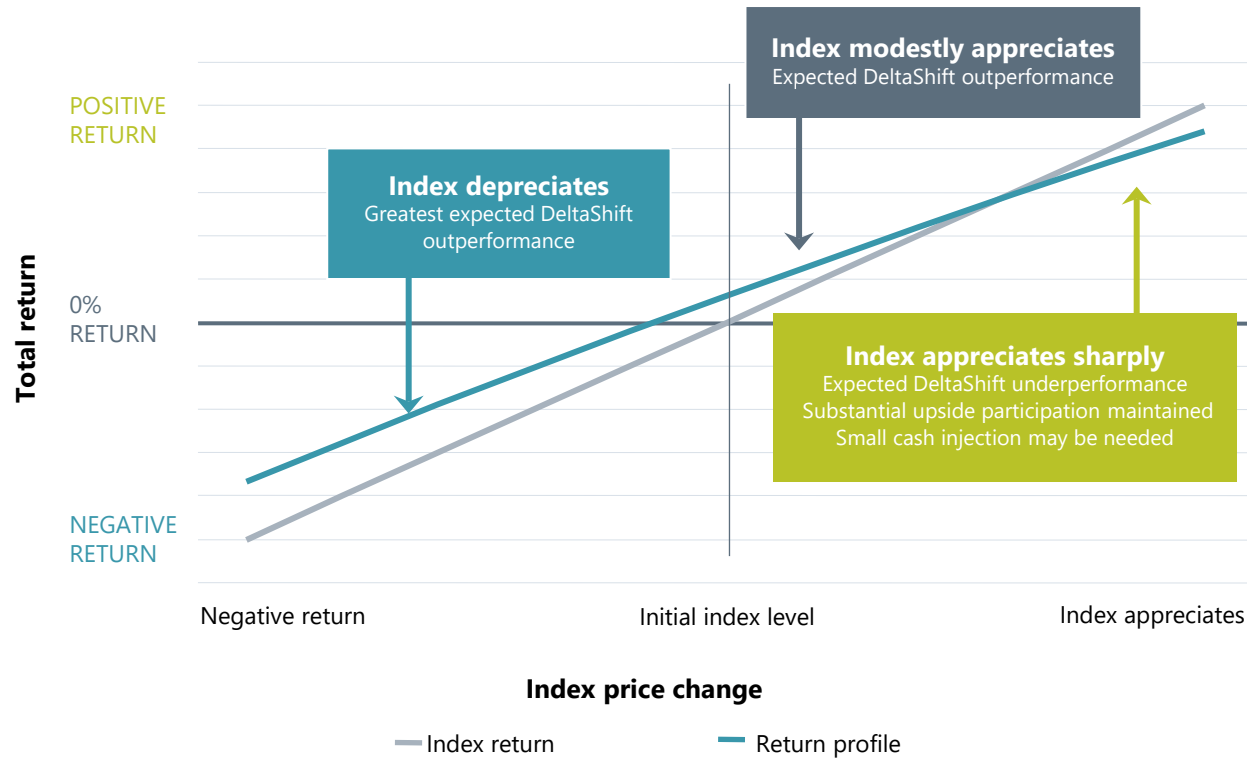
- 11/15/19 sold an option with 1/31/20 expiration and 3230 strike price. Received \$14,070 in upfront premium.
- 1/13/20 bought the option back to mitigate risk for \$50,010.
- Loss: \$36K
- 1/13/20 sold new option with 3/13/20 expiration and 3370 strike price. Received \$13,190 in upfront premium and bought back on 2/27/20 for \$832. Led to a \$12,357 profit.



Illustrative index path. No representation is being made that an actual index will have a similar price path as this illustrative example. The example is provided for illustrative purposes only to show trading mechanics on a conceptual basis.

DeltaShift Rules-Based Management

Call Selling Market Mechanics



Portfolio management example: risk management / loss mitigation

- Traditional call writing is a trade-off between receiving an upfront payment in exchange for giving away upside (being capped at a target level).
- Unlike traditional covered call writing, a key goal of DeltaShift is to maintain substantial (but not all) upside participation during times of sharp appreciation.

During these times we expect the total portfolio value to continue to appreciate (not be capped), but it may underperform the index itself

Illustrative index path. No representation is being made that any index will move negatively or positively. For illustrative purposes only to show the market mechanics of writing call options and the relationship to market movement.

DeltaShift Summary

Expected benefits

- Incremental return in down, sideways and moderately up markets
- Cash flow enhancement and management for future funding obligations
 - Generally, positive cash flow from call selling during declining equity markets can reduce need to sell into weakness
- Enhanced performance and attractive risk-adjusted returns
- Flexibility to include or exclude management of equity portfolio

Disciplined ▶ Liquid ▶ Transparent ▶ No Leverage

There is no guarantee that expected benefits will be achieved. All investments are subject to loss. Investing in an options strategy involves risk. Please refer to the disclosures for additional information.

Oakland Police & Fire Portfolio Review

Portfolio and Benchmark Returns – September 30, 2023

Oakland Police & Fire Retirement System

\$22.1 Million – **Total AUM**

\$11.0 Million - DeltaShift

\$11.1 Million – Enhanced BXM Replication

Inception Date

March 13, 2014

	Returns				
	Oakland Police & Fire Total Account (Net)	DeltaShift (Net)	Enhanced BXM Replication (Net)	BXM – CBOE S&P 500® Buy-Write Index (Net)	S&P 500® Index (Net)
QTD	-1.78%	-2.61%	-0.98%	-2.84%	-3.27%
YTD	12.06%	13.67%	10.37%	7.33%	13.07%
1 Year	20.58%	23.17%	17.84%	14.62%	21.62%
3 Year	10.14%	11.49%	8.27%	7.22%	10.15%
5 Year	7.89%	9.73%	5.55%	2.83%	9.92%
Since Inception	8.48%	10.48%	6.68%	5.09%	11.16%

Source: Parametric; Bloomberg; CBOE®

Performance is as of 9/30/2023 and is net of investment advisory fees. Past performance is not indicative of future results. All investments are subject to loss. It is not possible to invest directly in an index. They are unmanaged and do not reflect the deduction of fees and other expenses. Please refer to the Appendix for additional information and disclosure.



Oakland Police & Fire Retirement System Portfolio Performance

Parametric DeltaShift (Net) vs. Parametric BXM (Net) vs. S&P 500 Index Total Return vs CBOE BXM Index

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Replication Account (Net)		CBOE S&P 500 BuyWrite Index ("BXM")		S&P 500 Total Return Index ("SPTR")	
	Return	Volatility	Return	Volatility	Return	Volatility	Return	Volatility
Mar 13, 2014 - Dec 31, 2014	11.25%	9.99%	2.86%	8.83%	2.76%	8.82%	11.98%	11.15%
Jan 1, 2015 - Dec 31, 2015	2.79%	15.12%	6.07%	12.17%	5.24%	11.75%	1.38%	15.49%
Jan 1, 2016 - Dec 31, 2016	11.32%	11.77%	8.32%	8.86%	7.07%	8.51%	11.96%	13.10%
Jan 1, 2017 - Dec 31, 2017	17.48%	5.29%	13.25%	3.95%	13.00%	3.69%	21.83%	6.68%
Jan 1, 2018 - Dec 31, 2018	(6.09%)	15.80%	(4.04%)	13.38%	(4.77%)	13.45%	(4.38%)	16.73%
Jan 1, 2019 - Dec 31, 2019	27.78%	10.98%	16.01%	8.30%	15.68%	8.65%	31.49%	12.26%
Jan 1, 2020 - Dec 31, 2020	16.20%	32.26%	5.74%	26.18%	(2.75%)	26.54%	18.40%	33.84%
Jan 1, 2021 - Dec 31, 2021	28.88%	10.98%	18.58%	8.22%	20.47%	8.47%	28.71%	12.87%
Jan 1, 2022 - Dec 31, 2022	(15.10%)	22.66%	(10.02%)	16.38%	(11.37%)	15.82%	(18.11%)	23.74%
Jan 1, 2023 - Sep 30, 2023	13.64%	11.77%	10.35%	7.46%	7.33%	7.27%	13.07%	13.03%
Annualized Since Inception	10.48%	16.63%	6.68%	13.04%	5.09%	13.02%	11.15%	17.74%

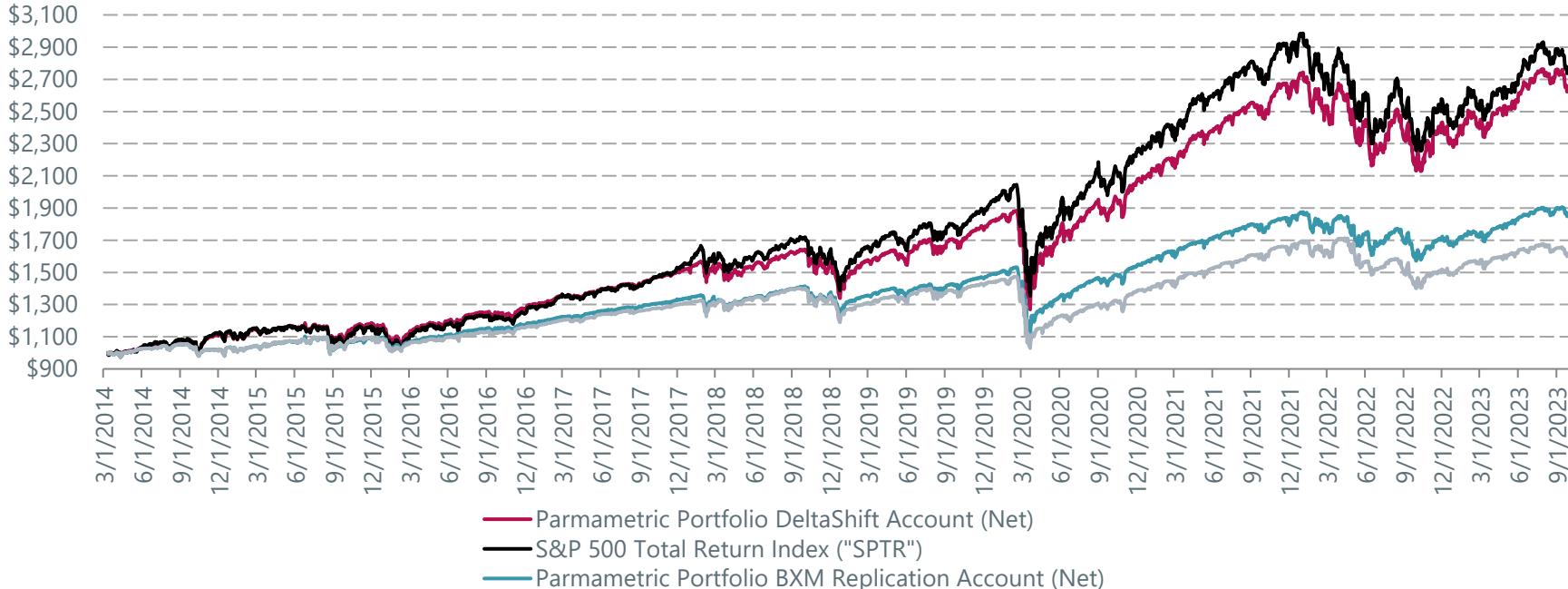
Source: Parametric; Bloomberg; CBOE®

*Performance is as of 9/30/2023 and is net of investment advisory fees. The deduction of an advisory fee would reduce an investor's return.

Past performance is not indicative of future results. All investments are subject to loss. It is not possible to invest directly in an index. They are unmanaged and do not reflect the deduction of fees and other expenses. Please refer to the Appendix for additional information and disclosure.

Oakland Police & Fire Retirement System Portfolio Performance

Parametric Portfolio DeltaShift Account (Net) vs.
 Parametric Portfolio BXM Replication Account (Net)
 vs. S&P 500 Index Total Return vs CBOE BXM Index
 Mar 13, 2014 - Sep 30, 2023



- > DeltaShift outperformed both BXM and PPA Enhanced BXM in most illustrated time frames plus since inception.
- > PPA Enhanced BXM outperformed BXM in most illustrated time frames plus since inception.

Source: Parametric; Bloomberg; CBOE®
 Performance is as of 9/30/2023 and is net of investment advisory fees. The deduction of an advisory fee would reduce an investor's return.
 Past performance is not indicative of future results. All investments are subject to loss. It is not possible to invest directly in an index. They are unmanaged and do not reflect the deduction of fees and other expenses. Please refer to the Appendix for additional information and disclosure.



Performance Commentary: A Review of the Past Year

- > For the past year (9/30/22 through 9/30/23), the S&P 500 Index has generally followed a positive trajectory, up 21.62%.
- > Over this time, the Parametric DeltaShift program returned 23.17%, outperforming the BXM Index which returned 14.62%.
- > For the most recent quarter, the S&P 500 Index return was -3.27%, the DeltaShift return was -2.61% and the BXM Index return was -2.84%. As discussed previously, we'd expect the BXM Index to outperform DeltaShift when the S&P 500 Index is down, as the BXM Index sells at-the-money calls vs. out-of-the-money calls for DeltaShift.
- > However, the diversification of strike prices and maturity dates employed by DeltaShift allowed it to outperform the BXM Index in Q3, even though the S&P 500 Index was down.
- > For the same reason, the Enhanced BXM Replication (which employs 4 rolling one-month call option tranches vs. one monthly tranche for BXM) outperformed the BXM Index in Q3 (-0.98% vs -2.84%).
- > The goal of Enhanced BXM Replication is to diversify strike prices and maturity dates. Some market return paths may favor BXM and some may favor Enhanced BXM. Enhanced BXM has returned 6.64% per annum since inception (3/11/14), which has outperformed the 5.09% per annum return of the BXM Index.
- > Since inception, the DeltaShift program has returned 10.37% per annum, compared to 5.09% per annum for the BXM Index.

Appendix

Parametric Diversity Survey

Diversity Representation Survey for Oakland Police and Fire

DATA AS OF 06/30/2023

Firm Name	Parametric Portfolio Associates, LLC
Product Name	BXM Replications and Portfolio DeltaShift
Total No. of Employees	870

Race and Ethnicity*	Percentage (%) of Board of Directors / Managing Members	Percentage(%) of Firm (Entire Staff)	Percentage (%) of Firm (Investment Professionals)
African American/ Black		3.9%	2.0%
Asian/Hawaiian/Pacific Islander		19.3%	16.3%
Latino/Hispanic	Not applicable.	4.6%	3.1%
White		66.2%	73.5%
American Indian/ Alaska Native	Parametric is a part of Morgan Stanley Investment Management, the asset management division of Morgan Stanley.	0.5%	0.5%
Other		5.5%	4.6%
Gender			
Male		63.6%	77.6%
Female	Not applicable.	36.4%	22.4%
Non-Identified/Other	Parametric is a part of Morgan Stanley Investment Management, the asset management division of Morgan Stanley.	100.0%	100.0%
		100.0%	100.0%

* Racial/ethnic categories appear as defined by EEOC guidance.

**Gender and Ethnicity metrics reflect a point in time and may not reflect voluntary employee changes to their gender or race/ethnicity.

**Parametric is in the process of gathering additional demographic data for employees such as persons with disabilities, veterans, and LGBTQ+. This information is not yet available.



Potential Risks

Strategies utilizing options have certain risks. One or more combinations of the following risks may be incurred:

Risk	Description
Trade Restrictions Risk	Like other strategies that utilize exchange-traded instruments, a trading halt or other suspension of trading, whether or not temporary in nature, may limit Parametric's ability to implement portfolio modifications.
Liquidity Risk	During periods of heightened volatility, there may be a reduction in liquidity that impacts option pricing or bid/offer spreads. Such occurrences could impact the investment manager's ability to establish new or liquidate existing positions and subject portfolio to losses.
Option Collateral Risk	Changes in option collateral requirements could require positions to be modified or removed, which may produce results meaningfully different from objectives.
Opportunity Risk	Selling call options could limit investment gains if underlying index advances beyond call strike price.

Please refer to the general disclosures in the Appendices.

U.S. Large Cap Equity DeltaShift Composite

GIPS Report

Reported in: USD

	Total Gross	Total Net	Primary	Secondary	3Yr Ex-Post Std	3Yr Ex-Post Std	3Yr Ex-Post Std	Internal Equal	Number Of	Composite	Total Firm	Total Firm
	Return AWR	Return AWR	Benchmark	Benchmark	Dev Composite	Dev Primary	Dev Secondary	Wtd. Dispersion				
					Gross	Benchmark	Benchmark		Portfolios	Assets (MM)	Assets (MM)	Economic Exposure (MM)*
2013	26.97%	26.52%	13.26%	32.39%	< 3 Years	< 3 Years	< 3 Years	n.m.	≤ 5	147	80,896	
2014	14.33%	13.92%	5.64%	13.69%	< 3 Years	< 3 Years	< 3 Years	n.m.	≤ 5	273	94,545	
2015	3.22%	2.89%	5.24%	1.38%	9.20%	6.52%	10.62%	n.m.	≤ 5	234	99,248	
2016	11.75%	11.40%	7.07%	11.96%	9.41%	6.68%	10.74%	n.m.	≤ 5	261	111,470	
2017	17.95%	17.59%	13.00%	21.83%	8.76%	5.83%	10.07%	n.m.	≤ 5	303	137,786	
2018	-5.66%	-5.96%	-4.77%	-4.38%	9.52%	7.48%	10.95%	n.m.	≤ 5	130	122,650	
2019	27.95%	27.53%	15.68%	31.49%	10.55%	7.95%	12.10%	n.m.	≤ 5	155	277,806	
2020	16.30%	15.94%	-2.75%	18.40%	17.25%	14.72%	18.79%	n.m.	≤ 5	167	241,194	347,690
2021	29.06%	28.69%	20.47%	28.71%	16.05%	13.93%	17.41%	n.m.	≤ 5	215	292,472	418,440
2022	-15.33%	-15.57%	-11.37%	-18.11%	19.83%	15.75%	21.16%	n.m.	≤ 5	166	265,381	381,191

* Total Firm Economic Exposure is the sum of the total firm assets and the firm overlay exposure. Firm overlay exposure represents the sum of the notional exposure of the overlay strategy portfolio or a specific contractual program notional value.

n.m. = Not Meaningful

Primary Benchmark: CBOE S&P 500® BuyWrite Index

Secondary Benchmark: S&P 500® Total Return Index

Composite Creation Date: December 31, 2013; Inception Date: December 1, 2012

Annualized As Of	Composite Gross	Composite Net	Primary	Secondary
12/31/2022	Return	Return	Benchmark	Benchmark
1 Year	-15.33%	-15.57%	-11.37%	-18.11%
5 Year	8.94%	8.60%	2.73%	9.42%
10 Year	11.72%	11.37%	5.71%	12.56%

- Parametric Portfolio Associates® LLC claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Parametric Portfolio Associates® LLC has been independently verified for the periods January 1, 2000 to December 31, 2022. The verification report(s) is/are available upon request. A firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm's policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. Verification does not provide assurance on the accuracy of any specific performance report.
- Parametric Portfolio Associates® LLC (the "Firm") is an investment advisor registered under the Investment Advisers Act of 1940. Parametric Portfolio Associates® LLC provides rules-based investment management services to institutional investors, individual clients and commingled investment vehicles, including Systematic Alpha and Income Strategies, Custom Core, Centralized Portfolio Management ("CPM"), Customized Exposure Management ("CEM"), Volatility Risk Premium ("VRP"), Tax-Advantaged Bond Strategies (TABS), and Taxable Bond Strategies. The Firm has complied with the GIPS standards retroactive to January 1, 2000.

Prior to July 1, 2019, the firm included only the Parametric Investment & Overlay Strategies. On July 1, 2019, the firm was redefined to include the Parametric Custom Tax-Managed & Centralized Portfolio Management Strategies. On January 1, 2020, the firm was redefined to include the Tax-Advantaged Bond Strategies (TABS), and Taxable Bond Strategies previously managed by Eaton Vance Management, an investment affiliate of Parametric's parent company, Eaton Vance Corporation. For the purpose of complying with the GIPS standards, the Firm is defined and held out to the public as Parametric Portfolio Associates® LLC.

On March 1, 2021, Eaton Vance Management and its affiliates (which includes Parametric Portfolio Associates® LLC) became wholly-owned, subsidiaries of Morgan Stanley. The Firm continues to operate as Parametric Portfolio Associates® LLC.
- Gross performance figures are time-weighted rates of return, which include the deduction of transaction costs, any foreign withholding taxes and other direct expenses, but before management fees, custody charges and other indirect expenses. Performance results reflect the reinvestment of dividends, interest income and other earnings. Performance results are expressed in U.S. dollars. Past performance is not an indication of future performance.
- Internal dispersion is based on the sample using the equal-weighted standard deviation of the annual gross returns of those portfolios that were included in the composite for the entire year. When the composite consists of five or fewer portfolios for the full year, no dispersion measure is presented. The three-year annualized standard deviation measures the variability of the composite gross returns and the benchmark returns over the preceding 36-month period.
- Policies for valuing investments, calculating performance, and preparing GIPS Reports are available upon request.
- A list including composite descriptions and pooled funds descriptions for limited distribution pooled funds is available upon request.
- GIPS® is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein.

- 8 The U.S. Large Cap Equity DeltaShift Composite is comprised of all fully discretionary portfolios that utilize a call option selling strategy on the S&P 500® Index (or other underlying's that are designed to economically track the returns of the S&P 500® Index) combined with the daily returns of an actively managed S&P 500® Equity portfolio sleeve. Portfolios seek to increase the total return and reduce the volatility relative to the returns of the S&P 500® Total Return Index. Key risks for strategies utilizing options have one or more combinations of the following risks that may be incurred: market risk, trade restrictions risk, liquidity risk, early termination risk, option collateral risk and opportunity risk.
- 9 Composite net returns are calculated by deducting the actual portfolio management fee charged when known and available, otherwise the maximum management fee charged for a segregated account of this style is deducted from the gross performance returns.
- 10 The management fee schedule for this strategy is: Segregated Account DeltaShift Fee Schedule* 0.39% on the first \$20 million;0.325% on the next \$20 million;0.26% on the next \$20 million;0.2275% on the next \$40 million;0.195% on the next \$100M;0.1625% on the next \$100M;0.13% on the next \$100M;0.0975% thereafter.
- *Options management only. S&P Index Management Fee Schedule: Flat: 0.05% per annum.
- 11 The composite's benchmark is the CBOE S&P 500® BuyWrite Index. The Index is designed to track the performance of a hypothetical buy-write strategy on the S&P 500® Index.
- 12 The composite's secondary benchmark is the S&P 500® Total Return Index. The Index is a total return index that reflects both changes in the prices of stocks in the S&P 500® Index as well as the reinvestment of the dividend income from its underlying stocks.The Index is unmanaged and does not incur management fees, transaction costs or other expenses associated with separately managed accounts in this style. It is not possible to directly invest in an index. S&P Indices are a product of S&P Dow Jones Indices LLC, a division of S&P Global, or its affiliates ("S&P") and have been licensed for use. Standard & Poor's® and S&P® are registered trademarks of S&P. Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"); S&P, Dow Jones and their respective affiliates do not sponsor, endorse, sell or promote the Fund and do not have any liability for any errors, omissions, or interruptions of the S&P Indices.
- 13 The firm's strategies contain derivatives such as futures, options, swaps, and other investment strategies that may involve certain advantages and risks. Futures require the posting of initial and variation margin. Therefore, a portion of risk capital must be preserved for this purpose rather than being allocated to a manager. Swaps require periodic payments, which may be less liquid than futures, and certain swaps may have counterparty/credit risk. Some investment strategies may require a collateral investment equal to the desired amount of exposure.

Biographies

Jim Roccas

Managing Director, Investment Strategy

Jim works with clients who are interested in accessing Parametric's Volatility Risk Premium (VRP) suite of options-based solutions. Jim has over 25 years of experience working with clients to implement solutions for increasing return and reducing risk using options and other derivative product strategies. Prior to joining Parametric in 2008, Jim was a Director at Merrill Lynch where he structured and originated solutions for high-net-worth and institutional investors for protecting downside, enhancing returns and gaining customized market exposure. He earned a BA in Economics from Princeton University and an MBA in Finance from The Wharton School at the University of Pennsylvania.

Dan Ryan

Executive Director, Client Relationship Management

Dan is responsible for managing client relationships throughout the western US. Prior to joining Parametric in 2013, Dan was vice president and senior relationship manager at State Street Global Advisors. He earned a BA in history from the University of Michigan.

Disclosure

Parametric Portfolio Associates® LLC ("Parametric"), headquartered in Seattle, is registered as an investment advisor with the Securities and Exchange Commission under the Investment Advisers Act of 1940. Parametric is a leading global asset management firm, providing investment strategies and customized exposure management directly to institutional investors and indirectly to individual investors through financial intermediaries. Parametric offers a variety of rules-based investment strategies, including alpha-seeking equity, fixed-income, alternative and options strategies. Parametric also offers implementation services, including customized equity, traditional overlay and centralized portfolio management. Parametric is part of Morgan Stanley Investment Management, the asset management division of Morgan Stanley, and offers these capabilities through offices located in Seattle, Boston, Minneapolis, New York City, and Westport, Connecticut. This material may not be forwarded or reproduced, in whole or in part, without the written consent of Parametric. Parametric and its affiliates are not responsible for its use by other parties.

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This material contains hypothetical, back-tested and/or model performance data, which may not be relied upon for investment decisions. Hypothetical, back-tested and/or model performance results have many inherent limitations, some of which are described below. Hypothetical returns are unaudited, are calculated in U.S. dollars using the internal rate of return, reflect the reinvestment of dividends, income and other distributions, but exclude transaction costs, advisory fees and do not take individual investor taxes into consideration. The deduction of such fees would reduce the results shown.

Model/target portfolio information presented, including, but not limited to, objectives, allocations and portfolio characteristics, is intended to provide a general example of the implementation of the strategy and no representation is being made that any client account will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently sharp differences between hypothetical performance results and the actual results subsequently achieved by any particular trading program. One of the limitations of hypothetical performance results is that they are generally prepared with the benefit of hindsight. In addition, simulated trading does not involve financial risk, and no simulated trading record can completely account for the impact of financial risk in actual trading. For example, the ability to withstand losses or to adhere to a particular trading program in spite of trading losses are material points which can also adversely affect actual trading results. There are numerous other factors related to the markets in general or to the implementation of any specific trading program which cannot be fully accounted for in the preparation of hypothetical performance results and all of which can adversely affect actual trading results. Because there are no actual trading results to compare to the hypothetical, back-tested and/or model performance results, clients should be particularly wary of placing undue reliance on these hypothetical results. Perspectives, opinions and testing data may change without notice. Detailed back-tested and/or model portfolio data is available upon request. No security, discipline or process is profitable all of the time. There is always the possibility of loss of investment.

Disclosure (Continued)

Benchmark/index information provided is for illustrative purposes only. Indexes are unmanaged and cannot be invested in directly. Deviations from the benchmarks provided herein may include, but are not limited to, factors such as: the purchase of higher risk securities, over/under-weighting specific sectors and countries, limitations in market capitalization, company revenue sources, and/or client restrictions. Parametric's proprietary investment process considers factors such as additional guidelines, restrictions, weightings, allocations, market conditions and other investment characteristics. Thus returns may at times materially differ from the stated benchmark and/or other disciplines provided for comparison.

The CBOE S&P 500® BuyWrite Index (BXM) is a benchmark index designed to track the performance of a hypothetical buy-write strategy on the S&P 500® Index. 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.

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The effectiveness of the option strategy is dependent on a general imbalance of natural buyers over natural sellers of index options. This imbalance could decrease or be eliminated, which could have an adverse effect. A decision as to whether, when and how to use options involves the exercise of skill and judgment, and even a well-conceived and well-executed options program may be adversely affected by market behavior or unexpected events. Successful options strategies may require the anticipation of future movements in securities prices, interest rates and other economic factors. No assurances can be given that the judgments of Parametric in this respect will be correct.

Options are not suitable for all investors and carry additional risks. Investors must ensure that they have read and understood the current options risk disclosure document before entering into any options transactions. In addition, investors should consult with a tax, legal and/or financial advisor prior to contemplating any derivative transactions. The options risk disclosure document can be accessed at the following web address: <http://www.optionsclearing.com/about/publications/character-risks.jsp>.

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Parametric is headquartered at 800 5th Ave Suite 2800, Seattle, WA 98104. Parametric's Minneapolis office is located at 3600 Minnesota Drive, Suite 325, Minneapolis, MN 55435. For more information regarding Parametric and its investment strategies, or to request a copy of Parametric's Form ADV, please contact us at 206.694.5500 (Seattle) or 612.870.8800 (Minneapolis), or visit our website, www.parametricportfolio.com.

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MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: Meketa Investment Group (Meketa)
DATE: October 25, 2023
RE: Parametric Portfolio Associates—Manager Update

Manager: Parametric Portfolio Associates

Inception Date:	April 2014	OPFRS AUM (9/30/2023):	\$22.2 million
Strategy:	Covered Calls	Strategy AUM (9/30/2023)¹:	\$4.1 billion
Benchmark:	CBOE S&P 500 Buy Write Index (BXM)	Firm-wide AUM (9/30/2022):	\$432.6 billion

Summary & Recommendation

Parametric has managed OPFRS’s Covered Calls portfolio since April 2014 using the passive Enhanced BXM Replication and the active DeltaShift strategies. As of 9/30/2023, the Covered Calls portfolio has approximately \$22.2 million or 5.5% of the total portfolio with roughly \$11.1 million allocated to each underlying strategy.

Since inception and the last review in August 2022, the strategies have performed within expectations and guidelines for the portfolio and has experienced no major organizational changes. **Therefore, Meketa does not have any major concerns with Parametric and the Covered Calls strategies.**

Investment Performance Review Summary

As of 9/30/2023, on net of fees basis, the Covered Calls portfolio and its underlying strategies have outperformed the CBOE S&P 500 Buy Write Index (BXM) benchmark over all the time periods measured. In aggregate, the two strategies have generated 3.3% in excess return since inception.

OPFRS Portfolio Returns (as of 9/30/2023)²

Portfolio	Balance (\$000)	QTD	YTD	1 Yr	3 Yr	5 Yr	Since Inception	Inception Date
Covered Calls	22,157.8	-1.8	11.9	20.4	10.2	7.9	8.5	4/2014
<i>CBOE S&P 500 Buy Write</i>	<i>---</i>	<i>-2.8</i>	<i>7.3</i>	<i>14.6</i>	<i>7.2</i>	<i>3.0</i>	<i>5.2</i>	<i>---</i>
Excess Return	---	1.0	4.6	5.8	3.0	4.9	3.3	---
Parametric BXM	11,106.2	-1.0	10.3	18.1	8.5	5.8	6.8	4/2014
Excess Return	---	1.8	3.0	3.5	1.3	2.8	1.6	---
Parametric DeltaShift	11,051.6	-2.6	13.4	22.8	11.5	9.8	10.3	4/2014
Excess Return	---	0.2	6.1	8.2	4.3	6.8	5.1	---

¹ Combined asset under management (AUM) of Enhanced BXM Strategy (\$173.4 million in AUM) and DeltaShift Strategy (\$3,960.2 million in AUM).

² Performance shown is net of fees, and annualized for periods longer than one year.

Product and Organization Review Summary

Parametric Portfolio Associates	Areas of Potential Impact				
	Level of Concern	Investment Process	Investment Team	Performance Track Record	Team/Firm Culture
Product					
Key people changes	None				
Changes to team structure or individuals' roles	None				
Product client gain/losses	None				
Changes to investment process	None				
Personnel turnover	None				
Organization					
Ownership changes	None				
Key people changes	None				
Firm wide client gain/losses	None				
Recommended Action	None - X	Watch Status		Termination	

A review of Parametric Portfolio Associates and the Covered Call strategies revealed no concerning organizational issues or changes since last review in August 2022.

Investment Summary per Manager

Parametric’s approach to covered calls investing is based on the persistent premium of implied volatility to realized volatility in the options market. Parametric believes that there is a supply versus demand imbalance for equity options, and thus the implied volatility generally exceeds the realized volatility. The covered calls program is designed to generate returns for a long equity investor by providing additional income and cash flow while reducing volatility.

The options portion, managed by Parametric, is constructed around a diversified portfolio of short dated (1-3 month) options. Option selection incorporates liquidity, volatility, maturity, and time-decay. Strike prices are selected using a dynamic, volatility-based framework designed to adapt to changing market conditions. By selecting options that have a targeted initial delta, options strikes move further out-of-the-money when implied volatility levels rise, and vice-versa. Parametric attempts to create a ladder portfolio of options with multiple strike prices and maturities in order to diversify the time and price specific risk of selling call options. Parametric generally sells 25% 35% “delta” options, which, by definition, are out-of-the-money options. Using a fixed “delta” allows Parametric to effectively index the strikes to volatility. When the opportunity arises, the strategy allows for Parametric to capture and realize profits prior to written option maturity, and aggressively close out losing positions to mitigate potential outlier losses that are inherent to a “sell and hold” option program (i.e., BXM replication).

DS/PN/JLC/mn



Disclosure

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

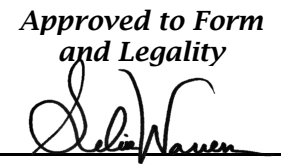
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PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA
RESOLUTION No. 8085



ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

RESOLUTION TO AUTHORIZE A ONE-YEAR EXTENSION OF THE PROFESSIONAL SERVICES AGREEMENT WITH PARAMETRIC PORTFOLIO ASSOCIATES, LLC FOR THE PROVISION OF COVERED CALLS INVESTMENT STRATEGY MANAGER SERVICES FOR THE CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM COMMENCING DECEMBER 23, 2023 AND ENDING DECEMBER 23, 2024.

WHEREAS, Article XVI §17 of the California Constitution, commonly referred to as the Pension Protection Act or Proposition 162, and Article XXVI of the Oakland City Charter (“Charter”) vest the Oakland Police and Fire Retirement System Board (“PFRS Board”) with exclusive control of the administration and investment of the assets of the Police and Fire Retirement Fund (the “Fund”); and

WHEREAS, the PFRS Board manages and administers the Police and Fire Retirement System (“PFRS”), pursuant to the requirements of Article XXVI of the Charter; and

WHEREAS, Oakland City Charter section 2601(e) states that the Board of the Oakland Police and Fire Retirement System (“PFRS Board”) shall possess power to make all necessary rules and regulation for its guidance and shall have exclusive control of the administration and investment of the funds established for the maintenance and operation of the system; and

WHEREAS, Article XXVI of the Charter expressly authorizes the PFRS Board to secure competent investment counsel to provide advice and counsel regarding the investment of the Fund and further provides that discretionary powers granted to such investment counsel will be at the option of the Board; and

WHEREAS, on June 19, 2013, the PFRS Board passed a motion to enter into an agreement (“The Agreement”) with Parametric Portfolio Associates, LLC (“Investment Counsel”), to provide advice and counsel regarding investments of the assets of the Police and Fire Retirement Fund (“Fund”); and

WHEREAS, Section XX of the Agreement allows for modification of the Agreement by written agreement of all parties; and

WHEREAS, Section IV(B) of the Agreement gave the PFRS Board the option to extend the initial term of the Agreement for three additional one-year terms by giving Investment Counsel written notice of its intent to exercise its option not less than sixty days prior to the expiration of the term or extended term of the agreement; and

OAKLAND POLICE AND FIRE RETIREMENT BOARD

CITY OF OAKLAND, CALIFORNIA

RESOLUTION No. 8085

WHEREAS, on November 28, 2018, the PFRS Board passed Resolution No. 7033 authorizing amendment of Section IV(B) of the Agreement to provide the Board with unlimited one-year extension options, and

WHEREAS, on October 30, 2019, the PFRS Board passed Resolution No. 7074 authorizing an extension of the Agreement with Investment Counsel for an additional one-year term commencing December 23, 2019 and ending December 23, 2020; and

WHEREAS, on December 10, 2020, the PFRS Board passed Resolution No. 8006 authorizing an extension of the Agreement with Investment Counsel for an additional one-year term commencing December 23, 2020 and ending December 23, 2021; and

WHEREAS, on November 17, 2021, the PFRS Board passed Resolution No. 8032 authorizing an extension of the Agreement with Investment Counsel for an additional one-year term commencing December 23, 2021 and ending December 23, 2022; and

WHEREAS, on October 26, 2022, the PFRS Board passed Resolution No. 8066 authorizing an extension of the Agreement with Investment Counsel for an additional one-year term commencing December 23, 2022 and ending December 23, 2023; and

WHEREAS, the PFRS Board now wishes to exercise its option to renew the Agreement with Investment Counsel for an additional one-year term, commencing December 23, 2023, and ending December 23, 2024; and

WHEREAS, the Fund assets under management in Delta Shift strategy (presently valued at approximately 12 Million Dollars (\$12,000,000.00), at the annual fee rate of 0.44 percent, which fees are estimated to be approximately Fifty One Thousand Dollars (\$51,000.00); and

WHEREAS, the Fund assets under management in BXM strategy (presently valued at approximately 11 Million Dollars (\$11,000,000.00), at the annual fee rate of 0.25 percent, which fees are estimated to be approximately Twenty Eight Thousand Dollars (\$28,000.00); now, therefore, be it

RESOLVED: That the Board hereby authorizes a one-year extension of the professional service agreement between the City of Oakland Police and Fire Retirement System and Parametric Portfolio Associates, LLC for the provision of Covered Calls Investment Manager Services, commencing December 23, 2023 and ending December 23, 2024; and be it

OAKLAND POLICE AND FIRE RETIREMENT BOARD

CITY OF OAKLAND, CALIFORNIA

RESOLUTION No. 8085

FURTHER RESOLVED: That the President of the PFRS Board is hereby authorized to execute, on behalf of PFRS, a one-year extension of the professional service agreement between the City of Oakland Police and Fire Retirement System and Parametric Portfolio Associates, LLC.

