

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.



**CITY OF
OAKLAND**

**Retirement Unit
Tele-Conference
Board Meeting**

AGENDA

RETIREMENT BOARD MEMBERS

Walter L. Johnson, Sr.
President

Jaime T. Godfrey
Vice President

Adam Benson
Member

Robert W. Nichelini
Member

Kevin R. Traylor
Member

John C. Speakman
Member

R. Steven Wilkinson
Member

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

Wednesday, June 24, 2020 – 1:30 pm

OBSERVE:

- To observe the meeting by video conference, please click on this link: <https://us02web.zoom.us/j/85601841491> 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):
- US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 312 626 6799 or +1 929 205 6099 or +1 301 715 8592
- Webinar ID: 856 0184 1491.
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 Tjenkins@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**.
- 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

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
SPECIAL TELE-CONFERENCE BOARD MEETING
JUNE 24, 2020**

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 Teir Jenkins, Investment Officer at Tjenkins@oaklandca.gov.

- - - ORDER OF BUSINESS - - -

- A. Subject: PFRS Board Meeting Minutes**
From: Staff of the PFRS Board
-
- Recommendation: APPROVE** February 26, 2020 PFRS Board meeting minutes.
- B. Subject: Administrative Expenses Report**
From: Staff of the PFRS Board
-
- Recommendation: ACCEPT** an informational report regarding PFRS administrative expenses from July 1, 2019 through April 30, 2020.
- C. Subject: Preliminary Investment Fund Performance Update as of May 31, 2020**
From: Staff of the PFRS Board
-
- Recommendation: APPROVE** a Preliminary Investment Fund Performance Update as of May 31, 2020
- D. Subject: Subject: Investment Market Overview as of June 2020**
From: Meketa Investment Group
-
- Recommendation: ACCEPT** an informational report on the global investment markets through June 2020.
- E. Subject: Investment Performance Report For the Quarter Ending March 31, 2020**
From: Meketa Investment Group
-
- Recommendation: APPROVE** the Investment Fund Performance for the Quarter Ending March 31, 2020

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- F. Subject: \$13.85 million Drawdown for Fiscal Year 2019/2020, (Quarter ending June 2020) Member Allowances (Retroactive)**
From: Staff of the PFRS Board & Meketa Investment Group
-
- Recommendation:** **RECOMMEND BOARD APPROVAL** of the Meketa recommendation of \$13.85 million drawdown, which includes an \$10.85 million contribution from the City of Oakland and a \$3.0 million contribution from the PFRS Investment Fund, to be used to pay for the April 2020 through June 2020 member Retirement Allowances (Retroactive).
- G. Subject: Select Investment Manager to invite to Interview for the Fixed Income Asset Class Investments Portfolio Manager position**
From: Staff of the PFRS Board & Meketa Investment Group
-
- Recommendation:** **RECOMMEND BOARD APPROVAL** of Meketa's Recommendations Regarding Interviews for the Fixed Income Investments Portfolio Manager position.
- H. Subject: Review of the Finalists for a New Active Small Cap Domestic Equities Asset Class Investment Manager**
From: Meketa Investment Group
-
- Recommendation:** **RECEIVE** an informational report summarizing regarding finalists' presentations from Investment Firms seeking to serve as PFRS's new Small Cap Domestic Equities Asset Class Manager.
- I. Subject: \$13.91 million Drawdown for New Fiscal Year 2020/2021 (Quarter ending September 2020) Member Allowances**
From: Staff of the PFRS Board & Meketa Investment Group
-
- Recommendation:** **RECOMMEND BOARD APPROVAL** of the Meketa recommendation of \$13.91 million drawdown, which includes an \$10.91 million contribution from the City of Oakland and a \$3.0 million contribution from the PFRS Investment Fund, to be used to pay for the July 2020 through September 2020 member Retirement Allowances (Retroactive).

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
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J. Subject: Member Resolution(s) No. 7095 - 7096
From: Staff of the PFRS Board

Recommendation: APPROVE Member Resolution(s) No. 7095 – 7096

**Resolution
No. 7095**

Resolution approving death benefit payments and directing warrants thereunder in the total sum of \$1,000.00 payable to the beneficiaries of deceased member(s) as follows: Robert A. Sebastiani; Harlan Goodson.

