

Pursuant to the Governor's Executive Order N-29-20, all members of the City Council, as well as the City Administrator, City Attorney and City Clerk will join the meeting via phone/video conference and no teleconference locations are required

Oakland Police and Fire Retirement Board meetings are being held via Tele-Conference. Please see the agenda to participate in the meeting. For additional information, contact the Retirement Unit by calling (510) 238-6481.



**Retirement Unit**  
**150 Frank H. Ogawa Plaza**  
**Oakland, CA 94612**

# AGENDA

## AUDIT COMMITTEE MEMBERS

**John C. Speakman**  
Chairperson

**R. Steve Wilkinson**  
Member

**Kevin Traylor**  
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."*

## REGULAR MEETING of the AUDIT / OPERATIONS COMMITTEE of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS")

**Wednesday, October 28, 2020 – 9:30 am**  
**Tele-Conference Board Meeting**  
**via Zoom**

### 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 three ways to submit public comments.

- eComment. To send your comment directly to staff BEFORE the meeting starts, please email to [mvisaya@oaklandca.gov](mailto:mvisaya@oaklandca.gov) with "PFRS Board Meeting" in the subject line for the corresponding meeting. Please note that eComment submission **closes two (2) hours before posted meeting time.**

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
REGULAR AUDIT COMMITTEE MEETING  
OCTOBER 28, 2020**

- To comment by Zoom video conference, click the “Raise Your Hand” button to request to speak when Public Comment is being taken on an eligible agenda item at the beginning of the meeting. You will be permitted to speak during your turn, allowed to comment, and after the allotted time, re-muted. Instructions on how to “Raise Your Hand” is available at: <https://support.zoom.us/hc/en-us/articles/205566129> - Raise-Hand-In-Webinar.
- To comment by phone, please call on one of the above listed phone numbers. You will be prompted to “Raise Your Hand” by pressing “\*9” to speak when Public Comment is taken. You will be permitted to speak during your turn, allowed to comment, and after the allotted time, re-muted. Please unmute yourself by pressing \*6.

If you have any questions, please email Maxine Visaya, Administrative Assistant II at [mvisaya@oaklandca.gov](mailto:mvisaya@oaklandca.gov)

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**- - - ORDER OF BUSINESS - - -**

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|--------------------|---|
| <b>1. Subject:</b> | <b>PFRS Audit Committee Meeting Minutes</b> |
| <b>From:</b>       | Staff of the PFRS Board                     |

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**Recommendation:** **APPROVE** September 30, 2020 Audit Committee meeting minutes.
- |                    |                                       |
|--------------------|---------------------------------------|
| <b>2. Subject:</b> | <b>Administrative Expenses Report</b> |
| <b>From:</b>       | Staff of the PFRS Board               |

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**Recommendation:** **ACCEPT** an informational report regarding PFRS administrative expenses as of August 31,2020.
- 3. REVIEW OF PENDING AUDIT COMMITTEE MEETING AGENDA ITEMS**
- 4. OPEN FORUM**
- 5. FUTURE SCHEDULING**
- 6. ADJOURNMENT**

**AN AUDIT/OPERATIONS COMMITTEE MEETING** of the Oakland Police and Fire Retirement System (“PFRS”) was held on Wednesday September 30,2020 via Zoom Tele-Conference.

Committee Members Present:

- John C. Speakman Chairman
- Walter L. Johnson, Sr. Member
- Kevin R. Traylor Member

Additional Attendees:

- David Jones Plan Administrator
- Teir Jenkins Staff Member
- Maxine Visaya Staff Member
- Jennifer Logue PFRS Legal Counsel

The Meeting was called to order at 9:00 am

1. **PFRS Audit Committee Meeting Minutes** – Member Traylor made a motion to approve the July 29, 2020 Audit Committee meeting minutes, second by Member Johnson. Motion passed.

[SPEAKMAN – Y/ JOHNSON – Y / TRAYLOR – Y]  
(AYES: 3 / NOES: 0 / ABSTAIN: 0)

2. **Administrative Expenses Report** – Investment Officer Teir Jenkins presented an informational report of the PFRS administrative expenditures as of July 31, 2020.

**MOTION:** Chairperson Speakman made a motion to accept the administrative expenses report, second by Member Johnson. Motion passed.

[SPEAKMAN – Y/ JOHNSON – Y / TRAYLOR – Y]  
(AYES: 3 / NOES: 0 / ABSTAIN: 0)

3. **Resolution No. 8033** – Staff recommends approval of Resolution No.8033, a two-year extension of the professional service agreement between the City of Oakland Police and Fire Retirement System Board and Cheiron, Inc. through June 30, 2022 at fees not to exceed \$46,500 for FY 2020-2021 and \$46,500 for FY2021-2022.

**MOTION:** Member Johnson mad a motion to accept Resolution 8033, as presented, second by Member Traylor. Motion passed.

[SPEAKMAN – Y/ JOHNSON – Y / TRAYLOR – Y]  
(AYES: 3 / NOES: 0 / ABSTAIN: 0)

4. **Review of Pending Audit Committee Meeting Agenda Items** – David Jones provided a brief update on two pending items: (1) The 2006 Management Audit which is still on hold due to COVID-19 restrictions and the need for staff to be on-site to review records and (2) The Ad Hoc Committee regarding the Actuarial Funding date of July 1, 2026 reconvened on September 28, 2020. The 2026 Ad Hoc Committee expects to provide a report to the Board at an upcoming Board meeting.

5. **Open Forum** – No Report

6. **Future Scheduling** – The next Audit Committee Meeting is tentatively scheduled for October 28, 2020 at approximately 9:00 am.

7. **Adjournment** – Member Traylor made a motion to adjourn, second by Member Johnson. Motion Passed.

[SPEAKMAN – Y/ JOHNSON – Y / TRAYLOR – Y]  
(AYES: 3 / NOES: 0 / ABSTAIN: 0)

The meeting adjourned at 9:14 am.

DRAFT

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JOHN C. SPEAKMAN, COMMITTEE CHAIRMAN

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DATE

**Table 1**

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM**

**Administrative Budget Spent to Date (Preliminary)**

As of August 31, 2020

	Approved Budget		August 2020		FYTD		Remaining		Percent Remaining	
<b>Internal Administrative Costs</b>										
PFRS Staff Salaries	\$	1,200,000	\$	84,199	\$	177,600	\$	1,022,400		85.2%
Board Travel Expenditures		52,500		-		-		52,500		100.0%
Staff Training		20,000		-		-		20,000		100.0%
Staff Training - Tuition Reimbursement		7,500		-		-		7,500		100.0%
Annual Report & Duplicating Services		4,000		-		-		4,000		100.0%
Board Hospitality		3,600		-		-		3,600		100.0%
Payroll Processing Fees		40,000		-		-		40,000		100.0%
Miscellaneous Expenditures		40,000		798		798		39,202		98.0%
Internal Service Fees (ISF)		88,000		-		-		88,000		100.0%
Contract Services Contingency		50,000		-		1,200		48,800		97.6%
<b>Internal Administrative Costs Subtotal :</b>	<b>\$</b>	<b>1,505,600</b>	<b>\$</b>	<b>84,997</b>	<b>\$</b>	<b>179,598</b>	<b>\$</b>	<b>1,326,002</b>		<b>88.1%</b>
<b>Actuary and Accounting Services</b>										
Audit	\$	45,000	\$	-	\$	-	\$	45,000		100.0%
Actuary		46,500		-		-		46,500		100.0%
<b>Actuary and Accounting Subtotal:</b>	<b>\$</b>	<b>91,500</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>91,500</b>		<b>100.0%</b>
<b>Legal Services</b>										
City Attorney Salaries	\$	188,000	\$	16,490	\$	30,462	\$	157,538		83.8%
Legal Contingency		150,000		-		-		150,000		100.0%
<b>Legal Services Subtotal:</b>	<b>\$</b>	<b>338,000</b>	<b>\$</b>	<b>16,490</b>	<b>\$</b>	<b>30,462</b>	<b>\$</b>	<b>307,538</b>		<b>91.0%</b>
<b>Investment Services</b>										
Money Manager Fees	\$	1,353,000	\$	-	\$	-	\$	1,353,000		100.0%
Custodial Fee		124,000		-		-		124,000		100.0%
Investment Consultant (Meketa)		100,000		-		-		100,000		100.0%
<b>Investment Subtotal:</b>	<b>\$</b>	<b>1,577,000</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>1,577,000</b>		<b>100.0%</b>
<b>Total Operating Budget</b>	<b>\$</b>	<b>3,512,100</b>	<b>\$</b>	<b>101,486</b>	<b>\$</b>	<b>210,059</b>	<b>\$</b>	<b>3,302,041</b>		<b>94.02%</b>

Table 2

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Cash in Treasury (Fund 7100) - Preliminary

As of August 31, 2020

	August 2020
<b>Beginning Cash as of 7/31/2020</b>	\$ 6,141,506
<b>Additions:</b>	
City Pension Contribution - Aug	\$ 3,637,333
Investment Draw	\$ 1,000,000
Misc. Receipts	-
<b>Total Additions:</b>	\$ 4,637,333
<b>Deductions:</b>	
Pension Payment (July Pension Paid on 8/1/2020)	(4,283,915)
Expenditures Paid	(156,284)
<b>Total Deductions</b>	\$ (4,440,199)
 <b>Ending Cash Balance as of 8/31/2020*</b>	 \$ 6,338,640

\* On 9/1/2020, August pension payment of appx \$4,475,000 will be made leaving a cash balance of \$1,864,000

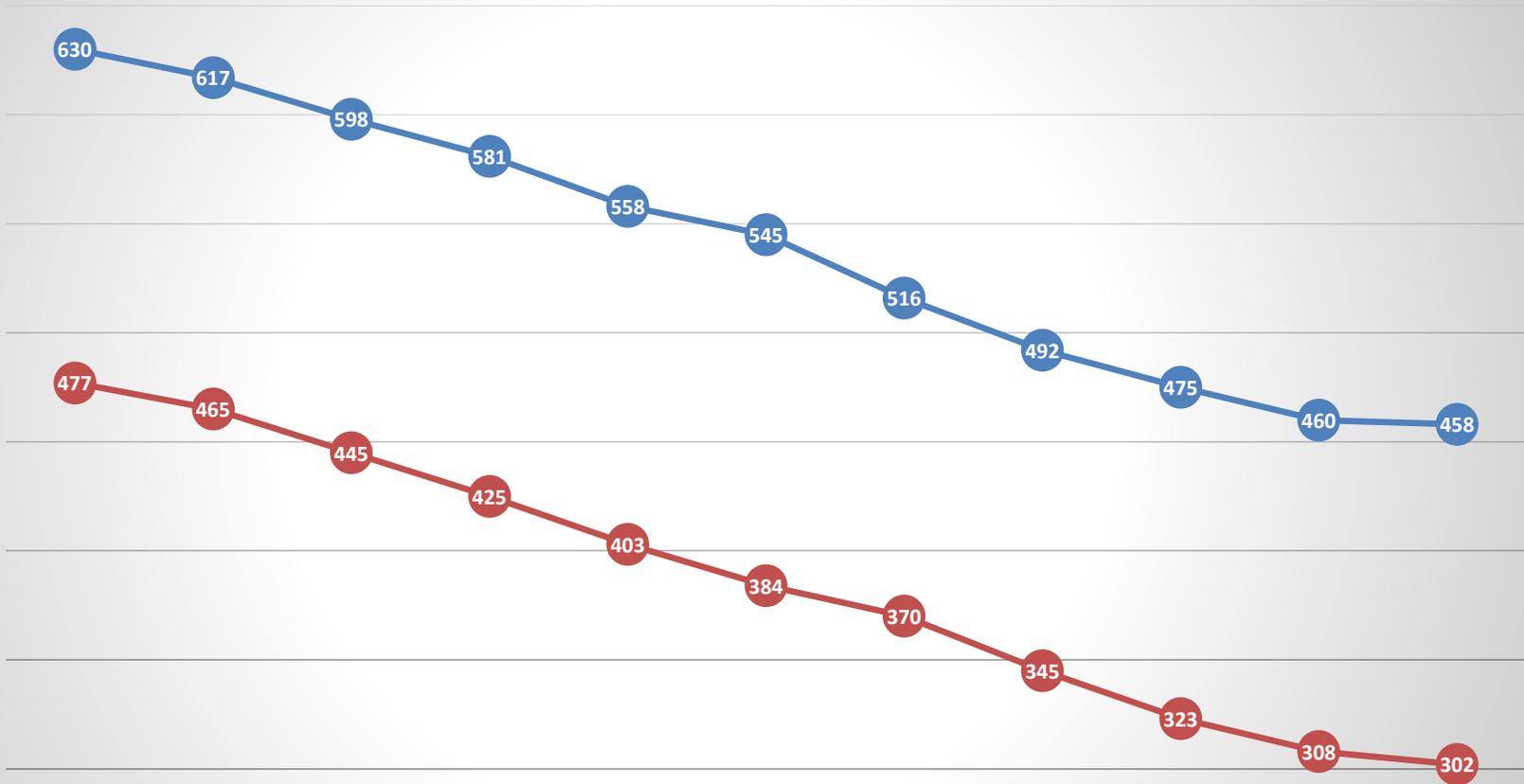
**Table 3**  
**CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM**

Census  
As of August 31, 2020

COMPOSITION	POLICE	FIRE	TOTAL
<b>Retired Member:</b>			
Retiree	338	194	532
Beneficiary	120	108	228
<b>Total Retired Members</b>	<b>458</b>	<b>302</b>	<b>760</b>
<b>Total Membership:</b>	<b>458</b>	<b>302</b>	<b>760</b>

COMPOSITION	POLICE	FIRE	TOTAL
<b>Retired Member:</b>			
Service Retirement	305	153	458
Disability Retirement	140	136	276
Death Allowance	13	13	26
<b>Total Retired Members:</b>	<b>458</b>	<b>302</b>	<b>760</b>
<b>Total Membership as of August 31, 2020:</b>	<b>458</b>	<b>302</b>	<b>760</b>
<b>Total Membership as of June 30, 2020:</b>	<b>460</b>	<b>308</b>	<b>768</b>
<b>Annual Difference:</b>	<b>-2</b>	<b>-6</b>	<b>-8</b>

## Oakland Police and Fire Retirement System Pension Plan Membership Count As of August 31, 2020 (FY 2011 - FY 2021)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021 FYTD
Police	630	617	598	581	558	545	516	492	475	460	458
Fire	477	465	445	425	403	384	370	345	323	308	302
Total	1107	1082	1043	1006	961	929	886	837	798	768	760



# AGENDA REPORT

**TO:** Oakland Police and Fire  
Retirement Board

**FROM:** David Jones  
Plan Administrator

**SUBJECT:** Audit Committee Agenda Pending List

**DATE:** October 19, 2020

	SUBJECT	TENTATIVE SCHEDULED MTG DATE	STATUS
1	Status Report of the Ad Hoc Committee regarding Actuarial Funding date of July 1, 2026	10/26/2020	
2	Staff review of the 2006 Management Audit.	TBD	

Respectfully submitted,

David Jones, Plan Administrator  
Oakland Police and Fire Retirement System

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

# AGENDA

## INVESTMENT COMMITTEE MEMBERS

**Jaime T. Godfrey**  
Chairperson  
**R. Steve Wilkinson**  
Member  
**Robert W. Nichelini**  
Member

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## **REGULAR MEETING of the INVESTMENT AND FINANCIAL MATTERS COMMITTEE of the OAKLAND POLICE AND FIRE RETIREMENT SYSTEM ("PFRS")**

**Wednesday, October 28, 2020**

**10:00 am**

**Tele-Conference Board Meeting  
via Zoom**

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**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
REGULAR INVESTMENT COMMITTEE MEETING  
OCTOBER 28, 2020**

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If you have any questions, please email Maxine Visaya, Administrative Assistant II at [mvisaya@oaklandca.gov](mailto:mvisaya@oaklandca.gov)

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**- - - ORDER OF BUSINESS - - -**

- |                        |   |
|------------------------|---|
| <b>1. Subject:</b>     | <b>PFRS Investment Committee Meeting Minutes</b>                        |
| <b>From:</b>           | Staff of the PFRS Board   |
| <b>Recommendation:</b> | <b>APPROVE</b> September 30, 2020 Investment Committee meeting minutes. |
  
- |                        |   |
|------------------------|---|
| <b>2. Subject:</b>     | <b>Investment Market Overview</b>   |
| <b>From:</b>           | Meketa Investment Group   |
| <b>Recommendation:</b> | <b>ACCEPT</b> an informational report on the global investment markets as of September 30, 2020 |
  
- |                        |  |
|------------------------|--|
| <b>3. Subject:</b>     | <b>Preliminary Investment Fund Quarterly Performance Update as of September 30, 2020</b>             |
| <b>From:</b>           | Meketa Investment Group  |
| <b>Recommendation:</b> | <b>ACCEPT</b> the Preliminary Investment Fund Quarterly Performance update as of September 30, 2020. |
  
- |                        |  |
|------------------------|--|
| <b>4. Subject:</b>     | <b>Informational Presentation – Collapsing Global Interest Rates/Negative Interest Rates</b>                           |
| <b>From:</b>           | Meketa Investment Group  |
| <b>Recommendation:</b> | <b>RECEIVE</b> an Informational Presentation on the topic of collapsing global interest rates/negative interest rates. |

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
REGULAR INVESTMENT COMMITTEE MEETING  
OCTOBER 28, 2020

5. **Subject:** Options to Consider a New PFRS Investment Manager to Implement the Crisis Risk Offset Systematic Trend Following/Alternative Risk Premia Investment Strategy
- From:** Meketa Investment Group
- 
- Recommendation:** **ACCEPT** an informational report regarding the options to consider a new PFRS Investment Manager to implement the Crisis Risk Offset Systematic Trend Following/Alternative Risk Premia Investment Strategy.
6. **Subject:** Draft Emergency Procedures for Terminating or Limiting Trading Discretion of PFRS Investment Managers to Protect PFRS Fund Assets
- From:** Staff of the PFRS Board and Meketa Investment Group
- 
- Recommendation:** **RECEIVE** draft proposal for possible Emergency Procedures for terminating or limiting trading discretion of PFRS Investment Managers to protect PFRS Fund Assets **DISCUSS** the Committee's recommended course of action with regard to Emergency Procedures for terminating or limiting trading discretion of PFRS Investment Managers to protect PFRS Fund Assets
7. **Subject:** Investment Manager Performance Review – Parametric Portfolio Associates, LLC, a PFRS Covered Calls Investment Manager
- From:** Parametric Portfolio Associates, LLC
- 
- Recommendation:** **RECEIVE** informational report regarding the investment performance of Parametric Portfolio Associates, LLC, a PFRS Covered Calls Investment Manager.
8. **Subject:** Investment Manager Performance Review – Parametric Portfolio Associates, LLC, a PFRS Covered Call Investment Manager
- From:** Meketa Investment Group
- 
- Recommendation:** **RECEIVE** informational report regarding the investment performance of Parametric Portfolio Associates, LLC, a PFRS Covered Calls Investment Manager **DISCUSS** exercising the option to extend the agreement one-year with Parametric Portfolio Associates, LLC, a PFRS Covered Calls Investment Manager **RECOMMEND BOARD APPROVAL** of the Committee's recommended course of action with regard to exercising the option to extend the agreement.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
REGULAR INVESTMENT COMMITTEE MEETING  
OCTOBER 28, 2020**

- 9. Schedule of Pending Investment Committee Meeting Agenda Items**
- 10. Open Forum**
- 11. Future Scheduling**
- 12. Adjournment**

**AN INVESTMENT AND FINANCIAL MATTERS COMMITTEE MEETING** of the Oakland Police and Fire Retirement System (“PFRS”) was held September 30, 2020 via Zoom Tele-Conference.

- Committee Members:
- Jamie T. Godfrey      Chairperson
  - R. Steven Wilkinson      Member \*(Initially absent at start of meeting)
  - Robert W. Nichelini      Member
- Additional Attendees:
- David Jones      Plan Administrator
  - Jennifer Logue      PFRS Legal Counsel
  - Teir Jenkins      Staff Member
  - Maxine Visaya      Staff Member
  - David Sancewich      Meketa Investment Group
  - Paola Nealon      Meketa Investment Group
  - Sidney Kawanguzi      Meketa Investment Group
  - James Haddon      Ramirez Asset Management
  - Samuel Ramirez Jr.      Ramirez Asset Management
  - Thao Buuhoan      Rice Hall James & Associates, LLC
  - Lou Holtz      Rice Hall James & Associates, LLC
  - Yossi Lipsker      Rice Hall James & Associates, LLC
  - Mike Meoli      Rice Hall James & Associates, LLC

The meeting was called to order at 10:00 am

1. **Approval of Investment Committee meeting minutes** – Chairperson Godfrey noted one correction was necessary on item six to reflect the correct number of member votes to two ayes and one abstain. Chairperson Godfrey made a motion to approve the minutes with the noted correction to be made, second by Nichelini. The motion passed.

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

2. **Investment Market Overview** – David Sancewich provided an informational report on the global economic factors affecting the PFRS Fund as of August 31, 2020, including the impact of the Coronavirus on the world investment markets. Chairperson Godfrey and Plan Administrator Jones asked what actions, if any, should be taken in consideration of the possibility of a repeat of market volatility. Mr. Sancewich emphasized that now is not the time for PFRS to take undue risk, follow policy, and continue to further de-risk the PFRS portfolio by moving assets into capital preservation.

**MOTION:** Chairperson Godfrey made a motion to accept and move the informational report from Meketa regarding the global economic factors as of August 31, 2020 to the Full Board, second by Member Nichelini. Motion passed.

[GODFREY – Y/ NICHELINI – Y/ WILKINSON – Y]  
(AYES: 3/ NOES: 0/ ABSTAIN: 0)

3. **\$13.9 Million Drawdown for Fiscal Year 2020/2021 (Quarter Ending December 2020) Member Allowances** – David Sancewich presented the details of the Meketa report describing the drawdown of funds, which includes a \$10.9 Million contribution from the City of Oakland and a \$3.0 Million contribution from the PFRS Investment Fund, to pay for the PFRS member retirement allowances to its members for the period of October 2020 through December 2020.

**MOTION:** Member Nichelini made a motion to recommend Board Approval of the member allowances drawdown of funds to pay the PFRS member retirement allowances for the period of October 2020 through December 2020, second by Member Wilkinson. Motion passed.

[GODFREY – Y/ NICHELINI – Y/ WILKINSON – Y]  
(AYES: 3/ NOES: 0/ ABSTAIN: 0)

4. **Preliminary Investment fund Performance Update as of August 31, 2020** – David Sancewich reported on the details of the Preliminary Investment Fund Performance Update as of August 31, 2020.

**MOTION:** Chairperson Godfrey made a motion to accept and move the performance update report as of August 31, 2020 from Meketa to the Full Board, second by Member Nichelini. Motion passed.

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

5. **Investment Manager Overview – Ramirez Asset Management** – James Haddon and Samuel Ramirez Jr. from Ramirez Asset Management, a PFRS Domestic Core Fixed Income Investment Manager, presented an informational report providing a firm update, detailing their investment portfolio performance, strategy, diversity, and managerial assessment.

**MOTION:** Chairperson Godfrey made a motion to accept the informational report presented by Ramirez Asset Management, second by Member Wilkinson. Motion Passed.

[GODFREY – Y/ NICHELINI – Y/ WILKINSON – Y]  
(AYES: 3/ NOES: 0/ ABSTAIN: 0)

6. **Investment Manager Overview – Ramirez Asset Management** – Paola Nealon presented an evaluation of Ramirez Asset Management, a PFRS Domestic Core Fixed Income Investment Manager and noted Meketa continues to have confidence in Ramirez Asset Management and has no concerns at this time.

**MOTION:** Chairperson Godfrey made a motion to accept the comments from Meketa regarding the evaluation of the Ramirez Asset Management overview, second by Member Nichelini. Motion Passed.

[GODFREY – Y/ NICHELINI – Y/ WILKINSON – Y]  
(AYES: 3/ NOES: 0/ ABSTAIN: 0)

7. **Investment Manager Overview – Rice Hall James & Associates, LLC** – Mike Meoli, Thao Buuhoan, Lou Holtz and Yosi Lipsker from Rice Hall James & Associates presented an informational report providing a firm update, detailing their investment portfolio performance, strategy, diversity, and managerial assessment.

**MOTION:** Chairperson Godfrey made a motion to accept the informational report received from Rice Hall James & Associates, LLC, second by Member Nichelini. Motion Passed.

[GODFREY – Y/ NICHELINI – Y/ WILKINSON – Y]  
(AYES: 3/ NOES: 0/ ABSTAIN: 0)

8. **Investment Manager Overview – Rice Hall James & Associates, LLC** – Paola Nealon presented an informational report discussing the performance of Rice Hall James & Associates, provided context to the reason for underperformance and the initial need to place them on watch status. Ms. Nealon noted although they had strong performance for the quarter as of June 30, 2020, they continue to lag. Meketa Investment Group continues to recommend they remain on watch status but does not have any concerns at this time with the manager, the firm, or the people supporting and driving this product.

**MOTION:** Chairperson Godfrey made a motion to accept the evaluation, review, and recommendation from Meketa Investment Group to continue to keep Rice Hall James & Associates, LLC on watch status, second by Member Nichelini. Motion Passed.

[GODFREY – Y/ NICHELINI – Y/ WILKINSON – Y]  
(AYES: 3/ NOES: 0/ ABSTAIN: 0)

9. **Updated List of Thermal Coal Companies Prohibited from the PFRS Investment Portfolio** – David Sancewich reported on the updated list of Thermal Coal Companies prohibited from the PFRS Investment Portfolio, noting it is essentially unchanged from the list from last year. Mr. Sancewich will update the PFRS Investment Policy to reflect this list and update the Portfolio Managers.

**MOTION:** Chairperson Godfrey made a motion to accept the updated list of Thermal Coal companies prohibited from the PFRS Investment Portfolio from Meketa Investment Group, second by Member Wilkinson. Motion passed.

[GODFREY – Y/ NICHELINI – Y/ WILKINSON – Y]  
(AYES: 3/ NOES: 0/ ABSTAIN: 0)

10. **Informational Report Regarding Emergency Procedures for Terminating or Limiting Trading Discretion of PFRS Investment Managers to Protect PFRS Fund Assets** – Plan Administrator Jones presented the informational report regarding emergency procedures for termination or limiting trading discretion of PFRS Investment Managers to protect PFRS Fund Assets for discussion. Members and staff discussed the examples provided and various options regarding possibilities to move forward in the event of an emergency situation.

**MOTION:** Chairperson Godfrey made a motion to bring this item back next month with one or two recommendations to the committee as an action item to take to the full board, second by Member Nichelini. Motion passed.

[GODFREY – Y/ NICHELINI – Y/ WILKINSON – Y]  
(AYES: 3/ NOES: 0/ ABSTAIN: 0)

11. **Termination of Service Agreement with Parametric Portfolio Associates, LLC Crisis Risk Offset Systematic Alternative Risk Premia (SARP) Strategy** – David Sancewich reported on September 22, 2020 Meketa received a phone call from Parametric Portfolio Associates, LLC informing them that the largest investor in the SARP Strategy will be pulling their assets out as of October 1, 2020. As a result, Parametric will be closing down the fund as of October 1, 2020 and PFRS assets will be returned. Meketa recommended moving 50% of the assets to a new Barclay's Aggregate Exchange Traded Fund (ETF) within the fixed income class and 50% to the Long Duration ETF within Crisis Risk Offset.

**MOTION:** Member Nichelini made a motion to accept the report regarding Parametric Portfolio Associates, LLC Crisis Risk Offset Systematic Alternative Risk Premia (SARP) Strategy and move forward with the recommendation from Meketa to move 50% of the assets to a new Barclay's Aggregate Exchange Traded Fund (ETF) within the fixed income class and 50% to the Long Duration ETF within Crisis Risk Offset, second by Member Wilkinson. Motion passed.

[GODFREY – Y/ NICHELINI – Y/ WILKINSON – Y]  
(AYES: 3/ NOES: 0/ ABSTAIN: 0)

12. **Resolution No. 8002 – Resolution ratifying the August 26, 2020 motion Of The Oakland Police and Fire Retirement System Board to hire Wellington Management Company, LLP to serve as the Core Fixed Income Asset Class Investment Manager for the Oakland Police and Fire Retirement System at a management fee rate not to exceed 15 basis points (15 BPS or 0.15 percent) of the portfolio’s annual asset value and authorizing the President of the Police And Fire Retirement System Board to execute a professional services agreement with Wellington Management Company, LLP. –** PFRS Staff Member Jenkins recommended to ratify Resolution No. 8002 to hire Wellington Management Company, LLP to serve as the Core Fixed Income Asset Class Investment Manager for the Oakland Police and Fire Retirement System.

**MOTION:** Member Nichelini made a motion to ratify Resolution No. 8002 the August 26, 2020 motion Of The Oakland Police and Fire Retirement System Board to hire Wellington Management Company, LLP to serve as the Core Fixed Income Asset Class Investment Manager for the Oakland Police and Fire Retirement System at a management fee rate not to exceed 15 basis points (15 BPS or 0.15 percent) of the portfolio’s annual asset value and authorizing the President of the Police And Fire Retirement System Board to execute a professional services agreement with Wellington Management Company, LLP, second by Chairperson Godfrey. Motion passed.

[GODFREY – Y/ NICHELINI – Y/ WILKINSON – Y]  
(AYES: 3/ NOES: 0/ ABSTAIN: 0)

13. **Schedule of Pending Investment Committee Meeting Agenda Items** – David Sancewich reported the agenda items scheduled for the upcoming Investment Committee meeting.
14. **Open Forum** – No Report
15. **Future Scheduling** – The next Investment Committee Meeting is tentatively scheduled for October 28, 2020 at approximately 10:00 am.
16. **Adjournment** – Member Nichelini made a motion to adjourn, second by Chairperson Godfrey. Motion passed.

[GODFREY – Y/ NICHELINI – Y/ WILKINSON – Y]  
(AYES: 3/ NOES: 0/ ABSTAIN: 0)

The meeting adjourned at 11:57 am

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JAMIE T. GODFREY, COMMITTEE CHAIRPERSON

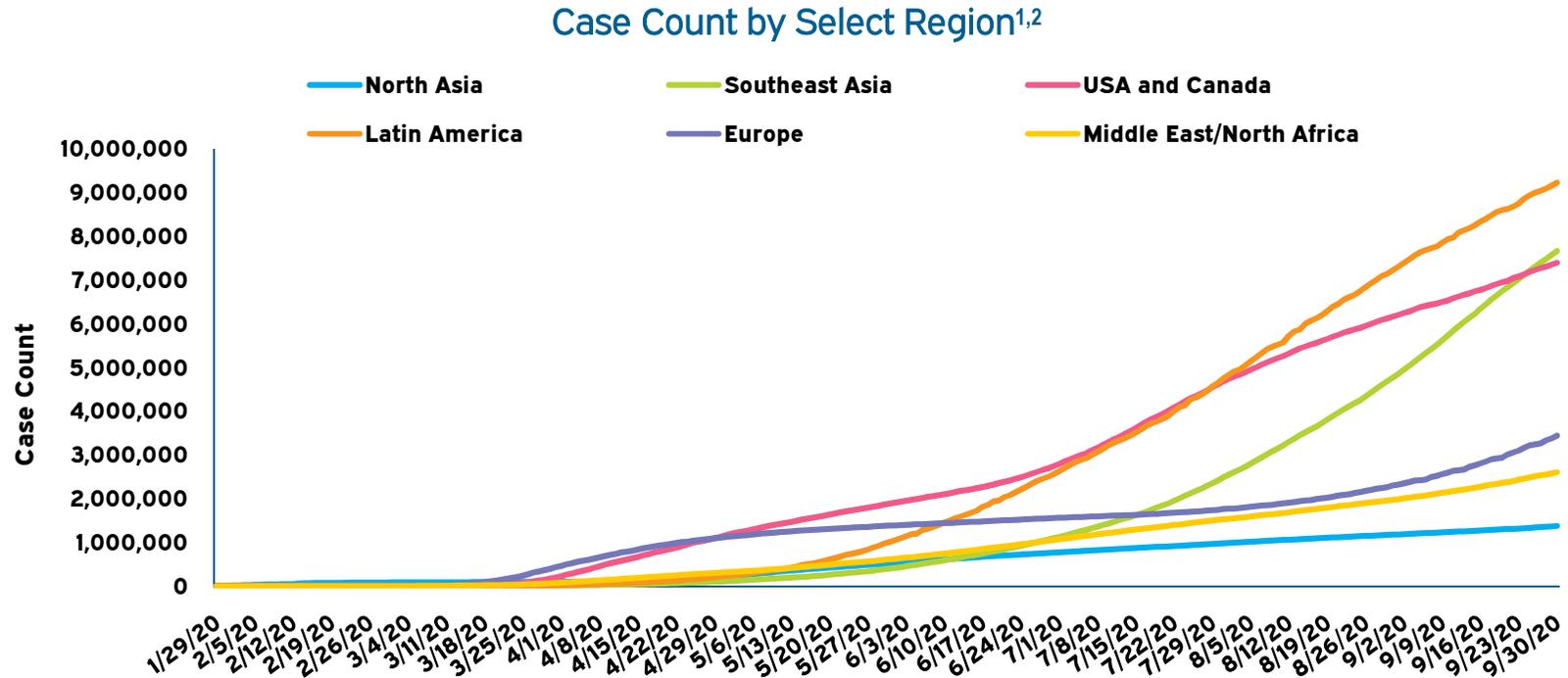
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DATE

# Economic and Market Update

Data as of September 30, 2020



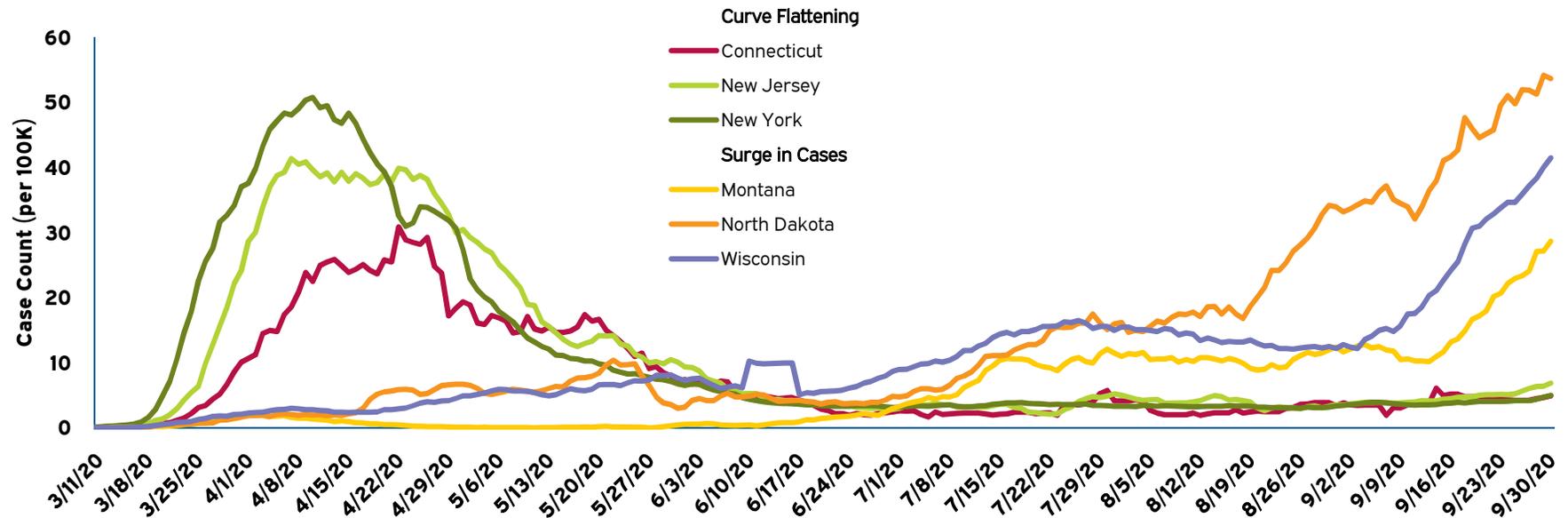


- Cases of COVID-19 continue to grow globally with now over 40 million reported cases across 189 countries.
- The US still has the highest number of cases, with India surpassing Brazil for the second spot. Latin America in aggregate remains a hotspot, with Russia, France, and Spain also experiencing high case counts.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020.

<sup>2</sup> North Asia: China, Hong Kong, Japan, Russia, South Korea, and Taiwan. Southeast Asia: Singapore, India, Indonesia, Malaysia, Pakistan, Philippines, Thailand, Bangladesh, Sri Lanka, and Vietnam. Europe: Austria, Belarus, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Hungary, Italy, Netherlands, Norway, Poland, Romania, Spain, Sweden, United Kingdom, Switzerland, and Ukraine. Latin America: Chile, Brazil, Mexico, Argentina, Colombia, Peru, Venezuela, Ecuador, Panama, Paraguay, Costa Rica, Bolivia, Uruguay, El Salvador, Honduras, Cuba, Dominican Republic, Haiti, and Nicaragua. Middle East/North Africa: Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Turkey, Tunisia, United Arab Emirates, and Yemen.

### New Daily Reported COVID-19 Cases<sup>1</sup>



- Some states experienced initial spikes in cases with subsequent improvements, while other states fared better early on with recent case spikes.
- As we move into the colder months, flu season and the reopening of schools in some areas could create additional stresses on the healthcare system.
- The recent increase in cases in some states has sparked concerns that the trend will continue throughout the country.

<sup>1</sup> Source: TrackTheRecovery. Data is as of September 30, 2020.

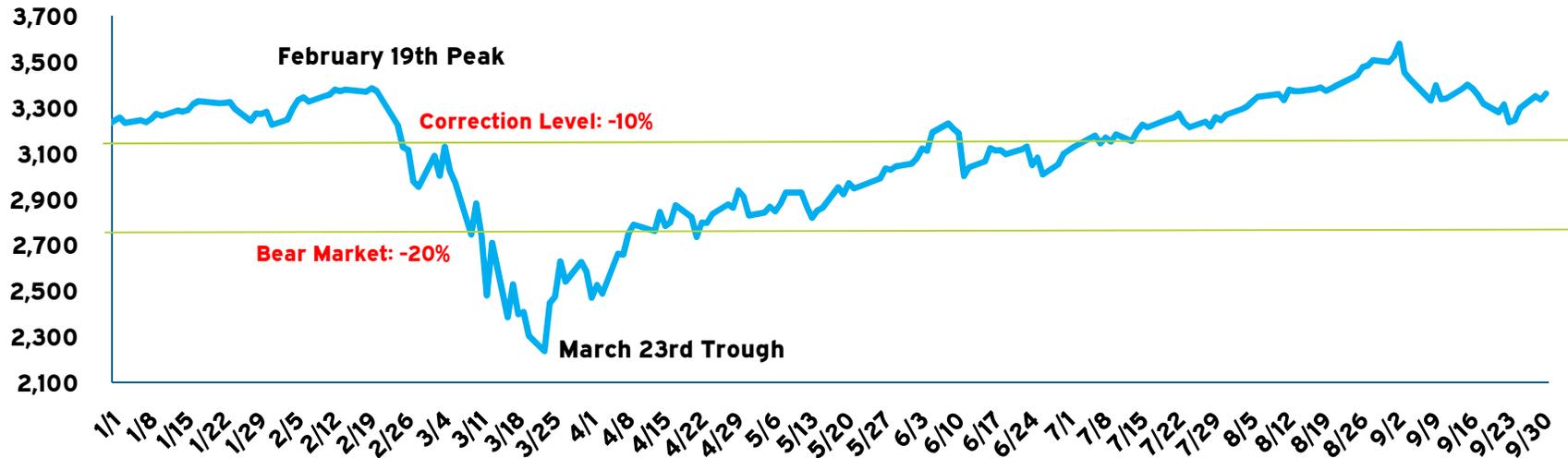
**Market Returns<sup>1</sup>**

Indices	September	YTD	1 Year	3 Year	5 Year	10 Year
S&P 500	-3.8%	5.6%	15.1%	12.3%	14.1%	13.7%
MSCI EAFE	-2.6%	-7.1%	0.5%	0.6%	5.3%	4.6%
MSCI Emerging Markets	-1.6%	-1.2%	10.5%	2.4%	9.0%	2.5%
MSCI China	-2.7%	16.4%	33.6%	7.9%	13.5%	6.5%
Bloomberg Barclays Aggregate	-0.1%	6.8%	7.0%	5.2%	4.2%	3.6%
Bloomberg Barclays TIPS	-0.4%	9.2%	10.1%	5.8%	4.6%	3.6%
Bloomberg Barclays High Yield	-1.0%	0.6%	3.3%	4.2%	6.8%	6.5%
10-year US Treasury	0.2%	12.8%	10.8%	6.7%	4.6%	4.3%
30-year US Treasury	0.1%	23.9%	17.9%	12.4%	9.3%	7.8%

- In September, most asset classes declined, particularly riskier ones, possibly influenced by gridlock over the next round of US fiscal stimulus, the approaching presidential election, and fears over rising virus cases. Notably, September declines followed five straight months of substantial gains.
- Overall, global risk assets have recovered meaningfully from their lows, largely driven by record fiscal and monetary policy stimulus. The S&P 500 has appreciated by over 56% from its mid-March trough.
- Despite the recovery in risk assets, yields on safe-haven assets like US Treasuries remain close to record lows due to expectations for extremely accommodative monetary policy for the foreseeable future and for relatively weak economic growth.

<sup>1</sup> Source: InvestorForce and Bloomberg. Data is as of September 30, 2020.

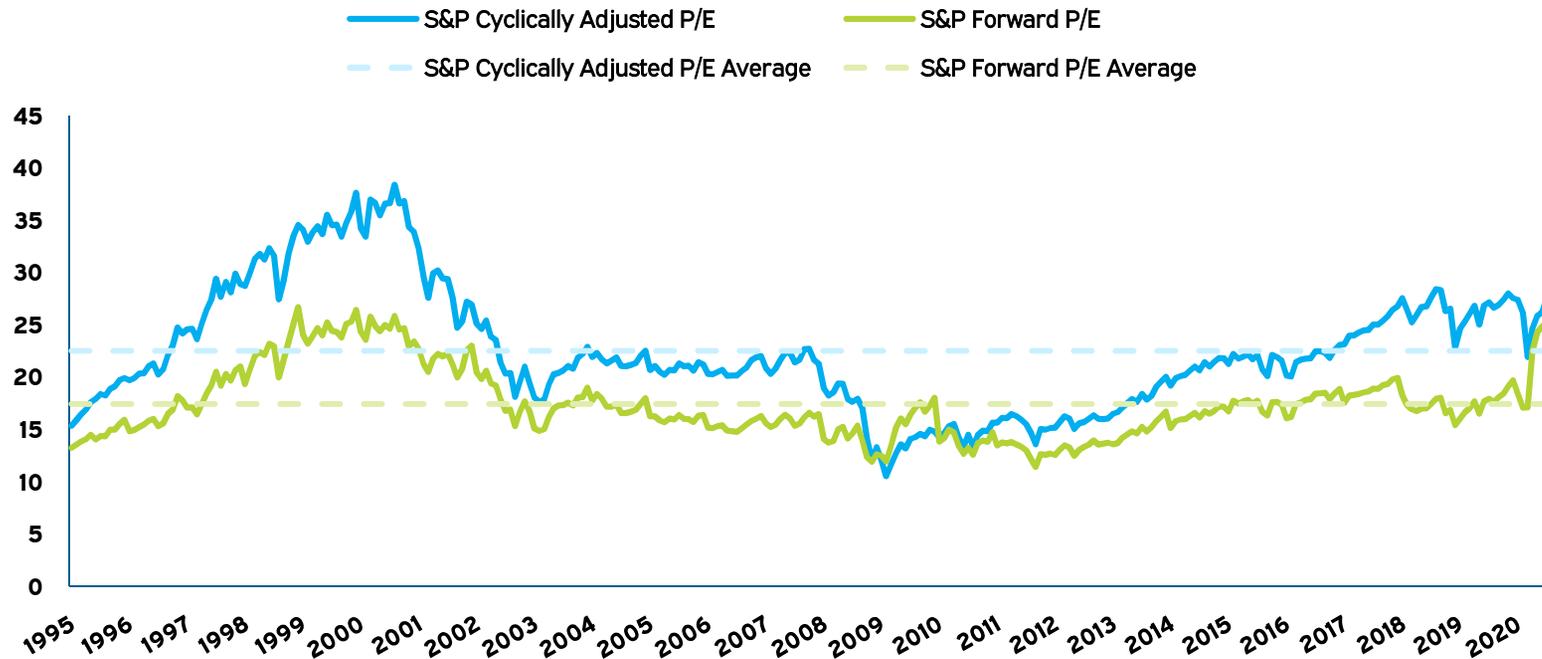
### S&P 500 Fully Recovers<sup>1</sup>



- Given the anticipated economic carnage surrounding the pandemic, US stocks declined from a February peak into bear market (-20%) territory at the fastest pace in history.
- From the February 19 peak, the S&P 500 plunged 34% in just 24 trading days.
- After quickly rebounding from its lows and finishing above its pre-COVID levels at the end of August, the market retraced 3.8% in September, bringing its year-to-date gain to 5.6%.
- The key risk going forward remains that a spike in COVID-19 cases could slow, or reverse, reopening plans.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020.

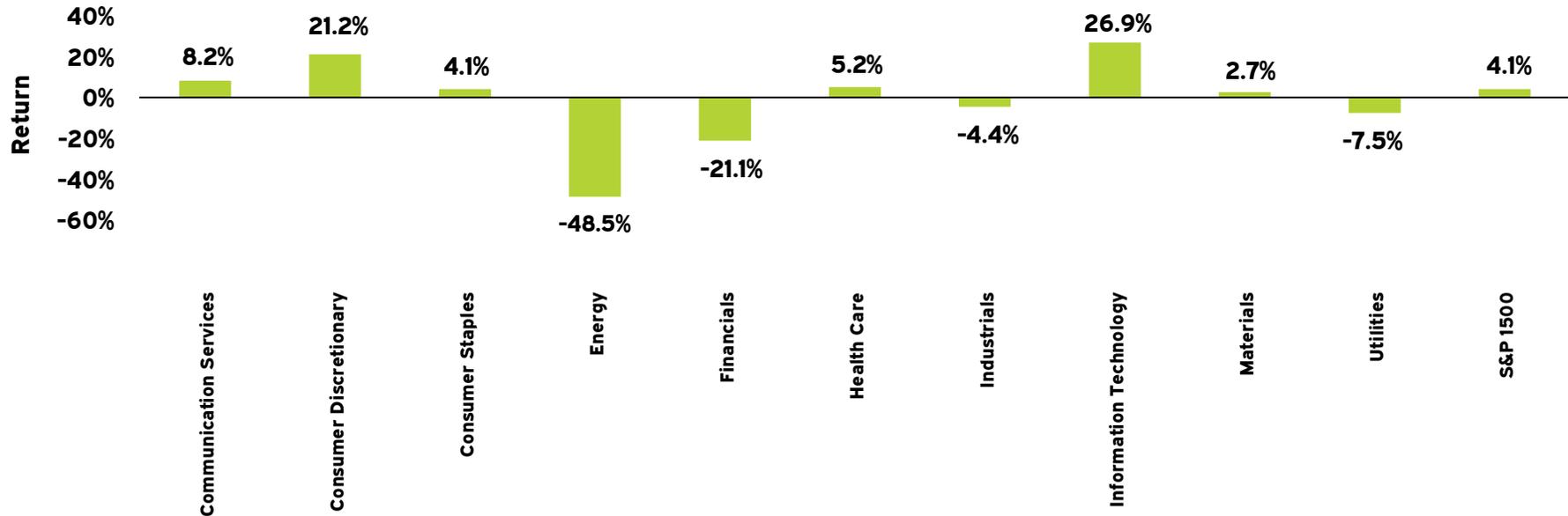
### S&P Equity Valuations<sup>1</sup>



- Despite the pullback in September, valuations based on both forward- and backward-looking earnings remain stretched.
- Many are looking to improvements in earnings growth as the US economy continues to reopen to justify market levels, with historically low interest rates also providing support.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020.

### 2020 YTD Sector Returns<sup>1</sup>

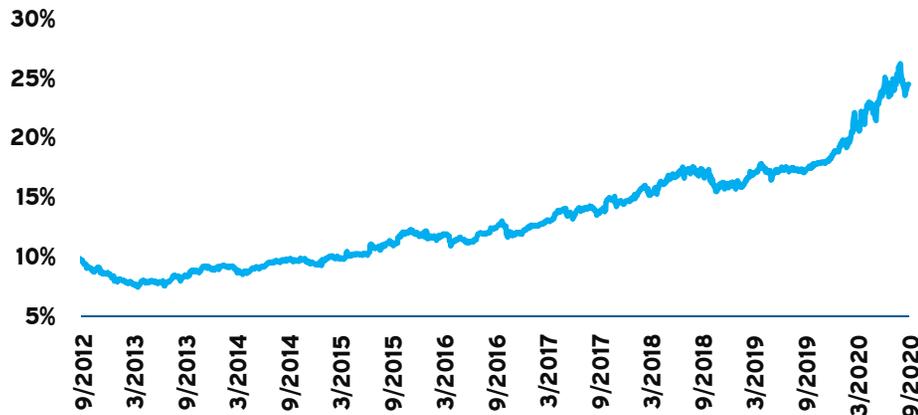


- Information technology remains the best performing sector, with a narrow group of companies including Amazon and Netflix driving market gains. The outperformance has been due to consumers moving to online purchases and streaming services.
- The consumer discretionary sector also experienced gains as the economy reopened, people returned to work, and stimulus checks were spent.
- The energy sector remains the sector with the greatest 2020 decline, triggered by the plunge in oil prices. Financials have also struggled in this slow growth environment with demand for loans down and low interest rates weighing on loan revenue.

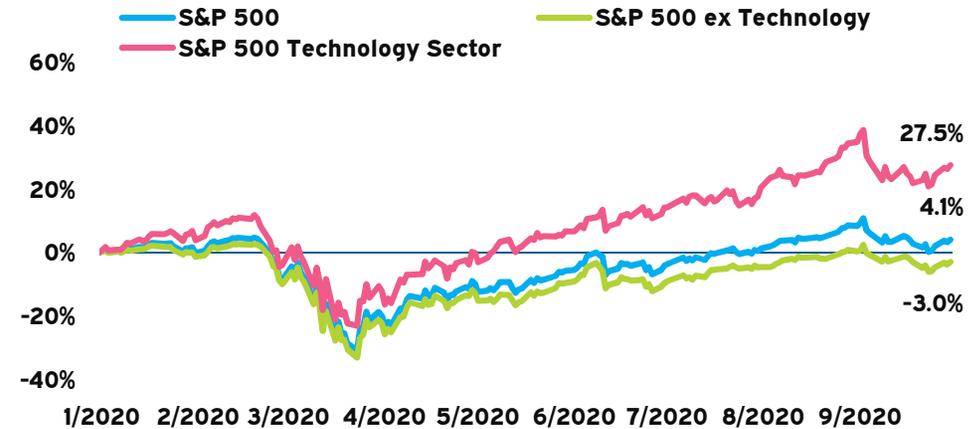
<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020.

### Technology has led the way in the Rebound

FAANG+M Share of S&P 500<sup>1</sup>



Returns Year to Date through September 30<sup>2</sup>

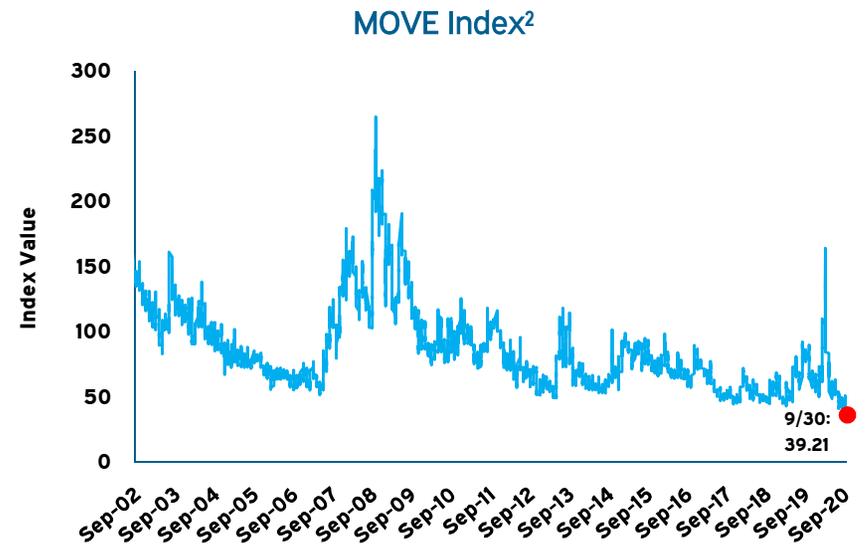
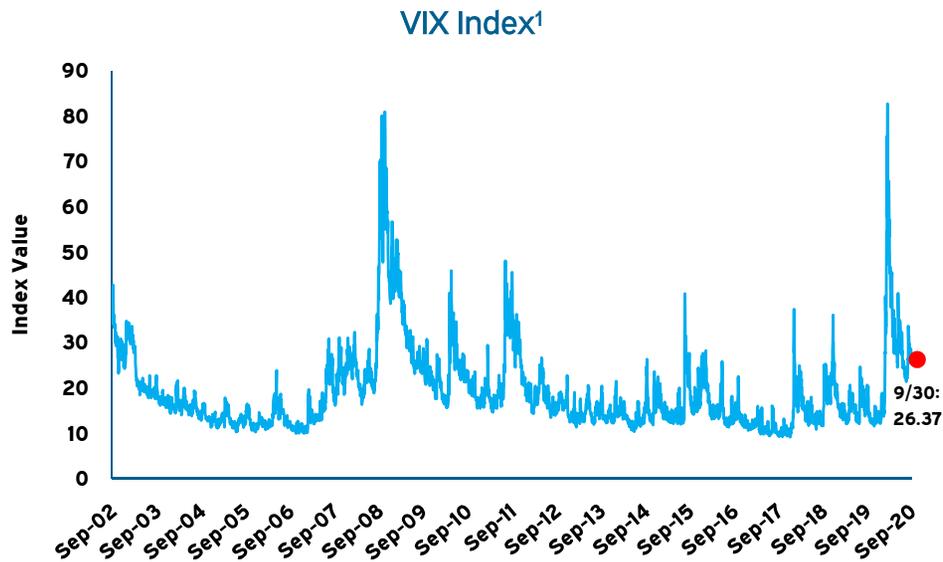


- The recent market recovery has largely been driven by a few select technology companies that benefited from the stay-at-home environment related to the virus.
- Year-to-date, the S&P 500 technology sector returned 27.5%, compared to -3.0% for the S&P 500 ex-technology index, with Amazon (+70%), Netflix (+55%), and Apple (+58%) posting strong results.
- The strong relative returns of these companies has led to them comprising a growing portion (24.5%) of the S&P 500, which makes their future performance particularly impactful.

<sup>1</sup> FAANG+M = Facebook, Amazon, Apple, Netflix, Google (Alphabet), and Microsoft. The percentage represents the aggregate market capitalization of the 6 companies compared to the total market capitalization of the S&P 500 as of September 30, 2020.

<sup>2</sup> Each data point represents the price change relative to the 12/31/2019 starting value.

### Volatility has Declined



- Expectations of short-term equity volatility, as measured by the VIX index, continued to decline from record levels, though it remains elevated relative to the past decade.
- At the recent peak, the VIX reached 82.7, surpassing the pinnacle of volatility during the GFC, thus showing the magnitude of the crisis and of investor fear.
- Expectations of volatility within fixed income, as represented by the MOVE index, spiked and then dropped to historic lows, helped by the broad level of monetary support and forward guidance by the Fed.