IN BOARD MEETING, CITY HALL, OAKLAND, CA OCTOBER 25, 2023

PASSED BY THE FOLLOWING VOTE:

AYES: GODFREY, MELIA, NICHELINI, ROSEMAN, SPEAKMAN, WILKINSON, AND PRESIDENT JOHNSON

NOES:

ABSTAIN:

ABSENT:

ATTEST: _____

PRESIDENT

ATTEST: _____

SECRETARY

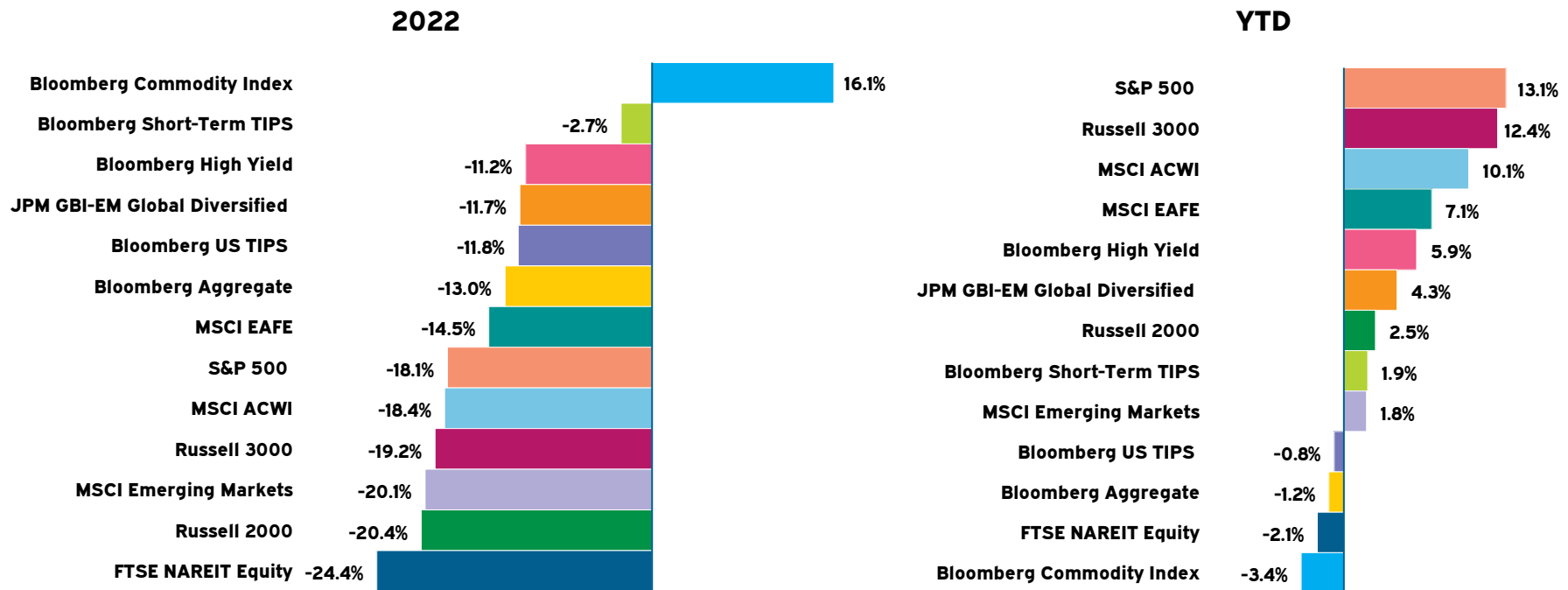
Economic and Market Update

September 2023 Report

Commentary

- After a strong July, global assets turned negative in August and September as expectations shifted to the Fed keeping interest rates higher for longer. Weakening economic data from Europe and China, as well as further instability in the Chinese real estate sector and a strong US dollar, weighed on results.
- The Federal Open Markets Committee (FOMC) increased policy rates in July by 0.25% to a range of 5.25% - 5.5% and kept rates at that level at their September meeting. Markets are now largely expecting the FOMC to maintain interest rates at this level through the first half of next year.
 - US equity markets (Russell 3000 index) fell in the third quarter (-3.3%), bringing the year-to-date gains to 12.4%. The technology sector remains the key driver of results this year, helped by artificial intelligence optimism.
 - Non-US developed equity markets declined more than the US in the third quarter (MSCI EAFE -4.1%) with the strength of the US dollar adding 2.8% to the quarterly declines. This widened the gap between US and international developed equities for the year (12.4% versus 7.1%).
 - Emerging market equities experienced the smallest declines in the third quarter (-2.9%). Negative results were driven by China and again the strong US dollar. Emerging markets continue to significantly trail developed market equities year-to-date, returning just 1.8%, again driven by China.
 - Interest rates generally rose over the quarter, particularly for longer-dated maturities. The broad US bond market fell (-3.2%) for the quarter and turned negative (-1.2%) year-to-date, as higher income has offset capital losses from rising rates.
- For the rest of this year, the paths of inflation and monetary policy, slowing global growth, and the wars in Ukraine and Israel will all be key.

Index Returns¹



→ After a particularly difficult 2022, most public market assets are up thus far in 2023, led by developed market equities.

→ While hopes for a soft landing remain in place, the prospect of higher interest rates for longer weighed on market sentiment in August and September.

¹ Source: Bloomberg. Data is as of September 30, 2023.

Domestic Equity Returns¹

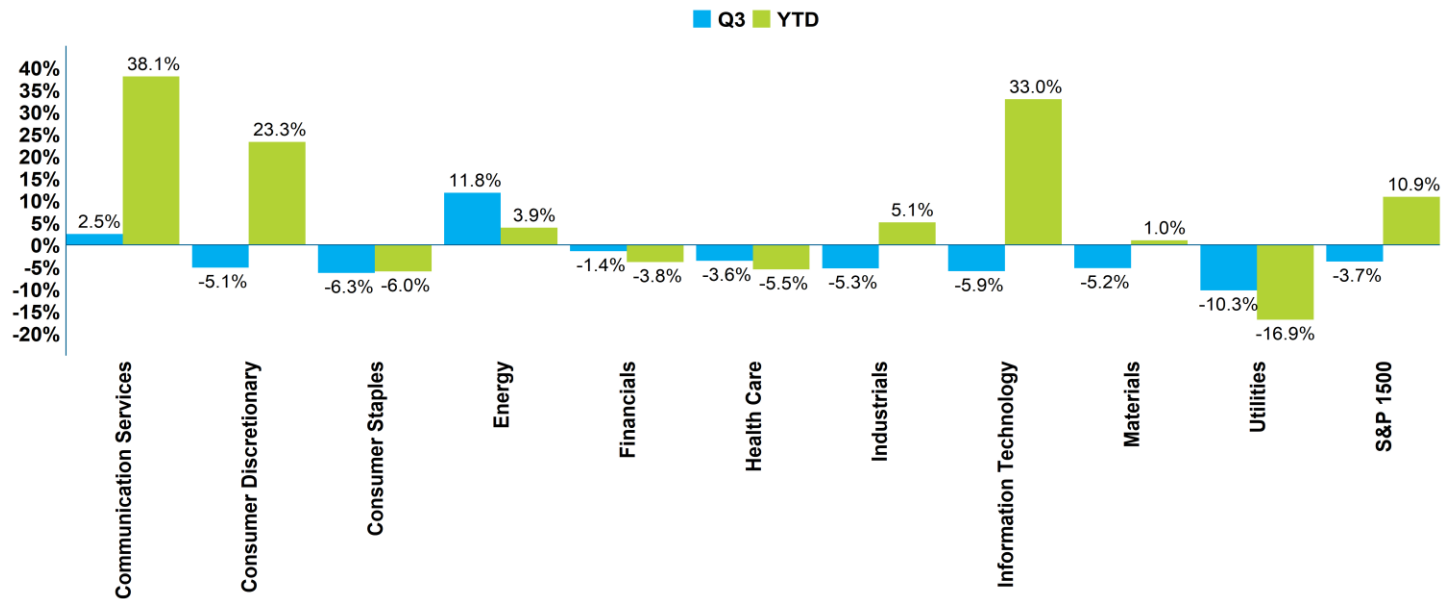
Domestic Equity	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	-4.8	-3.3	13.1	21.6	10.2	9.9	11.9
Russell 3000	-4.8	-3.3	12.4	20.5	9.4	9.1	11.3
Russell 1000	-4.7	-3.1	13.0	21.2	9.5	9.6	11.6
Russell 1000 Growth	-5.4	-3.1	25.0	27.7	8.0	12.4	14.5
Russell 1000 Value	-3.9	-3.2	1.8	14.4	11.1	6.2	8.4
Russell MidCap	-5.0	-4.7	3.9	13.4	8.1	6.4	9.0
Russell MidCap Growth	-4.9	-5.2	9.9	17.5	2.6	7.0	9.9
Russell MidCap Value	-5.1	-4.5	0.5	11.0	11.0	5.2	7.9
Russell 2000	-5.9	-5.1	2.5	8.9	7.2	2.4	6.6
Russell 2000 Growth	-6.6	-7.3	5.2	9.6	1.1	1.6	6.7
Russell 2000 Value	-5.2	-3.0	-0.5	7.8	13.3	2.6	6.2

US Equities: The Russell 3000 Index fell 3.3% in the third quarter but is up 12.4% YTD.

- US stocks fell 3.3% in the third quarter as healthy economic data and comments from the Fed caused investors to expect interest rates to remain higher for longer.
- Large cap stocks outperformed small cap stocks during the quarter, bringing their year-to-date outperformance to over 10%. The so called “Magnificent Seven” within the large cap market drove most of this outperformance despite a weak third quarter.
- Energy strongly led the way during the quarter posting double-digit gains while most other sectors declined. Oil prices rose after Saudi Arabia and Russia extended output cuts.

¹ Source: Bloomberg. Data is as of September 30, 2023.

S&P 1500 Sector Returns¹



→ Except for energy, which benefited from rising oil prices, all sectors were down in the third quarter.

→ So far in 2023, the communication services (+38.1%) and technology (+33.0%) sectors had the best results on artificial intelligence optimism. Given the continued strength in the US consumer the consumer discretionary sector followed (+23.3%), while more defensive sectors like utilities (-16.9%) and consumer staples (-6.0%) have trailed.

¹ S&P 1500 Sector Returns. Source: Bloomberg. Data is as of September 30, 2023.

Foreign Equity Returns¹

Foreign Equity	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	-3.2	-3.8	5.3	20.4	3.7	2.6	3.3
MSCI EAFE	-3.4	-4.1	7.1	25.6	5.8	3.2	3.8
MSCI EAFE (Local Currency)	-1.1	-1.3	10.7	20.3	10.8	5.7	6.8
MSCI EAFE Small Cap	-4.4	-3.5	1.8	17.9	1.1	0.8	4.3
MSCI Emerging Markets	-2.6	-2.9	1.8	11.7	-1.7	0.6	2.1
MSCI Emerging Markets (Local Currency)	-1.8	-1.4	4.0	10.9	0.6	2.7	4.9
MSCI China	-2.8	-1.9	-7.3	5.2	-14.3	-4.2	1.7

Foreign Equity: Developed international equities (MSCI EAFE) fell 4.1% in the third quarter bringing the YTD gain to 7.1%. Emerging market equities (MSCI EM) fell 2.9% in the period, rising 1.8% YTD.

- Outside of the US, equities were also weak during the third quarter with the continued strength of the US dollar being a key driver.
- Eurozone shares felt pressure from slowing GDP growth and an interest rate hike by the ECB, although inflation continued to ease. By contrast, the UK saw modest gains amid promising economic data including slowing inflation and GDP back around pre-pandemic levels. Japan outperformed regional peers for the quarter due in part to strong earnings.
- Emerging market performance, while negative, outpaced developed peers. Chinese markets saw losses in-line with other emerging market countries, driven largely by unease surrounding property company Evergrande and a continued lackluster reopening of the economy.

¹ Source: Bloomberg. Data is as of September 30, 2023.

Fixed Income Returns¹

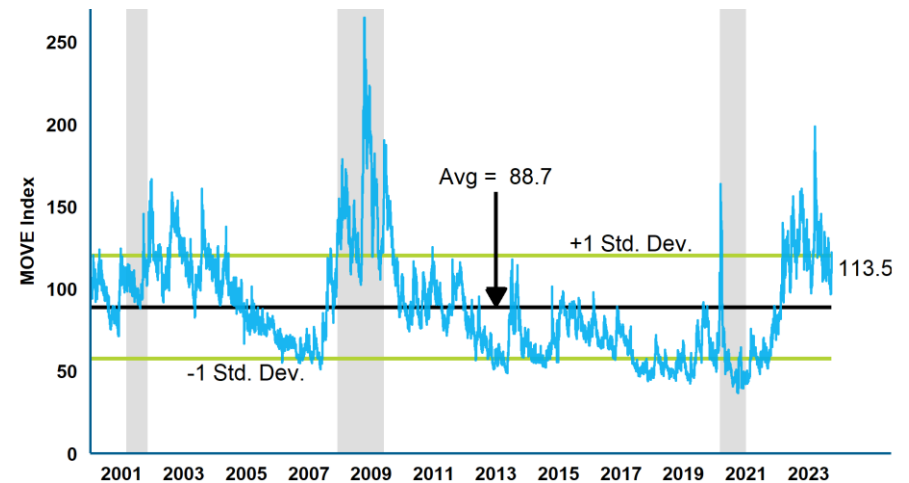
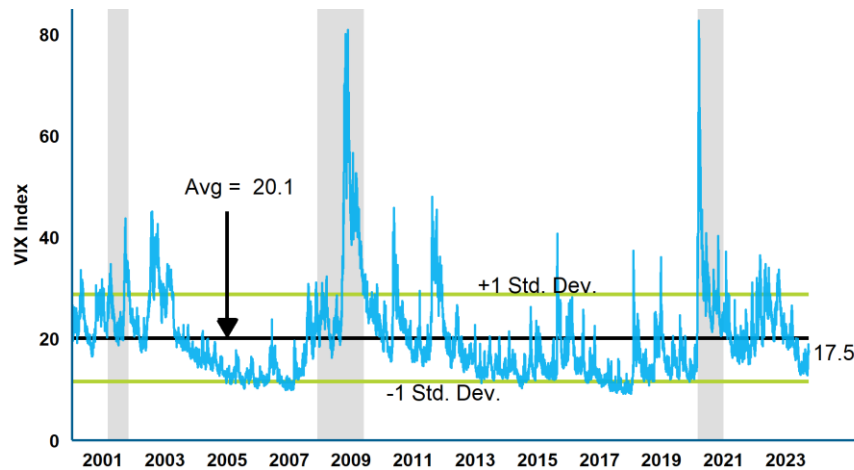
Fixed Income	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	-2.4	-2.9	-0.6	1.6	-4.7	0.3	1.4	5.7	6.0
Bloomberg Aggregate	-2.5	-3.2	-1.2	0.6	-5.2	0.1	1.1	5.4	6.2
Bloomberg US TIPS	-1.8	-2.6	-0.8	1.2	-2.0	2.1	1.7	5.0	6.6
Bloomberg Short-term TIPS	-0.2	0.4	1.9	3.2	1.9	2.8	1.7	5.4	2.5
Bloomberg High Yield	-1.2	0.5	5.9	10.3	1.8	3.0	4.2	8.9	4.0
JPM GBI-EM Global Diversified (USD)	-3.4	-3.3	4.3	13.1	-2.7	0.0	-0.8	6.9	4.9

Fixed Income: The Bloomberg Universal index declined 2.9% in the third quarter and -0.6% YTD.

- The downgrade of US government debt from AAA to AA+ by Fitch combined with expectations for higher borrowing put upward pressure on longer-term rates for the quarter and weighed on overall results. Expectations for policy rates to remain higher for longer than previously expected also contributed to the decline in bonds.
- The broad US bond market (Bloomberg Aggregate) fell 3.2% for the quarter bringing YTD results into negative territory. The broader TIPS index fell by 2.6%, while the less interest-rate-sensitive short-term TIPS index outperformed most sectors, up 0.4%.
- High yield bonds were the strongest quarterly performers, up 0.5%, while emerging market bonds were the weakest performer, falling 3.3%. The two asset classes remain the top performers for the year as risk appetite in credit markets remains robust.

¹ Source: Bloomberg. JPM GBI-EM data is from InvestorForce. Data is as of September 30, 2023. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively.

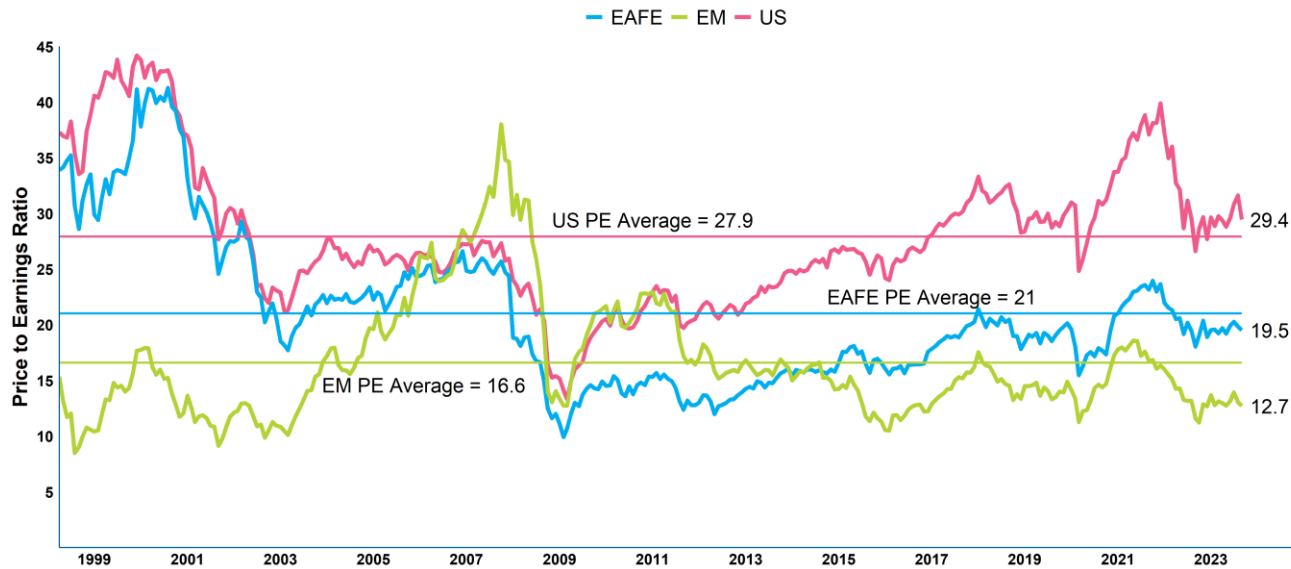
Equity and Fixed Income Volatility¹



- Volatility in equities (VIX) increased over the quarter but finished at a level below the long-term average. The recent increase in equity volatility has largely been driven by investors coming to terms that interest rates might remain higher for a longer period.
- In comparison, volatility in the bond market (MOVE) remains well above its long-run average (88.7) after last year's historic losses and due to continued policy uncertainty. Over the quarter, fixed income volatility finished slightly higher compared to where it started, like equities, driven by expectations for rates to stay higher or longer.

¹ Equity Volatility – Source: FRED. Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of September 2023. The average line indicated is the average of the VIX and MOVE values between January 2000 and September 2023.

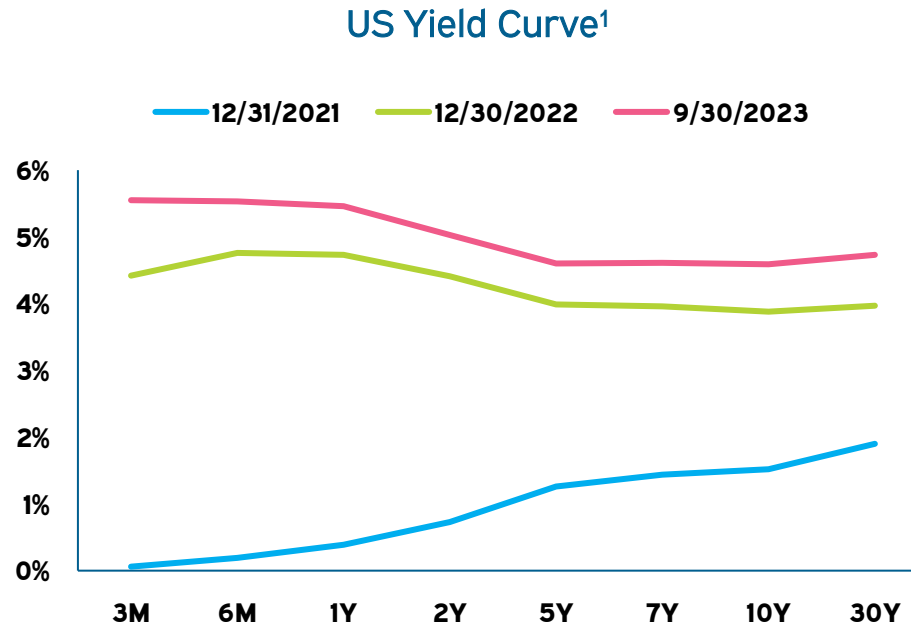
Equity Cyclically Adjusted P/E Ratios¹



→ Given the strong technology-driven rally this year, the US equity price-to-earnings ratio increased above its long-run (21st century) average. With the equity market decline in August and September the P/E ratio declined from its recent peak.

→ International developed market valuations are below their own long-term average, with those for emerging markets the lowest and well under the long-term average (close to one standard deviation below).

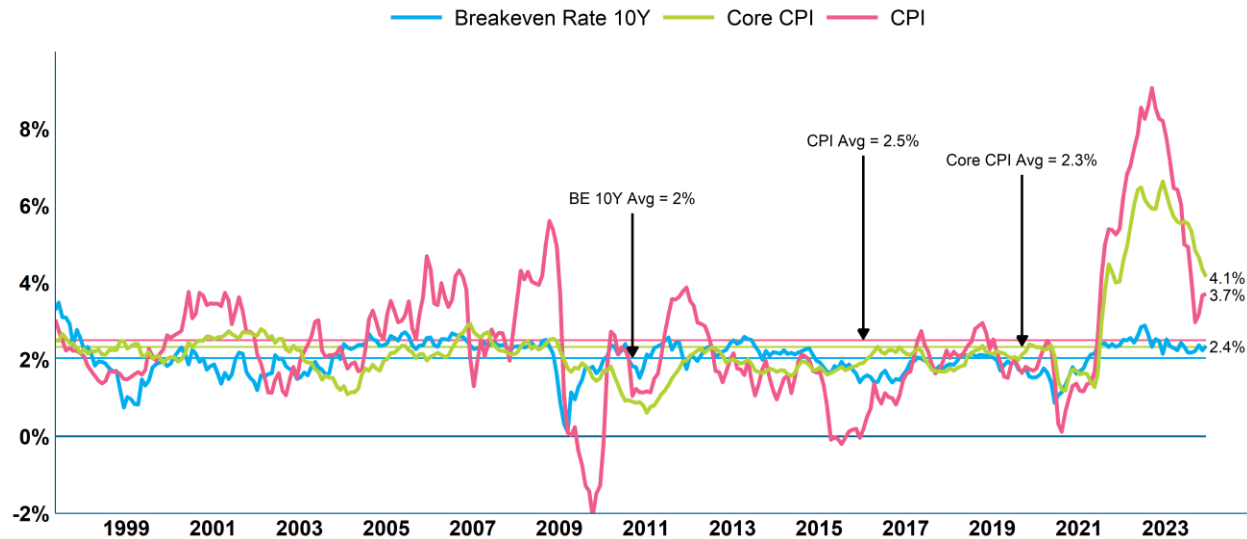
¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years. Data is as of September 2023. The average line is the long-term average of the US, EM, and EAFE PE values from April 1998 to the recent month-end respectively.



- Overall rates have continued to increase this year, particularly at the policy sensitive front-end of the yield curve, but at much slower pace compared to last year.
- Over the quarter, very short-term interest rates (two years or less) increased only slightly as monetary policy has likely reached close to its terminal rate for this cycle. By contrast, longer-term rates rose dramatically as US debt was downgraded and investors came to terms with rates remaining higher for longer. The ten-year Treasury yield increased from 3.8% to 4.6% over the quarter.
- Because of the dynamic above, the yield curve's inversion decreased with the spread between two-year and ten-year Treasuries finishing the quarter at -0.47% (it started the quarter at -1.05%).

¹ Source: Bloomberg. Data is as of September 30, 2023.

Ten-Year Breakeven Inflation and CPI¹

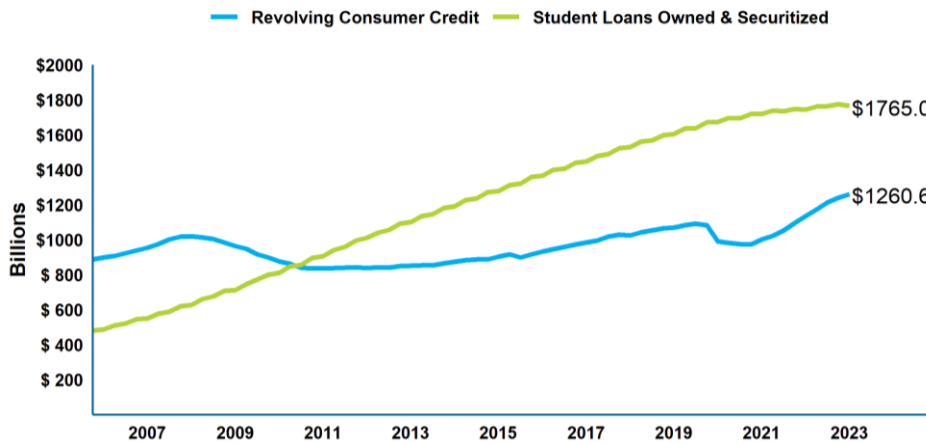


- After the steady decline in inflation from the June 2022 peak, consumer prices recently increased driven by energy prices.
- Year-over-year headline inflation was flat at 3.7% coming in slightly higher than expectations as improvements in energy prices were offset by higher shelter costs.
- Core inflation – excluding food and energy – continued its decline (4.3% to 4.1%) year-over-year. It remains stubbornly high, though, driven by shelter costs (+7.2%), particularly owners’ equivalent rent, and transportation services (+9.1%).
- Inflation expectations (breakevens) remain well below current inflation as investors continue to expect inflation to track back toward the Fed’s 2% average target.

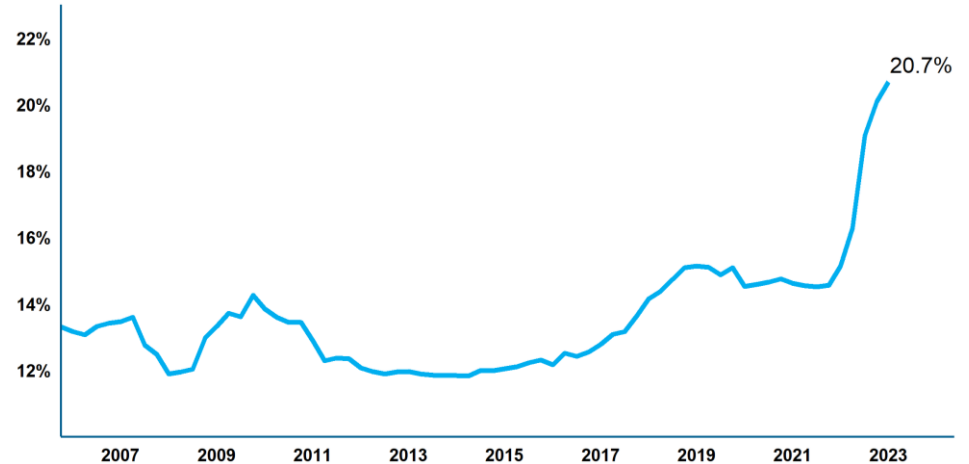
¹ Source: FRED. Data is as September 30, 2023. The CPI and 10 Year Breakeven average lines denote the average values from February 1997 to the present month-end, respectively. Breakeven values represent month-end values for comparative purposes.

US Consumer Under Stress¹

Revolving Consumer Credit & Student Loans (\$B)



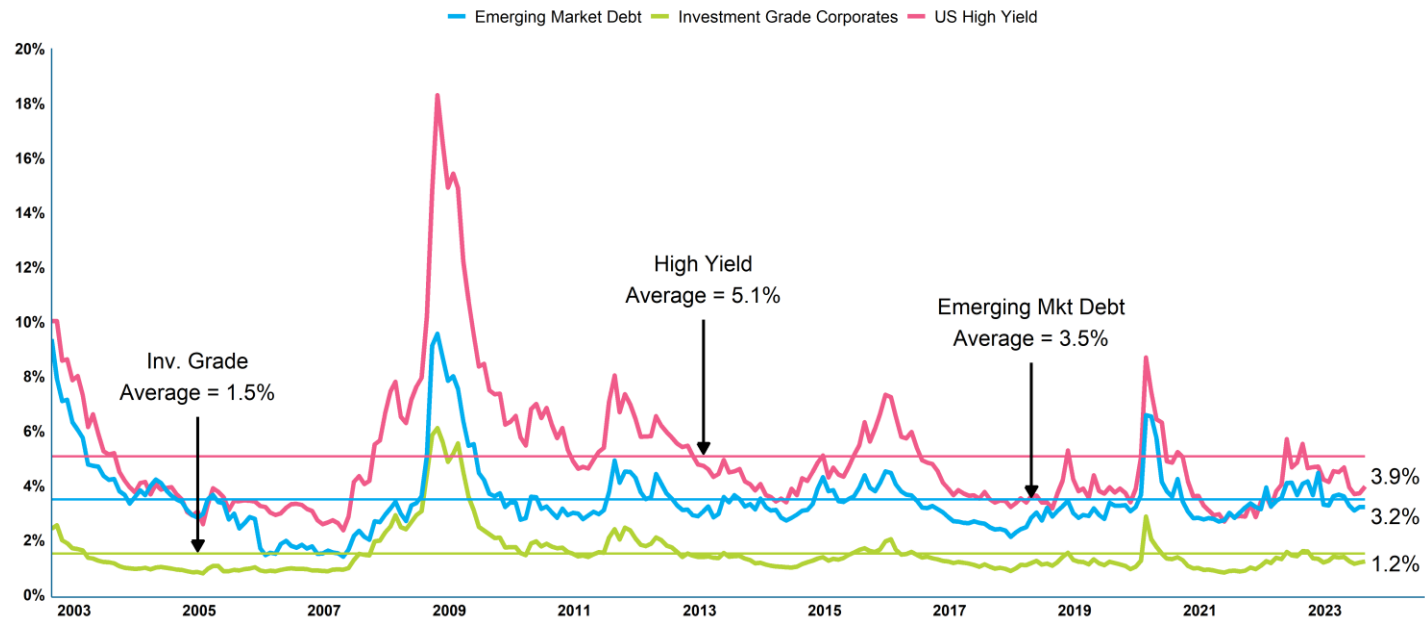
Consumer Credit Card Interest Rates (%)



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

¹ Source: FRED. The most recent data is as June 30, 2023. Revolving Consumer Credit data is seasonally adjusted to remove distortions during the holiday season.

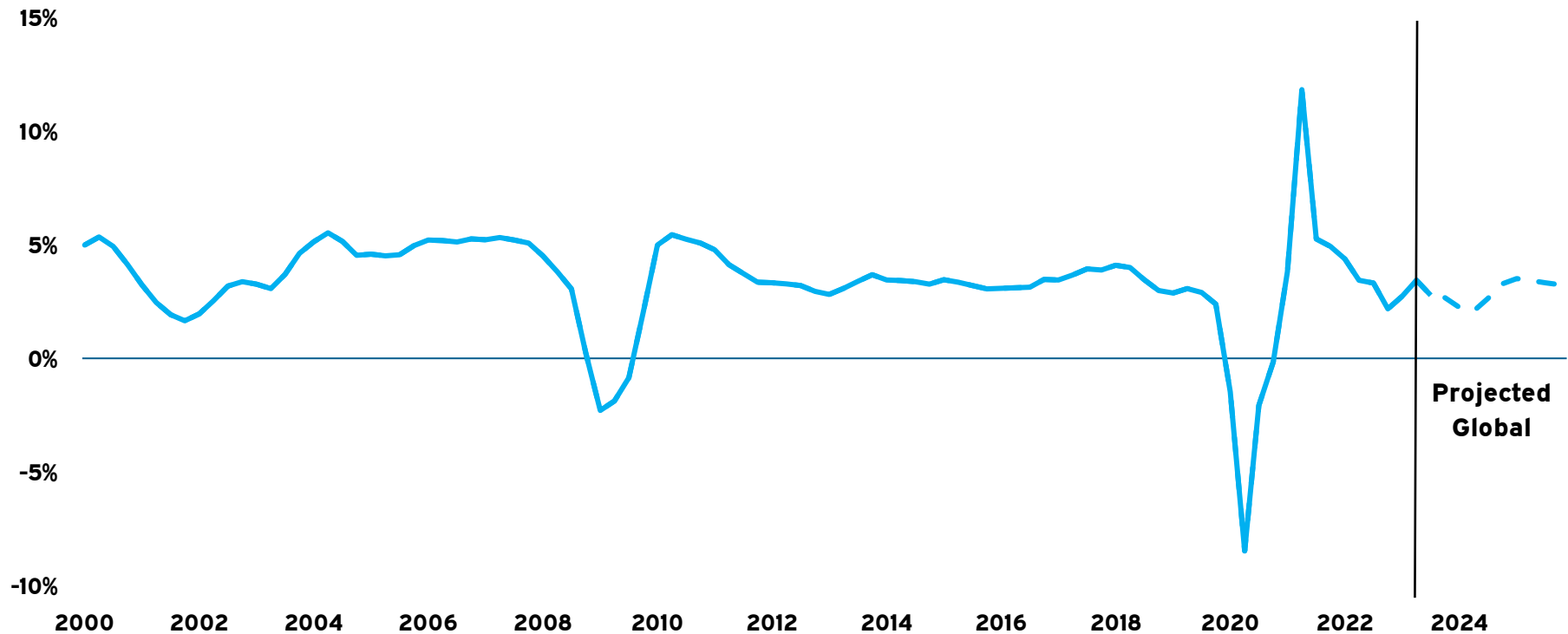
Credit Spreads vs. US Treasury Bonds¹



- Credit spreads (the added yield above a comparable maturity Treasury) largely remained unchanged over the quarter.
- High yield spreads remain well below the long-term average given the overall risk appetite this year. Investment grade and emerging market spreads are also below their respective long-term averages, but by smaller margins.

¹ Sources: Bloomberg. Data is as of September 30, 2023. Average lines denote the average of the investment grade, high yield, and emerging market spread values from September 2002 to the recent month-end, respectively.

Global Real Gross Domestic Product (GDP) Growth¹

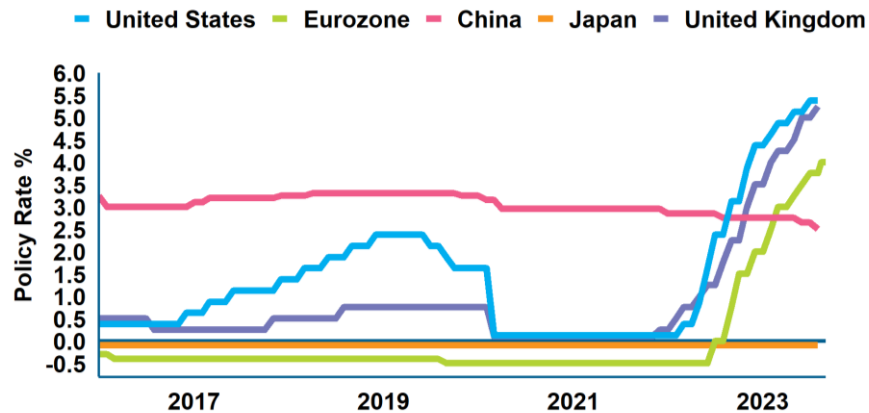


- Global economies are expected to slow this year compared to 2022. The risk of recession remains elevated given policymakers' aggressive tightening, but optimism has started to grow over some central banks potentially navigating a soft landing.
- The delicate balancing act of central banks trying to reduce inflation without dramatically disrupting labor markets and depressing economic growth, will remain key.

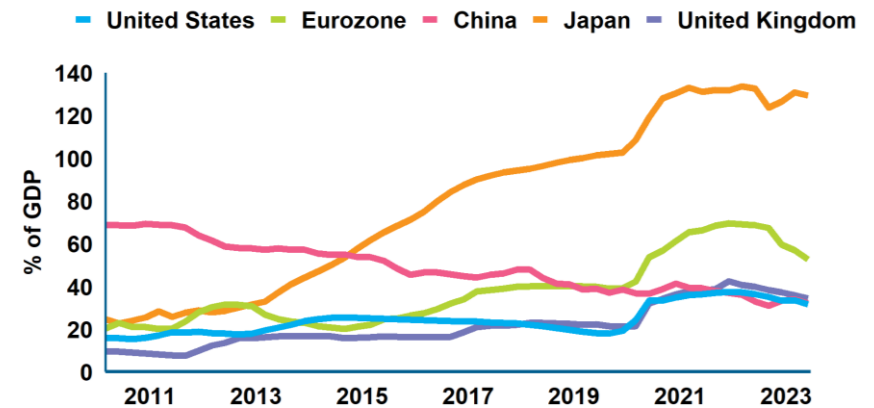
¹ Source: Oxford Economics (World GDP, US\$ prices & PPP exchange rate, real, % change YoY). Updated September 2023.

Central Bank Response¹

Policy Rates



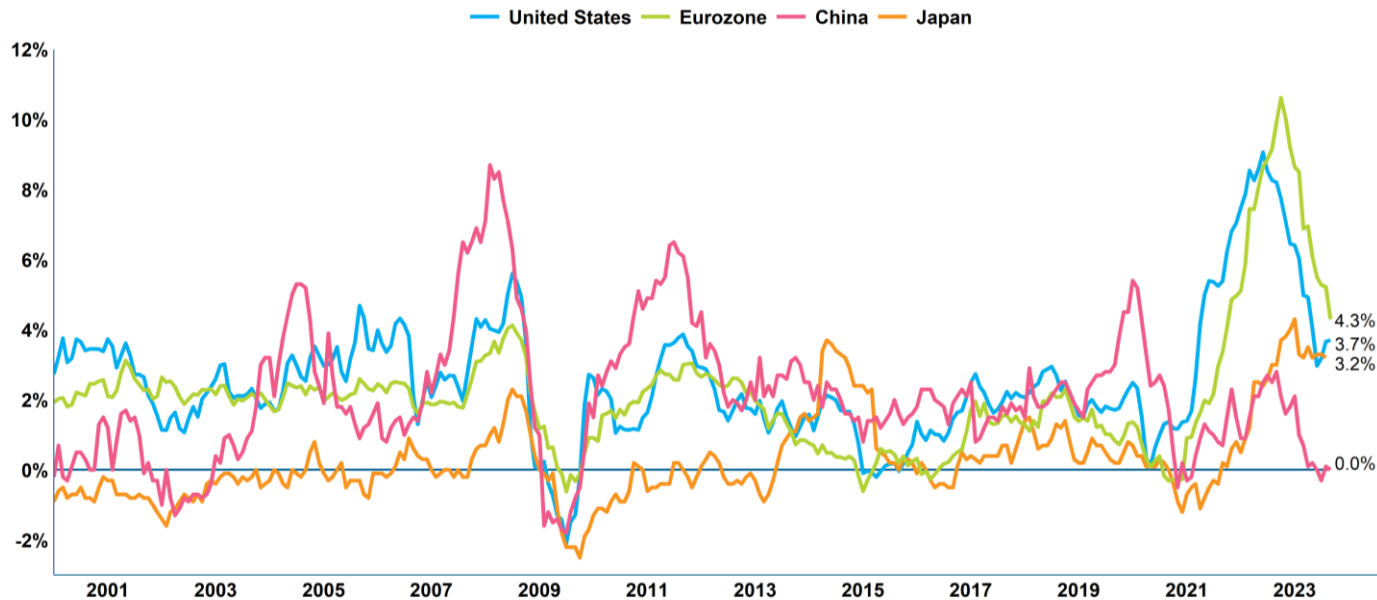
Balance Sheet as % of GDP



- Slowing inflation and growth have led to expectations for a reduction in the pace of aggressive policy tightening.
- In July the Fed raised rates another 25 basis points to a range of 5.25% to 5.50% and then kept rates at this level at their September meeting. Markets are expecting at most one more hike later this year.
- The European Central Bank also increased rates in July, with an additional hike in September, but rates remain lower than in the US. In Japan, expectations have increased that the BOJ will end its negative interest rate policy due to rising inflation.
- The central bank in China has continued to cut interest rates and inject liquidity into the banking system, as weaker than expected economic data appears to indicate a widespread slowdown.
- Risks remain for a policy error as central banks attempt to balance bringing down inflation, maintaining financial stability, and supporting growth.

¹ Source: Bloomberg. Policy rate data is as of September 30, 2023. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of June 30, 2023.