**Resolution
No. 7096**

Resolution fixing the monthly allowance of Renate C. Owen, Surviving Spouse of John A. Owen ; Elaine D. Vaughn, Surviving Spouse of Harry L. Vaughn; Beverly A. Burnett, Surviving Spouse of Donald B. Burnett; Phyllis Whitfield, Surviving Spouse of George E. Whitfield; Surviving Spouse of Jody Buna; June T. Aboussleman Surviving Spouse of Donald A. Aboussleman.

K. NEW BUSINESS

L. OPEN FORUM

M. FUTURE SCHEDULING

N. ADJOURNMENT

A BOARD MEETING of the Oakland Police and Fire Retirement System (“PFRS”) was held on February 26, 2020 in Hearing Room 1, One Frank Ogawa Plaza, Oakland, California.

- Board Members Present:
- Walter L. Johnson, President
 - Jaime T. Godfrey, Vice President
 - Adam D. Benson, Member
 - Robert W. Nichelini, Member
 - John C. Speakman, Member
 - Kevin R. Traylor, Member
 - R. Steven Wilkinson, Member

- Additional Attendees:
- David Jones, PFRS Plan Administrator
 - Jennifer Logue, PFRS Legal Counsel
 - David Low & Teir Jenkins, Staff Members
 - David Sancewich, Meketa Investment Group
 - Sean Copus, Meketa Investment Group

The meeting was called to order at 12:16 pm. President Johnson introduced Kevin R. Traylor to the PFRS Board. Member Traylor is replacing Member Nichelini as the 3-year alternating Police/Fire member for the balance of Member Nichelini’s original term of office through August 31, 2022. President Johnson reordered the agenda matters.

D. PFRS INVESTMENT COMMITTEE MEETING – FEBRUARY 26, 2020

- D1. Selection of New Active Small Cap Domestic Equities Asset Class Investment Manager** – David Sancewich reported on the presentations by four investment firms for the new Active Small Cap Domestic Equities Asset Class Investment Manager for PFRS. He reported that the Investment Committee would continue discussion of this matter at the March 2020 investment committee meeting.

MOTION: Member Godfrey made a motion to accept the informational report from Meketa, second by Member Nichelini. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

- D2. Investment Market Overview** – Mr. Sancewich provided an informational report on the global economic factors affecting the PFRS Fund.

MOTION: Member Traylor made a motion to accept the Investment Market Overview report, second by Member Speakman. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

- D3. Investment Fund Performance for the Quarter Ending December 31, 2019** – Sean Copus presented the Investment performance report of PFRS investments fund for the quarter ending December 31, 2019. He reported how PFRS Investment overperformed to the investment benchmarks for this period, with

excess portfolio returns of 0.4 percent, 1.5 percent, 1.1 percent and 0.5 percent for the calendar quarter, 1-year, 3-year, and 5-year periods, respectively.

MOTION: Chairman Godfrey made a motion to approve the PFRS Investment Fund Performance Report for the Quarter Ending December 31, 2019, second by Member Nichelini. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

D4. Investment Manager Overview – SPI Strategies, LLC – David Sancewich reported that the Investment Committee discussed the recommendations presented by Meketa regarding action with SPI Strategies as a PFRS Investment Manager following internal changes at SPI Strategies.

MOTION: Member Godfrey made a motion (1) to terminate the service agreement between the Oakland Police and Fire Retirement System and SPI Strategies, LLC, (2) to move PFRS investment assets from SPI Strategies to an equivalent Exchange Traded Fund, and (3) to direct Meketa to reach out to the remaining investment managers from the Defensive Domestic Equity RFP for future consideration as possible replacements for SPI Strategies, second by Member Speakman. Motion passed.

[JOHNSON – Y/ GODFREY – Y/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 7/ NOES: 0/ ABSTAIN: 0)

President Johnson called for a recess at 12:36 pm.

President Johnson called the meeting back to order at 1:05 pm. Member Godfrey had departed the meeting.

A. PFRS Board Meeting Minutes – Member Speakman made a motion to approve the January 29, 2020 PFRS Board meeting minutes, second by Member Traylor. Motion Passed.