<sup>1</sup> Source: Chicago Board of Exchange. Data is as of September 30, 2020.

<sup>2</sup> Source: Bloomberg. Data is as of September 30, 2020.

## Global Financial Crisis Comparison

	2007-2009 Global Financial Crisis	COVID-19 Crisis
<b>Primary Causes</b>	Excess Risk Taking Due to: <ul style="list-style-type: none"> <li>Deregulation, un-constrained securitization, shadow banking system, fraud</li> </ul>	Pandemic/Natural Disaster: <ul style="list-style-type: none"> <li>Large scale global restrictions on businesses and individuals leading to immediate and significant deterioration in economic fundamentals</li> </ul>
<b>Fiscal Measures</b>	<ul style="list-style-type: none"> <li>American Recovery Reinvestment Act of 2009: \$787 billion</li> <li>Economic Stimulus Act of 2008: \$152 billion</li> </ul>	<ul style="list-style-type: none"> <li>PPP Act: \$659 billion</li> <li>CARES Act of 2020: \$2.3 trillion</li> <li>Families First Coronavirus Response Act: \$150 billion</li> <li>Coronavirus Preparedness &amp; Response Supplemental Appropriations Act 2020: \$8.3 billion</li> <li>National Emergency: \$50 billion</li> </ul>
	2007-2009 Global Financial Crisis	COVID-19 Crisis
<b>Monetary Measures</b>		
Lowering Fed Funds Rate	X	X
Quantitative Easing	X	X
Primary Dealer Repos	X	X
Central Bank Swap Lines	X	X
Commercial Paper Funding Facility	X	X
Primary Dealers Credit Facility	X	X
Money Market Lending Facility	X	X
Term Auction Facility	X	
TALF	X	X
TSLF	X	
FIMA Repo Facility		X
Primary & Secondary Corp. Debt		X
PPP Term Facility		X
Municipal Liquidity Facility		X
Main Street Loan Facility		X

### Global Financial Crisis Comparison (continued)

- The US **fiscal** response to the COVID-19 Crisis has been materially larger than the response to the 2007-2009 Global Financial Crisis (GFC), and stimulus is acutely focused on areas of the economy showing the greatest need, including small- and mid-sized companies. For example, the Paycheck Protection Program (PPP) helped small businesses keep employees working by offering forgivable loans to cover salaries.
- On the **monetary** side, markets targeted during both crises represent those most in need, but for the COVID-19 Crisis the policy response was dramatically faster, measured in weeks, not years, as in the GFC.
- Of the monetary stimulus measures, the corporate debt (Primary & Secondary Corporate Debt) programs and Main Street Loan Facility are new and garnered much attention from market participants.
- Through the end of September, Fed programs have experienced various degrees of usage. However, at this point, none has come close to reaching program limits. Still, programs have been extended through December 2020, and the psychological value of knowing the programs are available, if necessary, likely supports market sentiment.

## Policy Responses

	Fiscal	Monetary
United States	\$50 billion to states for virus related support, interest waived on student loans, flexibility on tax payments and filings, expanded COVID-19 testing, paid sick leave for hourly workers, \$2 trillion package for individuals, businesses, and state/local governments. Additional \$484 billion package to replenish small business loans, provide funding to hospitals, and increase testing.	Cut policy rates to zero, outcome-based forward guidance suggesting aggressively accommodative policy for the foreseeable future, unlimited QE4, offering trillions in repo market funding, restarted and extended CPFF, PDCF, MMMF programs to support lending and financing markets, expanded US dollar swap lines with foreign central banks, announced IG corporate debt buying program with subsequent amendment for certain HY securities, Main Street Lending program, Muni liquidity facility, repo facility with foreign central banks, easing of some financial regulations for lenders, and changing the inflation mandate to an average target of 2.0%
Euro Area	European Union: Shared 750 billion euro stimulus package. Germany: 220 billion euro stimulus France: 57 billion euro stimulus. Italy: 75 billion euro stimulus. Spain: 200 billion euro and 700 million euro loan and aid package, respectively.	Targeted longer-term refinancing operations aimed at small and medium sized businesses, under more favorable pricing, and announced the 750 billion euro Pandemic Emergency Purchase Program, and then expanded the purchases to include lower-quality corporate debt.
Japan	Hundreds of trillions in yen stimulus for citizens and businesses, including low interest loans, deferrals on taxes, and direct cash handouts.	Initially increased QE purchases (ETFs, corporate bonds, and CP) and then expanded to unlimited purchases and doubling of corporate debt and commercial paper, expanded collateral and liquidity requirements, and 0% interest loans to businesses hurt by virus.
China	Tax cuts, low-interest business loans, extra payments to gov't benefit recipients.	Expanded repo facility, policy rate cuts, lowered reserve requirements, loan-purchase scheme.
Canada	\$7.1 billion in loans to businesses to help with virus damage, C\$381 billion stimulus.	Cut policy rates, expanded bond-buying and repos, lowered bank reserve requirements.
UK (BOE)	190 billion pound stimulus, Tax cut for retailers, small business cash grants, benefits for those infected with virus, expanded access to gov't benefits for self and un-employed.	Lowered policy rates and capital requirements for UK banks, restarts QE program and subsequently increased the purchase amounts.
Australia	\$11.4 billion, subsidies for impacted industries like tourism, one-time payment to gov't benefit recipients.	Policy rate cut, started QE.

### Next Round of US Fiscal Stimulus

	Republican Proposal <sup>1</sup>	Democratic Proposal <sup>2</sup>
Status	Offered by the President and republican leaders in mid-October	Passed in House on October 1
Direct payments	\$1,200 for adults, \$1,000 per child	\$1,200 for adults, \$500 per dependent
Unemployment / Assistance	\$400 per week, through the third week of January and retroactive to Sept. 12	\$600 per week enhanced unemployment benefit through January. 15% increase in food stamps
State and local aid	\$300 billion	\$436 billion
Airlines	\$20 billion	\$25 billion
Paycheck Protection	\$330 billion	Extend program
Testing / Tracing / Healthcare	\$175 billion	\$75 billion
Education	\$150 billion	\$225 billion
Childcare	\$25 billion	\$57 billion
Total	\$1.8 Trillion	\$2.2 Trillion

- The next round of fiscal stimulus that the market has been anticipating appears to be caught in gridlock.
- Without further stimulus, many businesses might not be able to survive, particularly services like restaurants as we move into the colder months in parts of the country.
- The enhanced unemployment benefits from the initial stimulus program were particularly impactful to those without jobs. After it ended in July an extension of a lesser amount (\$300 extra per week) was implemented, but is in the process of winding down and at risk of ending without replacement.

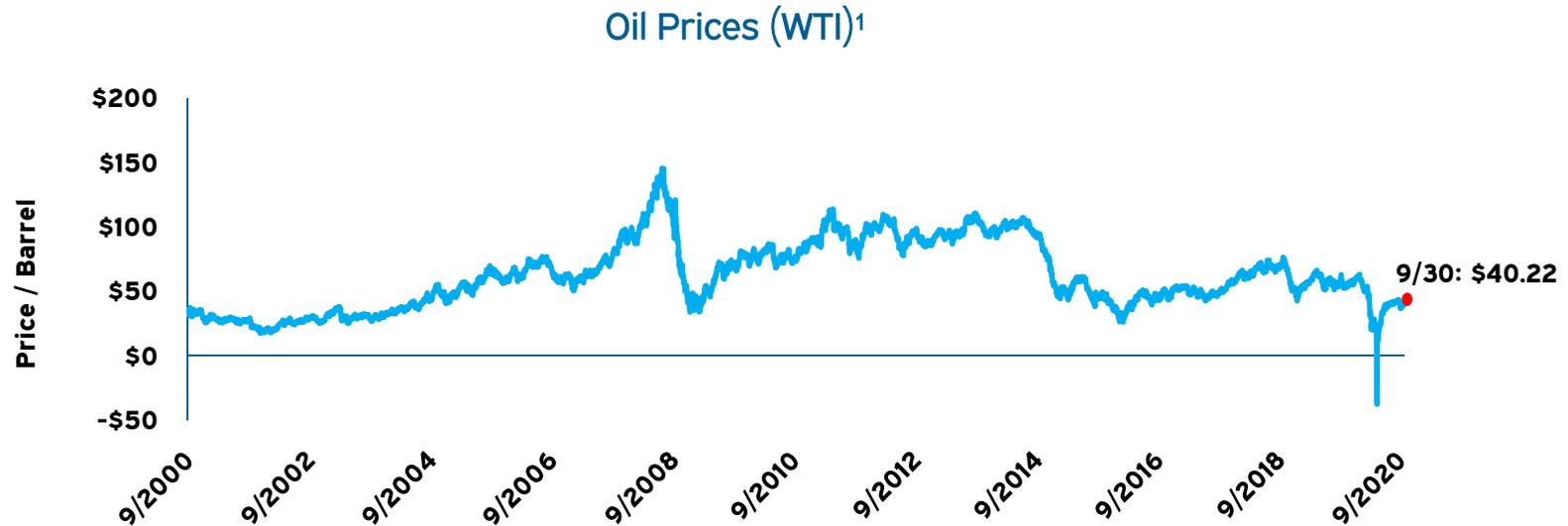
<sup>1</sup> Source: <https://www.cnn.com/2020/10/10/pelosi-dismisses-trump-coronavirus-stimulus-offer.html>

<sup>2</sup> Source: <https://www.cnn.com/2020/10/01/coronavirus-stimulus-update-house-passes-democratic-relief-bill.html>

### November US Presidential Election

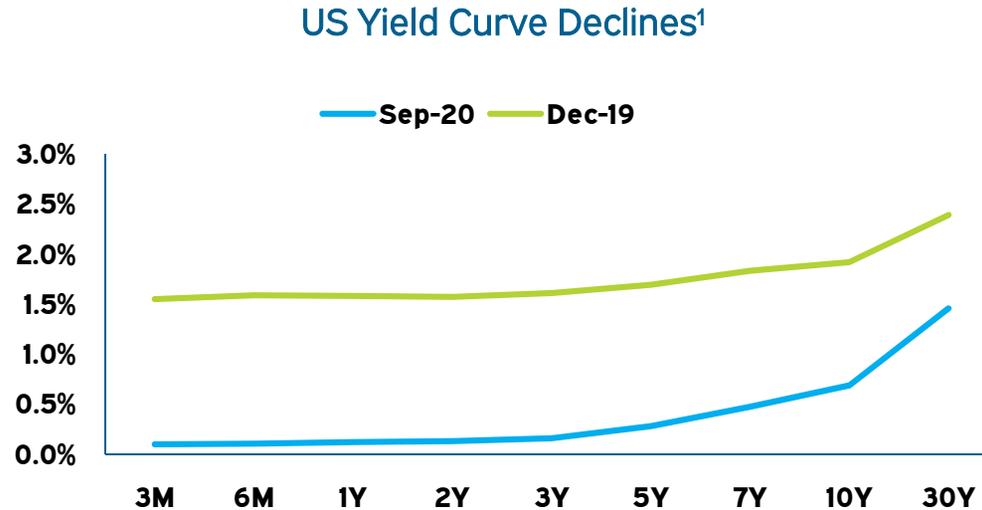
Policy Area	Trump	Biden
Tax Policy & Wages	Favors lower taxes and lower capital gains rates; “Made in America” tax credits; expanded tax breaks for investing in lower-income communities; Has indicated support for an increased minimum wage but prefers to leave it to the States.	Increase corporate tax rates from 21% to 28% (still lower than under President Obama) and implement a minimum 15% tax on global income over \$100 million; increase the tax rate for individuals earning over \$400,000 to 39.6%; Supports a \$15 an hour national minimum wage.
Infrastructure	Allocate over \$1 trillion over ten years to highways and transit, rural broadband, and 5G cell service.	Allocate over \$2 trillion to “sustainable infrastructure” and clean energy, 5G cell service, rural broadband, and modernize schools.
Government reach and Regulation	Favors smaller government and de-regulation; continue to ease regulation for businesses.	Favors increased government involvement; strengthen regulation and oversight.
Trade Policy	“America First”, protectionist in nature, use of tariffs; hard line stance with China.	“Why America Must Lead Again”; coalition forming to confront China.
Immigration	Favors restrictive immigration policies including building the southern wall and more restrictive visa requirements.	Vowed to reverse President Trump’s immigration policies including border detention and public charge rule
Climate Change	Pulled the US out of the Paris Climate Accord.	Proposed a \$2 trillion climate plan with the goal of achieving an emissions-free power sector by 2035 and upgrading four million buildings over four years to meet the highest standards for energy efficiency. Return to the Paris Accord.

- Many are looking to the November presidential election and the potential impacts of the candidate’s proposed policies.
- President Trump’s policies will likely be a continuation of those implemented pre-pandemic, focused around low taxes, deregulation, and protectionist trade policies, with a particularly aggressive stance against China. By contrast, Mr. Biden’s plans include an increase in taxes for higher-income earners, a more collaborative approach with America’s allies on foreign policy, broader regulation, and “green” initiatives.



- While global oil prices have rallied from April lows, they remain below their pre-pandemic level.
- In September, OPEC+ maintained their 7.7 million barrels/day production cuts in an effort to support oil prices.
- Counterbalancing the OPEC+ production cut agreement, US oil producers (particularly shale output) are turning wells back on, given higher prices.
- As OPEC+ starts rolling back production cuts, and an increasing virus spread potentially weighs on demand, oil prices could experience downward pressure going forward.

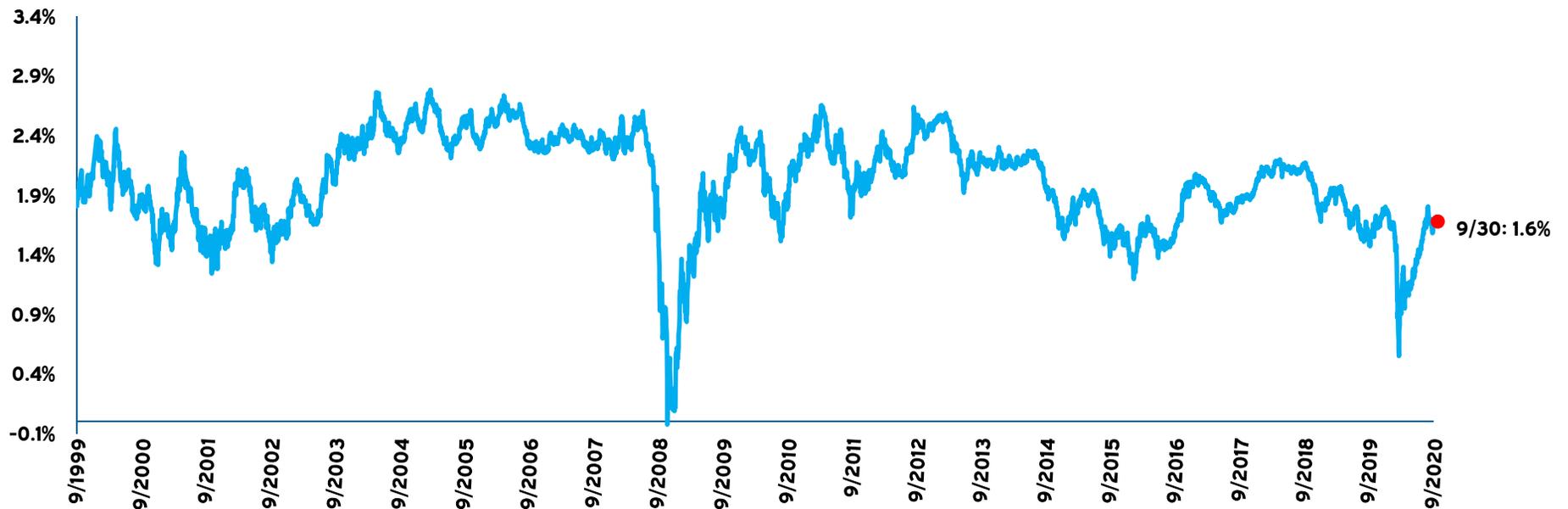
<sup>1</sup> Source: Bloomberg. Represents WTI first available futures contract. Data is as of September 30, 2020.



- The US Treasury yield curve has declined materially during 2020.
- Cuts in monetary policy rates, and policy makers' open commitments to keep rates low for the foreseeable future, drove yields down in shorter maturities, while flight-to-quality flows, low inflation, and economic growth uncertainty have driven the changes in longer maturities.
- The Federal Reserve's unlimited quantitative easing purchase program has produced further downward pressure on interest rates, particularly in the short- and medium-term sectors due to the purchases being focused on those segments.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020.

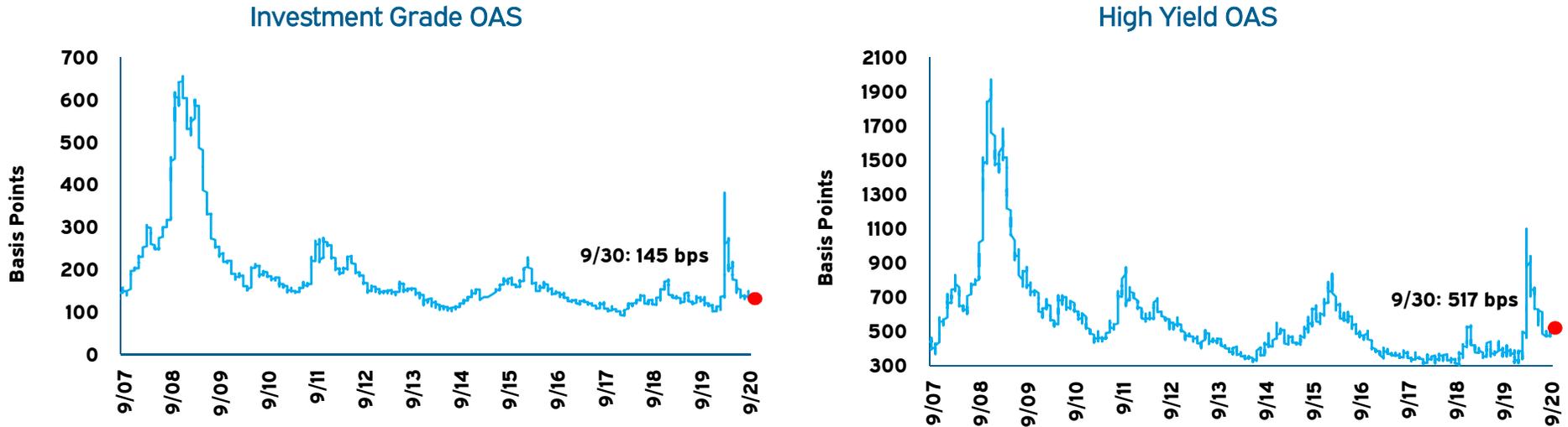
### 10-Year Breakeven Inflation<sup>1</sup>



- Inflation breakeven rates initially declined sharply, due to a combination of lower growth and inflation expectations, as well as liquidity dynamics in TIPS during the height of market volatility.
- Liquidity eventually improved and breakeven rates increased as deflationary concerns moderated, but given the uncertainty regarding economic growth and the inflationary effects of the unprecedented US fiscal response, inflation expectations remain below historical averages.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020.

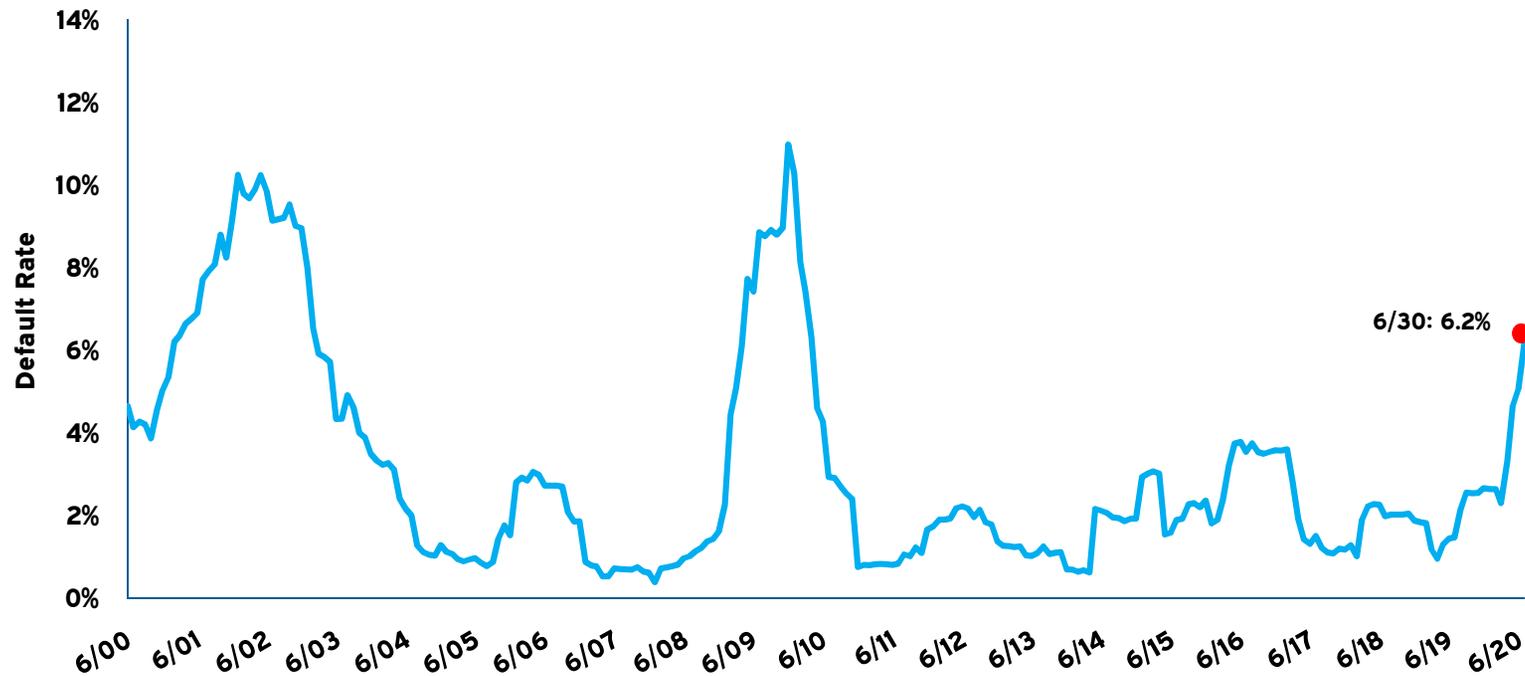
### Credit Spreads (High Yield & Investment Grade)<sup>1</sup>



- Credit spreads (the spread above a comparable Treasury bond) for investment grade and high yield corporate debt expanded sharply at the start of the pandemic as investors sought safety.
- Investment grade bonds held up better than high yield bonds. The Federal Reserve’s corporate debt purchase program for investment grade and certain high yield securities recently downgraded from investment grade, was well received by investors, leading to a decline in spreads to around long-term averages.
- Overall, corporate debt issuance has more than doubled since 2008, which magnifies the impact of deterioration in the corporate debt market. This is particularly true in the energy sector, which represents over 10% of the high yield bond market.

<sup>1</sup> Source: Federal Reserve Bank of St. Louis Economic Research. Data is as of September 30, 2020.

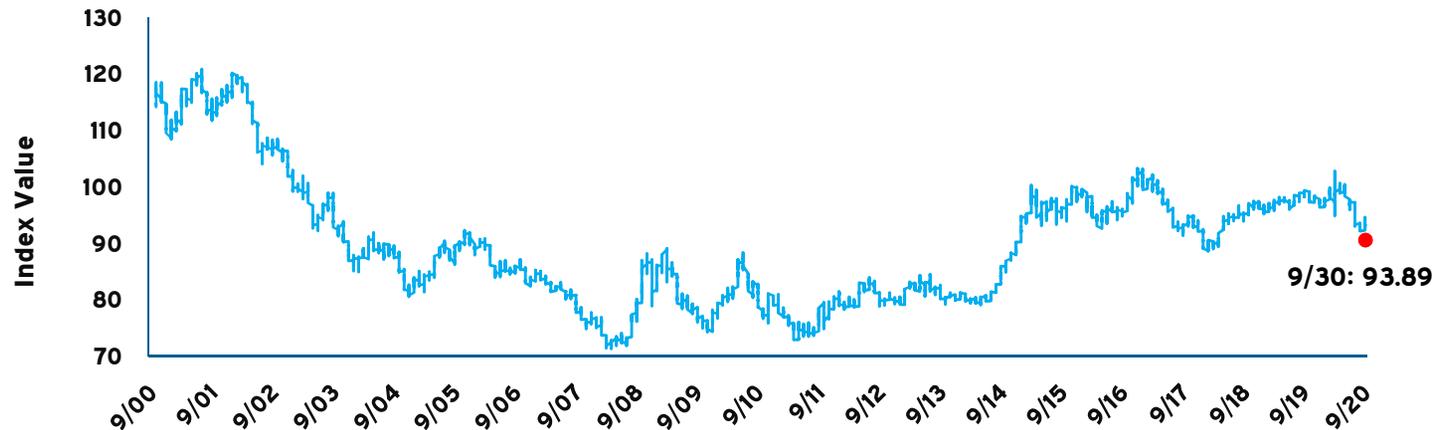
### US High Yield Credit Defaults<sup>1</sup>



- Even though spreads have declined, helped by the Federal Reserve's support, defaults, particularly in the high yield sector, have increased dramatically in 2020.
- The energy sector has experienced the greatest impact given the decline in oil prices, with the default rate over 10% and expectations for it to increase.

<sup>1</sup> Source: J.P. Morgan; S&P LCD. Most recent data is as of June 30, 2020.

### US Dollar versus Broad Currencies<sup>1</sup>



- When financial markets began aggressively reacting to COVID-19 developments, the US dollar came under selling pressure as investors sought safe-haven exposure in currencies like the Japanese yen given its current account surplus and its status as the largest creditor globally.
- As the crisis grew into a pandemic, investors' preferences shifted to holding US dollars and highly liquid, short-term securities like US Treasury bills. This global demand for US dollars led to appreciation versus most major currencies.
- To help ease global demand for US dollars, the Federal Reserve, working with a number of global central banks, re-established the US dollar swap program, providing some relief to other currencies. Usage of the program continues to decline as dollar funding demands have eased.
- Recently we have seen some weakness in the dollar as the US struggles with containing the virus and investors seek higher-yielding non-US assets, particularly in emerging markets. This has created pressures on already stressed export-focused countries.
- Going forward, the dollar's safe haven quality and the relatively higher rates in the US could provide support.

<sup>1</sup> Source: Bloomberg. Represents the DXY Index. Data is as of September 30, 2020.

## Economic Impact

### Supply Chain Disruptions:

- Factories closing, increased cost of stagnant inventory, and disrupted supply agreements.
- Reduced travel, tourism, and separation policies including closed borders: Significant impact on service-based economies.

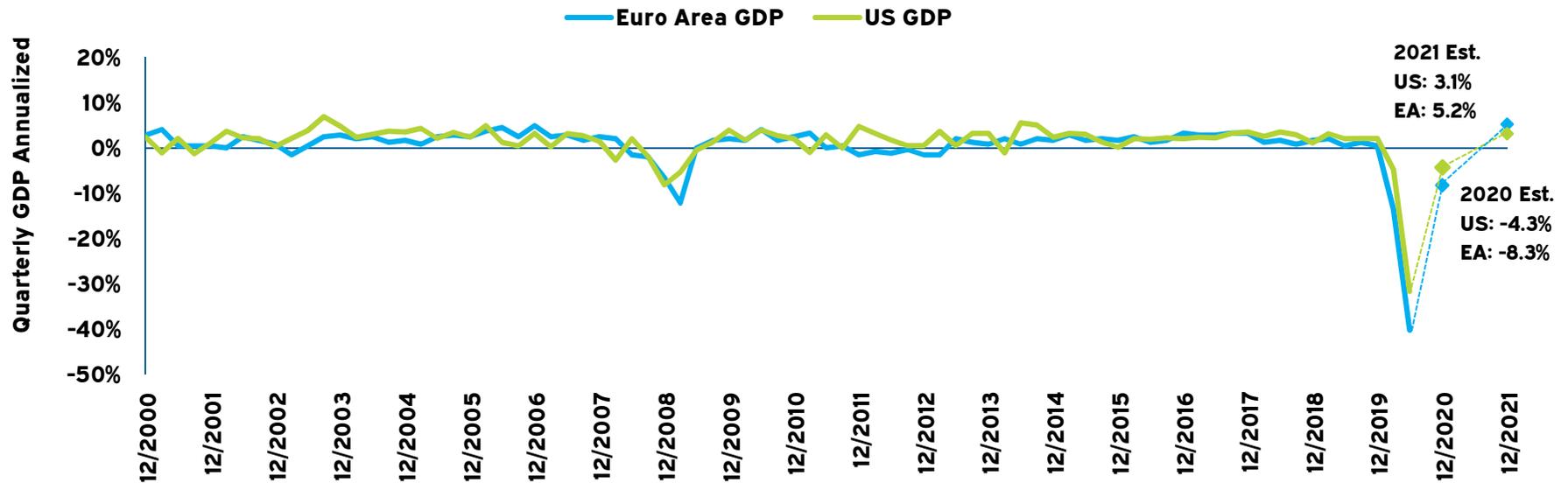
### Labor Force Impacts:

- Huge layoffs across service and manufacturing economies.
- Increased strains as workforce productivity declines from increased societal responsibilities (e.g., home schooling of children) and lower functionality working from home.
- Illnesses from the disease will also depress the labor force.

### Declines in Business and Consumer Sentiment:

- Sentiment drives investment and consumption, which leads to increased recessionary pressures as sentiment slips.

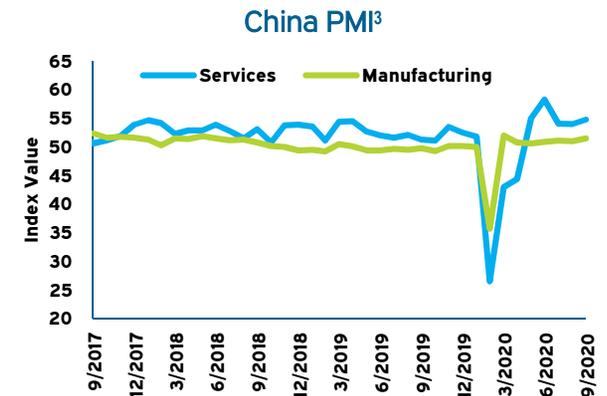
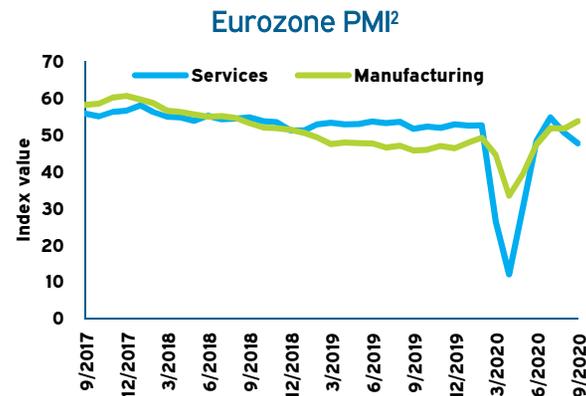
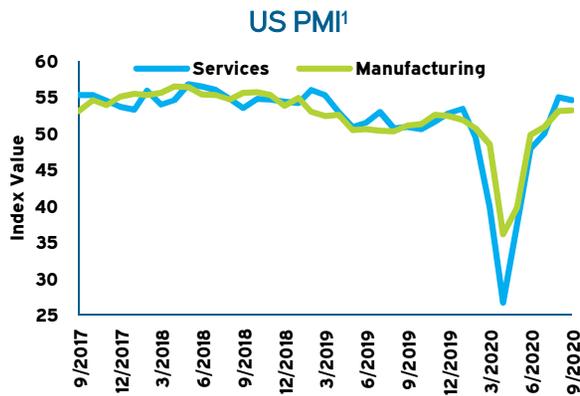
### GDP Data Shows Impact of the Pandemic<sup>1</sup>



- The global economy faces major recessionary pressures this year, but optimism remains for improvements in 2021, as economies are expected to gradually reopen.
- In the US, second quarter GDP posted a record (annualized) decline of -31.4%, officially putting the US in a recession. Similarly, growth in the Euro Area declined by a record amount with the major economies in Germany, France, Italy, and Spain experiencing historic declines.
- At the end of September, Bloomberg Economics estimated that third quarter US GDP growth could be as high as 25.1% (QoQ annualized). Full year US GDP growth is forecasted to decline by 4.3%.

<sup>1</sup> Source: Bloomberg and IMF. Q3 2020 data represents the third estimate of GDP for the Euro Area and United States. Euro Area figures annualized by Meketa. Projections via October 2020 IMF World Economic Outlook and represent annual numbers.

### Global PMIs



- Purchasing Managers Indices (PMI), which are based on surveys of private sector companies, initially collapsed across the world to record lows, as output, new orders, production, and employment were materially impacted by closed economies.
- Readings below 50 represent contractions across underlying components and act as a leading indicator of economic activity, including the future paths of GDP, employment, and industrial production.
- The services sector was particularly hard hit by the stay-at-home restrictions in many places.
- As the Chinese economy reopened, their PMI's, particularly in the service sector, recovered materially. In the US and Europe, the indices have also improved from their lows to above contraction levels in most cases.

<sup>1</sup> Source: Bloomberg. US Markit Services and Manufacturing PMI. Data is as of September 2020.

<sup>2</sup> Source: Bloomberg. Eurozone Markit Services and Manufacturing PMI. Data is as of September 2020.

<sup>3</sup> Source: Bloomberg. Caixin Services and Manufacturing PMI. Data is as of September 2020.

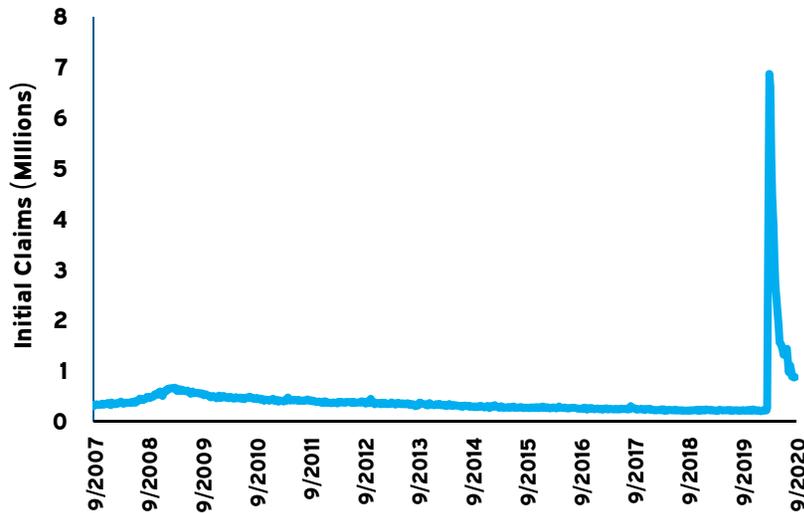


- In September, the unemployment rate continued its decline from the recent April 14.7% peak, falling to 7.9% as businesses and consumers emerged from the lockdown.
- Despite the improvement, unemployment levels remain well above pre-virus readings and are likely higher than reported, as some workers appear misclassified. According to the Bureau of Labor Statistics, absent the misclassification issue, the September unemployment rate would be higher by 0.4%.
- The recent spike in infections and the potential shutting down of some parts of the economy, could lead to an increase in the unemployment rate going forward.

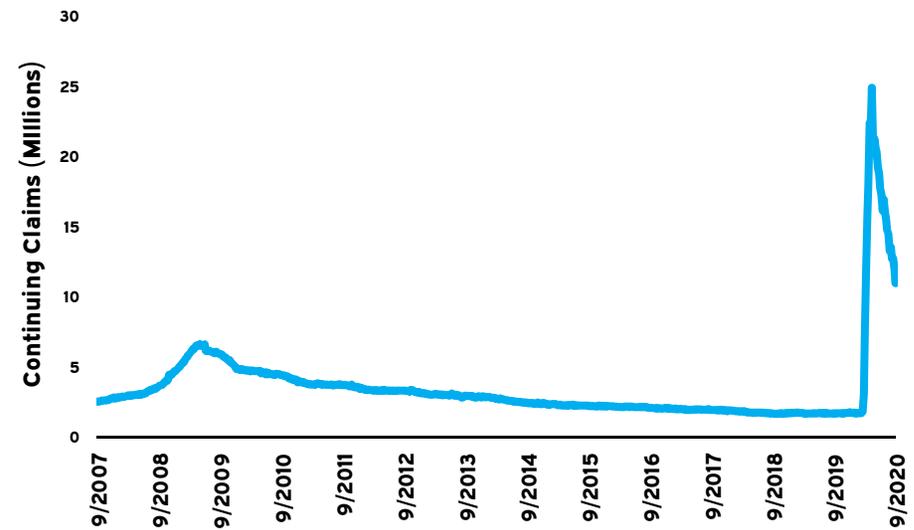
<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020. Bars represent recessions.

### US Jobless Claims

#### US Initial Jobless Claims<sup>1</sup>



#### Continuing Claims<sup>2</sup>

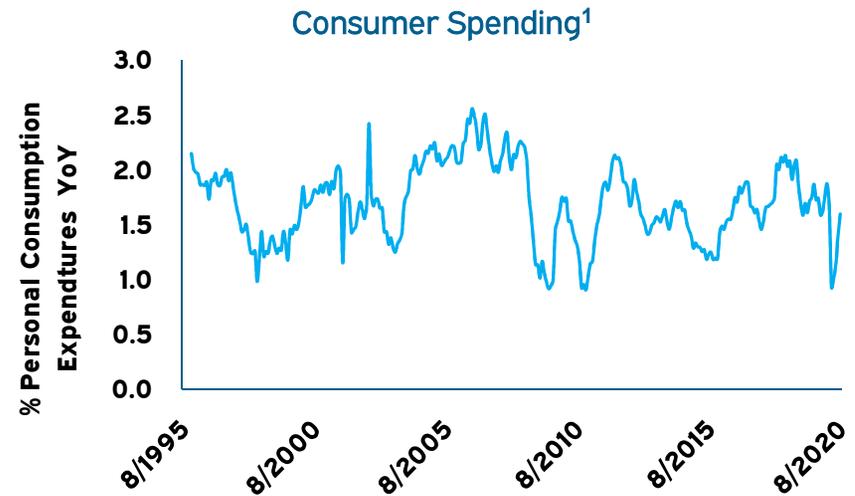
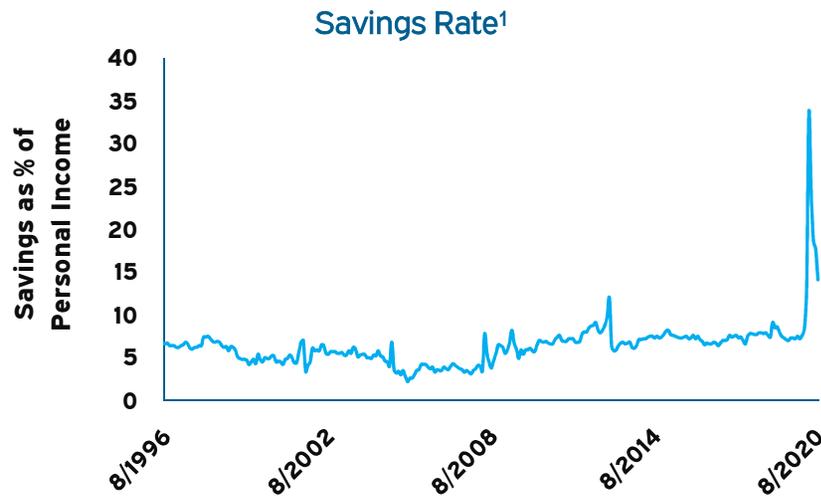


- Over the last 28 weeks, roughly 63 million people filed for initial unemployment. This level far exceeds the 22 million jobs added since the GFC, highlighting the unprecedented impact of the virus.
- Despite the continued decline in initial jobless claims to below 1.0 million per week, levels remain many multiples above the worst reading during the Global Financial Crisis.
- Continuing jobless claims (i.e., those currently receiving benefits) has also declined from record levels, but remains elevated at 11.8 million.

<sup>1</sup> Source: Bloomberg. First reading of seasonally adjusted initial jobless claims. Data is as of September 25, 2020.

<sup>2</sup> Source: Bloomberg. US Continuing Jobless Claims SA. Data is as of September 25, 2020.

### Savings and Spending

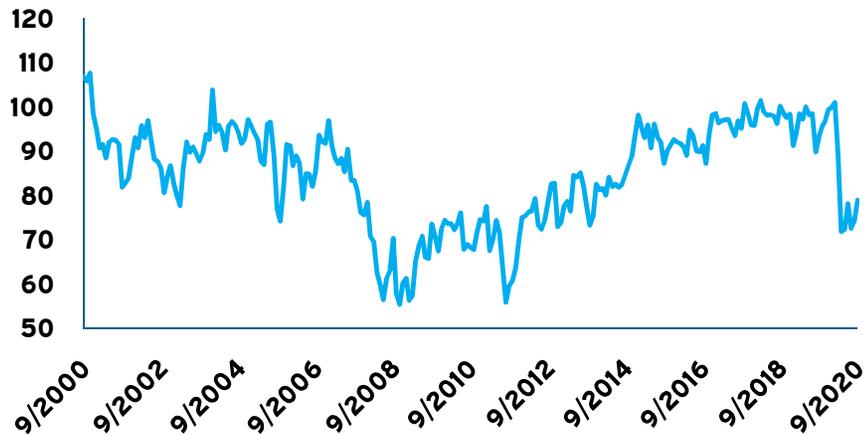


- Fiscal programs including stimulus checks, enhanced unemployment benefits, and loans to small businesses through the Paycheck Protection Program (PPP) have largely supported income levels through the shutdown.
- Despite the income support, the savings rate increased due to the decline in consumer spending, driven by the initial lock-down of the economy, and by uncertainties related to the future of the job market and stimulus programs.
- More recently, the savings rate declined from its peak as spending increased with the economy slowly reopening.

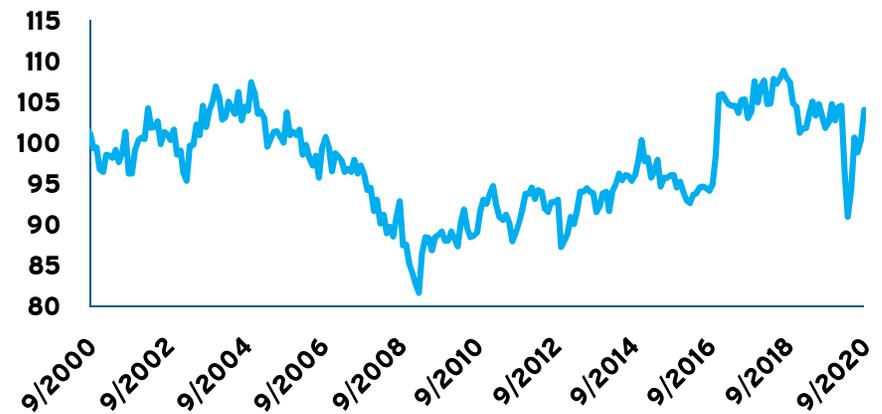
<sup>1</sup> Source: Bloomberg. Latest data is as of August 31, 2020.

### Sentiment Indicators

University of Michigan Consumer Sentiment<sup>1</sup>



Small Business Confidence<sup>2</sup>



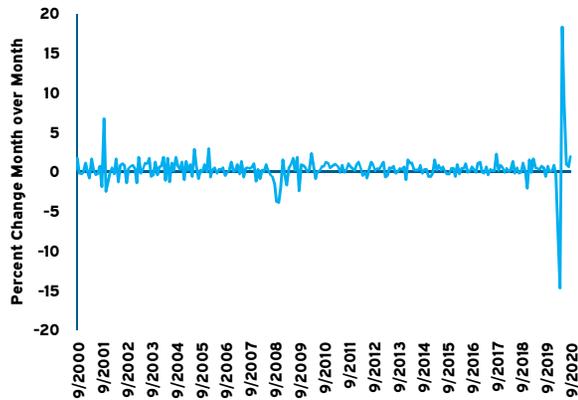
- A strong indicator of future economic activity are the attitudes of businesses and consumers today.
- Consumer spending comprises close to 70% of US GDP, making the attitudes of consumers an important driver of economic growth. Additionally, small businesses generate around half of US GDP, making sentiment in that segment important too.
- Sentiment indicators have shown some improvements as the economy re-opens, particularly for small businesses, but they remain below prior levels.

<sup>1</sup> Source: Bloomberg. University of Michigan Consumer Sentiment Index. Data is as of September 30, 2020.

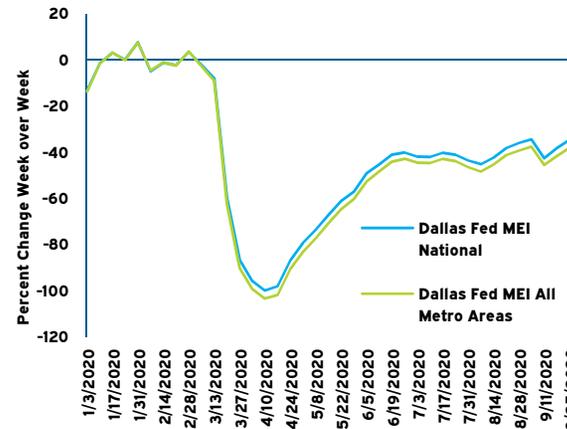
<sup>2</sup> Source: Bloomberg. NFIB Small Business Optimism Index. Latest data is as of September 30, 2020.

### Some US Data has Improved

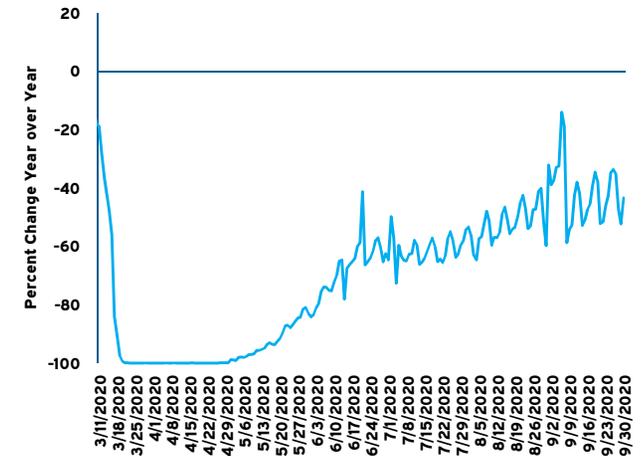
#### Retail Sales<sup>1</sup>



#### Dallas Fed Mobility and Engagement Index<sup>2</sup>



#### OpenTable Seated Diners YoY % Change<sup>3</sup>



- There have been improvements in high frequency data, but overall levels remain well below historical averages, and have slowed in some instances given the recent spike in cases.
- Generally, people have become more active as restrictions eased and stores reopened. Retail sales recovered from a record decline with five consecutive months of growth as the economy reopened, but the pace of growth has been declining.
- Restaurants saw initial improvements before declining and leveling-off, as in-store dining has been cited as a key contributor to increases in infections.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020 and represents the US Retail Sales SA MoM%.

<sup>2</sup> Source: Bloomberg. Data is as of September 25, 2020 and represents the deviation from normal mobility behaviors induced by COVID-19 (formerly the "Social Distancing Index"). The index represents a weighted average of various lengths of time that a mobile device, like a cell phone, leaves its "home" or place of residence, and/or how long a device stays at home. A decline in this index represents a mobile device at home for a longer period of time than average.

<sup>3</sup> Source: Bloomberg. This data shows year-over-year seated diners at restaurants on the OpenTable network across all channels: online reservations, phone reservations, and walk-ins. Only states or cities with 50+ restaurants in the sample are included. All such restaurants on the OpenTable network in either period are included. Data is as of September 30, 2020. Index start date 2/19/20.

### Looking Forward...

- There will be significant economic impact and a global recession.
  - How deep it will be and how long it will last depend on factors (below) that are unknowable at this time.
- The length of the virus and country responses will be key considerations.
  - As of now, it is not clear the end is in sight, particularly with the recent increases in cases in certain areas; however, individual countries are attempting to lay the groundwork to support recoveries in their economies.
- Central banks and governments are pledging support, but will it be enough?
  - Market reactions to announced policies have been positive, but additional support will likely be required until the virus gets better contained and a vaccine is developed.
- Expect heightened market volatility should economies start to shut back down in response to the recent spike in cases.
  - This has been a consistent theme recently; volatility is likely to remain at risk of spiking again for the foreseeable future.
- It is important to retain a long-term focus.
  - History supports the argument that maintaining a long-term focus will ultimately prove beneficial for diversified portfolios.

### Prior Drawdowns and Recoveries from 1926-2020<sup>1</sup>

Period	Peak-to-Trough Decline of the S&P 500	Approximate Time to Recovery
Sept 1929 to June 1932	-85%	266 months
February 1937 to April 1942	-57%	48 months
May 1946 to February 1948	-25%	27 months
August 1956 to October 1957	-22%	11 months
December 1961 to June 1962	-28%	14 months
February 1966 to October 1966	-22%	7 months
November 1968 to May 1970	-36%	21 months
January 1973 to October 1974	-48%	69 months
September 1976 to March 1978	-19%	17 months
November 1980 to August 1982	-27%	3 months
August 1987 to December 1987	-32%	19 months
July 1990 to October 1990	-20%	4 months
July 1998 to August 1998	-19%	3 months
March 2000 to October 2002	-49%	56 months
October 2007 to March 2009	-57%	49 months
February 2020 to August 2020	-34%	6 months
<b>Average</b>	<b>-36%</b>	<b>39 months</b>
<b>Average ex. Great Depression</b>	<b>-33%</b>	<b>24 months</b>

- As markets have fully recovered to above pre-COVID levels, questions remain about the sustainability of the rally.
- The six-month recovery period represents one of the shortest on record, similar to the historic decline.

<sup>1</sup> Source: Goldman Sachs.

### Implications for Clients

- Portfolios have experienced significant improvements from the March lows.
- Diversification and a disciplined rebalancing approach worked.
- Even though equity markets have recovered from their lows, it is important to remain vigilant and be prepared to rebalance if high volatility returns.
  - Before rebalancing, consider changes in liquidity needs given the potential for cash inflows to decline in some cases.
  - Also, consider the cost of rebalancing if investment liquidity declines.

### Performance YTD (through September 30, 2020)

S&P 500	ACWI (ex. US)	Aggregate Bond Index	Balanced Portfolio <sup>1</sup>
5.6%	-5.4%	6.8%	3.6%

- Meketa will continue to monitor the situation and communicate frequently.
  - The situation is fluid and the economic impact is uncertain at this stage.
- Please feel free to reach out with any questions.

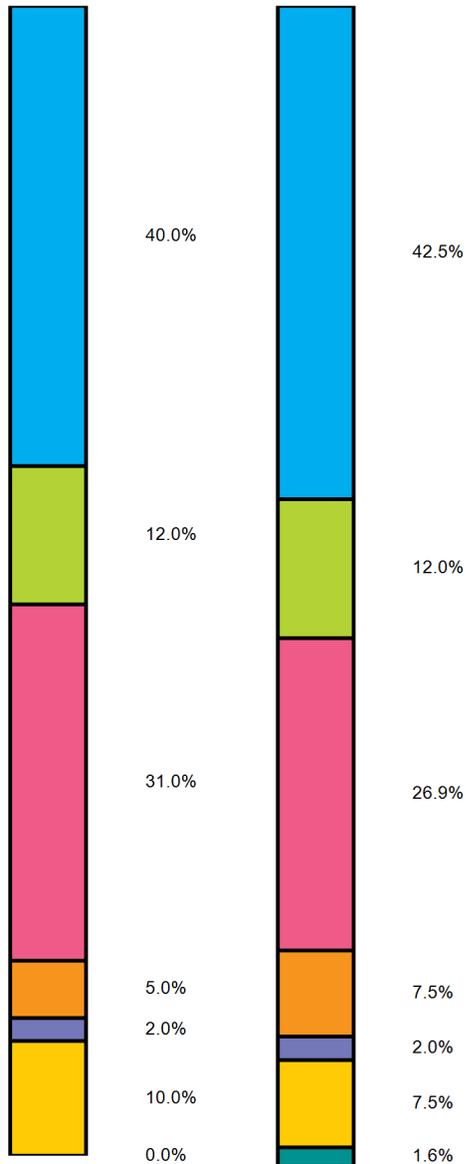
<sup>1</sup> Source: InvestorForce. Balanced Portfolio represents 60% MSCI ACWI and 40% Bloomberg Barclays Global Aggregate.