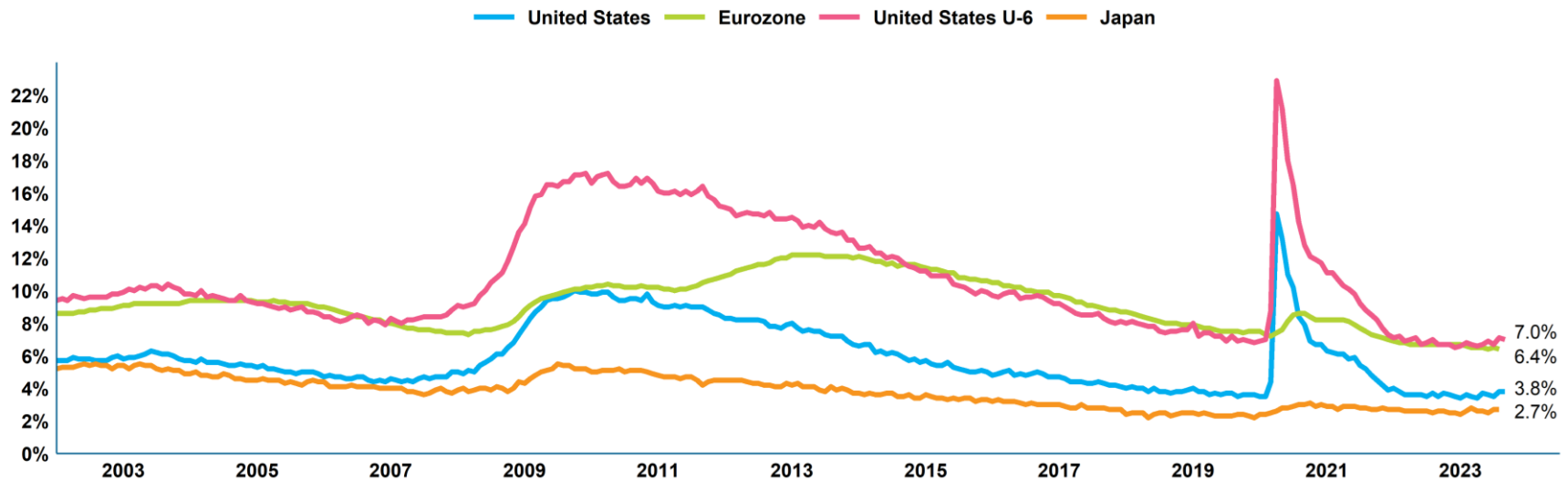
Inflation (CPI Trailing Twelve Months)¹



- The inflation picture remains mixed across the major economies.
- In the US, inflation was flat at 3.7%, influenced by rising shelter costs, while eurozone inflation remained higher than the US at 4.3%, a level well off its peak, however. Despite 2023's significant declines in the US and Europe, inflation levels remain elevated compared to central bank targets.
- Inflation in Japan has increased to levels not seen in almost a decade largely driven by food and home related items. In China, deflationary pressures eased but prices were flat from a year prior.

¹ United States CPI and Eurozone CPI – Source: FRED. Japan CPI and China CPI - Source: Bloomberg. Data is as September 30, 2023. The most recent data for Japanese and Eurozone inflation is as of August 2023.

Unemployment¹



- Overall, the US labor market remains healthy with the unemployment rate relatively low, wage growth now positive in real terms, and initial claims for unemployment staying subdued. The pace of wage growth has slowed though, and despite remaining elevated, the number of job openings has declined from recent highs.
- In September, unemployment remained at 3.8%, a level only 0.2% higher than the start of the quarter. The labor force participation rate remained at 62.8% well off the lows of the pandemic (60.1%) but not back to pre-pandemic levels (63.3%). Broader measures of unemployment (U-6) finished the quarter at 7.0% up only slightly from the end of June (6.9%).
- Unemployment in Europe has also declined but remains higher than the US, while levels in Japan have been flat through the pandemic given less layoffs.

¹ Eurozone Unemployment - Source: Bloomberg. Japan, United States, United States U-6 Unemployment – Source: FRED. Data is as September 30, 2023, for the US. The most recent data for Eurozone unemployment is as of August 2023 and Japanese unemployment is as of July 2023.

US Dollar versus Broad Currencies¹



- After a strong 2022, the US dollar declined late last year and into early this year as weaker economic data and lower inflation led to investors anticipating the end of FOMC tightening.
- Recently though, the dollar reversed course and appreciated against major currencies as relative growth remains strong and investors anticipate the FOMC keeping interest rates higher for longer.
- For the rest of this year, the track of inflation across economies and the corresponding monetary policies will be key drivers of currency moves.

¹ Source: Bloomberg. Data as of September 30, 2023.

Summary

Key Trends:

- The impact of inflation still above policy targets will remain key, with bond market volatility likely to stay high.
- Global monetary policies could diverge going forward. The risk of policy errors remains elevated as central banks try to reduce persistent inflation while not tipping their economies into recession.
- Growth is expected to slow globally this year, with many economies forecasted to tip into recession. However, optimism has been building that some economies could experience a soft landing. Inflation, monetary policy, and the war will all be key.
- In the US, consumers could feel pressure as certain components of inflation remain high (e.g., shelter), borrowing costs are elevated, and the job market may weaken.
- The key for US equities going forward will be whether earnings can remain resilient if growth continues to slow. 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 the potential for recent strength in the US dollar to persist, higher inflation weighing particularly on Europe, and China's sluggish economic reopening and on-going weakness in the real estate sector. Japan's recent hint at potentially tightening monetary policy along with changes in corporate governance in the country could influence relative results.
- After month-end, heightened tensions in Israel could add to overall uncertainty and drive safe haven flows.

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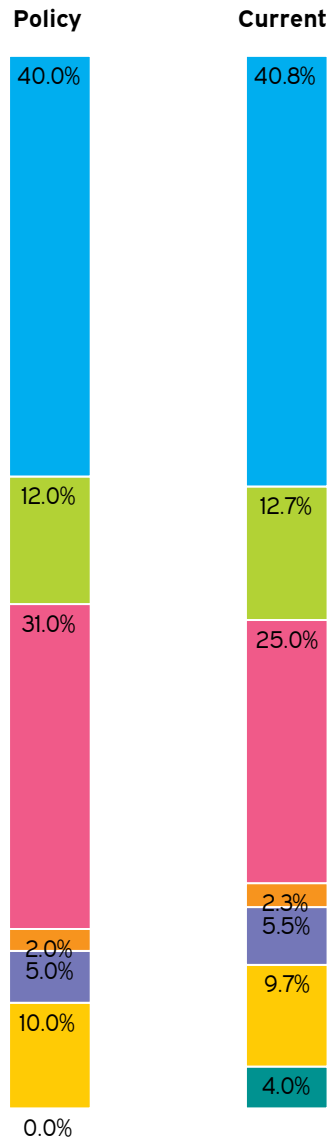
PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Oakland Police and Fire Retirement System

October 25, 2023

September Flash Report

As of September 30, 2023



Allocation vs. Targets and Policy						
	Current Balance (\$)	Current (%)	Policy (%)	Difference (%)	Policy Range (%)	Within IPS Range?
Domestic Equity	165,391,122	40.8	40.0	0.8	30.0 - 50.0	Yes
International Equity	51,607,318	12.7	12.0	0.7	8.0 - 14.0	Yes
Fixed Income	101,122,231	25.0	31.0	-6.0	25.0 - 40.0	Yes
Credit	9,329,974	2.3	2.0	0.3	1.0 - 3.0	Yes
Covered Calls	22,157,801	5.5	5.0	0.5	5.0 - 10.0	Yes
Crisis Risk Offset	39,485,989	9.7	10.0	-0.3	5.0 - 15.0	Yes
Cash	16,049,014	4.0	0.0	4.0	0.0 - 5.0	Yes
Total	405,143,449	100.0	100.0	0.0		

Asset Class Performance Summary | As of September 30, 2023

Asset Class Performance Summary											
	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	Inception Date
OPFRS Total Plan	405,143,449	100.0	-3.0	-3.1	4.5	10.3	3.5	3.8	6.2	6.4	Dec-88
<i>OPFRS Policy Benchmark</i>			-3.2	-3.0	5.9	12.2	3.5	4.0	6.4	7.7	
Excess Return			0.2	-0.1	-1.4	-1.9	0.0	-0.2	-0.2	-1.3	
Domestic Equity	165,391,122	40.8	-4.6	-3.9	7.0	15.7	8.4	7.5	10.4	8.6	Jun-97
<i>Russell 3000 (Blend)</i>			-4.8	-3.3	12.4	20.5	9.4	9.1	11.3	8.9	
Excess Return			0.2	-0.6	-5.4	-4.8	-1.0	-1.6	-0.9	-0.3	
International Equity	51,607,318	12.7	-2.4	-4.0	7.3	23.3	4.6	3.2	4.3	5.0	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			-3.2	-3.8	5.3	20.4	3.7	2.6	3.3	4.8	
Excess Return			0.8	-0.2	2.0	2.9	0.9	0.6	1.0	0.2	
Fixed Income	101,122,231	25.0	-2.6	-3.2	-0.6	1.5	-4.5	0.4	1.5	4.3	Jan-94
<i>Bloomberg Universal (Blend)</i>			-2.4	-2.9	-0.6	1.6	-4.7	0.3	1.4	4.4	
Excess Return			-0.2	-0.3	0.0	-0.1	0.2	0.1	0.1	-0.1	
Credit	9,329,974	2.3	-0.1	1.4	8.4	10.4	5.1	3.2	--	4.6	Feb-15
<i>Blmbg. U.S. Corp: High Yield Index</i>			-1.2	0.5	5.9	10.3	1.8	3.0	4.2	4.1	
Excess Return			1.1	0.9	2.5	0.1	3.3	0.2	--	0.5	
Covered Calls	22,157,801	5.5	-3.3	-1.8	11.9	20.4	10.2	7.9	--	8.5	Apr-14
<i>CBOE S&P 500 Buy Write Index</i>			-2.7	-2.8	7.3	14.6	7.2	3.0	6.0	5.2	
Excess Return			-0.6	1.0	4.6	5.8	3.0	4.9	--	3.3	
Crisis Risk Offset	39,485,989	9.7	0.3	-1.4	0.5	-4.3	-7.4	-8.9	--	-8.1	Aug-18
<i>Crisis Risk Offset Benchmark</i>			-0.5	-2.4	0.3	1.8	3.5	-0.3	--	-0.4	
Excess Return			0.8	1.0	0.2	-6.1	-10.9	-8.6	--	-7.7	

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

Asset Class & Manager Performance | As of September 30, 2023

	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	Inception Date
OPFRS Total Plan	405,143,449	100.0	-3.0	-3.1	4.5	10.3	3.5	3.8	6.2	6.4	Dec-88
<i>OPFRS Policy Benchmark</i>			-3.2	-3.0	5.9	12.2	3.5	4.0	6.4	7.7	
Excess Return			0.2	-0.1	-1.4	-1.9	0.0	-0.2	-0.2	-1.3	
Domestic Equity	165,391,122	40.8	-4.6	-3.9	7.0	15.7	8.4	7.5	10.4	8.6	Jun-97
<i>Russell 3000 (Blend)</i>			-4.8	-3.3	12.4	20.5	9.4	9.1	11.3	8.9	
Excess Return			0.2	-0.6	-5.4	-4.8	-1.0	-1.6	-0.9	-0.3	
Northern Trust Russell 1000	78,815,151	19.5	-4.7	-3.1	13.0	21.2	9.4	9.5	11.5	12.8	Jun-10
<i>Russell 1000 Index</i>			-4.7	-3.1	13.0	21.2	9.5	9.6	11.6	12.9	
Excess Return			0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	
EARNEST Partners	39,440,769	9.7	-5.0	-4.7	3.4	11.3	8.6	8.3	10.8	8.8	Apr-06
<i>Russell Midcap Index</i>			-5.0	-4.7	3.9	13.4	8.1	6.4	9.0	8.2	
Excess Return			0.0	0.0	-0.5	-2.1	0.5	1.9	1.8	0.6	
Wellington Select Quality Equity	22,275,787	5.5	-3.5	-4.7	0.3	14.1	--	--	--	0.8	May-22
<i>Russell 1000 Index</i>			-4.7	-3.1	13.0	21.2	9.5	9.6	11.6	4.0	
Excess Return			1.2	-1.6	-12.7	-7.1	--	--	--	-3.2	
Brown Fundamental Small Cap Value	11,370,103	2.8	-3.5	0.8	4.1	16.8	--	--	--	2.3	Apr-21
<i>Russell 2000 Value Index</i>			-5.2	-3.0	-0.5	7.8	13.3	2.6	6.2	-4.1	
Excess Return			1.7	3.8	4.6	9.0	--	--	--	6.4	
Rice Hall James	13,489,312	3.3	-6.1	-8.3	0.7	3.7	1.8	-0.3	--	4.8	Aug-17
<i>Russell 2000 Growth Index</i>			-6.6	-7.3	5.2	9.6	1.1	1.6	6.7	5.3	
Excess Return			0.5	-1.0	-4.5	-5.9	0.7	-1.9	--	-0.5	

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Asset Class & Manager Performance | As of September 30, 2023

	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	Inception Date
International Equity	51,607,318	12.7	-2.4	-4.0	7.3	23.3	4.6	3.2	4.3	5.0	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			-3.2	-3.8	5.3	20.4	3.7	2.6	3.3	4.8	
Excess Return			0.8	-0.2	2.0	2.9	0.9	0.6	1.0	0.2	
Vanguard Developed Markets ETF	14,640,298	3.6	-3.8	-4.7	5.3	22.9	5.0	--	--	5.0	Sep-19
<i>FTSE Developed All Cap ex-U.S. Index</i>			-3.5	-3.9	6.7	24.2	5.8	3.5	4.3	5.6	
Excess Return			-0.3	-0.8	-1.4	-1.3	-0.8	--	--	-0.6	
SGA ACWI ex-U.S. Equity	36,967,020	9.1	-1.9	-3.7	8.1	23.4	4.2	--	--	1.8	Dec-19
<i>MSCI AC World ex USA (Net)</i>			-3.2	-3.8	5.3	20.4	3.7	2.6	3.3	2.6	
Excess Return			1.3	0.1	2.8	3.0	0.5	--	--	-0.8	
Fixed Income	101,122,231	25.0	-2.6	-3.2	-0.6	1.5	-4.5	0.4	1.5	4.3	Jan-94
<i>Bloomberg Universal (Blend)</i>			-2.4	-2.9	-0.6	1.6	-4.7	0.3	1.4	4.4	
Excess Return			-0.2	-0.3	0.0	-0.1	0.2	0.1	0.1	-0.1	
Ramirez	68,697,575	17.0	-2.5	-3.1	-0.6	1.0	-4.5	0.3	--	0.7	Feb-17
<i>Blmbg. U.S. Aggregate Index</i>			-2.5	-3.2	-1.2	0.6	-5.2	0.1	1.1	0.3	
Excess Return			0.0	0.1	0.6	0.4	0.7	0.2	--	0.4	
Wellington Core Bond	6,517,141	1.6	-2.6	-3.1	-0.2	1.6	--	--	--	-5.5	Apr-21
<i>Blmbg. U.S. Aggregate Index</i>			-2.5	-3.2	-1.2	0.6	-5.2	0.1	1.1	-5.2	
Excess Return			-0.1	0.1	1.0	1.0	--	--	--	-0.3	
Reams	25,907,515	6.4	-3.0	-3.5	-0.5	2.6	-4.3	2.7	2.4	4.7	Feb-98
<i>Bloomberg Universal (Blend)</i>			-2.4	-2.9	-0.6	1.6	-4.7	0.3	1.4	3.9	
Excess Return			-0.6	-0.6	0.1	1.0	0.4	2.4	1.0	0.8	

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

Asset Class & Manager Performance | As of September 30, 2023

	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	Inception Date
Credit	9,329,974	2.3	-0.1	1.4	8.4	10.4	5.1	3.2	--	4.6	Feb-15
<i>Blmbg. U.S. Corp: High Yield Index</i>			<i>-1.2</i>	<i>0.5</i>	<i>5.9</i>	<i>10.3</i>	<i>1.8</i>	<i>3.0</i>	<i>4.2</i>	<i>4.1</i>	
Excess Return			1.1	0.9	2.5	0.1	3.3	0.2	--	0.5	
Polen Capital	9,329,974	2.3	-0.1	1.4	8.4	10.4	5.1	3.2	--	4.6	Feb-15
<i>ICE BofA High Yield Master II</i>			<i>-1.2</i>	<i>0.5</i>	<i>6.0</i>	<i>10.2</i>	<i>1.8</i>	<i>2.8</i>	<i>4.2</i>	<i>4.0</i>	
Excess Return			1.1	0.9	2.4	0.2	3.3	0.4	--	0.6	
Covered Calls	22,157,801	5.5	-3.3	-1.8	11.9	20.4	10.2	7.9	--	8.5	Apr-14
<i>CBOE S&P 500 Buy Write Index</i>			<i>-2.7</i>	<i>-2.8</i>	<i>7.3</i>	<i>14.6</i>	<i>7.2</i>	<i>3.0</i>	<i>6.0</i>	<i>5.2</i>	
Excess Return			-0.6	1.0	4.6	5.8	3.0	4.9	--	3.3	
Parametric BXM	11,106,210	2.7	-2.2	-1.0	10.3	18.1	8.5	5.8	--	6.8	Apr-14
<i>CBOE S&P 500 Buy Write Index</i>			<i>-2.7</i>	<i>-2.8</i>	<i>7.3</i>	<i>14.6</i>	<i>7.2</i>	<i>3.0</i>	<i>6.0</i>	<i>5.2</i>	
Excess Return			0.5	1.8	3.0	3.5	1.3	2.8	--	1.6	
Parametric DeltaShift	11,051,591	2.7	-4.5	-2.6	13.4	22.8	11.5	9.8	--	10.3	Apr-14
<i>CBOE S&P 500 Buy Write Index</i>			<i>-2.7</i>	<i>-2.8</i>	<i>7.3</i>	<i>14.6</i>	<i>7.2</i>	<i>3.0</i>	<i>6.0</i>	<i>5.2</i>	
Excess Return			-1.8	0.2	6.1	8.2	4.3	6.8	--	5.1	

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

Asset Class & Manager Performance | As of September 30, 2023

	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	Inception Date
Crisis Risk Offset	39,485,989	9.7	0.3	-1.4	0.5	-4.3	-7.4	-8.9	--	-8.1	Aug-18
<i>Crisis Risk Offset Benchmark</i>			<i>-0.5</i>	<i>-2.4</i>	<i>0.3</i>	<i>1.8</i>	<i>3.5</i>	<i>-0.3</i>	<i>--</i>	<i>-0.4</i>	
Excess Return			0.8	1.0	0.2	-6.1	-10.9	-8.6	--	-7.7	
Kepos Alternative Risk Premia	10,968,295	2.7	2.0	4.7	11.5	12.6	--	--	--	5.7	Feb-22
<i>SG Multi Alternative Risk Premia Index</i>			<i>2.5</i>	<i>4.2</i>	<i>7.9</i>	<i>9.5</i>	<i>6.0</i>	<i>1.2</i>	<i>--</i>	<i>7.1</i>	
Excess Return			-0.5	0.5	3.6	3.1	--	--	--	-1.4	
Versor Trend Following	16,170,216	4.0	5.6	4.0	1.2	-9.7	--	--	--	5.1	Apr-22
<i>SG Trend Index</i>			<i>3.4</i>	<i>0.8</i>	<i>0.9</i>	<i>-5.2</i>	<i>15.0</i>	<i>9.1</i>	<i>6.2</i>	<i>6.1</i>	
Excess Return			2.2	3.2	0.3	-4.5	--	--	--	-1.0	
Vanguard Long-Term Treasury ETF	12,347,478	3.0	-7.3	-11.9	-8.5	-9.5	-15.8	--	--	-6.7	Jul-19
<i>Blmbg. U.S. Gov Long Index</i>			<i>-7.3</i>	<i>-11.8</i>	<i>-8.5</i>	<i>-9.0</i>	<i>-15.7</i>	<i>-2.8</i>	<i>0.8</i>	<i>-6.5</i>	
Excess Return			0.0	-0.1	0.0	-0.5	-0.1	--	--	-0.2	
Cash	16,049,014	4.0	0.0	0.0	0.0	0.0	0.0	0.8	0.7	0.6	Mar-11

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

**Cash Flow Summary
Month to Date**

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Northern Trust Russell 1000	82,696,891	-	-3,881,740	78,815,151
EARNEST Partners	41,473,502	-	-2,032,734	39,440,769
Wellington Select Quality Equity	23,087,330	-	-811,542	22,275,787
Brown Fundamental Small Cap Value	11,783,990	-	-413,887	11,370,103
Rice Hall James	14,345,949	-	-856,637	13,489,312
Vanguard Developed Markets ETF	15,320,074	-	-679,776	14,640,298
SGA ACWI ex-U.S. Equity	38,655,618	-1,000,000	-688,597	36,967,020
Ramirez	70,461,623	-	-1,764,049	68,697,575
Wellington Core Bond	6,687,686	-	-170,545	6,517,141
Reams	26,694,632	-	-787,117	25,907,515
Polen Capital	9,339,528	-	-9,555	9,329,974
Parametric BXM	11,349,735	-	-243,526	11,106,210
Parametric DeltaShift	11,569,406	-	-517,815	11,051,591
Kepos Alternative Risk Premia	10,752,656	-	215,639	10,968,295
Versor Trend Following	15,310,522	-	859,693	16,170,216
Vanguard Long-Term Treasury ETF	13,361,791	-	-1,014,313	12,347,478
Cash - Money Market	5,496,268	147,746	-	5,644,014
Cash - Treasury	10,245,000	160,000	-	10,405,000
Securities Lending Northern Trust	-	-11,387	11,387	-
OPFRS Total Plan	418,632,202	-703,642	-12,785,112	405,143,449

Benchmark History		
From Date	To Date	Benchmark
OPFRS Total Plan		
06/01/2022	Present	40.0% Russell 3000 Index, 12.0% MSCI AC World ex USA (Net), 31.0% Blmbg. U.S. Universal Index, 2.0% Blmbg. U.S. Corp: High Yield Index, 5.0% CBOE S&P 500 Buy Write Index, 10.0% Crisis Risk Offset Benchmark
01/01/2019	06/01/2022	40.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 31.0% Blmbg. U.S. Universal Index, 5.0% CBOE S&P 500 Buy Write Index, 2.0% Blmbg. U.S. Treasury: Long, 10.0% Crisis Risk Offset Benchmark
05/01/2016	01/01/2019	48.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 20.0% Blmbg. U.S. Universal Index, 20.0% CBOE BXM
10/01/2015	05/01/2016	43.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 20.0% Blmbg. U.S. Universal Index, 15.0% CBOE BXM, 10.0% CPI - All Urban Consumers (unadjusted) +3%
01/01/2014	10/01/2015	48.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 20.0% Blmbg. U.S. Universal Index, 10.0% CBOE BXM, 10.0% CPI - All Urban Consumers (unadjusted) +3%
03/01/2013	01/01/2014	40.0% Russell 3000 Index, 10.0% MSCI AC World ex USA index, 17.0% Blmbg. U.S. Universal Index, 33.0% ICE BofA 3 Month U.S. T-Bill
08/01/2012	03/01/2013	20.0% Russell 3000 Index, 7.0% MSCI AC World ex USA index, 18.0% Blmbg. U.S. Universal Index, 55.0% ICE BofA 3 Month U.S. T-Bill
10/01/2007	08/01/2012	53.0% Russell 3000 Index, 17.0% MSCI AC World ex USA index, 30.0% Blmbg. U.S. Universal Index
04/01/2006	10/01/2007	35.0% Russell 3000 Index, 15.0% MSCI AC World ex USA index, 50.0% Blmbg. U.S. Universal Index
01/01/2005	04/01/2006	35.0% Russell 3000 Index, 50.0% Blmbg. U.S. Aggregate Index, 15.0% MSCI AC World ex USA index
04/01/1998	01/01/2005	20.0% Russell 1000 Value Index, 10.0% Russell 1000 Index, 5.0% Russell Midcap Index, 50.0% Blmbg. U.S. Aggregate Index, 15.0% MSCI EAFE (Net)
09/01/1988	04/01/1998	40.0% S&P 500 Index, 55.0% Blmbg. U.S. Aggregate Index, 5.0% FTSE 3 Month T-Bill

Benchmark History

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

Additional Information

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

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

Fiscal Year: Fiscal year begins on July 1.

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

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Oakland Police and Fire Retirement System

October 2023

Asset Liability Study


Agenda

1. Key Risks to the Plan
2. Actuarial Background and Strategic Considerations
3. Summary and Next Steps

Key Risks to the Plan

What are typical risks to a pension plan?


01



Investments

- Long-term asset appreciation in value
- Asset return volatility


02



Inflation

- Depreciating value of the assets
- Strength of the participant benefits


03



Liquidity

- Ability of assets to pay benefit payments
- Maintain investment policy targets


04



Workforce

- Constant or growing headcount
- Level of hours worked or wages earned


05



Cash Inflow

- Volatility of contribution requirements
- Employer ability to make contributions

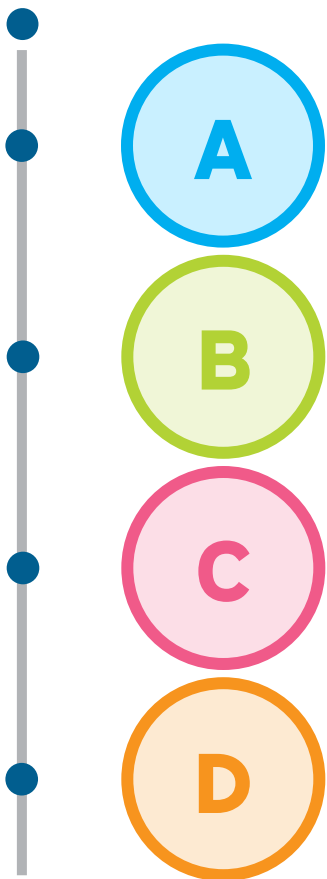
06



Longevity

- Participants receiving benefits beyond expectations

How does Meketa evaluate risks in isolation?



Likelihood

- How likely is a risk to deviate from an assumption?
- Example: Investment Risk - The assets have a very low probability of returning precisely the assumed rate of return every year.

Materiality

- If the risk occurs, how detrimental or beneficial will the result be?
- Example: Longevity Risk - Over the last X years, mortality experience has resulted in X% liability gains or losses.

Quantitative

- Can the outcomes be measured or are the results subject to interpretation?
- Example: Inflation Risk - The appreciation a participant has for the size of the pension benefit varies by person. It cannot be measured precisely.

Impact of Investment Policy

- Can the risk be mitigated with a change to the asset allocation?
- Example: Cash Inflow Risk - Will adjusting the asset allocation affect an employer's ability to make required contributions?

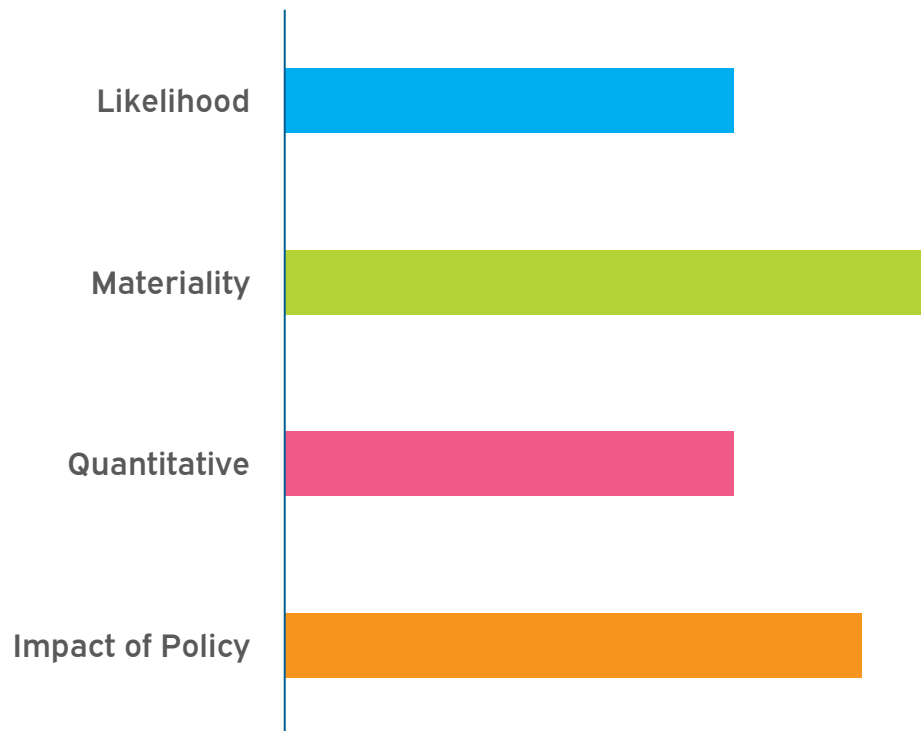
Risk Isolation – Investments

01



Investments

- Long-term asset appreciation in value
- Asset return volatility



- ✓ There is a high likelihood of *annual* asset returns beyond +/- 1% of the assumed rate of return.
- ✓ Over the *long-term*, it is expected that returns will match or exceed the assumption.
- ✓ Volatile asset returns can have a very material effect on the Plan's funded status.
- ✓ The effects of various asset returns are highly quantifiable.
- ✓ There are many different, valid opinions on asset class return expectations.
- ✓ A Plan's asset allocation is the biggest driver of investment risk.
- ✓ No investment policy is investment risk-free.

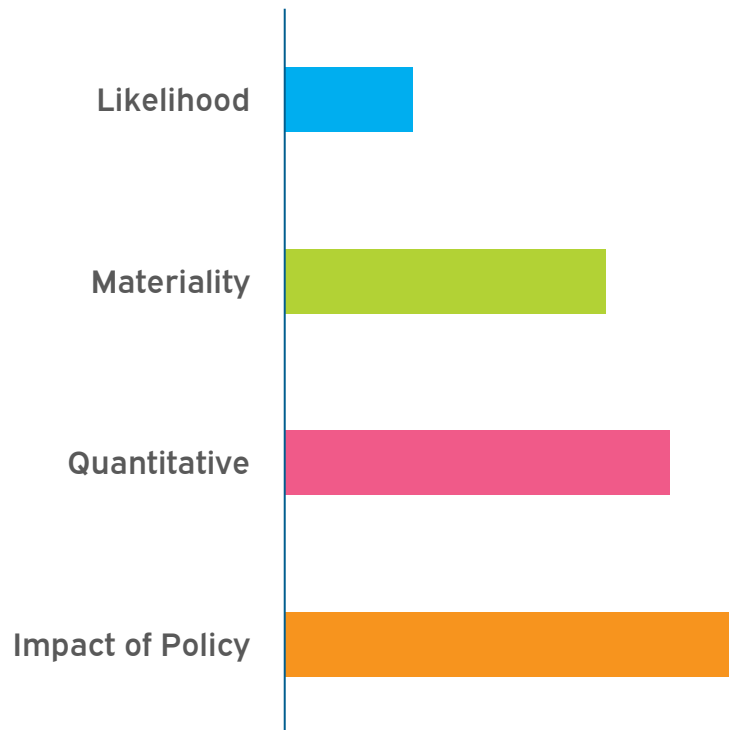
Risk Isolation – Inflation

02



Inflation

- Depreciating value of the assets
- Strength of the participant benefits



- ✓ There is a low likelihood of *annual* inflation beyond +/- 1% of the Plan's assumption (2.25%).
- ✓ The Plan's liability is expected to increase by ~5% if long-term COLA is 3.25%.
- ✓ Sensitivity to inflation changes is highly quantitative.
- ✓ The value of the benefit to each participant is subjective.
- ✓ Asset strategies can be created with a goal of providing benefit increases tied to realized inflation.
- ✓ While certain asset classes have shown correlations to inflation, no asset replicates inflation perfectly.

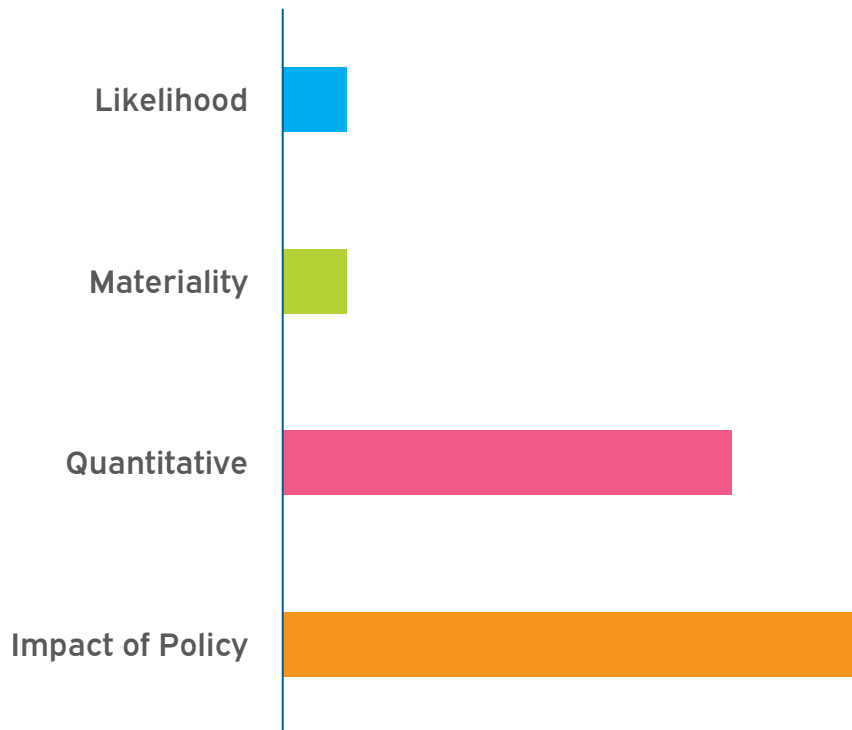
Risk Isolation – Liquidity

03



Liquidity

- Ability of assets to pay benefit payments
- Maintain investment policy targets



- ✓ The portfolio is invested in highly liquid or semi-liquid asset classes.
- ✓ In the event of liquidity issues, the Plan can initiate alternative courses of less-than-ideal actions, such as selling liquid assets at a loss.
- ✓ Liquidity can be tricky to measure given most illiquid assets are not valued frequently or consistently.
- ✓ Certain reasonable assumptions can be made to produce a good, quantitative liquidity analysis.
- ✓ Asset allocation is a primary driver of Plan liquidity.
- ✓ Liquidity in stressed markets can be very unpredictable.

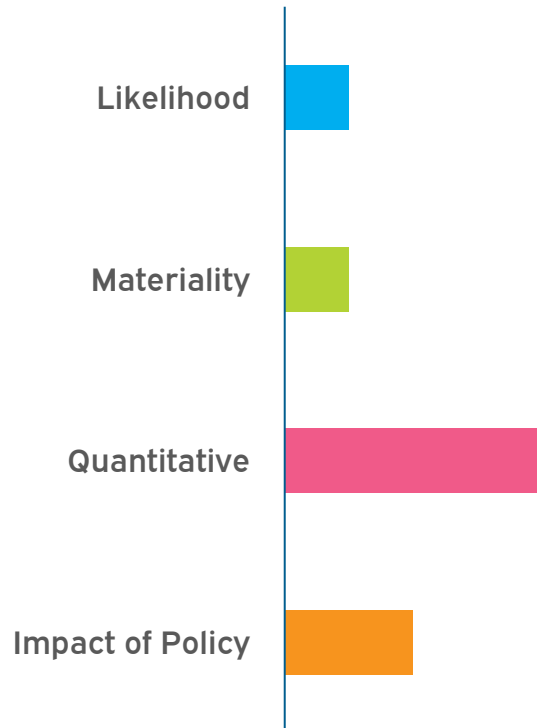
Risk Isolation – Workforce

04



Workforce

- Constant or growing headcount
- Level of hours worked or wages earned



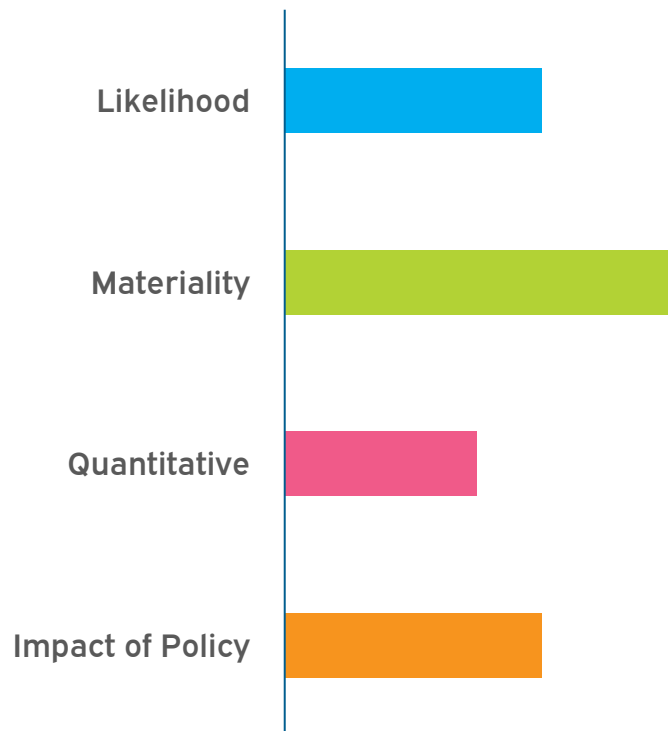
- ✓ The Plans are closed and anticipated to decrease in headcount every year.
- ✓ Contribution requirements are independent of active workforce or hours/payroll levels.
- ✓ Prediction of active headcount can be very difficult due to various outside influences.
- ✓ Various deterministic scenarios or other, more creative approaches can aim to quantify this risk.
- ✓ By and large, asset allocation is not viewed as a solution to mitigate workforce risks.
- ✓ Some pension plans have shown a correlation between economies and hiring/payroll.

Risk Isolation – Cash Inflow



Cash Inflow

- Volatility of contribution requirements
- Employer ability to make contributions

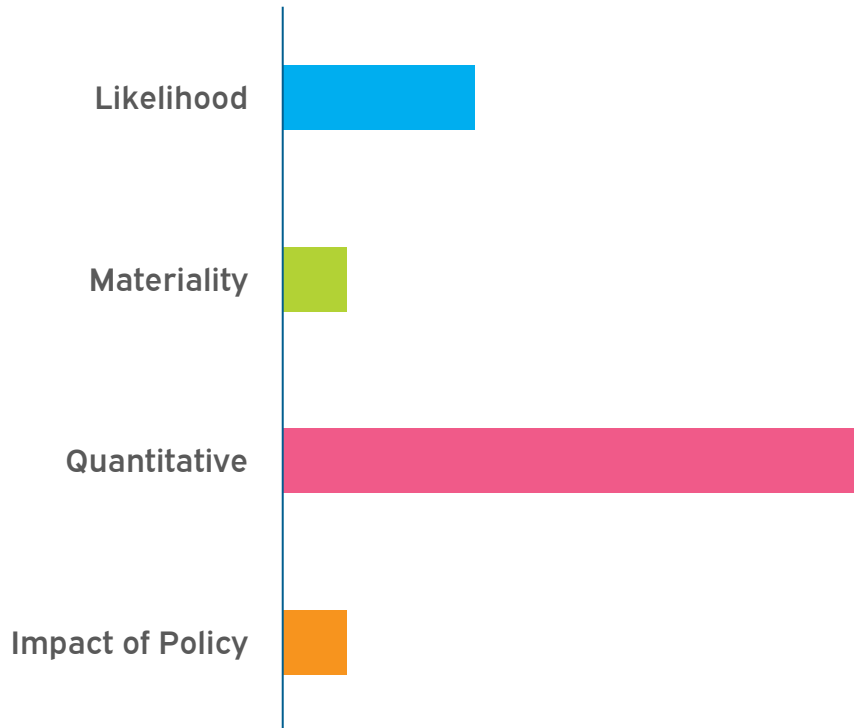


- ✓ Recent history has shown contributions being made to fund the Plan to 100% by 2026.
- ✓ After 2026, experience gains/losses can lead to contribution requirement volatility.
- ✓ It's assumed that the employer will always make the required contribution. This leaves downside risk.
- ✓ Falling behind on making contributions has a compounding impact on future results.
- ✓ The probability of not making required contributions is a risk that is very difficult to quantitatively measure.
- ✓ Contribution volatility can be measured as part of the asset-liability study.
- ✓ Asset allocation can be used to mitigate recommended contribution volatility.
- ✓ However, asset allocation has little correlation with the ability to make pension contributions.

Risk Isolation – Longevity

06 **Longevity**

- Participants receiving benefits beyond expectations



- ✓ Sufficient historical data on longevity creates accurate assumptions.
- ✓ As the covered population get smaller, it becomes harder to predict annual mortality.
- ✓ History of mortality (gains)/losses and the impact on the liability suggests assumptions have done a very good job of predicting experience.
- ✓ Analyzing a Plan’s sensitivity to mortality rates is a straightforward exercise.
- ✓ Future mortality improvement is subjective and based on a variety of uncontrollable factors.
- ✓ Asset allocation has little to no correlation to longevity.