[JOHNSON – Y/ GODFREY – ABSENT/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

B. PFRS Actuary Valuation as of July 1, 2019 – Tim Doyle and Graham Schmidt from Cheiron, Inc, PFRS Actuary, presented the PFRS actuary valuation report as of July 1, 2019. Mr. Doyle reported that the funded ratio was 58.0 percent (actuarial value of assets) and 61.8 percent (market value of assets) with an unfunded actuarial value of assets of \$261,698,000. Also, the plan assets returns were 5.83 percent on a market value basis (net of investment expenses) compared to the 6.00 percent assumed investment return for 2018-2019 plan year. The Board and the Actuary had additional discussion about the actuary reporting.

MOTION: Member Nichelini made a motion to approve the PFRS actuary valuation as of July 1, 2019, second by member Speakman. Motion passed.

[JOHNSON – Y/ GODFREY – ABSENT/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

C. PFRS AUDIT COMMITTEE MEETING – FEBRUARY 26, 2020

- c1. Administrative Expenses Report** – Investment Officer Teir Jenkins presented an informational report of the PFRS administrative expenditures through December 31, 2019.

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

[JOHNSON – Y/ GODFREY – ABSENT/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- c2. Mid-Cycle PFRS Administrative Budget for Fiscal Years 2019 through 2021** – Investment Officer Teir Jenkins presented the Mid-Cycle PFRS Administrative Budget for Fiscal Years (FY) 2019 through 2021. Mr. Jenkins noted the reallocation of budgeted funds on the FY 2019-2020 budget and the proposed reallocation of budgeted funds on the FY 2020-2021, including increases to staff salaries due to changes in the Memorandum of Understanding.

MOTION: Member Traylor made a motion to approve the Mid-Cycle PFRS Administrative Budget for Fiscal Years 2019 through 2021, second by member Speakman. Motion passed.

[JOHNSON – Y/ GODFREY – ABSENT/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- c3. Purchase of iPad Tablets for PFRS Staff and Board Members at meetings** – Plan Administrator David Jones presented the staff report detailing the cost to purchase iPad Tablets for Board and Staff members to replace the Board Binders used at the PFRS Committee and Board meetings. Mr. Jones said the purchase order may be subject to the City of Oakland’s purchasing requirement to provide a bidding process for such a large order. Member Speakman and Mr. Jones discussed whether the PFRS Board had autonomy in the choice to make the purchase of the iPad tablets independent of the City requirements, with Mr. Jones reporting that he would review the process with staff.

MOTION: Member Benson made a motion to approve the purchase eight new iPad Tablets for staff and Board use to replace PFRS Board meeting binders, second by member Speakman. Motion passed.

[JOHNSON – Y/ GODFREY – ABSENT/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- c4. Resolution No. 7089 – Jones Travel** – Member Speakman made a motion to approve Resolution No. 7089 approving the request of Oakland Police and Fire Retirement System Plan Administrator David Jones to attend the Government Investment Officer’s Association 2020 Annual Conference from March 18, 2020 to March 20, 2020 in Las Vegas, Nevada and for reimbursement of registration fees and travel-related expenses in an amount not to exceed Two Thousand Dollars, second by Member Benson. Motion passed.

[JOHNSON – Y/ GODFREY – ABSENT/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- c5. Resolution No. 7090 – Benson Travel** – Member Speakman made a motion to approve Resolution No. 7090 approving the request of Oakland Police and Fire Retirement System Trustee Adam Benson to attend the Government Investment Officer’s Association 2020 Annual Conference from March 18, 2020 to March 20, 2020 in Las Vegas, Nevada and for reimbursement of registration fees and travel-related expenses in an amount not to exceed Two Thousand Dollars, second by Member Benson. Motion passed.

[JOHNSON – Y/ GODFREY – ABSENT/ BENSON – ABSTAIN/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 5/ NOES: 0/ ABSTAIN: 1)

- c6. Resolution No. 7091 – Benson Travel** – Member Speakman made a motion to approve to Resolution No. 7091 approving the request of Oakland Police and Fire Retirement System Trustee Adam Benson to attend the 2020 Pension Bridge Conference from April 14, 2020 to April 15, 2020 in San Francisco, California and for reimbursement of registration fees and travel-related expenses in an amount not to exceed Two Hundred Dollars, second by Member Benson. Motion passed.