# Oakland Police and Fire Retirement System

October 20, 2020

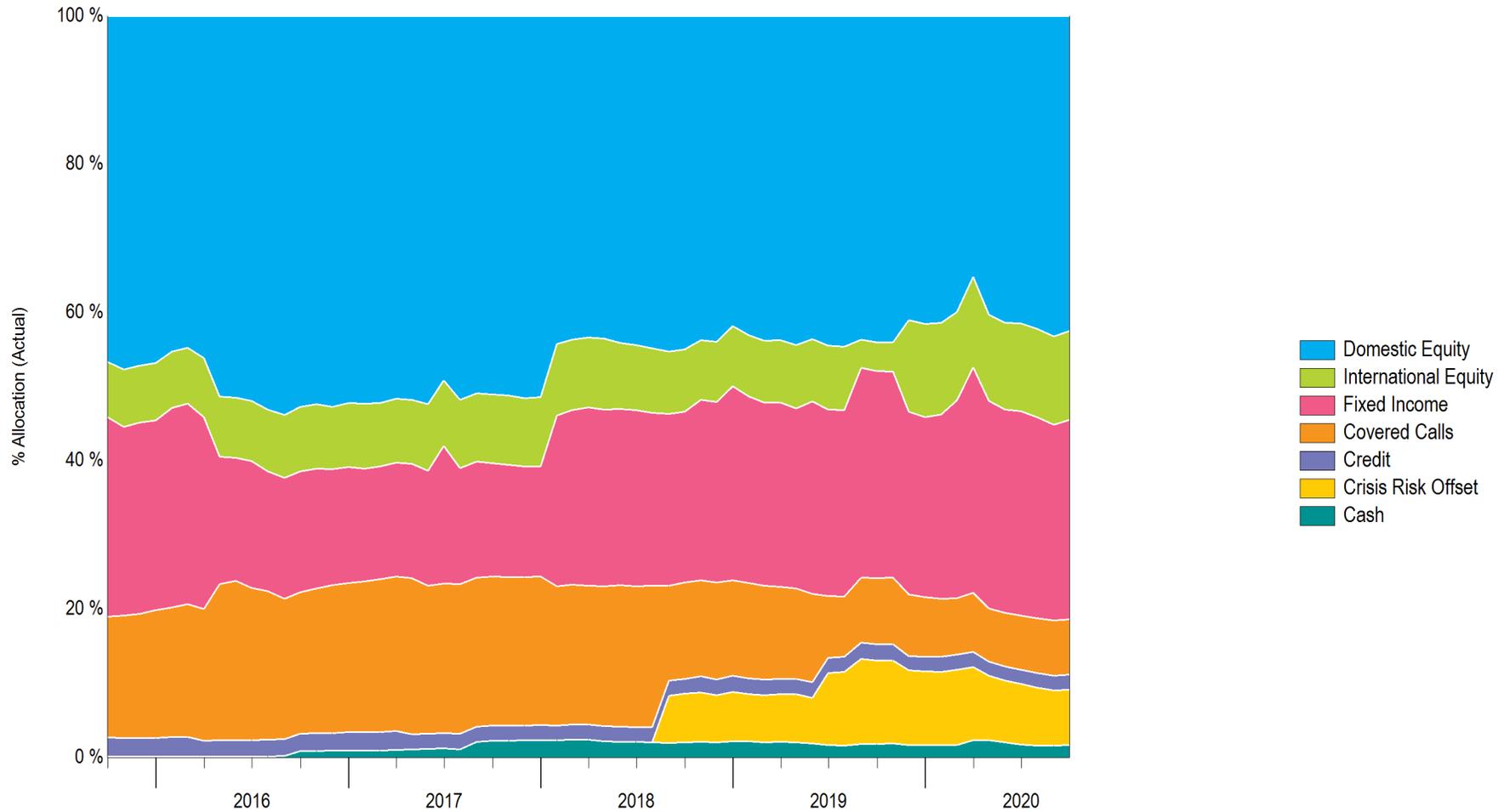
September Flash Report

### OPFRS Total Plan As of September 30, 2020



Allocation vs. Targets and Policy						
	Current Balance	Current Allocation	Policy	Difference	Within IPS Range?	
Domestic Equity	\$169,962,362	42.5%	40.0%	2.5%	Yes	
International Equity	\$47,942,430	12.0%	12.0%	0.0%	Yes	
Fixed Income	\$107,701,257	26.9%	31.0%	-4.1%	Yes	
Covered Calls	\$29,895,963	7.5%	5.0%	2.5%	Yes	
Credit	\$8,028,555	2.0%	2.0%	0.0%	Yes	
Crisis Risk Offset	\$30,031,879	7.5%	10.0%	-2.5%	Yes	
Cash	\$6,504,670	1.6%	0.0%	1.6%	Yes	
<b>Total</b>	<b>\$400,067,116</b>	<b>100.0%</b>	<b>100.0%</b>			

Asset Allocation History  
5 Years Ending September 30, 2020



#### Asset Class Performance Summary

	Market Value (\$)	% of Portfolio	1 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>OPFRS Total Plan</b>	<b>400,067,116</b>	<b>100.0</b>	<b>-1.7</b>	<b>0.4</b>	<b>5.2</b>	<b>5.7</b>	<b>6.6</b>	<b>9.0</b>	<b>8.3</b>	<b>6.7</b>	<b>Dec-88</b>
<i>OPFRS Policy Benchmark</i>			<i>-1.8</i>	<i>3.4</i>	<i>5.1</i>	<i>8.4</i>	<i>7.0</i>	<i>9.2</i>	<i>8.0</i>	<i>8.2</i>	<i>Dec-88</i>
<b>Domestic Equity</b>	<b>169,962,362</b>	<b>42.5</b>	<b>-3.0</b>	<b>2.7</b>	<b>8.3</b>	<b>11.6</b>	<b>10.3</b>	<b>12.9</b>	<b>13.2</b>	<b>8.6</b>	<b>Jun-97</b>
<i>Russell 3000 (Blend)</i>			<i>-3.6</i>	<i>5.4</i>	<i>9.2</i>	<i>15.0</i>	<i>11.6</i>	<i>13.7</i>	<i>13.5</i>	<i>8.8</i>	<i>Jun-97</i>
<b>International Equity</b>	<b>47,942,430</b>	<b>12.0</b>	<b>-1.9</b>	<b>-6.7</b>	<b>5.5</b>	<b>2.4</b>	<b>1.8</b>	<b>7.2</b>	<b>5.3</b>	<b>5.1</b>	<b>Jan-98</b>
<i>MSCI ACWI ex US (Blend)</i>			<i>-2.4</i>	<i>-5.1</i>	<i>6.4</i>	<i>3.4</i>	<i>1.6</i>	<i>6.7</i>	<i>4.5</i>	<i>5.3</i>	<i>Jan-98</i>
<b>Fixed Income</b>	<b>107,701,257</b>	<b>26.9</b>	<b>0.0</b>	<b>6.5</b>	<b>1.9</b>	<b>6.8</b>	<b>5.6</b>	<b>4.9</b>	<b>4.2</b>	<b>5.6</b>	<b>Dec-93</b>
<i>Blmbg BC Universal (Blend)</i>			<i>-0.2</i>	<i>6.2</i>	<i>1.0</i>	<i>6.7</i>	<i>5.1</i>	<i>4.5</i>	<i>3.9</i>	<i>5.4</i>	<i>Dec-93</i>
<b>Credit</b>	<b>8,028,555</b>	<b>2.0</b>	<b>1.6</b>	<b>0.3</b>	<b>7.5</b>	<b>3.1</b>	<b>2.7</b>	<b>5.7</b>	<b>--</b>	<b>5.0</b>	<b>Feb-15</b>
<i>BBgBarc US High Yield TR</i>			<i>-1.0</i>	<i>0.6</i>	<i>4.6</i>	<i>3.3</i>	<i>4.2</i>	<i>6.8</i>	<i>6.5</i>	<i>5.4</i>	<i>Feb-15</i>
<b>Covered Calls</b>	<b>29,895,963</b>	<b>7.5</b>	<b>-1.3</b>	<b>1.0</b>	<b>7.1</b>	<b>7.2</b>	<b>6.9</b>	<b>9.7</b>	<b>--</b>	<b>8.0</b>	<b>Apr-14</b>
<i>CBOE S&amp;P 500 BuyWrite USD</i>			<i>0.0</i>	<i>-9.6</i>	<i>6.5</i>	<i>-4.9</i>	<i>1.1</i>	<i>4.8</i>	<i>6.0</i>	<i>4.3</i>	<i>Apr-14</i>
<b>Crisis Risk Offset</b>	<b>30,031,879</b>	<b>7.5</b>	<b>-1.4</b>	<b>-21.2</b>	<b>-1.3</b>	<b>-20.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-8.5</b>	<b>Aug-18</b>
<i>SG Multi Alternative Risk Premia Index</i>			<i>0.3</i>	<i>-13.1</i>	<i>-0.7</i>	<i>-13.9</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.5</i>	<i>Aug-18</i>
<b>Cash</b>	<b>6,504,670</b>	<b>1.6</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>1.5</b>	<b>1.9</b>	<b>1.4</b>	<b>--</b>	<b>0.7</b>	<b>Mar-11</b>
<i>FTSE T-Bill 3 Months TR</i>			<i>0.0</i>	<i>0.6</i>	<i>0.0</i>	<i>1.0</i>	<i>1.6</i>	<i>1.2</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>

Market values and returns based on preliminary custodial data and manager estimates.

### OPFRS Total Plan As of September 30, 2020

Trailing Net Performance												
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>OPFRS Total Plan</b>	<b>400,067,116</b>	<b>100.0</b>	<b>--</b>	<b>-1.7</b>	<b>5.2</b>	<b>0.4</b>	<b>5.7</b>	<b>6.6</b>	<b>9.0</b>	<b>8.3</b>	<b>6.7</b>	<b>Dec-88</b>
<i>OPFRS Policy Benchmark</i>				<i>-1.8</i>	<i>5.1</i>	<i>3.4</i>	<i>8.4</i>	<i>7.0</i>	<i>9.2</i>	<i>8.0</i>	<i>8.2</i>	<i>Dec-88</i>
<b>Domestic Equity</b>	<b>169,962,362</b>	<b>42.5</b>	<b>42.5</b>	<b>-3.0</b>	<b>8.3</b>	<b>2.7</b>	<b>11.6</b>	<b>10.3</b>	<b>12.9</b>	<b>13.2</b>	<b>8.6</b>	<b>Jun-97</b>
<i>Russell 3000 (Blend)</i>				<i>-3.6</i>	<i>9.2</i>	<i>5.4</i>	<i>15.0</i>	<i>11.6</i>	<i>13.7</i>	<i>13.5</i>	<i>8.8</i>	<i>Jun-97</i>
Northern Trust Russell 1000	97,755,168	24.4	57.5	-3.6	9.4	6.3	15.9	12.4	14.0	13.7	13.8	Jun-10
<i>Russell 1000</i>				<i>-3.7</i>	<i>9.5</i>	<i>6.4</i>	<i>16.0</i>	<i>12.4</i>	<i>14.1</i>	<i>13.8</i>	<i>13.9</i>	<i>Jun-10</i>
EARNEST Partners	34,661,855	8.7	20.4	-1.4	8.5	2.5	10.4	11.4	14.6	13.8	9.8	Apr-06
<i>Russell MidCap</i>				<i>-1.9</i>	<i>7.5</i>	<i>-2.3</i>	<i>4.6</i>	<i>7.1</i>	<i>10.1</i>	<i>11.8</i>	<i>8.2</i>	<i>Apr-06</i>
Vanguard Russell 2000 Value	6,725,768	1.7	4.0	-4.5	2.7	-21.1	-14.5	--	--	--	-12.8	Aug-19
<i>Russell 2000 Value</i>				<i>-4.7</i>	<i>2.6</i>	<i>-21.5</i>	<i>-14.9</i>	<i>-5.1</i>	<i>4.1</i>	<i>7.1</i>	<i>-13.4</i>	<i>Aug-19</i>
Rice Hall James	12,400,423	3.1	7.3	-3.4	5.7	3.0	13.1	7.6	--	--	8.2	Jul-17
<i>Russell 2000 Growth</i>				<i>-2.1</i>	<i>7.2</i>	<i>3.9</i>	<i>15.7</i>	<i>8.2</i>	<i>11.4</i>	<i>12.3</i>	<i>9.5</i>	<i>Jul-17</i>
iShares Edge MSCI Min Vol	18,419,148	4.6	10.8	-1.7	5.6	--	--	--	--	--	19.2	Apr-20
<i>MSCI USA Minimum Volatility GR USD</i>				<i>-1.6</i>	<i>5.8</i>	<i>-1.1</i>	<i>1.9</i>	<i>10.6</i>	<i>12.5</i>	<i>13.4</i>	<i>19.4</i>	<i>Apr-20</i>
<b>International Equity</b>	<b>47,942,430</b>	<b>12.0</b>	<b>12.0</b>	<b>-1.9</b>	<b>5.5</b>	<b>-6.7</b>	<b>2.4</b>	<b>1.8</b>	<b>7.2</b>	<b>5.3</b>	<b>5.1</b>	<b>Jan-98</b>
<i>MSCI ACWI ex US (Blend)</i>				<i>-2.4</i>	<i>6.4</i>	<i>-5.1</i>	<i>3.4</i>	<i>1.6</i>	<i>6.7</i>	<i>4.5</i>	<i>5.3</i>	<i>Jan-98</i>
Vanguard Developed Markets ETF	14,122,361	3.5	29.5	-1.8	6.0	-5.6	2.2	--	--	--	5.0	Sep-19
<i>FTSE Developed All Cap Ex US TR USD</i>				<i>-2.3</i>	<i>6.0</i>	<i>-5.8</i>	<i>2.3</i>	<i>1.1</i>	<i>5.2</i>	<i>3.0</i>	<i>5.0</i>	<i>Sep-19</i>
SGA ACWI ex-U.S. Equity	33,541,668	8.4	70.0	-1.8	5.9	-5.7	--	--	--	--	-5.1	Dec-19
<i>MSCI ACWI ex USA Gross</i>				<i>-2.4</i>	<i>6.4</i>	<i>-5.1</i>	<i>3.4</i>	<i>1.6</i>	<i>6.7</i>	<i>4.5</i>	<i>-0.9</i>	<i>Dec-19</i>

International equity performance inclusive of residual cash in Fisher and Hansberger transition accounts.

### OPFRS Total Plan As of September 30, 2020

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Fixed Income</b>	<b>107,701,257</b>	<b>26.9</b>	<b>26.9</b>	<b>0.0</b>	<b>1.9</b>	<b>6.5</b>	<b>6.8</b>	<b>5.6</b>	<b>4.9</b>	<b>4.2</b>	<b>5.6</b>	<b>Dec-93</b>
<i>Blmbg BC Universal (Blend)</i>				-0.2	1.0	6.2	6.7	5.1	4.5	3.9	5.4	Dec-93
Ramirez	78,306,337	19.6	72.7	0.0	1.9	5.5	5.6	5.4	--	--	5.4	Jan-17
<i>BBgBarc US Aggregate TR</i>				-0.1	0.6	6.8	7.0	5.2	4.2	3.6	5.0	Jan-17
Reams	29,394,876	7.3	27.3	0.0	2.0	18.0	17.9	9.1	6.6	5.3	6.2	Feb-98
<i>Blmbg BC Universal (Blend)</i>				-0.2	1.0	6.2	6.7	5.1	4.5	3.9	5.1	Feb-98
<b>Credit</b>	<b>8,028,555</b>	<b>2.0</b>	<b>2.0</b>	<b>1.6</b>	<b>7.5</b>	<b>0.3</b>	<b>3.1</b>	<b>2.7</b>	<b>5.7</b>	<b>--</b>	<b>5.0</b>	<b>Feb-15</b>
<i>BBgBarc US High Yield TR</i>				-1.0	4.6	0.6	3.3	4.2	6.8	6.5	5.4	Feb-15
DDJ Capital	8,028,555	2.0	100.0	1.6	7.5	0.3	3.1	2.7	5.7	--	5.0	Feb-15
<i>ICE BofA High Yield Master TR</i>				-1.0	4.7	-0.3	2.3	3.9	6.6	6.3	5.2	Feb-15
<b>Covered Calls</b>	<b>29,895,963</b>	<b>7.5</b>	<b>7.5</b>	<b>-1.3</b>	<b>7.1</b>	<b>1.0</b>	<b>7.2</b>	<b>6.9</b>	<b>9.7</b>	<b>--</b>	<b>8.0</b>	<b>Apr-14</b>
<i>CBOE S&amp;P 500 BuyWrite USD</i>				0.0	6.5	-9.6	-4.9	1.1	4.8	6.0	4.3	Apr-14
Parametric BXM	13,692,936	3.4	45.8	-0.1	6.3	-1.9	2.7	4.2	7.3	--	6.2	Apr-14
<i>CBOE S&amp;P 500 BuyWrite USD</i>				0.0	6.5	-9.6	-4.9	1.1	4.8	6.0	4.3	Apr-14
Parametric DeltaShift	16,203,027	4.1	54.2	-2.3	7.9	3.8	11.5	9.4	12.0	--	10.2	Apr-14
<i>CBOE S&amp;P 500 BuyWrite USD</i>				0.0	6.5	-9.6	-4.9	1.1	4.8	6.0	4.3	Apr-14
<b>Crisis Risk Offset</b>	<b>30,031,879</b>	<b>7.5</b>	<b>7.5</b>	<b>-1.4</b>	<b>-1.3</b>	<b>-21.2</b>	<b>-20.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-8.5</b>	<b>Aug-18</b>
<i>SG Multi Alternative Risk Premia Index</i>				0.3	-0.7	-13.1	-13.9	--	--	--	-5.5	Aug-18
Parametric Systematic Alternative Risk Premia	15,284,520	3.8	50.9	-3.4	-2.5	-42.6	-40.3	--	--	--	-19.8	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>				0.3	-0.7	-13.1	-13.9	--	--	--	-5.5	Aug-18
Vanguard Long-Term Treasury ETF	14,747,360	3.7	49.1	0.8	0.0	21.0	15.8	--	--	--	19.6	Jul-19
<i>BBgBarc US Govt Long TR</i>				0.4	0.1	21.1	16.2	11.8	8.2	7.2	19.8	Jul-19
<b>Cash</b>	<b>6,504,670</b>	<b>1.6</b>	<b>1.6</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>1.5</b>	<b>1.9</b>	<b>1.4</b>	<b>--</b>	<b>0.7</b>	<b>Mar-11</b>
<i>FTSE T-Bill 3 Months TR</i>				0.0	0.0	0.6	1.0	1.6	1.2	0.6	0.6	Mar-11
Cash	213,670	0.1	3.3	0.0	0.3	1.5	2.0	2.1	1.5	--	0.8	Mar-11
<i>FTSE T-Bill 3 Months TR</i>				0.0	0.0	0.6	1.0	1.6	1.2	0.6	0.6	Mar-11
Cash - Treasury	6,291,000	1.6	96.7									

**OPFRS Total Plan As of September 30, 2020**

Cash Flow Summary				
Month to Date				
	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Cash	\$190,421	\$23,254	-\$5	\$213,670
Cash - Treasury	\$6,394,000	-\$103,000	\$0	\$6,291,000
DDJ Capital	\$7,902,913	\$0	\$125,642	\$8,028,555
EARNEST Partners	\$35,141,215	\$0	-\$479,359	\$34,661,855
Fisher Transition	\$73,535	-\$639	-\$1,431	\$71,466
Hansberger Transition	\$269,040	\$0	-\$62,104	\$206,936
iShares Edge MSCI Min Vol	\$18,728,389	\$0	-\$309,241	\$18,419,148
Northern Trust Russell 1000	\$102,446,721	-\$1,000,000	-\$3,691,554	\$97,755,168
Parametric BXM	\$13,709,498	\$0	-\$16,562	\$13,692,936
Parametric DeltaShift	\$16,581,219	\$0	-\$378,192	\$16,203,027
Parametric Systematic Alternative Risk Premia	\$15,822,484	\$0	-\$537,964	\$15,284,520
Ramirez	\$78,296,249	\$0	\$10,088	\$78,306,337
Reams	\$29,384,301	\$0	\$10,576	\$29,394,876
Reams Low Duration	\$44	\$0	\$0	\$44
Rice Hall James	\$12,839,518	\$0	-\$439,095	\$12,400,423
Securities Lending Northern Trust	\$0	-\$22,615	\$22,615	\$0
SGA ACWI ex-U.S. Equity	\$34,168,255	\$0	-\$626,587	\$33,541,668
Vanguard Developed Markets ETF	\$14,373,210	\$0	-\$250,849	\$14,122,361
Vanguard Long-Term Treasury ETF	\$14,631,503	\$0	\$115,856	\$14,747,360
Vanguard Russell 2000 Value	\$7,045,741	\$0	-\$319,973	\$6,725,768
<b>Total</b>	<b>\$407,998,255</b>	<b>-\$1,103,000</b>	<b>-\$6,828,139</b>	<b>\$400,067,116</b>

**Benchmark History**  
**As of September 30, 2020**

Total Plan x Securities Lending x Reams LD Exception Comp

1/1/2019	Present	40% Russell 3000 / 12% MSCI ACWI ex USA Gross / 33% BBgBarc US Universal TR / 5% CBOE BXM / 6.7% SG Multi Alternative Risk Premia Index / 3.3% BBgBarc US Treasury Long TR
5/1/2016	12/31/2018	48% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% BBgBarc US Universal TR / 20% CBOE BXM
10/1/2015	4/30/2016	43% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% BBgBarc US Universal TR / 15% CBOE BXM / 10% CPI - All Urban Consumers (unadjusted) +3%
1/1/2014	9/30/2015	48% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% BBgBarc US Universal TR / 10% CBOE BXM / 10% CPI - All Urban Consumers (unadjusted) +3%
3/1/2013	12/31/2013	40% Russell 3000 / 10% MSCI ACWI ex USA Gross / 17% BBgBarc US Universal TR / 33% ICE BofA 3M US Treasury TR USD
8/1/2012	2/28/2013	20% Russell 3000 / 7% MSCI ACWI ex USA Gross / 18% BBgBarc US Universal TR / 55% ICE BofA 3M US Treasury TR USD
10/1/2007	7/31/2012	53% Russell 3000 / 17% MSCI ACWI ex USA Gross / 30% BBgBarc US Universal TR
4/1/2006	9/30/2007	35% Russell 3000 / 15% MSCI ACWI ex USA Gross / 50% BBgBarc US Universal TR
1/1/2005	3/31/2006	35% Russell 3000 / 15% MSCI ACWI ex USA Gross / 50% BBgBarc US Aggregate TR
4/1/1998	12/31/2004	50% BBgBarc US Aggregate TR / 10% Russell 1000 / 20% Russell 1000 Value / 5% Russell MidCap / 15% MSCI EAFE
9/1/1988	3/31/1998	40% S&P 500 / 55% BBgBarc US Aggregate TR / 5% FTSE T-Bill 3 Months TR

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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 20, 2020

Collapsing Global Interest Rates /  
Negative Rates

## Collapsing Global Interest Rates

1. Summary – Current State of Markets
2. US 10-Year Treasury Yield at All Time Lows
3. Total Return Given Changes in Interest Rates
4. “Low-Rate Environment” Is a Global Issue
5. The Role of US Inflation

## Negative Rates

6. What Does Negative Rates actually Mean?
7. How Do Rates Become Negative?
8. Negative Yielding Debt Makes Up Over 20% of Barclays Global Aggregate Index
9. Why Negative Rates?
10. Potential Impact from Negative Rates

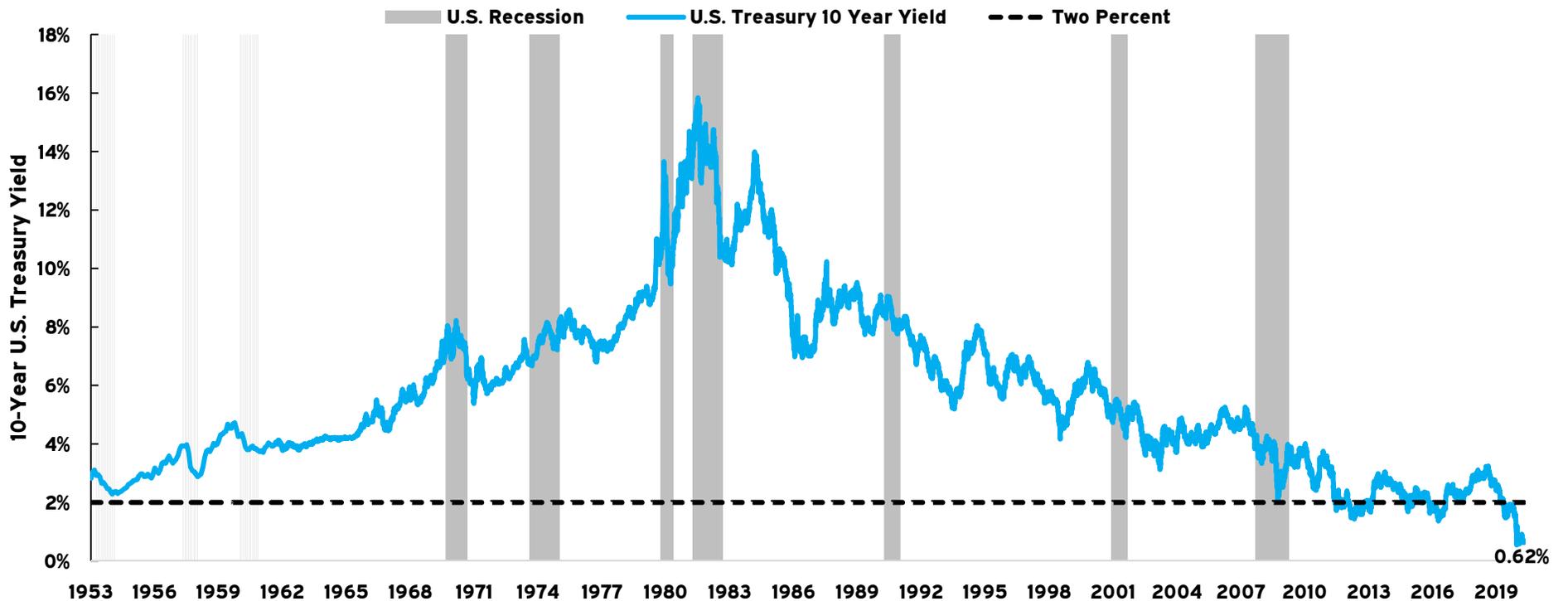
### Summary – Current State of the Markets

- The US Ten-Year Treasury yield fell below 2% in August 2019 for the first time in almost three years, and ultimately reached historical lows of well below 1% in March 2020 (touched all-time low of 0.32% in overnight trading).
- Leading into the COVID-19 pandemic, the yield curve briefly “inverted” from the perspective of the 10-year and 2-year yields, adding to the earlier inversion seen at the 10-year vs. 3-month yields.
- While inversions do not provide information regarding timing, a “10-2” inversion has always been (eventually) followed by a recession.
- However, in a still highly interconnected developed world, US yields cannot be evaluated in isolation. US Treasury yields currently offer among the highest yields for government bonds across the developed world.
  - While US Treasury bonds are expensive relative to their history, they may actually still be cheap relative to the rest of the developed world, leaving room for yields to push even lower, or stay low for the foreseeable future.
- Before the onset of the pandemic, Treasury yields were at or near all-time lows and equity prices (in the US) at or near all-time peaks, which is not conducive to future high expected returns. Currently, Treasury yields have gone even lower and equity prices dropped at an unprecedented rate in March, but have come back near record highs.

**US 10-Year Treasury Yield at All Time Lows**

- In August 2019, the US 10-Year Treasury yield fell below 2% for the first time since November 2016.
- After the onset of the pandemic, the yield went even lower, going below 1% in March. At the end of June, the yield was close to 0.7%.

**US 10-Year Treasury Yield**  
April 1, 1953 – July 9, 2020



### “Low-Rate Environment” Is a Global Issue (Update)

- US Treasury yields are not the only sovereign bond yields that are near all-time lows.
- In fact, US ten-year yields are currently the highest among G-7 countries,<sup>1</sup> and
- The US dollar’s status as the world’s reserve currency combined with the status of Treasuries as a primary “safe haven” for investors may mean there is room for yields to go lower.
- As testament to the extreme low rate environment, Germany and Japan’s government bond yield curves are almost completely negative.

#### G-7 10-Year Government Bond Yields (%)

December 6, 2019

Country	2-Year Yield	5-Year Yield	10-Year Yield	30-Year Yield
United States	1.61	1.67	1.84	2.28
Canada	1.65	1.59	1.58	1.68
France	-0.61	-0.35	0.03	0.80
Germany	-0.64	-0.55	-0.29	0.23
Italy	0.06	0.63	1.35	2.48
Japan	-0.15	-0.13	-0.02	0.43
United Kingdom	0.58	0.58	0.77	1.28

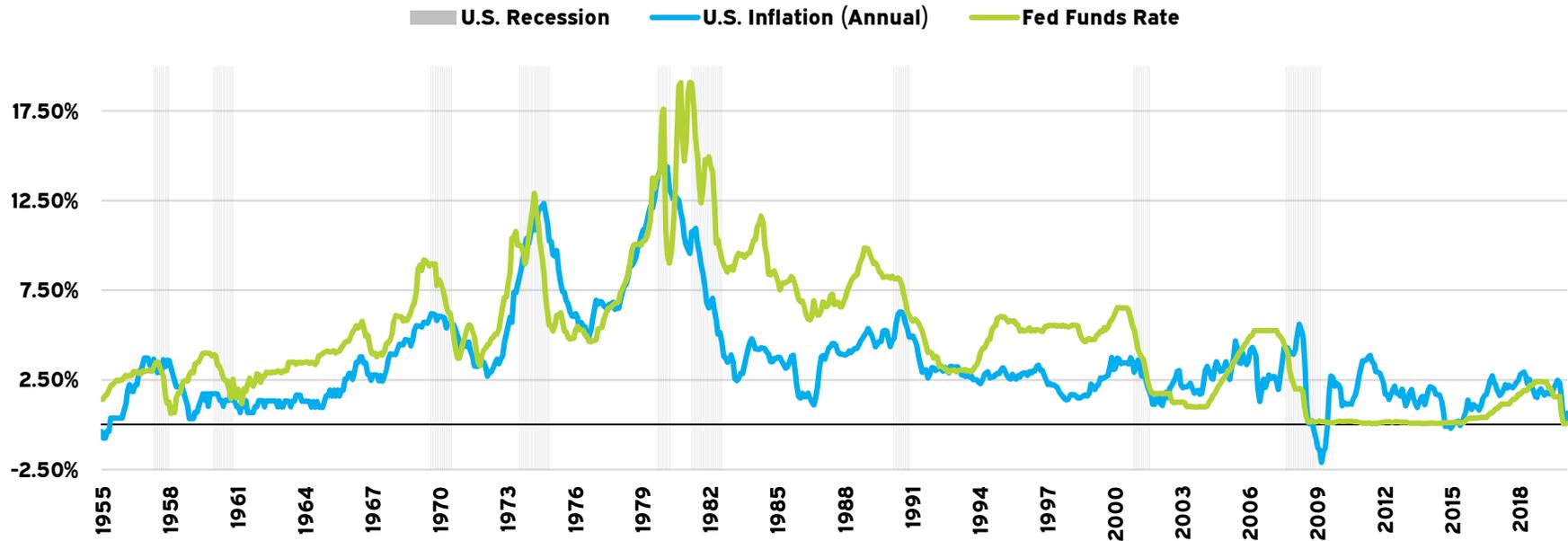
<sup>1</sup> G-7 represent the seven largest advanced economies in the world, per the IMF. The countries are Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.

**The Role of US Inflation**

- With rates and growth at very low levels and expected to remain low, an unexpected burst of inflation in the economy could potentially have negative effects on markets, something the US has not seen since the stagflation of the 1970s.

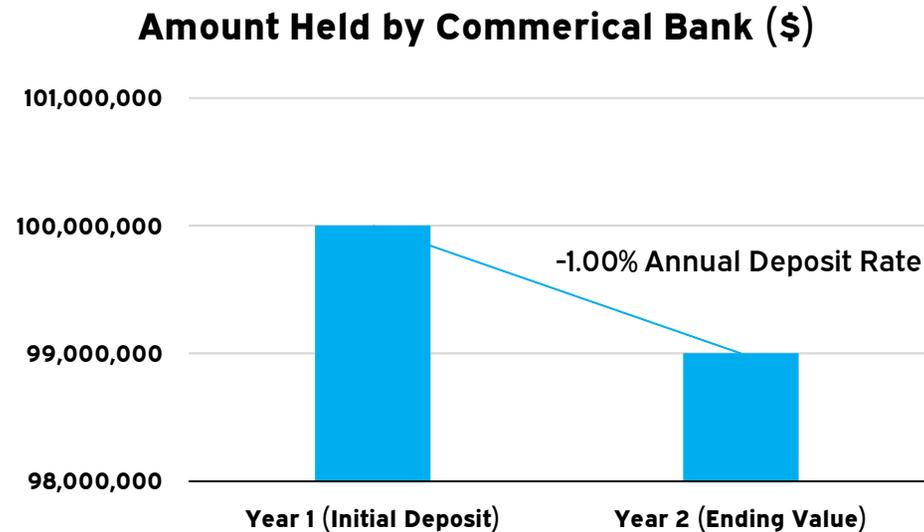
**US Inflation and Fed Funds Rate**

May 1954 – June 2020



## What Does Negative Rates Actually Mean?

- Negative interest rates are a concept where a lender has to theoretically pay to lend cash. It is akin to a storage fee, in that you're paying a bank to hold cash.
- A more relevant example would be a commercial bank having to pay for holding excess reserves with central banks that employ negative rates.
- Here is a simple example:

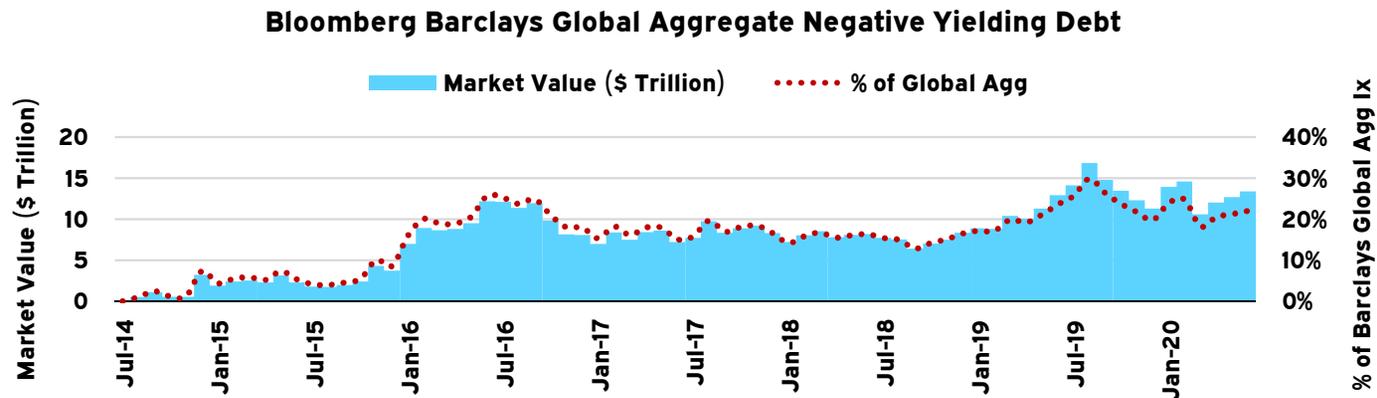


- From a bond yield perspective, a negative bond yield doesn't mean that a borrower is making periodic coupon payments, but rather at maturity, the lender receives a reduced principal amount.

## How Do Rates Become Negative?

- While there are many different interest rates – the policy rate is what a country’s central bank uses to implement its monetary policy stance.
- In the US, it is the federal funds rate, which is the target rate determined by the FOMC. It is the rate that commercial banks use to borrow and lend their excess cash reserves to each other on an overnight basis. In theory, the FOMC could set a negative rate.
- The federal funds rate can influence short-term rates on consumer loans and can impact the stock market.
- Markets expectations can also cause Treasury yields to go negative. The term premium can be negative based on the expected course of the FOMC policy for intermediate and long term bonds.

## Negative Yielding Debt Makes Up Over 20% of Barclays Global Aggregate Index



- After the global financial crisis, central banks cut nominal interest rates aggressively.
- Record highs of negative yielding debt were reached in Q3 of 2019, but have since trending downward since then.

### Why Negative Rates?

- Why would central banks want to employ negative rates? The main idea is to have commercial banks lend money instead of holding balances with the central bank.
- With more money in circulation via loans to the public, that should increase spending which should increase growth, inflation, and devalue a currency.

### Potential Impact from Negative Rates

#### Stress on Banking System

Banks may lend less as profits decline

Lower bank equity valuations

Greater potential for bank runs

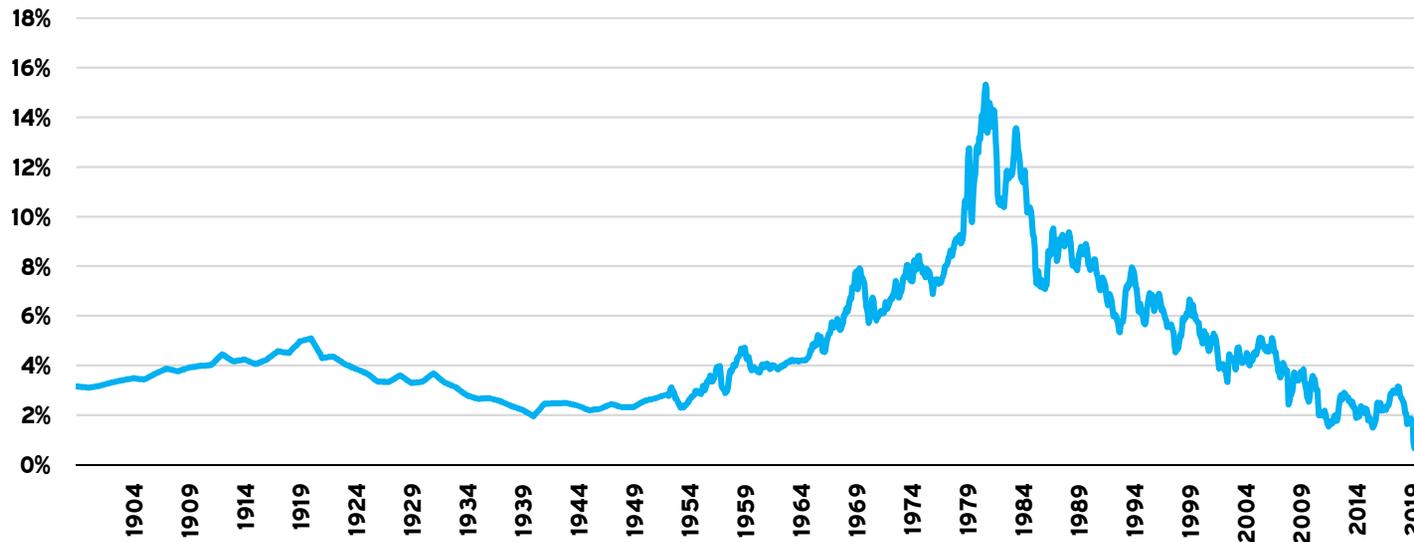
Banks could convert reserves to currency, "reversal rate"

- General public could opt to save more and hold instead of in deposits.
- Potential to remain in negative yield territory for prolong periods – central banks have been utilizing negative rates for over a decade.

How Low, and For How Long?

- US interest rates have essentially reached all-time lows.
- It is quite possible they are going to stay low.
  - If the Fed thinks this crisis will require low rates across the curve, they could intervene for an extended period.
  - The Fed actively managed the Treasury Yield Curve in the 1940s (during WWII).<sup>1</sup>

US Treasury 10-Year Rates<sup>2</sup>



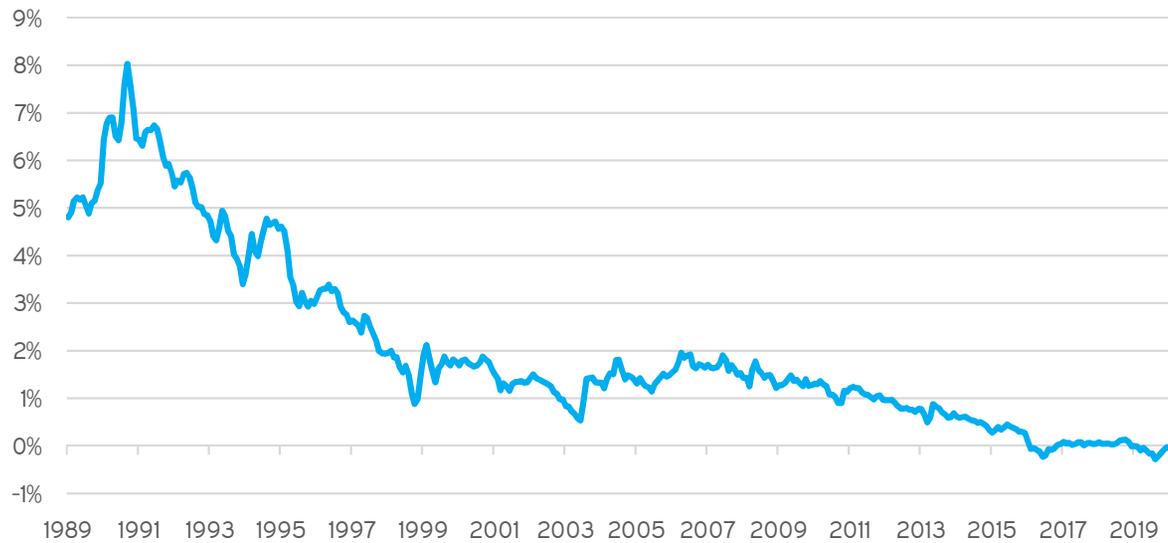
<sup>1</sup> Source: Kenneth D. Garbade, "How the Fed Managed the Treasury Yield Curve in the 1940s," Federal Reserve Bank of New York Liberty Street Economics, April 6, 2020, <https://libertystreeteconomics.newyorkfed.org/2020/03/how-the-fed-managed-the-treasury-yield-curve-in-the-1940s.html>

<sup>2</sup> Source: FRED, Multpl.com. Data is as of July 2020.

**How Low, and For How Long? (Continued)**

- There is global precedent for rates staying low for a long time.
- It may even be possible that rates move lower.
  - US rates could theoretically push past what many once considered a zero bound.
  - Foreign rates have gone negative in recent years, and not just in Japan.<sup>1</sup>

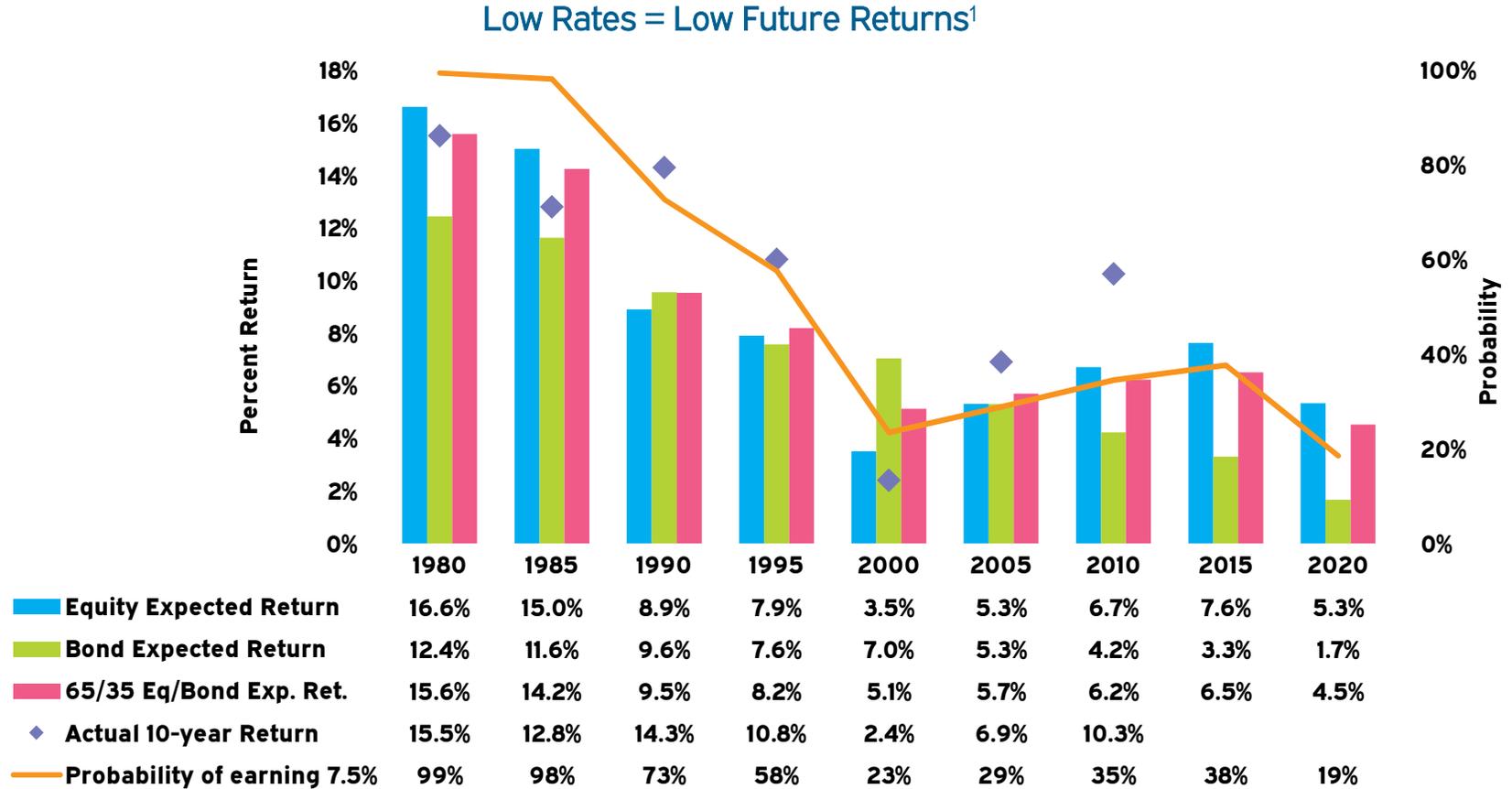
**Japanese 10-Year Rates**



- The most likely reason for the Fed to reverse course on rates would be to fight inflation.
- Even still, there is some (unknown) tolerance for inflation that the Fed will probably be willing to accept.

<sup>1</sup> Germany, Japan, Denmark, Sweden, Switzerland, Spain, France, Ireland, Portugal, and Austria have all experienced negative rates at some point since 2016.

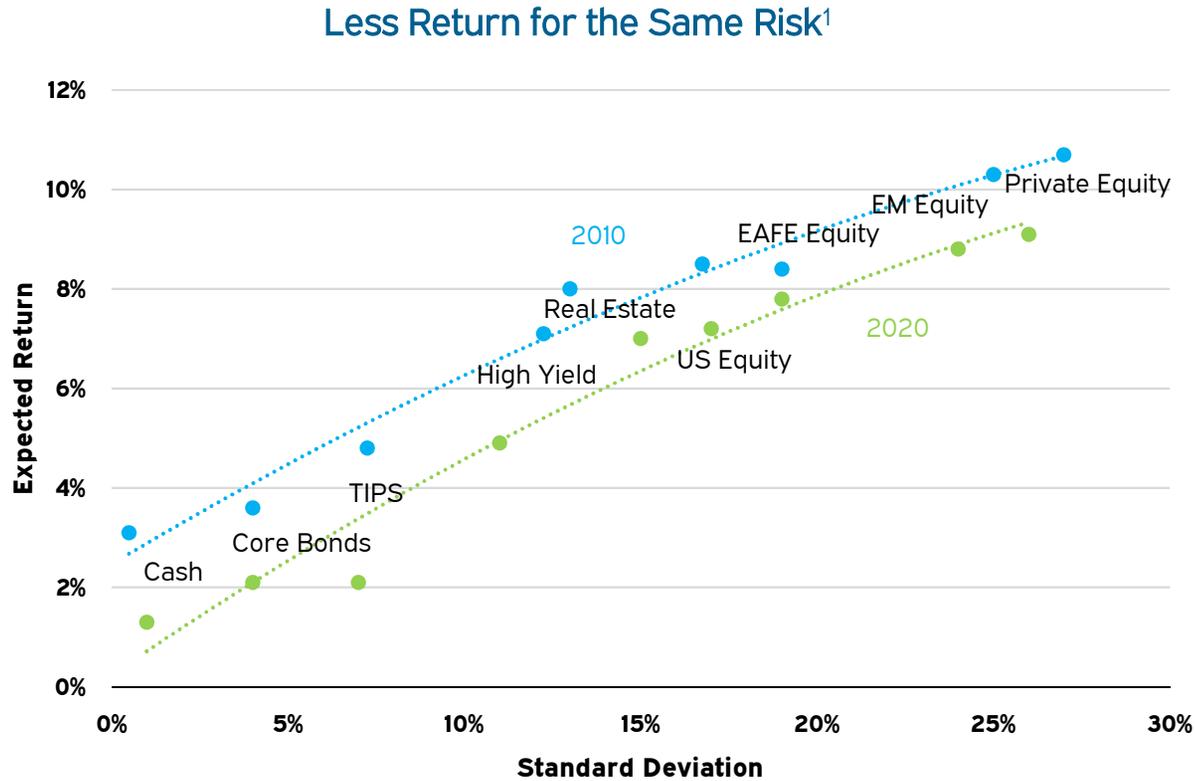
## Collapsing Global Interest Rates / Negative Rates



- A simple stock/bond mix has produced diminishing expected returns over the past 40 years.
- With rates having declined even further, it will be more difficult than ever for institutional investors to achieve their target returns.

<sup>1</sup> Expected return assumptions for 1) Bonds equals the yield of the ten-year Treasury plus 100 basis points, and 2) Equities equals the dividend yield plus the earnings yield of the S&P 500 index (using the inflation-adjusted trailing 10-year earnings). Probability calculation is for the subsequent ten years. Reflects yields and valuations as of June 30, 2020.

**Collapsing Global Interest Rates / Negative Rates**



- A positive relationship exists between long term return expectations and the level of risk accepted.
  - However, this relationship is not static.
- Achieving the returns you have in the past will require taking on greater levels of risk than it has historically.

<sup>1</sup> Expected return and standard deviation are based upon Meketa Investment Group's January 2010 and July 2020 Capital markets Expectations.

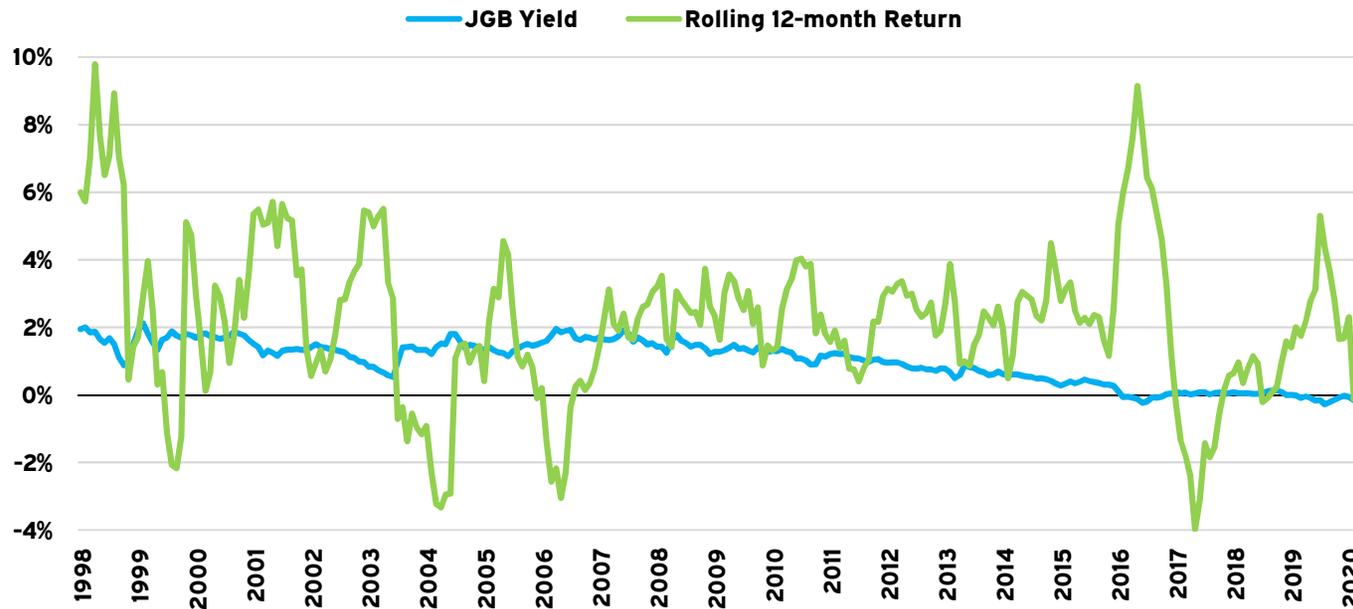
### The Barbell Approach: Mixing Low and High Risk Assets

- Target returns for institutional investors have been declining, but not nearly as quickly as interest rates.
- Low interest rates flow through to many asset classes, thus lowering their expected return.
- The lower expected return across asset classes argues for a “barbell approach” to portfolio structuring.
  - This means owning higher-risk assets such as equities along with hedges such as long Treasuries and other Diversifying Strategies.
- It effectively “crowds out” assets with expected returns in the middle that tend to be correlated with higher risk assets.
  - It will be harder for high yield, bank loans, EM debt, GTAA, and traditional hedge funds to find a home.
- A barbell approach takes on risk more efficiently.
  - It provides better downside protection than a typical portfolio that theoretically has the same level of risk in it.

**Should We Fear Bonds When Rates Are Low?**

- If the Fed wants to keep rates steady, they can, implying limited downside to bonds.
- A good case study is Japan, who instituted a Zero Interest Rate Policy (ZIRP) in 1999.
- Since the inception of ZIRP in Japan, government bonds have produced fairly steady, if modest, returns.
  - The average annual return was 1.9%, and the worst 12-month decline was a -4% drawdown.

**Japanese Government Bond Yields and Returns<sup>1</sup>**

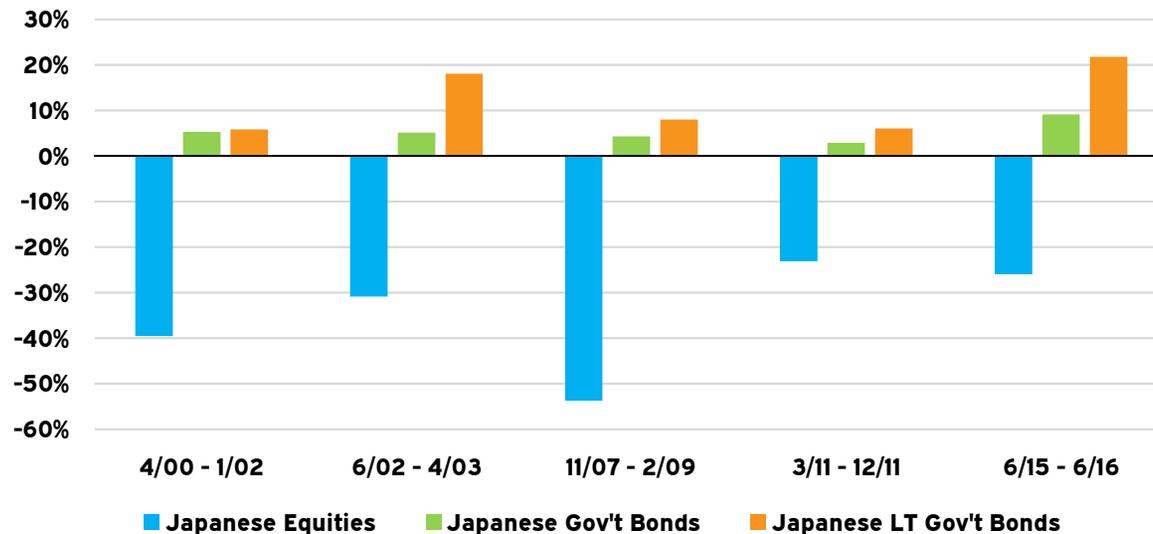


<sup>1</sup> Data Source for JGB returns is the ICE BofA Japan Government Index and its components. 10-year rates fell and stayed below 2% in 1998, hence we used this as the inception point for our analysis.

**But Can Bonds Still Provide A Hedge?**

- There is an unknown level below which rates cannot fall, perhaps -1.0%.
  - This places a limit on how good of a hedge bonds, especially long bonds, can provide.
- During the worst drawdowns in Japan, government bonds consistently served as a hedge.
  - Long-term government bonds served as a better hedge, despite the low starting yield.

**Worst Drawdowns during ZIRP (Cumulative Return)<sup>1</sup>**



- The 2015-16 drawdown is particularly informative, as the 10-year rate at the start of the period was just 0.46%, and it declined to -0.23%.

<sup>1</sup> Data Source for JGB returns is the ICE BofA Japan Government Index and its components; for equities, the source is MSCI Japan (local currency).

### Diversifying Strategies

- Also often referred to as Crisis Risk Offset “CRO” or Risk Mitigating Strategies, or “RMS,” is an asset allocation program designed to provide robust, impactful diversification benefits and defensive characteristics relative to growth-like asset classes.
- Programs are designed to have:
  - Low correlation with traditional portfolios.
  - Low to negative correlations to equities during volatile markets or equity drawdowns.
- Programs generally incorporate at least several of the following strategies:
  - Long Term US Treasuries
  - Trend Following
  - Global Macro
  - Alternative Risk Premia
  - Long Volatility
- By diversifying across several of these strategies, it reduces the reliance upon any single component.
  - Each strategy will react differently, depending on the type and magnitude of the drawdown, thus supporting a portfolio approach to building a program.

### Continue To Accept Risk

- Given lower interest rates, achieving your target return will require continuing to invest in risky assets.
  - Risky assets are less attractive in absolute terms, but perhaps more attractive in relative terms.
- Many investors with long or indefinite horizons will continue to take on illiquidity via private markets.
- Ramping up in private markets does not happen overnight, especially given the amount of capital overhang and current pause in transactions.
  - That means public equities will have to be the mainstay of portfolios.
- Be cognizant of the risks of equities.
  - While we continue to expect equities to produce higher returns than lower risk assets, we expect those returns will be lower than they have been over the past decade.

## Summary

- Rates are incredibly low. This does not bode well for future returns.
- It will be more difficult to achieve target returns.
  - While doing so will prove challenging, it is not impossible.
- Through a combination of options, you can improve your odds of success.
- Uncertainty is high.
- If you just don't know where the market is heading, have a little humility and diversify.