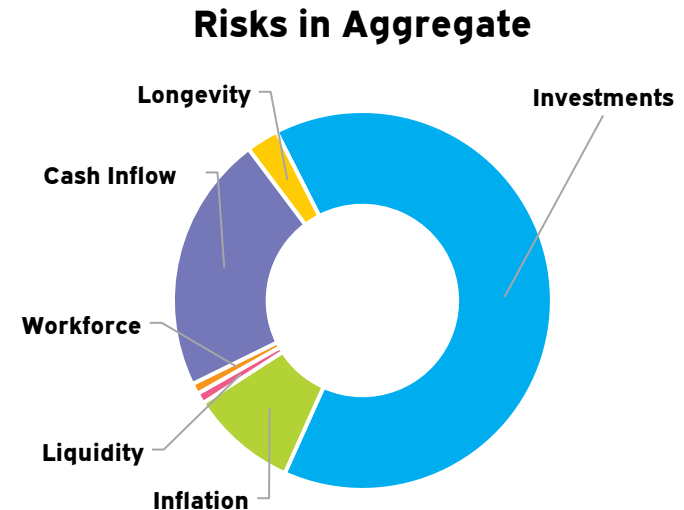
How do you evaluate risks in total (i.e., Enterprise risk)?

The asset-liability study aims to bring together all of the enterprise risks.



Summary of the key risks to Oakland P&F pension

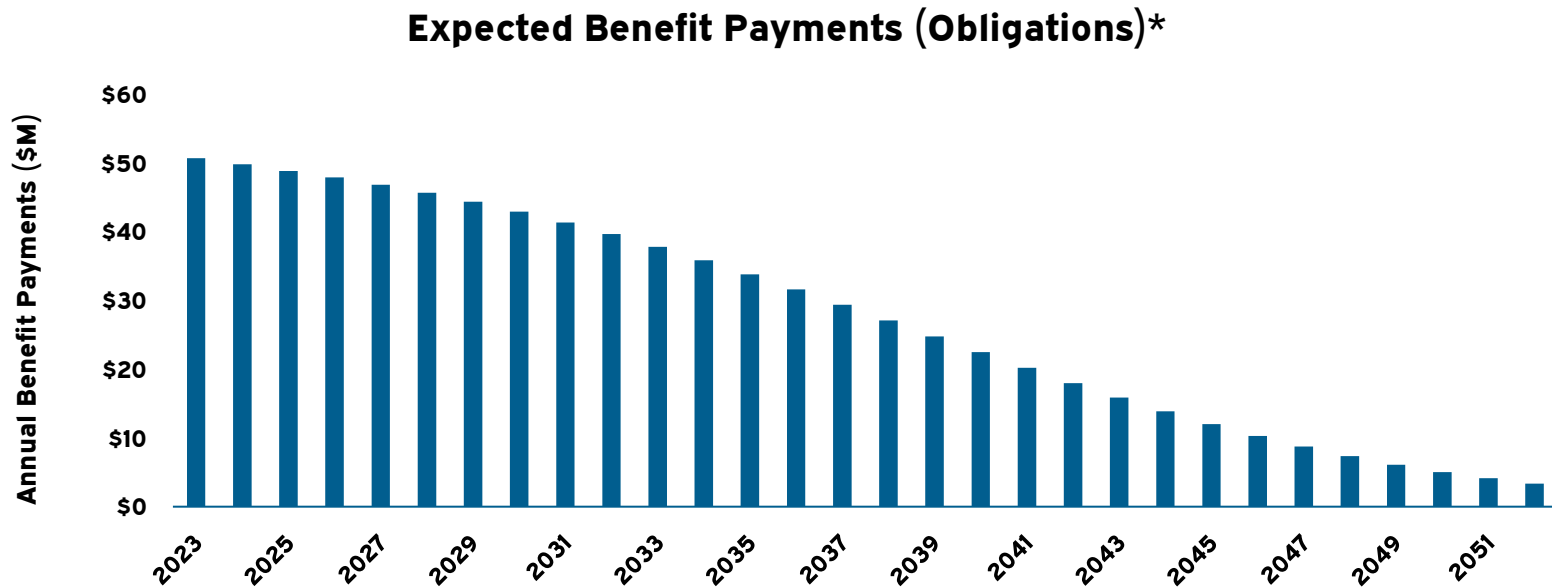
1. **Investments:** Asset return volatility is the biggest risk to the Plan.
2. **Cash Inflow:** After the Plan reaches 100% funded in 2026, it will be important to minimize Plan risks to avoid required contribution volatility.
3. **Inflation:** Future benefits are increased based on salary increases which are generally correlated with inflation. This creates the possibility of liability increases if inflation stays high long-term.



Recommendation: Optimize the asset return and asset return volatility to ensure all investment risks are compensated appropriately. Secondly, discuss strategies for hedging contribution volatility and inflation.

Actuarial Background and Strategic Considerations

How is the liability determined?



- The liability is calculated by discounting the expected benefit payments using the assumed long-term actuarial rate of return (currently 6%).
- Benefit payments are determined by the provisions of the plan, generally based on how long participants work and salary earned.
- *Expected* benefit payments are determined by the plan's actuary using many assumptions, such as future life expectancy and cost-of-living (COLA) increases.

* Expected benefit payments shown were provided by Cheiron as of June 30, 2022.

What pension strategies should be considered?

→ Below are high-level pension strategies that can help a Plan add certainty to desired outcomes.

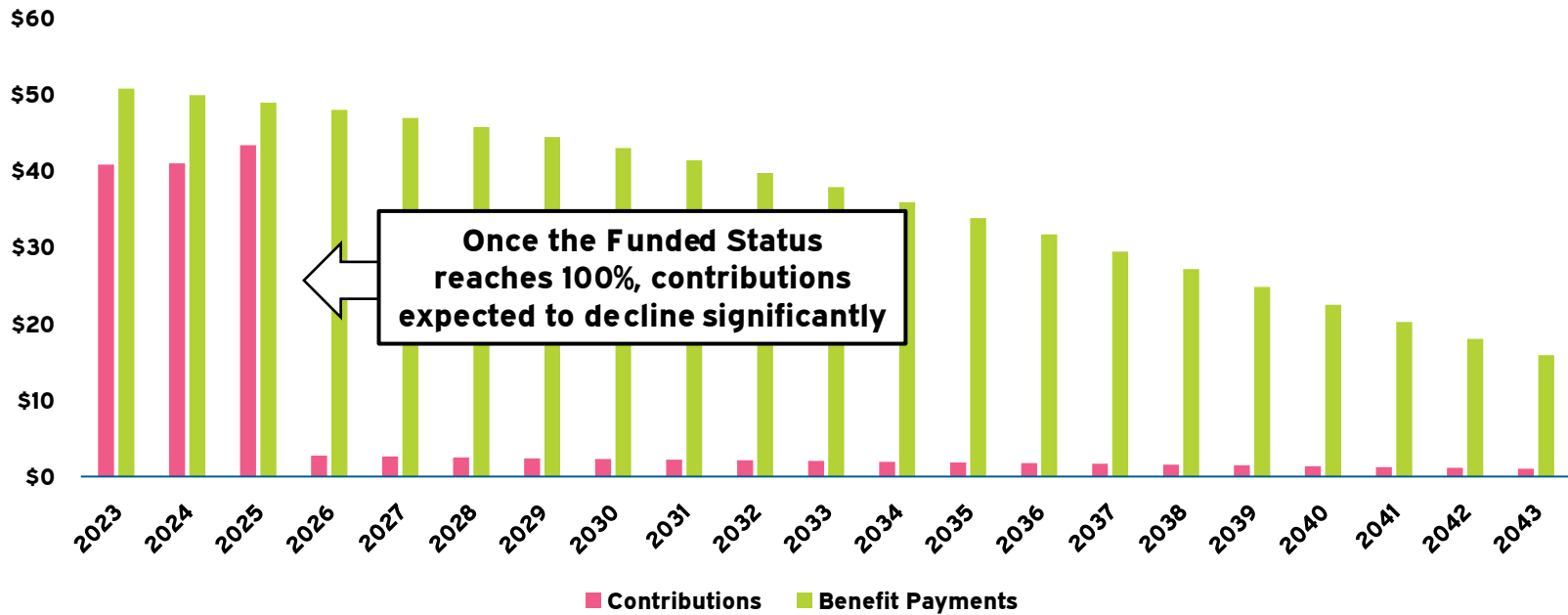
Strategy	Action	Desired Outcome
De-link Assumptions	De-link the expected return on asset assumption and the liability discount rate	Plan has a higher probability of achieving the return necessary to fund the plan on schedule
Dynamic Asset Allocation	As the plan's funded status improves, the investment policy defines how the asset allocation targets should change	Over time the asset allocation shifts from a "growth" orientation into a funded status "protection" posture
Liability-driven Investing	Reallocate assets into income-oriented vehicles that align future income earned with the size and timing of expected benefit payments.	Funded status volatility is reduced, adding predictability to future required contributions.

→ The above strategies can be implemented in isolation or in tandem depending on the plan's pension goals.

What are the key obligations over the next few decades?

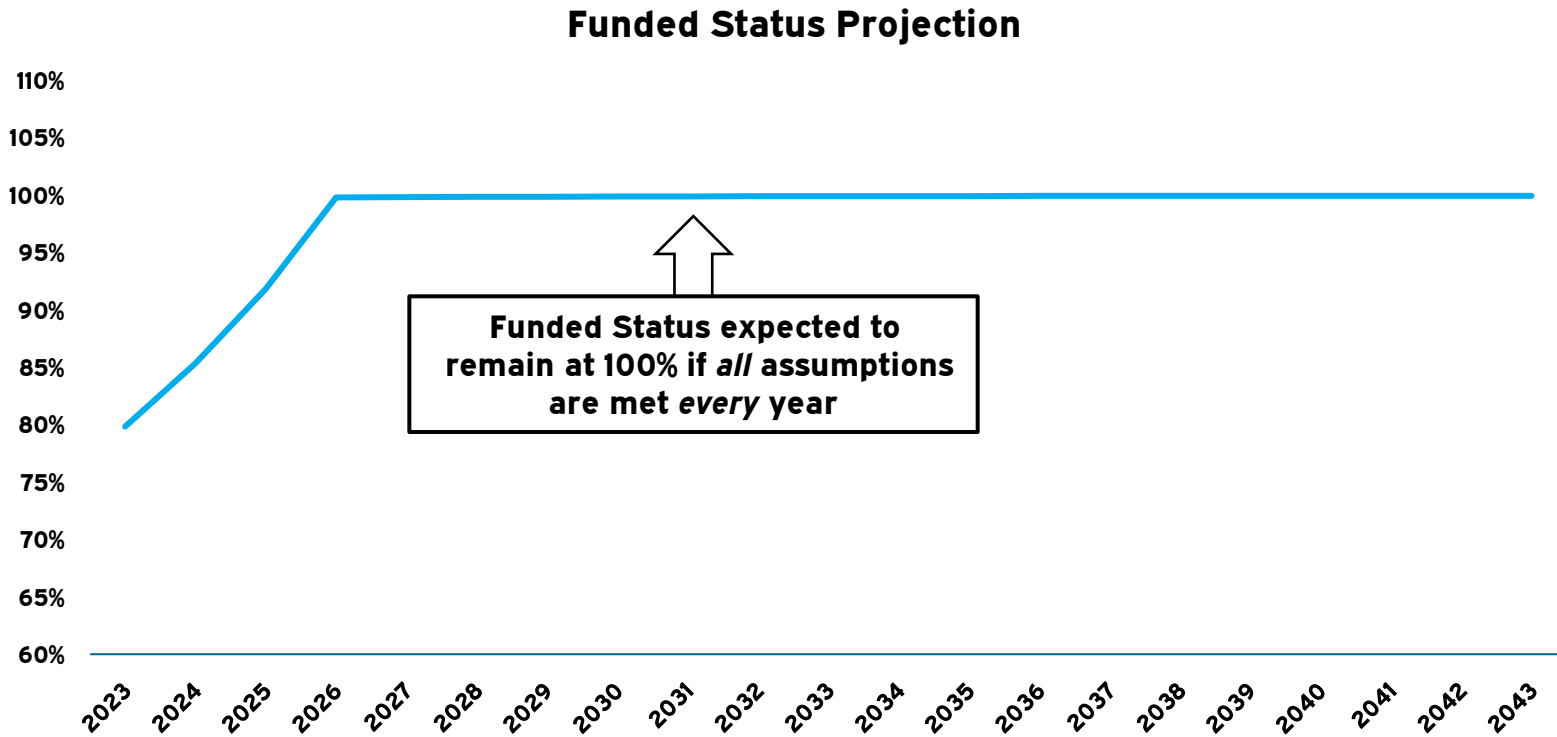
- At the most basic level, the pension plan must pay immediate benefit payment obligations and fund the plan to meet future benefit payment obligations.
- The following example shows the relationship between incoming funds (contributions) and outgoing funds (benefit payments) from the trust.

Expected Plan Inflows & Outflows (\$M)



* Expected cash flows shown were provided by Cheiron as of June 30, 2022.

Why is it important to further analyze cash flow projections?



- The *only* guarantee is that all assumptions will not be met.
- It is very important to measure obligations when assumptions are not met, so stakeholders can gain an appreciation for the risks being taken.

Summary and Next Steps

Summary and Next Steps

Summary

- There is no single definition of Risk in the A/L process
- The goals and objectives of the Oakland Police & Fire plan are unique
- We will be evaluating the plan based on future liabilities and capital market expectations.

Summary and Next Steps

Next Steps

- Determine which asset classes should be included in the portfolio
- Define risk and quantify that definition in the A/L process
 - Dialogue with the board and staff on what risks are important moving forward
- Given the long-term cash flows and liabilities. Designing a portfolio to achieve 6.00% may no longer be required.
- Further define De-risking in the context of OPFRS overall plan health.

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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."

MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: Meketa Investment Group (Meketa)
DATE: October 25, 2023
RE: 2023 Ongoing Strategic Investment Agenda

On an ongoing (monthly) basis, Meketa develops a list of projects that we expect to work closely with OPFRS to complete over throughout the calendar year (see table below). In an attempt to coordinate the scheduling of these tasks, this memo details a Preliminary Investment Project Agenda by calendaring and prioritizing the expected tasks and deliverables that would be required to fulfill the Agenda. Meketa welcomes any suggestions and/or modifications to the proposed timeline.

2023 Preliminary Investment Project Agenda

Expected Completion Date	Task
November/December 2023	Flash Performance Report (2023 Oct) Quarterly Performance Report (3Q 2023) Cash Flow Report (1Q 2024) Information/Discussion: Asset-Liability Study Manager Update: Ramirez Contract Renewal: Ramirez

This agenda includes only major strategic items. Meketa also expects to work with the Staff and Board to complete more routine tasks and projects, as expected.

DS/PN/JLC/mn

Due to the termination of the statewide COVID-19 State of Emergency by the Governor of California, effective March 1, 2023, all meetings of the Oakland Police & Fire Retirement System Board and its Committees will be conducted in person.

Meetings are held in wheelchair accessible facilities.

The Board may take action on items not on the agenda only if findings pursuant to the Sunshine Ordinance and Brown Act are made that the matter is urgent or an emergency.

For additional information, contact the Retirement Unit by calling (510) 238-7295. or send an email to mvisaya@oaklandca.gov



Retirement Unit
150 Frank H. Ogawa Plaza
Oakland, California 94612

AGENDA

RETIREMENT BOARD MEMBERS

Walter L. Johnson, Sr.
President

Jaime T. Godfrey
Vice President

Martin J. Melia
Member

Robert W. Nichelini
Member

John C. Speakman
Member

R. Steven Wilkinson
Member

Erin Roseman
Member

CLOSED SESSION of the BOARD OF ADMINISTRATION of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM (“PFRS”)

WEDNESDAY, OCTOBER 25, 2023

**DURING REGULAR MEETING SCHEDULED TO START AT 11:30 AM
ONE FRANK H. OGAWA PLAZA, CAUCUS ROOM, 3RD FLOOR, ROOM 336
OAKLAND, CA 94612**

OBSERVE

- To observe the meeting by video conference, please click on this link: <https://us02web.zoom.us/j/82880493983> at the noticed meeting time.
- To listen to the meeting by phone, please call the numbers below at the noticed meeting time: Dial (for higher quality, dial a number based on your current location):
- iPhone one-tap: US: +16699006833, 82880493983# or +13462487799, 82880493983#
- US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 301 715 8592 or +1 312 626 6799 or +1 929 205 6099
- International numbers available: <https://us02web.zoom.us/j/82880493983>
- Webinar ID: 828 8049 3983.
- If asked for a participant ID or code, press #.

PUBLIC COMMENTS

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If you have any questions, please email Maxine Visaya, Administrative Assistant II, at mvisaya@oaklandca.gov

ORDER OF BUSINESS

**THE PFRS BOARD WILL MEET IN CLOSED SESSION
DURING ITS SCHEDULED BOARD MEETING**

Please see the meeting agenda for open session items. The board will convene in open session prior to the closed session. Speakers may address the items of business on the closed session agenda prior to closed session. The Board will reconvene in open session following the closed session to report any final decisions that the board makes in closed session.

Pursuant to California Government code Sections 54956.9(a) and 54956.9(d)(2):

- 1. REQUEST FOR AMENDMENTS TO JANUARY 29, 2020 SETTLEMENT AGREEMENTS OF RETIRED OAKLAND POLICE OFFICERS ASSOCIATION (ROPOA), PFRS AND CITY OF OAKLAND FOR ADDITIONAL HOLIDAY PAY AND EXTENSION OF TERMS – *POTENTIAL LITIGATION***

Retired Oakland Police Officers Association *Potential Plaintiff/Claimant*

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Retirement Unit
150 Frank H. Ogawa Plaza
Oakland, California 94612

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Walter L. Johnson, Sr.
President

Jaime T. Godfrey
Vice President

Martin J. Melia
Member

Robert W. Nichelini
Member

John C. Speakman
Member

R. Steven Wilkinson
Member

Erin Roseman
Member

REGULAR MEETING of the BOARD OF ADMINISTRATION of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM (“PFRS”)

WEDNESDAY, OCTOBER 25, 2023

11:30 AM

**ONE FRANK H. OGAWA PLAZA, HEARING ROOM 1
OAKLAND, CA 94612**

OBSERVE

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If you have any questions, please email Maxine Visaya, Administrative Assistant II at mvisaya@oaklandca.gov

ORDER OF BUSINESS

A. CLOSED SESSION

B. REPORT OF PFRS BOARD ACTION FROM CLOSED SESSION (IF ANY)

C. Subject: POLICE AND FIRE RETIREMENT SYSTEM (“PFRS”) BOARD OF ADMINISTRATION MEETING MINUTES

From: Staff of the PFRS Board

Recommendation: **APPROVE** the September 27, 2023 PFRS Board of Administration Meeting Minutes

D. AUDIT & OPERATIONS COMMITTEE AGENDA – OCTOBER 25, 2023

D1. Subject: ADMINISTRATIVE EXPENSES REPORT

From: Staff of the PFRS Board

Recommendation: **ACCEPT** informational report regarding PFRS administrative expenses as of August 31, 2023

E. INVESTMENT & FINANCIAL MATTERS COMMITTEE AGENDA – OCTOBER 25, 2023

E1. Subject: INVESTMENT MANAGER PERFORMANCE UPDATE: PARAMETRIC PORTFOLIO ASSOCIATES, LLC

From: Parametric Portfolio Associates, LLC

Recommendation: **ACCEPT** informational report regarding a firm overview and managerial assessment; diversity and inclusion policy and practices; and investment strategy and portfolio performance of PFRS’ Covered Calls Investment Strategy Manager Parametric Portfolio Associates, LLC

E2. Subject: INVESTMENT MANAGER PERFORMANCE REVIEW: PARAMETRIC PORTFOLIO ASSOCIATES, LLC

From: Meketa Investment Group

Recommendation: **ACCEPT** Meketa Investment Group’s review and evaluation regarding a firm overview and managerial assessment; peer ranking; and investment portfolio performance of PFRS’ Covered Calls Investment Strategy Manager Parametric Portfolio Associates, LLC

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR BOARD MEETING
OCTOBER 25, 2023

- E3. **Subject:** RESOLUTION NO. 8085
RESOLUTION TO AUTHORIZE A ONE-YEAR EXTENSION OF
THE PROFESSIONAL SERVICES AGREEMENT WITH
PARAMETRIC PORTFOLIO ASSOCIATES, LLC FOR THE
PROVISION OF COVERED CALLS INVESTMENT STRATEGY
MANAGER SERVICES
From: Staff of the PFRS Board
-
- Recommendation:** **APPROVE** Resolution No. 8085 authorizing a one-year extension
of the professional services agreement with Parametric Portfolio
Associates, LLC for the provision of Covered Calls Investment
Strategy Manager Services for the City of Oakland Police and Fire
Retirement System
- E4. **Subject:** ECONOMIC AND INVESTMENT MARKET OVERVIEW
AS OF SEPTEMBER 30, 2023
From: Meketa Investment Group
-
- Recommendation:** **ACCEPT** informational report regarding the Global Investment
Markets as of September 30, 2023
- E5. **Subject:** PRELIMINARY INVESTMENT FUND PERFORMANCE UPDATE
AS OF SEPTEMBER 30, 2023
From: Meketa Investment Group
-
- Recommendation:** **ACCEPT** informational report regarding the Preliminary
Investment Fund Performance Update as of September 30, 2023
- E6. **Subject:** ASSET-LIABILITY STUDY OF THE PFRS FUND (2023)
From: Meketa Investment Group
-
- Recommendation:** **RECEIVE** informational report and **APPROVE** Meketa Investment
Group's recommended course of action moving forward
- F. PENDING ITEMS: NONE
- G. NEW BUSINESS
- H. OPEN FORUM
- I. FUTURE SCHEDULING
- J. ADJOURNMENT

A MEETING OF THE OAKLAND POLICE AND FIRE RETIREMENT SYSTEM (“PFRS”) BOARD OF ADMINISTRATION was held on Wednesday, September 27, 2023, at One Frank H. Ogawa Plaza, Hearing Room 1, Oakland, CA.

- Board Members:
- Walter L. Johnson President
 - Jaime T. Godfrey Vice President (Excused)
 - Martin J. Melia Member (Excused)
 - Robert W. Nichelini Member
 - Erin Roseman Member
(Joined at start of Closed Session & Excused at 12:17 pm)
 - John C. Speakman Member
 - R. Steven Wilkinson Member
- Additional Attendees:
- David F. Jones PFRS Secretary & Plan Administrator
 - Téir Jenkins PFRS Investment & Operations Manager
 - Maxine Visaya PFRS Staff Member
 - Selia Warren PFRS Legal Counsel
 - David Sancewich Meketa Investment Group

The meeting was called to order at 11:32 a.m. Pacific

THERE WAS NO PUBLIC COMMENT PRIOR TO CLOSED SESSION

A. CLOSED SESSION

The Board convened into Closed Session at 11:32 a.m. Pacific. The Regular Meeting was called to order and resumed at 12:05 p.m. Pacific.

B. REPORT OF PFRS BOARD ACTION FROM CLOSED SESSION

PFRS outside legal counsel Angela Cabral of Sloan Sakai Yeung & Wong LLP reported Member Nichelini made a motion to have the Board accept a proposal to swap the Juneteenth holiday for the floating holiday in the current pay structure as a result of the settlement agreement and recommended ROPOA approach the City regarding an extension of the settlement agreement and negotiate the language to that effect. The motion was seconded by Member Speakman and there was a unanimous vote to approve by all members present. Vice President Godfrey and Member Melia were excused.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 5 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 2)

C. APPROVAL OF THE PFRS BOARD OF ADMINISTRATION MEETING MINUTES

Member Speakman made a motion to approve the July 26, 2023 PFRS Board of Administration Meeting Minutes, second by Member Nichelini. Motion passed.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 5 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 2)

D. APPROVAL OF THE PFRS BOARD OF ADMINISTRATION MEETING MINUTES

Member Speakman made a motion to approve the August 30, 2023 PFRS Board of Administration Meeting Minutes, second by Member Nichelini. Motion passed.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 5 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 2)

E. AUDIT AND OPERATIONS COMMITTEE AGENDA – SEPTEMBER 27, 2023

E1. ADMINISTRATIVE EXPENSES REPORT

Investment & Operations Manager Jenkins presented an informational report on PFRS' administrative expenditures as of July 31, 2023. PFRS has an approved annual budget of approximately \$3.7 million and have expensed approximately \$88,000 to date for fiscal year 2023/2024. Membership consisted of 650 retired members and beneficiaries, which included 403 Police Members and 247 Fire Members.

MOTION: Member Speakman made a motion to accept the informational report regarding the Administrative Expenses Report, second by Member Nichelini. Motion passed.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 5 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 2)

E2. MANNER OF PFRS BOARD & COMMITTEE MEETINGS

Investment & Operations Manager Jenkins presented an informational report regarding the manner of PFRS Board & Committee meetings and requested Board direction on the matter. Member Nichelini suggested the matter be dropped.

MOTION: Member Nichelini made a motion to drop the matter, second by Member Speakman. Motion passed.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 5 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 2)

F. INVESTMENT & FINANCIAL MATTERS COMMITTEE AGENDA – SEPTEMBER 27, 2023

F1. INVESTMENT MANAGER PERFORMANCE UPDATE: VERSOR INVESTMENTS, LLC

Member Wilkinson presented a brief overview of the presentation provided by Versor Investments, LLC (Versor), PFRS' Systematic Trend Following Investment Strategy.

Member Wilkinson noted the firm doesn't have a written Diversity and Inclusion (D&I) Policy, nor do they seem to be serious about the matter or knowledgeable of organizations and resources to drive the effort; their quantitative strategy didn't add value to the portfolio beyond the index; and believes they should be placed on watch status. Plan Administrator Jones echoed Member Wilkinson's concerns regarding D & I and strategy.

MOTION: Member Wilkinson made a motion Versor be placed on watch status, second by Member Speakman. Motion passed.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 5 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 2)

F2. INVESTMENT MANAGER PERFORMANCE REVIEW: VERSOR INVESTMENTS, LLC

David Sancewich of Meketa Investment Group (“Meketa”) presented an overview memo regarding a firm overview and managerial assessment; peer ranking; and investment portfolio performance of Versor, PFRS’ Systematic Trend Following Investment Strategy Manager. D. Sancewich advised Meketa has no concerns and will follow-up with staff regarding Member Wilkinson’s request for information regarding the discrepancy in reported portfolio performance statistics provided by Versor vs. Meketa.

MOTION: Member Nichelini made a motion to accept Meketa’s evaluation of Versor, second by Member Speakman. Motion Passed.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: Y / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 5 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 2)

F3. ECONOMIC AND INVESTMENT MARKET OVERVIEW AS OF AUGUST 31, 2023

David Sancewich of Meketa presented an informational report regarding the Economic and Investment Market Overview as of August 31, 2023, and highlighted Fixed Income Returns and current factors impacting outcomes.

MOTION: Member Speakman made a motion to accept the informational report provided by Meketa regarding the Economic and Investment Market Overview as of August 31, 2023, second by Member Nichelini. Motion passed.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: EXCUSED / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 4 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 3)

F4. PRELIMINARY INVESTMENT FUND PERFORMANCE UPDATE AS OF AUGUST 31, 2023

David Sancewich of Meketa presented the Preliminary Investment Fund Performance Update as of August 31, 2023 and highlighted the Asset Class Performance Summary.

MOTION: Member Speakman made a motion to accept the informational report provided by Meketa regarding the Preliminary Investment Fund Performance Update as of August 31, 2023, second by Member Nichelini. Motion Passed.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: EXCUSED / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 4 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 3)

**F5. \$13.2 MILLION DRAWDOWN FOR MEMBER RETIREMENT ALLOWANCES
QUARTER ENDING DECEMBER 31, 2023 (FISCAL YEAR 2023/2024)**

David Sancewich of Meketa presented an informational report and recommendation for a \$13.2 million drawdown, which included a \$10.2 Million contribution from the City of Oakland and a \$3.0 Million contribution from the PFRS Investment Fund, to be used to pay Member Retirement Allowances from October 1, 2023, through December 31, 2023 and for funds to be drawn from the Earnest Partners Portfolio.

MOTION: Member Wilkinson made a motion to approve Meketa's recommendation regarding the \$13.2 million drawdown to pay Member Retirement Allowances from October 1, 2023, through December 31, 2023, second by Member Nichelini. Motion Passed.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: EXCUSED / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 4 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 3)

**F6. THERMAL COAL COMPANIES PROHIBITED FROM THE PFRS INVESTMENT PORTFOLIO
2023 UPDATE**

David Sancewich of Meketa presented an informational memo regarding an updated list of thermal coal companies prohibited from the PFRS Investment Portfolio. Upon approval, Meketa will update PFRS Investment Policy to reflect the updated list and provide to PFRS Investment Managers to ensure they are not investing in these companies.

MOTION: Member Wilkinson made a motion to approve of Meketa Investment Group's updated list of thermal coal companies prohibited from the PFRS Investment Portfolio, second by Member Nichelini. Motion passed.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: EXCUSED / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 4 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 3)

F7. ASSET-LIABILITY STUDY OF THE PFRS FUND (2023)

David Sancewich of Meketa presented an informational report regarding the 2023 Asset-Liability Study of the PFRS Fund. D. Sancewich noted this presentation is intended to be informational to familiarize the Board with the purpose, process and terms members will hear in the coming months as we continue this discussion. Meketa will not have a new portfolio to present for consideration until January or February 2024. Board Members discussed the need to educate new City Council Members as they are not familiar with PFRS; particularly the implications if the Property Tax Override is not extended, thus requiring City contributions come from the general fund. President Johnson suggested the Ad Hoc Committee consider the option to extend the 2026 funding date out another 10 years and requested staff organize a meeting with the Chair of the Finance & Management Committee to bring them up to speed on the matter.

MOTION: Member Speakman made a motion to accept Meketa's informational report regarding the 2023 Asset-Liability Study of the PFRS Fund, second by Wilkinson. Motion Passed.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: EXCUSED / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 4 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 3)

G. MEMBER RESOLUTIONS NOS. 8084

Resolution fixing the monthly allowance of surviving spouse of the following retired member of the Oakland Police and Fire Retirement System in the amount indicated:

<u>Deceased Member</u>	<u>Surviving Spouse</u>	<u>Monthly Allowance</u>
Philip D. Hickman	Maryanne Hickman	\$ 4,243.35

MOTION: Member Speakman made a motion to approve Resolution No. 8082, second by Member Nichelini. Motion Passed.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: EXCUSED / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 4 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 3)

H. ELECTION OF PFRS BOARD PRESIDENT & VICE PRESIDENT

Walter L. Johnson, Sr. made a declaration that the positions of PFRS Board President and Vice President are vacant and welcomed comments from Board Members. Member Speakman proposed we continue with the same officers currently in place, Walter L. Johnson, Sr. as President and Jaime T. Godfrey as Vice President.

FIRST MOTION: Member Speakman made a motion Walter L. Johnson, Sr. continue to serve as PFRS Board President, second by Member Nichelini. Motion Passed.

[JOHNSON – ABSTAIN / GODFREY – EXCUSED / MELIA – EXCUSED / NICHELINI – Y / ROSEMAN – Y / SPEAKMAN – Y / WILKINSON – Y]
(AYES:4 / NOES: 0 / ABSTAIN: 1 / EXCUSED: 2)

SECOND MOTION: Member Speakman made a motion Jaime Godfrey continue to serve as PFRS Board Vice President, second by Member Nichelini. Motion Passed.

[JOHNSON – Y / GODFREY – ABSTAIN / MELIA - Y / NICHELINI – Y / ROSEMAN – Y / SPEAKMAN – Y / WILKINSON – EXCUSED]
(AYES: 5 / NOES: 0 / ABSTAIN: 1 / EXCUSED: 1)

I. PENDING ITEMS – None

J. NEW BUSINESS – None

K. OPEN FORUM – No Speaker Cards were submitted

L. FUTURE SCHEDULING

The next Regular Board Meeting will be held in-person and is tentatively scheduled to occur October 25, 2023.

M. ADJOURNMENT

Member Wilkinson made a motion to adjourn, second by Member Speakman. Motion passed.

[JOHNSON: Y / GODFREY: EXCUSED / MELIA: EXCUSED / NICHELINI: Y / ROSEMAN: EXCUSED / SPEAKMAN: Y / WILKINSON: Y]
(AYES: 4 / NOES: 0 / ABSENT: 0 / ABSTAIN: 0 / EXCUSED: 3)

The meeting adjourned at 12:47 p.m.

DAVID F. JONES
PLAN ADMINISTRATOR & SECRETARY

DATE

Table 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Administrative Budget Spent to Date (Preliminary)

As of August 31, 2023

	Approved Budget		August 2023		FYTD		Remaining		Percent Remaining	
Internal Administrative Costs										
PFRS Staff Salaries	\$	1,459,000	\$	103,518	\$	192,038	\$	1,266,962		86.8%
Board Travel Expenditures		52,500		1,765		2,030		50,470		96.1%
Staff Training		20,000		-		-		20,000		100.0%
Staff Training - Tuition Reimbursement		7,500		-		-		7,500		100.0%
Board Hospitality		3,600		345		345		3,255		90.4%
Payroll Processing Fees		40,000		-		-		40,000		100.0%
Miscellaneous Expenditures		45,000		471		471		44,529		99.0%
Internal Service Fees (ISF)		88,000		-		-		88,000		100.0%
Contract Services Contingency		50,000		-		-		50,000		100.0%
Internal Administrative Costs Subtotal :	\$	1,765,600	\$	106,098	\$	194,883	\$	1,570,717		89.0%
Actuary and Accounting Services										
Audit	\$	52,800	\$	-	\$	-	\$	52,800		100.0%
Actuary		49,400		-		-		49,400		100.0%
Actuary and Accounting Subtotal:	\$	102,200	\$	-	\$	-	\$	102,200		100.0%
Legal Services										
City Attorney Salaries	\$	212,100	\$	-	\$	-	\$	212,100		100.0%
Legal Contingency		150,000		-		-		150,000		100.0%
Legal Services Subtotal:	\$	362,100	\$	-	\$	-	\$	362,100		100.0%
Investment Services										
Money Manager Fees	\$	1,353,000	\$	-	\$	-	\$	1,353,000		100.0%
Custodial Fee		124,500		-		-		124,500		100.0%
Investment Consultant		100,000		-		-		100,000		100.0%
Investment Subtotal:	\$	1,577,500	\$	-	\$	-	\$	1,577,500		100.0%
Total Operating Budget	\$	3,807,400	\$	106,098	\$	194,883	\$	3,612,517		94.88%

Table 2

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Cash in Treasury (Fund 7100) - Preliminary

As of August 31, 2023

	August 2023	
Beginning Cash as of 8/1/2023	\$	10,423,651
Additions:		
City Pension Contribution - August	\$	3,396,917
Investment Draw	\$	1,000,000
Misc. Receipts		1,600
Total Additions:	\$	4,398,517
Deductions:		
Pension Payment (July Pension Paid on 8/1/2023)		(4,257,036)
Expenditures Paid		(182,947)
Total Deductions	\$	(4,439,983)
 Ending Cash Balance as of 8/31/2023*	 \$	 10,382,185

* On 9/1/2023, July pension payment of appx \$4,243,000 will be made leaving a cash balance of \$6,139,000.

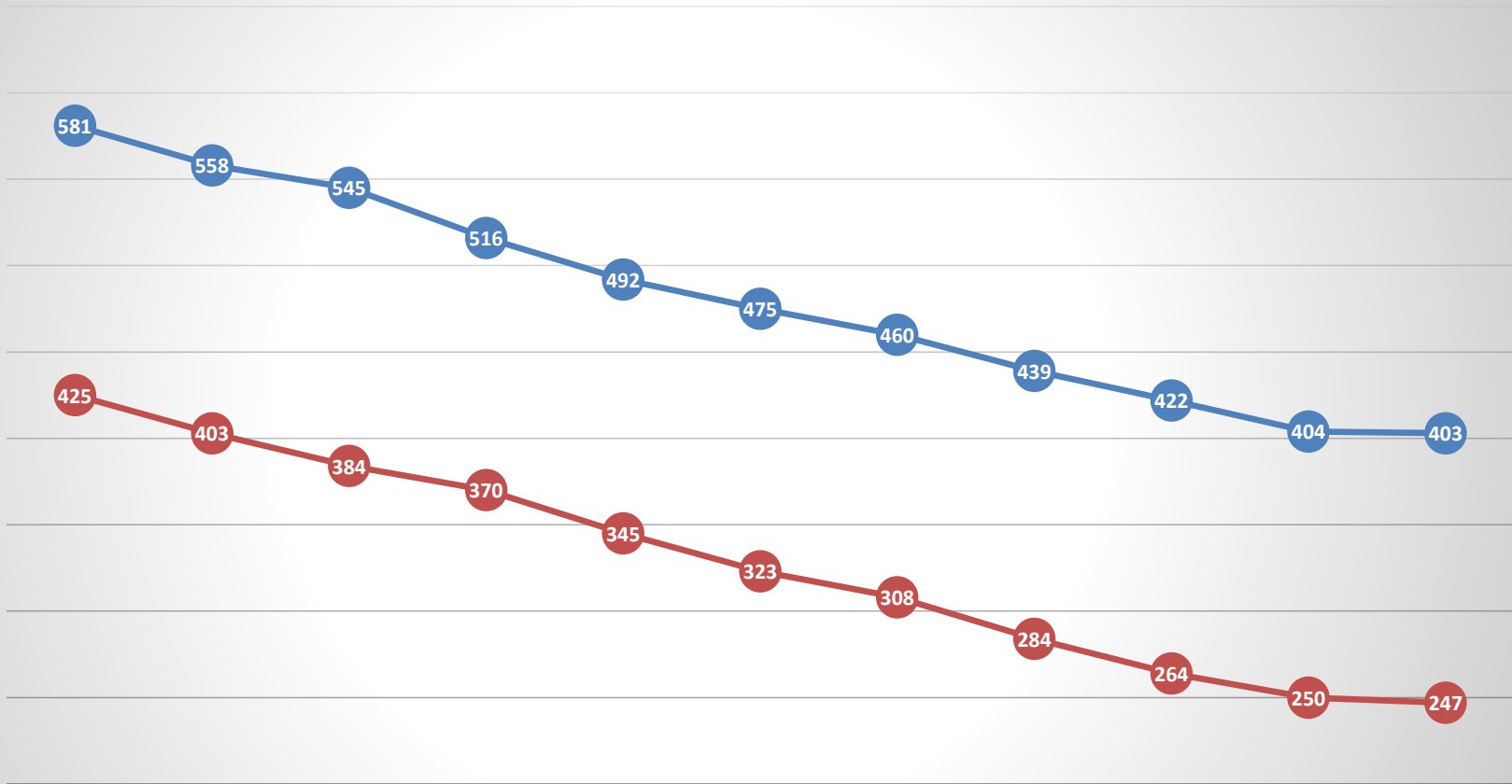
Table 3
CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Census
As of August 31, 2023

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Retiree	276	156	432
Beneficiary	127	91	218
<i>Total Retired Members</i>	403	247	650
<i>Total Membership:</i>	403	247	650

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Service Retirement	269	118	387
Disability Retirement	125	118	243
Death Allowance	9	11	20
<i>Total Retired Members:</i>	403	247	650
<i>Total Membership as of August 31, 2023:</i>	403	247	650
<i>Total Membership as of June 30, 2023:</i>	404	250	654
<i>Annual Difference:</i>	-1	-3	-4

Oakland Police and Fire Retirement System Pension Plan Membership Count As of August 31, 2023 (FY 2014 - FY 2024)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 FYTD
Police	581	558	545	516	492	475	460	439	422	404	403
Fire	425	403	384	370	345	323	308	284	264	250	247
Total	1006	961	929	886	837	798	768	723	686	654	650



Oakland Police & Fire Retirement System Covered Call Portfolio Review

October 25, 2023

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Firm Overview

Parametric Overview

We help institutional investors build, manage, and protect their portfolios.