[JOHNSON – Y/ GODFREY – ABSENT/ BENSON – ABSTAIN/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 5/ NOES: 0/ ABSTAIN: 1)

- c7. Resolution No. 7092 – Jenkins Travel** – Member Speakman made a motion to approve Resolution No. 7092 approving the request of Oakland Police and Fire Retirement System Staff Member Teir Jenkins to attend the 2020 Pension Bridge Conference from April 14, 2020 to April 15, 2020 in San Francisco, California and for reimbursement of registration fees and travel-related expenses in an amount not to exceed Five Hundred Dollars, second by member Benson. Motion passed.

[JOHNSON – Y/ GODFREY – ABSENT/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- c8. Resolution No. 7093 – Wilkinson Travel** – Member Speakman made a motion to approve Resolution No. 7093 approving the request of Oakland Police and Fire Retirement System Trustee R. Steven Wilkinson to attend the 2020 Pension Bridge Conference from April 14, 2020 to April 15, 2020 in San Francisco, California and for reimbursement of registration fees and travel-related expenses in an amount not to exceed Five Hundred Dollars, second by member Benson. Motion passed.

[JOHNSON – Y/ GODFREY – ABSENT/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – ABSTAIN]
(AYES: 5/ NOES: 0/ ABSTAIN: 1)

- c9. Resolution No. 7094 – Jones Travel** – Member Speakman made a motion to approve Resolution No. 7094 approving the request of Oakland Police and Fire Retirement System Plan Administrator David Jones to attend the 2020 Pension Bridge Conference from April 14, 2020 to April 15, 2020 in San Francisco, California and for reimbursement of registration fees and travel-related expenses

in an amount not to exceed Five Hundred Dollars, second by member Benson.
Motion passed.

[JOHNSON – Y/ GODFREY – ABSENT/ BENSON – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

E. New Business – No Report.

F. Open Forum – Pete Peterson, President of the Retired Oakland Police Officers Association, addressed the PFRS Board about his thoughts and concerns regarding the requirement that the PFRS Fund be fully funded by June 30, 2026.

G. Future Scheduling – The next PFRS Board meeting was scheduled for Wednesday, March 25, 2020.

The meeting adjourned at 2:02 pm.

DAVID JONES, BOARD SECRETARY

DATE

Table 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Administrative Budget Spent to Date (Preliminary)

As of April 30, 2020

	Approved Budget					Percent Remaining
		April 2020	FYTD	Remaining		
Internal Administrative Costs						
PFRS Staff Salaries	\$ 1,149,000	\$ 94,774	\$ 918,330	\$ 230,670	20.1%	
Board Travel Expenditures	52,500	1,669	9,487	43,013	81.9%	
Staff Training	20,000	201	326	19,674	98.4%	
Staff Training - Tuition Reimbursement	7,500	-	-	7,500	100.0%	
Annual Report & Duplicating Services	4,000	-	-	4,000	100.0%	
Board Hospitality	3,600	13	1,370	2,230	61.9%	
Payroll Processing Fees	40,000	-	-	40,000	100.0%	
Miscellaneous Expenditures	40,000	617	15,951	24,049	60.1%	
Internal Service Fees (ISF)	85,000	-	76,926	8,074	9.5%	
Contract Services Contingency	50,000	-	1,200	48,800	97.6%	
Office Construction Costs*	5,128	-	-	5,128	100.0%	
Internal Administrative Costs Subtotal :	\$ 1,456,728	\$ 97,274	\$ 1,023,590	\$ 433,138	29.7%	
Actuary and Accounting Services						
Audit	\$ 45,000	\$ -	\$ 45,000	\$ (0)	0.0%	
Actuary	46,500	-	41,790	4,710	10.1%	
Actuary and Accounting Subtotal:	\$ 91,500	\$ -	\$ 86,790	\$ 4,710	5.1%	
Legal Services						
City Attorney Salaries	\$ 188,000	\$ 16,687	\$ 130,148	\$ 57,852	30.8%	
Legal Contingency	150,000	-	5,455	144,546	96.4%	
Legal Services Subtotal:	\$ 338,000	\$ 16,687	\$ 135,603	\$ 202,397	59.9%	
Investment Services						
Money Manager Fees	\$ 1,326,000	\$ 67,568	\$ 573,712	\$ 752,288	56.7%	
Custodial Fee	124,000	-	58,250	65,750	53.0%	
Investment Consultant (Meketa)	100,000	-	75,000	25,000	25.0%	
Investment Subtotal:	\$ 1,550,000	\$ 67,568	\$ 706,962	\$ 843,038	54.4%	
Total Operating Budget	\$ 3,436,228	\$ 181,530	\$ 1,952,944	\$ 1,483,284	43.17%	