## MEMORANDUM

**TO:** Oakland Police and Fire Retirement System (OPFRS)  
**FROM:** David Sancewich, Paola Nealon, Sidney Kawanguzi – Meketa Inv. Group  
**DATE:** October 28, 2020  
**RE:** Risk Premia Review

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### Recommendation and Discussion

At the September 30, 2020 PFRS board meeting, Meketa discussed with the trustees the pending October closure of the Parametric Systematic Risk Premia strategy. As a result, Parametric returned 100% of PFRS capital. On an interim basis, the capital was moved into treasury.

A key feature of the current allocation policy is its allocation to a CRO strategic class. When fully structured and funded, the CRO class will be comprised of two components: Long Duration and Systematic Trend Following/Alternative Risk Premia. The CRO class is expected to (i) have a high probability of producing material appreciation during equity-crisis periods, and (ii) maintain its long-term purchasing power in the intervening market cycles.

Meketa believes the Trend/ARP segment of the Crisis Risk Offset class (CRO) is crucial to maintaining long-term performance rather than rely solely on Long Duration. Given the termination of Parametric this segment requires action on the part of the Oakland PFRS board to maintain its allocation moving forward. Meketa recommends that Oakland PFRS select one of the following actions in regards to Trend/ARP mandate:

1. Conduct a new RFP for a new investment manager.
2. Review the other two finalists from the 2018 ARP search: AQR and Lombard

Rather than spend the time and money conducting a new RFP. Meketa recommends OPFRS option #2 above. Specifically, sending a short update questionnaire to both managers and interview both managers at an upcoming meeting.



CITY OF OAKLAND

# AGENDA REPORT

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**TO:** Oakland Police and Fire Retirement Board      **FROM:** David F. Jones

**SUBJECT:** Emergency procedures for terminating or limiting trading discretion of PFRS investment managers to protect PFRS fund assets      **DATE:** October 19, 2020

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## SUMMARY

At the October 30, 2019 PFRS Board Meeting, Plan Administrator David Jones recommended the PFRS Board discuss considerations regarding the establishment of emergency procedures for terminating or limiting trading discretion of PFRS investment managers to protect PFRS fund assets. Staff presented excerpts of Emergency Procedures language used by other pension systems.

At the September 30, 2020 PFRS Board Meeting, staff was directed to work with the PFRS Investment Consultant (Meketa) and the Investment Committee Chair to provide the PFRS Board proposed Emergency Procedures for the System. **ATTACHMENT 1** shows proposed Emergency Procedures for PFRS.

## RECOMMENDATION

Staff recommends that the Board review the attached proposed Emergency Procedures and propose any additional edits. Upon approval, staff recommends that these procedures be added to the existing PFRS Investment Policy.

Respectfully submitted,

---

David F. Jones, Plan Administrator  
Oakland Police and Fire Retirement System

## Attachment (1):

- *Proposed Emergency Procedures Policy to Terminate/Limit Investment Managers*

Agenda Item **C5**  
PFRS Board Meeting  
October 28, 2020

# **ATTACHMENT 1**

**Proposed  
Emergency Procedures Policy  
To  
Terminate/Limit Investment Managers**

## ***Emergency Procedures Policy to Terminate/Limit Investment Managers***

### **OVERVIEW**

Occasionally, issues with investment managers may arise that require immediate action outside of a regularly scheduled board meeting. In order to protect the assets of The Oakland Police and Fire Retirement system (OPFRS) in these cases, it is necessary to have an emergency policy in place for when an urgent prudent decision is required and a Special Meeting of the Board is unable to convene.

This document describes procedures that the Board have adopted for use in situations where an investment manager's ability to continue investing assets for OPFRS is impaired.

### **DEFINITION OF EMERGENCY PROCEDURES**

To deal with such emergencies, the OPFRS Board have authorized the following individuals as part of an Emergency Group to make a timely decision in the event that the Board is unable to convene as a Special Meeting of the Board.

The Emergency Group will consist of the following:

1. OPFRS staff (Plan Administrator and/or Investment Officer and Operations Supervisor),
2. OPFRS Investment Consultant,
3. OPFRS investment committee chair, audit committee chair and/or board president . Note: At least two Board members listed above are required. If only two Board members are available a consensus from the Emergency Group members is required.
4. OPFRS Legal Counsel. (if needed)

### **Attachment 1**

***Proposed Emergency Procedures Policy to Terminate/Limit Investment Managers***  
Agenda Report\_PFRS Regular Board Meeting\_October 28, 2020\_Item C5

Unexpected Emergencies could take many forms, from a natural disaster that disrupts the monitoring of securities, mass personnel departures, litigation issues, or the sudden closure of a particular fund due to unforeseen circumstances.

Common to every emergency, however, would be the need to act quickly to minimize a negative impact on OPFRS assets.

The initial discovery of a material event could come from many sources, including the public media, the custodian bank, or the investment manager. Upon discovery of the event, OPFRS staff and the investment consultant will discuss whether further action is needed. If the decision to move forward is made, the investment consultant will notify the investment committee chair for further discussion. If an agreement to proceed is made, other members (listed above) will be notified for further discussion.

At the next regularly scheduled board meeting, all members will be informed in writing of the issue, discussion and action taken or not taken.



# Oakland Police & Fire Retirement System

## Covered Call Portfolio Review

**October 28, 2020**

**Dan Ryan**

*Senior 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

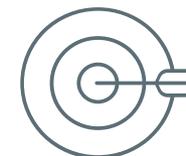
# Our Difference



Rigorous, disciplined,  
and rules-based approach



Transparent, cost-effective  
implementation expertise



Customizable, flexible  
solutions

**\$316B+**

assets under management<sup>1</sup>,  
with \$159B across  
institutional

**30+**

years of experience across  
equity, derivative and  
implementation strategies

**140+**

investment professionals,  
including 102 CFA charterholders  
and 9 PhDs

**500+**

institutional client  
relationships

All numbers are approximate as of 9/30/2020.

<sup>1</sup>AUM includes both discretionary and non-discretionary assets of Parametric Portfolio Associates® LLC (the Firm). Fixed Income assets previously offered by Eaton Vance Management and managed by Parametric as of January 1, 2020 were transferred throughout the first quarter of 2020.

Please refer to the disclosures for additional information regarding the Firm.



Proprietary and confidential. This material has been prepared for the exclusive use of Oakland Police & Fire Retirement System Performance in a one-on-one presentation only.

Third Quarter 2020

DeltaShift Overview

# Institutional Multi-Asset Capabilities

Parametric provides customizable offerings across **alternative, equity, and fixed income** that can help solve implementation challenges, portfolio risks, and asset allocation needs



## Custom Solutions

---

- Overlay solutions
- Liability-driven investing
- Custom equity & fixed income indexing
- Centralized portfolio management
- Cross-asset portfolio solutions



## Systematic Strategies

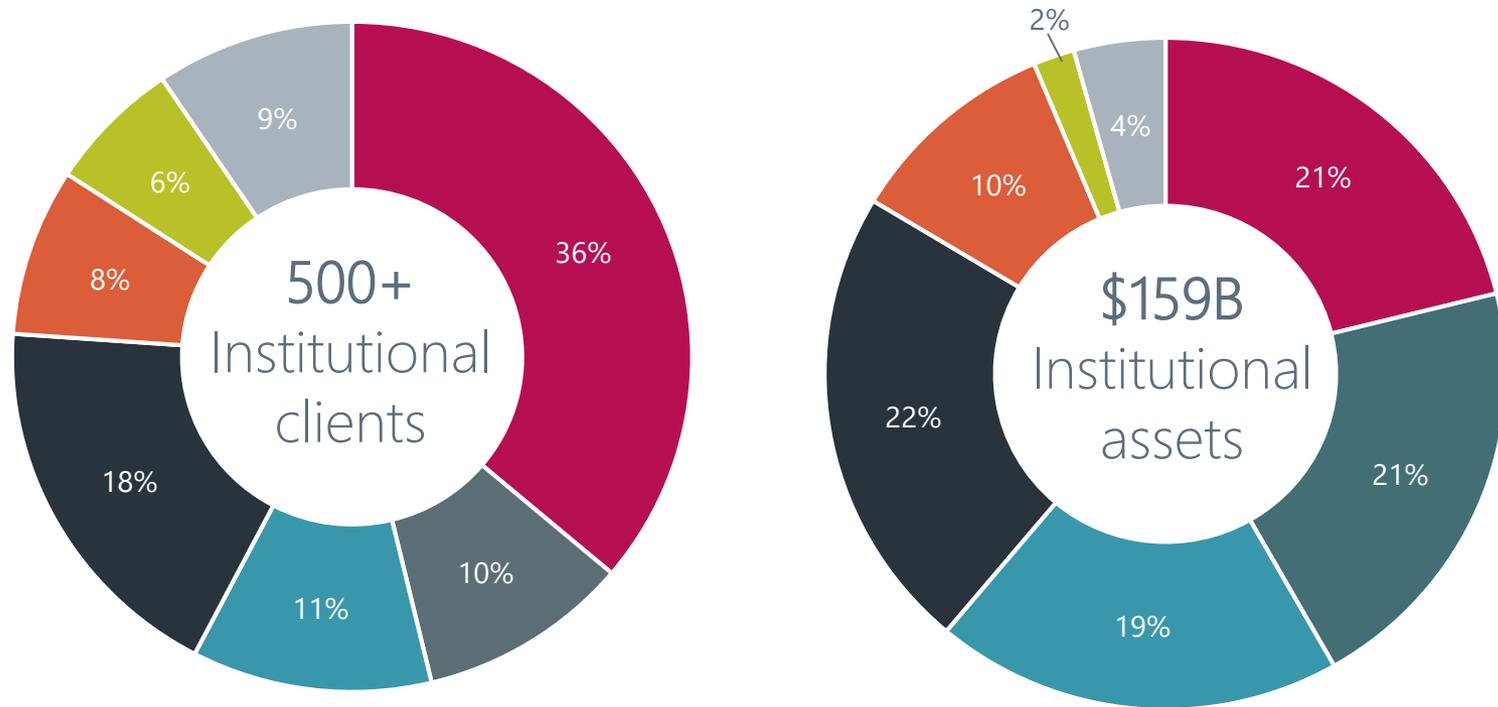
---

- Developed international
- Emerging markets
- Volatility risk premium
- Commodities

---

*Responsible investing, factors, and other themes can be applied across strategies and solutions*

# Diversified Institutional Client Base



Endowment/ Foundation
  Public
  Sub-Advisory
  Corporate
  Other<sup>1</sup>
 Healthcare
  Taft-Hartley

All numbers are approximate as of 9/30/2020 and include both discretionary and non-discretionary assets of the Firm.

<sup>1</sup>Other includes: Charity, Commingled, Individual, LP, Wrap, Superannuation, Insurance, Internal Account, Mutual Fund

# Representative Client List as of September 30, 2020

## > **Public**

East Bay Municipal Utility District  
Fairfax County 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  
Oakland Police and Fire Retirement System  
Orange County Employees Retirement System  
San Mateo County Employees' Retirement Association  
Teachers Retirement System of Louisiana  
Utah School & Institutional Trust Funds Office  
Wisconsin Investment Board

## > **Endowments**

Carnegie Institution of Washington  
Florida State University  
Indiana University & Foundation  
Pepperdine University  
Texas Christian University  
University of Michigan  
University of Minnesota  
University of Pittsburgh

## > **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 Aurora Health, Inc.  
North Memorial Health Care  
Rush University Medical Center  
Trinity Health

## > **Taft-Hartley**

Board of Trustees ABC-NABET Retirement Trust Fund  
Boilermaker-Blacksmith National Pension Trust  
Carpenters, Regional Council, Greater Pennsylvania  
Central Laborers' Pension Fund  
Chicago Laborers' Pension & Welfare Funds  
International Union of Painters and Allied Trades  
SEIU Benefit Funds  
Teamsters, Western Pennsylvania

## > **Foundations**

Auburn University  
Doris Duke Charitable Foundation, Inc.  
The John D. & Catherine T. MacArthur Foundation  
The McKnight Foundation  
Strada Education Network, Inc.  
Wisconsin Alumni Research Foundation

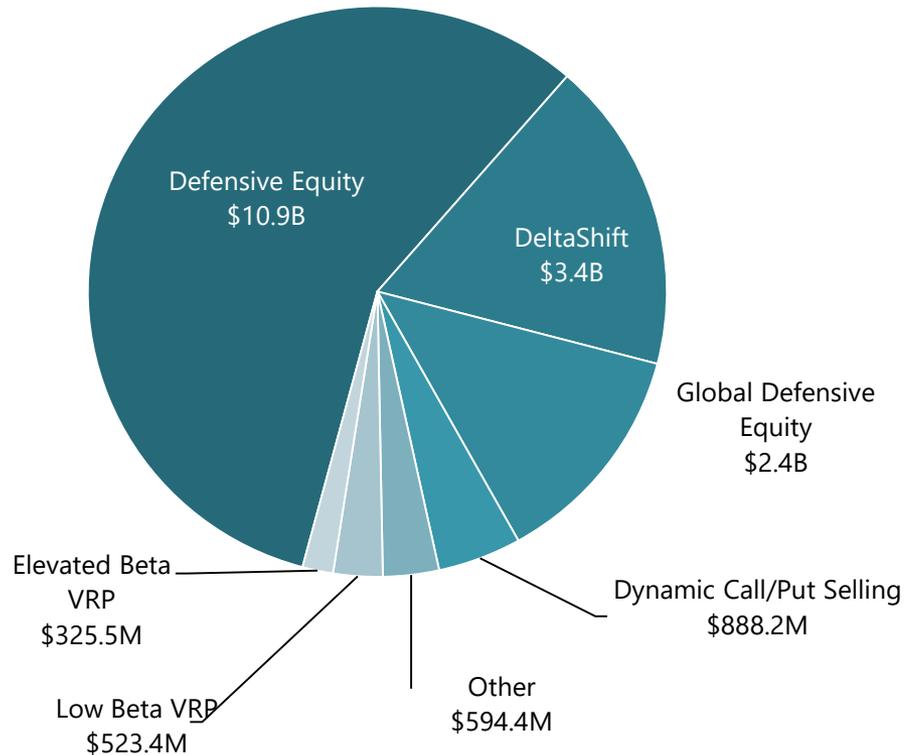
## > **Corporate**

The Boeing Company  
Cargill Inc.  
Eversource Energy  
Macy's Inc.  
3M Company  
Raytheon Technologies Corporation  
Target 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

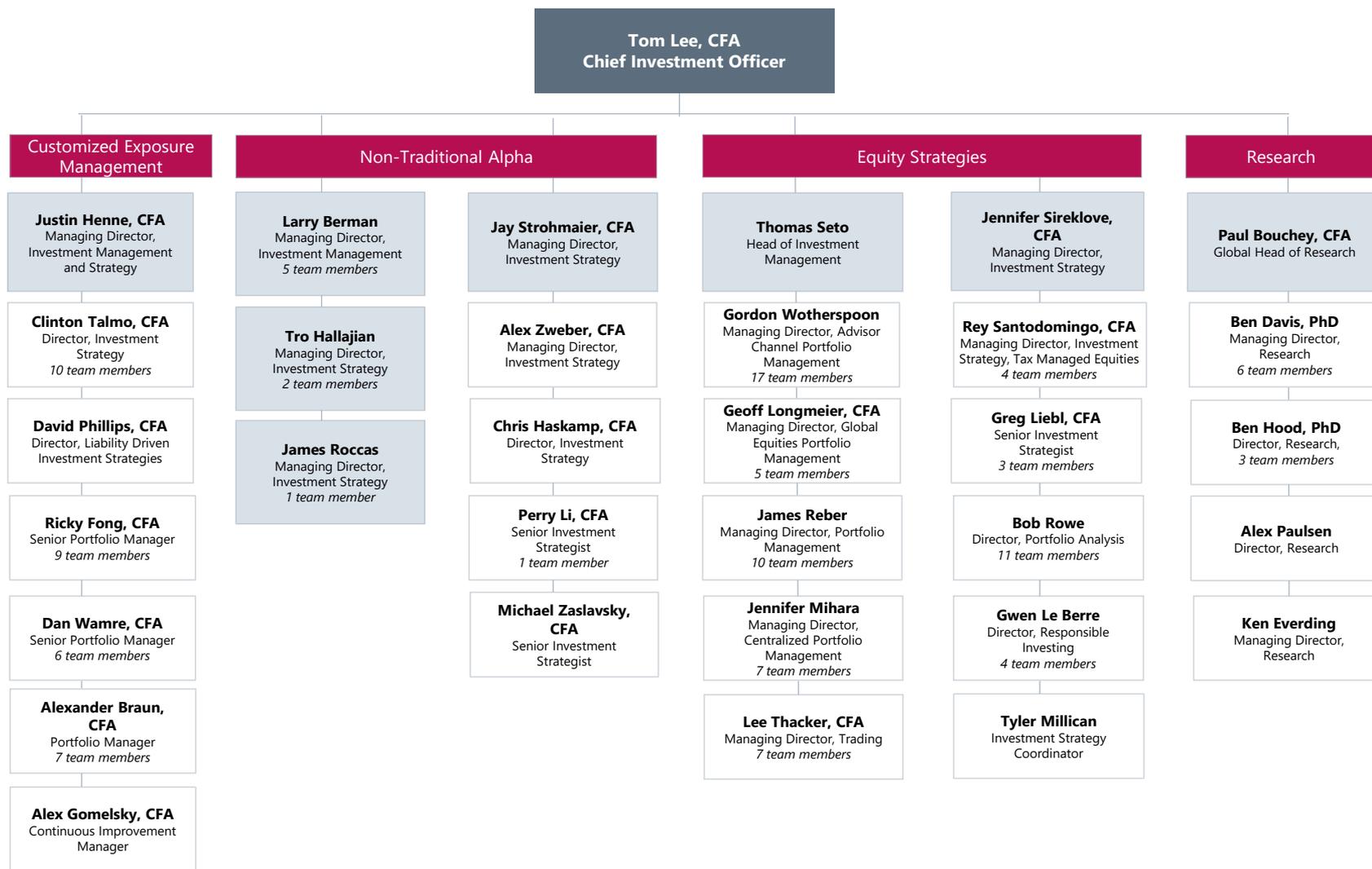
Assets by Strategy



Volatility Risk Premium Strategies Total Assets of \$19 Billion  
Consists of Funded and Overlay Assets

All numbers are approximate as of 9/30/20 and include both discretionary and non-discretionary assets of the Firm.

# Investment Team



As of 10/13/2020. Shaded box denotes direct report to Tom Lee.

# Covered Call Investment Process

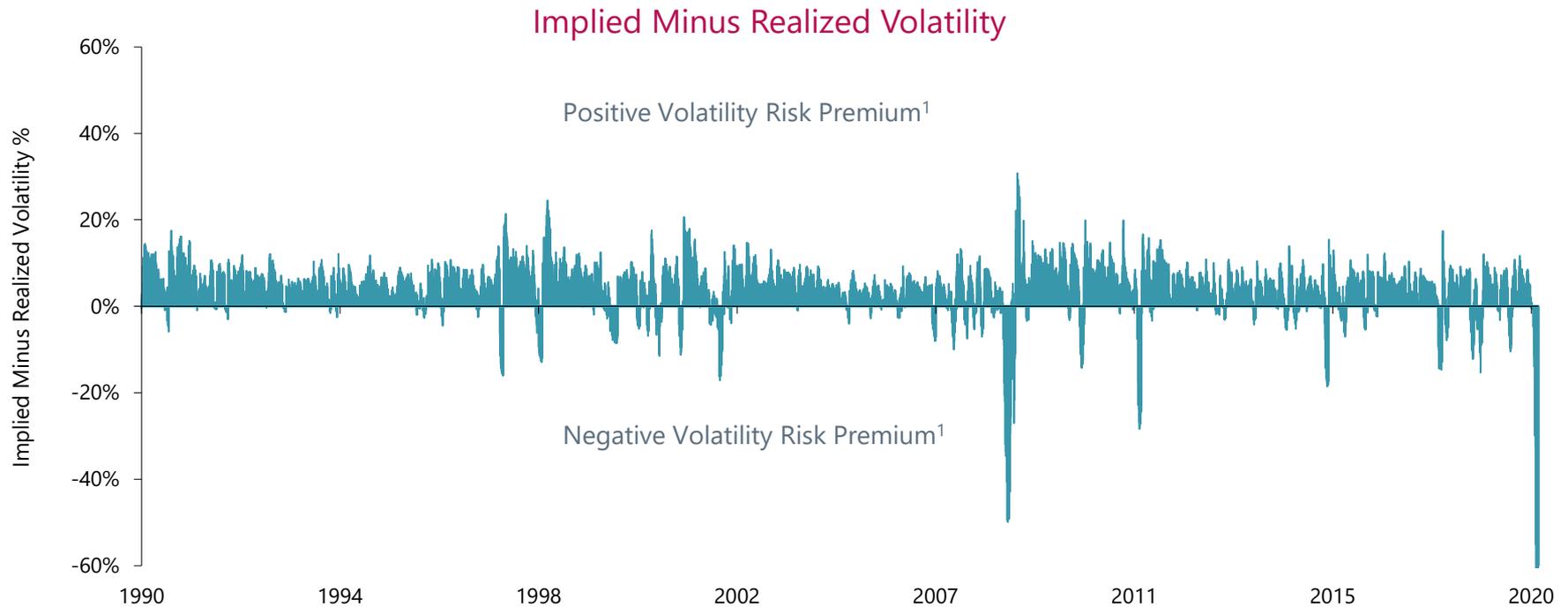
# Investment Objectives

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.

# IV-RV Relationship Has Important Implications for Investors

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



<sup>1</sup>1990 to present represents longest period from which reliable data is available and accessible for S&P 500<sup>®</sup> Volatility Index. S&P500<sup>®</sup> 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<sup>®</sup> 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: 6/30/2020.

# 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. Investment management techniques require liquidity in the specific option. 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 index call options that generally expire in 1 to 3 months. The additional return is received in exchange for potentially limiting upside participation in strong equity markets.

## Standard portfolio construction & characteristics

- Own a S&P 500<sup>®</sup> equity index portfolio.
- Systematic, rules-based call writing using exchange-traded, S&P 500<sup>®</sup> 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<sup>®</sup> Index in down, sideways and moderately up markets, and expected to underperform in strong equity markets.

Investing in an options strategy involves risk. See Disclosures for additional information.

# 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.
- Dynamic strike prices adapt to market conditions.
- 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; reduces time/price specific risk.

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# DeltaShift Rules-Based Management

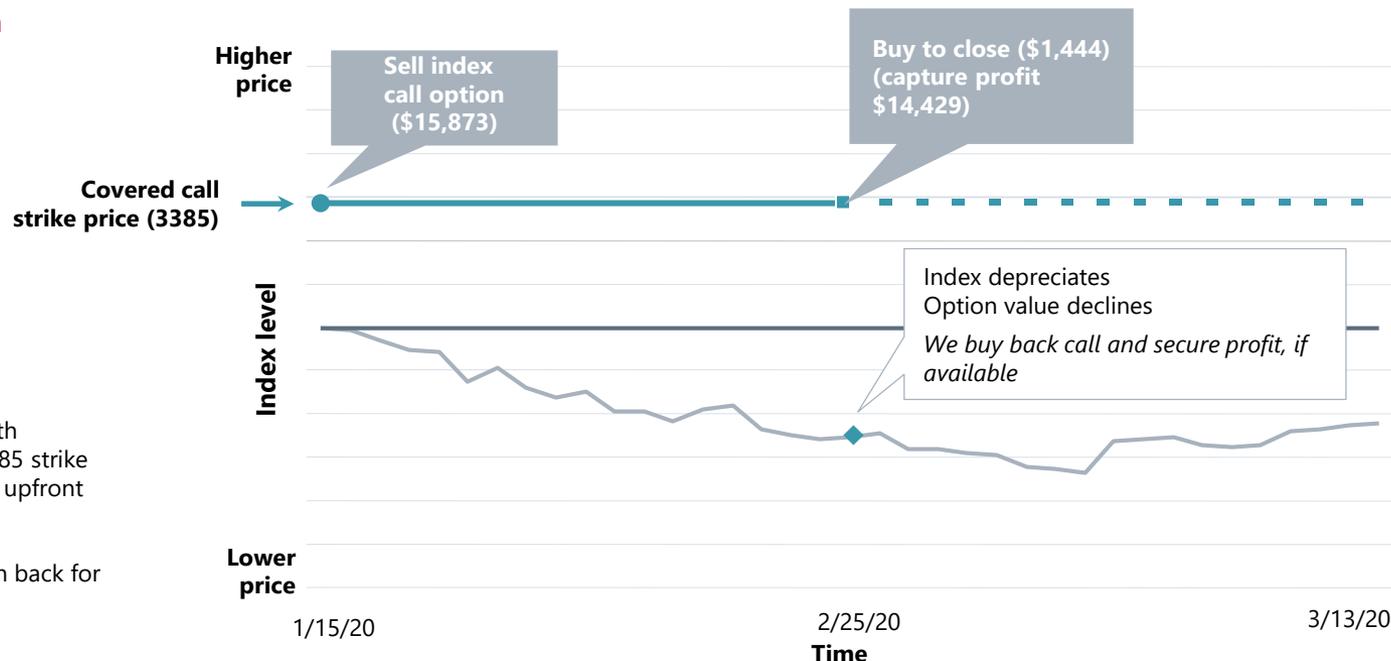
Portfolio management example: early profit capture

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

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

- 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%).



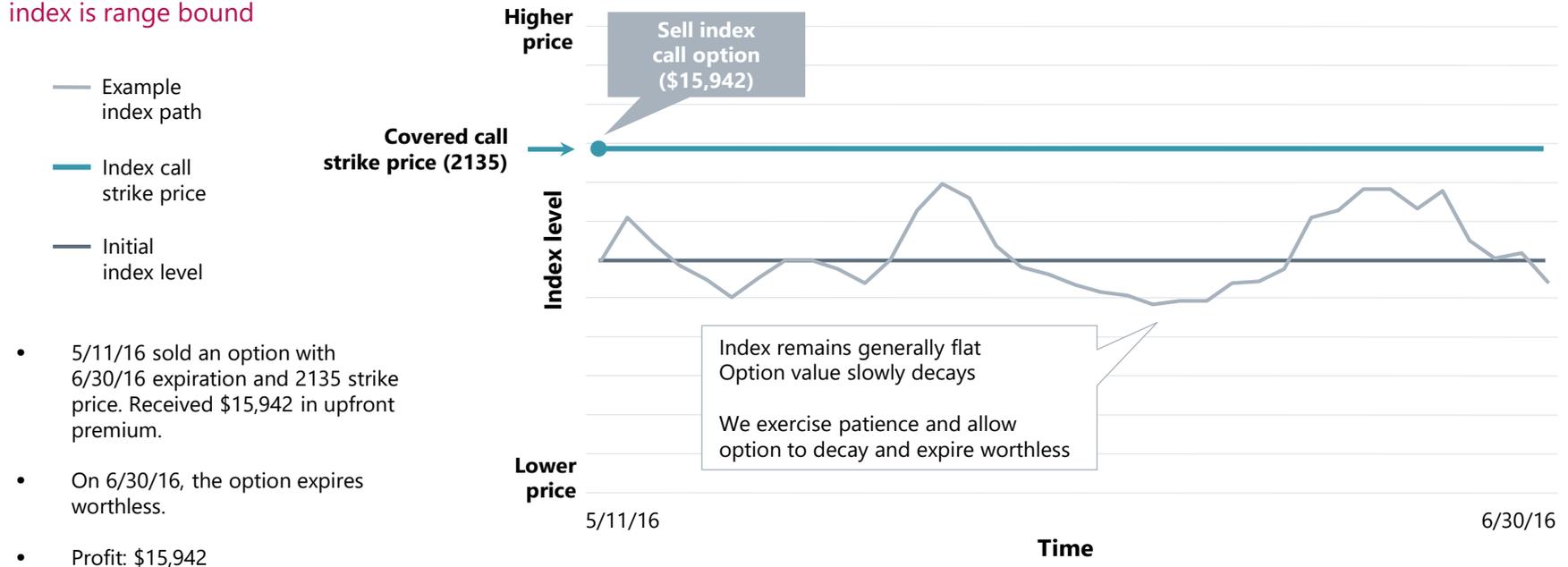
Source: Parametric. The above example is for demonstration and illustrative purposes only. Actual returns will vary from the illustrative example presented. There is no guarantee that the strategy will be successful. All investments are subject to potential loss of principal. Please refer to the Appendix for additional important information and disclosure.

# 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



Source: Parametric. The above example is for demonstration and illustrative purposes only. Actual returns will vary from the illustrative example presented. There is no guarantee that the strategy will be successful. All investments are subject to potential loss of principal. Please refer to the Appendix for additional important information and disclosure.

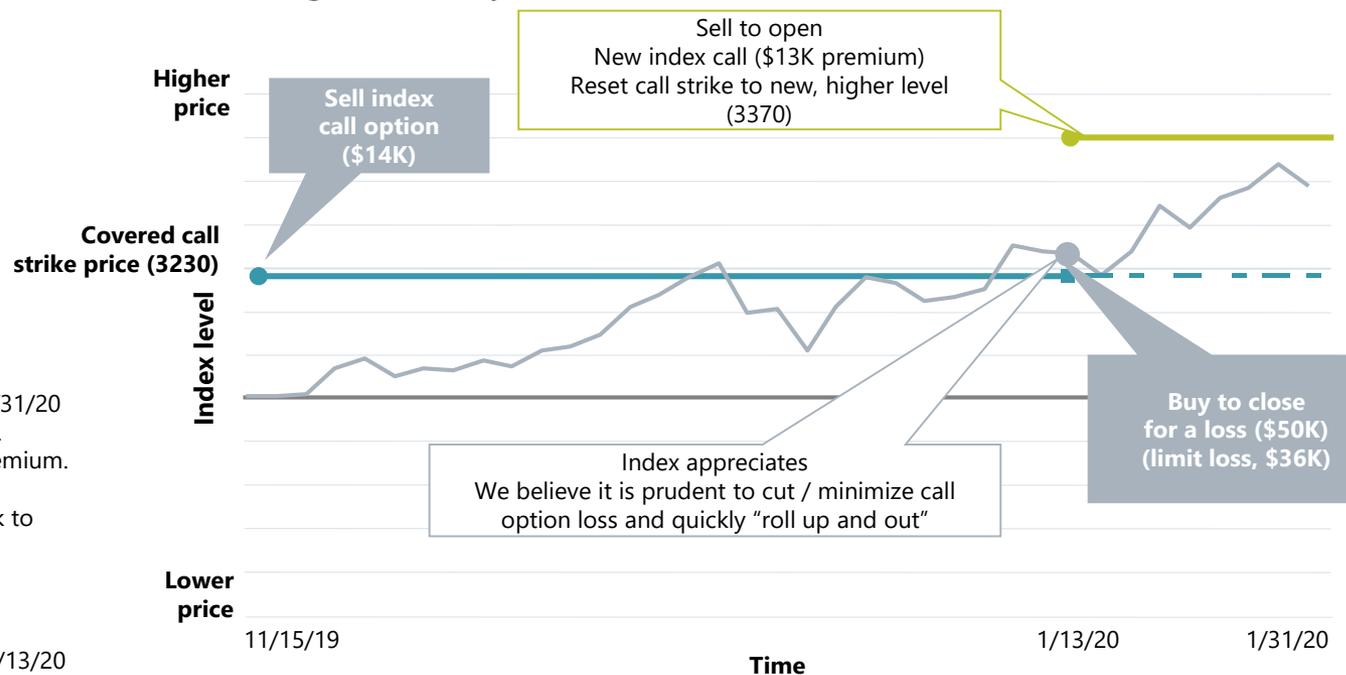
# DeltaShift Rules-Based Management

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 option "up and out" (up to a higher strike price and out to a longer maturity).

Illustrative index price path:  
index appreciates

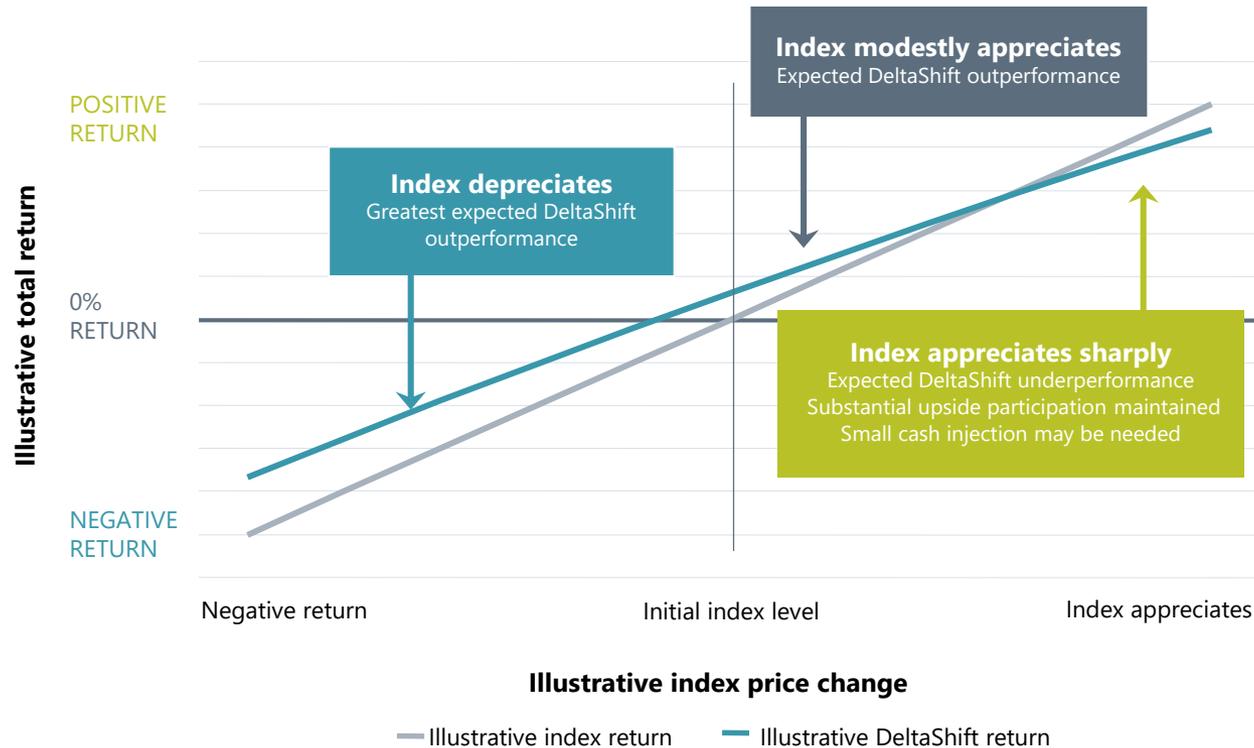
- Example index path
- Initial index level
- Index call strike price
- New index call strike price
- 11/15/19 sold an option with 1/31/20 expiration and 3230 strike price. Received \$14,070 in upfront premium.
- 1/13/20 bought the option back to mitigate risk for \$50,010.
- Loss: \$36K
- 1/13/20 sold 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.



Source: Parametric. The above example is for demonstration and illustrative purposes only. Actual returns will vary from the illustrative example presented. There is no guarantee that the strategy will be successful. All investments are subject to potential loss of principal. Please refer to the Appendix for additional important information and disclosure.

# DeltaShift Rules-Based Management

## Illustrative DeltaShift results



### 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**

Source: Parametric. The above example is for demonstration and illustrative purposes only. Actual returns will vary from the illustrative example presented. There is no guarantee that the strategy will be successful. All investments are subject to potential loss of principal. Please refer to the Appendix for additional important information and disclosure.

# 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

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

# Oakland Police & Fire Portfolio Review

# Portfolio and Benchmark Returns - September 30, 2020

## Oakland Police and Fire Retirement System

\$29.8 Million – **Total AUM**

\$16.2 Million - DeltaShift

\$13.7 Million – Enhanced BXM Replication

### Inception Date

March 11, 2014

	Returns				
	Oakland Police & Fire Total Account	DeltaShift	Enhanced BXM Replication	BXM – CBOE S&P 500® Buy-Write Index	S&P 500® Index
QTD	7.07%	7.83%	6.12%	6.52%	8.93%
YTD	1.04%	3.55%	-2.11%	-9.58%	5.58%
1 Year	7.11%	11.16%	2.35%	-5.66%	15.16%
3 Year	6.50%	8.87%	3.80%	0.79%	12.28%
5 Year	9.36%	11.49%	6.98%	4.62%	14.15%
Since Inception	7.74%	9.85%	5.90%	4.13%	11.62%

Source: Parametric; Bloomberg; CBOE®

\*Performance is as of 9/30/2020 and is gross of investment advisory fees. The deduction of an advisory fee would reduce an investor's return.

\*\*Returns presented may differ from the Options only returns provided by Parametric due to the inclusion of cash and the effect of portfolio rebalancing.

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.



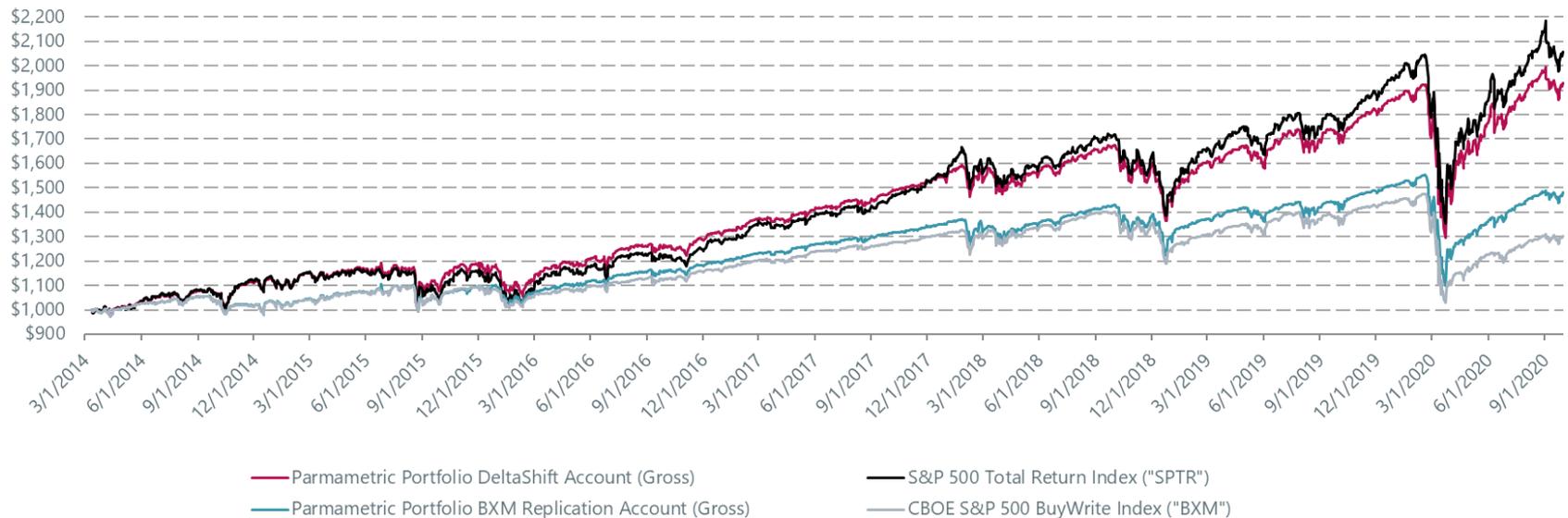
Proprietary and confidential. This material has been prepared for the exclusive use of Oakland Police & Fire Retirement System in a one-on-one presentation only.

Third Quarter 2020

Deltashift Overview

# Oakland Police & Fire Retirement System Portfolio Performance

Parametric Portfolio DeltaShift Account (Gross) vs.  
 Parametric Portfolio BXM Replication Account (Gross)  
 vs. S&P 500 Index Total Return vs CBOE BXM Index  
 Mar 13, 2014 - Sep 30, 2020



Source: Parametric; Bloomberg; CBOE®

\*Performance is as of 9/30/20.

\*\*Returns presented may differ from the Options only returns provided by Parametric due to the inclusion of cash and the effect of portfolio rebalancing.

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Third Quarter 2020

Deltashift Overview

# Oakland Police & Fire Retirement System Portfolio Performance

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

	Parametric Portfolio DeltaShift Account (Gross)		Parametric Portfolio BXM Replication Account (Gross)		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	11.63%	9.98%	3.07%	8.82%	2.76%	8.82%	11.98%	11.15%
Jan 1, 2015 - Dec 31, 2015	3.27%	15.12%	6.33%	12.17%	5.24%	11.75%	1.38%	15.49%
Jan 1, 2016 - Dec 31, 2016	11.78%	11.78%	8.57%	8.86%	7.07%	8.51%	11.96%	13.10%
Jan 1, 2017 - Dec 31, 2017	17.97%	5.28%	13.54%	3.95%	13.00%	3.69%	21.83%	6.68%
Jan 1, 2018 - Dec 31, 2018	(5.78%)	15.80%	(3.82%)	13.38%	(4.77%)	13.45%	(4.38%)	16.73%
Jan 1, 2019 - Dec 31, 2019	27.93%	10.96%	16.08%	8.29%	15.68%	8.65%	31.49%	12.26%
Jan 1, 2020 - Sep 30, 2020	3.82%	36.30%	(1.86%)	29.75%	(9.58%)	30.00%	5.57%	38.02%
<b>Annualized Since Inception</b>	<b>10.31%</b>	<b>16.80%</b>	<b>6.17%</b>	<b>13.68%</b>	<b>4.13%</b>	<b>13.70%</b>	<b>11.62%</b>	<b>17.85%</b>

- DeltaShift outperformed both BXM and PPA Enhanced BXM through 5/31/2020 and since inception.
- PPA Enhanced BXM outperformed BXM in all illustrated time frames plus since inception.

Source: Parametric; Bloomberg; CBOE®

\*Performance is as of 9/30/20.

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# Oakland Police & Fire Retirement System Portfolio Performance

**Call writing is expected to have a positive contribution to portfolio performance and corresponding reduction to portfolio volatility over time.**

- The source of excess return is the Volatility Risk Premium.
- The source of volatility reduction is the negative correlation between short call options and long equity.

**From program inception (March 12, 2014) through the 2016 election (November 7, 2016) the programs performed as expected:**

Inception to Election (March 12, 2014 – November 7, 2016), Annualized

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced Replication Account (Net)		CBOE S&P 500 BuyWrite Index ("BXW")		S&P 500 Total Return Index ("SPTR")	
	Return	Volatility	Return	Volatility	Return	Volatility	Return	Volatility
Mar. 12, 2014 – Nov. 7, 2016	7.61%	12.64%	5.62%	9.99%	4.79%	10.08%	7.04%	13.73%

Source: Parametric; Bloomberg; CBOE®

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Third Quarter 2020

DeltaShift Overview

# Oakland Police & Fire Retirement System Portfolio Performance

**From the 2016 election (November 7, 2016) through January 26, 2018, the S&P 500 had 14 consecutive positive monthly total returns, the first time that had happened in the previous 90 years.**

- This impressive performance resulted in 30.33% annualized total return for the S&P 500® Index.
- Sustained S&P 500 appreciation like that witnessed during the period does not lend itself to call selling.
- Any VRP portfolio contribution was overwhelmed by the directional component of the S&P 500.
- While DeltaShift expectedly underperformed the S&P 500 during the period, the risk management techniques of the strategy resulted in substantial outperformance of the benchmark CBOE S&P 500 BuyWrite Index (“BXM”).
- In addition, the added diversification of Parametric’s Enhanced BXM replication resulted in outperformance vs the BXM.

## Post Election Rally (November 8, 2016 – January 26, 2018), Annualized

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced 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
Nov. 8, 2016 – Jan. 26, 2018	21.76%	5.27%	14.41%	3.77%	13.86%	3.60%	30.33%	6.89%

Source: Parametric; Bloomberg; CBOE®

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# Oakland Police & Fire Retirement System Portfolio Performance

**Post rally, from January 26, 2018 through September 30, 2019, call writing was again additive to the portfolio. Both primary goals – excess return and reduced portfolio volatility– were once again successful.**

- In this period DeltaShift outperformed the BXM, the Parametric Enhanced BXM, and the S&P 500 Total Return Index.

Post Rally (January 27, 2018 – September 30, 2019), Annualized

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced 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
Jan. 27, 2018 – Sep. 30, 2019	4.87%	14.72%	3.48%	11.87%	2.41%	12.17%	4.22%	15.83%

**From Q4 2019 through the peak of the market on 2/19/20, the S&P 500 Index was up strongly with a total return of 14.33% (14% annualized)**

- DeltaShift outperformed the BXM, the Parametric Enhanced BXM, and trailed the S&P 500 Total Return Index.

Q4 2019 / early 2020 Run-up

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced 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
Sep. 30, 2019 – Feb. 19, 2020	10.89%	8.14%	7.33%	6.31%	6.68%	6.83%	14.33%	10.02%

Source: Parametric; Bloomberg; CBOE®

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Third Quarter 2020

DeltaShift Overview

# Oakland Police & Fire Retirement System Portfolio Performance

**In late February, the market experienced heightened concern about the COVID 19 Virus. From 2/20/20 through 3/23/20, the market experienced one of its steepest selloffs ever.**

- In this period, the BXM and Parametric Enhanced BXM, which sell at-the-money options, outperformed DeltaShift and the S&P 500 Total Return Index.

## COVID downturn (February 20, 2020 – March 23, 2020)

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced 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
Feb. 20, 2020 – Mar. 23, 2020	-32.69%	80.61%	-27.67%	73.01%	-30.23%	63.89%	-33.92%	80.99%

**From the bottom of the market of 3/23/20 through the end of Sept., the S&P 500 made a very strong recovery.**

- DeltaShift significantly outperformed the BXM, the Parametric Enhanced BXM, and slightly trailed the S&P 500 Total Return Index.

## Post - COVID recovery

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced 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. 24, 2020 – Sep. 30, 2020	48.15%	27.16%	34.65%	16.83%	26.74%	14.71%	50.31%	29.60%

Source: Parametric; Bloomberg; CBOE®

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Third Quarter 2020

DeltaShift Overview

# Appendix

# Potential Risks

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

<b>Risk</b>	<b>Description</b>
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 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.

# Appendix: Performance

## Large Capitalization U.S. Equity Portfolio DeltaShift (Unfunded, Brokerage) Composite Performance Presentation

As of December 31, 2019

Period	Returns			3 Yr. Annualized Standard Deviation		Dispersion	Assets		
	Total Gross Return AWR	Total Net Return AWR	Index	Composite	Index	Internal Equal Wtd.	Number of Portfolios	Composite (MM)	Total Firm (MM)
2010	-0.62%	-1.21%	-9.14%	2.06%	9.26%	0.21%	19	1,626	17,579
2011	1.14%	0.54%	2.12%	2.24%	8.58%	0.62%	48	1,595	19,548
2012	-0.84%	-1.43%	-9.92%	1.93%	7.17%	0.32%	37	1,751	63,431
2013	-4.33%	-4.91%	-14.96%	1.79%	5.88%	0.43%	25	826	80,896
2014	0.34%	-0.26%	-0.86%	1.67%	5.21%	0.18%	30	829	94,545
2015	1.84%	1.24%	3.07%	1.83%	5.81%	0.20%	117	2,498	99,248
2016	-0.31%	-0.91%	-5.05%	1.65%	5.90%	0.28%	194	2,457	111,470
2017	-3.16%	-3.74%	-7.46%	1.79%	5.66%	0.39%	258	3,010	137,760
2018	-1.90%	-2.49%	-1.10%	2.59%	5.47%	0.39%	188	2,310	122,628
2019	-2.98%	-3.56%	-12.61%	2.71%	5.54%	0.41%	139	2,471	287,828

Index: CBOE S&P 500 BuyWrite Index Option Attribution Index

N/A - Internal dispersion is not statistically meaningful for periods shorter than a year or for years in which five or fewer portfolios were included in the Composite for the full year.

Parametric Portfolio Associates® LLC is an independent 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"), Policy Implementation Overlay Service ("PIOS"), Customized Exposure Management ("CEM"), Volatility Risk Premium ("VRP"), and Systematic Alternative Risk Premia ("SARP"), 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.

Parametric Investment & Overlay Strategies



Proprietary and confidential. This material has been prepared for the exclusive use of Oakland Police and Fire Retirement System in a one-on-one presentation only.

Third Quarter 2020

Deltashift Overview

# Appendix: Performance

## Parametric Portfolio Associates LLC

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, 2019. The verification report is available upon request.

Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. Verification does not ensure the accuracy of any specific composite presentation.

The Large Capitalization U.S. Equity Portfolio DeltaShift (Unfunded, Brokerage) Composite includes all fully discretionary unfunded brokerage portfolios that utilize a call option selling strategy on the S&P 500 Index (or other underlyings that are designed to economically track the returns of the S&P 500 Index). The DeltaShift option strategy, when combined with the daily returns of the S&P 500 Index, seeks to increase the total return and reduce the volatility relative to the returns of the S&P 500 Index.

The Large Capitalization U.S. Equity Portfolio DeltaShift (Unfunded, Brokerage) Composite was created in December 2013 and the inception date is August 2007.

The Composite is compared to a custom calculated benchmark, ("the Index"). The Index represents the difference between the CBOE S&P 500 BuyWrite Index ("BXM") and the S&P 500 Total Return Index ("SPTR") and the returns are calculated daily. The calculation attempts to isolate the options only performance attribution of the BXM Index. Monthly returns reflect the sum of the daily returns during the applicable calendar month. 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.

Derivative securities are used in the accounts which comprise this composite. For a detailed description of the derivative strategies used in these accounts, please contact the firm.

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.

Portfolio daily returns represent the change of the daily options' gains and losses divided by the daily contractual program notional value. Monthly returns reflect the sum of the daily returns during the applicable calendar month.

Performance results are expressed in U.S. dollars.

Gross of fees performance results for actual client accounts are net of transaction costs but do not reflect the deduction of investment advisory fees. Net of fees performance results are calculated utilizing a model fee and reflect the deduction of 0.60%. The fees for the investment management services described herein are described in the fee schedule.

The separate account management fee schedule is as follows: First 20M @ 0.60%, Next 20M @ 0.50%, Next 20M @ 0.40%.

The dispersion of annual returns is measured by equal-weighted standard deviation of portfolio returns within the Composite for the full year.

Policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

A list of composite descriptions is available upon request.

Past performance is not a guarantee of future results.

# Biographies

## **Thomas Lee, CFA**

Chief Investment Officer

Tom is a member of Parametric's Executive Committee and leads Parametric's Research, Strategy, Portfolio Management, and Trading teams, coordinating resources, aligning priorities, and establishing processes for achieving clients' investment objectives. Tom has coauthored articles on topics ranging from liability-driven investing to the volatility risk premium. He is a voting member of all the firm's investment committees. Prior to joining Parametric in 1994 (originally as an employee of the Clifton Group, which was acquired by Parametric in 2012), Tom spent two years working for the Board of Governors of the Federal Reserve in Washington, DC. He earned a BS in economics and an MBA in finance from the University of Minnesota. A CFA charterholder, Tom is a member of the CFA Society of Minnesota.

## **Jay Strohmaier, CFA**

Managing Director, Investment Strategy

Jay leads a team of investment professionals responsible for developing and managing institutional portfolios with an emphasis on Defensive Equity, Global Defensive Equity, and related options-based Volatility Risk Premium Strategies. He has extensive experience with futures and options and has been active in the investment industry since 1984. Prior to rejoining Parametric in 2009, Jay worked for Cargill, Peregrine Capital Management, and Advantus Capital Management. He earned a BS degree in agricultural economics from Washington State University and a MS in applied economics from the University of Minnesota. A CFA charterholder, Jay is a member of the CFA Society of Minnesota.

## **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**

Senior Director, Client Relationship Management

Mr. Ryan 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.

## **Larry Berman**

Managing Director

Larry is responsible for trading and operations of our derivative strategies. Prior to joining Parametric in 2006 (originally as an employee of Managed Risk Advisors, which was acquired by Parametric in 2007), Larry was a principal at Wolverine Trading, one of the largest options market-makers in the world. At Wolverine, he was the head trader in charge of all trading in the New York office on the American Stock Exchange and the COMEX, and he was responsible for over 90 equity/index options as well as market-making in ETFs and structured products. He earned a BS in business administration from Boston University.

## **Alex Zweber, CFA**

Managing Director, Investment Strategy

Alex is responsible for the continued investment success of Parametric's liquid alternative strategies. He has over 14 years of experience working in portfolio construction, trading, and portfolio management across both futures and options. In his various positions, he has worked closely with institutional and HNW clients and their consultants to address their investment and risk management needs. Prior to returning to Minneapolis in 2020, he was responsible for supporting the development and distribution of Parametric's strategies in Europe, and before that served as a Senior Portfolio Manager on Parametric's volatility risk premium solutions, including Defensive Equity and Global Defensive Equity. Alex began his career in the investment management industry in 2006 with the Clifton Group (acquired by Parametric in 2012). Alex earned a BA in economics from Macalester College. A CFA charterholder, Alex is a member of the CFA Society of Minnesota.

# Disclosure

Parametric Portfolio Associates® LLC (“Parametric”), headquartered in Seattle, is registered as an investment advisor with the Securities and Exchange Commission under the Investment Advisors 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 a wholly-owned subsidiary of Eaton Vance Corp. 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.

This information is intended solely to report on investment strategies and opportunities identified by Parametric. Opinions and estimates offered constitute our judgment and are subject to change without notice, as are statements of financial market trends, which are based on current market conditions. We believe the information provided here is reliable, but do not warrant its accuracy or completeness. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. Past performance is not indicative of future results. The views and strategies described may not be suitable for all investors. Investing entails risks and there can be no assurance that Parametric will achieve profits or avoid incurring losses. Parametric does not provide legal, tax and/or accounting advice or services. Clients should consult with their own tax or legal advisor prior to entering into any transaction or strategy described herein.

Charts, graphs and other visual presentations and text information were derived from internal, proprietary, and/or service vendor technology sources and/or may have been extracted from other firm data bases. As a result, the tabulation of certain reports may not precisely match other published data. Data may have originated from various sources including, but not limited to, Bloomberg, MSCI/Barr, FactSet, and/or other systems and programs. Parametric makes no representation or endorsement concerning the accuracy or propriety of information received from any other third party.

Performance is presented gross of investment advisory fees. Advisory fees are deducted quarterly from an investor’s portfolio and would impact performance adversely. As an example, assuming (a) \$1,000,000 investment, (b) portfolio return of 5% per year, and (c) 1.00% annual investment advisory fee, the cumulative fees paid would be \$10,209.57 in the first year, \$55,254.43 over five years, and \$122,351.51 over ten years. Actual fees charged vary by portfolio due to various conditions, including account size. Parametric’s investment advisory fees are described further in Part 2A of Form ADV, which is available upon request.

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)

Case studies, general strategy examples, and certain illustrations contained herein are hypothetical in nature and do not represent the experience or results that any particular investor actually attained. The information presented is based, in part, on hypothetical assumptions and the experience of Parametric. No representation or warranty is made as to the reasonableness of the assumptions made or that all assumptions used in achieving the returns have been stated or fully considered. No representation is made that any account will or is likely to profit similar to those shown in the examples. Actual performance results will differ, and may differ substantially, from the examples illustrated. Changes in assumptions may have a material impact on the hypothetical performance presented. The information may not reflect the impact that material economic and market factors might have had on Parametric's decision-making if PPA were actually managing client assets.