Extensive, established investment capabilities

An industry pioneer in overlay solutions and custom indexing, Parametric is a trusted fiduciary for institutional asset owners.



Focus on transparency and repeatability

We provide research and rules-based solutions with a quantitative approach. Our solutions span global markets, asset classes, and instrument types.



Extension of staff partnership

We help investors solve specific portfolio challenges, implementing tailored solutions via a high-touch service model.

\$439B+

Firm wide AUM¹, including 185B+ in institutional assets

500+

Institutional client relationships

196

Investment professionals, including 105 CFA charterholders and 10 PhDs

30+

Years of investment experience across equities, fixed income, and derivatives

Asset figures are approximate as of 6/30/2023.

¹AUM includes overlay exposure, and both discretionary and non-discretionary assets of Parametric Portfolio Associates® LLC (the Firm).

Certain statements contained herein reflect the subjective view of Parametric and its personnel and as such cannot be independently verified. Please refer to the disclosures for additional information.



Institutional Capabilities

We offer a comprehensive platform for investors seeking to:

- ✓ Eliminate inefficiencies
- ✓ Create custom exposures
- ✓ Capitalize on market opportunities
- ✓ Address strategic and episodic risks

Efficient implementation

Flexible exposure management programs tailored to fit specific needs

Solution ideas

- Cash overlay
- Rebalancing
- Transition exposure
- Custom equity exposures
- Custom fixed income exposures
- Responsible investing (ESG)

Return enhancement

Systematic strategies that seek alpha across asset classes

Solution ideas

- Alternative risk premia
- Systematic alpha
- Portable alpha
- Commodity management
- Tax management

Risk mitigation

Customizable tools that address and manage specific portfolio risks

Solution ideas

- Tail-risk strategies
- Market and security hedging programs
- Asset and liability hedging
- Currency management

Investing involves market- and program-specific risks. All investments are subject to loss.

The Parametric Difference



Collaborative, client-centric approach

Clients are supported by a high-touch, consultative team with decades of experience structuring and executing custom strategies.



The next level of implementation refinement

Our investments in technology and thoughtful trade execution deliver highly competitive solutions across markets.



Comprehensive, transparent investment approach

Clients gain comprehensive exposure management tools with daily reporting delivered in a customizable format.

Certain statements contained herein reflect the subjective view of Parametric and its personnel and as such cannot be independently verified. Please refer to the disclosures for additional information.

Diversity, Equity, and Inclusion

Our mission

We aspire to be an industry leader in our representation of a truly diverse and inclusive workforce to reflect the communities in which we live and work.

Our principles



Accountability

Senior leadership teams take actions to improve diversity, equity, and inclusion.



Advancement

Through training and education, we support all employees along their career journeys.



Representation

We boost representation through targeted recruitment, development, and retention.



Culture

We aim to foster an atmosphere of inclusion and belonging.

Helping our clients stay true to their DEI missions

We offer you customizable ways to pursue your missions through our wide array of responsible investing strategies, including portfolio construction and active ownership.

"Making sustained, meaningful progress in our firm's DEI agenda is a top priority for Parametric. Our employees deserve it, our clients expect it, and we perform better as a business because of it." —Brian Langstraat, CEO

Representative Client List as of June 30, 2023

> **Public**

East Bay Municipal Utility District
Fairfax County Employees' Retirement Systems
Houston Police Officers' Pension System
Manhattan & Bronx Surface Transit Operating Authority Pension Plan
Marin County Employees' Retirement Association
Massachusetts Pension Reserves Investment Management Board
New Mexico Public Employees' Retirement Association
Orange County Employees Retirement System
San Mateo County Employees' Retirement Association
Teachers' Retirement System of Louisiana
Utah School and Institutional Trust Funds Office
State of Wisconsin Investment Board

> **Endowments**

Carnegie Institution of Washington
Florida State University Foundation
Indiana University Foundation
Pepperdine University
Texas Christian University
Regents of the University of Michigan
University of Minnesota Foundation

> **Faith Based**

Catholic Diocese of Fort Worth
Covenant Ministries of Benevolence
Ministers & Missionaries' Benefit Board of American Baptist Churches
Pension Fund of the Christian Church
YMCA Retirement Fund

> **Healthcare**

Advocate Health and Hospitals Corporation
North Memorial Health Care
Trinity Health Pension

> **Taft-Hartley**

ABC-NABET Retirement Trust Fund
Boilermaker-Blacksmith National Pension Trust
Greater Pennsylvania Carpenters' Pension Fund
Chicago Laborers' Pension & Welfare Funds
International Union of Painters and Allied Trades Annuity Plan
SEIU Pension Plans Master Trust
Western Pennsylvania Teamsters & Employers Pension Fund

> **Foundations**

John D. & Catherine T. MacArthur Foundation
The McKnight Foundation
Strada Education Network, Inc.
Wisconsin Alumni Research Foundation

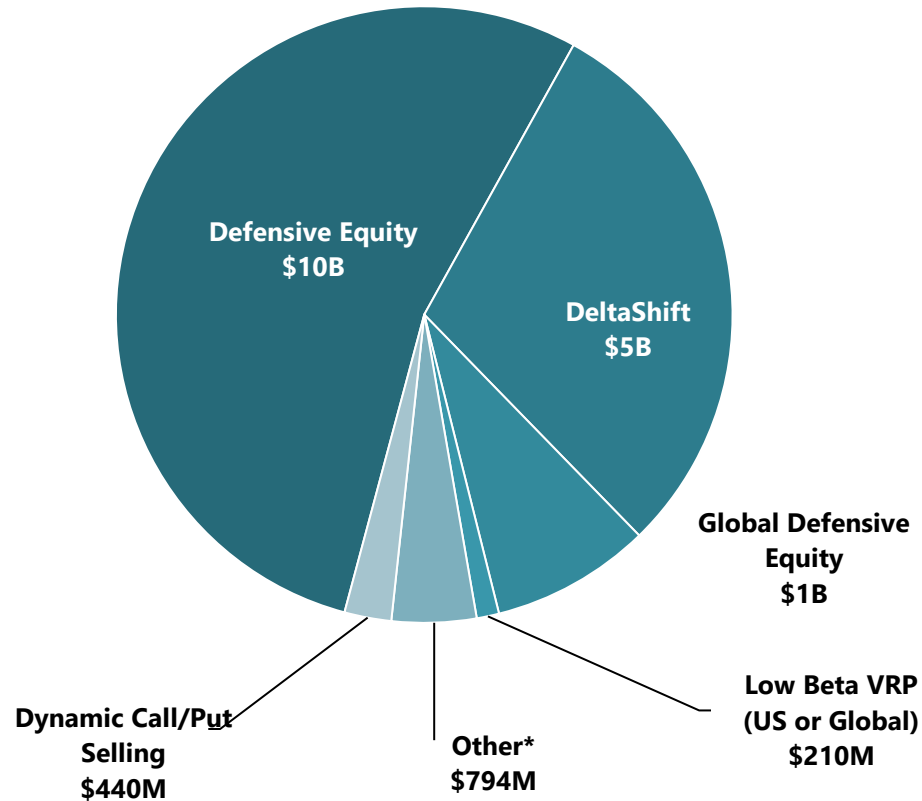
> **Corporate**

The Boeing Company
EverSource Energy
Raytheon Technologies Corporation

It is not known whether the listed clients approve or disapprove of the adviser. The partial list of clients included herein were selected as being representative of the different types of institutional clients and businesses serviced by Parametric. Performance-based data was not a determining factor in their selection.

Parametric Volatility Risk Premium Strategies

Assets by Strategy



Volatility Risk Premium Strategies Total Assets of \$18 Billion
Consists of Funded and Overlay Assets

*"Other" includes strategies Absolute Return VRP, BXM Replications, Elevated Beta VRP, Fixed Budget Put Buying, Multi-Asset Volatility Risk Premium, Options - Dynamic Hedged Equity, and Risk Managed Put Selling.

All numbers are approximate as of 6/30/2023 and include both discretionary and non-discretionary assets of the Firm.

Covered Call Investment Process

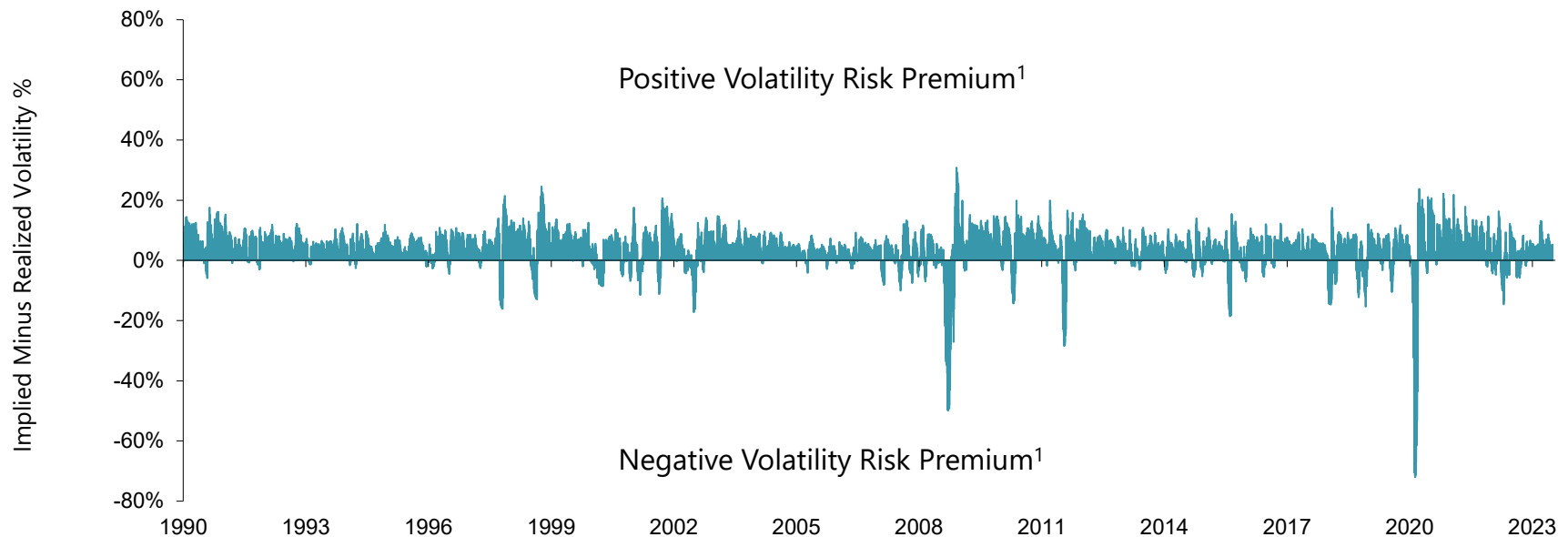
Investment Objectives

Parametric manages two covered call portfolios for Oakland Police and Fire: one utilizing the CBOE BXM BuyWrite Enhanced Replication strategy (“Enhanced BXM”) and one utilizing the Portfolio DeltaShift strategy (“DeltaShift”).

- **The Enhanced BXM objective** is to replicate the CBOE BXM Index with greater diversification than the published index.
- **The DeltaShift objective** is to monetize the existing volatility of the underlying large-cap portfolio and maintain partial upside equity participation that is often forgone in traditional call writing programs.
 - When equity markets are down, flat or moderately positive, DeltaShift seeks to add cash flow to the portfolio.
 - When equity markets are strong, DeltaShift may underperform the equity market.
 - DeltaShift is expected to deliver a positive return over market cycles, net of fees, as a result of the embedded volatility imbalance observed in the options market.

Empirical Data Supports Our Investment Thesis

S&P 500[®] Index options have traded with a positive volatility risk premium over 85% of the time since 1990.



Embedded risk premium creates opportunity to enhance return through option selling.

¹1990 to present represents longest period from which reliable data is available and accessible for S&P 500 Volatility Index. S&P 500[®] Index options relative valuation measured by taking daily observations of Implied Volatility (as measured by VIX Index) and subtracting the subsequent Realized Volatility of the S&P 500[®] over the subsequent 1 month (assuming 21 trading days). Options have historically traded about above subsequent realized volatility. Said another way, the option market tends to overestimate future volatility, which translates directly into higher prices for both puts and calls. VIX is the Chicago Board Options Exchange volatility index. VIX is calculated constantly throughout each trading day by observing the implied volatility derived from actual market prices of a wide array of put and call options with an average maturity of 30 days to expiration. For informational purposes only. It is not possible to invest directly in an index. All investments are subject to loss. Source: Parametric, Bloomberg; Date: 6/30/23.

Investment Objectives

DeltaShift and Enhanced BXM Investment Thesis

Equity index options have historically traded above “theoretical fair value”, and we expect this to continue.

- Option prices contain a “Volatility Risk Premium” (VRP) paid by option buyers to option sellers.
- The VRP is meaningful and likely to persist, it is a diversifying premium that most portfolios currently do not hold.
- A covered call portfolio can capture the VRP by selling covered options without introducing leverage.

Disciplined ▶ Liquid ▶ Transparent ▶ No Leverage

Investing in an options strategy involves risk. There is no guarantee that the investment objectives can be achieved. Please refer to the Appendix for additional information and disclosure.

Portfolio Construction & Overview

DeltaShift seeks to provide incremental return over an equity index or other base portfolio by systematically selling short-dated index call options. The additional return is received in exchange for potentially limiting upside participation in strong equity markets.

Standard portfolio construction & characteristics

- Long S&P 500[®] equity index portfolio (or other highly correlated equity portfolios)
- Systematic, rules-based call writing using exchange-traded, S&P 500[®] index call options
 - Option selection diversified across maturities and strike prices to mitigate risk
 - Favorable risk/reward trade-off
 - Early profit capture and risk reduction based on loss minimization implementation rules
- Expected to outperform the S&P 500[®] Index in down, sideways and moderately up markets, and expected to underperform in strong equity markets

DeltaShift Option Selection

When selling call options, we index the strike price to market volatility.

- Higher strike price in higher volatility environments; lower strike price in lower volatility environments
- At point of sale, call options expected to finish in the money approximately 1 in 4 times

In addition, DeltaShift incorporates the following factors in the option selection process:

- Liquidity – select options which helps to minimize market impact and transactions costs; exchange traded only — liquid, transparent and low cost
- Volatility – systematically select options which exhibit attractive risk vs. reward opportunities
- Maturity – select short-term options (1 – 3 months) to optimize time decay and minimize event risk; generally, short-dated options have higher implied volatility than longer dated options
- Diversification – select options with several different strikes and maturities; this reduces time/price specific risk

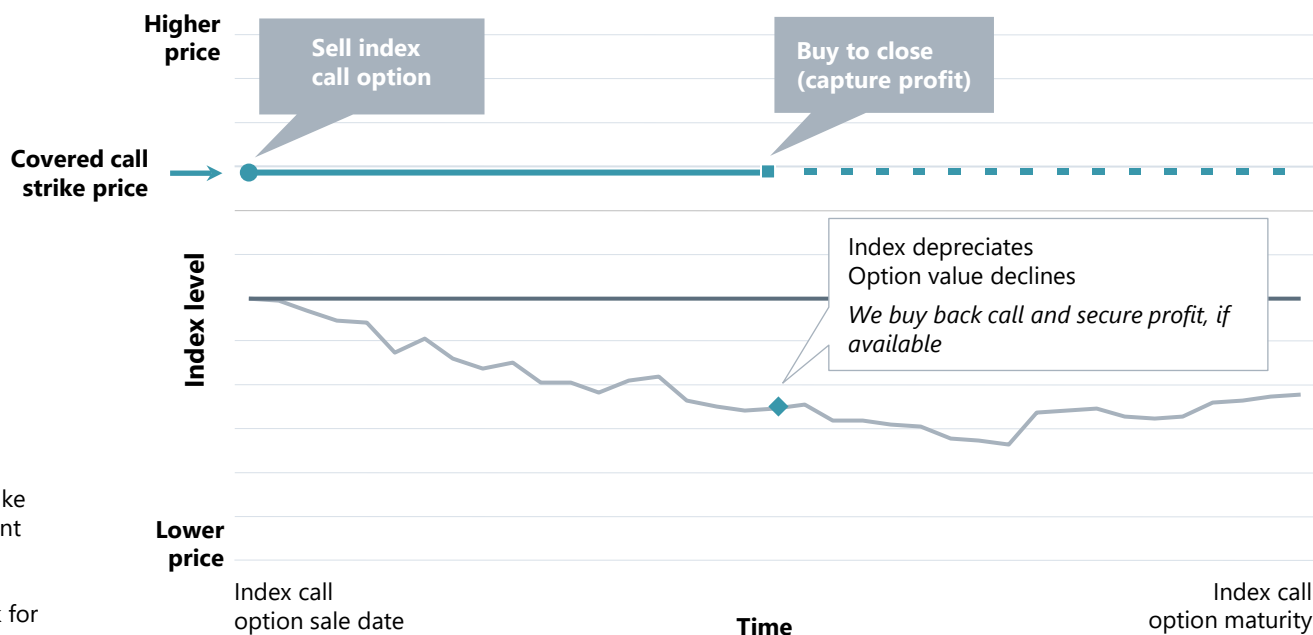
There is no guarantee that the investment objectives can be achieved. Investment management techniques require market liquidity in the specific option. Please refer to the Appendix for additional important information and disclosure.

DeltaShift Rules-Based Management

Portfolio management example: early profit capture

If the index option loses a significant amount of value due to index movement, change in volatility or excessive time decay, we seek to take profits and minimize risk.

Illustrative index price path
index depreciates



- 1/15/20 sold an option with 3/13/20 expiration and 3385 strike price. Received \$15,873 in upfront premium.
- 2/25/20 Bought the option back for \$1,444
- Profit: \$14,429 (over 90%).

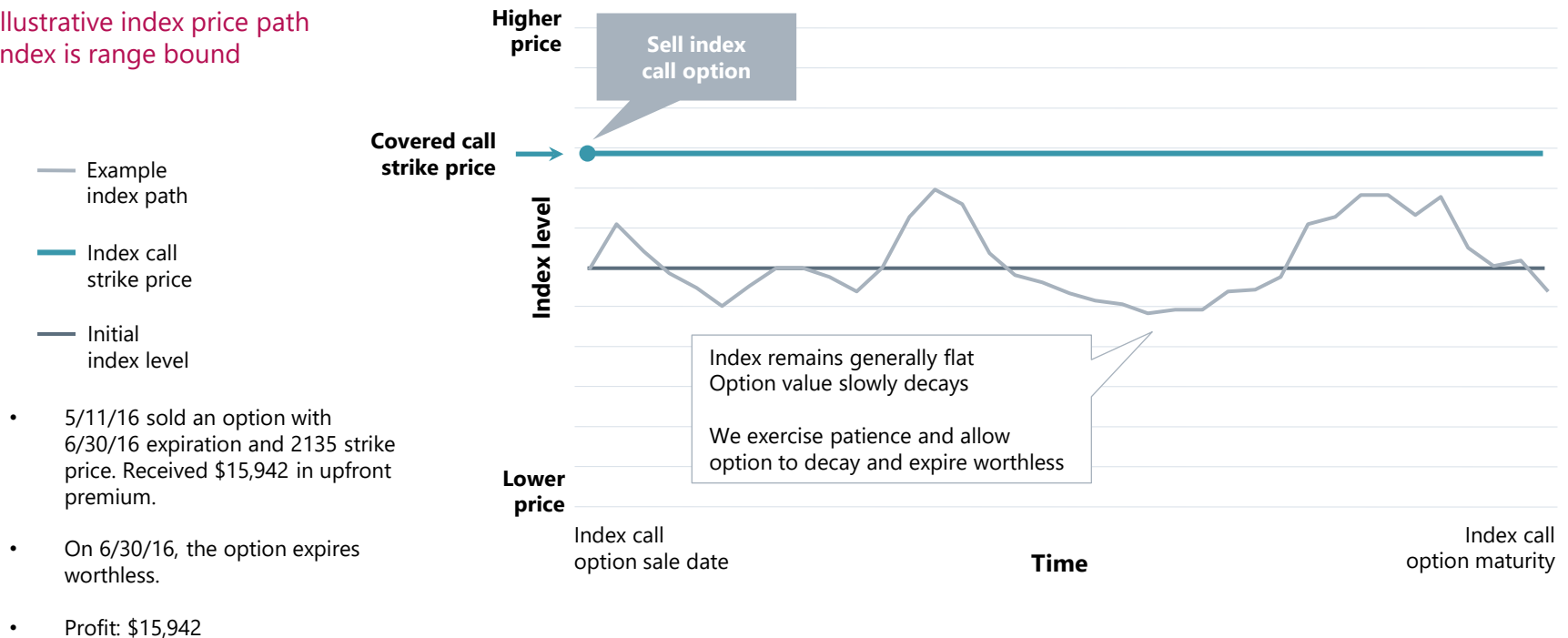
Illustrative index path. No representation is being made that an actual index will have a similar price path as this illustrative example. The example is provided for illustrative purposes only to show trading mechanics on a conceptual basis.

DeltaShift Rules-Based Management

Portfolio management example: allow option to expire worthless

If the index remains within “expected” range, the option’s value “decays” each day. This is known as time decay. If the index remains below the option strike, we will let the option expire worthless.

Illustrative index price path
index is range bound



Illustrative index path. No representation is being made that an actual index will have a similar price path as this illustrative example. The example is provided for illustrative purposes only to show trading mechanics on a conceptual basis.

DeltaShift Rules-Based Management

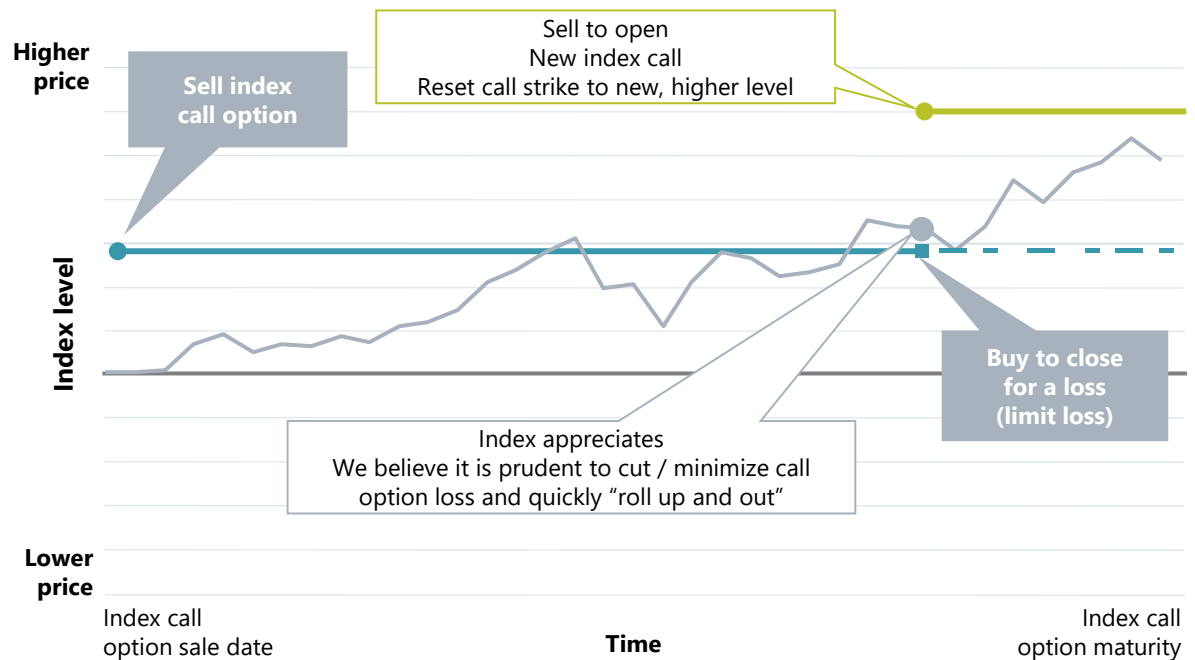
Portfolio management example: risk management / loss mitigation

If underlying index appreciates from the initial index level and the risk vs. reward exposure becomes unfavorable, due to the convexity in options pricing, we seek to mitigate the risk by repurchasing the sold call option (generally for a loss) and sell a new, higher strike option by rolling the option “up and out” (up to a higher strike price and out to a longer maturity).

Illustrative index price path:
index appreciates

- Example index path
- Initial index level
- Index call strike price
- New index call strike price

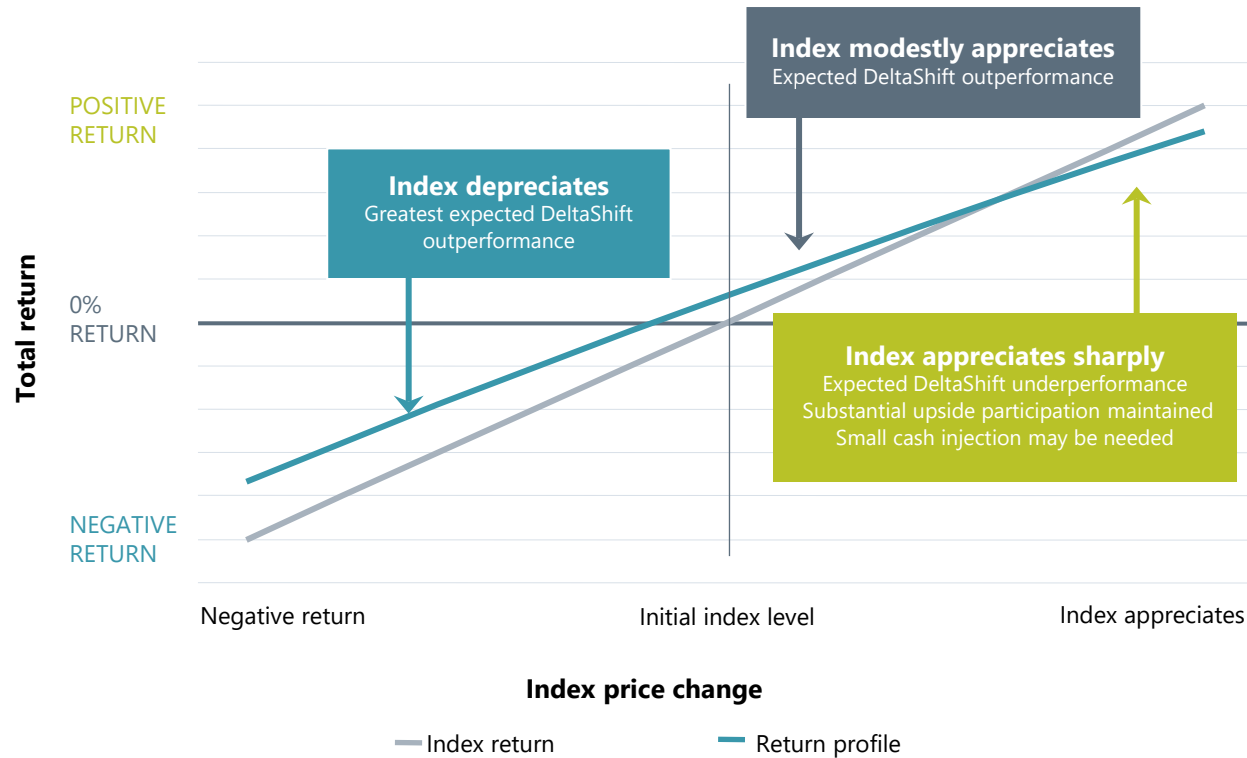
- 11/15/19 sold an option with 1/31/20 expiration and 3230 strike price. Received \$14,070 in upfront premium.
- 1/13/20 bought the option back to mitigate risk for \$50,010.
- Loss: \$36K
- 1/13/20 sold new option with 3/13/20 expiration and 3370 strike price. Received \$13,190 in upfront premium and bought back on 2/27/20 for \$832. Led to a \$12,357 profit.



Illustrative index path. No representation is being made that an actual index will have a similar price path as this illustrative example. The example is provided for illustrative purposes only to show trading mechanics on a conceptual basis.

DeltaShift Rules-Based Management

Call Selling Market Mechanics



Portfolio management example: risk management / loss mitigation

- Traditional call writing is a trade-off between receiving an upfront payment in exchange for giving away upside (being capped at a target level).
- Unlike traditional covered call writing, a key goal of DeltaShift is to maintain substantial (but not all) upside participation during times of sharp appreciation.

During these times we expect the total portfolio value to continue to appreciate (not be capped), but it may underperform the index itself

Illustrative index path. No representation is being made that any index will move negatively or positively. For illustrative purposes only to show the market mechanics of writing call options and the relationship to market movement.

DeltaShift Summary

Expected benefits

- Incremental return in down, sideways and moderately up markets
- Cash flow enhancement and management for future funding obligations
 - Generally, positive cash flow from call selling during declining equity markets can reduce need to sell into weakness
- Enhanced performance and attractive risk-adjusted returns
- Flexibility to include or exclude management of equity portfolio

Disciplined ▶ Liquid ▶ Transparent ▶ No Leverage

There is no guarantee that expected benefits will be achieved. All investments are subject to loss. Investing in an options strategy involves risk. Please refer to the disclosures for additional information.

Oakland Police & Fire Portfolio Review

Portfolio and Benchmark Returns – September 30, 2023

Oakland Police & Fire Retirement System

\$22.1 Million – **Total AUM**

\$11.0 Million - DeltaShift

\$11.1 Million – Enhanced BXM Replication

Inception Date

March 13, 2014

	Returns				
	Oakland Police & Fire Total Account (Net)	DeltaShift (Net)	Enhanced BXM Replication (Net)	BXM – CBOE S&P 500® Buy-Write Index (Net)	S&P 500® Index (Net)
QTD	-1.78%	-2.61%	-0.98%	-2.84%	-3.27%
YTD	12.06%	13.67%	10.37%	7.33%	13.07%
1 Year	20.58%	23.17%	17.84%	14.62%	21.62%
3 Year	10.14%	11.49%	8.27%	7.22%	10.15%
5 Year	7.89%	9.73%	5.55%	2.83%	9.92%
Since Inception	8.48%	10.48%	6.68%	5.09%	11.16%

Source: Parametric; Bloomberg; CBOE®

Performance is as of 9/30/2023 and is net of investment advisory fees. Past performance is not indicative of future results. All investments are subject to loss. It is not possible to invest directly in an index. They are unmanaged and do not reflect the deduction of fees and other expenses. Please refer to the Appendix for additional information and disclosure.



Oakland Police & Fire Retirement System Portfolio Performance

Parametric DeltaShift (Net) vs. Parametric BXM (Net) vs. S&P 500 Index Total Return vs CBOE BXM Index

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Replication Account (Net)		CBOE S&P 500 BuyWrite Index ("BXM")		S&P 500 Total Return Index ("SPTR")	
	Return	Volatility	Return	Volatility	Return	Volatility	Return	Volatility
Mar 13, 2014 - Dec 31, 2014	11.25%	9.99%	2.86%	8.83%	2.76%	8.82%	11.98%	11.15%
Jan 1, 2015 - Dec 31, 2015	2.79%	15.12%	6.07%	12.17%	5.24%	11.75%	1.38%	15.49%
Jan 1, 2016 - Dec 31, 2016	11.32%	11.77%	8.32%	8.86%	7.07%	8.51%	11.96%	13.10%
Jan 1, 2017 - Dec 31, 2017	17.48%	5.29%	13.25%	3.95%	13.00%	3.69%	21.83%	6.68%
Jan 1, 2018 - Dec 31, 2018	(6.09%)	15.80%	(4.04%)	13.38%	(4.77%)	13.45%	(4.38%)	16.73%
Jan 1, 2019 - Dec 31, 2019	27.78%	10.98%	16.01%	8.30%	15.68%	8.65%	31.49%	12.26%
Jan 1, 2020 - Dec 31, 2020	16.20%	32.26%	5.74%	26.18%	(2.75%)	26.54%	18.40%	33.84%
Jan 1, 2021 - Dec 31, 2021	28.88%	10.98%	18.58%	8.22%	20.47%	8.47%	28.71%	12.87%
Jan 1, 2022 - Dec 31, 2022	(15.10%)	22.66%	(10.02%)	16.38%	(11.37%)	15.82%	(18.11%)	23.74%
Jan 1, 2023 - Sep 30, 2023	13.64%	11.77%	10.35%	7.46%	7.33%	7.27%	13.07%	13.03%
Annualized Since Inception	10.48%	16.63%	6.68%	13.04%	5.09%	13.02%	11.15%	17.74%

Source: Parametric; Bloomberg; CBOE®

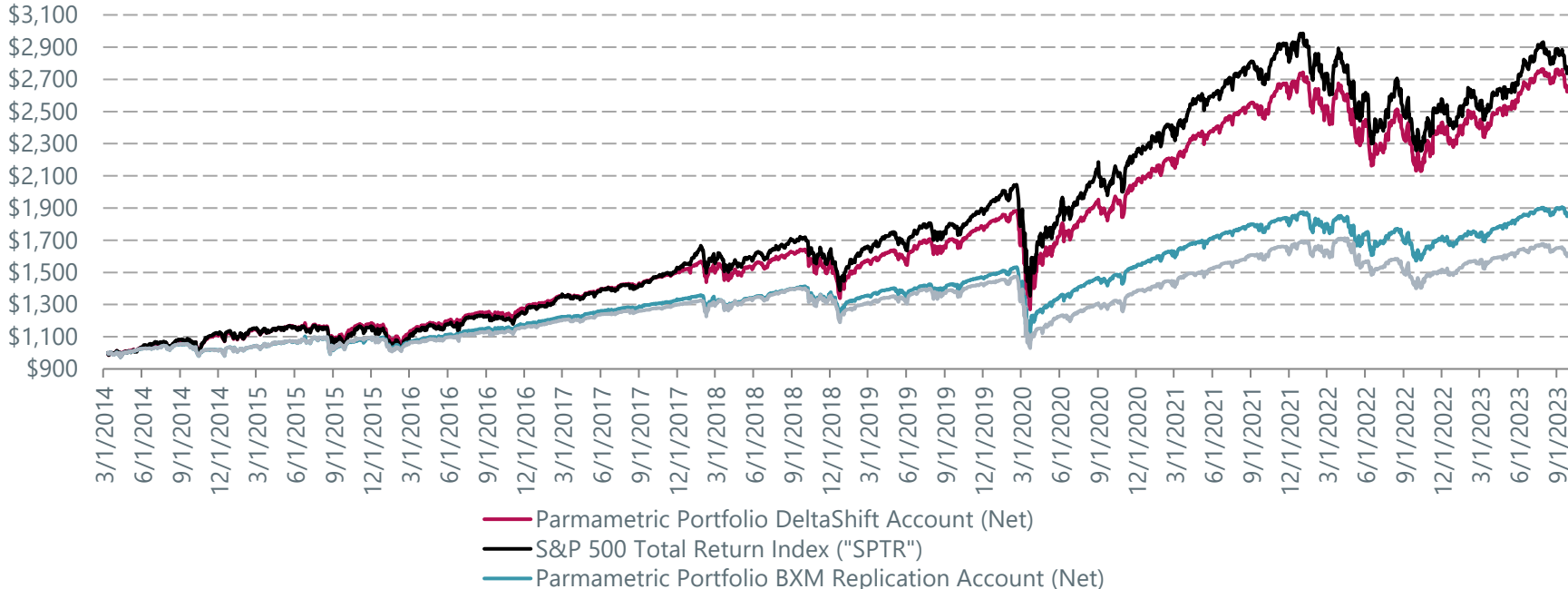
*Performance is as of 9/30/2023 and is net of investment advisory fees. The deduction of an advisory fee would reduce an investor's return.

Past performance is not indicative of future results. All investments are subject to loss. It is not possible to invest directly in an index. They are unmanaged and do not reflect the deduction of fees and other expenses. Please refer to the Appendix for additional information and disclosure.



Oakland Police & Fire Retirement System Portfolio Performance

Parametric Portfolio DeltaShift Account (Net) vs.
 Parametric Portfolio BXM Replication Account (Net)
 vs. S&P 500 Index Total Return vs CBOE BXM Index
 Mar 13, 2014 - Sep 30, 2023



- > DeltaShift outperformed both BXM and PPA Enhanced BXM in most illustrated time frames plus since inception.
- > PPA Enhanced BXM outperformed BXM in most illustrated time frames plus since inception.

Source: Parametric; Bloomberg; CBOE®
 Performance is as of 9/30/2023 and is net of investment advisory fees. The deduction of an advisory fee would reduce an investor's return.
 Past performance is not indicative of future results. All investments are subject to loss. It is not possible to invest directly in an index. They are unmanaged and do not reflect the deduction of fees and other expenses. Please refer to the Appendix for additional information and disclosure.



Performance Commentary: A Review of the Past Year

- > For the past year (9/30/22 through 9/30/23), the S&P 500 Index has generally followed a positive trajectory, up 21.62%.
- > Over this time, the Parametric DeltaShift program returned 23.17%, outperforming the BXM Index which returned 14.62%.
- > For the most recent quarter, the S&P 500 Index return was -3.27%, the DeltaShift return was -2.61% and the BXM Index return was -2.84%. As discussed previously, we'd expect the BXM Index to outperform DeltaShift when the S&P 500 Index is down, as the BXM Index sells at-the-money calls vs. out-of-the-money calls for DeltaShift.
- > However, the diversification of strike prices and maturity dates employed by DeltaShift allowed it to outperform the BXM Index in Q3, even though the S&P 500 Index was down.
- > For the same reason, the Enhanced BXM Replication (which employs 4 rolling one-month call option tranches vs. one monthly tranche for BXM) outperformed the BXM Index in Q3 (-0.98% vs -2.84%).
- > The goal of Enhanced BXM Replication is to diversify strike prices and maturity dates. Some market return paths may favor BXM and some may favor Enhanced BXM. Enhanced BXM has returned 6.64% per annum since inception (3/11/14), which has outperformed the 5.09% per annum return of the BXM Index.
- > Since inception, the DeltaShift program has returned 10.37% per annum, compared to 5.09% per annum for the BXM Index.

Appendix

Parametric Diversity Survey

Diversity Representation Survey for Oakland Police and Fire

DATA AS OF 06/30/2023

Firm Name	Parametric Portfolio Associates, LLC
Product Name	BXM Replications and Portfolio DeltaShift
Total No. of Employees	870

Race and Ethnicity*	Percentage (%) of Board of Directors / Managing Members	Percentage(%) of Firm (Entire Staff)	Percentage (%) of Firm (Investment Professionals)
African American/ Black		3.9%	2.0%
Asian/Hawaiian/Pacific Islander		19.3%	16.3%
Latino/Hispanic	Not applicable.	4.6%	3.1%
White		66.2%	73.5%
American Indian/Alaska Native	Parametric is a part of Morgan Stanley Investment Management, the asset management division of Morgan Stanley.	0.5%	0.5%
Other		5.5%	4.6%
Gender			
Male		63.6%	77.6%
Female	Not applicable.	36.4%	22.4%
Non-Identified/Other	Parametric is a part of Morgan Stanley Investment Management, the asset management division of Morgan Stanley.	100.0%	100.0%
		100.0%	100.0%

* Racial/ethnic categories appear as defined by EEOC guidance.

**Gender and Ethnicity metrics reflect a point in time and may not reflect voluntary employee changes to their gender or race/ethnicity.

**Parametric is in the process of gathering additional demographic data for employees such as persons with disabilities, veterans, and LGBTQ+. This information is not yet available.



Potential Risks

Strategies utilizing options have certain risks. One or more combinations of the following risks may be incurred:

Risk	Description
Trade Restrictions Risk	Like other strategies that utilize exchange-traded instruments, a trading halt or other suspension of trading, whether or not temporary in nature, may limit Parametric's ability to implement portfolio modifications.
Liquidity Risk	During periods of heightened volatility, there may be a reduction in liquidity that impacts option pricing or bid/offer spreads. Such occurrences could impact the investment manager's ability to establish new or liquidate existing positions and subject portfolio to losses.
Option Collateral Risk	Changes in option collateral requirements could require positions to be modified or removed, which may produce results meaningfully different from objectives.
Opportunity Risk	Selling call options could limit investment gains if underlying index advances beyond call strike price.