*Carry Forward from FY 2018-2019

Table 2

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Cash in Treasury (Fund 7100) - Preliminary

As of April 30, 2020

	April 2020
Beginning Cash as of 3/31/2020	\$ 7,311,852
Additions:	
City Pension Contribution - April	\$ 3,617,417
Investment Draw (Incoming Wire) - 4/1/2020	2,000,000
Misc. Receipts	480
Total Additions:	\$ 5,617,897
Deductions:	
Pension Payment (March Pension Paid on 4/1/2020)	(4,419,041)
Expenditures Paid	(245,970)
Total Deductions	\$ (4,665,011)
 Ending Cash Balance as of 4/30/2020*	 \$ 8,264,739

* On 5/1/2020, April pension payment of appx \$4,450,000 will be made leaving a cash balance of \$3,815,000

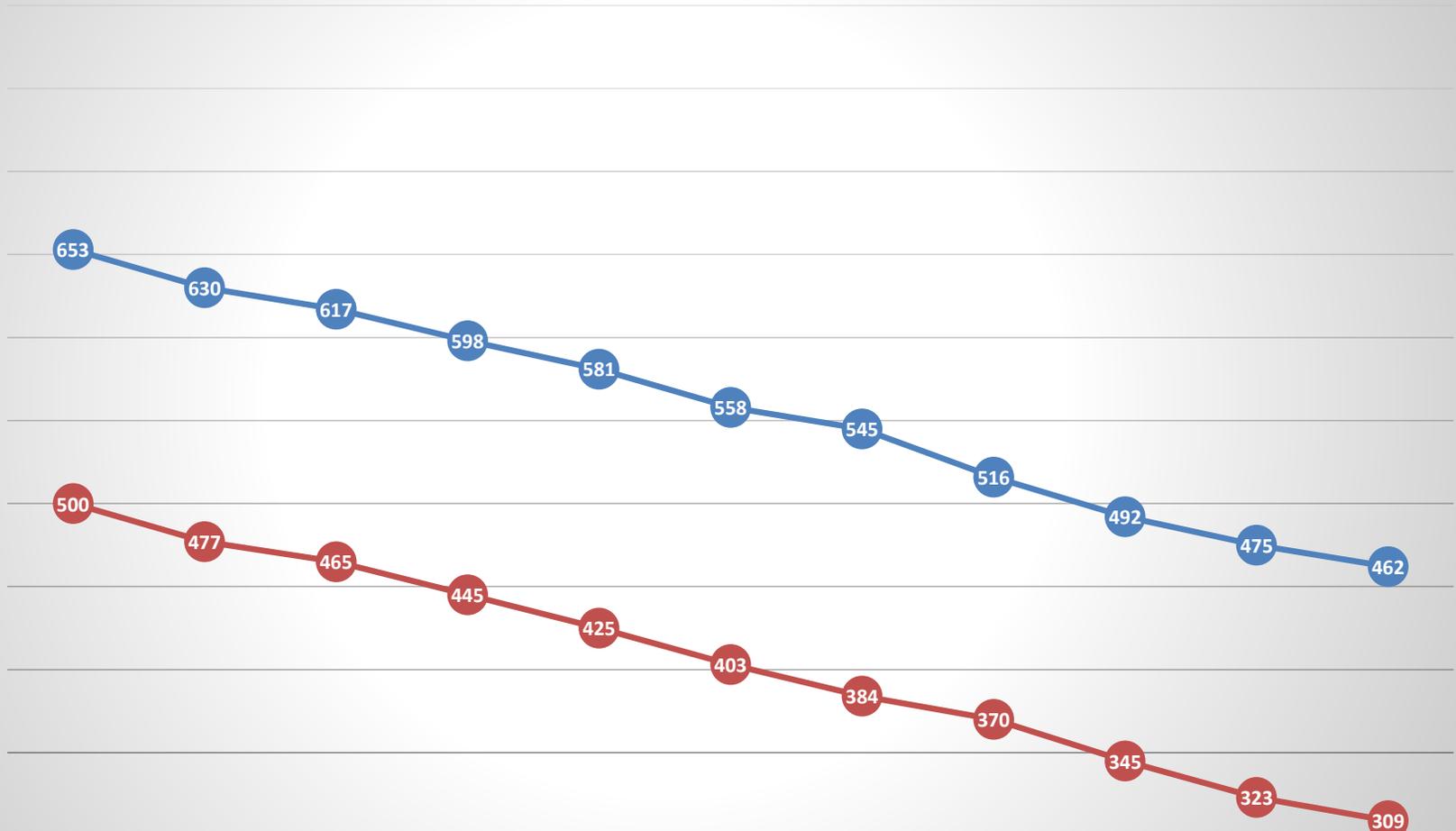
Table 3
CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Census
As of April 30, 2020