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<sup>®</sup> BuyWrite Index (BXM) is a benchmark index designed to track the performance of a hypothetical buy-write strategy on the S&P 500<sup>®</sup> Index. The BXM is a passive total return index based on (1) buying an S&P 500<sup>®</sup> stock index portfolio, and (2) "writing" (or selling) the near-term S&P 500<sup>®</sup> 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.

The S&P 500 Index represents the top 500 publicly traded companies in the US.

"Bloomberg" is a trademark and service mark of Bloomberg Finance L.P. ("Bloomberg"). This strategy is not sponsored or endorsed by Bloomberg and Bloomberg makes no representation regarding the content of this material. Please refer to the specific service provider's web site for complete details on all indices.

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>.

Selling uncovered call options exposes the seller to unlimited loss should the index appreciate. Participation in the program does not protect the portfolio from downside risk. The investor retains full downside exposure to the portfolio. The downside protection afforded by call writing is limited to the amount of the premium received less the costs incurred to settle index options. The strategy provides a hedge only to the extent of those net premiums received. The loss for the investor could be the current value of the portfolio less the net premium received from the call options. Portfolio holdings may need to be sold to generate cash to settle call options. The sale of portfolio holdings may produce tax consequences for US taxpayers. Prior to implementing the Parametric DeltaShift call writing program, you should discuss with your personal tax advisor how selling index call options and any potential sales of portfolio holdings will affect your tax situation. Parametric does not provide tax advice. There is no assurance that the revenue received from the program will exceed the fees and expenses paid. If a secondary market in options becomes unavailable and prevents a closing transaction, the option writer's obligation would remain until expiration or assignment.

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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 strategy 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](http://www.parametricportfolio.com).

## MEMORANDUM

**TO:** Oakland Police and Fire Retirement System (OPFRS)  
**FROM:** David Sancewich, Paola Nealon, Sidney Kawanguzi – Meketa Inv. Group  
**DATE:** October 28, 2020  
**RE:** Parametric (Covered Calls) – Contract Renewal

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Manager	Parametric
<b>Inception Date:</b>	4/2014
<b>OPFRS AUM (9/30/2020):</b>	\$29.9 million (7.5%)
<b>Product Name:</b>	Parametric BXM/DeltaShift
<b>Management Fee:</b>	32 bps
<b>Investment Strategy:</b>	Covered Calls DeltaShift (Active) & Replication (Passive)
<b>Benchmark:</b>	CBOE BXM

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*Meketa recommends that OPFRS renew its contract with Parametric before the current contract date of expiration.* OPFRS contracts reserve the right for the Board to terminate the agreement, with or without cause, at any time upon 30 calendar days' prior written notice. In making this recommendation, Meketa considered investment performance and recent organizational / personnel issues. Since the last contract renewal, Parametric has exhibited acceptable performance and organizational stability regarding its Covered Calls portfolios, therefore Meketa believes that there are no issues that should prevent a contract extension for this manager.

### Organizational Issues

Parametric	Level of Concern^	Areas of Potential Impact			
		Investment process (client portfolio)	Investment Team	Performance Track Record	Team/ Firm Culture
<b>Product</b>					
Key people changes	None				
Changes to team structure/individuals' roles	None				
Product client gain/losses	None				
Changes to the investment process	None				
Personnel turnover	None				
<b>Organization</b>					
Ownership changes	None				
Key people changes	None				
Firm wide client gain/losses	None				
<b>Recommended Action</b>	<b>None - X</b>	<b>Watch Status</b>		<b>Termination</b>	

### Investment Philosophy & Process, 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 options (generally 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 in order to mitigate potential outlier losses that are inherent to a “sell and hold” option program (i.e. BXM replication).

## MEMORANDUM

**TO:** Oakland Police and Fire Retirement System (OPFRS)  
**FROM:** David Sancewich, Paola Nealon, Sidney Kawanguzi – Meketa Inv. Group  
**DATE:** October 28, 2020  
**RE:** 2020 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.

### 2020 Preliminary Investment Project Agenda

Expected Completion Date	Task
November 2020	<ul style="list-style-type: none"><li>Quarterly Performance Report (3Q 2020)</li><li>Educational Item: Inflation</li><li>Defensive Equity Review</li></ul>
December 2020	<ul style="list-style-type: none"><li>Cash Flow Report (1Q 2021)</li></ul>

**Bold** are priority strategic items.

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/SC/hs

Pursuant to the Governor's Executive Order N-29-20, all members of the City Council, as well as the City Administrator, City Attorney and City Clerk will join the meeting via phone/video conference and no teleconference locations are required

Oakland Police and Fire Retirement Board meetings are being held via Tele-Conference. Please see the agenda to participate in the meeting. For additional information, contact the Retirement Unit by calling (510) 238-6481.



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

# AGENDA

## RETIREMENT BOARD MEMBERS

**Walter L. Johnson, Sr.**  
President

**Jaime T. Godfrey**  
Vice President

**Robert W. Nichelini**  
Member

**Kevin R. Traylor**  
Member

**John C. Speakman**  
Member

**R. Steven Wilkinson**  
Member

**Margaret O'Brien**  
Member

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

**Wednesday, October 28, 2020**

**12:00 pm**

**Tele-Conference Board Meeting  
via Zoom**

### 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 three ways to submit public comments.

- eComment. To send your comment directly to staff BEFORE the meeting starts, please email to [mvisaya@oaklandca.gov](mailto:mvisaya@oaklandca.gov) with "PFRS Board Meeting" in the subject line for the corresponding meeting. Please note that eComment submission **closes two (2) hours before posted meeting time.**

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
REGULAR BOARD MEETING  
October 28, 2020**

- To comment by Zoom video conference, click the “Raise Your Hand” button to request to speak when Public Comment is being taken on an eligible agenda item at the beginning of the meeting. You will be permitted to speak during your turn, allowed to comment, and after the allotted time, re-muted. Instructions on how to “Raise Your Hand” is available at: <https://support.zoom.us/hc/en-us/articles/205566129> - Raise-Hand-In-Webinar.
- To comment by phone, please call on one of the above listed phone numbers. You will be prompted to “Raise Your Hand” by pressing “\*9” to speak when Public Comment is taken. You will be permitted to speak during your turn, allowed to comment, and after the allotted time, re-muted. Please unmute yourself by pressing \*6.

If you have any questions, please email Maxine Visaya, Administrative Assistant at [mvisaya@oaklandca.gov](mailto:mvisaya@oaklandca.gov).

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- - - ORDER OF BUSINESS - - -

- A. Subject: PFRS Board Meeting Minutes**  
**From:** Staff of the PFRS Board
- 
- Recommendation:** **APPROVE** September 30, 2020 PFRS Board Meeting Minutes.
- B. AUDIT AND OPERATIONS COMMITTEE AGENDA – OCTOBER 28, 2020**
- B1. Subject: Administrative Expenses Report**  
**From:** Staff of the PFRS Board
- 
- Recommendation:** **ACCEPT** an informational report regarding PFRS administrative expenses as of August 31, 2020
- C. INVESTMENT & FINANCIAL MATTERS COMMITTEE AGENDA – OCTOBER 28, 2020**
- C1. Subject: Investment Market Overview**  
**From:** Meketa Investment Group
- 
- Recommendation:** **ACCEPT** an informational report on the global investment markets as of September 30, 2020.
- C2. Subject: Preliminary Investment Fund Quarterly Performance Update as of September 30, 2020**  
**From:** Meketa Investment Group
- 
- Recommendation:** **ACCEPT** the Preliminary Investment Fund Quarterly Performance update as of September 30, 2020.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
REGULAR BOARD MEETING  
October 28, 2020

- C3. **Subject:** Informational Presentation – Collapsing Global Interest Rates/Negative Interest Rates  
**From:** Meketa Investment Group  
**Recommendation:** **RECEIVE** an Informational Presentation on the topic of collapsing global interest rates/negative interest rates.
- C4. **Subject:** Options to Consider a New PFRS Investment Manager to Implement the Crisis Risk Offset Systematic Trend Following/Alternative Risk Premia Investment Strategy  
**From:** Meketa Investment Group  
**Recommendation:** **ACCEPT** an informational report regarding the options to consider a new PFRS Investment Manager to implement the Crisis Risk Offset Systematic Trend Following/Alternative Risk Premia Investment Strategy
- C5. **Subject:** Draft Emergency Procedures for Terminating or Limiting Trading Discretion of PFRS Investment Managers to Protect PFRS Fund Assets  
**From:** Meketa Investment Group  
**Recommendation:** **RECEIVE DRAFT** proposal for possible Emergency Procedures for terminating or limiting trading discretion of PFRS Investment Managers to protect PFRS Fund Assets **DISCUSS** the Committee’s recommended course of action with regard to Emergency Procedures for terminating or limiting trading discretion of PFRS Investment Managers to protect PFRS Fund Assets
- C6. **Subject:** Investment Manager Performance Review – Parametric Portfolio Associates, LLC, a PFRS Covered Calls Investment Manager  
**From:** Parametric Portfolio Associates, LLC  
**Recommendation:** **RECEIVE** informational report regarding the investment performance of Parametric Portfolio Associates, LLC, a PFRS Covered Calls Investment Manager
- C7. **Subject:** Investment Manager Performance Review – Parametric Portfolio Associates, LLC, a PFRS Covered Calls Investment Manager.  
**From:** Meketa Investment Group  
**Recommendation:** **RECEIVE** informational report regarding the investment performance of Parametric Portfolio Associates, LLC, a PFRS Covered Calls Investment Manager **DISCUSS** exercising the option to extend the agreement one-year with Parametric Portfolio Associates, LLC, a PFRS Covered Calls BXM Index Investment Manager **RECOMMEND BOARD APPROVAL** of the Committee’s recommended course of action with regard to exercising the option to extend the agreement

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
REGULAR BOARD MEETING  
October 28, 2020**

**D. Subject: Convert PFRS form Compensation Attached to the Rank  
to Cost of Living Allowance (COLA)**  
**From: Robert Nichelini (Board Member)**

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**Recommendation: DISCUSS** converting PFRS from compensation attached to  
the rank to Cost of Living Allowance (COLA)

**E. NEW BUSINESS**

**F. OPEN FORUM**

**G. FUTURE SCHEDULING**

**H. ADJOURNMENT**

A **BOARD MEETING** of the Oakland Police and Fire Retirement System (“PFRS”) was held on September 30, 2020 via Zoom Tele-Conference.

- |                       |                       |                         |
|-----------------------|-----------------------|-------------------------|
| Board Members:        | ▪ Walter L. Johnson   | President               |
|                       | ▪ Jaime T. Godfrey    | Vice President          |
|                       | ▪ Margaret O’Brien    | Member                  |
|                       | ▪ Robert W. Nichelini | Member                  |
|                       | ▪ John C. Speakman    | Member - Excused        |
|                       | ▪ Kevin R. Traylor    | Member                  |
|                       | ▪ R. Steven Wilkinson | Member                  |
| Additional Attendees: | ▪ David F. Jones      | PFRS Plan Administrator |
|                       | ▪ Jennifer Logue      | PFRS Legal Counsel      |
|                       | ▪ Teir Jenkins        | Staff Member            |
|                       | ▪ Maxine Visaya       | Staff Member            |
|                       | ▪ David Sancewich     | Meketa Investment Group |
|                       | ▪ Paola Nealon        | Meketa Investment Group |

The meeting was called to order at 12:33 pm

- A. **PFRS Board Meeting Minutes** Member Traylor made a motion to approve the minutes with a necessary correction to be made to item I that erroneously stated he is the Vice President on a motion that he made, second by Vice President Godfrey. The motion passed.

[JOHNSON – Y/ GODFREY – Y/ O’BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

B. **AUDIT AND OPERATIONS COMMITTEE AGENDA – SEPTEMBER 30, 2020**

- B1. **Administrative Expenses Report Administrative Expenses Report** – Member Traylor reviewed the informational report of the PFRS administrative expenditures as of July 31, 2020.

**MOTION:** Member Nichelini made a motion to accept the administrative expenses report, second by Vice President Godfrey. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ O’BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- B2. Resolution No. 8003 – Resolution to approve a two-year extension of the professional service agreement between the City of Oakland Police and Fire Retirement System Board and Cheiron, Inc. through June 30, 2022 at fees not to exceed \$46,500 for FY2020-2021 and \$46,500 for FY2021-2022 Report** – Teir Jenkins reported the Audit Committee recommended Board approval of Resolution No. 8003, a resolution for a two year extension of the contract service agreement between its actuary, Cheiron and PFRS.

**MOTION:** Vice President Godfrey made a motion to approve the two-year extension of the professional service agreement between the City of Oakland Police and Fire Retirement System Board and Cheiron, Inc. through June 30, 2022 at fees not to exceed \$46,500 for FY2020-2021 and \$46,500 for FY2021-2022 Report, second by Member Nichelini. Motion Passed.

[JOHNSON – Y/ GODFREY – Y/ O'BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

**C. INVESTMENT & FINANCIAL MATTERS COMMITTEE AGENDA – SEPTEMBER 30, 2020**

- C1. Investment Market Overview** – David Sancewich provided an informational report on the global economic factors affecting the PFRS Fund as of August 31, 2020, including the impact of the Coronavirus on the world investment markets.

**MOTION:** Vice President Godfrey made a motion to accept the informational report from Meketa regarding the economic factors affecting the PFRS Fund as of August 31, 2020, second by Member O'Brien. Motion Passed

[JOHNSON – Y/ GODFREY – Y/ O'BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- C2. \$13.9 Million Drawdown for Fiscal Year 2020/2021 (Quarter Ending December 2020) Member Allowances** – Vice President Godfrey summarized the presentation made by David Sancewich regarding the details of the Meketa report describing the drawdown of funds, which includes a recommendation of \$10.9 Million contribution from the City of Oakland and a \$3.0 Million contribution from the PFRS Investment Fund, to pay for the PFRS member retirement allowances to its members for the period of October 2020 through December 2020.

**MOTION:** Vice President Godfrey made a motion to accept the recommendation from Meketa regarding the \$13.9 Million drawdown of funds to pay for the PFRS Member Retirement Allowances for the period of October 2020 through December 2020, second by Member Wilkinson. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ O'BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- C3. Preliminary Investment Fund Performance Update as of August 31, 2020** – David Sancewich reported on the details of the Preliminary Investment Fund Performance Update as of August 31, 2020. Plan Administrator Jones commented on market volatility as we approach November and Meketa’s confidence in navigating any such concerns. Mr. Sancewich emphasized that now is not the time for PFRS to take undue risk, follow policy, and continue to monitor this monthly and intramonthly as needed.

**MOTION:** Vice President Godfrey made a motion to accept the informational report from Meketa regarding the Preliminary Investment Fund Performance Update as of August 31, 2020, second by Member Traylor. Motion Passed.

[JOHNSON – Y/ GODFREY – Y/ O’BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- C4. Investment Manager Overview – Ramirez Asset Management** – Vice President Godfrey reported on the presentation from Ramirez Asset Management, a PFRS Domestic Core Fixed Income Investment Manager, providing an update on the investment portfolio, portfolio performance, staffing and they predicated on a question that Member Wilkinson asked concerning their belief and activities regarding diversity and how it impacts positively. Mr. Sancewich noted that Ramirez has utilized minority local brokers for approximately 30% of the trades on PFRS behalf, and Plan Administrator Jones emphasized that two of those brokers are within seven blocks of The City of Oakland’s offices.

**MOTION:** Vice President Godfrey made a motion to accept the summary he provided of the informational report from Ramirez Asset Management, a PFRS Domestic Core Fixed Income Investment Manager, regarding their investment performance and managerial assessment, second by Member Nichelini. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ O’BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- C5. Investment Manager Overview – Ramirez Asset Management** – Paola Nealon presented Meketa’s evaluation and review of Ramirez Asset Management, a PFRS Domestic Core Fixed Income Investment Manager. We continue to hold them in high regard and have no concerns at this time with this manager.

**MOTION:** Vice President Godfrey made a motion to accept Meketa’s evaluation and review of Ramirez Asset Management, a PFRS Domestic Core Fixed Income Investment Manager, second by Member Traylor. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ O’BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- C6. Investment Manager Overview – Rice Hall James & Associates, LLC** – Vice President Godfrey reported on the presentation from Rice Hall James & Associates, LLC, a PFRS Small Cap Growth Investment Manager regarding the investment performance and managerial assessment, as well as how they see the market and some of the things they are doing. Mr. Sancewich added Rice Hall James trades about 7% of their portfolio through local minority brokers.

**MOTION:** Vice President Godfrey made a motion to accept the informational report from Rice Hall James & Associates, LLC, a PFRS Small Cap Growth Investment Manager regarding their investment performance and managerial assessment, second by Member Nichelini. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ O'BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- C7. Investment Manager Overview – Rice Hall James & Associates, LLC** – Paola Nealon presented Meketa's evaluation and review of from Rice Hall James & Associates, LLC, a PFRS Small Cap Growth Investment Manager. Ms. Nealon emphasized that although they continue to remain on watch status, performance has seen an improvement and Meketa holds them in high regard and continue to view both the firm and strategy favorably and therefore have no concerns at this time.

**MOTION:** Vice President Godfrey made a motion to accept Meketa's evaluation and review of Rice Hall James & Associates, LLC, a PFRS Small Cap Growth Investment Manager, second by Member Nichelini. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ O'BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- C8. Updated List of Thermal Coal Companies Prohibited from the PFRS Investment Portfolio** – David Sancewich reported on the updated list of Thermal Coal companies prohibited from the PFRS Investment Portfolio. noting it is essentially unchanged from the list from last year. Mr. Sancewich will update the PFRS Investment Policy to reflect this list and update the Portfolio Managers.

**Motion:** Vice President Godfrey made a motion to accept the report on the updated list of Thermal Coal companies prohibited from the PFRS Investment Portfolio, second by Member Traylor. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ O'BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- C9. Informational Report Regarding Emergency Procedures for Terminating or Limiting Trading Discretion of PFRS Investment Managers to Protect PFRS Fund Assets** – Plan Administrator Jones reported on the discussion of the informational report and Vice President Godfrey directed staff to provide more information, work with the PFRS Legal Counsel and provide one or two options to the Board to take action on at the October 2020 meeting.

**MOTION:** This item was tabled until the October 2020 Board Meeting and no further action was taken.

- C10. Termination of Service Agreement with Parametric Portfolio Associates, LLC Crisis Risk Offset Systematic Alternative Risk Premia (SARP) Strategy** – David Sancewich reported September 22, 2020 Meketa received a phone call from Parametric Portfolio Associates, LLC informing them that the largest investor in the SARP Strategy will be pulling their assets out as of October 1, 2020. As a result, Parametric will be closing down the fund as of October 1, 2020 and PFRS assets will be returned. Meketa recommended to allocate 50% of the assets to a new Barclay's Aggregate Exchange Traded Fund (ETF) within the fixed income class and 50% to the Long Duration ETF within Crisis Risk Offset.

**MOTION:** Vice President Godfrey made a motion to accept Meketa's recommended course of action regarding the Parametric Portfolio Associates, LLC Crisis Risk Offset Systematic Alternative Risk Premia (SARP) Strategy and transferring assets into an ETF in a different vehicle, second by Member Wilkinson. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ O'BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- C11. Resolution 8002 – Resolution ratifying the August 26, 2020 motion Of The Oakland Police and Fire Retirement System Board to hire Wellington Management Company, LLP to serve as the Core Fixed Income Asset Class Investment Manager for the Oakland Police And Fire Retirement System at a management fee rate not to exceed 15 basis points (15 BPS or 0.15 percent) of the portfolio's annual asset value and authorizing the President of the Police And Fire Retirement System Board to execute a professional services agreement with Wellington Management Company, LLP** – PFRS Staff Member Jenkins reported Resolution 8002 ratifies the Board's decision to hire Wellington Management Company, LLP to serve as the Core Fixed Income Asset Class Investment Manager for the Oakland Police And Fire Retirement System made via a motion at the August 26, 2020 Board Meeting.

**MOTION:** Vice President Godfrey made a motion to approve Resolution 8002 to ratify the August 26, 2020 motion of The Oakland Police and Fire Retirement System Board to hire Wellington Management Company, LLP to serve as the Core Fixed Income Asset Class Investment Manager for the Oakland Police And Fire Retirement System, second by Member Traylor. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ O'BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- D. Election of Board President and Vice President** – Member Nichelini moved to nominate Walter L. Johnson Sr. as President of the PFRS Board, second by Vice President Godfrey to elect Walter L. Johnson Sr. to another term. Motion Passed.

[JOHNSON – ABSTAINED/ GODFREY – Y/ O'BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 5/ NOES: 0/ ABSTAIN: 1)

Member Nichelini moved to nominate Jamie T. Godfrey as Vice President of the PFRS Board, second by Member O'Brien to elect Jamie T. Godfrey to another term. Motion Passed.

[JOHNSON – Y/ GODFREY – ABSTAINED/ O'BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 5/ NOES: 0/ ABSTAIN: 1)

- E. New Business** – Member Nichelini made a motion to place an item on the October 28, 2020 Regular Board Meeting Agenda to discuss converting PFRS from compensation attached to the rank to Cost of Living Allowance (COLA), second by Member O'Brien. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ O'BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- F. Open Forum** – David Sancewich provided an update regarding Meketa's Payroll Protection Program Loan, stating that Meketa will paying the loan back as early as this week with interest. Pete Peterson expressed appreciation for the work being done regarding the 2026 Funding Date.

- G. Future Scheduling** – The next PFRS Regular Board Meeting is tentatively scheduled to meet October 28, 2020 at approximately 12:00 pm.

- H. Adjournment** – Vice President Godfrey made a motion to adjourn, second by Member Wilkinson. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ O'BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – EXCUSED/ TRAYLOR – Y/ WILKINSON – Y]  
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

The meeting adjourned at 1:24 pm

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WALTER L. JOHNSON, SR., BOARD PRESIDENT

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DATE

**Table 1**

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM**

**Administrative Budget Spent to Date (Preliminary)**

As of August 31, 2020

	Approved Budget		August 2020		FYTD		Remaining		Percent Remaining	
<b>Internal Administrative Costs</b>										
PFRS Staff Salaries	\$	1,200,000	\$	84,199	\$	177,600	\$	1,022,400		85.2%
Board Travel Expenditures		52,500		-		-		52,500		100.0%
Staff Training		20,000		-		-		20,000		100.0%
Staff Training - Tuition Reimbursement		7,500		-		-		7,500		100.0%
Annual Report & Duplicating Services		4,000		-		-		4,000		100.0%
Board Hospitality		3,600		-		-		3,600		100.0%
Payroll Processing Fees		40,000		-		-		40,000		100.0%
Miscellaneous Expenditures		40,000		798		798		39,202		98.0%
Internal Service Fees (ISF)		88,000		-		-		88,000		100.0%
Contract Services Contingency		50,000		-		1,200		48,800		97.6%
<b>Internal Administrative Costs Subtotal :</b>	<b>\$</b>	<b>1,505,600</b>	<b>\$</b>	<b>84,997</b>	<b>\$</b>	<b>179,598</b>	<b>\$</b>	<b>1,326,002</b>		<b>88.1%</b>
<b>Actuary and Accounting Services</b>										
Audit	\$	45,000	\$	-	\$	-	\$	45,000		100.0%
Actuary		46,500		-		-		46,500		100.0%
<b>Actuary and Accounting Subtotal:</b>	<b>\$</b>	<b>91,500</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>91,500</b>		<b>100.0%</b>
<b>Legal Services</b>										
City Attorney Salaries	\$	188,000	\$	16,490	\$	30,462	\$	157,538		83.8%
Legal Contingency		150,000		-		-		150,000		100.0%
<b>Legal Services Subtotal:</b>	<b>\$</b>	<b>338,000</b>	<b>\$</b>	<b>16,490</b>	<b>\$</b>	<b>30,462</b>	<b>\$</b>	<b>307,538</b>		<b>91.0%</b>
<b>Investment Services</b>										
Money Manager Fees	\$	1,353,000	\$	-	\$	-	\$	1,353,000		100.0%
Custodial Fee		124,000		-		-		124,000		100.0%
Investment Consultant (Meketa)		100,000		-		-		100,000		100.0%
<b>Investment Subtotal:</b>	<b>\$</b>	<b>1,577,000</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>-</b>	<b>\$</b>	<b>1,577,000</b>		<b>100.0%</b>
<b>Total Operating Budget</b>	<b>\$</b>	<b>3,512,100</b>	<b>\$</b>	<b>101,486</b>	<b>\$</b>	<b>210,059</b>	<b>\$</b>	<b>3,302,041</b>		<b>94.02%</b>

Table 2

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM  
 Cash in Treasury (Fund 7100) - Preliminary  
 As of August 31, 2020

	August 2020
<b>Beginning Cash as of 7/31/2020</b>	\$ 6,141,506
<b>Additions:</b>	
City Pension Contribution - Aug	\$ 3,637,333
Investment Draw	\$ 1,000,000
Misc. Receipts	-
<b>Total Additions:</b>	\$ 4,637,333
<b>Deductions:</b>	
Pension Payment (July Pension Paid on 8/1/2020)	(4,283,915)
Expenditures Paid	(156,284)
<b>Total Deductions</b>	\$ (4,440,199)
 <b>Ending Cash Balance as of 8/31/2020*</b>	 \$ 6,338,640

\* On 9/1/2020, August pension payment of appx \$4,475,000 will be made leaving a cash balance of \$1,864,000

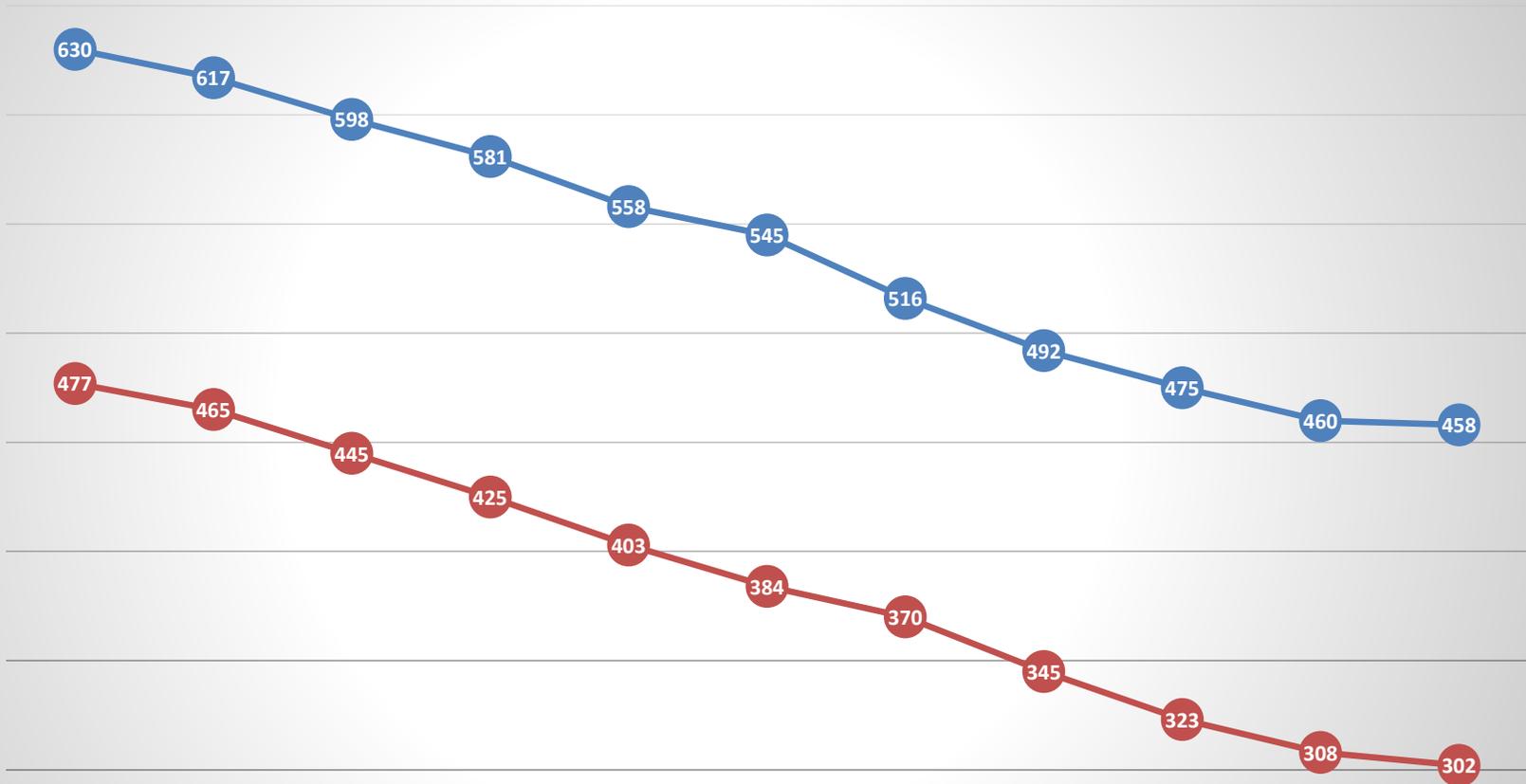
**Table 3**  
**CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM**

Census  
As of August 31, 2020

COMPOSITION	POLICE	FIRE	TOTAL
<b>Retired Member:</b>			
Retiree	338	194	532
Beneficiary	120	108	228
<b><i>Total Retired Members</i></b>	<b>458</b>	<b>302</b>	<b>760</b>
<b><i>Total Membership:</i></b>	<b>458</b>	<b>302</b>	<b>760</b>

COMPOSITION	POLICE	FIRE	TOTAL
<b>Retired Member:</b>			
Service Retirement	305	153	458
Disability Retirement	140	136	276
Death Allowance	13	13	26
<b><i>Total Retired Members:</i></b>	<b>458</b>	<b>302</b>	<b>760</b>
<b><i>Total Membership as of August 31, 2020:</i></b>	<b>458</b>	<b>302</b>	<b>760</b>
<b><i>Total Membership as of June 30, 2020:</i></b>	<b>460</b>	<b>308</b>	<b>768</b>
<b><i>Annual Difference:</i></b>	<b>-2</b>	<b>-6</b>	<b>-8</b>

## Oakland Police and Fire Retirement System Pension Plan Membership Count As of August 31, 2020 (FY 2011 - FY 2021)

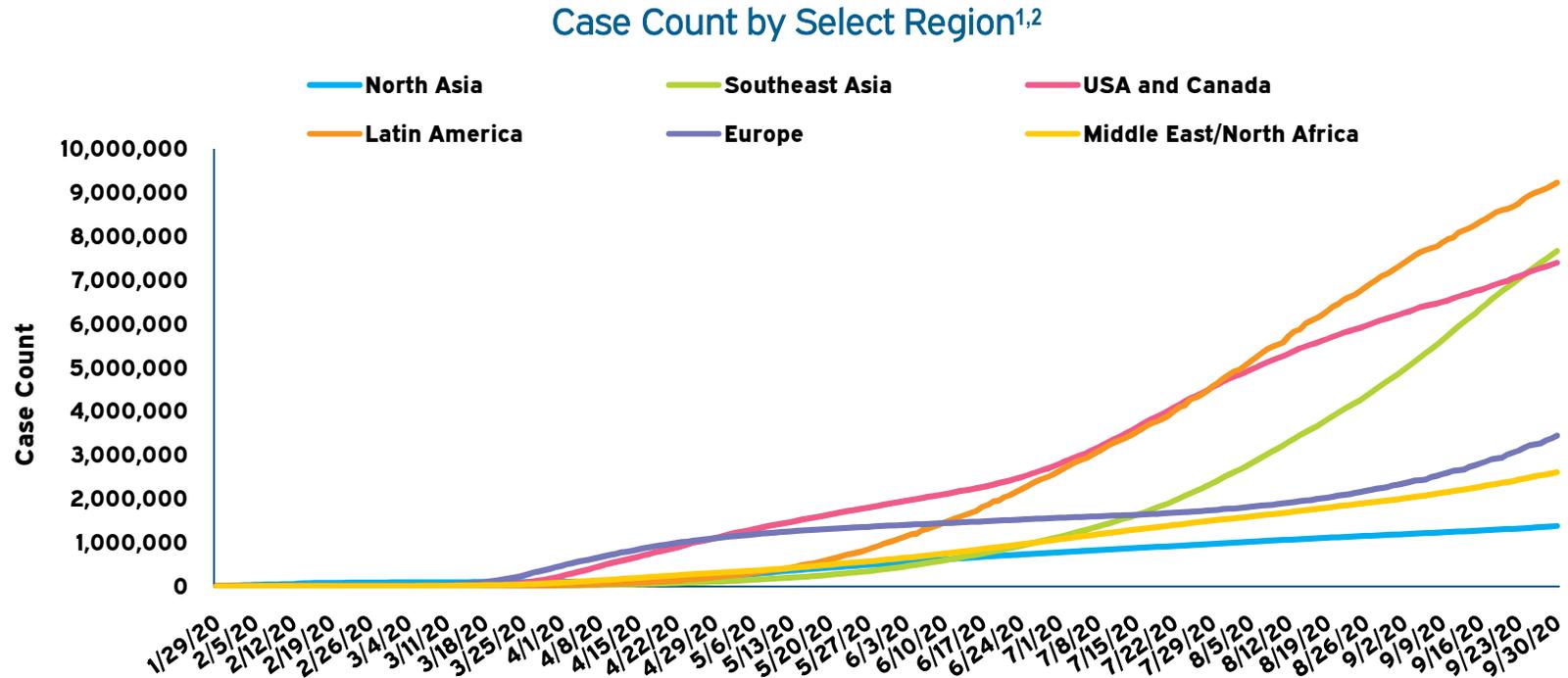


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021 FYTD
Police	630	617	598	581	558	545	516	492	475	460	458
Fire	477	465	445	425	403	384	370	345	323	308	302
Total	1107	1082	1043	1006	961	929	886	837	798	768	760

# Economic and Market Update

Data as of September 30, 2020



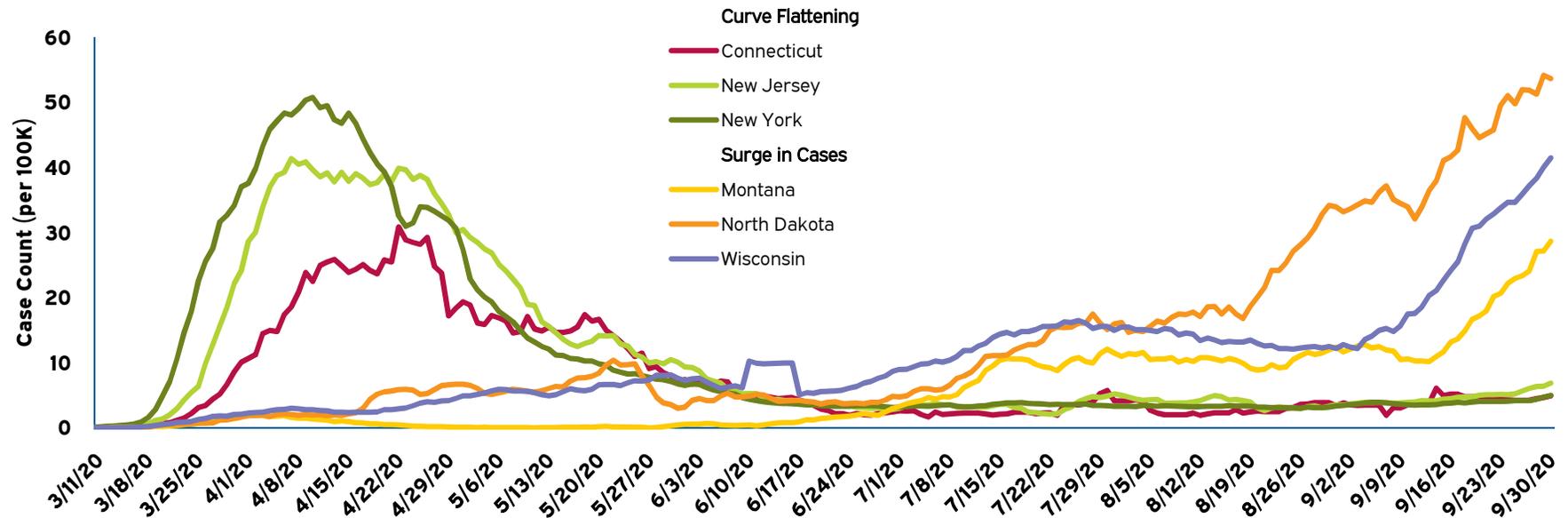


- Cases of COVID-19 continue to grow globally with now over 40 million reported cases across 189 countries.
- The US still has the highest number of cases, with India surpassing Brazil for the second spot. Latin America in aggregate remains a hotspot, with Russia, France, and Spain also experiencing high case counts.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020.

<sup>2</sup> North Asia: China, Hong Kong, Japan, Russia, South Korea, and Taiwan. Southeast Asia: Singapore, India, Indonesia, Malaysia, Pakistan, Philippines, Thailand, Bangladesh, Sri Lanka, and Vietnam. Europe: Austria, Belarus, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Hungary, Italy, Netherlands, Norway, Poland, Romania, Spain, Sweden, United Kingdom, Switzerland, and Ukraine. Latin America: Chile, Brazil, Mexico, Argentina, Colombia, Peru, Venezuela, Ecuador, Panama, Paraguay, Costa Rica, Bolivia, Uruguay, El Salvador, Honduras, Cuba, Dominican Republic, Haiti, and Nicaragua. Middle East/North Africa: Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Turkey, Tunisia, United Arab Emirates, and Yemen.

### New Daily Reported COVID-19 Cases<sup>1</sup>



- Some states experienced initial spikes in cases with subsequent improvements, while other states fared better early on with recent case spikes.
- As we move into the colder months, flu season and the reopening of schools in some areas could create additional stresses on the healthcare system.
- The recent increase in cases in some states has sparked concerns that the trend will continue throughout the country.

<sup>1</sup> Source: TrackTheRecovery. Data is as of September 30, 2020.

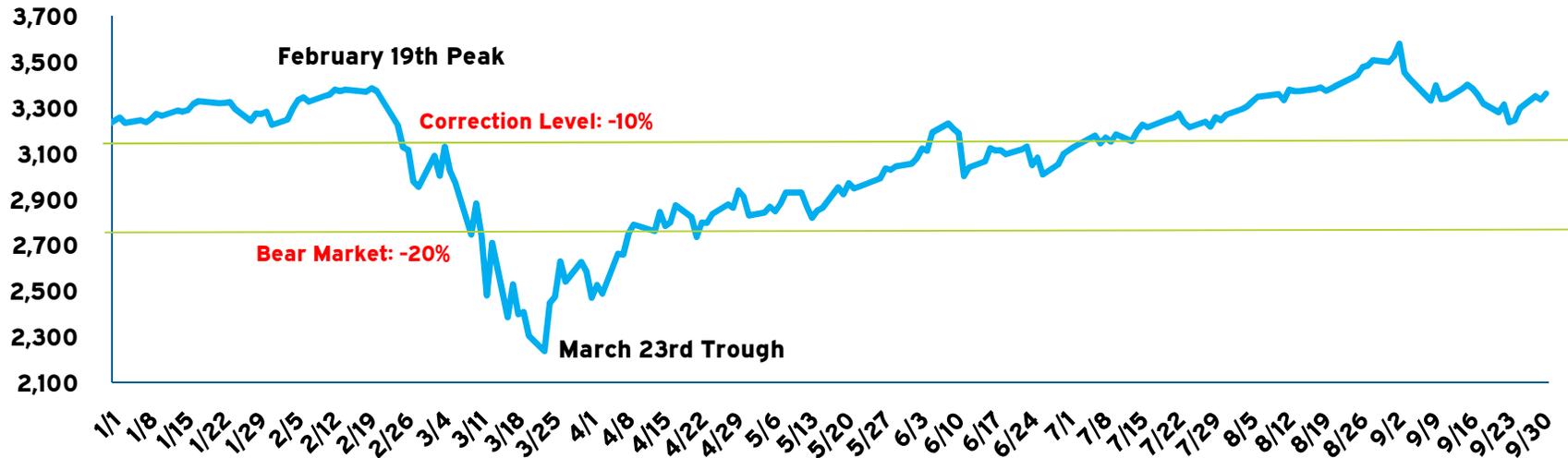
**Market Returns<sup>1</sup>**

Indices	September	YTD	1 Year	3 Year	5 Year	10 Year
S&P 500	-3.8%	5.6%	15.1%	12.3%	14.1%	13.7%
MSCI EAFE	-2.6%	-7.1%	0.5%	0.6%	5.3%	4.6%
MSCI Emerging Markets	-1.6%	-1.2%	10.5%	2.4%	9.0%	2.5%
MSCI China	-2.7%	16.4%	33.6%	7.9%	13.5%	6.5%
Bloomberg Barclays Aggregate	-0.1%	6.8%	7.0%	5.2%	4.2%	3.6%
Bloomberg Barclays TIPS	-0.4%	9.2%	10.1%	5.8%	4.6%	3.6%
Bloomberg Barclays High Yield	-1.0%	0.6%	3.3%	4.2%	6.8%	6.5%
10-year US Treasury	0.2%	12.8%	10.8%	6.7%	4.6%	4.3%
30-year US Treasury	0.1%	23.9%	17.9%	12.4%	9.3%	7.8%

- In September, most asset classes declined, particularly riskier ones, possibly influenced by gridlock over the next round of US fiscal stimulus, the approaching presidential election, and fears over rising virus cases. Notably, September declines followed five straight months of substantial gains.
- Overall, global risk assets have recovered meaningfully from their lows, largely driven by record fiscal and monetary policy stimulus. The S&P 500 has appreciated by over 56% from its mid-March trough.
- Despite the recovery in risk assets, yields on safe-haven assets like US Treasuries remain close to record lows due to expectations for extremely accommodative monetary policy for the foreseeable future and for relatively weak economic growth.

<sup>1</sup> Source: InvestorForce and Bloomberg. Data is as of September 30, 2020.

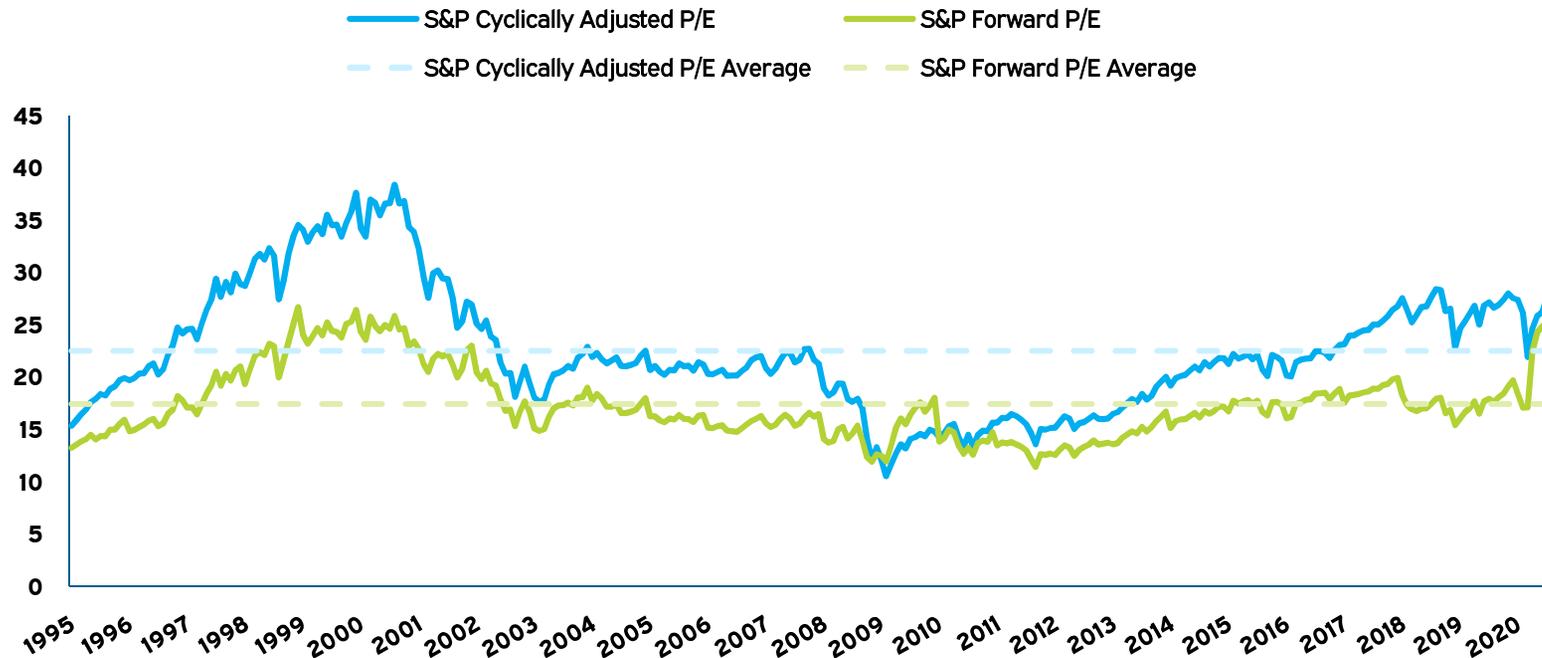
### S&P 500 Fully Recovers<sup>1</sup>



- Given the anticipated economic carnage surrounding the pandemic, US stocks declined from a February peak into bear market (-20%) territory at the fastest pace in history.
- From the February 19 peak, the S&P 500 plunged 34% in just 24 trading days.
- After quickly rebounding from its lows and finishing above its pre-COVID levels at the end of August, the market retraced 3.8% in September, bringing its year-to-date gain to 5.6%.
- The key risk going forward remains that a spike in COVID-19 cases could slow, or reverse, reopening plans.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020.

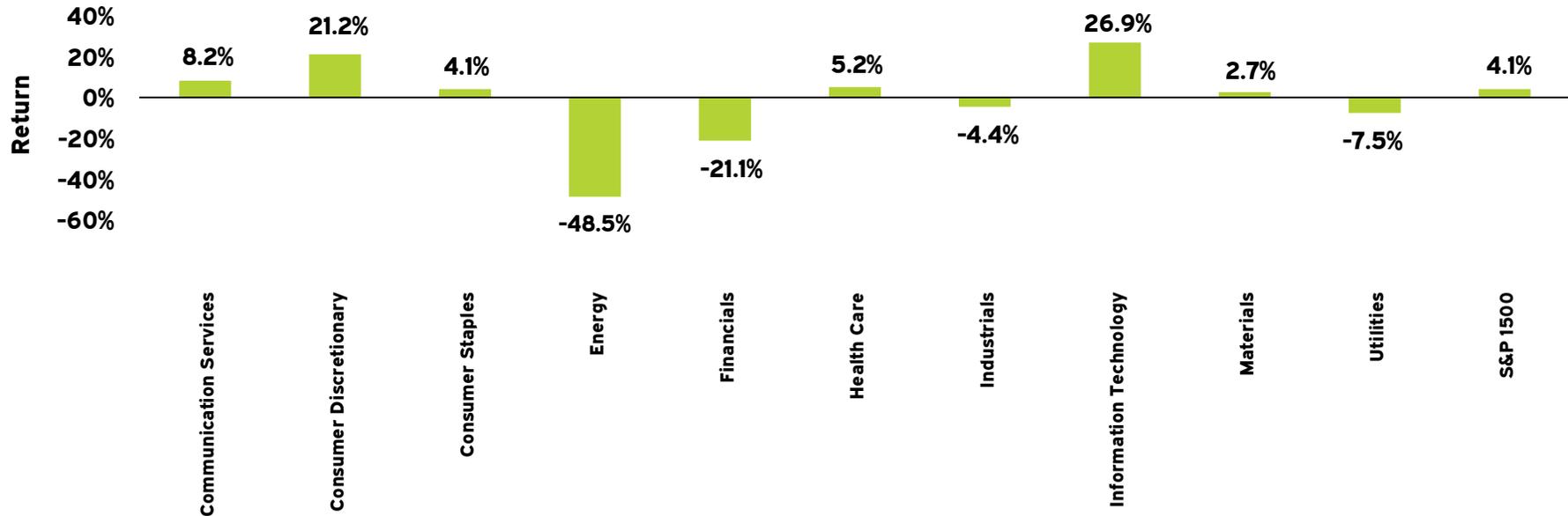
### S&P Equity Valuations<sup>1</sup>



- Despite the pullback in September, valuations based on both forward- and backward-looking earnings remain stretched.
- Many are looking to improvements in earnings growth as the US economy continues to reopen to justify market levels, with historically low interest rates also providing support.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020.

### 2020 YTD Sector Returns<sup>1</sup>

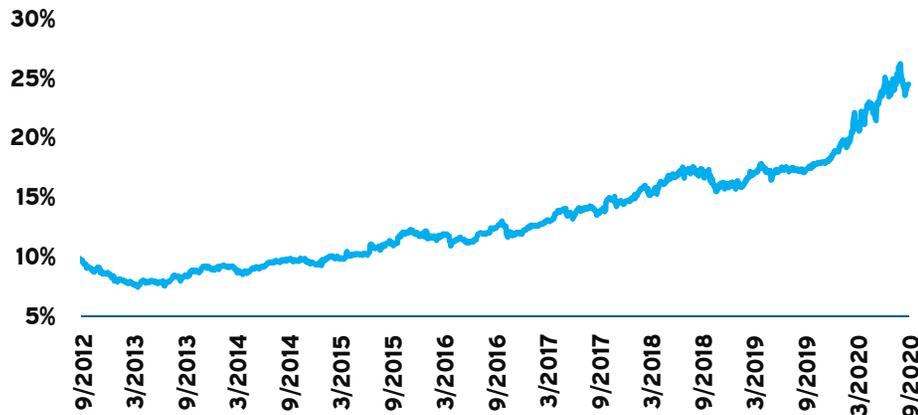


- Information technology remains the best performing sector, with a narrow group of companies including Amazon and Netflix driving market gains. The outperformance has been due to consumers moving to online purchases and streaming services.
- The consumer discretionary sector also experienced gains as the economy reopened, people returned to work, and stimulus checks were spent.
- The energy sector remains the sector with the greatest 2020 decline, triggered by the plunge in oil prices. Financials have also struggled in this slow growth environment with demand for loans down and low interest rates weighing on loan revenue.

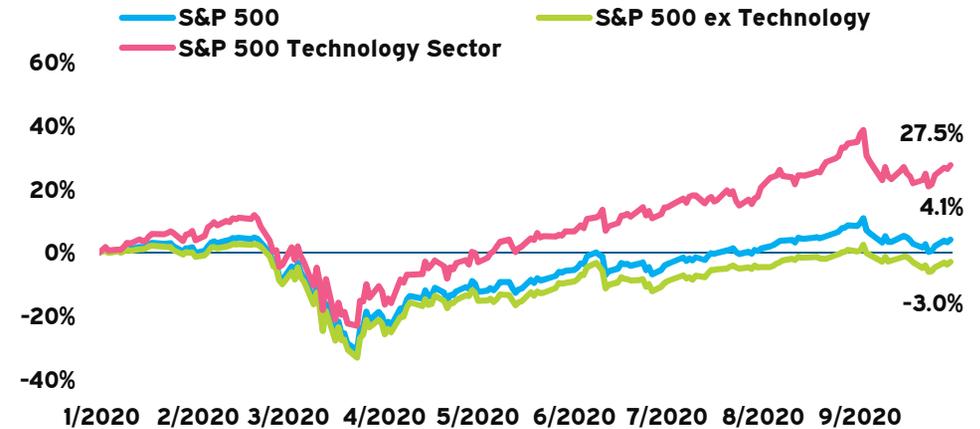
<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020.

### Technology has led the way in the Rebound

FAANG+M Share of S&P 500<sup>1</sup>



Returns Year to Date through September 30<sup>2</sup>

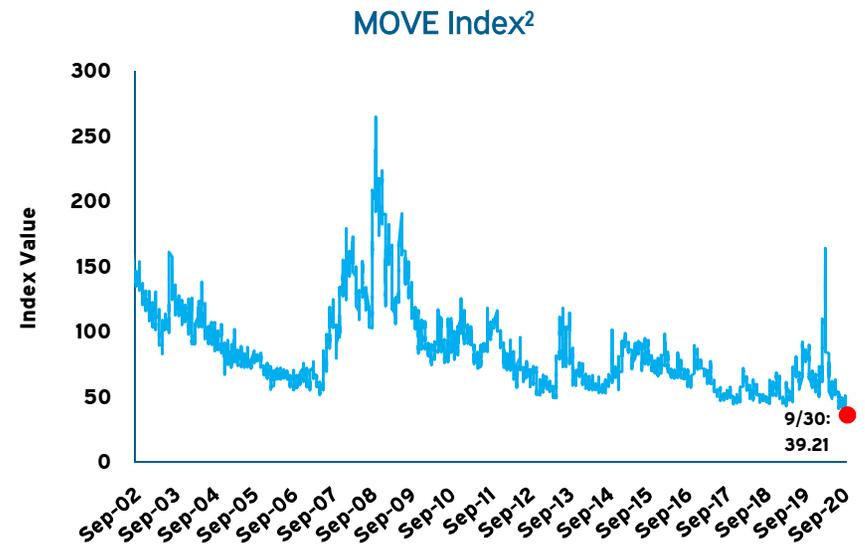
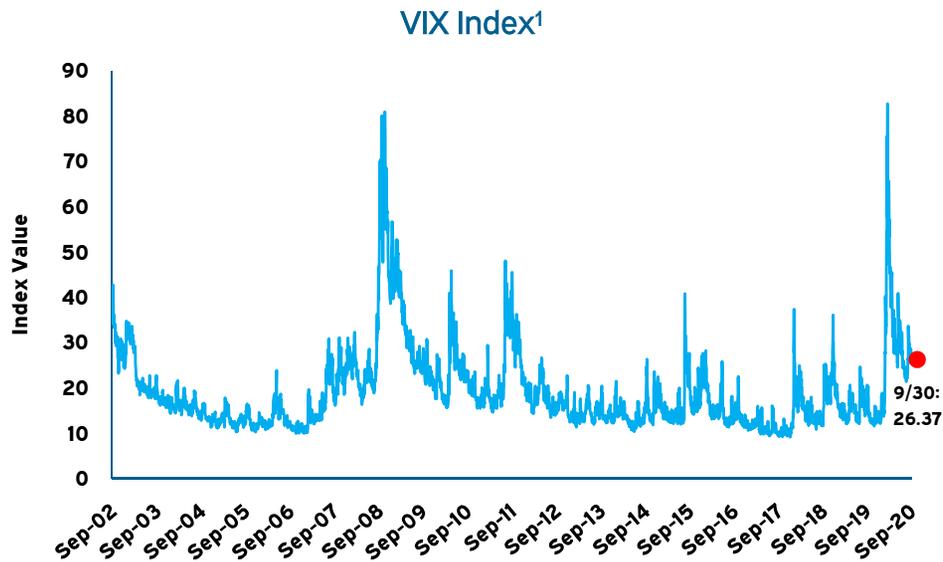


- The recent market recovery has largely been driven by a few select technology companies that benefited from the stay-at-home environment related to the virus.
- Year-to-date, the S&P 500 technology sector returned 27.5%, compared to -3.0% for the S&P 500 ex-technology index, with Amazon (+70%), Netflix (+55%), and Apple (+58%) posting strong results.
- The strong relative returns of these companies has led to them comprising a growing portion (24.5%) of the S&P 500, which makes their future performance particularly impactful.

<sup>1</sup> FAANG+M = Facebook, Amazon, Apple, Netflix, Google (Alphabet), and Microsoft. The percentage represents the aggregate market capitalization of the 6 companies compared to the total market capitalization of the S&P 500 as of September 30, 2020.

<sup>2</sup> Each data point represents the price change relative to the 12/31/2019 starting value.