Please refer to the general disclosures in the Appendices.

U.S. Large Cap Equity DeltaShift Composite

GIPS Report

Reported in: USD

	Total Gross	Total Net	Primary	Secondary	3Yr Ex-Post Std	3Yr Ex-Post Std	3Yr Ex-Post Std	Internal Equal	Number Of	Composite	Total Firm	Total Firm
	Return AWR	Return AWR	Benchmark	Benchmark	Dev Composite	Dev Primary	Dev Secondary	Wtd.				
					Gross	Benchmark	Benchmark	Dispersion	Portfolios	Assets (MM)	Assets (MM)	Economic Exposure (MM)*
2013	26.97%	26.52%	13.26%	32.39%	< 3 Years	< 3 Years	< 3 Years	n.m.	≤ 5	147	80,896	
2014	14.33%	13.92%	5.64%	13.69%	< 3 Years	< 3 Years	< 3 Years	n.m.	≤ 5	273	94,545	
2015	3.22%	2.89%	5.24%	1.38%	9.20%	6.52%	10.62%	n.m.	≤ 5	234	99,248	
2016	11.75%	11.40%	7.07%	11.96%	9.41%	6.68%	10.74%	n.m.	≤ 5	261	111,470	
2017	17.95%	17.59%	13.00%	21.83%	8.76%	5.83%	10.07%	n.m.	≤ 5	303	137,786	
2018	-5.66%	-5.96%	-4.77%	-4.38%	9.52%	7.48%	10.95%	n.m.	≤ 5	130	122,650	
2019	27.95%	27.53%	15.68%	31.49%	10.55%	7.95%	12.10%	n.m.	≤ 5	155	277,806	
2020	16.30%	15.94%	-2.75%	18.40%	17.25%	14.72%	18.79%	n.m.	≤ 5	167	241,194	347,690
2021	29.06%	28.69%	20.47%	28.71%	16.05%	13.93%	17.41%	n.m.	≤ 5	215	292,472	418,440
2022	-15.33%	-15.57%	-11.37%	-18.11%	19.83%	15.75%	21.16%	n.m.	≤ 5	166	265,381	381,191

* Total Firm Economic Exposure is the sum of the total firm assets and the firm overlay exposure. Firm overlay exposure represents the sum of the notional exposure of the overlay strategy portfolio or a specific contractual program notional value.

n.m. = Not Meaningful

Primary Benchmark: CBOE S&P 500® BuyWrite Index

Secondary Benchmark: S&P 500® Total Return Index

Composite Creation Date: December 31, 2013; Inception Date: December 1, 2012

Annualized As Of	Composite Gross	Composite Net	Primary	Secondary
12/31/2022	Return	Return	Benchmark	Benchmark
1 Year	-15.33%	-15.57%	-11.37%	-18.11%
5 Year	8.94%	8.60%	2.73%	9.42%
10 Year	11.72%	11.37%	5.71%	12.56%

- Parametric Portfolio Associates® LLC claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Parametric Portfolio Associates® LLC has been independently verified for the periods January 1, 2000 to December 31, 2022. The verification report(s) is/are available upon request. A firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm's policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. Verification does not provide assurance on the accuracy of any specific performance report.
- Parametric Portfolio Associates® LLC (the "Firm") is an investment advisor registered under the Investment Advisers Act of 1940. Parametric Portfolio Associates® LLC provides rules-based investment management services to institutional investors, individual clients and commingled investment vehicles, including Systematic Alpha and Income Strategies, Custom Core, Centralized Portfolio Management ("CPM"), Customized Exposure Management ("CEM"), Volatility Risk Premium ("VRP"), Tax-Advantaged Bond Strategies (TABS), and Taxable Bond Strategies. The Firm has complied with the GIPS standards retroactive to January 1, 2000.

Prior to July 1, 2019, the firm included only the Parametric Investment & Overlay Strategies. On July 1, 2019, the firm was redefined to include the Parametric Custom Tax-Managed & Centralized Portfolio Management Strategies. On January 1, 2020, the firm was redefined to include the Tax-Advantaged Bond Strategies (TABS), and Taxable Bond Strategies previously managed by Eaton Vance Management, an investment affiliate of Parametric's parent company, Eaton Vance Corporation. For the purpose of complying with the GIPS standards, the Firm is defined and held out to the public as Parametric Portfolio Associates® LLC.

On March 1, 2021, Eaton Vance Management and its affiliates (which includes Parametric Portfolio Associates® LLC) became wholly-owned, subsidiaries of Morgan Stanley. The Firm continues to operate as Parametric Portfolio Associates® LLC.
- Gross performance figures are time-weighted rates of return, which include the deduction of transaction costs, any foreign withholding taxes and other direct expenses, but before management fees, custody charges and other indirect expenses. Performance results reflect the reinvestment of dividends, interest income and other earnings. Performance results are expressed in U.S. dollars. Past performance is not an indication of future performance.
- Internal dispersion is based on the sample using the equal-weighted standard deviation of the annual gross returns of those portfolios that were included in the composite for the entire year. When the composite consists of five or fewer portfolios for the full year, no dispersion measure is presented. The three-year annualized standard deviation measures the variability of the composite gross returns and the benchmark returns over the preceding 36-month period.
- Policies for valuing investments, calculating performance, and preparing GIPS Reports are available upon request.
- A list including composite descriptions and pooled funds descriptions for limited distribution pooled funds is available upon request.
- GIPS® is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein.

- 8 The U.S. Large Cap Equity DeltaShift Composite is comprised of all fully discretionary portfolios that utilize a call option selling strategy on the S&P 500® Index (or other underlying's that are designed to economically track the returns of the S&P 500® Index) combined with the daily returns of an actively managed S&P 500® Equity portfolio sleeve. Portfolios seek to increase the total return and reduce the volatility relative to the returns of the S&P 500® Total Return Index. Key risks for strategies utilizing options have one or more combinations of the following risks that may be incurred: market risk, trade restrictions risk, liquidity risk, early termination risk, option collateral risk and opportunity risk.
- 9 Composite net returns are calculated by deducting the actual portfolio management fee charged when known and available, otherwise the maximum management fee charged for a segregated account of this style is deducted from the gross performance returns.
- 10 The management fee schedule for this strategy is: Segregated Account DeltaShift Fee Schedule* 0.39% on the first \$20 million;0.325% on the next \$20 million;0.26% on the next \$20 million;0.2275% on the next \$40 million;0.195% on the next \$100M;0.1625% on the next \$100M;0.13% on the next \$100M;0.0975% thereafter.
- *Options management only. S&P Index Management Fee Schedule: Flat: 0.05% per annum.
- 11 The composite's benchmark is the CBOE S&P 500® BuyWrite Index. The Index is designed to track the performance of a hypothetical buy-write strategy on the S&P 500® Index.
- 12 The composite's secondary benchmark is the S&P 500® Total Return Index. The Index is a total return index that reflects both changes in the prices of stocks in the S&P 500® Index as well as the reinvestment of the dividend income from its underlying stocks.The Index is unmanaged and does not incur management fees, transaction costs or other expenses associated with separately managed accounts in this style. It is not possible to directly invest in an index. S&P Indices are a product of S&P Dow Jones Indices LLC, a division of S&P Global, or its affiliates ("S&P") and have been licensed for use. Standard & Poor's® and S&P® are registered trademarks of S&P. Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"); S&P, Dow Jones and their respective affiliates do not sponsor, endorse, sell or promote the Fund and do not have any liability for any errors, omissions, or interruptions of the S&P Indices.
- 13 The firm's strategies contain derivatives such as futures, options, swaps, and other investment strategies that may involve certain advantages and risks. Futures require the posting of initial and variation margin. Therefore, a portion of risk capital must be preserved for this purpose rather than being allocated to a manager. Swaps require periodic payments, which may be less liquid than futures, and certain swaps may have counterparty/credit risk. Some investment strategies may require a collateral investment equal to the desired amount of exposure.

Biographies

Jim Roccas

Managing Director, Investment Strategy

Jim works with clients who are interested in accessing Parametric's Volatility Risk Premium (VRP) suite of options-based solutions. Jim has over 25 years of experience working with clients to implement solutions for increasing return and reducing risk using options and other derivative product strategies. Prior to joining Parametric in 2008, Jim was a Director at Merrill Lynch where he structured and originated solutions for high-net-worth and institutional investors for protecting downside, enhancing returns and gaining customized market exposure. He earned a BA in Economics from Princeton University and an MBA in Finance from The Wharton School at the University of Pennsylvania.

Dan Ryan

Executive Director, Client Relationship Management

Dan is responsible for managing client relationships throughout the western US. Prior to joining Parametric in 2013, Dan was vice president and senior relationship manager at State Street Global Advisors. He earned a BA in history from the University of Michigan.

Disclosure

Parametric Portfolio Associates® LLC ("Parametric"), headquartered in Seattle, is registered as an investment advisor with the Securities and Exchange Commission under the Investment Advisers Act of 1940. Parametric is a leading global asset management firm, providing investment strategies and customized exposure management directly to institutional investors and indirectly to individual investors through financial intermediaries. Parametric offers a variety of rules-based investment strategies, including alpha-seeking equity, fixed-income, alternative and options strategies. Parametric also offers implementation services, including customized equity, traditional overlay and centralized portfolio management. Parametric is part of Morgan Stanley Investment Management, the asset management division of Morgan Stanley, and offers these capabilities through offices located in Seattle, Boston, Minneapolis, New York City, and Westport, Connecticut. This material may not be forwarded or reproduced, in whole or in part, without the written consent of Parametric. Parametric and its affiliates are not responsible for its use by other parties.

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This material contains hypothetical, back-tested and/or model performance data, which may not be relied upon for investment decisions. Hypothetical, back-tested and/or model performance results have many inherent limitations, some of which are described below. Hypothetical returns are unaudited, are calculated in U.S. dollars using the internal rate of return, reflect the reinvestment of dividends, income and other distributions, but exclude transaction costs, advisory fees and do not take individual investor taxes into consideration. The deduction of such fees would reduce the results shown.

Model/target portfolio information presented, including, but not limited to, objectives, allocations and portfolio characteristics, is intended to provide a general example of the implementation of the strategy and no representation is being made that any client account will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently sharp differences between hypothetical performance results and the actual results subsequently achieved by any particular trading program. One of the limitations of hypothetical performance results is that they are generally prepared with the benefit of hindsight. In addition, simulated trading does not involve financial risk, and no simulated trading record can completely account for the impact of financial risk in actual trading. For example, the ability to withstand losses or to adhere to a particular trading program in spite of trading losses are material points which can also adversely affect actual trading results. There are numerous other factors related to the markets in general or to the implementation of any specific trading program which cannot be fully accounted for in the preparation of hypothetical performance results and all of which can adversely affect actual trading results. Because there are no actual trading results to compare to the hypothetical, back-tested and/or model performance results, clients should be particularly wary of placing undue reliance on these hypothetical results. Perspectives, opinions and testing data may change without notice. Detailed back-tested and/or model portfolio data is available upon request. No security, discipline or process is profitable all of the time. There is always the possibility of loss of investment.

Disclosure (Continued)

Benchmark/index information provided is for illustrative purposes only. Indexes are unmanaged and cannot be invested in directly. Deviations from the benchmarks provided herein may include, but are not limited to, factors such as: the purchase of higher risk securities, over/under-weighting specific sectors and countries, limitations in market capitalization, company revenue sources, and/or client restrictions. Parametric's proprietary investment process considers factors such as additional guidelines, restrictions, weightings, allocations, market conditions and other investment characteristics. Thus returns may at times materially differ from the stated benchmark and/or other disciplines provided for comparison.

The CBOE S&P 500® BuyWrite Index (BXM) is a benchmark index designed to track the performance of a hypothetical buy-write strategy on the S&P 500® Index. 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.

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The effectiveness of the option strategy is dependent on a general imbalance of natural buyers over natural sellers of index options. This imbalance could decrease or be eliminated, which could have an adverse effect. A decision as to whether, when and how to use options involves the exercise of skill and judgment, and even a well-conceived and well-executed options program may be adversely affected by market behavior or unexpected events. Successful options strategies may require the anticipation of future movements in securities prices, interest rates and other economic factors. No assurances can be given that the judgments of Parametric in this respect will be correct.

Options are not suitable for all investors and carry additional risks. Investors must ensure that they have read and understood the current options risk disclosure document before entering into any options transactions. In addition, investors should consult with a tax, legal and/or financial advisor prior to contemplating any derivative transactions. The options risk disclosure document can be accessed at the following web address: <http://www.optionsclearing.com/about/publications/character-risks.jsp>.

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MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: Meketa Investment Group (Meketa)
DATE: October 25, 2023
RE: Parametric Portfolio Associates—Manager Update

Manager: Parametric Portfolio Associates

Inception Date:	April 2014	OPFRS AUM (9/30/2023):	\$22.2 million
Strategy:	Covered Calls	Strategy AUM (9/30/2023)¹:	\$4.1 billion
Benchmark:	CBOE S&P 500 Buy Write Index (BXM)	Firm-wide AUM (9/30/2022):	\$432.6 billion

Summary & Recommendation

Parametric has managed OPFRS’s Covered Calls portfolio since April 2014 using the passive Enhanced BXM Replication and the active DeltaShift strategies. As of 9/30/2023, the Covered Calls portfolio has approximately \$22.2 million or 5.5% of the total portfolio with roughly \$11.1 million allocated to each underlying strategy.

Since inception and the last review in August 2022, the strategies have performed within expectations and guidelines for the portfolio and has experienced no major organizational changes. **Therefore, Meketa does not have any major concerns with Parametric and the Covered Calls strategies.**

Investment Performance Review Summary

As of 9/30/2023, on net of fees basis, the Covered Calls portfolio and its underlying strategies have outperformed the CBOE S&P 500 Buy Write Index (BXM) benchmark over all the time periods measured. In aggregate, the two strategies have generated 3.3% in excess return since inception.

OPFRS Portfolio Returns (as of 9/30/2023)²

Portfolio	Balance (\$000)	QTD	YTD	1 Yr	3 Yr	5 Yr	Since Inception	Inception Date
Covered Calls	22,157.8	-1.8	11.9	20.4	10.2	7.9	8.5	4/2014
<i>CBOE S&P 500 Buy Write</i>	---	-2.8	7.3	14.6	7.2	3.0	5.2	---
Excess Return	---	1.0	4.6	5.8	3.0	4.9	3.3	---
Parametric BXM	11,106.2	-1.0	10.3	18.1	8.5	5.8	6.8	4/2014
Excess Return	---	1.8	3.0	3.5	1.3	2.8	1.6	---
Parametric DeltaShift	11,051.6	-2.6	13.4	22.8	11.5	9.8	10.3	4/2014
Excess Return	---	0.2	6.1	8.2	4.3	6.8	5.1	---

¹ Combined asset under management (AUM) of Enhanced BXM Strategy (\$173.4 million in AUM) and DeltaShift Strategy (\$3,960.2 million in AUM).

² Performance shown is net of fees, and annualized for periods longer than one year.

Product and Organization Review Summary

Parametric Portfolio Associates	Areas of Potential Impact				
	Level of Concern	Investment Process	Investment Team	Performance Track Record	Team/Firm Culture
Product					
Key people changes	None				
Changes to team structure or individuals' roles	None				
Product client gain/losses	None				
Changes to investment process	None				
Personnel turnover	None				
Organization					
Ownership changes	None				
Key people changes	None				
Firm wide client gain/losses	None				
Recommended Action	None - X	Watch Status		Termination	

A review of Parametric Portfolio Associates and the Covered Call strategies revealed no concerning organizational issues or changes since last review in August 2022.

Investment Summary per Manager

Parametric’s approach to covered calls investing is based on the persistent premium of implied volatility to realized volatility in the options market. Parametric believes that there is a supply versus demand imbalance for equity options, and thus the implied volatility generally exceeds the realized volatility. The covered calls program is designed to generate returns for a long equity investor by providing additional income and cash flow while reducing volatility.

The options portion, managed by Parametric, is constructed around a diversified portfolio of short dated (1-3 month) options. Option selection incorporates liquidity, volatility, maturity, and time-decay. Strike prices are selected using a dynamic, volatility-based framework designed to adapt to changing market conditions. By selecting options that have a targeted initial delta, options strikes move further out-of-the-money when implied volatility levels rise, and vice-versa. Parametric attempts to create a ladder portfolio of options with multiple strike prices and maturities in order to diversify the time and price specific risk of selling call options. Parametric generally sells 25% 35% “delta” options, which, by definition, are out-of-the-money options. Using a fixed “delta” allows Parametric to effectively index the strikes to volatility. When the opportunity arises, the strategy allows for Parametric to capture and realize profits prior to written option maturity, and aggressively close out losing positions to mitigate potential outlier losses that are inherent to a “sell and hold” option program (i.e., BXM replication).

DS/PN/JLC/mn



Disclosure

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

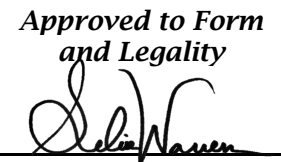
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PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA
RESOLUTION No. 8085



ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

RESOLUTION TO AUTHORIZE A ONE-YEAR EXTENSION OF THE PROFESSIONAL SERVICES AGREEMENT WITH PARAMETRIC PORTFOLIO ASSOCIATES, LLC FOR THE PROVISION OF COVERED CALLS INVESTMENT STRATEGY MANAGER SERVICES FOR THE CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM COMMENCING DECEMBER 23, 2023 AND ENDING DECEMBER 23, 2024.

WHEREAS, Article XVI §17 of the California Constitution, commonly referred to as the Pension Protection Act or Proposition 162, and Article XXVI of the Oakland City Charter (“Charter”) vest the Oakland Police and Fire Retirement System Board (“PFRS Board”) with exclusive control of the administration and investment of the assets of the Police and Fire Retirement Fund (the “Fund”); and

WHEREAS, the PFRS Board manages and administers the Police and Fire Retirement System (“PFRS”), pursuant to the requirements of Article XXVI of the Charter; and

WHEREAS, Oakland City Charter section 2601(e) states that the Board of the Oakland Police and Fire Retirement System (“PFRS Board”) shall possess power to make all necessary rules and regulation for its guidance and shall have exclusive control of the administration and investment of the funds established for the maintenance and operation of the system; and

WHEREAS, Article XXVI of the Charter expressly authorizes the PFRS Board to secure competent investment counsel to provide advice and counsel regarding the investment of the Fund and further provides that discretionary powers granted to such investment counsel will be at the option of the Board; and

WHEREAS, on June 19, 2013, the PFRS Board passed a motion to enter into an agreement (“The Agreement”) with Parametric Portfolio Associates, LLC (“Investment Counsel”), to provide advice and counsel regarding investments of the assets of the Police and Fire Retirement Fund (“Fund”); and

WHEREAS, Section XX of the Agreement allows for modification of the Agreement by written agreement of all parties; and

WHEREAS, Section IV(B) of the Agreement gave the PFRS Board the option to extend the initial term of the Agreement for three additional one-year terms by giving Investment Counsel written notice of its intent to exercise its option not less than sixty days prior to the expiration of the term or extended term of the agreement; and

OAKLAND POLICE AND FIRE RETIREMENT BOARD

CITY OF OAKLAND, CALIFORNIA

RESOLUTION No. 8085

WHEREAS, on November 28, 2018, the PFRS Board passed Resolution No. 7033 authorizing amendment of Section IV(B) of the Agreement to provide the Board with unlimited one-year extension options, and

WHEREAS, on October 30, 2019, the PFRS Board passed Resolution No. 7074 authorizing an extension of the Agreement with Investment Counsel for an additional one-year term commencing December 23, 2019 and ending December 23, 2020; and

WHEREAS, on December 10, 2020, the PFRS Board passed Resolution No. 8006 authorizing an extension of the Agreement with Investment Counsel for an additional one-year term commencing December 23, 2020 and ending December 23, 2021; and

WHEREAS, on November 17, 2021, the PFRS Board passed Resolution No. 8032 authorizing an extension of the Agreement with Investment Counsel for an additional one-year term commencing December 23, 2021 and ending December 23, 2022; and

WHEREAS, on October 26, 2022, the PFRS Board passed Resolution No. 8066 authorizing an extension of the Agreement with Investment Counsel for an additional one-year term commencing December 23, 2022 and ending December 23, 2023; and

WHEREAS, the PFRS Board now wishes to exercise its option to renew the Agreement with Investment Counsel for an additional one-year term, commencing December 23, 2023, and ending December 23, 2024; and

WHEREAS, the Fund assets under management in Delta Shift strategy (presently valued at approximately 12 Million Dollars (\$12,000,000.00), at the annual fee rate of 0.44 percent, which fees are estimated to be approximately Fifty One Thousand Dollars (\$51,000.00); and

WHEREAS, the Fund assets under management in BXM strategy (presently valued at approximately 11 Million Dollars (\$11,000,000.00), at the annual fee rate of 0.25 percent, which fees are estimated to be approximately Twenty Eight Thousand Dollars (\$28,000.00); now, therefore, be it

RESOLVED: That the Board hereby authorizes a one-year extension of the professional service agreement between the City of Oakland Police and Fire Retirement System and Parametric Portfolio Associates, LLC for the provision of Covered Calls Investment Manager Services, commencing December 23, 2023 and ending December 23, 2024; and be it

OAKLAND POLICE AND FIRE RETIREMENT BOARD

CITY OF OAKLAND, CALIFORNIA

RESOLUTION No. 8085

FURTHER RESOLVED: That the President of the PFRS Board is hereby authorized to execute, on behalf of PFRS, a one-year extension of the professional service agreement between the City of Oakland Police and Fire Retirement System and Parametric Portfolio Associates, LLC.

IN BOARD MEETING, CITY HALL, OAKLAND, CA OCTOBER 25, 2023

PASSED BY THE FOLLOWING VOTE:

AYES: GODFREY, MELIA, NICHELINI, ROSEMAN, SPEAKMAN, WILKINSON, AND PRESIDENT JOHNSON

NOES:

ABSTAIN:

ABSENT:

ATTEST: _____

PRESIDENT

ATTEST: _____

SECRETARY

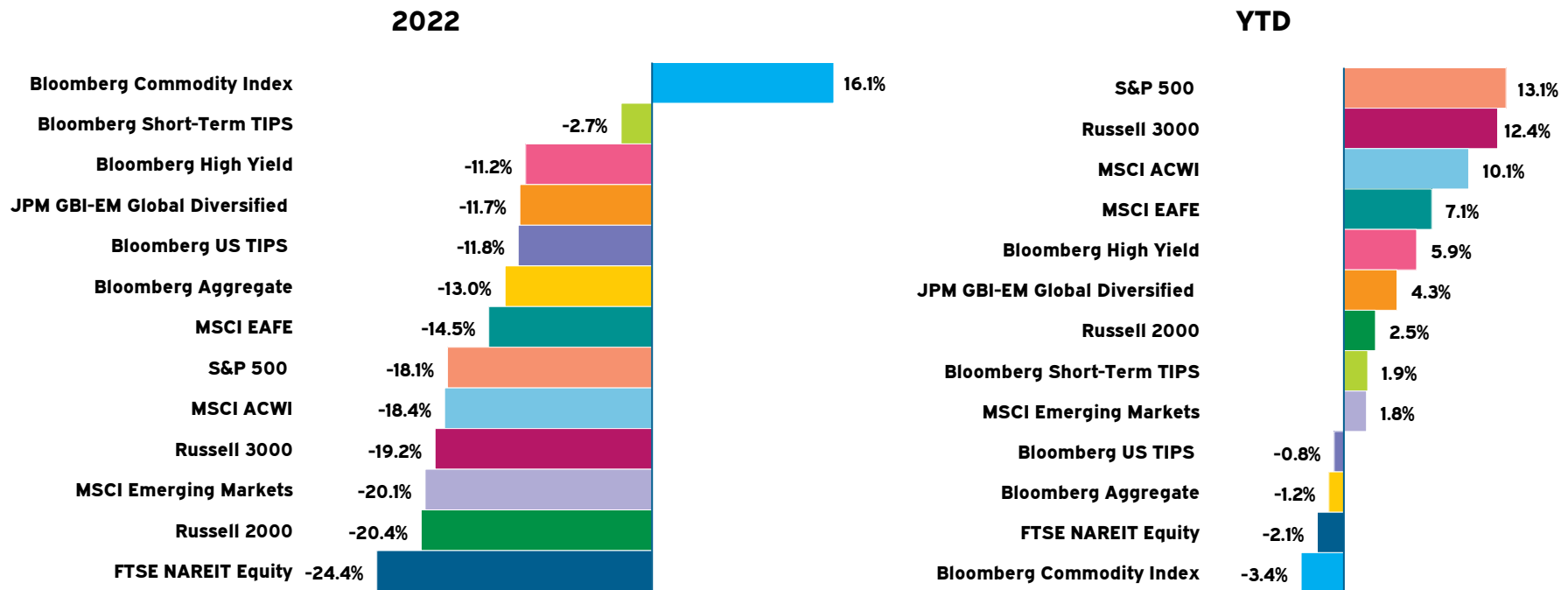
Economic and Market Update

September 2023 Report

Commentary

- After a strong July, global assets turned negative in August and September as expectations shifted to the Fed keeping interest rates higher for longer. Weakening economic data from Europe and China, as well as further instability in the Chinese real estate sector and a strong US dollar, weighed on results.
- The Federal Open Markets Committee (FOMC) increased policy rates in July by 0.25% to a range of 5.25% - 5.5% and kept rates at that level at their September meeting. Markets are now largely expecting the FOMC to maintain interest rates at this level through the first half of next year.
 - US equity markets (Russell 3000 index) fell in the third quarter (-3.3%), bringing the year-to-date gains to 12.4%. The technology sector remains the key driver of results this year, helped by artificial intelligence optimism.
 - Non-US developed equity markets declined more than the US in the third quarter (MSCI EAFE -4.1%) with the strength of the US dollar adding 2.8% to the quarterly declines. This widened the gap between US and international developed equities for the year (12.4% versus 7.1%).
 - Emerging market equities experienced the smallest declines in the third quarter (-2.9%). Negative results were driven by China and again the strong US dollar. Emerging markets continue to significantly trail developed market equities year-to-date, returning just 1.8%, again driven by China.
 - Interest rates generally rose over the quarter, particularly for longer-dated maturities. The broad US bond market fell (-3.2%) for the quarter and turned negative (-1.2%) year-to-date, as higher income has offset capital losses from rising rates.
- For the rest of this year, the paths of inflation and monetary policy, slowing global growth, and the wars in Ukraine and Israel will all be key.

Index Returns¹



→ After a particularly difficult 2022, most public market assets are up thus far in 2023, led by developed market equities.

→ While hopes for a soft landing remain in place, the prospect of higher interest rates for longer weighed on market sentiment in August and September.

¹ Source: Bloomberg. Data is as of September 30, 2023.

Domestic Equity Returns¹

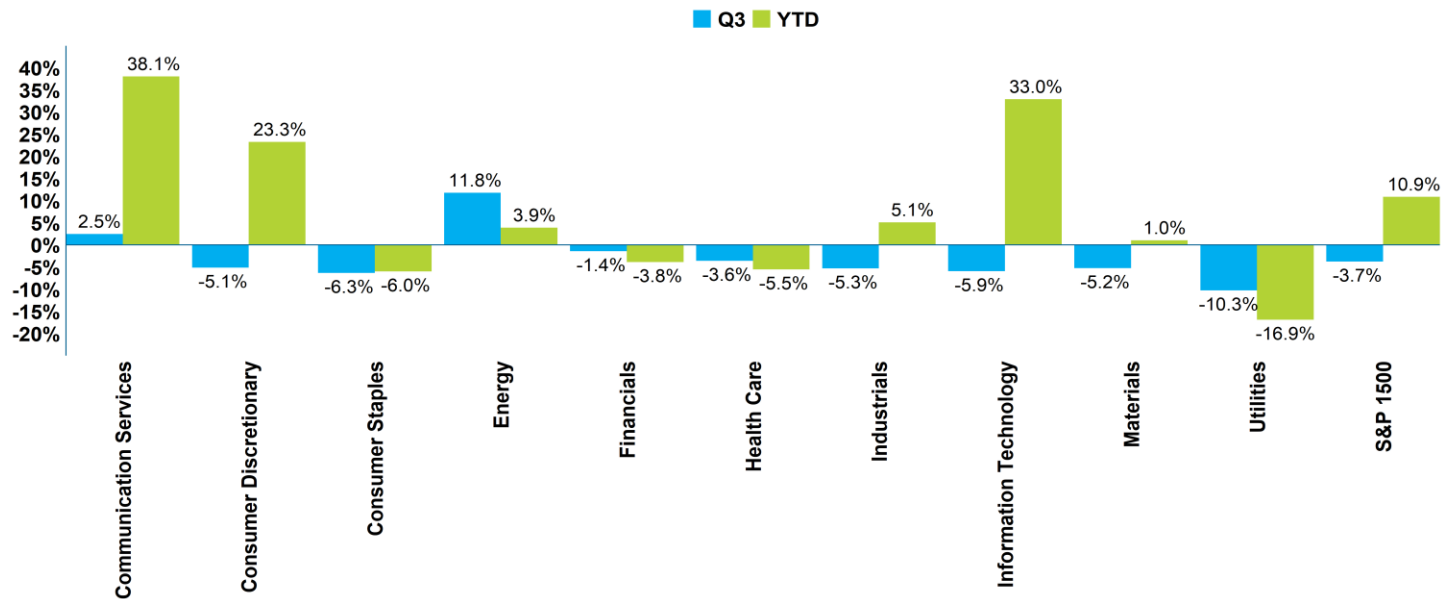
Domestic Equity	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	-4.8	-3.3	13.1	21.6	10.2	9.9	11.9
Russell 3000	-4.8	-3.3	12.4	20.5	9.4	9.1	11.3
Russell 1000	-4.7	-3.1	13.0	21.2	9.5	9.6	11.6
Russell 1000 Growth	-5.4	-3.1	25.0	27.7	8.0	12.4	14.5
Russell 1000 Value	-3.9	-3.2	1.8	14.4	11.1	6.2	8.4
Russell MidCap	-5.0	-4.7	3.9	13.4	8.1	6.4	9.0
Russell MidCap Growth	-4.9	-5.2	9.9	17.5	2.6	7.0	9.9
Russell MidCap Value	-5.1	-4.5	0.5	11.0	11.0	5.2	7.9
Russell 2000	-5.9	-5.1	2.5	8.9	7.2	2.4	6.6
Russell 2000 Growth	-6.6	-7.3	5.2	9.6	1.1	1.6	6.7
Russell 2000 Value	-5.2	-3.0	-0.5	7.8	13.3	2.6	6.2

US Equities: The Russell 3000 Index fell 3.3% in the third quarter but is up 12.4% YTD.

- US stocks fell 3.3% in the third quarter as healthy economic data and comments from the Fed caused investors to expect interest rates to remain higher for longer.
- Large cap stocks outperformed small cap stocks during the quarter, bringing their year-to-date outperformance to over 10%. The so called “Magnificent Seven” within the large cap market drove most of this outperformance despite a weak third quarter.
- Energy strongly led the way during the quarter posting double-digit gains while most other sectors declined. Oil prices rose after Saudi Arabia and Russia extended output cuts.

¹ Source: Bloomberg. Data is as of September 30, 2023.

S&P 1500 Sector Returns¹



→ Except for energy, which benefited from rising oil prices, all sectors were down in the third quarter.

→ So far in 2023, the communication services (+38.1%) and technology (+33.0%) sectors had the best results on artificial intelligence optimism. Given the continued strength in the US consumer the consumer discretionary sector followed (+23.3%), while more defensive sectors like utilities (-16.9%) and consumer staples (-6.0%) have trailed.

¹ S&P 1500 Sector Returns. Source: Bloomberg. Data is as of September 30, 2023.

Foreign Equity Returns¹

Foreign Equity	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	-3.2	-3.8	5.3	20.4	3.7	2.6	3.3
MSCI EAFE	-3.4	-4.1	7.1	25.6	5.8	3.2	3.8
MSCI EAFE (Local Currency)	-1.1	-1.3	10.7	20.3	10.8	5.7	6.8
MSCI EAFE Small Cap	-4.4	-3.5	1.8	17.9	1.1	0.8	4.3
MSCI Emerging Markets	-2.6	-2.9	1.8	11.7	-1.7	0.6	2.1
MSCI Emerging Markets (Local Currency)	-1.8	-1.4	4.0	10.9	0.6	2.7	4.9
MSCI China	-2.8	-1.9	-7.3	5.2	-14.3	-4.2	1.7

Foreign Equity: Developed international equities (MSCI EAFE) fell 4.1% in the third quarter bringing the YTD gain to 7.1%. Emerging market equities (MSCI EM) fell 2.9% in the period, rising 1.8% YTD.

- Outside of the US, equities were also weak during the third quarter with the continued strength of the US dollar being a key driver.
- Eurozone shares felt pressure from slowing GDP growth and an interest rate hike by the ECB, although inflation continued to ease. By contrast, the UK saw modest gains amid promising economic data including slowing inflation and GDP back around pre-pandemic levels. Japan outperformed regional peers for the quarter due in part to strong earnings.
- Emerging market performance, while negative, outpaced developed peers. Chinese markets saw losses in-line with other emerging market countries, driven largely by unease surrounding property company Evergrande and a continued lackluster reopening of the economy.

¹ Source: Bloomberg. Data is as of September 30, 2023.

Fixed Income Returns¹

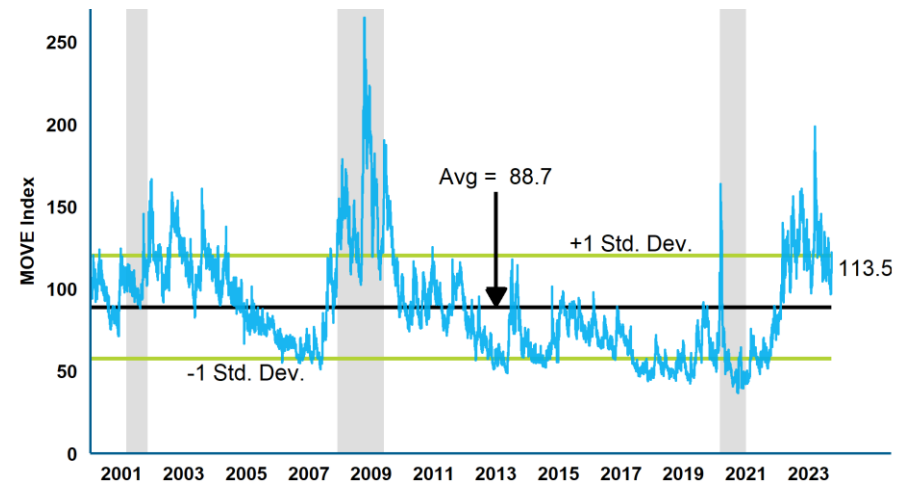
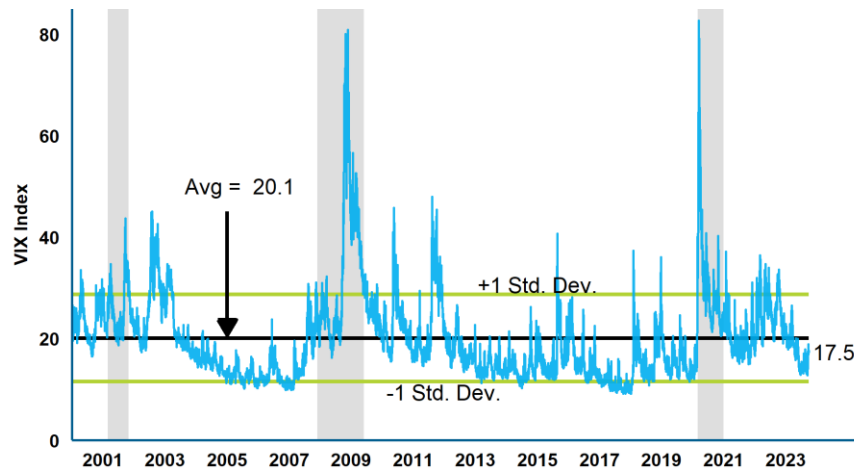
Fixed Income	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	-2.4	-2.9	-0.6	1.6	-4.7	0.3	1.4	5.7	6.0
Bloomberg Aggregate	-2.5	-3.2	-1.2	0.6	-5.2	0.1	1.1	5.4	6.2
Bloomberg US TIPS	-1.8	-2.6	-0.8	1.2	-2.0	2.1	1.7	5.0	6.6
Bloomberg Short-term TIPS	-0.2	0.4	1.9	3.2	1.9	2.8	1.7	5.4	2.5
Bloomberg High Yield	-1.2	0.5	5.9	10.3	1.8	3.0	4.2	8.9	4.0
JPM GBI-EM Global Diversified (USD)	-3.4	-3.3	4.3	13.1	-2.7	0.0	-0.8	6.9	4.9

Fixed Income: The Bloomberg Universal index declined 2.9% in the third quarter and -0.6% YTD.

- The downgrade of US government debt from AAA to AA+ by Fitch combined with expectations for higher borrowing put upward pressure on longer-term rates for the quarter and weighed on overall results. Expectations for policy rates to remain higher for longer than previously expected also contributed to the decline in bonds.
- The broad US bond market (Bloomberg Aggregate) fell 3.2% for the quarter bringing YTD results into negative territory. The broader TIPS index fell by 2.6%, while the less interest-rate-sensitive short-term TIPS index outperformed most sectors, up 0.4%.
- High yield bonds were the strongest quarterly performers, up 0.5%, while emerging market bonds were the weakest performer, falling 3.3%. The two asset classes remain the top performers for the year as risk appetite in credit markets remains robust.

¹ Source: Bloomberg. JPM GBI-EM data is from InvestorForce. Data is as of September 30, 2023. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively.

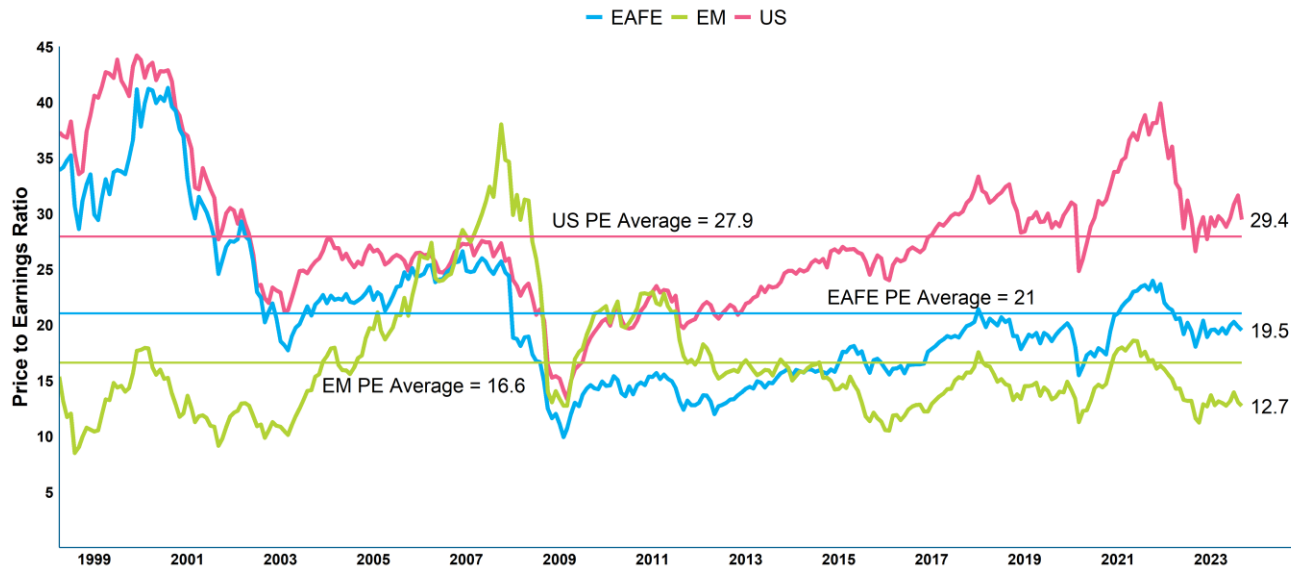
Equity and Fixed Income Volatility¹



- Volatility in equities (VIX) increased over the quarter but finished at a level below the long-term average. The recent increase in equity volatility has largely been driven by investors coming to terms that interest rates might remain higher for a longer period.
- In comparison, volatility in the bond market (MOVE) remains well above its long-run average (88.7) after last year's historic losses and due to continued policy uncertainty. Over the quarter, fixed income volatility finished slightly higher compared to where it started, like equities, driven by expectations for rates to stay higher or longer.