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Retiree	340	195	535
Beneficiary	122	114	236
<i>Total Retired Members</i>	462	309	771
<i>Total Membership:</i>	462	309	771

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Service Retirement	307	159	466
Disability Retirement	142	137	279
Death Allowance	13	13	26
<i>Total Retired Members:</i>	462	309	771
<i>Total Membership as of April 30, 2020:</i>	462	309	771
<i>Total Membership as of June 30, 2019:</i>	475	323	798
<i>Annual Difference:</i>	-13	-14	-27

Oakland Police and Fire Retirement System Pension Plan Membership Count As of April 30, 2020 (FY 2010 - FY 2020)

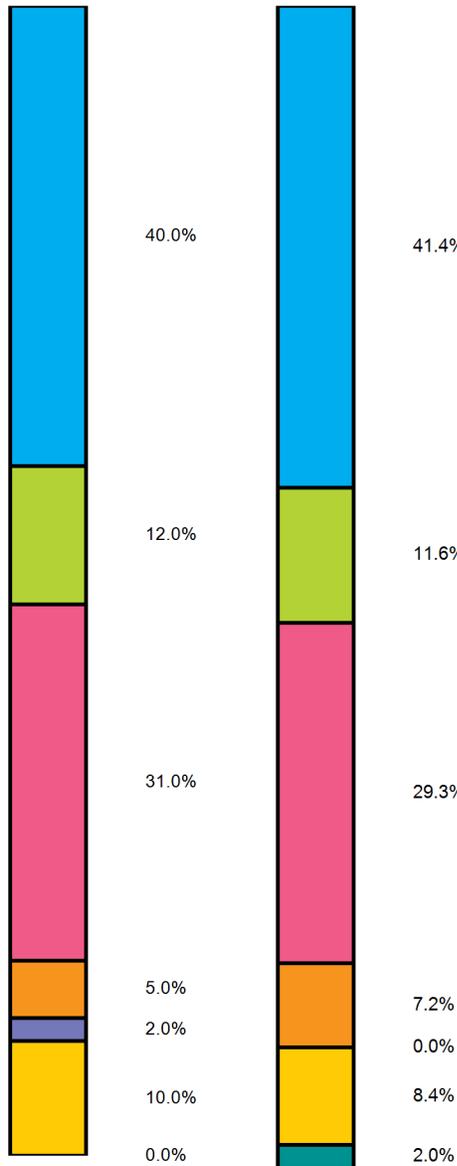


	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020 FYTD
Police	653	630	617	598	581	558	545	516	492	475	462
Fire	500	477	465	445	425	403	384	370	345	323	309
Total	1153	1107	1082	1043	1006	961	929	886	837	798	771