### Volatility has Declined



- Expectations of short-term equity volatility, as measured by the VIX index, continued to decline from record levels, though it remains elevated relative to the past decade.
- At the recent peak, the VIX reached 82.7, surpassing the pinnacle of volatility during the GFC, thus showing the magnitude of the crisis and of investor fear.
- Expectations of volatility within fixed income, as represented by the MOVE index, spiked and then dropped to historic lows, helped by the broad level of monetary support and forward guidance by the Fed.

<sup>1</sup> Source: Chicago Board of Exchange. Data is as of September 30, 2020.

<sup>2</sup> Source: Bloomberg. Data is as of September 30, 2020.

## Global Financial Crisis Comparison

	2007-2009 Global Financial Crisis	COVID-19 Crisis
<b>Primary Causes</b>	<p>Excess Risk Taking Due to:</p> <ul style="list-style-type: none"> <li>Deregulation, un-constrained securitization, shadow banking system, fraud</li> </ul>	<p>Pandemic/Natural Disaster:</p> <ul style="list-style-type: none"> <li>Large scale global restrictions on businesses and individuals leading to immediate and significant deterioration in economic fundamentals</li> </ul>
<b>Fiscal Measures</b>	<ul style="list-style-type: none"> <li>American Recovery Reinvestment Act of 2009: \$787 billion</li> <li>Economic Stimulus Act of 2008: \$152 billion</li> </ul>	<ul style="list-style-type: none"> <li>PPP Act: \$659 billion</li> <li>CARES Act of 2020: \$2.3 trillion</li> <li>Families First Coronavirus Response Act: \$150 billion</li> <li>Coronavirus Preparedness &amp; Response Supplemental Appropriations Act 2020: \$8.3 billion</li> <li>National Emergency: \$50 billion</li> </ul>
	2007-2009 Global Financial Crisis	COVID-19 Crisis
<b>Monetary Measures</b>		
Lowering Fed Funds Rate	X	X
Quantitative Easing	X	X
Primary Dealer Repos	X	X
Central Bank Swap Lines	X	X
Commercial Paper Funding Facility	X	X
Primary Dealers Credit Facility	X	X
Money Market Lending Facility	X	X
Term Auction Facility	X	
TALF	X	X
TSLF	X	
FIMA Repo Facility		X
Primary & Secondary Corp. Debt		X
PPP Term Facility		X
Municipal Liquidity Facility		X
Main Street Loan Facility		X

### Global Financial Crisis Comparison (continued)

- The US **fiscal** response to the COVID-19 Crisis has been materially larger than the response to the 2007-2009 Global Financial Crisis (GFC), and stimulus is acutely focused on areas of the economy showing the greatest need, including small- and mid-sized companies. For example, the Paycheck Protection Program (PPP) helped small businesses keep employees working by offering forgivable loans to cover salaries.
- On the **monetary** side, markets targeted during both crises represent those most in need, but for the COVID-19 Crisis the policy response was dramatically faster, measured in weeks, not years, as in the GFC.
- Of the monetary stimulus measures, the corporate debt (Primary & Secondary Corporate Debt) programs and Main Street Loan Facility are new and garnered much attention from market participants.
- Through the end of September, Fed programs have experienced various degrees of usage. However, at this point, none has come close to reaching program limits. Still, programs have been extended through December 2020, and the psychological value of knowing the programs are available, if necessary, likely supports market sentiment.

## Policy Responses

	Fiscal	Monetary
United States	\$50 billion to states for virus related support, interest waived on student loans, flexibility on tax payments and filings, expanded COVID-19 testing, paid sick leave for hourly workers, \$2 trillion package for individuals, businesses, and state/local governments. Additional \$484 billion package to replenish small business loans, provide funding to hospitals, and increase testing.	Cut policy rates to zero, outcome-based forward guidance suggesting aggressively accommodative policy for the foreseeable future, unlimited QE4, offering trillions in repo market funding, restarted and extended CPFF, PDCF, MMMF programs to support lending and financing markets, expanded US dollar swap lines with foreign central banks, announced IG corporate debt buying program with subsequent amendment for certain HY securities, Main Street Lending program, Muni liquidity facility, repo facility with foreign central banks, easing of some financial regulations for lenders, and changing the inflation mandate to an average target of 2.0%
Euro Area	European Union: Shared 750 billion euro stimulus package. Germany: 220 billion euro stimulus France: 57 billion euro stimulus. Italy: 75 billion euro stimulus. Spain: 200 billion euro and 700 million euro loan and aid package, respectively.	Targeted longer-term refinancing operations aimed at small and medium sized businesses, under more favorable pricing, and announced the 750 billion euro Pandemic Emergency Purchase Program, and then expanded the purchases to include lower-quality corporate debt.
Japan	Hundreds of trillions in yen stimulus for citizens and businesses, including low interest loans, deferrals on taxes, and direct cash handouts.	Initially increased QE purchases (ETFs, corporate bonds, and CP) and then expanded to unlimited purchases and doubling of corporate debt and commercial paper, expanded collateral and liquidity requirements, and 0% interest loans to businesses hurt by virus.
China	Tax cuts, low-interest business loans, extra payments to gov't benefit recipients.	Expanded repo facility, policy rate cuts, lowered reserve requirements, loan-purchase scheme.
Canada	\$7.1 billion in loans to businesses to help with virus damage, C\$381 billion stimulus.	Cut policy rates, expanded bond-buying and repos, lowered bank reserve requirements.
UK (BOE)	190 billion pound stimulus, Tax cut for retailers, small business cash grants, benefits for those infected with virus, expanded access to gov't benefits for self and un-employed.	Lowered policy rates and capital requirements for UK banks, restarts QE program and subsequently increased the purchase amounts.
Australia	\$11.4 billion, subsidies for impacted industries like tourism, one-time payment to gov't benefit recipients.	Policy rate cut, started QE.

### Next Round of US Fiscal Stimulus

	Republican Proposal <sup>1</sup>	Democratic Proposal <sup>2</sup>
Status	Offered by the President and republican leaders in mid-October	Passed in House on October 1
Direct payments	\$1,200 for adults, \$1,000 per child	\$1,200 for adults, \$500 per dependent
Unemployment / Assistance	\$400 per week, through the third week of January and retroactive to Sept. 12	\$600 per week enhanced unemployment benefit through January. 15% increase in food stamps
State and local aid	\$300 billion	\$436 billion
Airlines	\$20 billion	\$25 billion
Paycheck Protection	\$330 billion	Extend program
Testing / Tracing / Healthcare	\$175 billion	\$75 billion
Education	\$150 billion	\$225 billion
Childcare	\$25 billion	\$57 billion
Total	\$1.8 Trillion	\$2.2 Trillion

- The next round of fiscal stimulus that the market has been anticipating appears to be caught in gridlock.
- Without further stimulus, many businesses might not be able to survive, particularly services like restaurants as we move into the colder months in parts of the country.
- The enhanced unemployment benefits from the initial stimulus program were particularly impactful to those without jobs. After it ended in July an extension of a lesser amount (\$300 extra per week) was implemented, but is in the process of winding down and at risk of ending without replacement.

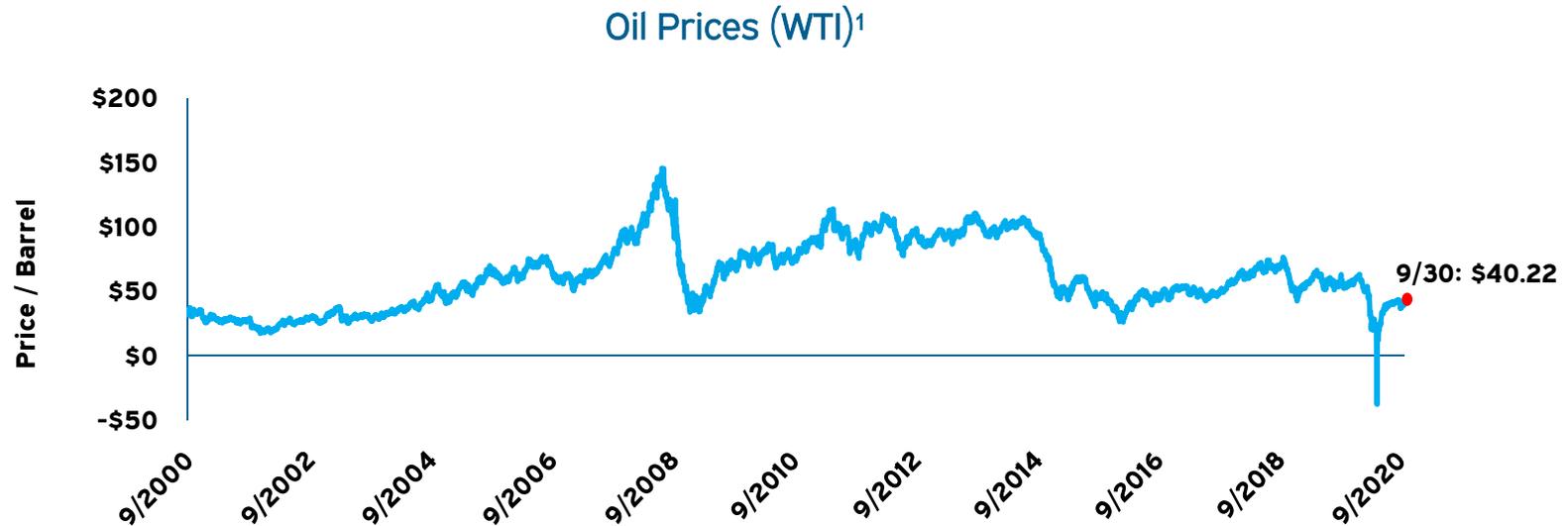
<sup>1</sup> Source: <https://www.cnn.com/2020/10/10/pelosi-dismisses-trump-coronavirus-stimulus-offer.html>

<sup>2</sup> Source: <https://www.cnn.com/2020/10/01/coronavirus-stimulus-update-house-passes-democratic-relief-bill.html>

### November US Presidential Election

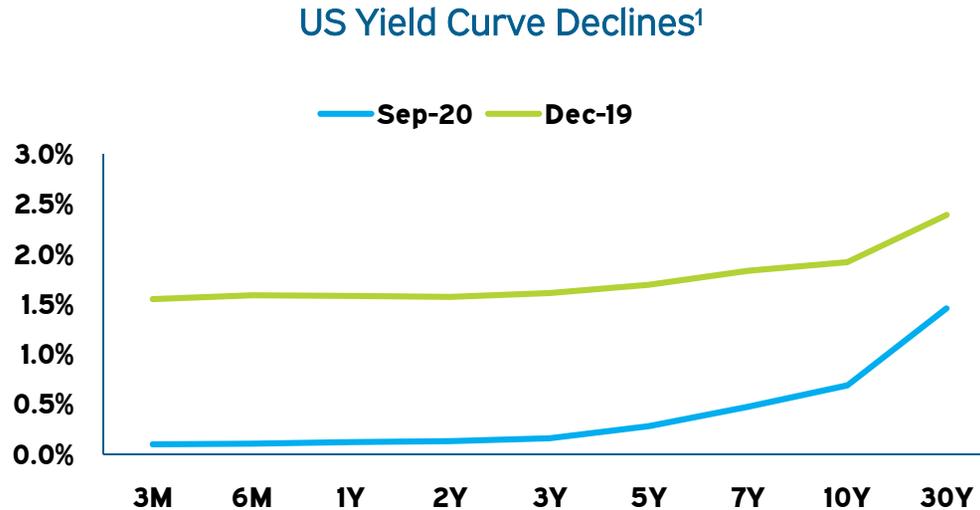
Policy Area	Trump	Biden
Tax Policy & Wages	Favors lower taxes and lower capital gains rates; “Made in America” tax credits; expanded tax breaks for investing in lower-income communities; Has indicated support for an increased minimum wage but prefers to leave it to the States.	Increase corporate tax rates from 21% to 28% (still lower than under President Obama) and implement a minimum 15% tax on global income over \$100 million; increase the tax rate for individuals earning over \$400,000 to 39.6%; Supports a \$15 an hour national minimum wage.
Infrastructure	Allocate over \$1 trillion over ten years to highways and transit, rural broadband, and 5G cell service.	Allocate over \$2 trillion to “sustainable infrastructure” and clean energy, 5G cell service, rural broadband, and modernize schools.
Government reach and Regulation	Favors smaller government and de-regulation; continue to ease regulation for businesses.	Favors increased government involvement; strengthen regulation and oversight.
Trade Policy	“America First”, protectionist in nature, use of tariffs; hard line stance with China.	“Why America Must Lead Again”; coalition forming to confront China.
Immigration	Favors restrictive immigration policies including building the southern wall and more restrictive visa requirements.	Vowed to reverse President Trump’s immigration policies including border detention and public charge rule
Climate Change	Pulled the US out of the Paris Climate Accord.	Proposed a \$2 trillion climate plan with the goal of achieving an emissions-free power sector by 2035 and upgrading four million buildings over four years to meet the highest standards for energy efficiency. Return to the Paris Accord.

- Many are looking to the November presidential election and the potential impacts of the candidate’s proposed policies.
- President Trump’s policies will likely be a continuation of those implemented pre-pandemic, focused around low taxes, deregulation, and protectionist trade policies, with a particularly aggressive stance against China. By contrast, Mr. Biden’s plans include an increase in taxes for higher-income earners, a more collaborative approach with America’s allies on foreign policy, broader regulation, and “green” initiatives.



- While global oil prices have rallied from April lows, they remain below their pre-pandemic level.
- In September, OPEC+ maintained their 7.7 million barrels/day production cuts in an effort to support oil prices.
- Counterbalancing the OPEC+ production cut agreement, US oil producers (particularly shale output) are turning wells back on, given higher prices.
- As OPEC+ starts rolling back production cuts, and an increasing virus spread potentially weighs on demand, oil prices could experience downward pressure going forward.

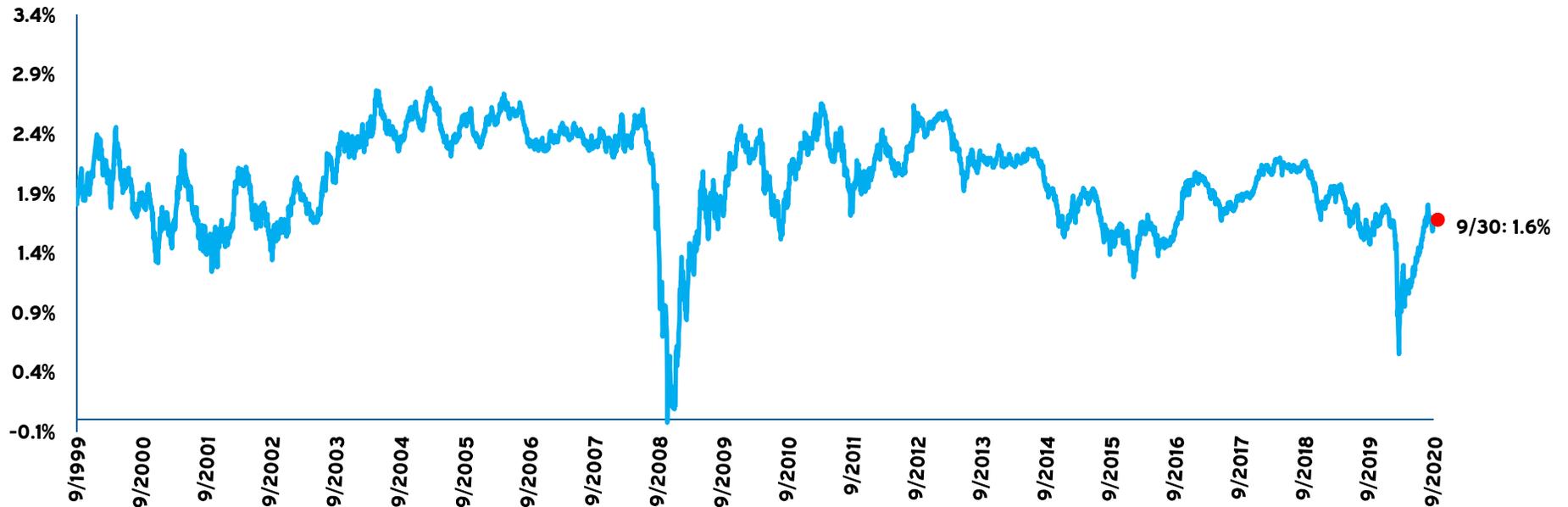
<sup>1</sup> Source: Bloomberg. Represents WTI first available futures contract. Data is as of September 30, 2020.



- The US Treasury yield curve has declined materially during 2020.
- Cuts in monetary policy rates, and policy makers' open commitments to keep rates low for the foreseeable future, drove yields down in shorter maturities, while flight-to-quality flows, low inflation, and economic growth uncertainty have driven the changes in longer maturities.
- The Federal Reserve's unlimited quantitative easing purchase program has produced further downward pressure on interest rates, particularly in the short- and medium-term sectors due to the purchases being focused on those segments.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020.

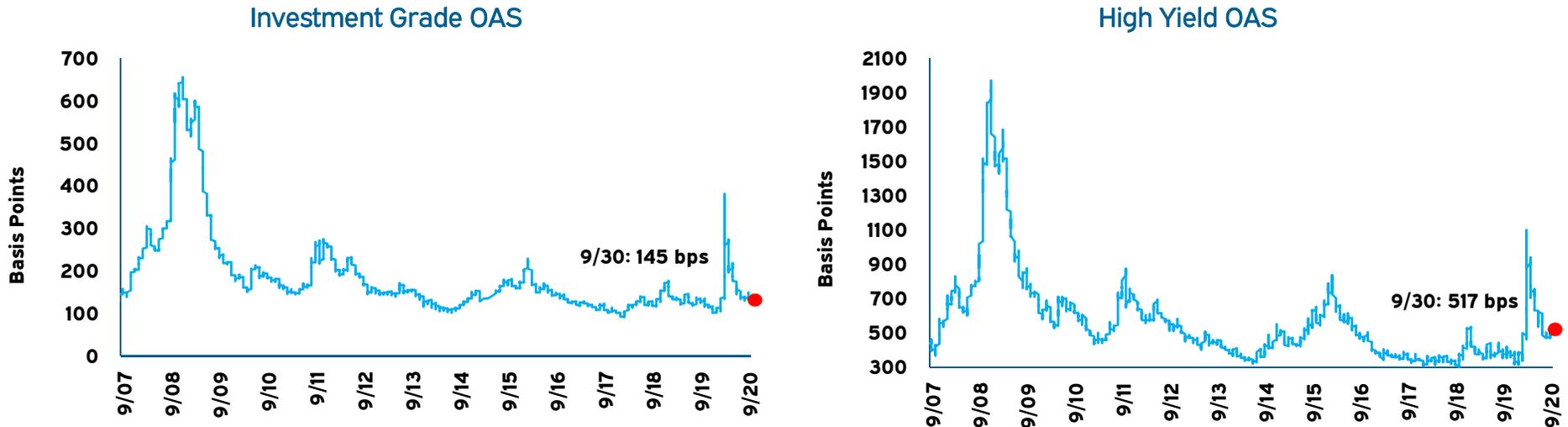
### 10-Year Breakeven Inflation<sup>1</sup>



- Inflation breakeven rates initially declined sharply, due to a combination of lower growth and inflation expectations, as well as liquidity dynamics in TIPS during the height of market volatility.
- Liquidity eventually improved and breakeven rates increased as deflationary concerns moderated, but given the uncertainty regarding economic growth and the inflationary effects of the unprecedented US fiscal response, inflation expectations remain below historical averages.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020.

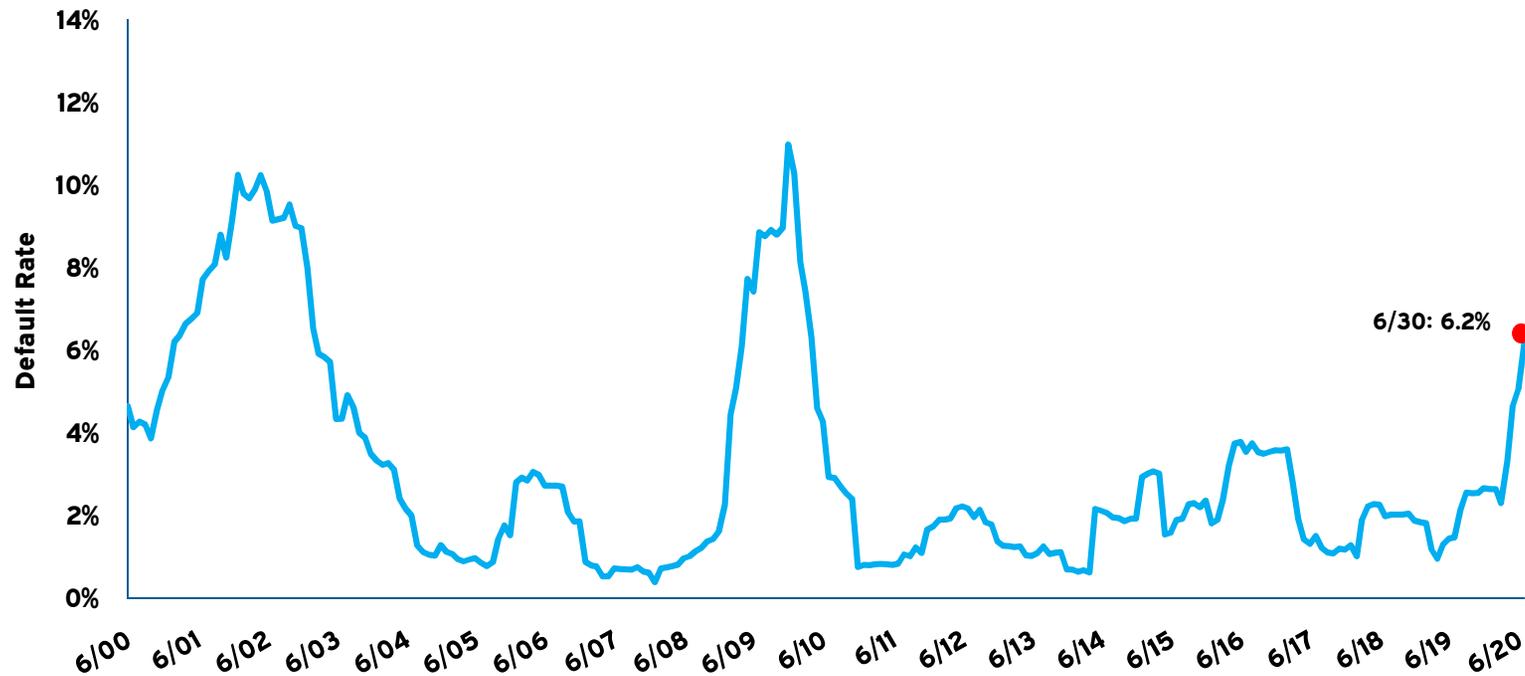
### Credit Spreads (High Yield & Investment Grade)<sup>1</sup>



- Credit spreads (the spread above a comparable Treasury bond) for investment grade and high yield corporate debt expanded sharply at the start of the pandemic as investors sought safety.
- Investment grade bonds held up better than high yield bonds. The Federal Reserve’s corporate debt purchase program for investment grade and certain high yield securities recently downgraded from investment grade, was well received by investors, leading to a decline in spreads to around long-term averages.
- Overall, corporate debt issuance has more than doubled since 2008, which magnifies the impact of deterioration in the corporate debt market. This is particularly true in the energy sector, which represents over 10% of the high yield bond market.

<sup>1</sup> Source: Federal Reserve Bank of St. Louis Economic Research. Data is as of September 30, 2020.

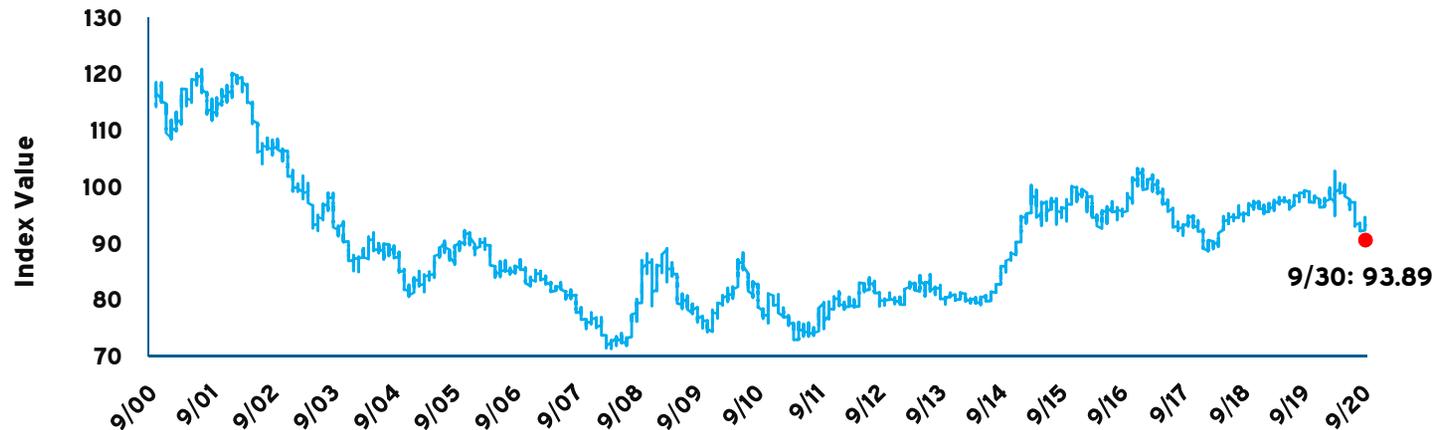
### US High Yield Credit Defaults<sup>1</sup>



- Even though spreads have declined, helped by the Federal Reserve's support, defaults, particularly in the high yield sector, have increased dramatically in 2020.
- The energy sector has experienced the greatest impact given the decline in oil prices, with the default rate over 10% and expectations for it to increase.

<sup>1</sup> Source: J.P. Morgan; S&P LCD. Most recent data is as of June 30, 2020.

### US Dollar versus Broad Currencies<sup>1</sup>



- When financial markets began aggressively reacting to COVID-19 developments, the US dollar came under selling pressure as investors sought safe-haven exposure in currencies like the Japanese yen given its current account surplus and its status as the largest creditor globally.
- As the crisis grew into a pandemic, investors' preferences shifted to holding US dollars and highly liquid, short-term securities like US Treasury bills. This global demand for US dollars led to appreciation versus most major currencies.
- To help ease global demand for US dollars, the Federal Reserve, working with a number of global central banks, re-established the US dollar swap program, providing some relief to other currencies. Usage of the program continues to decline as dollar funding demands have eased.
- Recently we have seen some weakness in the dollar as the US struggles with containing the virus and investors seek higher-yielding non-US assets, particularly in emerging markets. This has created pressures on already stressed export-focused countries.
- Going forward, the dollar's safe haven quality and the relatively higher rates in the US could provide support.

<sup>1</sup> Source: Bloomberg. Represents the DXY Index. Data is as of September 30, 2020.

## Economic Impact

### Supply Chain Disruptions:

- Factories closing, increased cost of stagnant inventory, and disrupted supply agreements.
- Reduced travel, tourism, and separation policies including closed borders: Significant impact on service-based economies.

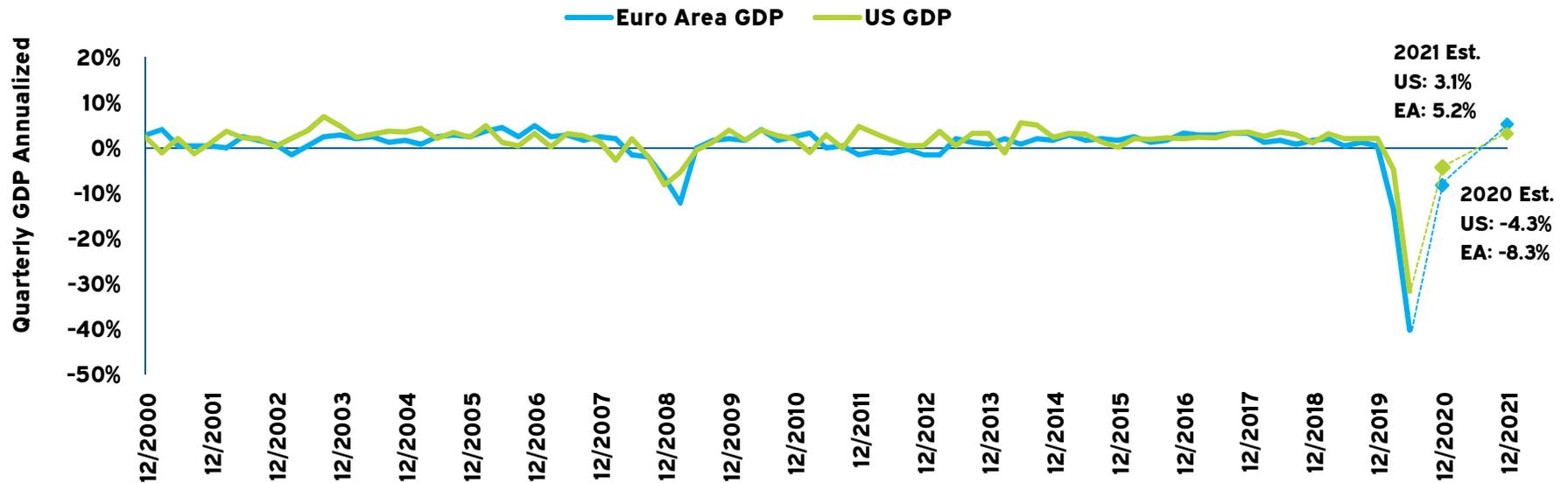
### Labor Force Impacts:

- Huge layoffs across service and manufacturing economies.
- Increased strains as workforce productivity declines from increased societal responsibilities (e.g., home schooling of children) and lower functionality working from home.
- Illnesses from the disease will also depress the labor force.

### Declines in Business and Consumer Sentiment:

- Sentiment drives investment and consumption, which leads to increased recessionary pressures as sentiment slips.

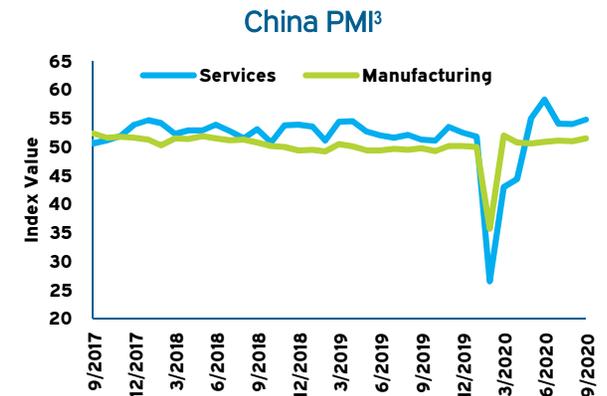
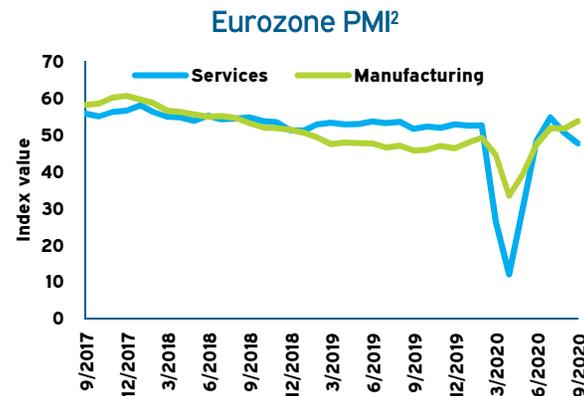
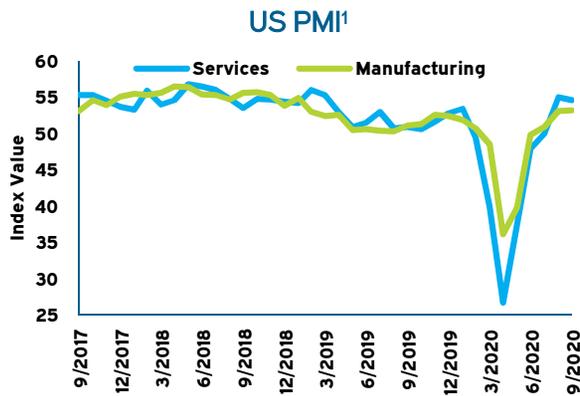
### GDP Data Shows Impact of the Pandemic<sup>1</sup>



- The global economy faces major recessionary pressures this year, but optimism remains for improvements in 2021, as economies are expected to gradually reopen.
- In the US, second quarter GDP posted a record (annualized) decline of -31.4%, officially putting the US in a recession. Similarly, growth in the Euro Area declined by a record amount with the major economies in Germany, France, Italy, and Spain experiencing historic declines.
- At the end of September, Bloomberg Economics estimated that third quarter US GDP growth could be as high as 25.1% (QoQ annualized). Full year US GDP growth is forecasted to decline by 4.3%.

<sup>1</sup> Source: Bloomberg and IMF. Q3 2020 data represents the third estimate of GDP for the Euro Area and United States. Euro Area figures annualized by Meketa. Projections via October 2020 IMF World Economic Outlook and represent annual numbers.

### Global PMIs

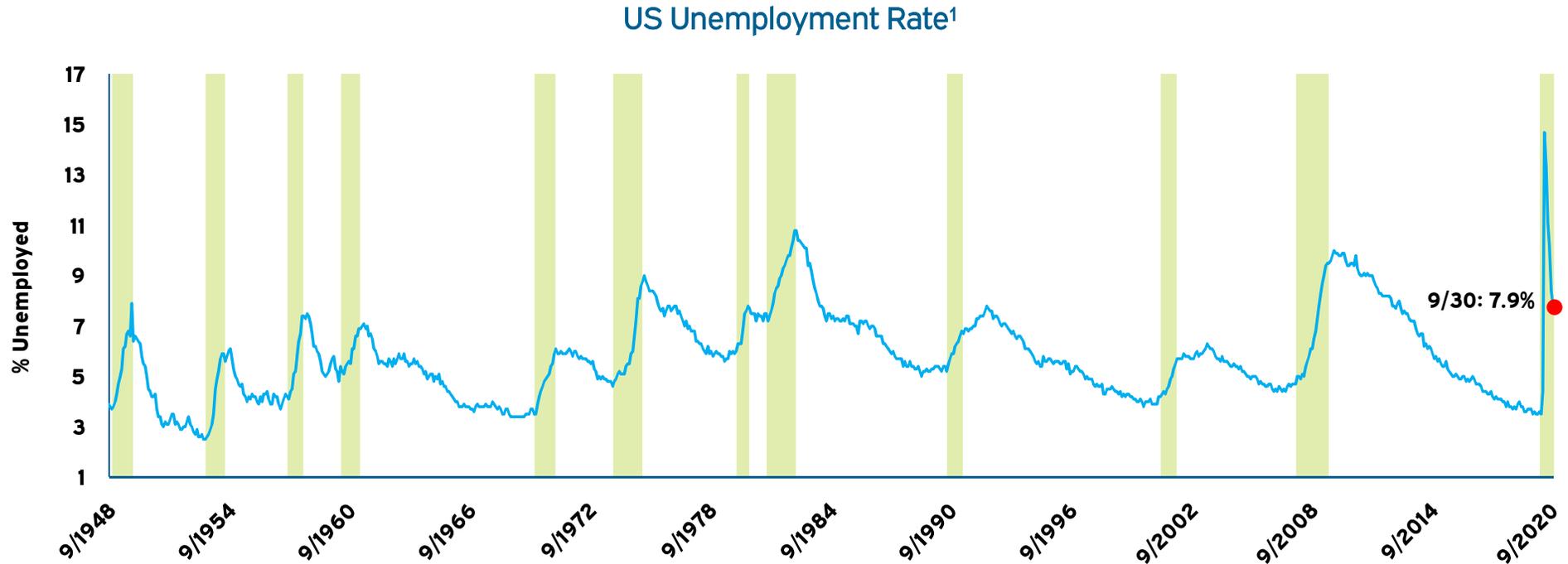


- Purchasing Managers Indices (PMI), which are based on surveys of private sector companies, initially collapsed across the world to record lows, as output, new orders, production, and employment were materially impacted by closed economies.
- Readings below 50 represent contractions across underlying components and act as a leading indicator of economic activity, including the future paths of GDP, employment, and industrial production.
- The services sector was particularly hard hit by the stay-at-home restrictions in many places.
- As the Chinese economy reopened, their PMI's, particularly in the service sector, recovered materially. In the US and Europe, the indices have also improved from their lows to above contraction levels in most cases.

<sup>1</sup> Source: Bloomberg. US Markit Services and Manufacturing PMI. Data is as of September 2020.

<sup>2</sup> Source: Bloomberg. Eurozone Markit Services and Manufacturing PMI. Data is as of September 2020.

<sup>3</sup> Source: Bloomberg. Caixin Services and Manufacturing PMI. Data is as of September 2020.

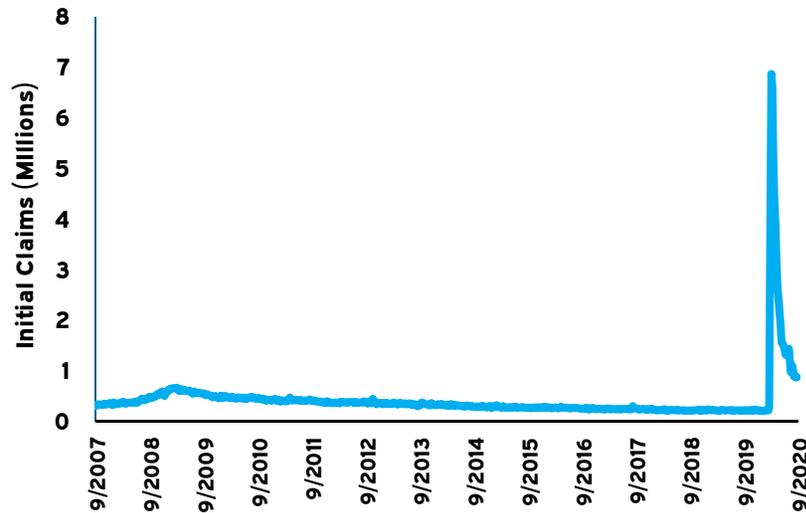


- In September, the unemployment rate continued its decline from the recent April 14.7% peak, falling to 7.9% as businesses and consumers emerged from the lockdown.
- Despite the improvement, unemployment levels remain well above pre-virus readings and are likely higher than reported, as some workers appear misclassified. According to the Bureau of Labor Statistics, absent the misclassification issue, the September unemployment rate would be higher by 0.4%.
- The recent spike in infections and the potential shutting down of some parts of the economy, could lead to an increase in the unemployment rate going forward.

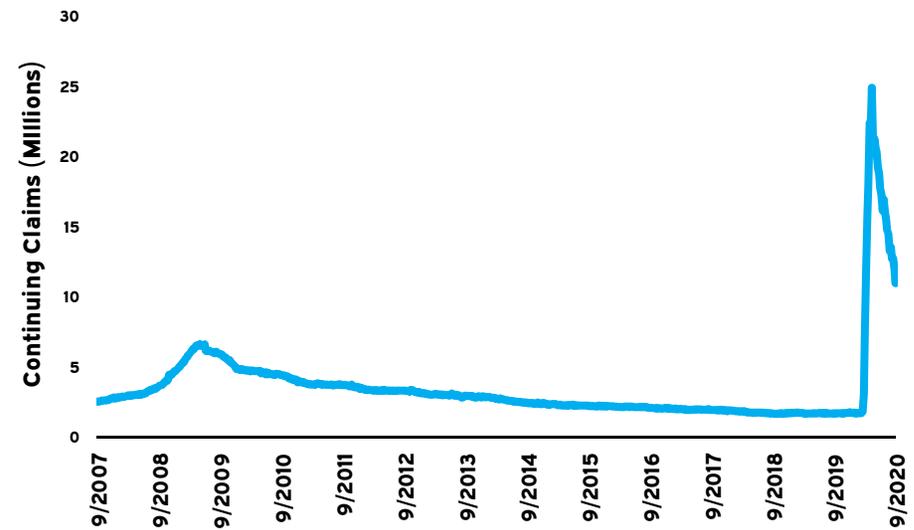
<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020. Bars represent recessions.

### US Jobless Claims

#### US Initial Jobless Claims<sup>1</sup>



#### Continuing Claims<sup>2</sup>

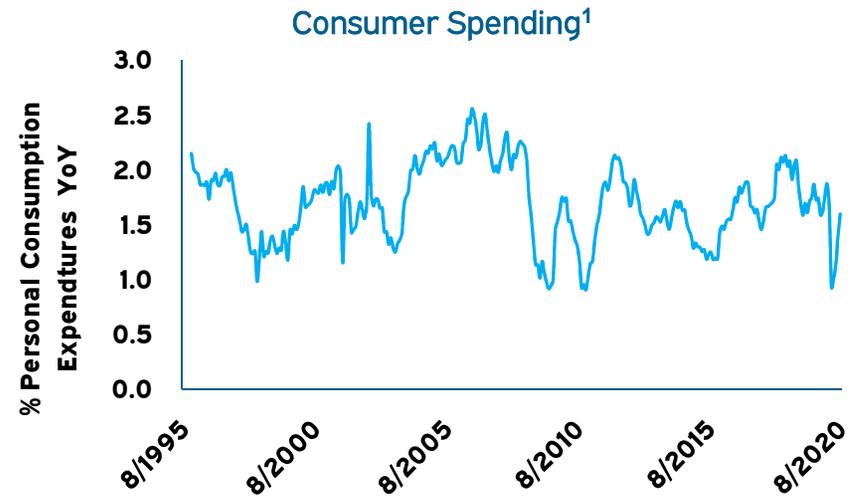


- Over the last 28 weeks, roughly 63 million people filed for initial unemployment. This level far exceeds the 22 million jobs added since the GFC, highlighting the unprecedented impact of the virus.
- Despite the continued decline in initial jobless claims to below 1.0 million per week, levels remain many multiples above the worst reading during the Global Financial Crisis.
- Continuing jobless claims (i.e., those currently receiving benefits) has also declined from record levels, but remains elevated at 11.8 million.

<sup>1</sup> Source: Bloomberg. First reading of seasonally adjusted initial jobless claims. Data is as of September 25, 2020.

<sup>2</sup> Source: Bloomberg. US Continuing Jobless Claims SA. Data is as of September 25, 2020.

### Savings and Spending

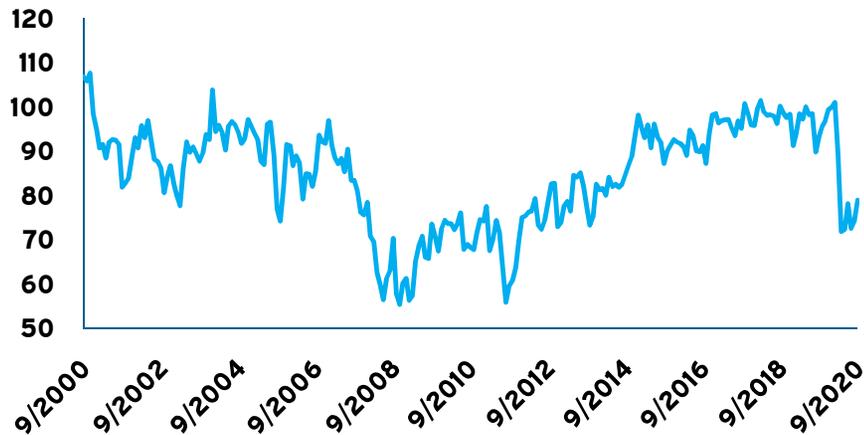


- Fiscal programs including stimulus checks, enhanced unemployment benefits, and loans to small businesses through the Paycheck Protection Program (PPP) have largely supported income levels through the shutdown.
- Despite the income support, the savings rate increased due to the decline in consumer spending, driven by the initial lock-down of the economy, and by uncertainties related to the future of the job market and stimulus programs.
- More recently, the savings rate declined from its peak as spending increased with the economy slowly reopening.

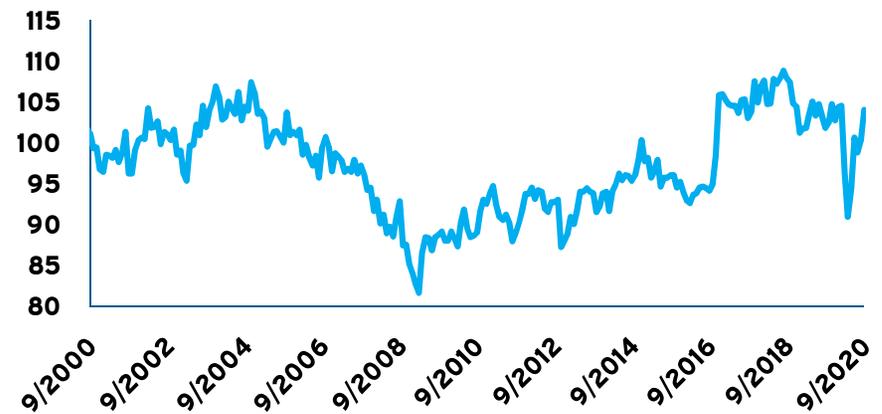
<sup>1</sup> Source: Bloomberg. Latest data is as of August 31, 2020.

### Sentiment Indicators

University of Michigan Consumer Sentiment<sup>1</sup>



Small Business Confidence<sup>2</sup>



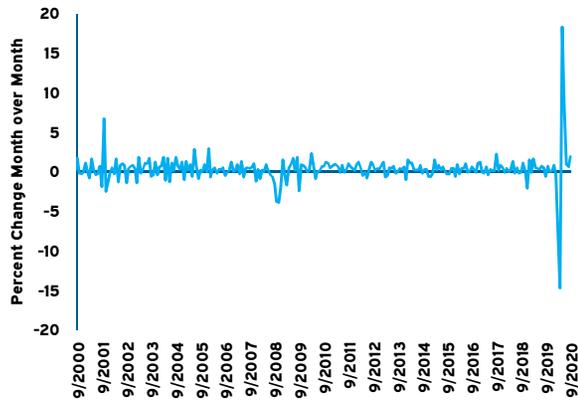
- A strong indicator of future economic activity are the attitudes of businesses and consumers today.
- Consumer spending comprises close to 70% of US GDP, making the attitudes of consumers an important driver of economic growth. Additionally, small businesses generate around half of US GDP, making sentiment in that segment important too.
- Sentiment indicators have shown some improvements as the economy re-opens, particularly for small businesses, but they remain below prior levels.

<sup>1</sup> Source: Bloomberg. University of Michigan Consumer Sentiment Index. Data is as of September 30, 2020.

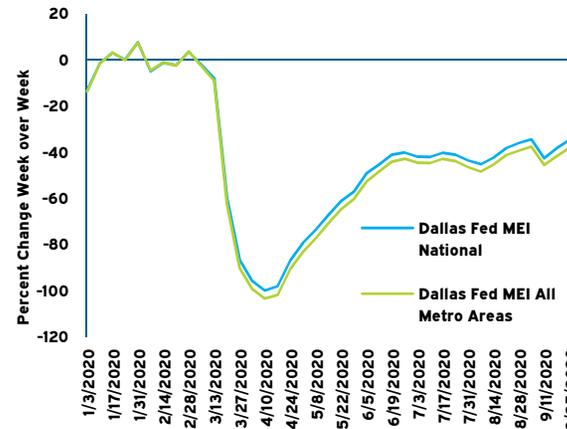
<sup>2</sup> Source: Bloomberg. NFIB Small Business Optimism Index. Latest data is as of September 30, 2020.

### Some US Data has Improved

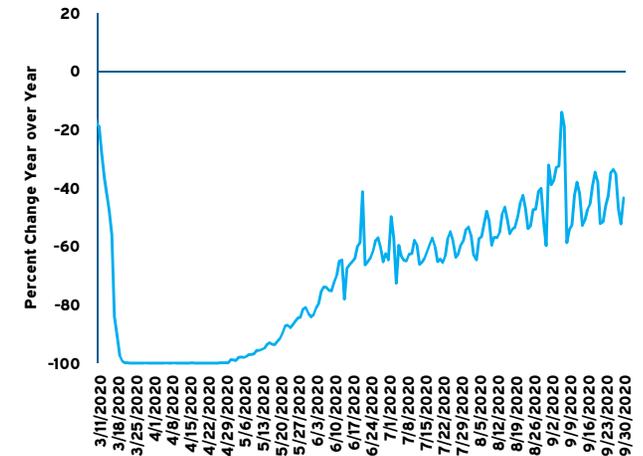
#### Retail Sales<sup>1</sup>



#### Dallas Fed Mobility and Engagement Index<sup>2</sup>



#### OpenTable Seated Diners YoY % Change<sup>3</sup>



- There have been improvements in high frequency data, but overall levels remain well below historical averages, and have slowed in some instances given the recent spike in cases.
- Generally, people have become more active as restrictions eased and stores reopened. Retail sales recovered from a record decline with five consecutive months of growth as the economy reopened, but the pace of growth has been declining.
- Restaurants saw initial improvements before declining and leveling-off, as in-store dining has been cited as a key contributor to increases in infections.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2020 and represents the US Retail Sales SA MoM%.

<sup>2</sup> Source: Bloomberg. Data is as of September 25, 2020 and represents the deviation from normal mobility behaviors induced by COVID-19 (formerly the "Social Distancing Index"). The index represents a weighted average of various lengths of time that a mobile device, like a cell phone, leaves its "home" or place of residence, and/or how long a device stays at home. A decline in this index represents a mobile device at home for a longer period of time than average.

<sup>3</sup> Source: Bloomberg. This data shows year-over-year seated diners at restaurants on the OpenTable network across all channels: online reservations, phone reservations, and walk-ins. Only states or cities with 50+ restaurants in the sample are included. All such restaurants on the OpenTable network in either period are included. Data is as of September 30, 2020. Index start date 2/19/20.

### Looking Forward...

- There will be significant economic impact and a global recession.
  - How deep it will be and how long it will last depend on factors (below) that are unknowable at this time.
- The length of the virus and country responses will be key considerations.
  - As of now, it is not clear the end is in sight, particularly with the recent increases in cases in certain areas; however, individual countries are attempting to lay the groundwork to support recoveries in their economies.
- Central banks and governments are pledging support, but will it be enough?
  - Market reactions to announced policies have been positive, but additional support will likely be required until the virus gets better contained and a vaccine is developed.
- Expect heightened market volatility should economies start to shut back down in response to the recent spike in cases.
  - This has been a consistent theme recently; volatility is likely to remain at risk of spiking again for the foreseeable future.
- It is important to retain a long-term focus.
  - History supports the argument that maintaining a long-term focus will ultimately prove beneficial for diversified portfolios.

### Prior Drawdowns and Recoveries from 1926-2020<sup>1</sup>

Period	Peak-to-Trough Decline of the S&P 500	Approximate Time to Recovery
Sept 1929 to June 1932	-85%	266 months
February 1937 to April 1942	-57%	48 months
May 1946 to February 1948	-25%	27 months
August 1956 to October 1957	-22%	11 months
December 1961 to June 1962	-28%	14 months
February 1966 to October 1966	-22%	7 months
November 1968 to May 1970	-36%	21 months
January 1973 to October 1974	-48%	69 months
September 1976 to March 1978	-19%	17 months
November 1980 to August 1982	-27%	3 months
August 1987 to December 1987	-32%	19 months
July 1990 to October 1990	-20%	4 months
July 1998 to August 1998	-19%	3 months
March 2000 to October 2002	-49%	56 months
October 2007 to March 2009	-57%	49 months
February 2020 to August 2020	-34%	6 months
<b>Average</b>	<b>-36%</b>	<b>39 months</b>
<b>Average ex. Great Depression</b>	<b>-33%</b>	<b>24 months</b>

- As markets have fully recovered to above pre-COVID levels, questions remain about the sustainability of the rally.
- The six-month recovery period represents one of the shortest on record, similar to the historic decline.

<sup>1</sup> Source: Goldman Sachs.

### Implications for Clients

- Portfolios have experienced significant improvements from the March lows.
- Diversification and a disciplined rebalancing approach worked.
- Even though equity markets have recovered from their lows, it is important to remain vigilant and be prepared to rebalance if high volatility returns.
  - Before rebalancing, consider changes in liquidity needs given the potential for cash inflows to decline in some cases.
  - Also, consider the cost of rebalancing if investment liquidity declines.

### Performance YTD (through September 30, 2020)

S&P 500	ACWI (ex. US)	Aggregate Bond Index	Balanced Portfolio <sup>1</sup>
5.6%	-5.4%	6.8%	3.6%

- Meketa will continue to monitor the situation and communicate frequently.
  - The situation is fluid and the economic impact is uncertain at this stage.
- Please feel free to reach out with any questions.

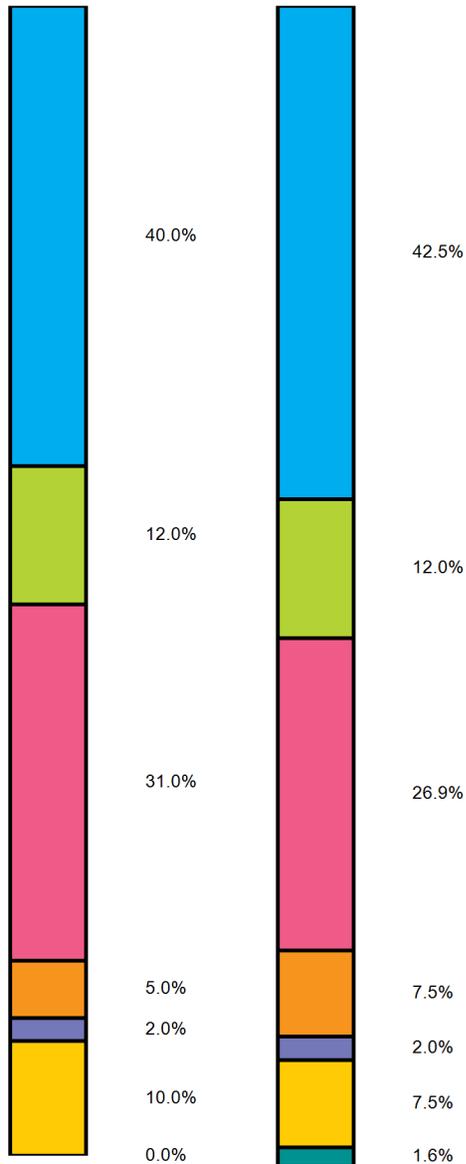
<sup>1</sup> Source: InvestorForce. Balanced Portfolio represents 60% MSCI ACWI and 40% Bloomberg Barclays Global Aggregate.