¹ Equity Volatility – Source: FRED. Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of September 2023. The average line indicated is the average of the VIX and MOVE values between January 2000 and September 2023.

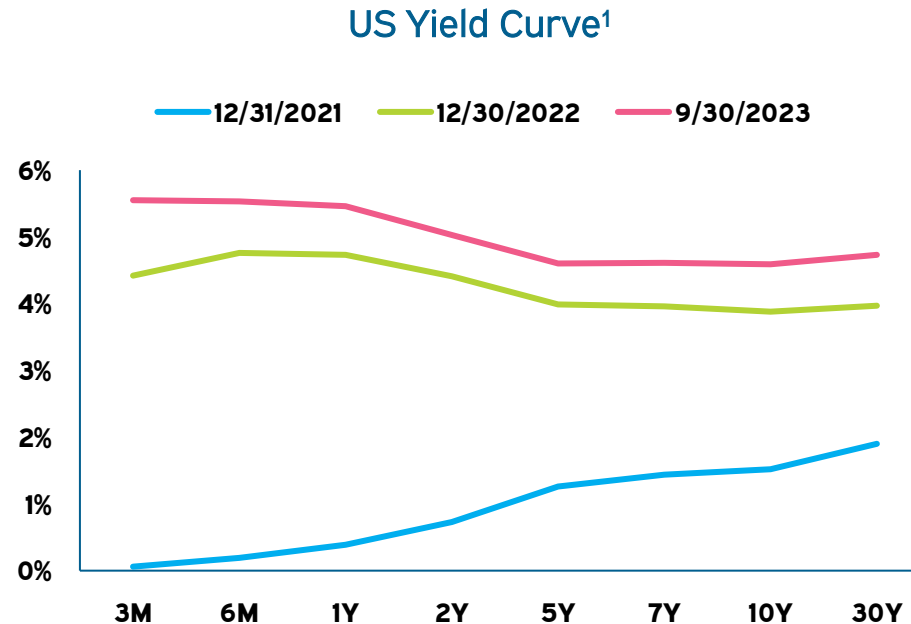
Equity Cyclically Adjusted P/E Ratios¹



→ Given the strong technology-driven rally this year, the US equity price-to-earnings ratio increased above its long-run (21st century) average. With the equity market decline in August and September the P/E ratio declined from its recent peak.

→ International developed market valuations are below their own long-term average, with those for emerging markets the lowest and well under the long-term average (close to one standard deviation below).

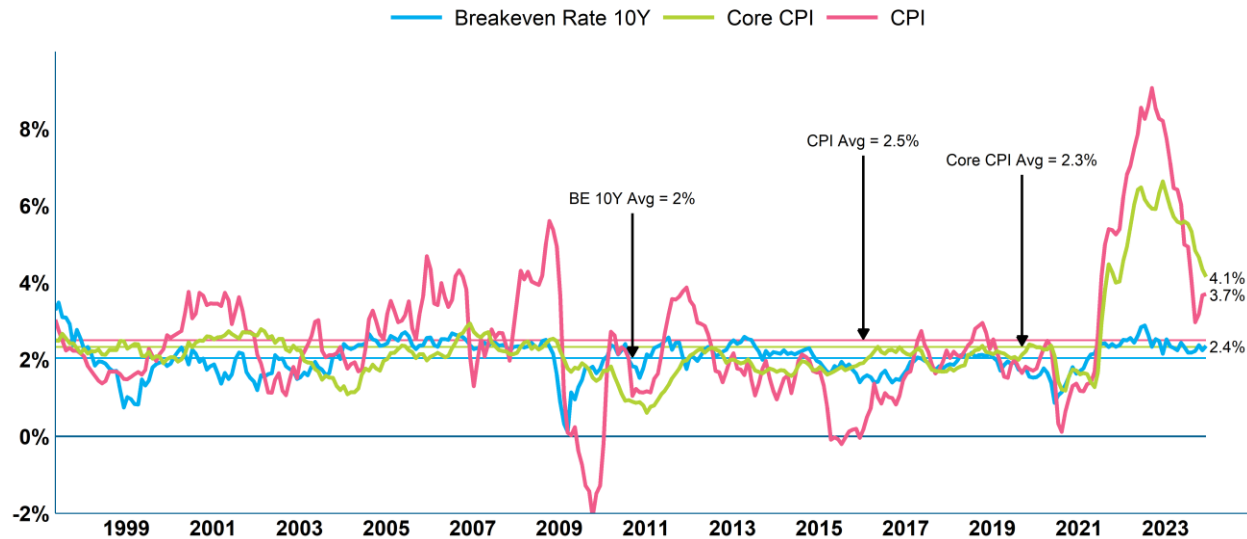
¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years. Data is as of September 2023. The average line is the long-term average of the US, EM, and EAFE PE values from April 1998 to the recent month-end respectively.



- Overall rates have continued to increase this year, particularly at the policy sensitive front-end of the yield curve, but at much slower pace compared to last year.
- Over the quarter, very short-term interest rates (two years or less) increased only slightly as monetary policy has likely reached close to its terminal rate for this cycle. By contrast, longer-term rates rose dramatically as US debt was downgraded and investors came to terms with rates remaining higher for longer. The ten-year Treasury yield increased from 3.8% to 4.6% over the quarter.
- Because of the dynamic above, the yield curve's inversion decreased with the spread between two-year and ten-year Treasuries finishing the quarter at -0.47% (it started the quarter at -1.05%).

¹ Source: Bloomberg. Data is as of September 30, 2023.

Ten-Year Breakeven Inflation and CPI¹

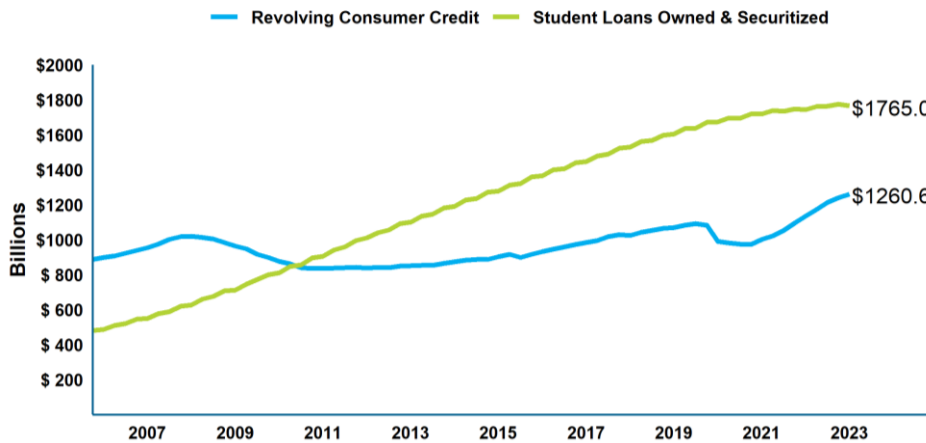


- After the steady decline in inflation from the June 2022 peak, consumer prices recently increased driven by energy prices.
- Year-over-year headline inflation was flat at 3.7% coming in slightly higher than expectations as improvements in energy prices were offset by higher shelter costs.
- Core inflation – excluding food and energy – continued its decline (4.3% to 4.1%) year-over-year. It remains stubbornly high, though, driven by shelter costs (+7.2%), particularly owners’ equivalent rent, and transportation services (+9.1%).
- Inflation expectations (breakevens) remain well below current inflation as investors continue to expect inflation to track back toward the Fed’s 2% average target.

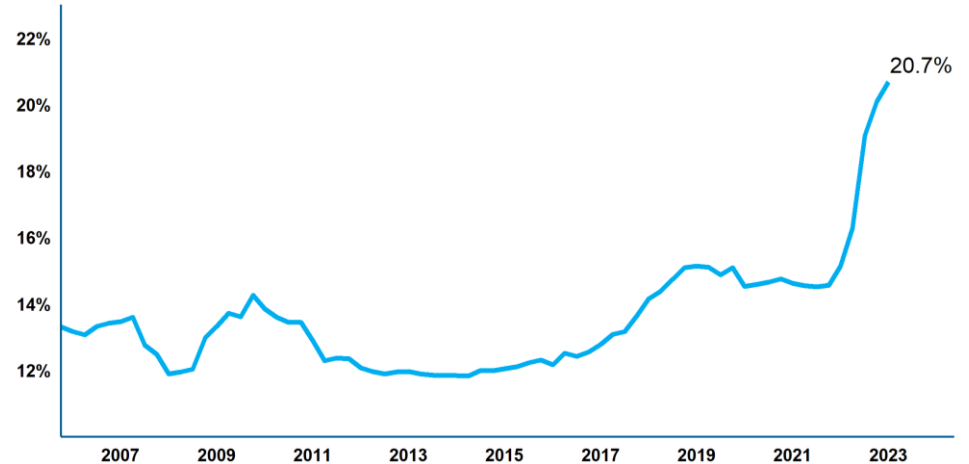
¹ Source: FRED. Data is as September 30, 2023. The CPI and 10 Year Breakeven average lines denote the average values from February 1997 to the present month-end, respectively. Breakeven values represent month-end values for comparative purposes.

US Consumer Under Stress¹

Revolving Consumer Credit & Student Loans (\$B)



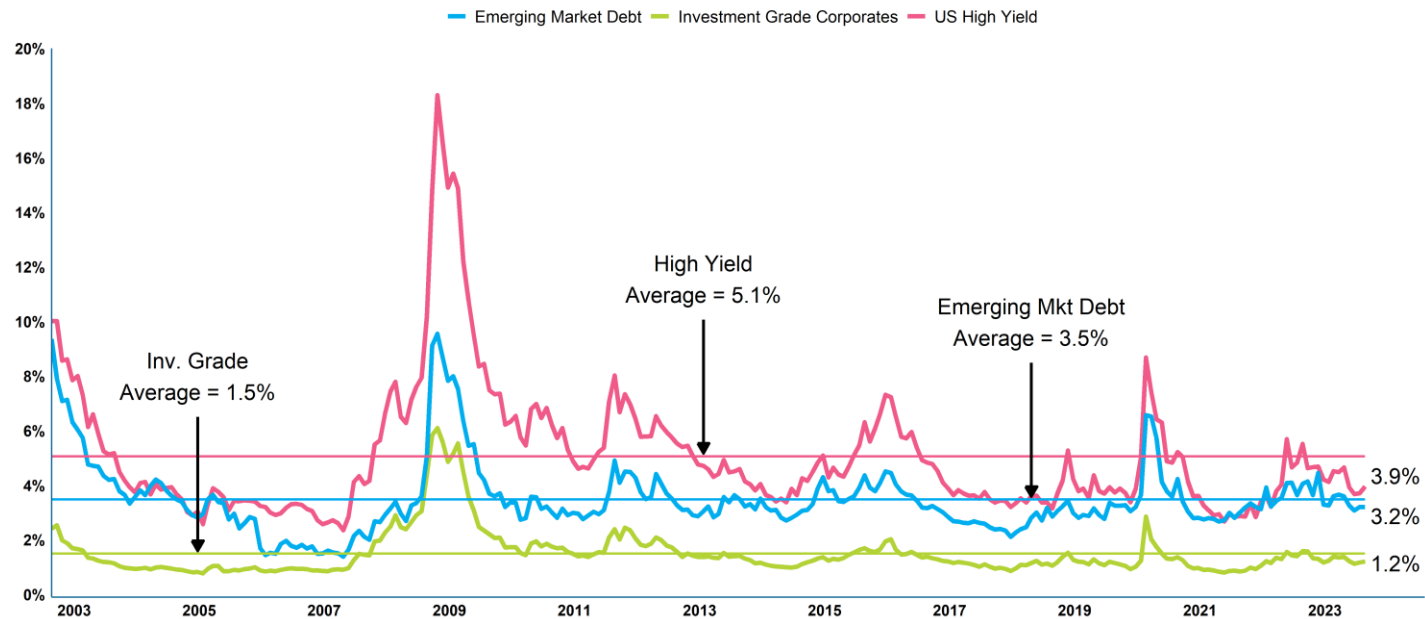
Consumer Credit Card Interest Rates (%)



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

¹ Source: FRED. The most recent data is as June 30, 2023. Revolving Consumer Credit data is seasonally adjusted to remove distortions during the holiday season.

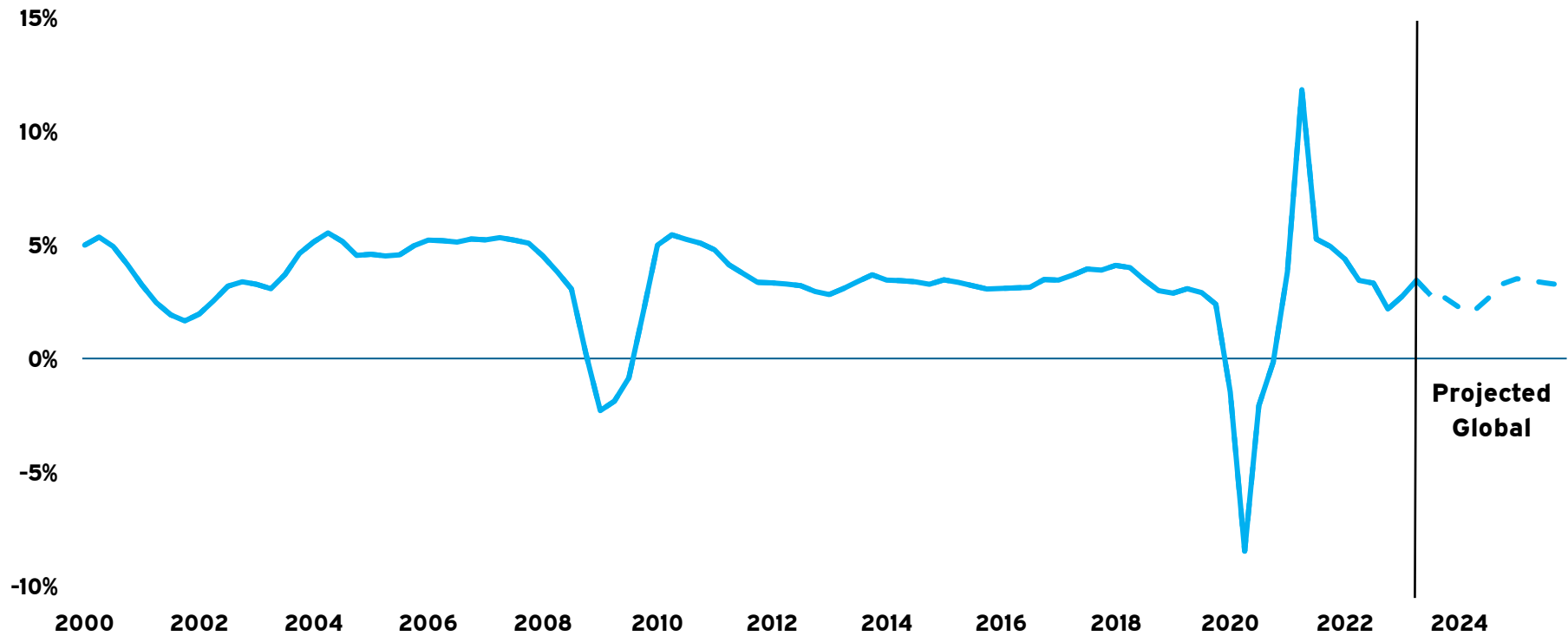
Credit Spreads vs. US Treasury Bonds¹



- Credit spreads (the added yield above a comparable maturity Treasury) largely remained unchanged over the quarter.
- High yield spreads remain well below the long-term average given the overall risk appetite this year. Investment grade and emerging market spreads are also below their respective long-term averages, but by smaller margins.

¹ Sources: Bloomberg. Data is as of September 30, 2023. Average lines denote the average of the investment grade, high yield, and emerging market spread values from September 2002 to the recent month-end, respectively.

Global Real Gross Domestic Product (GDP) Growth¹

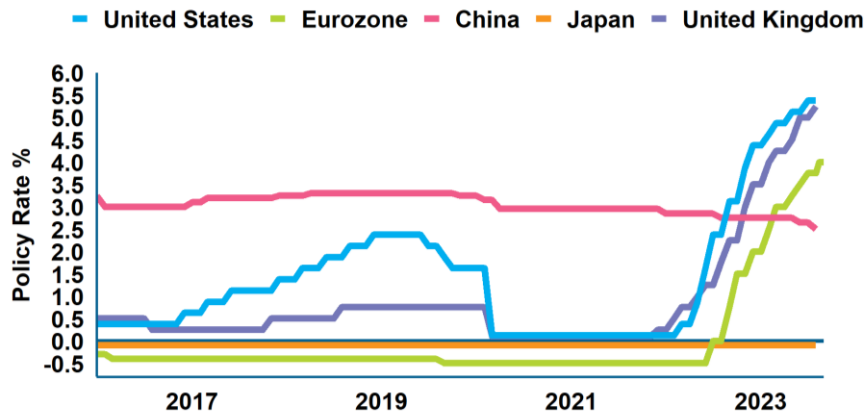


- Global economies are expected to slow this year compared to 2022. The risk of recession remains elevated given policymakers' aggressive tightening, but optimism has started to grow over some central banks potentially navigating a soft landing.
- The delicate balancing act of central banks trying to reduce inflation without dramatically disrupting labor markets and depressing economic growth, will remain key.

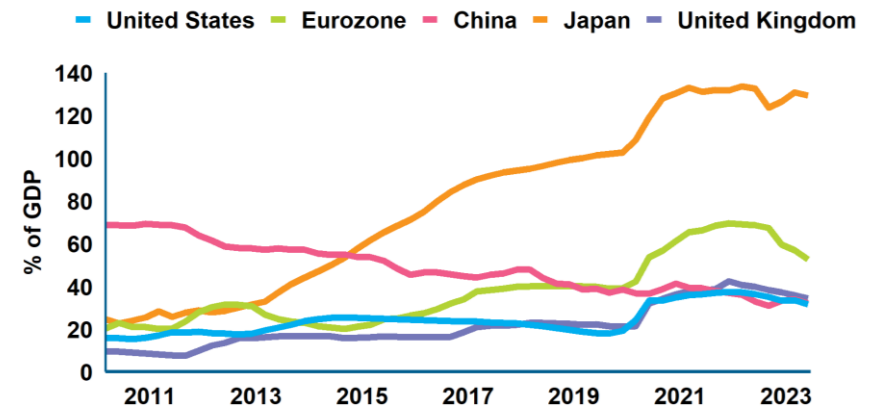
¹ Source: Oxford Economics (World GDP, US\$ prices & PPP exchange rate, real, % change YoY). Updated September 2023.

Central Bank Response¹

Policy Rates



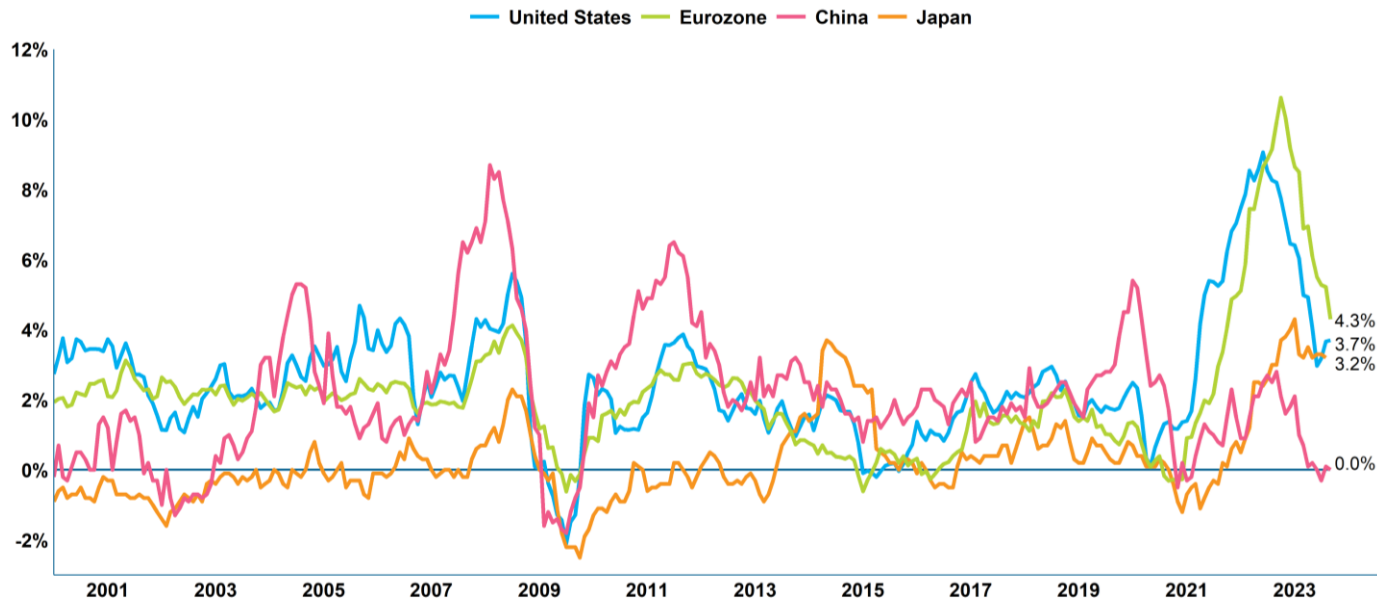
Balance Sheet as % of GDP



- Slowing inflation and growth have led to expectations for a reduction in the pace of aggressive policy tightening.
- In July the Fed raised rates another 25 basis points to a range of 5.25% to 5.50% and then kept rates at this level at their September meeting. Markets are expecting at most one more hike later this year.
- The European Central Bank also increased rates in July, with an additional hike in September, but rates remain lower than in the US. In Japan, expectations have increased that the BOJ will end its negative interest rate policy due to rising inflation.
- The central bank in China has continued to cut interest rates and inject liquidity into the banking system, as weaker than expected economic data appears to indicate a widespread slowdown.
- Risks remain for a policy error as central banks attempt to balance bringing down inflation, maintaining financial stability, and supporting growth.

¹ Source: Bloomberg. Policy rate data is as of September 30, 2023. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of June 30, 2023.

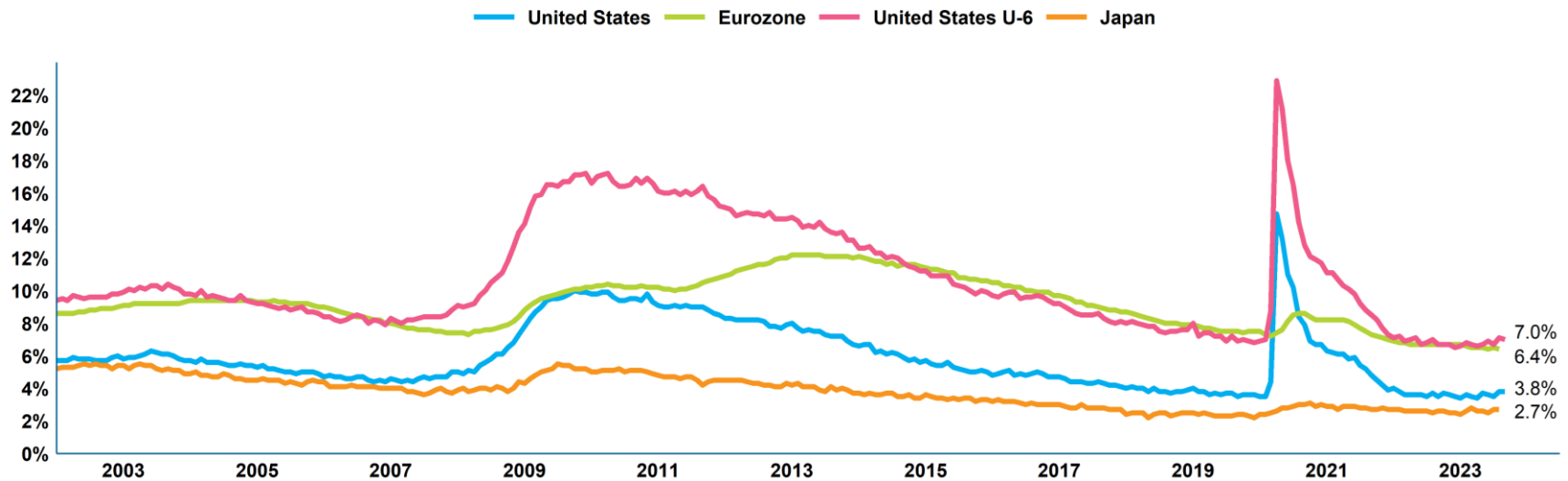
Inflation (CPI Trailing Twelve Months)¹



- The inflation picture remains mixed across the major economies.
- In the US, inflation was flat at 3.7%, influenced by rising shelter costs, while eurozone inflation remained higher than the US at 4.3%, a level well off its peak, however. Despite 2023's significant declines in the US and Europe, inflation levels remain elevated compared to central bank targets.
- Inflation in Japan has increased to levels not seen in almost a decade largely driven by food and home related items. In China, deflationary pressures eased but prices were flat from a year prior.

¹ United States CPI and Eurozone CPI – Source: FRED. Japan CPI and China CPI - Source: Bloomberg. Data is as September 30, 2023. The most recent data for Japanese and Eurozone inflation is as of August 2023.

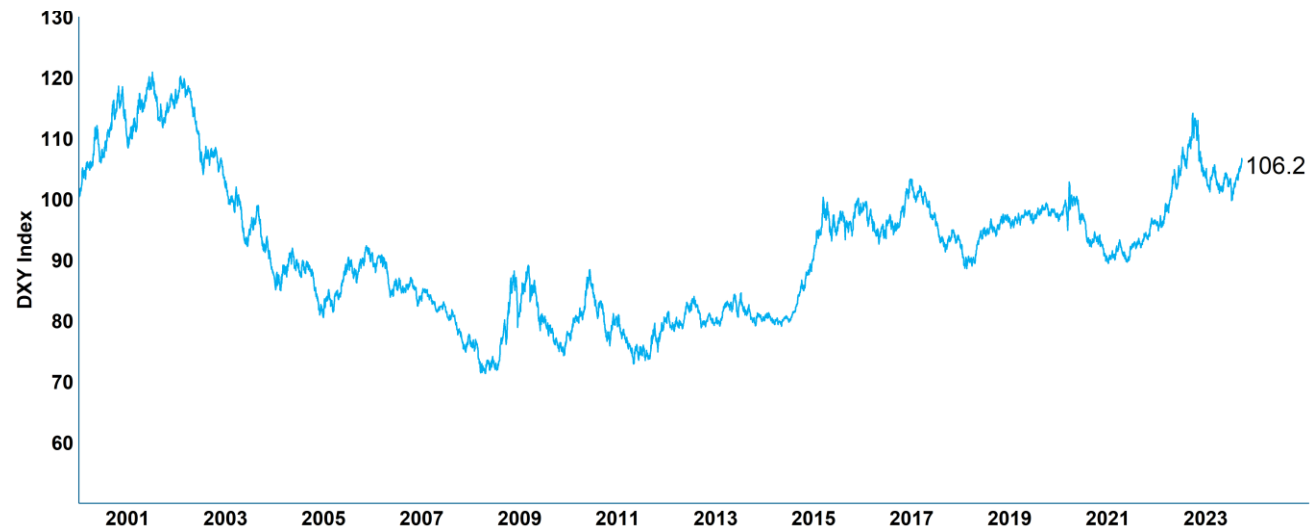
Unemployment¹



- Overall, the US labor market remains healthy with the unemployment rate relatively low, wage growth now positive in real terms, and initial claims for unemployment staying subdued. The pace of wage growth has slowed though, and despite remaining elevated, the number of job openings has declined from recent highs.
- In September, unemployment remained at 3.8%, a level only 0.2% higher than the start of the quarter. The labor force participation rate remained at 62.8% well off the lows of the pandemic (60.1%) but not back to pre-pandemic levels (63.3%). Broader measures of unemployment (U-6) finished the quarter at 7.0% up only slightly from the end of June (6.9%).
- Unemployment in Europe has also declined but remains higher than the US, while levels in Japan have been flat through the pandemic given less layoffs.

¹ Eurozone Unemployment - Source: Bloomberg. Japan, United States, United States U-6 Unemployment – Source: FRED. Data is as September 30, 2023, for the US. The most recent data for Eurozone unemployment is as of August 2023 and Japanese unemployment is as of July 2023.

US Dollar versus Broad Currencies¹



- After a strong 2022, the US dollar declined late last year and into early this year as weaker economic data and lower inflation led to investors anticipating the end of FOMC tightening.
- Recently though, the dollar reversed course and appreciated against major currencies as relative growth remains strong and investors anticipate the FOMC keeping interest rates higher for longer.
- For the rest of this year, the track of inflation across economies and the corresponding monetary policies will be key drivers of currency moves.

¹ Source: Bloomberg. Data as of September 30, 2023.

Summary

Key Trends:

- The impact of inflation still above policy targets will remain key, with bond market volatility likely to stay high.
- Global monetary policies could diverge going forward. The risk of policy errors remains elevated as central banks try to reduce persistent inflation while not tipping their economies into recession.
- Growth is expected to slow globally this year, with many economies forecasted to tip into recession. However, optimism has been building that some economies could experience a soft landing. Inflation, monetary policy, and the war will all be key.
- In the US, consumers could feel pressure as certain components of inflation remain high (e.g., shelter), borrowing costs are elevated, and the job market may weaken.
- The key for US equities going forward will be whether earnings can remain resilient if growth continues to slow. 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 the potential for recent strength in the US dollar to persist, higher inflation weighing particularly on Europe, and China's sluggish economic reopening and on-going weakness in the real estate sector. Japan's recent hint at potentially tightening monetary policy along with changes in corporate governance in the country could influence relative results.
- After month-end, heightened tensions in Israel could add to overall uncertainty and drive safe haven flows.

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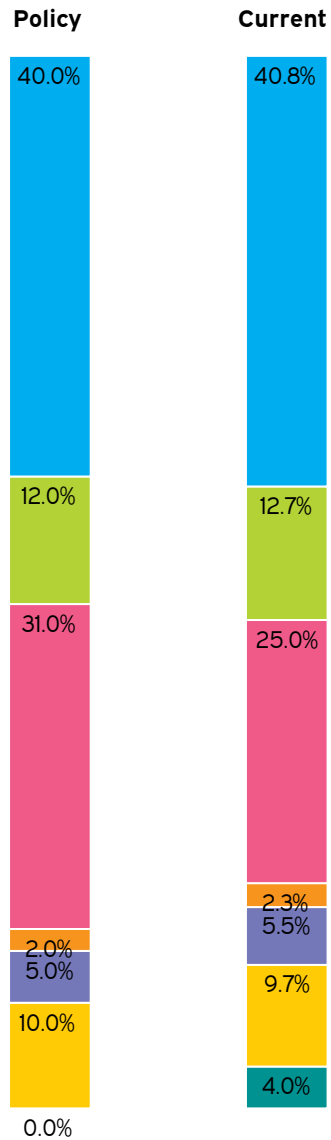
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Oakland Police and Fire Retirement System

October 25, 2023

September Flash Report

As of September 30, 2023



Allocation vs. Targets and Policy						
	Current Balance (\$)	Current (%)	Policy (%)	Difference (%)	Policy Range (%)	Within IPS Range?
Domestic Equity	165,391,122	40.8	40.0	0.8	30.0 - 50.0	Yes
International Equity	51,607,318	12.7	12.0	0.7	8.0 - 14.0	Yes
Fixed Income	101,122,231	25.0	31.0	-6.0	25.0 - 40.0	Yes
Credit	9,329,974	2.3	2.0	0.3	1.0 - 3.0	Yes
Covered Calls	22,157,801	5.5	5.0	0.5	5.0 - 10.0	Yes
Crisis Risk Offset	39,485,989	9.7	10.0	-0.3	5.0 - 15.0	Yes
Cash	16,049,014	4.0	0.0	4.0	0.0 - 5.0	Yes
Total	405,143,449	100.0	100.0	0.0		

Asset Class Performance Summary | As of September 30, 2023

Asset Class Performance Summary											
	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	Inception Date
OPFRS Total Plan	405,143,449	100.0	-3.0	-3.1	4.5	10.3	3.5	3.8	6.2	6.4	Dec-88
<i>OPFRS Policy Benchmark</i>			-3.2	-3.0	5.9	12.2	3.5	4.0	6.4	7.7	
Excess Return			0.2	-0.1	-1.4	-1.9	0.0	-0.2	-0.2	-1.3	
Domestic Equity	165,391,122	40.8	-4.6	-3.9	7.0	15.7	8.4	7.5	10.4	8.6	Jun-97
<i>Russell 3000 (Blend)</i>			-4.8	-3.3	12.4	20.5	9.4	9.1	11.3	8.9	
Excess Return			0.2	-0.6	-5.4	-4.8	-1.0	-1.6	-0.9	-0.3	
International Equity	51,607,318	12.7	-2.4	-4.0	7.3	23.3	4.6	3.2	4.3	5.0	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			-3.2	-3.8	5.3	20.4	3.7	2.6	3.3	4.8	
Excess Return			0.8	-0.2	2.0	2.9	0.9	0.6	1.0	0.2	
Fixed Income	101,122,231	25.0	-2.6	-3.2	-0.6	1.5	-4.5	0.4	1.5	4.3	Jan-94
<i>Bloomberg Universal (Blend)</i>			-2.4	-2.9	-0.6	1.6	-4.7	0.3	1.4	4.4	
Excess Return			-0.2	-0.3	0.0	-0.1	0.2	0.1	0.1	-0.1	
Credit	9,329,974	2.3	-0.1	1.4	8.4	10.4	5.1	3.2	--	4.6	Feb-15
<i>Blmbg. U.S. Corp: High Yield Index</i>			-1.2	0.5	5.9	10.3	1.8	3.0	4.2	4.1	
Excess Return			1.1	0.9	2.5	0.1	3.3	0.2	--	0.5	
Covered Calls	22,157,801	5.5	-3.3	-1.8	11.9	20.4	10.2	7.9	--	8.5	Apr-14
<i>CBOE S&P 500 Buy Write Index</i>			-2.7	-2.8	7.3	14.6	7.2	3.0	6.0	5.2	
Excess Return			-0.6	1.0	4.6	5.8	3.0	4.9	--	3.3	
Crisis Risk Offset	39,485,989	9.7	0.3	-1.4	0.5	-4.3	-7.4	-8.9	--	-8.1	Aug-18
<i>Crisis Risk Offset Benchmark</i>			-0.5	-2.4	0.3	1.8	3.5	-0.3	--	-0.4	
Excess Return			0.8	1.0	0.2	-6.1	-10.9	-8.6	--	-7.7	

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

Asset Class & Manager Performance | As of September 30, 2023

	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	Inception Date
OPFRS Total Plan	405,143,449	100.0	-3.0	-3.1	4.5	10.3	3.5	3.8	6.2	6.4	Dec-88
<i>OPFRS Policy Benchmark</i>			-3.2	-3.0	5.9	12.2	3.5	4.0	6.4	7.7	
Excess Return			0.2	-0.1	-1.4	-1.9	0.0	-0.2	-0.2	-1.3	
Domestic Equity	165,391,122	40.8	-4.6	-3.9	7.0	15.7	8.4	7.5	10.4	8.6	Jun-97
<i>Russell 3000 (Blend)</i>			-4.8	-3.3	12.4	20.5	9.4	9.1	11.3	8.9	
Excess Return			0.2	-0.6	-5.4	-4.8	-1.0	-1.6	-0.9	-0.3	
Northern Trust Russell 1000	78,815,151	19.5	-4.7	-3.1	13.0	21.2	9.4	9.5	11.5	12.8	Jun-10
<i>Russell 1000 Index</i>			-4.7	-3.1	13.0	21.2	9.5	9.6	11.6	12.9	
Excess Return			0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	
EARNEST Partners	39,440,769	9.7	-5.0	-4.7	3.4	11.3	8.6	8.3	10.8	8.8	Apr-06
<i>Russell Midcap Index</i>			-5.0	-4.7	3.9	13.4	8.1	6.4	9.0	8.2	
Excess Return			0.0	0.0	-0.5	-2.1	0.5	1.9	1.8	0.6	
Wellington Select Quality Equity	22,275,787	5.5	-3.5	-4.7	0.3	14.1	--	--	--	0.8	May-22
<i>Russell 1000 Index</i>			-4.7	-3.1	13.0	21.2	9.5	9.6	11.6	4.0	
Excess Return			1.2	-1.6	-12.7	-7.1	--	--	--	-3.2	
Brown Fundamental Small Cap Value	11,370,103	2.8	-3.5	0.8	4.1	16.8	--	--	--	2.3	Apr-21
<i>Russell 2000 Value Index</i>			-5.2	-3.0	-0.5	7.8	13.3	2.6	6.2	-4.1	
Excess Return			1.7	3.8	4.6	9.0	--	--	--	6.4	
Rice Hall James	13,489,312	3.3	-6.1	-8.3	0.7	3.7	1.8	-0.3	--	4.8	Aug-17
<i>Russell 2000 Growth Index</i>			-6.6	-7.3	5.2	9.6	1.1	1.6	6.7	5.3	
Excess Return			0.5	-1.0	-4.5	-5.9	0.7	-1.9	--	-0.5	

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

Asset Class & Manager Performance | As of September 30, 2023

	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	Inception Date
International Equity	51,607,318	12.7	-2.4	-4.0	7.3	23.3	4.6	3.2	4.3	5.0	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			-3.2	-3.8	5.3	20.4	3.7	2.6	3.3	4.8	
Excess Return			0.8	-0.2	2.0	2.9	0.9	0.6	1.0	0.2	
Vanguard Developed Markets ETF	14,640,298	3.6	-3.8	-4.7	5.3	22.9	5.0	--	--	5.0	Sep-19
<i>FTSE Developed All Cap ex-U.S. Index</i>			-3.5	-3.9	6.7	24.2	5.8	3.5	4.3	5.6	
Excess Return			-0.3	-0.8	-1.4	-1.3	-0.8	--	--	-0.6	
SGA ACWI ex-U.S. Equity	36,967,020	9.1	-1.9	-3.7	8.1	23.4	4.2	--	--	1.8	Dec-19
<i>MSCI AC World ex USA (Net)</i>			-3.2	-3.8	5.3	20.4	3.7	2.6	3.3	2.6	
Excess Return			1.3	0.1	2.8	3.0	0.5	--	--	-0.8	
Fixed Income	101,122,231	25.0	-2.6	-3.2	-0.6	1.5	-4.5	0.4	1.5	4.3	Jan-94
<i>Bloomberg Universal (Blend)</i>			-2.4	-2.9	-0.6	1.6	-4.7	0.3	1.4	4.4	
Excess Return			-0.2	-0.3	0.0	-0.1	0.2	0.1	0.1	-0.1	
Ramirez	68,697,575	17.0	-2.5	-3.1	-0.6	1.0	-4.5	0.3	--	0.7	Feb-17
<i>Blmbg. U.S. Aggregate Index</i>			-2.5	-3.2	-1.2	0.6	-5.2	0.1	1.1	0.3	
Excess Return			0.0	0.1	0.6	0.4	0.7	0.2	--	0.4	
Wellington Core Bond	6,517,141	1.6	-2.6	-3.1	-0.2	1.6	--	--	--	-5.5	Apr-21
<i>Blmbg. U.S. Aggregate Index</i>			-2.5	-3.2	-1.2	0.6	-5.2	0.1	1.1	-5.2	
Excess Return			-0.1	0.1	1.0	1.0	--	--	--	-0.3	
Reams	25,907,515	6.4	-3.0	-3.5	-0.5	2.6	-4.3	2.7	2.4	4.7	Feb-98
<i>Bloomberg Universal (Blend)</i>			-2.4	-2.9	-0.6	1.6	-4.7	0.3	1.4	3.9	
Excess Return			-0.6	-0.6	0.1	1.0	0.4	2.4	1.0	0.8	