# Oakland Police and Fire Retirement System

October 20, 2020

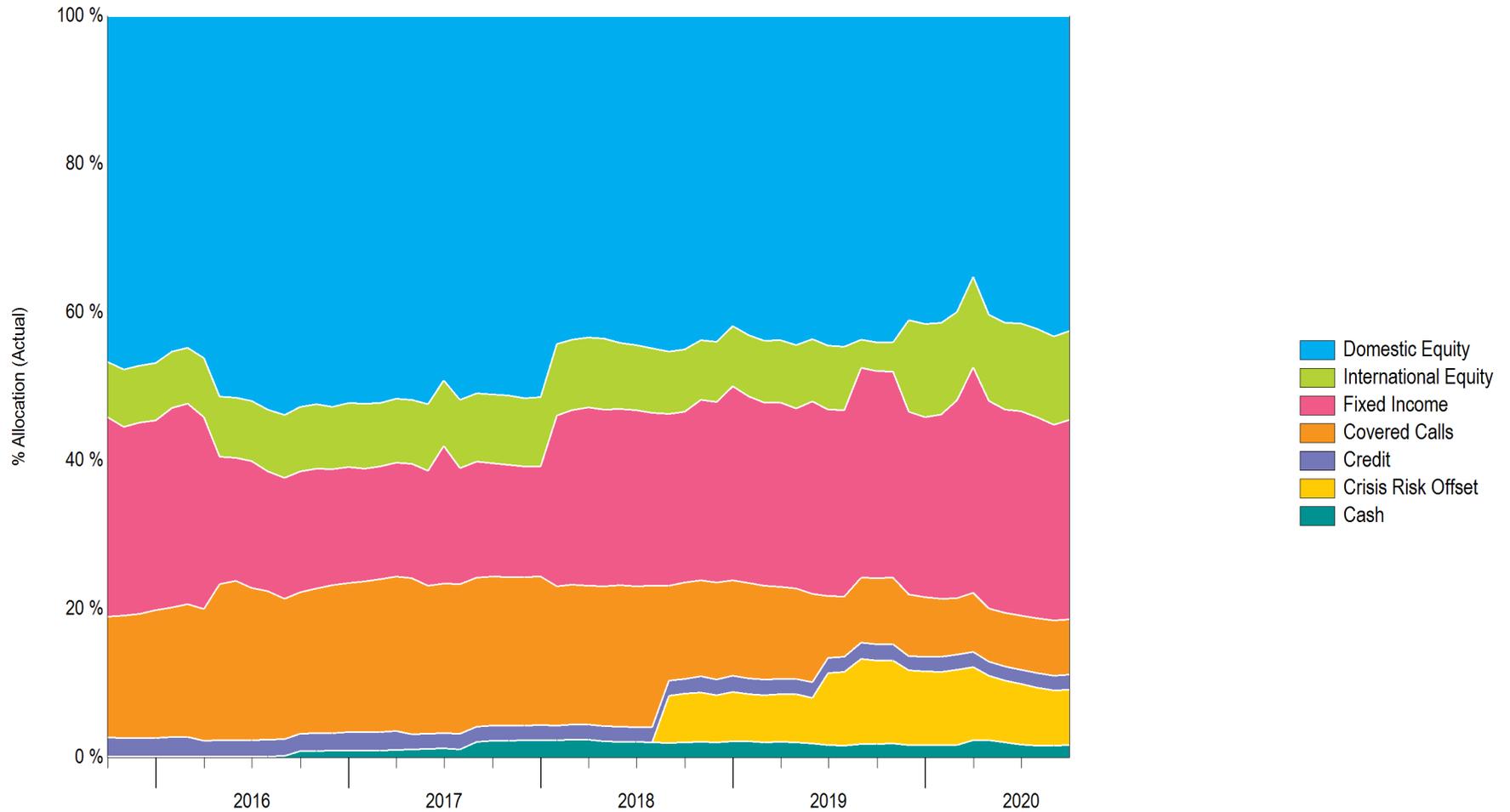
September Flash Report

### OPFRS Total Plan As of September 30, 2020



Allocation vs. Targets and Policy						
	Current Balance	Current Allocation	Policy	Difference	Within IPS Range?	
Domestic Equity	\$169,962,362	42.5%	40.0%	2.5%	Yes	
International Equity	\$47,942,430	12.0%	12.0%	0.0%	Yes	
Fixed Income	\$107,701,257	26.9%	31.0%	-4.1%	Yes	
Covered Calls	\$29,895,963	7.5%	5.0%	2.5%	Yes	
Credit	\$8,028,555	2.0%	2.0%	0.0%	Yes	
Crisis Risk Offset	\$30,031,879	7.5%	10.0%	-2.5%	Yes	
Cash	\$6,504,670	1.6%	0.0%	1.6%	Yes	
<b>Total</b>	<b>\$400,067,116</b>	<b>100.0%</b>	<b>100.0%</b>			

Asset Allocation History  
5 Years Ending September 30, 2020



#### Asset Class Performance Summary

	Market Value (\$)	% of Portfolio	1 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>OPFRS Total Plan</b>	<b>400,067,116</b>	<b>100.0</b>	<b>-1.7</b>	<b>0.4</b>	<b>5.2</b>	<b>5.7</b>	<b>6.6</b>	<b>9.0</b>	<b>8.3</b>	<b>6.7</b>	<b>Dec-88</b>
<i>OPFRS Policy Benchmark</i>			<i>-1.8</i>	<i>3.4</i>	<i>5.1</i>	<i>8.4</i>	<i>7.0</i>	<i>9.2</i>	<i>8.0</i>	<i>8.2</i>	<i>Dec-88</i>
<b>Domestic Equity</b>	<b>169,962,362</b>	<b>42.5</b>	<b>-3.0</b>	<b>2.7</b>	<b>8.3</b>	<b>11.6</b>	<b>10.3</b>	<b>12.9</b>	<b>13.2</b>	<b>8.6</b>	<b>Jun-97</b>
<i>Russell 3000 (Blend)</i>			<i>-3.6</i>	<i>5.4</i>	<i>9.2</i>	<i>15.0</i>	<i>11.6</i>	<i>13.7</i>	<i>13.5</i>	<i>8.8</i>	<i>Jun-97</i>
<b>International Equity</b>	<b>47,942,430</b>	<b>12.0</b>	<b>-1.9</b>	<b>-6.7</b>	<b>5.5</b>	<b>2.4</b>	<b>1.8</b>	<b>7.2</b>	<b>5.3</b>	<b>5.1</b>	<b>Jan-98</b>
<i>MSCI ACWI ex US (Blend)</i>			<i>-2.4</i>	<i>-5.1</i>	<i>6.4</i>	<i>3.4</i>	<i>1.6</i>	<i>6.7</i>	<i>4.5</i>	<i>5.3</i>	<i>Jan-98</i>
<b>Fixed Income</b>	<b>107,701,257</b>	<b>26.9</b>	<b>0.0</b>	<b>6.5</b>	<b>1.9</b>	<b>6.8</b>	<b>5.6</b>	<b>4.9</b>	<b>4.2</b>	<b>5.6</b>	<b>Dec-93</b>
<i>Blmbg BC Universal (Blend)</i>			<i>-0.2</i>	<i>6.2</i>	<i>1.0</i>	<i>6.7</i>	<i>5.1</i>	<i>4.5</i>	<i>3.9</i>	<i>5.4</i>	<i>Dec-93</i>
<b>Credit</b>	<b>8,028,555</b>	<b>2.0</b>	<b>1.6</b>	<b>0.3</b>	<b>7.5</b>	<b>3.1</b>	<b>2.7</b>	<b>5.7</b>	<b>--</b>	<b>5.0</b>	<b>Feb-15</b>
<i>BBgBarc US High Yield TR</i>			<i>-1.0</i>	<i>0.6</i>	<i>4.6</i>	<i>3.3</i>	<i>4.2</i>	<i>6.8</i>	<i>6.5</i>	<i>5.4</i>	<i>Feb-15</i>
<b>Covered Calls</b>	<b>29,895,963</b>	<b>7.5</b>	<b>-1.3</b>	<b>1.0</b>	<b>7.1</b>	<b>7.2</b>	<b>6.9</b>	<b>9.7</b>	<b>--</b>	<b>8.0</b>	<b>Apr-14</b>
<i>CBOE S&amp;P 500 BuyWrite USD</i>			<i>0.0</i>	<i>-9.6</i>	<i>6.5</i>	<i>-4.9</i>	<i>1.1</i>	<i>4.8</i>	<i>6.0</i>	<i>4.3</i>	<i>Apr-14</i>
<b>Crisis Risk Offset</b>	<b>30,031,879</b>	<b>7.5</b>	<b>-1.4</b>	<b>-21.2</b>	<b>-1.3</b>	<b>-20.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-8.5</b>	<b>Aug-18</b>
<i>SG Multi Alternative Risk Premia Index</i>			<i>0.3</i>	<i>-13.1</i>	<i>-0.7</i>	<i>-13.9</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.5</i>	<i>Aug-18</i>
<b>Cash</b>	<b>6,504,670</b>	<b>1.6</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>1.5</b>	<b>1.9</b>	<b>1.4</b>	<b>--</b>	<b>0.7</b>	<b>Mar-11</b>
<i>FTSE T-Bill 3 Months TR</i>			<i>0.0</i>	<i>0.6</i>	<i>0.0</i>	<i>1.0</i>	<i>1.6</i>	<i>1.2</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>

Market values and returns based on preliminary custodial data and manager estimates.

### OPFRS Total Plan As of September 30, 2020

Trailing Net Performance												
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>OPFRS Total Plan</b>	<b>400,067,116</b>	<b>100.0</b>	<b>--</b>	<b>-1.7</b>	<b>5.2</b>	<b>0.4</b>	<b>5.7</b>	<b>6.6</b>	<b>9.0</b>	<b>8.3</b>	<b>6.7</b>	<b>Dec-88</b>
<i>OPFRS Policy Benchmark</i>				<i>-1.8</i>	<i>5.1</i>	<i>3.4</i>	<i>8.4</i>	<i>7.0</i>	<i>9.2</i>	<i>8.0</i>	<i>8.2</i>	<i>Dec-88</i>
<b>Domestic Equity</b>	<b>169,962,362</b>	<b>42.5</b>	<b>42.5</b>	<b>-3.0</b>	<b>8.3</b>	<b>2.7</b>	<b>11.6</b>	<b>10.3</b>	<b>12.9</b>	<b>13.2</b>	<b>8.6</b>	<b>Jun-97</b>
<i>Russell 3000 (Blend)</i>				<i>-3.6</i>	<i>9.2</i>	<i>5.4</i>	<i>15.0</i>	<i>11.6</i>	<i>13.7</i>	<i>13.5</i>	<i>8.8</i>	<i>Jun-97</i>
Northern Trust Russell 1000	97,755,168	24.4	57.5	-3.6	9.4	6.3	15.9	12.4	14.0	13.7	13.8	Jun-10
<i>Russell 1000</i>				<i>-3.7</i>	<i>9.5</i>	<i>6.4</i>	<i>16.0</i>	<i>12.4</i>	<i>14.1</i>	<i>13.8</i>	<i>13.9</i>	<i>Jun-10</i>
EARNEST Partners	34,661,855	8.7	20.4	-1.4	8.5	2.5	10.4	11.4	14.6	13.8	9.8	Apr-06
<i>Russell MidCap</i>				<i>-1.9</i>	<i>7.5</i>	<i>-2.3</i>	<i>4.6</i>	<i>7.1</i>	<i>10.1</i>	<i>11.8</i>	<i>8.2</i>	<i>Apr-06</i>
Vanguard Russell 2000 Value	6,725,768	1.7	4.0	-4.5	2.7	-21.1	-14.5	--	--	--	-12.8	Aug-19
<i>Russell 2000 Value</i>				<i>-4.7</i>	<i>2.6</i>	<i>-21.5</i>	<i>-14.9</i>	<i>-5.1</i>	<i>4.1</i>	<i>7.1</i>	<i>-13.4</i>	<i>Aug-19</i>
Rice Hall James	12,400,423	3.1	7.3	-3.4	5.7	3.0	13.1	7.6	--	--	8.2	Jul-17
<i>Russell 2000 Growth</i>				<i>-2.1</i>	<i>7.2</i>	<i>3.9</i>	<i>15.7</i>	<i>8.2</i>	<i>11.4</i>	<i>12.3</i>	<i>9.5</i>	<i>Jul-17</i>
iShares Edge MSCI Min Vol	18,419,148	4.6	10.8	-1.7	5.6	--	--	--	--	--	19.2	Apr-20
<i>MSCI USA Minimum Volatility GR USD</i>				<i>-1.6</i>	<i>5.8</i>	<i>-1.1</i>	<i>1.9</i>	<i>10.6</i>	<i>12.5</i>	<i>13.4</i>	<i>19.4</i>	<i>Apr-20</i>
<b>International Equity</b>	<b>47,942,430</b>	<b>12.0</b>	<b>12.0</b>	<b>-1.9</b>	<b>5.5</b>	<b>-6.7</b>	<b>2.4</b>	<b>1.8</b>	<b>7.2</b>	<b>5.3</b>	<b>5.1</b>	<b>Jan-98</b>
<i>MSCI ACWI ex US (Blend)</i>				<i>-2.4</i>	<i>6.4</i>	<i>-5.1</i>	<i>3.4</i>	<i>1.6</i>	<i>6.7</i>	<i>4.5</i>	<i>5.3</i>	<i>Jan-98</i>
Vanguard Developed Markets ETF	14,122,361	3.5	29.5	-1.8	6.0	-5.6	2.2	--	--	--	5.0	Sep-19
<i>FTSE Developed All Cap Ex US TR USD</i>				<i>-2.3</i>	<i>6.0</i>	<i>-5.8</i>	<i>2.3</i>	<i>1.1</i>	<i>5.2</i>	<i>3.0</i>	<i>5.0</i>	<i>Sep-19</i>
SGA ACWI ex-U.S. Equity	33,541,668	8.4	70.0	-1.8	5.9	-5.7	--	--	--	--	-5.1	Dec-19
<i>MSCI ACWI ex USA Gross</i>				<i>-2.4</i>	<i>6.4</i>	<i>-5.1</i>	<i>3.4</i>	<i>1.6</i>	<i>6.7</i>	<i>4.5</i>	<i>-0.9</i>	<i>Dec-19</i>

International equity performance inclusive of residual cash in Fisher and Hansberger transition accounts.

### OPFRS Total Plan As of September 30, 2020

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Fixed Income</b>	<b>107,701,257</b>	<b>26.9</b>	<b>26.9</b>	<b>0.0</b>	<b>1.9</b>	<b>6.5</b>	<b>6.8</b>	<b>5.6</b>	<b>4.9</b>	<b>4.2</b>	<b>5.6</b>	<b>Dec-93</b>
<i>Blmbg BC Universal (Blend)</i>				-0.2	1.0	6.2	6.7	5.1	4.5	3.9	5.4	Dec-93
Ramirez	78,306,337	19.6	72.7	0.0	1.9	5.5	5.6	5.4	--	--	5.4	Jan-17
<i>BBgBarc US Aggregate TR</i>				-0.1	0.6	6.8	7.0	5.2	4.2	3.6	5.0	Jan-17
Reams	29,394,876	7.3	27.3	0.0	2.0	18.0	17.9	9.1	6.6	5.3	6.2	Feb-98
<i>Blmbg BC Universal (Blend)</i>				-0.2	1.0	6.2	6.7	5.1	4.5	3.9	5.1	Feb-98
<b>Credit</b>	<b>8,028,555</b>	<b>2.0</b>	<b>2.0</b>	<b>1.6</b>	<b>7.5</b>	<b>0.3</b>	<b>3.1</b>	<b>2.7</b>	<b>5.7</b>	<b>--</b>	<b>5.0</b>	<b>Feb-15</b>
<i>BBgBarc US High Yield TR</i>				-1.0	4.6	0.6	3.3	4.2	6.8	6.5	5.4	Feb-15
DDJ Capital	8,028,555	2.0	100.0	1.6	7.5	0.3	3.1	2.7	5.7	--	5.0	Feb-15
<i>ICE BofA High Yield Master TR</i>				-1.0	4.7	-0.3	2.3	3.9	6.6	6.3	5.2	Feb-15
<b>Covered Calls</b>	<b>29,895,963</b>	<b>7.5</b>	<b>7.5</b>	<b>-1.3</b>	<b>7.1</b>	<b>1.0</b>	<b>7.2</b>	<b>6.9</b>	<b>9.7</b>	<b>--</b>	<b>8.0</b>	<b>Apr-14</b>
<i>CBOE S&amp;P 500 BuyWrite USD</i>				0.0	6.5	-9.6	-4.9	1.1	4.8	6.0	4.3	Apr-14
Parametric BXM	13,692,936	3.4	45.8	-0.1	6.3	-1.9	2.7	4.2	7.3	--	6.2	Apr-14
<i>CBOE S&amp;P 500 BuyWrite USD</i>				0.0	6.5	-9.6	-4.9	1.1	4.8	6.0	4.3	Apr-14
Parametric DeltaShift	16,203,027	4.1	54.2	-2.3	7.9	3.8	11.5	9.4	12.0	--	10.2	Apr-14
<i>CBOE S&amp;P 500 BuyWrite USD</i>				0.0	6.5	-9.6	-4.9	1.1	4.8	6.0	4.3	Apr-14
<b>Crisis Risk Offset</b>	<b>30,031,879</b>	<b>7.5</b>	<b>7.5</b>	<b>-1.4</b>	<b>-1.3</b>	<b>-21.2</b>	<b>-20.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-8.5</b>	<b>Aug-18</b>
<i>SG Multi Alternative Risk Premia Index</i>				0.3	-0.7	-13.1	-13.9	--	--	--	-5.5	Aug-18
Parametric Systematic Alternative Risk Premia	15,284,520	3.8	50.9	-3.4	-2.5	-42.6	-40.3	--	--	--	-19.8	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>				0.3	-0.7	-13.1	-13.9	--	--	--	-5.5	Aug-18
Vanguard Long-Term Treasury ETF	14,747,360	3.7	49.1	0.8	0.0	21.0	15.8	--	--	--	19.6	Jul-19
<i>BBgBarc US Govt Long TR</i>				0.4	0.1	21.1	16.2	11.8	8.2	7.2	19.8	Jul-19
<b>Cash</b>	<b>6,504,670</b>	<b>1.6</b>	<b>1.6</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>1.5</b>	<b>1.9</b>	<b>1.4</b>	<b>--</b>	<b>0.7</b>	<b>Mar-11</b>
<i>FTSE T-Bill 3 Months TR</i>				0.0	0.0	0.6	1.0	1.6	1.2	0.6	0.6	Mar-11
Cash	213,670	0.1	3.3	0.0	0.3	1.5	2.0	2.1	1.5	--	0.8	Mar-11
<i>FTSE T-Bill 3 Months TR</i>				0.0	0.0	0.6	1.0	1.6	1.2	0.6	0.6	Mar-11
Cash - Treasury	6,291,000	1.6	96.7									

**OPFRS Total Plan As of September 30, 2020**

Cash Flow Summary				
Month to Date				
	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Cash	\$190,421	\$23,254	-\$5	\$213,670
Cash - Treasury	\$6,394,000	-\$103,000	\$0	\$6,291,000
DDJ Capital	\$7,902,913	\$0	\$125,642	\$8,028,555
EARNEST Partners	\$35,141,215	\$0	-\$479,359	\$34,661,855
Fisher Transition	\$73,535	-\$639	-\$1,431	\$71,466
Hansberger Transition	\$269,040	\$0	-\$62,104	\$206,936
iShares Edge MSCI Min Vol	\$18,728,389	\$0	-\$309,241	\$18,419,148
Northern Trust Russell 1000	\$102,446,721	-\$1,000,000	-\$3,691,554	\$97,755,168
Parametric BXM	\$13,709,498	\$0	-\$16,562	\$13,692,936
Parametric DeltaShift	\$16,581,219	\$0	-\$378,192	\$16,203,027
Parametric Systematic Alternative Risk Premia	\$15,822,484	\$0	-\$537,964	\$15,284,520
Ramirez	\$78,296,249	\$0	\$10,088	\$78,306,337
Reams	\$29,384,301	\$0	\$10,576	\$29,394,876
Reams Low Duration	\$44	\$0	\$0	\$44
Rice Hall James	\$12,839,518	\$0	-\$439,095	\$12,400,423
Securities Lending Northern Trust	\$0	-\$22,615	\$22,615	\$0
SGA ACWI ex-U.S. Equity	\$34,168,255	\$0	-\$626,587	\$33,541,668
Vanguard Developed Markets ETF	\$14,373,210	\$0	-\$250,849	\$14,122,361
Vanguard Long-Term Treasury ETF	\$14,631,503	\$0	\$115,856	\$14,747,360
Vanguard Russell 2000 Value	\$7,045,741	\$0	-\$319,973	\$6,725,768
<b>Total</b>	<b>\$407,998,255</b>	<b>-\$1,103,000</b>	<b>-\$6,828,139</b>	<b>\$400,067,116</b>

**Benchmark History**  
As of September 30, 2020

Total Plan x Securities Lending x Reams LD Exception Comp

1/1/2019	Present	40% Russell 3000 / 12% MSCI ACWI ex USA Gross / 33% BBgBarc US Universal TR / 5% CBOE BXM / 6.7% SG Multi Alternative Risk Premia Index / 3.3% BBgBarc US Treasury Long TR
5/1/2016	12/31/2018	48% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% BBgBarc US Universal TR / 20% CBOE BXM
10/1/2015	4/30/2016	43% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% BBgBarc US Universal TR / 15% CBOE BXM / 10% CPI - All Urban Consumers (unadjusted) +3%
1/1/2014	9/30/2015	48% Russell 3000 / 12% MSCI ACWI ex USA Gross / 20% BBgBarc US Universal TR / 10% CBOE BXM / 10% CPI - All Urban Consumers (unadjusted) +3%
3/1/2013	12/31/2013	40% Russell 3000 / 10% MSCI ACWI ex USA Gross / 17% BBgBarc US Universal TR / 33% ICE BofA 3M US Treasury TR USD
8/1/2012	2/28/2013	20% Russell 3000 / 7% MSCI ACWI ex USA Gross / 18% BBgBarc US Universal TR / 55% ICE BofA 3M US Treasury TR USD
10/1/2007	7/31/2012	53% Russell 3000 / 17% MSCI ACWI ex USA Gross / 30% BBgBarc US Universal TR
4/1/2006	9/30/2007	35% Russell 3000 / 15% MSCI ACWI ex USA Gross / 50% BBgBarc US Universal TR
1/1/2005	3/31/2006	35% Russell 3000 / 15% MSCI ACWI ex USA Gross / 50% BBgBarc US Aggregate TR
4/1/1998	12/31/2004	50% BBgBarc US Aggregate TR / 10% Russell 1000 / 20% Russell 1000 Value / 5% Russell MidCap / 15% MSCI EAFE
9/1/1988	3/31/1998	40% S&P 500 / 55% BBgBarc US Aggregate TR / 5% FTSE T-Bill 3 Months TR

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.

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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 20, 2020

Collapsing Global Interest Rates /  
Negative Rates

## Collapsing Global Interest Rates

1. Summary – Current State of Markets
2. US 10-Year Treasury Yield at All Time Lows
3. Total Return Given Changes in Interest Rates
4. “Low-Rate Environment” Is a Global Issue
5. The Role of US Inflation

## Negative Rates

6. What Does Negative Rates actually Mean?
7. How Do Rates Become Negative?
8. Negative Yielding Debt Makes Up Over 20% of Barclays Global Aggregate Index
9. Why Negative Rates?
10. Potential Impact from Negative Rates

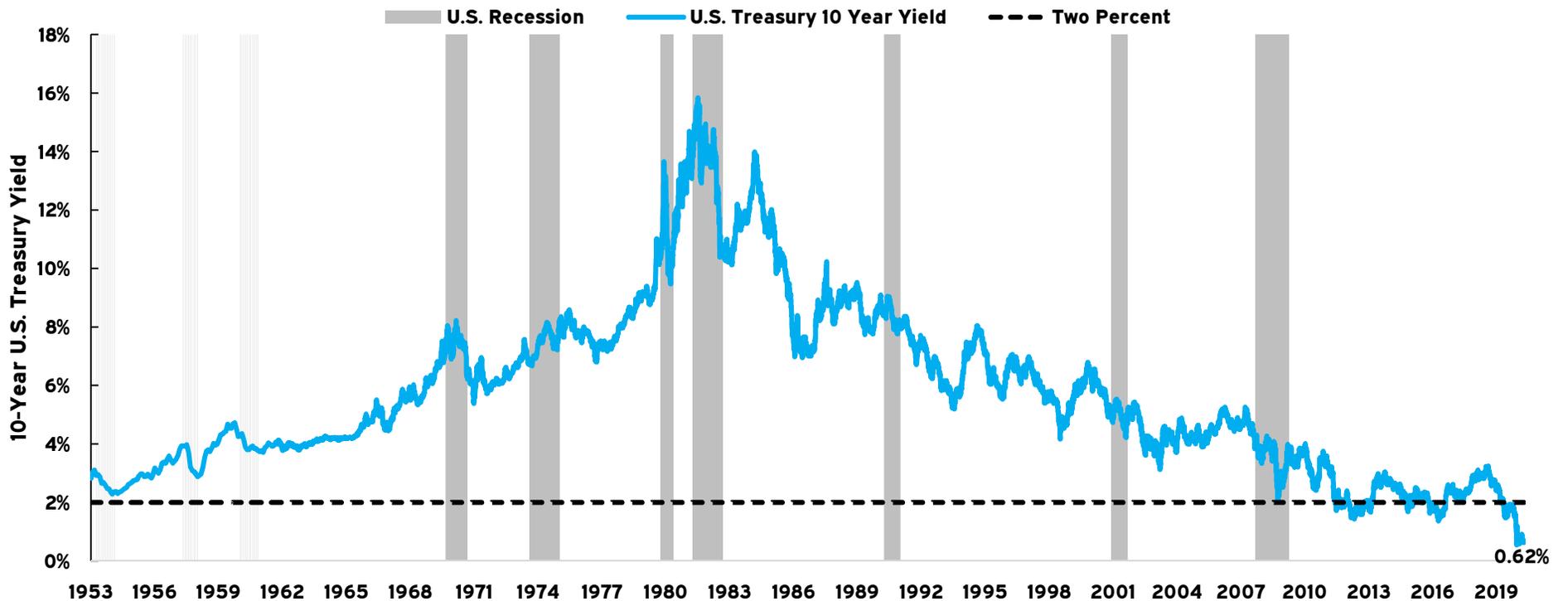
### Summary – Current State of the Markets

- The US Ten-Year Treasury yield fell below 2% in August 2019 for the first time in almost three years, and ultimately reached historical lows of well below 1% in March 2020 (touched all-time low of 0.32% in overnight trading).
- Leading into the COVID-19 pandemic, the yield curve briefly “inverted” from the perspective of the 10-year and 2-year yields, adding to the earlier inversion seen at the 10-year vs. 3-month yields.
- While inversions do not provide information regarding timing, a “10-2” inversion has always been (eventually) followed by a recession.
- However, in a still highly interconnected developed world, US yields cannot be evaluated in isolation. US Treasury yields currently offer among the highest yields for government bonds across the developed world.
  - While US Treasury bonds are expensive relative to their history, they may actually still be cheap relative to the rest of the developed world, leaving room for yields to push even lower, or stay low for the foreseeable future.
- Before the onset of the pandemic, Treasury yields were at or near all-time lows and equity prices (in the US) at or near all-time peaks, which is not conducive to future high expected returns. Currently, Treasury yields have gone even lower and equity prices dropped at an unprecedented rate in March, but have come back near record highs.

**US 10-Year Treasury Yield at All Time Lows**

- In August 2019, the US 10-Year Treasury yield fell below 2% for the first time since November 2016.
- After the onset of the pandemic, the yield went even lower, going below 1% in March. At the end of June, the yield was close to 0.7%.

**US 10-Year Treasury Yield**  
April 1, 1953 – July 9, 2020



### “Low-Rate Environment” Is a Global Issue (Update)

- US Treasury yields are not the only sovereign bond yields that are near all-time lows.
- In fact, US ten-year yields are currently the highest among G-7 countries,<sup>1</sup> and
- The US dollar’s status as the world’s reserve currency combined with the status of Treasuries as a primary “safe haven” for investors may mean there is room for yields to go lower.
- As testament to the extreme low rate environment, Germany and Japan’s government bond yield curves are almost completely negative.

#### G-7 10-Year Government Bond Yields (%)

December 6, 2019

Country	2-Year Yield	5-Year Yield	10-Year Yield	30-Year Yield
United States	1.61	1.67	1.84	2.28
Canada	1.65	1.59	1.58	1.68
France	-0.61	-0.35	0.03	0.80
Germany	-0.64	-0.55	-0.29	0.23
Italy	0.06	0.63	1.35	2.48
Japan	-0.15	-0.13	-0.02	0.43
United Kingdom	0.58	0.58	0.77	1.28

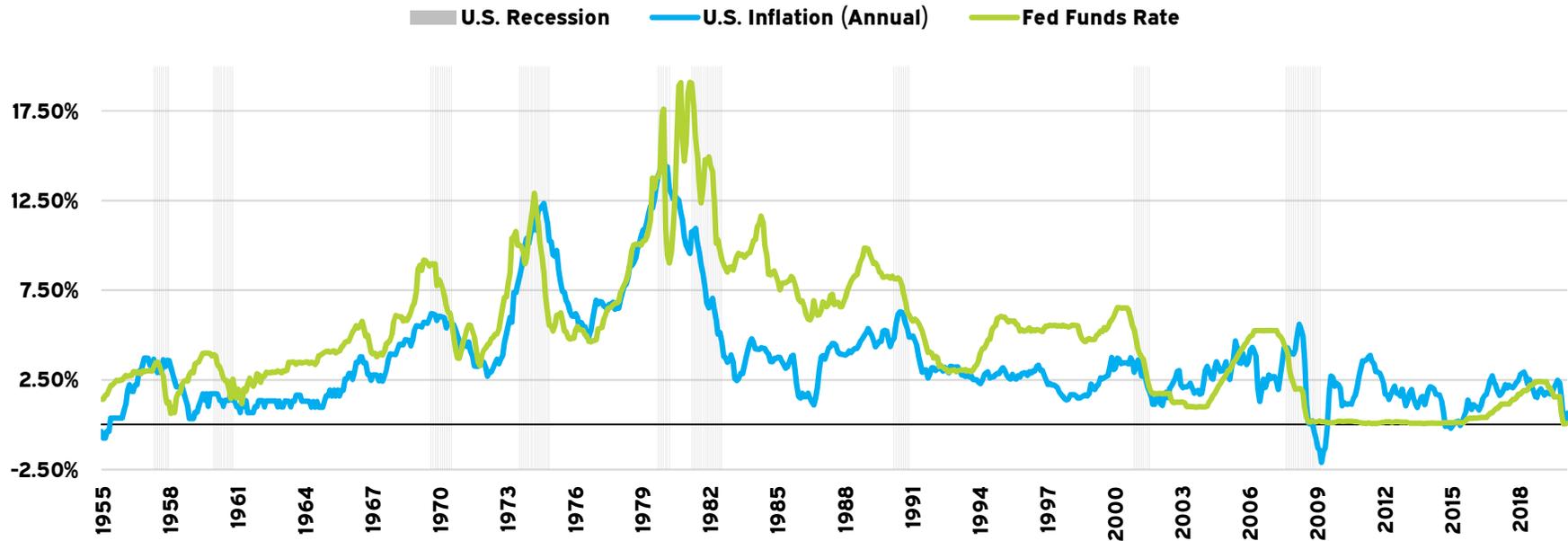
<sup>1</sup> G-7 represent the seven largest advanced economies in the world, per the IMF. The countries are Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.

The Role of US Inflation

- With rates and growth at very low levels and expected to remain low, an unexpected burst of inflation in the economy could potentially have negative effects on markets, something the US has not seen since the stagflation of the 1970s.

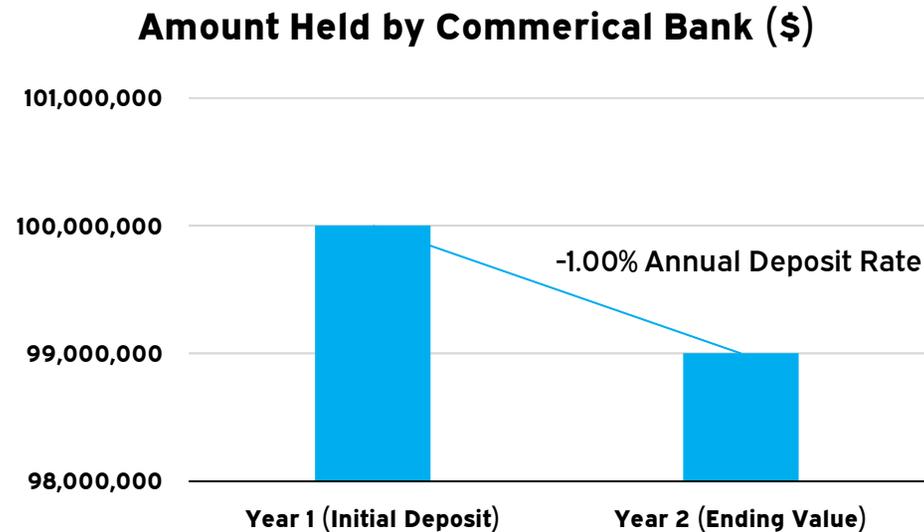
US Inflation and Fed Funds Rate

May 1954 – June 2020



## What Does Negative Rates Actually Mean?

- Negative interest rates are a concept where a lender has to theoretically pay to lend cash. It is akin to a storage fee, in that you're paying a bank to hold cash.
- A more relevant example would be a commercial bank having to pay for holding excess reserves with central banks that employ negative rates.
- Here is a simple example:

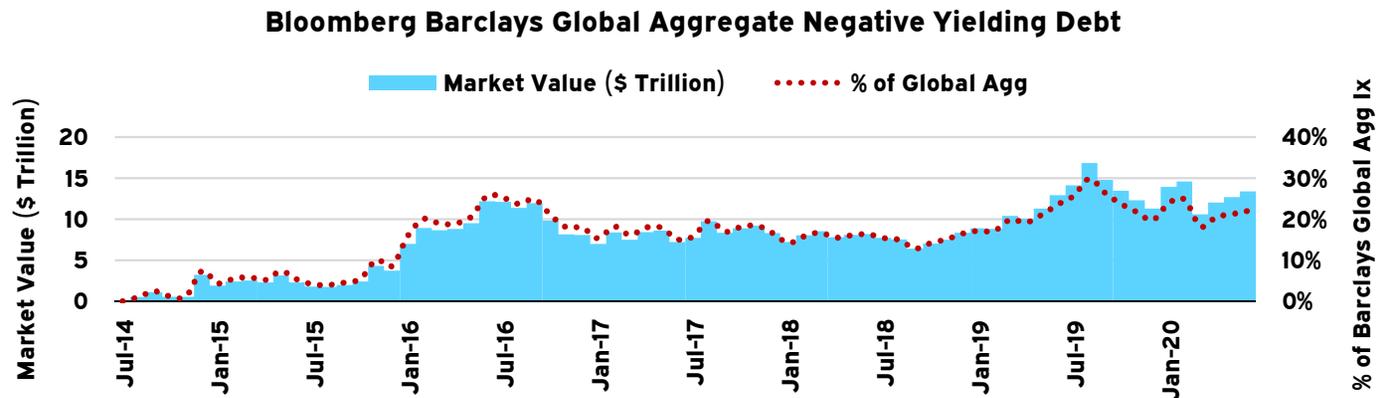


- From a bond yield perspective, a negative bond yield doesn't mean that a borrower is making periodic coupon payments, but rather at maturity, the lender receives a reduced principal amount.

## How Do Rates Become Negative?

- While there are many different interest rates – the policy rate is what a country’s central bank uses to implement its monetary policy stance.
- In the US, it is the federal funds rate, which is the target rate determined by the FOMC. It is the rate that commercial banks use to borrow and lend their excess cash reserves to each other on an overnight basis. In theory, the FOMC could set a negative rate.
- The federal funds rate can influence short-term rates on consumer loans and can impact the stock market.
- Markets expectations can also cause Treasury yields to go negative. The term premium can be negative based on the expected course of the FOMC policy for intermediate and long term bonds.

## Negative Yielding Debt Makes Up Over 20% of Barclays Global Aggregate Index



- After the global financial crisis, central banks cut nominal interest rates aggressively.
- Record highs of negative yielding debt were reached in Q3 of 2019, but have since trending downward since then.

### Why Negative Rates?

- Why would central banks want to employ negative rates? The main idea is to have commercial banks lend money instead of holding balances with the central bank.
- With more money in circulation via loans to the public, that should increase spending which should increase growth, inflation, and devalue a currency.

### Potential Impact from Negative Rates

#### Stress on Banking System

Banks may lend less as profits decline

Lower bank equity valuations

Greater potential for bank runs

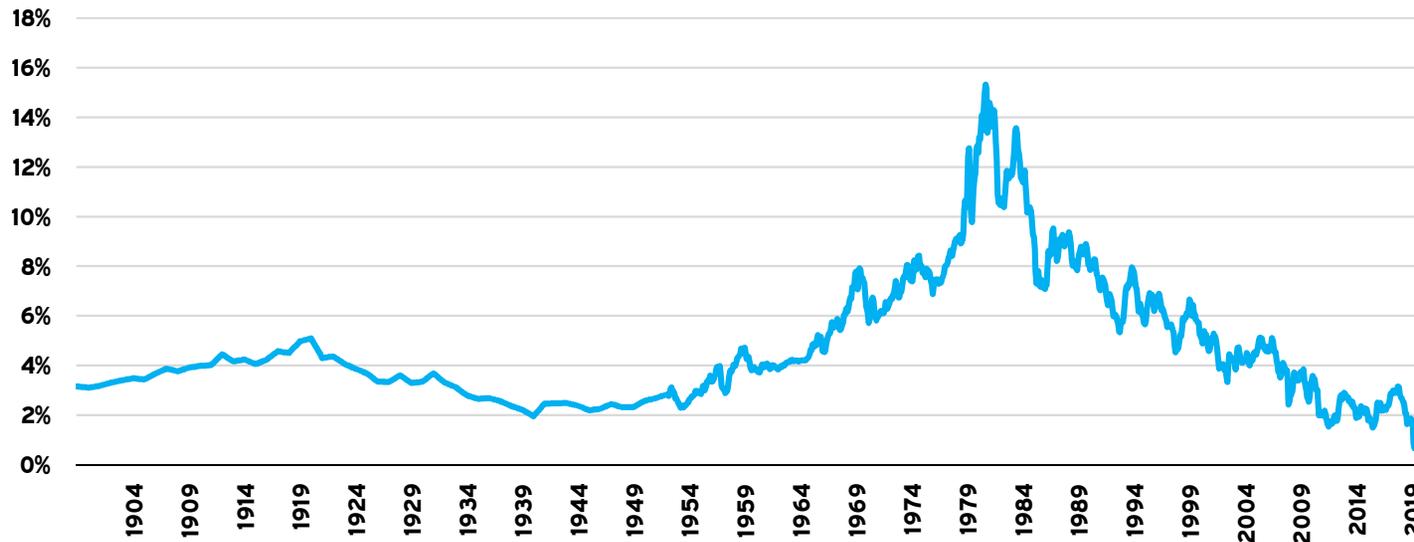
Banks could convert reserves to currency, "reversal rate"

- General public could opt to save more and hold instead of in deposits.
- Potential to remain in negative yield territory for prolonged periods – central banks have been utilizing negative rates for over a decade.

How Low, and For How Long?

- US interest rates have essentially reached all-time lows.
- It is quite possible they are going to stay low.
  - If the Fed thinks this crisis will require low rates across the curve, they could intervene for an extended period.
  - The Fed actively managed the Treasury Yield Curve in the 1940s (during WWII).<sup>1</sup>

US Treasury 10-Year Rates<sup>2</sup>



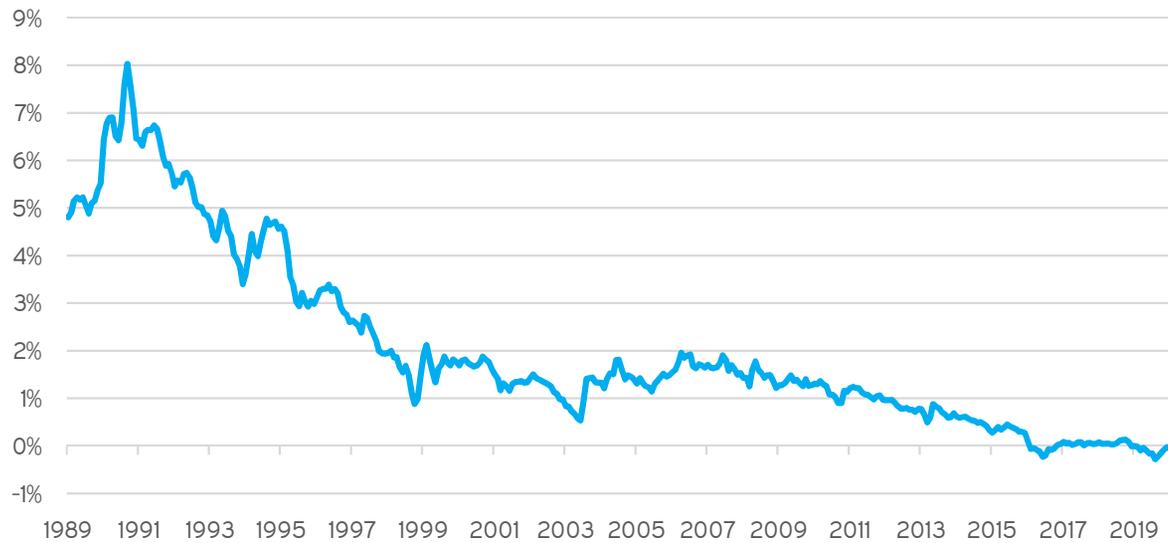
<sup>1</sup> Source: Kenneth D. Garbade, "How the Fed Managed the Treasury Yield Curve in the 1940s," Federal Reserve Bank of New York Liberty Street Economics, April 6, 2020, <https://libertystreeteconomics.newyorkfed.org/2020/03/how-the-fed-managed-the-treasury-yield-curve-in-the-1940s.html>

<sup>2</sup> Source: FRED, Multpl.com. Data is as of July 2020.

**How Low, and For How Long? (Continued)**

- There is global precedent for rates staying low for a long time.
- It may even be possible that rates move lower.
  - US rates could theoretically push past what many once considered a zero bound.
  - Foreign rates have gone negative in recent years, and not just in Japan.<sup>1</sup>

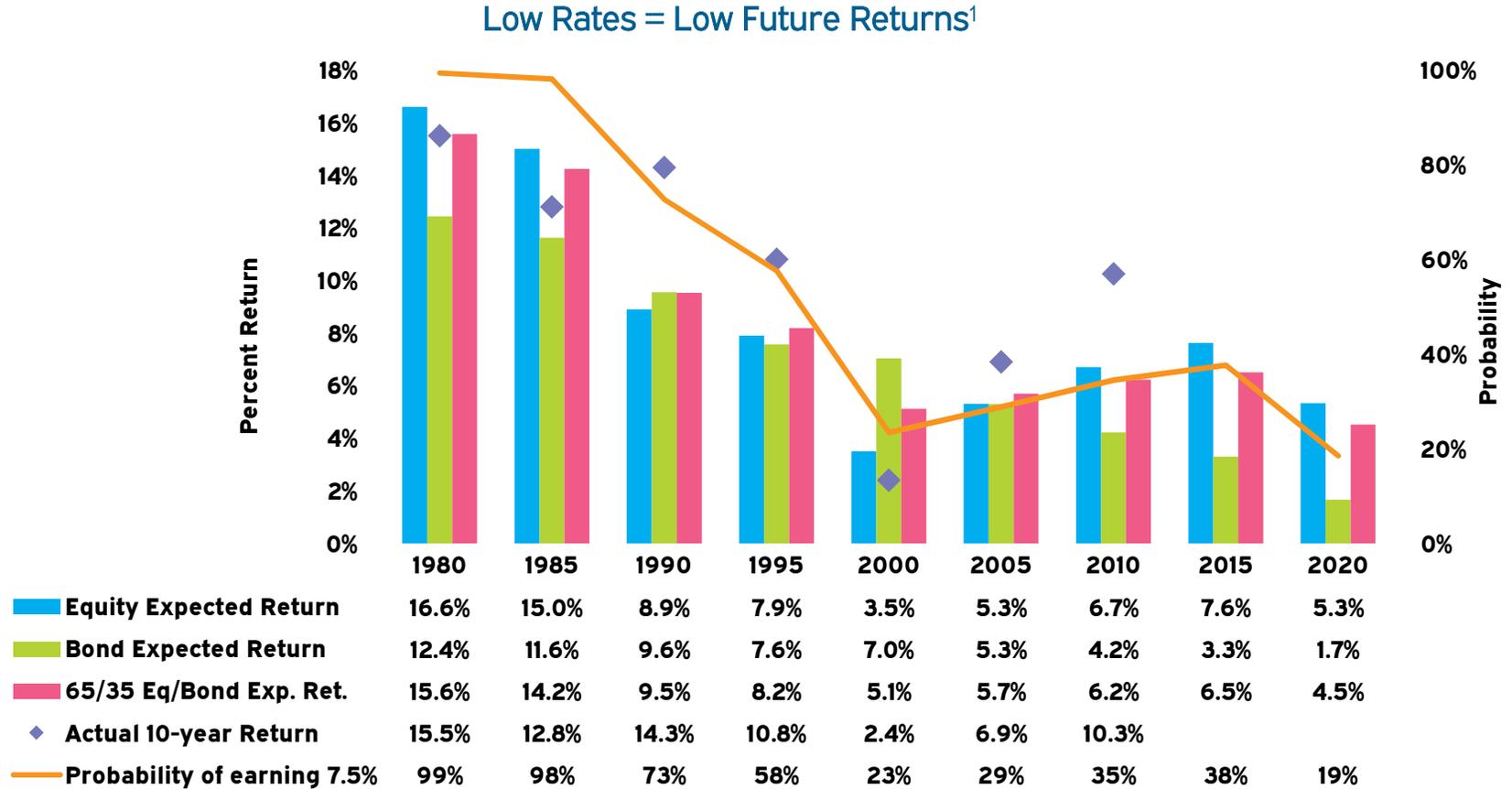
**Japanese 10-Year Rates**



- The most likely reason for the Fed to reverse course on rates would be to fight inflation.
- Even still, there is some (unknown) tolerance for inflation that the Fed will probably be willing to accept.

<sup>1</sup> Germany, Japan, Denmark, Sweden, Switzerland, Spain, France, Ireland, Portugal, and Austria have all experienced negative rates at some point since 2016.

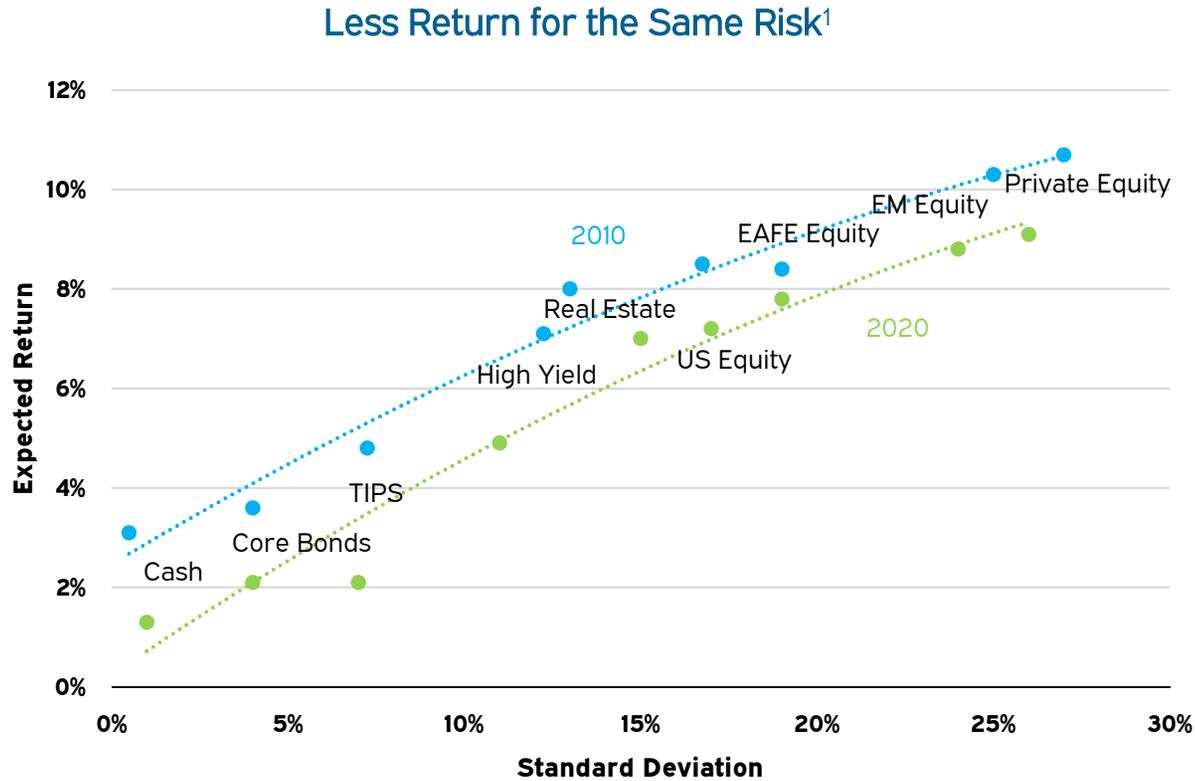
## Collapsing Global Interest Rates / Negative Rates



- A simple stock/bond mix has produced diminishing expected returns over the past 40 years.
- With rates having declined even further, it will be more difficult than ever for institutional investors to achieve their target returns.

<sup>1</sup> Expected return assumptions for 1) Bonds equals the yield of the ten-year Treasury plus 100 basis points, and 2) Equities equals the dividend yield plus the earnings yield of the S&P 500 index (using the inflation-adjusted trailing 10-year earnings). Probability calculation is for the subsequent ten years. Reflects yields and valuations as of June 30, 2020.

**Collapsing Global Interest Rates / Negative Rates**



- A positive relationship exists between long term return expectations and the level of risk accepted.
  - However, this relationship is not static.
- Achieving the returns you have in the past will require taking on greater levels of risk than it has historically.

<sup>1</sup> Expected return and standard deviation are based upon Meketa Investment Group's January 2010 and July 2020 Capital markets Expectations.

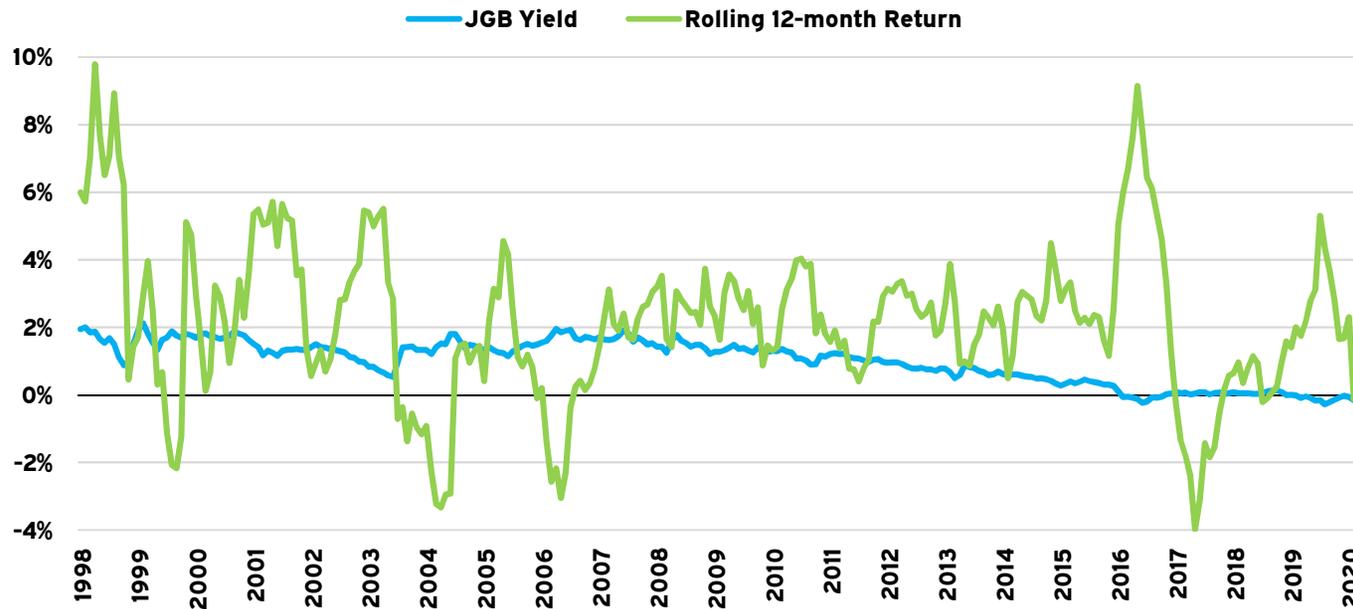
### The Barbell Approach: Mixing Low and High Risk Assets

- Target returns for institutional investors have been declining, but not nearly as quickly as interest rates.
- Low interest rates flow through to many asset classes, thus lowering their expected return.
- The lower expected return across asset classes argues for a “barbell approach” to portfolio structuring.
  - This means owning higher-risk assets such as equities along with hedges such as long Treasuries and other Diversifying Strategies.
- It effectively “crowds out” assets with expected returns in the middle that tend to be correlated with higher risk assets.
  - It will be harder for high yield, bank loans, EM debt, GTAA, and traditional hedge funds to find a home.
- A barbell approach takes on risk more efficiently.
  - It provides better downside protection than a typical portfolio that theoretically has the same level of risk in it.

**Should We Fear Bonds When Rates Are Low?**

- If the Fed wants to keep rates steady, they can, implying limited downside to bonds.
- A good case study is Japan, who instituted a Zero Interest Rate Policy (ZIRP) in 1999.
- Since the inception of ZIRP in Japan, government bonds have produced fairly steady, if modest, returns.
  - The average annual return was 1.9%, and the worst 12-month decline was a -4% drawdown.

**Japanese Government Bond Yields and Returns<sup>1</sup>**

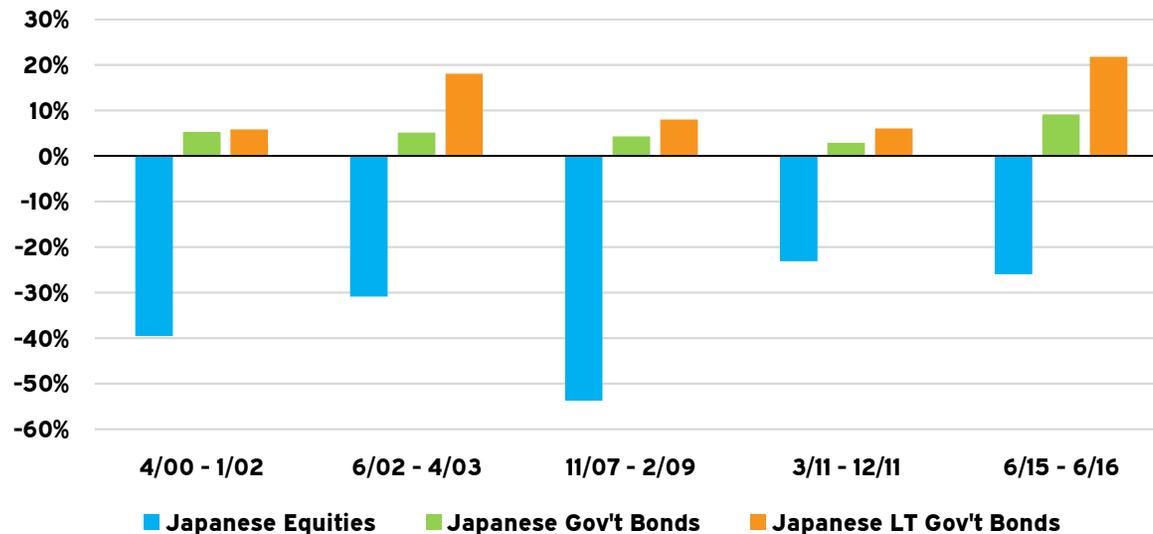


<sup>1</sup> Data Source for JGB returns is the ICE BofA Japan Government Index and its components. 10-year rates fell and stayed below 2% in 1998, hence we used this as the inception point for our analysis.

**But Can Bonds Still Provide A Hedge?**

- There is an unknown level below which rates cannot fall, perhaps -1.0%.
  - This places a limit on how good of a hedge bonds, especially long bonds, can provide.
- During the worst drawdowns in Japan, government bonds consistently served as a hedge.
  - Long-term government bonds served as a better hedge, despite the low starting yield.