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

Asset Class & Manager Performance | As of September 30, 2023

	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	Inception Date
Credit	9,329,974	2.3	-0.1	1.4	8.4	10.4	5.1	3.2	--	4.6	Feb-15
<i>Blmbg. U.S. Corp: High Yield Index</i>			<i>-1.2</i>	<i>0.5</i>	<i>5.9</i>	<i>10.3</i>	<i>1.8</i>	<i>3.0</i>	<i>4.2</i>	<i>4.1</i>	
Excess Return			1.1	0.9	2.5	0.1	3.3	0.2	--	0.5	
Polen Capital	9,329,974	2.3	-0.1	1.4	8.4	10.4	5.1	3.2	--	4.6	Feb-15
<i>ICE BofA High Yield Master II</i>			<i>-1.2</i>	<i>0.5</i>	<i>6.0</i>	<i>10.2</i>	<i>1.8</i>	<i>2.8</i>	<i>4.2</i>	<i>4.0</i>	
Excess Return			1.1	0.9	2.4	0.2	3.3	0.4	--	0.6	
Covered Calls	22,157,801	5.5	-3.3	-1.8	11.9	20.4	10.2	7.9	--	8.5	Apr-14
<i>CBOE S&P 500 Buy Write Index</i>			<i>-2.7</i>	<i>-2.8</i>	<i>7.3</i>	<i>14.6</i>	<i>7.2</i>	<i>3.0</i>	<i>6.0</i>	<i>5.2</i>	
Excess Return			-0.6	1.0	4.6	5.8	3.0	4.9	--	3.3	
Parametric BXM	11,106,210	2.7	-2.2	-1.0	10.3	18.1	8.5	5.8	--	6.8	Apr-14
<i>CBOE S&P 500 Buy Write Index</i>			<i>-2.7</i>	<i>-2.8</i>	<i>7.3</i>	<i>14.6</i>	<i>7.2</i>	<i>3.0</i>	<i>6.0</i>	<i>5.2</i>	
Excess Return			0.5	1.8	3.0	3.5	1.3	2.8	--	1.6	
Parametric DeltaShift	11,051,591	2.7	-4.5	-2.6	13.4	22.8	11.5	9.8	--	10.3	Apr-14
<i>CBOE S&P 500 Buy Write Index</i>			<i>-2.7</i>	<i>-2.8</i>	<i>7.3</i>	<i>14.6</i>	<i>7.2</i>	<i>3.0</i>	<i>6.0</i>	<i>5.2</i>	
Excess Return			-1.8	0.2	6.1	8.2	4.3	6.8	--	5.1	

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

Asset Class & Manager Performance | As of September 30, 2023

	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	Inception Date
Crisis Risk Offset	39,485,989	9.7	0.3	-1.4	0.5	-4.3	-7.4	-8.9	--	-8.1	Aug-18
<i>Crisis Risk Offset Benchmark</i>			<i>-0.5</i>	<i>-2.4</i>	<i>0.3</i>	<i>1.8</i>	<i>3.5</i>	<i>-0.3</i>	<i>--</i>	<i>-0.4</i>	
Excess Return			0.8	1.0	0.2	-6.1	-10.9	-8.6	--	-7.7	
Kepos Alternative Risk Premia	10,968,295	2.7	2.0	4.7	11.5	12.6	--	--	--	5.7	Feb-22
<i>SG Multi Alternative Risk Premia Index</i>			<i>2.5</i>	<i>4.2</i>	<i>7.9</i>	<i>9.5</i>	<i>6.0</i>	<i>1.2</i>	<i>--</i>	<i>7.1</i>	
Excess Return			-0.5	0.5	3.6	3.1	--	--	--	-1.4	
Versor Trend Following	16,170,216	4.0	5.6	4.0	1.2	-9.7	--	--	--	5.1	Apr-22
<i>SG Trend Index</i>			<i>3.4</i>	<i>0.8</i>	<i>0.9</i>	<i>-5.2</i>	<i>15.0</i>	<i>9.1</i>	<i>6.2</i>	<i>6.1</i>	
Excess Return			2.2	3.2	0.3	-4.5	--	--	--	-1.0	
Vanguard Long-Term Treasury ETF	12,347,478	3.0	-7.3	-11.9	-8.5	-9.5	-15.8	--	--	-6.7	Jul-19
<i>Blmbg. U.S. Gov Long Index</i>			<i>-7.3</i>	<i>-11.8</i>	<i>-8.5</i>	<i>-9.0</i>	<i>-15.7</i>	<i>-2.8</i>	<i>0.8</i>	<i>-6.5</i>	
Excess Return			0.0	-0.1	0.0	-0.5	-0.1	--	--	-0.2	
Cash	16,049,014	4.0	0.0	0.0	0.0	0.0	0.0	0.8	0.7	0.6	Mar-11

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

**Cash Flow Summary
Month to Date**

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Northern Trust Russell 1000	82,696,891	-	-3,881,740	78,815,151
EARNEST Partners	41,473,502	-	-2,032,734	39,440,769
Wellington Select Quality Equity	23,087,330	-	-811,542	22,275,787
Brown Fundamental Small Cap Value	11,783,990	-	-413,887	11,370,103
Rice Hall James	14,345,949	-	-856,637	13,489,312
Vanguard Developed Markets ETF	15,320,074	-	-679,776	14,640,298
SGA ACWI ex-U.S. Equity	38,655,618	-1,000,000	-688,597	36,967,020
Ramirez	70,461,623	-	-1,764,049	68,697,575
Wellington Core Bond	6,687,686	-	-170,545	6,517,141
Reams	26,694,632	-	-787,117	25,907,515
Polen Capital	9,339,528	-	-9,555	9,329,974
Parametric BXM	11,349,735	-	-243,526	11,106,210
Parametric DeltaShift	11,569,406	-	-517,815	11,051,591
Kepos Alternative Risk Premia	10,752,656	-	215,639	10,968,295
Versor Trend Following	15,310,522	-	859,693	16,170,216
Vanguard Long-Term Treasury ETF	13,361,791	-	-1,014,313	12,347,478
Cash - Money Market	5,496,268	147,746	-	5,644,014
Cash - Treasury	10,245,000	160,000	-	10,405,000
Securities Lending Northern Trust	-	-11,387	11,387	-
OPFRS Total Plan	418,632,202	-703,642	-12,785,112	405,143,449

Benchmark History		
From Date	To Date	Benchmark
OPFRS Total Plan		
06/01/2022	Present	40.0% Russell 3000 Index, 12.0% MSCI AC World ex USA (Net), 31.0% Blmbg. U.S. Universal Index, 2.0% Blmbg. U.S. Corp: High Yield Index, 5.0% CBOE S&P 500 Buy Write Index, 10.0% Crisis Risk Offset Benchmark
01/01/2019	06/01/2022	40.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 31.0% Blmbg. U.S. Universal Index, 5.0% CBOE S&P 500 Buy Write Index, 2.0% Blmbg. U.S. Treasury: Long, 10.0% Crisis Risk Offset Benchmark
05/01/2016	01/01/2019	48.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 20.0% Blmbg. U.S. Universal Index, 20.0% CBOE BXM
10/01/2015	05/01/2016	43.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 20.0% Blmbg. U.S. Universal Index, 15.0% CBOE BXM, 10.0% CPI - All Urban Consumers (unadjusted) +3%
01/01/2014	10/01/2015	48.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 20.0% Blmbg. U.S. Universal Index, 10.0% CBOE BXM, 10.0% CPI - All Urban Consumers (unadjusted) +3%
03/01/2013	01/01/2014	40.0% Russell 3000 Index, 10.0% MSCI AC World ex USA index, 17.0% Blmbg. U.S. Universal Index, 33.0% ICE BofA 3 Month U.S. T-Bill
08/01/2012	03/01/2013	20.0% Russell 3000 Index, 7.0% MSCI AC World ex USA index, 18.0% Blmbg. U.S. Universal Index, 55.0% ICE BofA 3 Month U.S. T-Bill
10/01/2007	08/01/2012	53.0% Russell 3000 Index, 17.0% MSCI AC World ex USA index, 30.0% Blmbg. U.S. Universal Index
04/01/2006	10/01/2007	35.0% Russell 3000 Index, 15.0% MSCI AC World ex USA index, 50.0% Blmbg. U.S. Universal Index
01/01/2005	04/01/2006	35.0% Russell 3000 Index, 50.0% Blmbg. U.S. Aggregate Index, 15.0% MSCI AC World ex USA index
04/01/1998	01/01/2005	20.0% Russell 1000 Value Index, 10.0% Russell 1000 Index, 5.0% Russell Midcap Index, 50.0% Blmbg. U.S. Aggregate Index, 15.0% MSCI EAFE (Net)
09/01/1988	04/01/1998	40.0% S&P 500 Index, 55.0% Blmbg. U.S. Aggregate Index, 5.0% FTSE 3 Month T-Bill

Benchmark History

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

Additional Information

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

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

Fiscal Year: Fiscal year begins on July 1.

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

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

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

Oakland Police and Fire Retirement System

October 2023

Asset Liability Study


Agenda

1. Key Risks to the Plan
2. Actuarial Background and Strategic Considerations
3. Summary and Next Steps

Key Risks to the Plan

What are typical risks to a pension plan?


01



Investments

- Long-term asset appreciation in value
- Asset return volatility


02



Inflation

- Depreciating value of the assets
- Strength of the participant benefits


03



Liquidity

- Ability of assets to pay benefit payments
- Maintain investment policy targets


04



Workforce

- Constant or growing headcount
- Level of hours worked or wages earned


05



Cash Inflow

- Volatility of contribution requirements
- Employer ability to make contributions

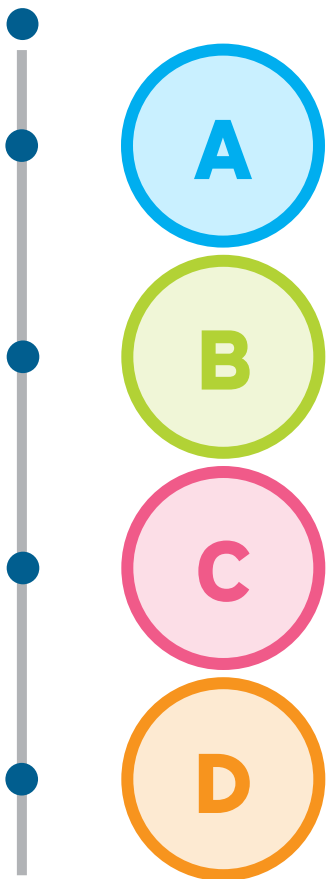
06



Longevity

- Participants receiving benefits beyond expectations

How does Meketa evaluate risks in isolation?



Likelihood

- How likely is a risk to deviate from an assumption?
- Example: Investment Risk - The assets have a very low probability of returning precisely the assumed rate of return every year.

Materiality

- If the risk occurs, how detrimental or beneficial will the result be?
- Example: Longevity Risk - Over the last X years, mortality experience has resulted in X% liability gains or losses.

Quantitative

- Can the outcomes be measured or are the results subject to interpretation?
- Example: Inflation Risk - The appreciation a participant has for the size of the pension benefit varies by person. It cannot be measured precisely.

Impact of Investment Policy

- Can the risk be mitigated with a change to the asset allocation?
- Example: Cash Inflow Risk - Will adjusting the asset allocation affect an employer's ability to make required contributions?

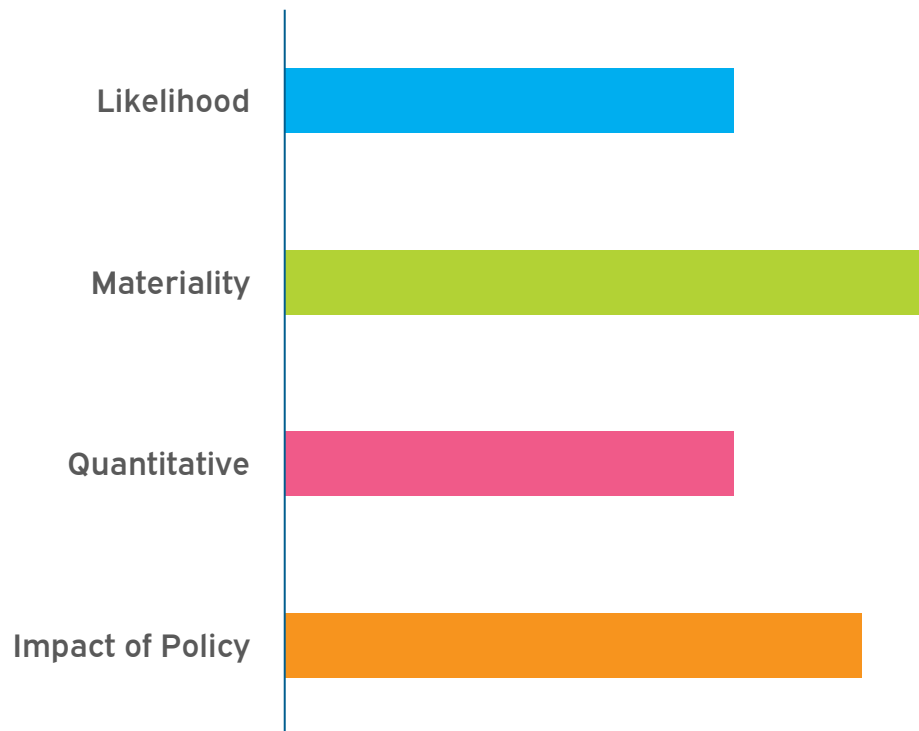
Risk Isolation – Investments

01



Investments

- Long-term asset appreciation in value
- Asset return volatility



- ✓ There is a high likelihood of *annual* asset returns beyond +/- 1% of the assumed rate of return.
- ✓ Over the *long-term*, it is expected that returns will match or exceed the assumption.
- ✓ Volatile asset returns can have a very material effect on the Plan's funded status.
- ✓ The effects of various asset returns are highly quantifiable.
- ✓ There are many different, valid opinions on asset class return expectations.
- ✓ A Plan's asset allocation is the biggest driver of investment risk.
- ✓ No investment policy is investment risk-free.

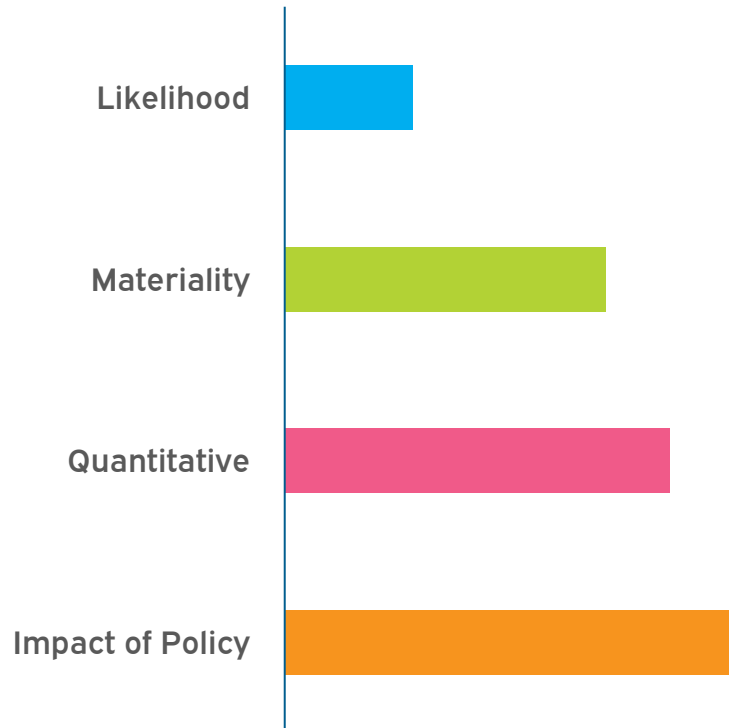
Risk Isolation – Inflation

02



Inflation

- Depreciating value of the assets
- Strength of the participant benefits



- ✓ There is a low likelihood of *annual* inflation beyond +/- 1% of the Plan's assumption (2.25%).
- ✓ The Plan's liability is expected to increase by ~5% if long-term COLA is 3.25%.
- ✓ Sensitivity to inflation changes is highly quantitative.
- ✓ The value of the benefit to each participant is subjective.
- ✓ Asset strategies can be created with a goal of providing benefit increases tied to realized inflation.
- ✓ While certain asset classes have shown correlations to inflation, no asset replicates inflation perfectly.

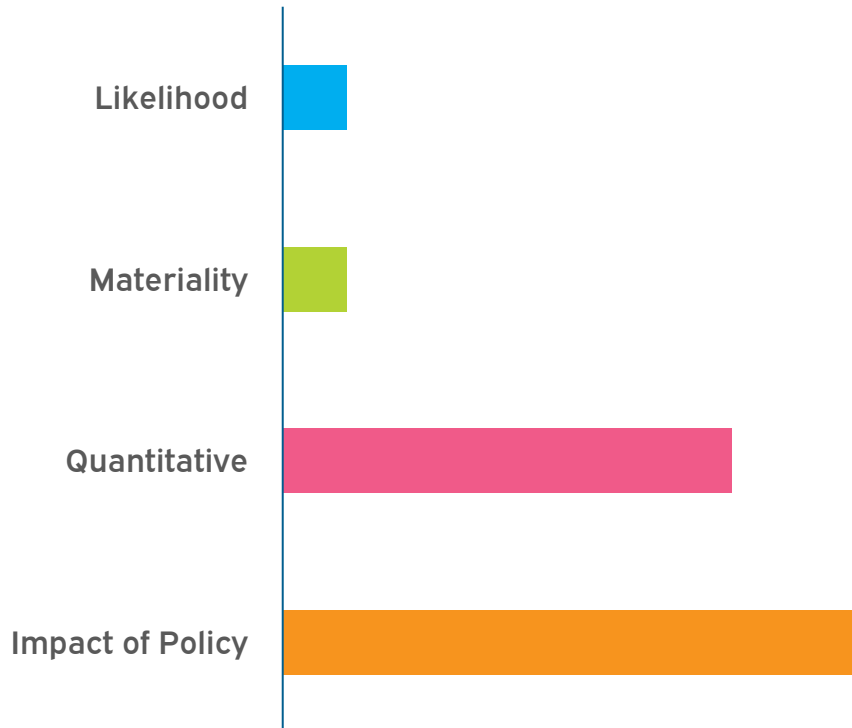
Risk Isolation – Liquidity

03



Liquidity

- Ability of assets to pay benefit payments
- Maintain investment policy targets



- ✓ The portfolio is invested in highly liquid or semi-liquid asset classes.
- ✓ In the event of liquidity issues, the Plan can initiate alternative courses of less-than-ideal actions, such as selling liquid assets at a loss.
- ✓ Liquidity can be tricky to measure given most illiquid assets are not valued frequently or consistently.
- ✓ Certain reasonable assumptions can be made to produce a good, quantitative liquidity analysis.
- ✓ Asset allocation is a primary driver of Plan liquidity.
- ✓ Liquidity in stressed markets can be very unpredictable.

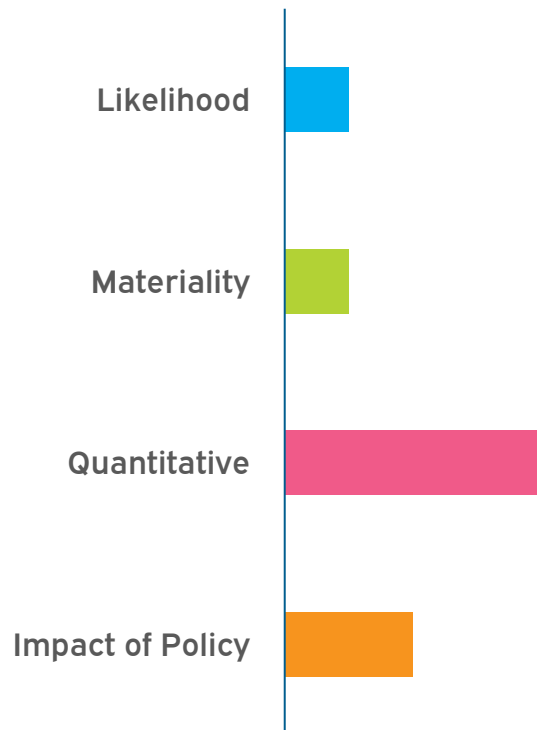
Risk Isolation – Workforce

04



Workforce

- Constant or growing headcount
- Level of hours worked or wages earned

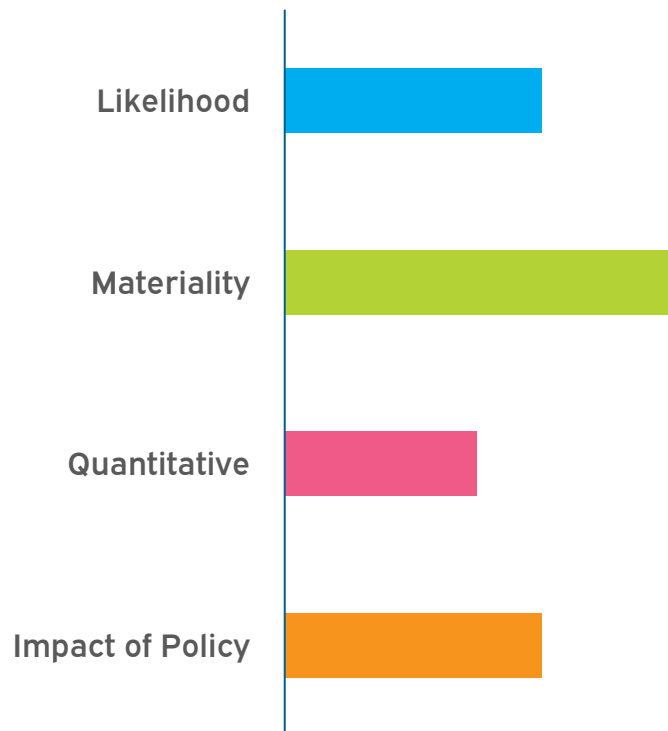


- ✓ The Plans are closed and anticipated to decrease in headcount every year.
- ✓ Contribution requirements are independent of active workforce or hours/payroll levels.
- ✓ Prediction of active headcount can be very difficult due to various outside influences.
- ✓ Various deterministic scenarios or other, more creative approaches can aim to quantify this risk.
- ✓ By and large, asset allocation is not viewed as a solution to mitigate workforce risks.
- ✓ Some pension plans have shown a correlation between economies and hiring/payroll.

Risk Isolation – Cash Inflow

05 **Cash Inflow**

- Volatility of contribution requirements
- Employer ability to make contributions

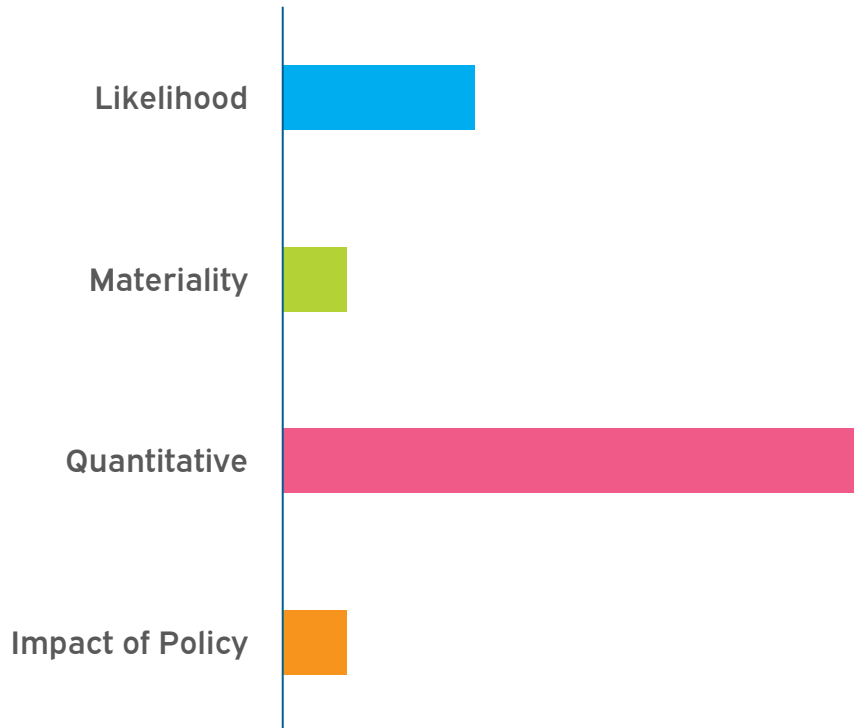


- ✓ Recent history has shown contributions being made to fund the Plan to 100% by 2026.
- ✓ After 2026, experience gains/losses can lead to contribution requirement volatility.
- ✓ It's assumed that the employer will always make the required contribution. This leaves downside risk.
- ✓ Falling behind on making contributions has a compounding impact on future results.
- ✓ The probability of not making required contributions is a risk that is very difficult to quantitatively measure.
- ✓ Contribution volatility can be measured as part of the asset-liability study.
- ✓ Asset allocation can be used to mitigate recommended contribution volatility.
- ✓ However, asset allocation has little correlation with the ability to make pension contributions.

Risk Isolation – Longevity

06 **Longevity**

- Participants receiving benefits beyond expectations



- ✓ Sufficient historical data on longevity creates accurate assumptions.
- ✓ As the covered population get smaller, it becomes harder to predict annual mortality.
- ✓ History of mortality (gains)/losses and the impact on the liability suggests assumptions have done a very good job of predicting experience.
- ✓ Analyzing a Plan's sensitivity to mortality rates is a straightforward exercise.
- ✓ Future mortality improvement is subjective and based on a variety of uncontrollable factors.
- ✓ Asset allocation has little to no correlation to longevity.

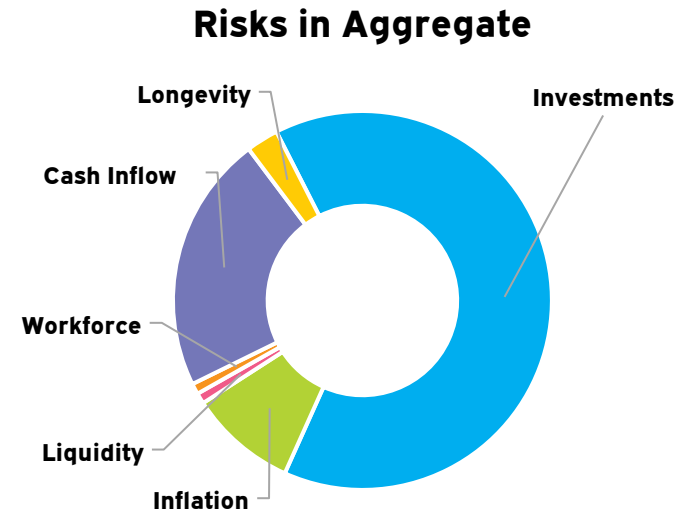
How do you evaluate risks in total (i.e., Enterprise risk)?

The asset-liability study aims to bring together all of the enterprise risks.



Summary of the key risks to Oakland P&F pension

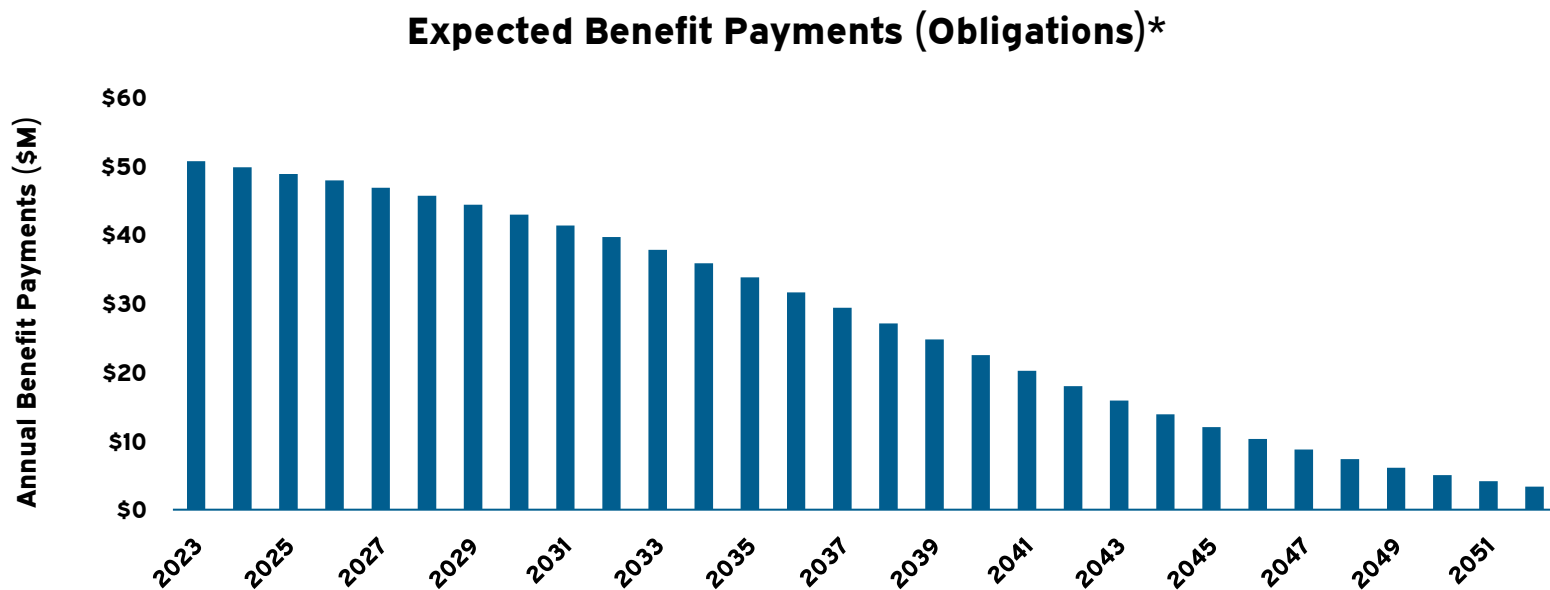
1. **Investments:** Asset return volatility is the biggest risk to the Plan.
2. **Cash Inflow:** After the Plan reaches 100% funded in 2026, it will be important to minimize Plan risks to avoid required contribution volatility.
3. **Inflation:** Future benefits are increased based on salary increases which are generally correlated with inflation. This creates the possibility of liability increases if inflation stays high long-term.



Recommendation: Optimize the asset return and asset return volatility to ensure all investment risks are compensated appropriately. Secondly, discuss strategies for hedging contribution volatility and inflation.

Actuarial Background and Strategic Considerations

How is the liability determined?



- The liability is calculated by discounting the expected benefit payments using the assumed long-term actuarial rate of return (currently 6%).
- Benefit payments are determined by the provisions of the plan, generally based on how long participants work and salary earned.
- *Expected* benefit payments are determined by the plan's actuary using many assumptions, such as future life expectancy and cost-of-living (COLA) increases.

* Expected benefit payments shown were provided by Cheiron as of June 30, 2022.

What pension strategies should be considered?

→ Below are high-level pension strategies that can help a Plan add certainty to desired outcomes.

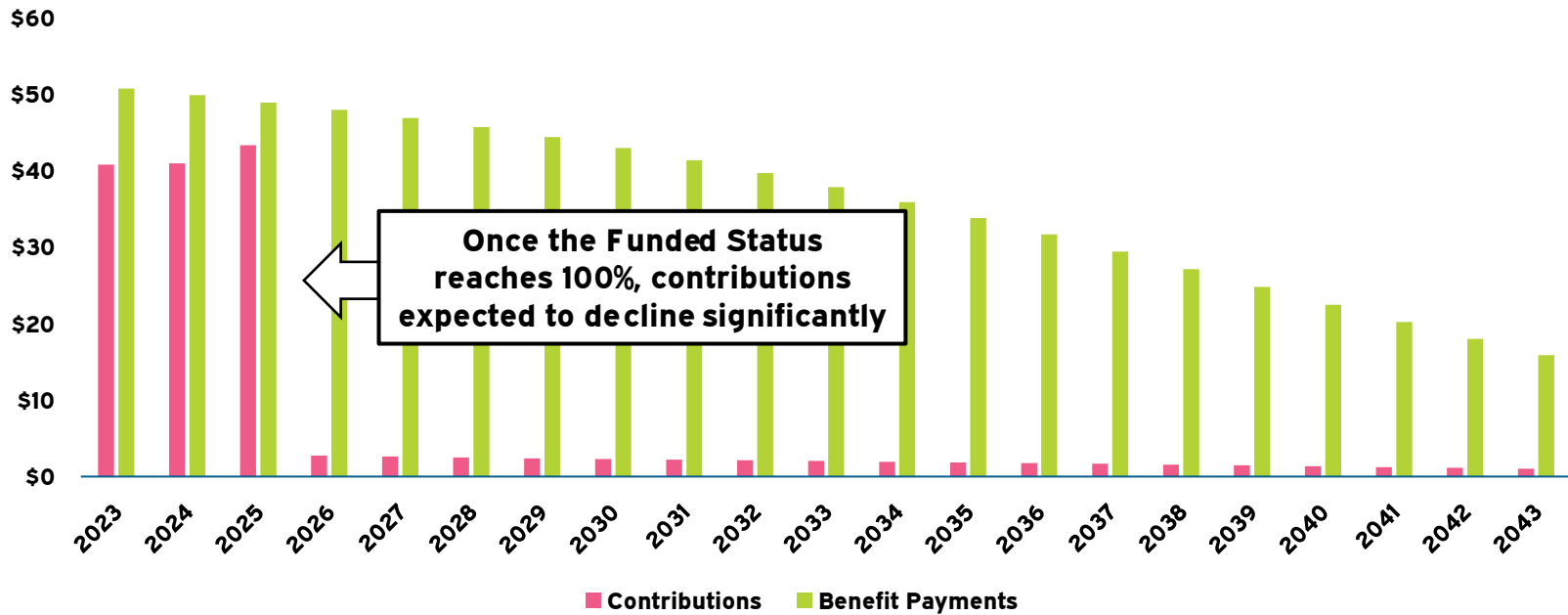
Strategy	Action	Desired Outcome
De-link Assumptions	De-link the expected return on asset assumption and the liability discount rate	Plan has a higher probability of achieving the return necessary to fund the plan on schedule
Dynamic Asset Allocation	As the plan's funded status improves, the investment policy defines how the asset allocation targets should change	Over time the asset allocation shifts from a "growth" orientation into a funded status "protection" posture
Liability-driven Investing	Reallocate assets into income-oriented vehicles that align future income earned with the size and timing of expected benefit payments.	Funded status volatility is reduced, adding predictability to future required contributions.

→ The above strategies can be implemented in isolation or in tandem depending on the plan's pension goals.

What are the key obligations over the next few decades?

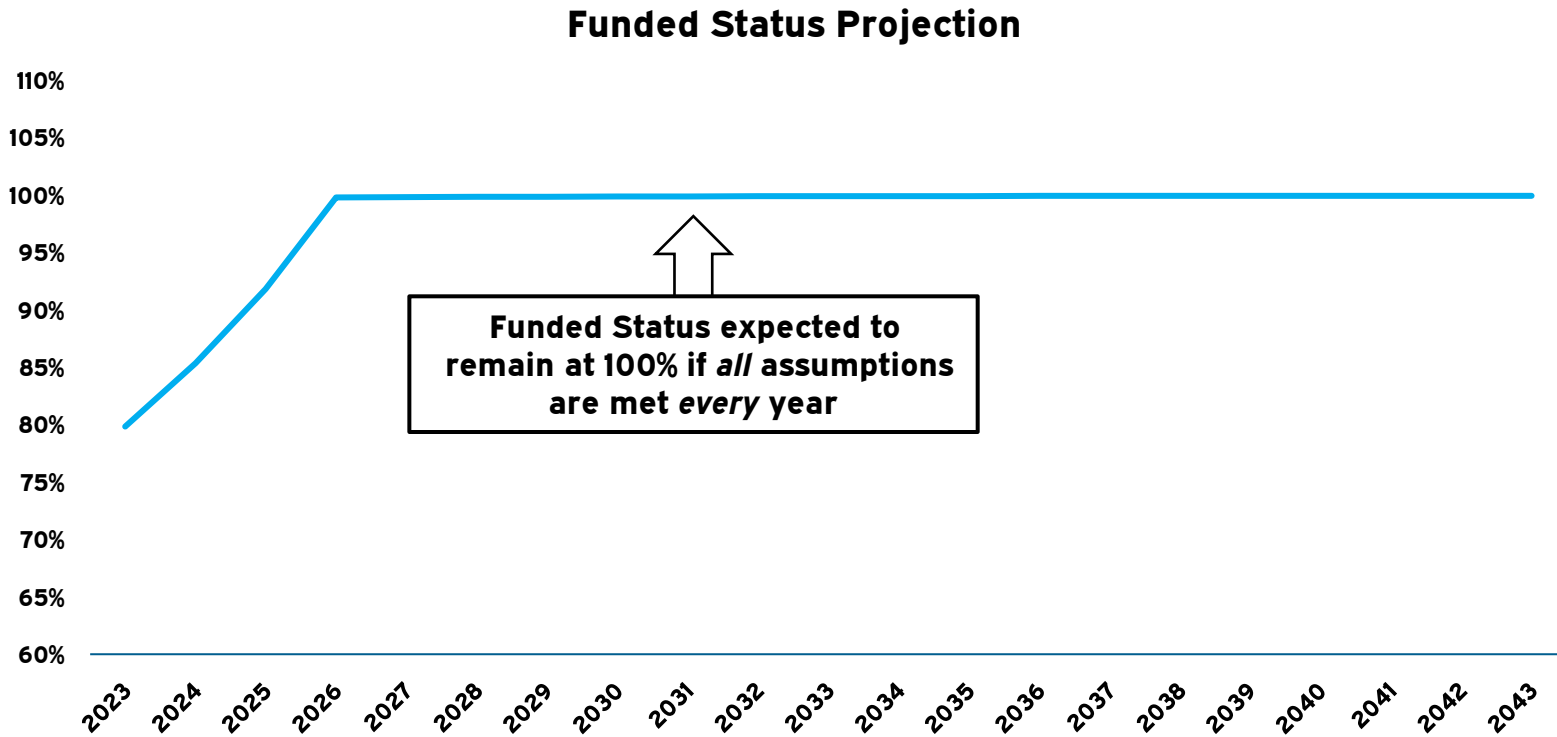
- At the most basic level, the pension plan must pay immediate benefit payment obligations and fund the plan to meet future benefit payment obligations.
- The following example shows the relationship between incoming funds (contributions) and outgoing funds (benefit payments) from the trust.

Expected Plan Inflows & Outflows (\$M)



* Expected cash flows shown were provided by Cheiron as of June 30, 2022.

Why is it important to further analyze cash flow projections?



- The *only* guarantee is that all assumptions will not be met.
- It is very important to measure obligations when assumptions are not met, so stakeholders can gain an appreciation for the risks being taken.

Summary and Next Steps

Summary and Next Steps

Summary

- There is no single definition of Risk in the A/L process
- The goals and objectives of the Oakland Police & Fire plan are unique
- We will be evaluating the plan based on future liabilities and capital market expectations.

Summary and Next Steps

Next Steps

- Determine which asset classes should be included in the portfolio
- Define risk and quantify that definition in the A/L process
 - Dialogue with the board and staff on what risks are important moving forward
- Given the long-term cash flows and liabilities. Designing a portfolio to achieve 6.00% may no longer be required.
- Further define De-risking in the context of OPFRS overall plan health.

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