**Worst Drawdowns during ZIRP (Cumulative Return)<sup>1</sup>**



- The 2015-16 drawdown is particularly informative, as the 10-year rate at the start of the period was just 0.46%, and it declined to -0.23%.

<sup>1</sup> Data Source for JGB returns is the ICE BofA Japan Government Index and its components; for equities, the source is MSCI Japan (local currency).

### Diversifying Strategies

- Also often referred to as Crisis Risk Offset “CRO” or Risk Mitigating Strategies, or “RMS,” is an asset allocation program designed to provide robust, impactful diversification benefits and defensive characteristics relative to growth-like asset classes.
- Programs are designed to have:
  - Low correlation with traditional portfolios.
  - Low to negative correlations to equities during volatile markets or equity drawdowns.
- Programs generally incorporate at least several of the following strategies:
  - Long Term US Treasuries
  - Trend Following
  - Global Macro
  - Alternative Risk Premia
  - Long Volatility
- By diversifying across several of these strategies, it reduces the reliance upon any single component.
  - Each strategy will react differently, depending on the type and magnitude of the drawdown, thus supporting a portfolio approach to building a program.

### Continue To Accept Risk

- Given lower interest rates, achieving your target return will require continuing to invest in risky assets.
  - Risky assets are less attractive in absolute terms, but perhaps more attractive in relative terms.
- Many investors with long or indefinite horizons will continue to take on illiquidity via private markets.
- Ramping up in private markets does not happen overnight, especially given the amount of capital overhang and current pause in transactions.
  - That means public equities will have to be the mainstay of portfolios.
- Be cognizant of the risks of equities.
  - While we continue to expect equities to produce higher returns than lower risk assets, we expect those returns will be lower than they have been over the past decade.

## Summary

- Rates are incredibly low. This does not bode well for future returns.
- It will be more difficult to achieve target returns.
  - While doing so will prove challenging, it is not impossible.
- Through a combination of options, you can improve your odds of success.
- Uncertainty is high.
- If you just don't know where the market is heading, have a little humility and diversify.

## MEMORANDUM

**TO:** Oakland Police and Fire Retirement System (OPFRS)  
**FROM:** David Sancewich, Paola Nealon, Sidney Kawanguzi – Meketa Inv. Group  
**DATE:** October 28, 2020  
**RE:** Risk Premia Review

---

### Recommendation and Discussion

At the September 30, 2020 PFRS board meeting, Meketa discussed with the trustees the pending October closure of the Parametric Systematic Risk Premia strategy. As a result, Parametric returned 100% of PFRS capital. On an interim basis, the capital was moved into treasury.

A key feature of the current allocation policy is its allocation to a CRO strategic class. When fully structured and funded, the CRO class will be comprised of two components: Long Duration and Systematic Trend Following/Alternative Risk Premia. The CRO class is expected to (i) have a high probability of producing material appreciation during equity-crisis periods, and (ii) maintain its long-term purchasing power in the intervening market cycles.

Meketa believes the Trend/ARP segment of the Crisis Risk Offset class (CRO) is crucial to maintaining long-term performance rather than rely solely on Long Duration. Given the termination of Parametric this segment requires action on the part of the Oakland PFRS board to maintain its allocation moving forward. Meketa recommends that Oakland PFRS select one of the following actions in regards to Trend/ARP mandate:

1. Conduct a new RFP for a new investment manager.
2. Review the other two finalists from the 2018 ARP search: AQR and Lombard

Rather than spend the time and money conducting a new RFP. Meketa recommends OPFRS option #2 above. Specifically, sending a short update questionnaire to both managers and interview both managers at an upcoming meeting.



CITY OF OAKLAND

# AGENDA REPORT

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**TO:** Oakland Police and Fire Retirement Board    **FROM:** David F. Jones

**SUBJECT:** Emergency procedures for terminating or limiting trading discretion of PFRS investment managers to protect PFRS fund assets    **DATE:** October 19, 2020

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## SUMMARY

At the October 30, 2019 PFRS Board Meeting, Plan Administrator David Jones recommended the PFRS Board discuss considerations regarding the establishment of emergency procedures for terminating or limiting trading discretion of PFRS investment managers to protect PFRS fund assets. Staff presented excerpts of Emergency Procedures language used by other pension systems.

At the September 30, 2020 PFRS Board Meeting, staff was directed to work with the PFRS Investment Consultant (Meketa) and the Investment Committee Chair to provide the PFRS Board proposed Emergency Procedures for the System. **ATTACHMENT 1** shows proposed Emergency Procedures for PFRS.

## RECOMMENDATION

Staff recommends that the Board review the attached proposed Emergency Procedures and propose any additional edits. Upon approval, staff recommends that these procedures be added to the existing PFRS Investment Policy.

Respectfully submitted,

---

David F. Jones, Plan Administrator  
Oakland Police and Fire Retirement System

## Attachment (1):

- *Proposed Emergency Procedures Policy to Terminate/Limit Investment Managers*

Agenda Item **C5**  
PFRS Board Meeting  
October 28, 2020

# **ATTACHMENT 1**

**Proposed  
Emergency Procedures Policy  
To  
Terminate/Limit Investment Managers**

## ***Emergency Procedures Policy to Terminate/Limit Investment Managers***

### **OVERVIEW**

Occasionally, issues with investment managers may arise that require immediate action outside of a regularly scheduled board meeting. In order to protect the assets of The Oakland Police and Fire Retirement system (OPFRS) in these cases, it is necessary to have an emergency policy in place for when an urgent prudent decision is required and a Special Meeting of the Board is unable to convene.

This document describes procedures that the Board have adopted for use in situations where an investment manager's ability to continue investing assets for OPFRS is impaired.

### **DEFINITION OF EMERGENCY PROCEDURES**

To deal with such emergencies, the OPFRS Board have authorized the following individuals as part of an Emergency Group to make a timely decision in the event that the Board is unable to convene as a Special Meeting of the Board.

The Emergency Group will consist of the following:

1. OPFRS staff (Plan Administrator and/or Investment Officer and Operations Supervisor),
2. OPFRS Investment Consultant,
3. OPFRS investment committee chair, audit committee chair and/or board president . Note: At least two Board members listed above are required. If only two Board members are available a consensus from the Emergency Group members is required.
4. OPFRS Legal Counsel. (if needed)

### **Attachment 1**

***Proposed Emergency Procedures Policy to Terminate/Limit Investment Managers***  
Agenda Report\_PFRS Regular Board Meeting\_October 28, 2020\_Item C5

Unexpected Emergencies could take many forms, from a natural disaster that disrupts the monitoring of securities, mass personnel departures, litigation issues, or the sudden closure of a particular fund due to unforeseen circumstances.

Common to every emergency, however, would be the need to act quickly to minimize a negative impact on OPFRS assets.

The initial discovery of a material event could come from many sources, including the public media, the custodian bank, or the investment manager. Upon discovery of the event, OPFRS staff and the investment consultant will discuss whether further action is needed. If the decision to move forward is made, the investment consultant will notify the investment committee chair for further discussion. If an agreement to proceed is made, other members (listed above) will be notified for further discussion.

At the next regularly scheduled board meeting, all members will be informed in writing of the issue, discussion and action taken or not taken.



# Oakland Police & Fire Retirement System

## Covered Call Portfolio Review

**October 28, 2020**

**Dan Ryan**

*Senior 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

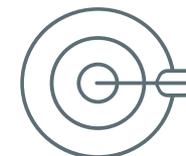
# Our Difference



Rigorous, disciplined,  
and rules-based approach



Transparent, cost-effective  
implementation expertise



Customizable, flexible  
solutions

**\$316B+**

assets under management<sup>1</sup>,  
with \$159B across  
institutional

**30+**

years of experience across  
equity, derivative and  
implementation strategies

**140+**

investment professionals,  
including 102 CFA charterholders  
and 9 PhDs

**500+**

institutional client  
relationships

All numbers are approximate as of 9/30/2020.

<sup>1</sup>AUM includes both discretionary and non-discretionary assets of Parametric Portfolio Associates® LLC (the Firm). Fixed Income assets previously offered by Eaton Vance Management and managed by Parametric as of January 1, 2020 were transferred throughout the first quarter of 2020.

Please refer to the disclosures for additional information regarding the Firm.



Proprietary and confidential. This material has been prepared for the exclusive use of Oakland Police & Fire Retirement System Performance in a one-on-one presentation only.

Third Quarter 2020

DeltaShift Overview

# Institutional Multi-Asset Capabilities

Parametric provides customizable offerings across **alternative, equity, and fixed income** that can help solve implementation challenges, portfolio risks, and asset allocation needs



## Custom Solutions

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- Overlay solutions
- Liability-driven investing
- Custom equity & fixed income indexing
- Centralized portfolio management
- Cross-asset portfolio solutions



## Systematic Strategies

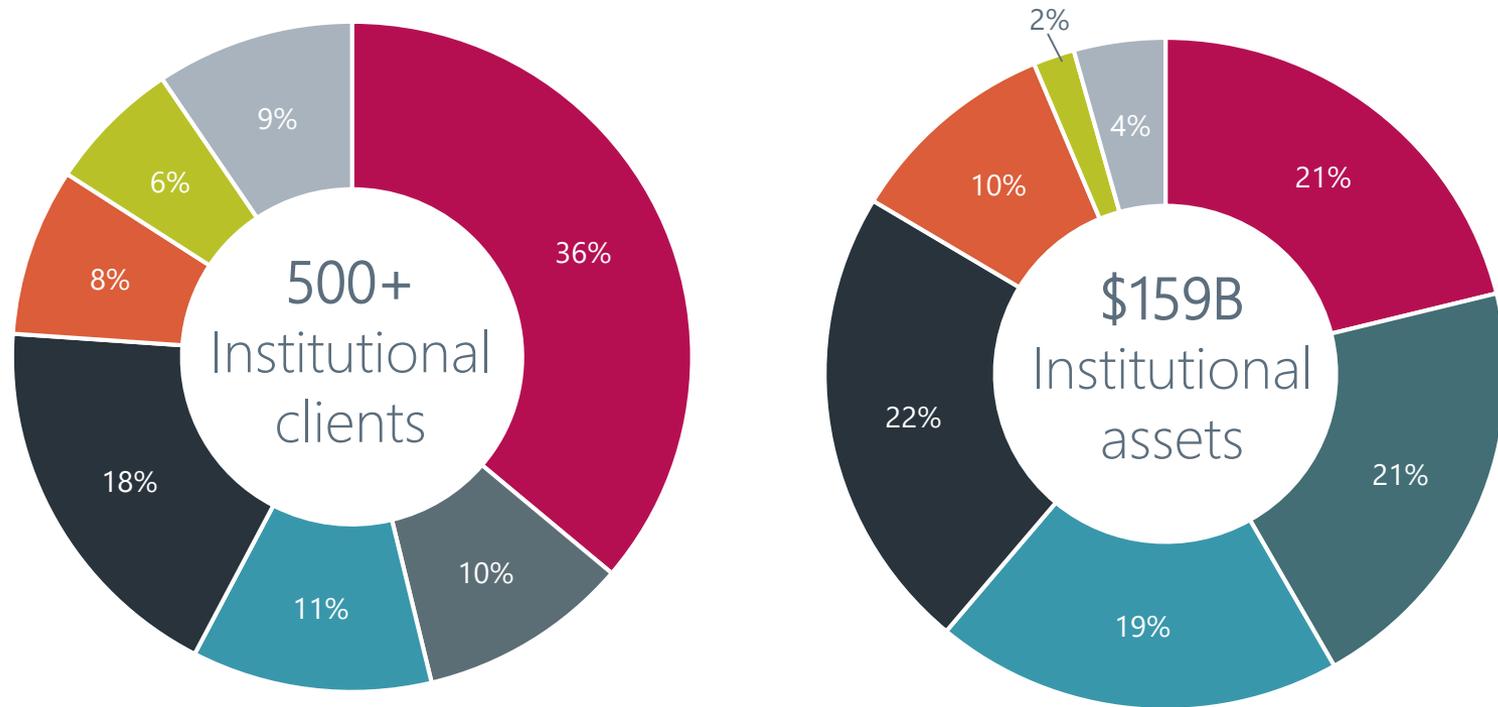
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- Developed international
- Emerging markets
- Volatility risk premium
- Commodities

---

*Responsible investing, factors, and other themes can be applied across strategies and solutions*

# Diversified Institutional Client Base



Endowment/ Foundation
  Public
  Sub-Advisory
  Corporate
  Other<sup>1</sup>
 Healthcare
  Taft-Hartley

All numbers are approximate as of 9/30/2020 and include both discretionary and non-discretionary assets of the Firm.

<sup>1</sup>Other includes: Charity, Commingled, Individual, LP, Wrap, Superannuation, Insurance, Internal Account, Mutual Fund

# Representative Client List as of September 30, 2020

## > **Public**

East Bay Municipal Utility District  
Fairfax County 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  
Oakland Police and Fire Retirement System  
Orange County Employees Retirement System  
San Mateo County Employees' Retirement Association  
Teachers Retirement System of Louisiana  
Utah School & Institutional Trust Funds Office  
Wisconsin Investment Board

## > **Endowments**

Carnegie Institution of Washington  
Florida State University  
Indiana University & Foundation  
Pepperdine University  
Texas Christian University  
University of Michigan  
University of Minnesota  
University of Pittsburgh

## > **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 Aurora Health, Inc.  
North Memorial Health Care  
Rush University Medical Center  
Trinity Health

## > **Taft-Hartley**

Board of Trustees ABC-NABET Retirement Trust Fund  
Boilermaker-Blacksmith National Pension Trust  
Carpenters, Regional Council, Greater Pennsylvania  
Central Laborers' Pension Fund  
Chicago Laborers' Pension & Welfare Funds  
International Union of Painters and Allied Trades  
SEIU Benefit Funds  
Teamsters, Western Pennsylvania

## > **Foundations**

Auburn University  
Doris Duke Charitable Foundation, Inc.  
The John D. & Catherine T. MacArthur Foundation  
The McKnight Foundation  
Strada Education Network, Inc.  
Wisconsin Alumni Research Foundation

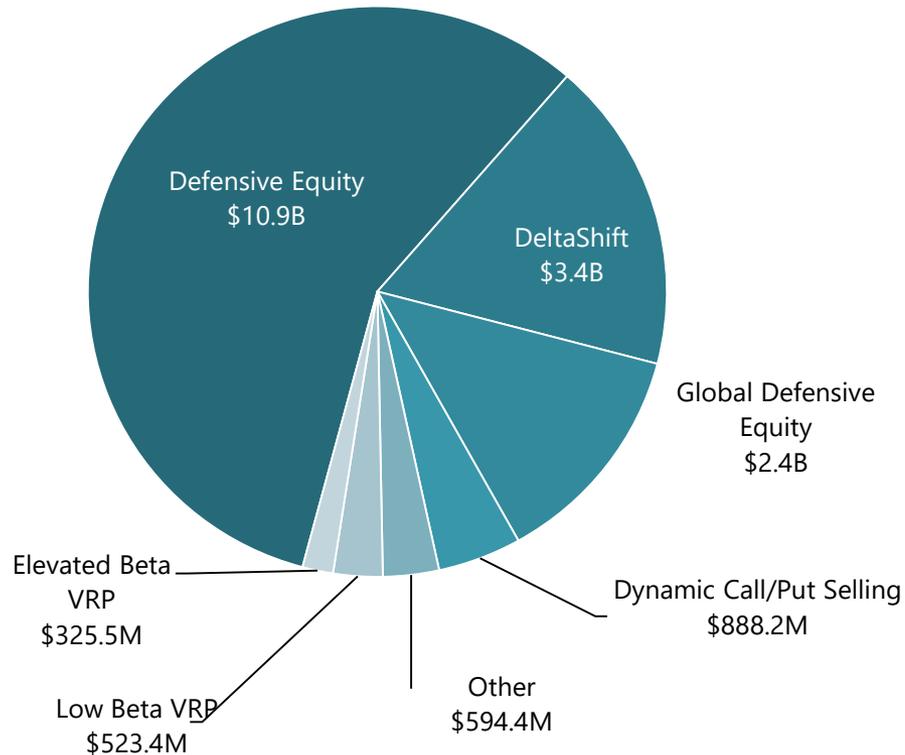
## > **Corporate**

The Boeing Company  
Cargill Inc.  
Eversource Energy  
Macy's Inc.  
3M Company  
Raytheon Technologies Corporation  
Target 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

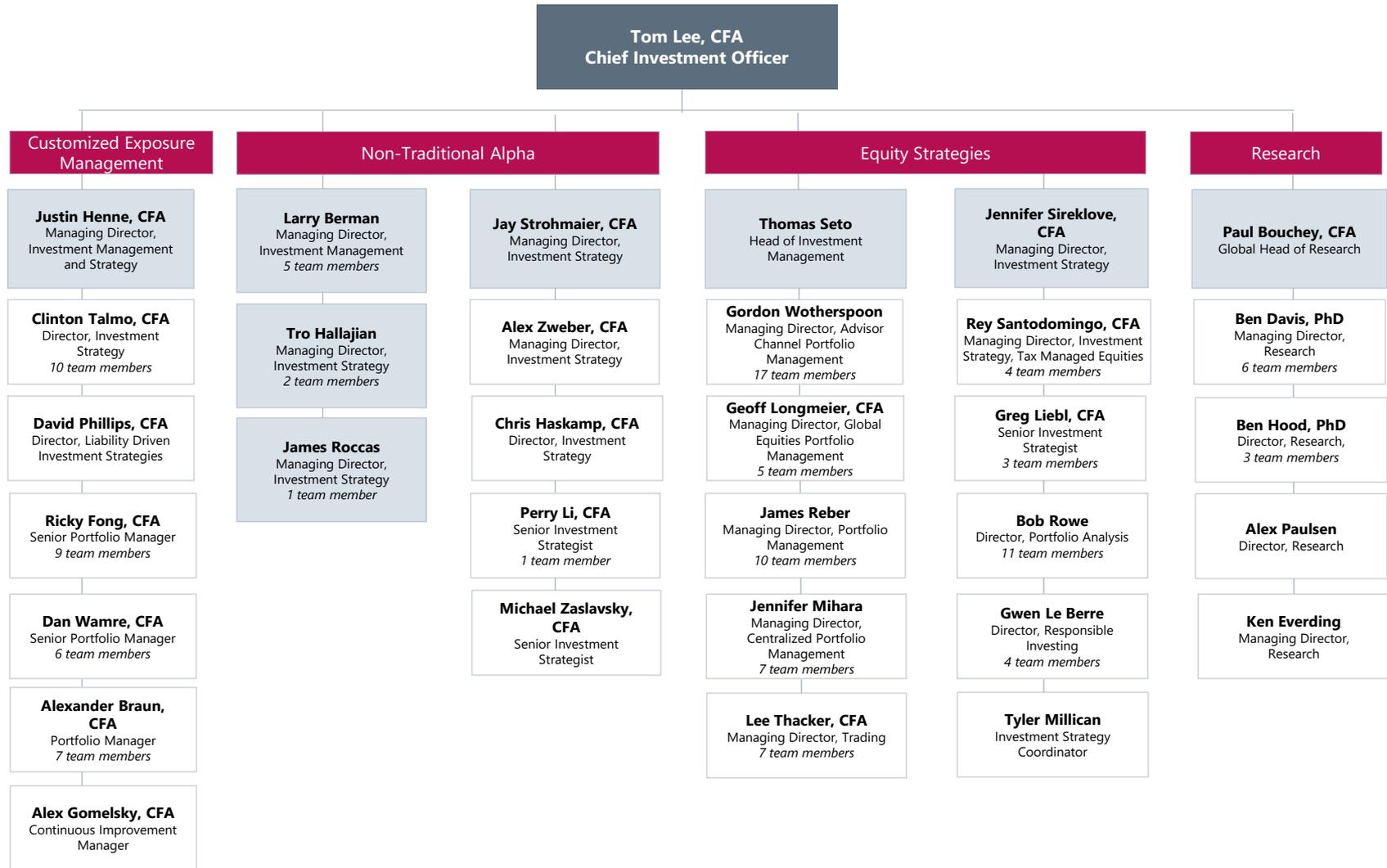
Assets by Strategy



Volatility Risk Premium Strategies Total Assets of \$19 Billion  
Consists of Funded and Overlay Assets

All numbers are approximate as of 9/30/20 and include both discretionary and non-discretionary assets of the Firm.

# Investment Team



As of 10/13/2020. Shaded box denotes direct report to Tom Lee.

# Covered Call Investment Process

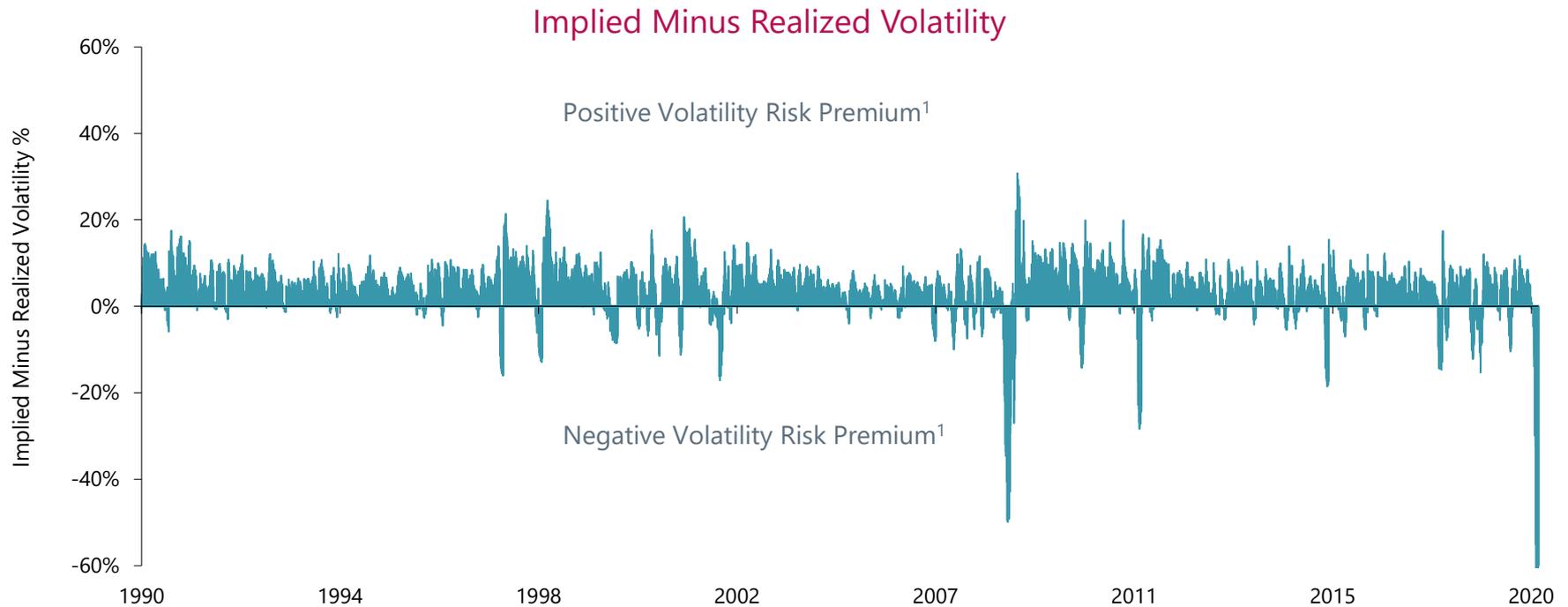
# Investment Objectives

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.

# IV-RV Relationship Has Important Implications for Investors

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



<sup>1</sup>1990 to present represents longest period from which reliable data is available and accessible for S&P 500<sup>®</sup> Volatility Index. S&P500<sup>®</sup> 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<sup>®</sup> 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: 6/30/2020.

# 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. Investment management techniques require liquidity in the specific option. 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 index call options that generally expire in 1 to 3 months. The additional return is received in exchange for potentially limiting upside participation in strong equity markets.

## Standard portfolio construction & characteristics

- Own a S&P 500<sup>®</sup> equity index portfolio.
- Systematic, rules-based call writing using exchange-traded, S&P 500<sup>®</sup> 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<sup>®</sup> Index in down, sideways and moderately up markets, and expected to underperform in strong equity markets.

Investing in an options strategy involves risk. See Disclosures for additional information.

# 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.
- Dynamic strike prices adapt to market conditions.
- 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; reduces time/price specific risk.

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

# DeltaShift Rules-Based Management

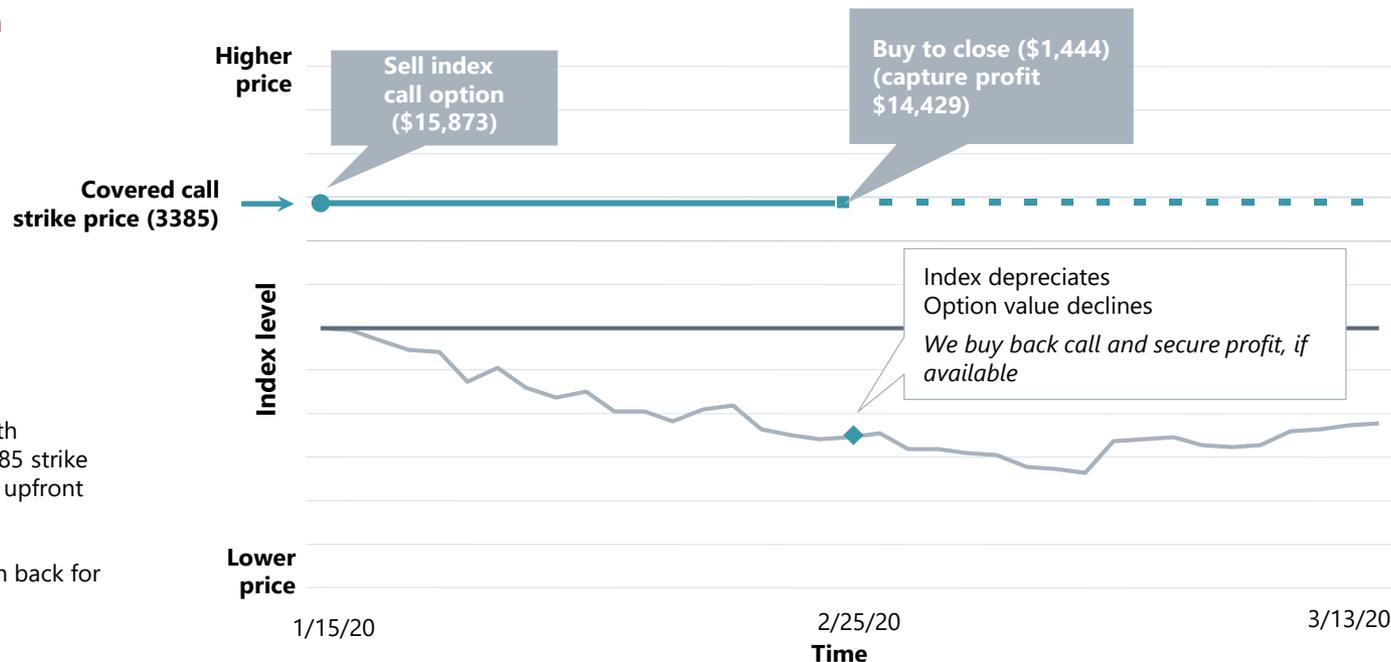
Portfolio management example: early profit capture

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

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

- 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%).



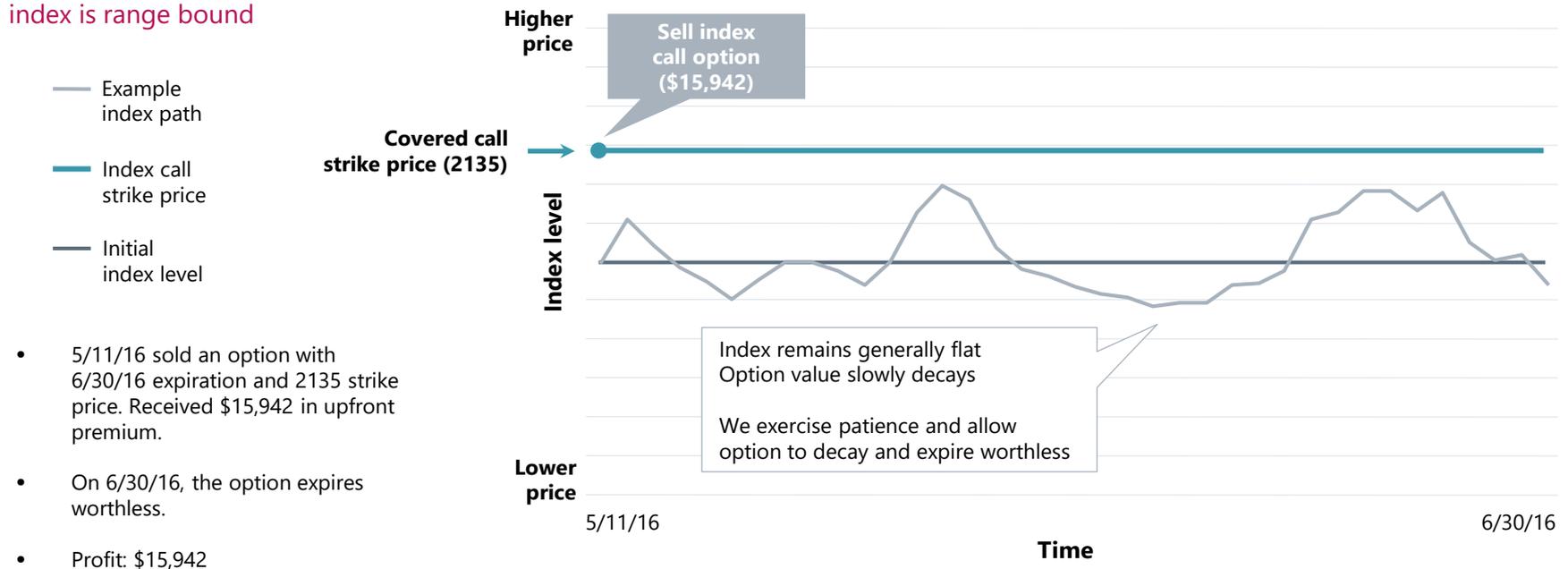
Source: Parametric. The above example is for demonstration and illustrative purposes only. Actual returns will vary from the illustrative example presented. There is no guarantee that the strategy will be successful. All investments are subject to potential loss of principal. Please refer to the Appendix for additional important information and disclosure.

# 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

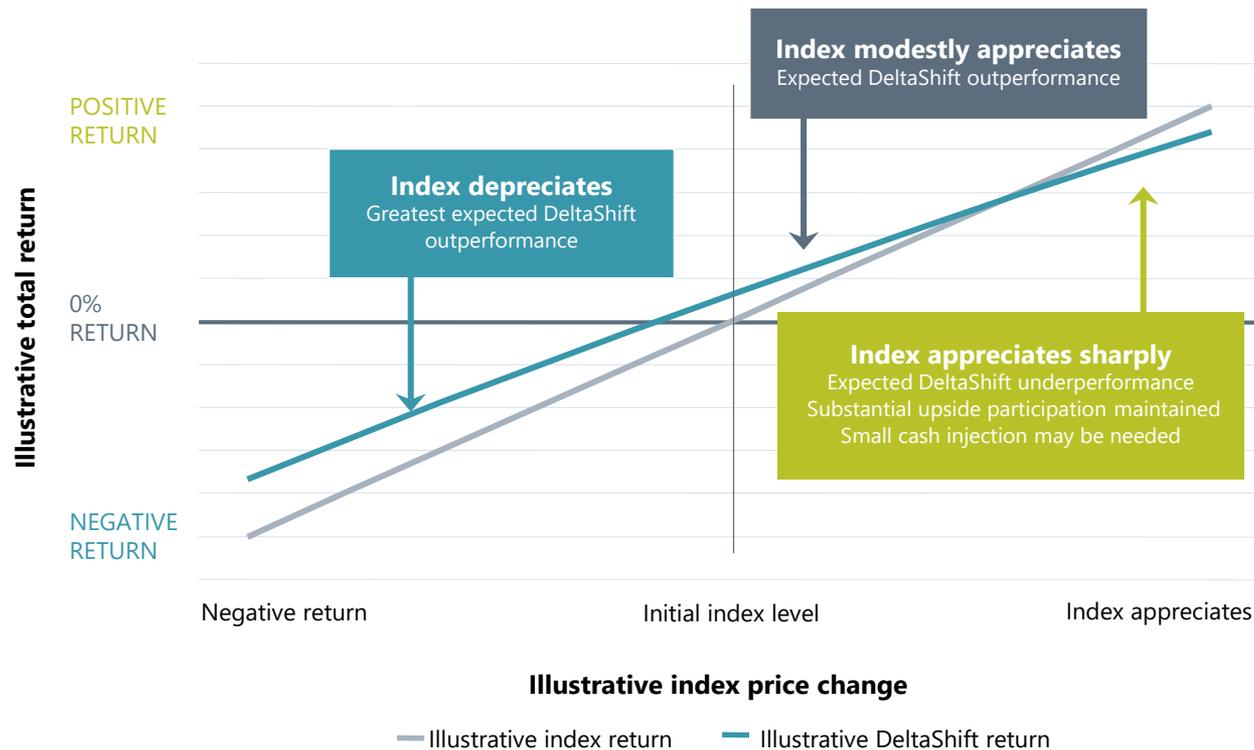


Source: Parametric. The above example is for demonstration and illustrative purposes only. Actual returns will vary from the illustrative example presented. There is no guarantee that the strategy will be successful. All investments are subject to potential loss of principal. Please refer to the Appendix for additional important information and disclosure.



# DeltaShift Rules-Based Management

## Illustrative DeltaShift results



### 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**

Source: Parametric. The above example is for demonstration and illustrative purposes only. Actual returns will vary from the illustrative example presented. There is no guarantee that the strategy will be successful. All investments are subject to potential loss of principal. Please refer to the Appendix for additional important information and disclosure.

# 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

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

# Oakland Police & Fire Portfolio Review

# Portfolio and Benchmark Returns - September 30, 2020

## Oakland Police and Fire Retirement System

\$29.8 Million – **Total AUM**

\$16.2 Million - DeltaShift

\$13.7 Million – Enhanced BXM Replication

### Inception Date

March 11, 2014

	Returns				
	Oakland Police & Fire Total Account	DeltaShift	Enhanced BXM Replication	BXM – CBOE S&P 500® Buy-Write Index	S&P 500® Index
QTD	7.07%	7.83%	6.12%	6.52%	8.93%
YTD	1.04%	3.55%	-2.11%	-9.58%	5.58%
1 Year	7.11%	11.16%	2.35%	-5.66%	15.16%
3 Year	6.50%	8.87%	3.80%	0.79%	12.28%
5 Year	9.36%	11.49%	6.98%	4.62%	14.15%
Since Inception	7.74%	9.85%	5.90%	4.13%	11.62%

Source: Parametric; Bloomberg; CBOE®

\*Performance is as of 9/30/2020 and is gross of investment advisory fees. The deduction of an advisory fee would reduce an investor's return.

\*\*Returns presented may differ from the Options only returns provided by Parametric due to the inclusion of cash and the effect of portfolio rebalancing.

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.



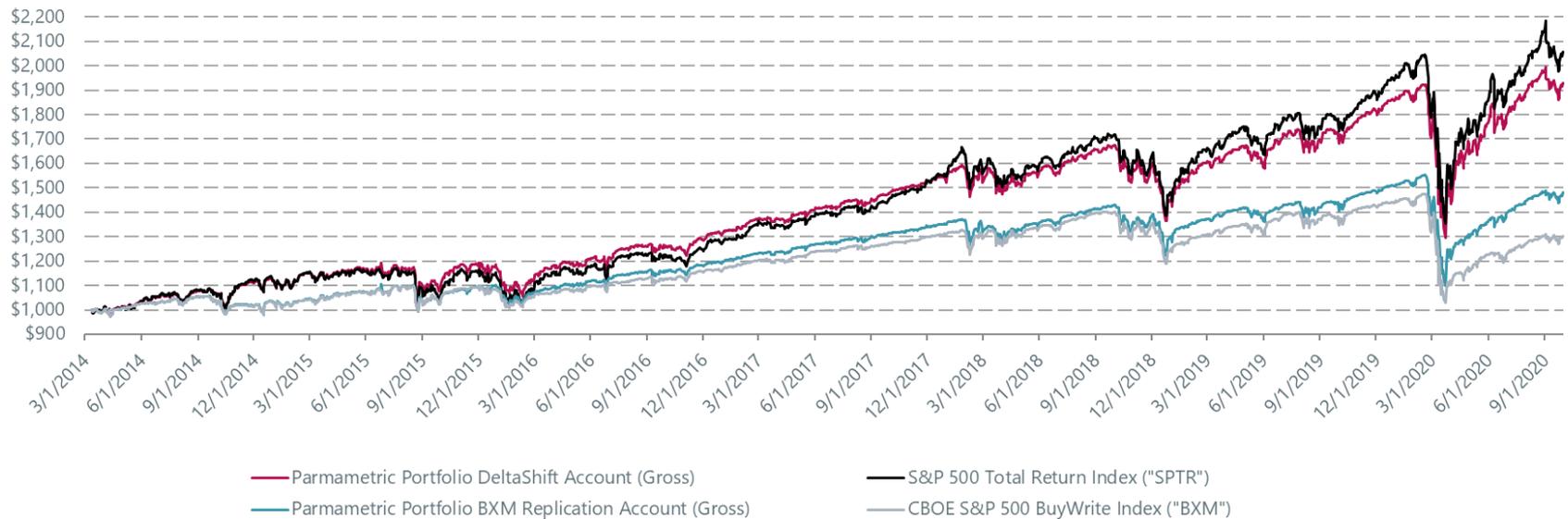
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Third Quarter 2020

Deltashift Overview

# Oakland Police & Fire Retirement System Portfolio Performance

Parametric Portfolio DeltaShift Account (Gross) vs.  
 Parametric Portfolio BXM Replication Account (Gross)  
 vs. S&P 500 Index Total Return vs CBOE BXM Index  
 Mar 13, 2014 - Sep 30, 2020



Source: Parametric; Bloomberg; CBOE®

\*Performance is as of 9/30/20.

\*\*Returns presented may differ from the Options only returns provided by Parametric due to the inclusion of cash and the effect of portfolio rebalancing.

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Third Quarter 2020

Deltashift Overview

# Oakland Police & Fire Retirement System Portfolio Performance

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

	Parametric Portfolio DeltaShift Account (Gross)		Parametric Portfolio BXM Replication Account (Gross)		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	11.63%	9.98%	3.07%	8.82%	2.76%	8.82%	11.98%	11.15%
Jan 1, 2015 - Dec 31, 2015	3.27%	15.12%	6.33%	12.17%	5.24%	11.75%	1.38%	15.49%
Jan 1, 2016 - Dec 31, 2016	11.78%	11.78%	8.57%	8.86%	7.07%	8.51%	11.96%	13.10%
Jan 1, 2017 - Dec 31, 2017	17.97%	5.28%	13.54%	3.95%	13.00%	3.69%	21.83%	6.68%
Jan 1, 2018 - Dec 31, 2018	(5.78%)	15.80%	(3.82%)	13.38%	(4.77%)	13.45%	(4.38%)	16.73%
Jan 1, 2019 - Dec 31, 2019	27.93%	10.96%	16.08%	8.29%	15.68%	8.65%	31.49%	12.26%
Jan 1, 2020 - Sep 30, 2020	3.82%	36.30%	(1.86%)	29.75%	(9.58%)	30.00%	5.57%	38.02%
<b>Annualized Since Inception</b>	<b>10.31%</b>	<b>16.80%</b>	<b>6.17%</b>	<b>13.68%</b>	<b>4.13%</b>	<b>13.70%</b>	<b>11.62%</b>	<b>17.85%</b>

- DeltaShift outperformed both BXM and PPA Enhanced BXM through 5/31/2020 and since inception.
- PPA Enhanced BXM outperformed BXM in all illustrated time frames plus since inception.

Source: Parametric; Bloomberg; CBOE®

\*Performance is as of 9/30/20.

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# Oakland Police & Fire Retirement System Portfolio Performance

**Call writing is expected to have a positive contribution to portfolio performance and corresponding reduction to portfolio volatility over time.**

- The source of excess return is the Volatility Risk Premium.
- The source of volatility reduction is the negative correlation between short call options and long equity.

**From program inception (March 12, 2014) through the 2016 election (November 7, 2016) the programs performed as expected:**

Inception to Election (March 12, 2014 – November 7, 2016), Annualized

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced Replication Account (Net)		CBOE S&P 500 BuyWrite Index ("BXW")		S&P 500 Total Return Index ("SPTR")	
	Return	Volatility	Return	Volatility	Return	Volatility	Return	Volatility
Mar. 12, 2014 – Nov. 7, 2016	7.61%	12.64%	5.62%	9.99%	4.79%	10.08%	7.04%	13.73%

Source: Parametric; Bloomberg; CBOE®

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Third Quarter 2020

DeltaShift Overview

# Oakland Police & Fire Retirement System Portfolio Performance

**From the 2016 election (November 7, 2016) through January 26, 2018, the S&P 500 had 14 consecutive positive monthly total returns, the first time that had happened in the previous 90 years.**

- This impressive performance resulted in 30.33% annualized total return for the S&P 500® Index.
- Sustained S&P 500 appreciation like that witnessed during the period does not lend itself to call selling.
- Any VRP portfolio contribution was overwhelmed by the directional component of the S&P 500.
- While DeltaShift expectedly underperformed the S&P 500 during the period, the risk management techniques of the strategy resulted in substantial outperformance of the benchmark CBOE S&P 500 BuyWrite Index (“BXM”).
- In addition, the added diversification of Parametric’s Enhanced BXM replication resulted in outperformance vs the BXM.

## Post Election Rally (November 8, 2016 – January 26, 2018), Annualized

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced 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
Nov. 8, 2016 – Jan. 26, 2018	21.76%	5.27%	14.41%	3.77%	13.86%	3.60%	30.33%	6.89%

Source: Parametric; Bloomberg; CBOE®

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# Oakland Police & Fire Retirement System Portfolio Performance

**Post rally, from January 26, 2018 through September 30, 2019, call writing was again additive to the portfolio. Both primary goals – excess return and reduced portfolio volatility– were once again successful.**

- In this period DeltaShift outperformed the BXM, the Parametric Enhanced BXM, and the S&P 500 Total Return Index.

Post Rally (January 27, 2018 – September 30, 2019), Annualized

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced 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
Jan. 27, 2018 – Sep. 30, 2019	4.87%	14.72%	3.48%	11.87%	2.41%	12.17%	4.22%	15.83%

**From Q4 2019 through the peak of the market on 2/19/20, the S&P 500 Index was up strongly with a total return of 14.33% (14% annualized)**

- DeltaShift outperformed the BXM, the Parametric Enhanced BXM, and trailed the S&P 500 Total Return Index.

Q4 2019 / early 2020 Run-up

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced 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
Sep. 30, 2019 – Feb. 19, 2020	10.89%	8.14%	7.33%	6.31%	6.68%	6.83%	14.33%	10.02%

Source: Parametric; Bloomberg; CBOE®

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Third Quarter 2020

DeltaShift Overview

# Oakland Police & Fire Retirement System Portfolio Performance

**In late February, the market experienced heightened concern about the COVID 19 Virus. From 2/20/20 through 3/23/20, the market experienced one of its steepest selloffs ever.**

- In this period, the BXM and Parametric Enhanced BXM, which sell at-the-money options, outperformed DeltaShift and the S&P 500 Total Return Index.

## COVID downturn (February 20, 2020 – March 23, 2020)

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced 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
Feb. 20, 2020 – Mar. 23, 2020	-32.69%	80.61%	-27.67%	73.01%	-30.23%	63.89%	-33.92%	80.99%

**From the bottom of the market of 3/23/20 through the end of Sept., the S&P 500 made a very strong recovery.**

- DeltaShift significantly outperformed the BXM, the Parametric Enhanced BXM, and slightly trailed the S&P 500 Total Return Index.

## Post - COVID recovery

	Parametric Portfolio DeltaShift Account (Net)		Parametric Portfolio BXM Enhanced 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. 24, 2020 – Sep. 30, 2020	48.15%	27.16%	34.65%	16.83%	26.74%	14.71%	50.31%	29.60%

Source: Parametric; Bloomberg; CBOE®

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Third Quarter 2020

DeltaShift Overview

# Appendix

# Potential Risks

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

<b>Risk</b>	<b>Description</b>
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 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.

# Appendix: Performance

## Large Capitalization U.S. Equity Portfolio DeltaShift (Unfunded, Brokerage) Composite Performance Presentation

As of December 31, 2019

Period	Returns			3 Yr. Annualized Standard Deviation		Dispersion	Assets		
	Total Gross Return AWR	Total Net Return AWR	Index	Composite	Index	Internal Equal Wtd.	Number of Portfolios	Composite (MM)	Total Firm (MM)
2010	-0.62%	-1.21%	-9.14%	2.06%	9.26%	0.21%	19	1,626	17,579
2011	1.14%	0.54%	2.12%	2.24%	8.58%	0.62%	48	1,595	19,548
2012	-0.84%	-1.43%	-9.92%	1.93%	7.17%	0.32%	37	1,751	63,431
2013	-4.33%	-4.91%	-14.96%	1.79%	5.88%	0.43%	25	826	80,896
2014	0.34%	-0.26%	-0.86%	1.67%	5.21%	0.18%	30	829	94,545
2015	1.84%	1.24%	3.07%	1.83%	5.81%	0.20%	117	2,498	99,248
2016	-0.31%	-0.91%	-5.05%	1.65%	5.90%	0.28%	194	2,457	111,470
2017	-3.16%	-3.74%	-7.46%	1.79%	5.66%	0.39%	258	3,010	137,760
2018	-1.90%	-2.49%	-1.10%	2.59%	5.47%	0.39%	188	2,310	122,628
2019	-2.98%	-3.56%	-12.61%	2.71%	5.54%	0.41%	139	2,471	287,828

Index: CBOE S&P 500 BuyWrite Index Option Attribution Index

N/A - Internal dispersion is not statistically meaningful for periods shorter than a year or for years in which five or fewer portfolios were included in the Composite for the full year.

Parametric Portfolio Associates® LLC is an independent 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"), Policy Implementation Overlay Service ("PIOS"), Customized Exposure Management ("CEM"), Volatility Risk Premium ("VRP"), and Systematic Alternative Risk Premia ("SARP"), 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.

Parametric Investment & Overlay Strategies



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Third Quarter 2020

Deltashift Overview

# Appendix: Performance

## Parametric Portfolio Associates LLC

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, 2019. The verification report is available upon request.

Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. Verification does not ensure the accuracy of any specific composite presentation.

The Large Capitalization U.S. Equity Portfolio DeltaShift (Unfunded, Brokerage) Composite includes all fully discretionary unfunded brokerage portfolios that utilize a call option selling strategy on the S&P 500 Index (or other underlyings that are designed to economically track the returns of the S&P 500 Index). The DeltaShift option strategy, when combined with the daily returns of the S&P 500 Index, seeks to increase the total return and reduce the volatility relative to the returns of the S&P 500 Index.

The Large Capitalization U.S. Equity Portfolio DeltaShift (Unfunded, Brokerage) Composite was created in December 2013 and the inception date is August 2007.

The Composite is compared to a custom calculated benchmark, ("the Index"). The Index represents the difference between the CBOE S&P 500 BuyWrite Index ("BXM") and the S&P 500 Total Return Index ("SPTR") and the returns are calculated daily. The calculation attempts to isolate the options only performance attribution of the BXM Index. Monthly returns reflect the sum of the daily returns during the applicable calendar month. 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.

Derivative securities are used in the accounts which comprise this composite. For a detailed description of the derivative strategies used in these accounts, please contact the firm.

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.

Portfolio daily returns represent the change of the daily options' gains and losses divided by the daily contractual program notional value. Monthly returns reflect the sum of the daily returns during the applicable calendar month.

Performance results are expressed in U.S. dollars.

Gross of fees performance results for actual client accounts are net of transaction costs but do not reflect the deduction of investment advisory fees. Net of fees performance results are calculated utilizing a model fee and reflect the deduction of 0.60%. The fees for the investment management services described herein are described in the fee schedule.

The separate account management fee schedule is as follows: First 20M @ 0.60%, Next 20M @ 0.50%, Next 20M @ 0.40%.

The dispersion of annual returns is measured by equal-weighted standard deviation of portfolio returns within the Composite for the full year.

Policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

A list of composite descriptions is available upon request.

Past performance is not a guarantee of future results.

# Biographies

## Thomas Lee, CFA

Chief Investment Officer

Tom is a member of Parametric's Executive Committee and leads Parametric's Research, Strategy, Portfolio Management, and Trading teams, coordinating resources, aligning priorities, and establishing processes for achieving clients' investment objectives. Tom has coauthored articles on topics ranging from liability-driven investing to the volatility risk premium. He is a voting member of all the firm's investment committees. Prior to joining Parametric in 1994 (originally as an employee of the Clifton Group, which was acquired by Parametric in 2012), Tom spent two years working for the Board of Governors of the Federal Reserve in Washington, DC. He earned a BS in economics and an MBA in finance from the University of Minnesota. A CFA charterholder, Tom is a member of the CFA Society of Minnesota.

## Jay Strohmaier, CFA

Managing Director, Investment Strategy

Jay leads a team of investment professionals responsible for developing and managing institutional portfolios with an emphasis on Defensive Equity, Global Defensive Equity, and related options-based Volatility Risk Premium Strategies. He has extensive experience with futures and options and has been active in the investment industry since 1984. Prior to rejoining Parametric in 2009, Jay worked for Cargill, Peregrine Capital Management, and Advantus Capital Management. He earned a BS degree in agricultural economics from Washington State University and a MS in applied economics from the University of Minnesota. A CFA charterholder, Jay is a member of the CFA Society of Minnesota.

## 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

Senior Director, Client Relationship Management

Mr. Ryan 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.

## Larry Berman

Managing Director

Larry is responsible for trading and operations of our derivative strategies. Prior to joining Parametric in 2006 (originally as an employee of Managed Risk Advisors, which was acquired by Parametric in 2007), Larry was a principal at Wolverine Trading, one of the largest options market-makers in the world. At Wolverine, he was the head trader in charge of all trading in the New York office on the American Stock Exchange and the COMEX, and he was responsible for over 90 equity/index options as well as market-making in ETFs and structured products. He earned a BS in business administration from Boston University.

## Alex Zweber, CFA

Managing Director, Investment Strategy

Alex is responsible for the continued investment success of Parametric's liquid alternative strategies. He has over 14 years of experience working in portfolio construction, trading, and portfolio management across both futures and options. In his various positions, he has worked closely with institutional and HNW clients and their consultants to address their investment and risk management needs. Prior to returning to Minneapolis in 2020, he was responsible for supporting the development and distribution of Parametric's strategies in Europe, and before that served as a Senior Portfolio Manager on Parametric's volatility risk premium solutions, including Defensive Equity and Global Defensive Equity. Alex began his career in the investment management industry in 2006 with the Clifton Group (acquired by Parametric in 2012). Alex earned a BA in economics from Macalester College. A CFA charterholder, Alex is a member of the CFA Society of Minnesota.

# Disclosure

Parametric Portfolio Associates® LLC (“Parametric”), headquartered in Seattle, is registered as an investment advisor with the Securities and Exchange Commission under the Investment Advisors 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 a wholly-owned subsidiary of Eaton Vance Corp. 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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Performance is presented gross of investment advisory fees. Advisory fees are deducted quarterly from an investor’s portfolio and would impact performance adversely. As an example, assuming (a) \$1,000,000 investment, (b) portfolio return of 5% per year, and (c) 1.00% annual investment advisory fee, the cumulative fees paid would be \$10,209.57 in the first year, \$55,254.43 over five years, and \$122,351.51 over ten years. Actual fees charged vary by portfolio due to various conditions, including account size. Parametric’s investment advisory fees are described further in Part 2A of Form ADV, which is available upon request.

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)

Case studies, general strategy examples, and certain illustrations contained herein are hypothetical in nature and do not represent the experience or results that any particular investor actually attained. The information presented is based, in part, on hypothetical assumptions and the experience of Parametric. No representation or warranty is made as to the reasonableness of the assumptions made or that all assumptions used in achieving the returns have been stated or fully considered. No representation is made that any account will or is likely to profit similar to those shown in the examples. Actual performance results will differ, and may differ substantially, from the examples illustrated. Changes in assumptions may have a material impact on the hypothetical performance presented. The information may not reflect the impact that material economic and market factors might have had on Parametric's decision-making if PPA were actually managing client assets.

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<sup>®</sup> BuyWrite Index (BXM) is a benchmark index designed to track the performance of a hypothetical buy-write strategy on the S&P 500<sup>®</sup> Index. The BXM is a passive total return index based on (1) buying an S&P 500<sup>®</sup> stock index portfolio, and (2) "writing" (or selling) the near-term S&P 500<sup>®</sup> 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.

The S&P 500 Index represents the top 500 publicly traded companies in the US.

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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>.

Selling uncovered call options exposes the seller to unlimited loss should the index appreciate. Participation in the program does not protect the portfolio from downside risk. The investor retains full downside exposure to the portfolio. The downside protection afforded by call writing is limited to the amount of the premium received less the costs incurred to settle index options. The strategy provides a hedge only to the extent of those net premiums received. The loss for the investor could be the current value of the portfolio less the net premium received from the call options. Portfolio holdings may need to be sold to generate cash to settle call options. The sale of portfolio holdings may produce tax consequences for US taxpayers. Prior to implementing the Parametric DeltaShift call writing program, you should discuss with your personal tax advisor how selling index call options and any potential sales of portfolio holdings will affect your tax situation. Parametric does not provide tax advice. There is no assurance that the revenue received from the program will exceed the fees and expenses paid. If a secondary market in options becomes unavailable and prevents a closing transaction, the option writer's obligation would remain until expiration or assignment.

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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 strategy 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](http://www.parametricportfolio.com).

## MEMORANDUM

**TO:** Oakland Police and Fire Retirement System (OPFRS)  
**FROM:** David Sancewich, Paola Nealon, Sidney Kawanguzi – Meketa Inv. Group  
**DATE:** October 28, 2020  
**RE:** Parametric (Covered Calls) – Contract Renewal

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Manager	Parametric
<b>Inception Date:</b>	4/2014
<b>OPFRS AUM (9/30/2020):</b>	\$29.9 million (7.5%)
<b>Product Name:</b>	Parametric BXM/DeltaShift
<b>Management Fee:</b>	32 bps
<b>Investment Strategy:</b>	Covered Calls DeltaShift (Active) & Replication (Passive)
<b>Benchmark:</b>	CBOE BXM

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*Meketa recommends that OPFRS renew its contract with Parametric before the current contract date of expiration.* OPFRS contracts reserve the right for the Board to terminate the agreement, with or without cause, at any time upon 30 calendar days' prior written notice. In making this recommendation, Meketa considered investment performance and recent organizational / personnel issues. Since the last contract renewal, Parametric has exhibited acceptable performance and organizational stability regarding its Covered Calls portfolios, therefore Meketa believes that there are no issues that should prevent a contract extension for this manager.

### Organizational Issues

Parametric	Level of Concern^	Areas of Potential Impact			
		Investment process (client portfolio)	Investment Team	Performance Track Record	Team/ Firm Culture
<b>Product</b>					
Key people changes	None				
Changes to team structure/individuals' roles	None				
Product client gain/losses	None				
Changes to the investment process	None				
Personnel turnover	None				
<b>Organization</b>					
Ownership changes	None				
Key people changes	None				
Firm wide client gain/losses	None				
<b>Recommended Action</b>	<b>None - X</b>	<b>Watch Status</b>		<b>Termination</b>	

### Investment Philosophy & Process, 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 options (generally 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 in order to mitigate potential outlier losses that are inherent to a “sell and hold” option program (i.e. BXM replication).