Oakland Police and Fire Retirement System

May 31, 2020

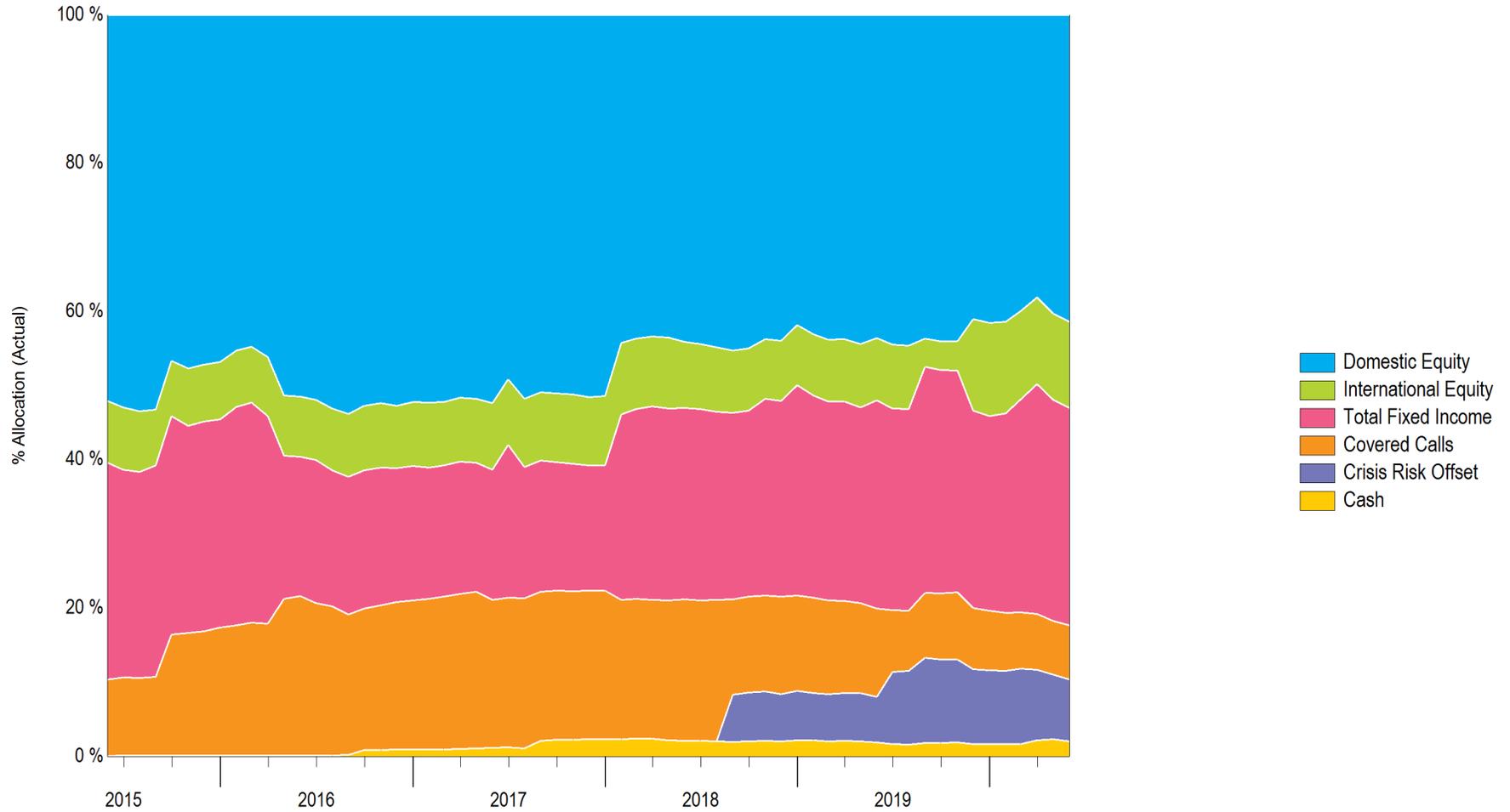
May Performance Update:
Preliminary



Asset Allocation vs. Target As Of May 31, 2020						
	Current	Current	Policy	Difference*	Within Range	
Domestic Equity	\$156,187,490	41.4%	40.0%	1.4%	Yes	
International Equity	\$43,863,443	11.6%	12.0%	-0.4%	Yes	
Total Fixed Income	\$110,690,458	29.3%	31.0%	-1.7%	Yes	
Covered Calls	\$27,324,293	7.2%	5.0%	2.2%	Yes	
Credit	--	--	2.0%	-2.0%	Yes	
Crisis Risk Offset	\$31,695,698	8.4%	10.0%	-1.6%	Yes	
Cash	\$7,515,867	2.0%	0.0%	2.0%	Yes	
Total	\$377,277,249	100.0%	100.0%			

*Difference between Policy and Current Allocation

Asset Allocation History
5 Years Ending May 31, 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
OPFRS Total Plan	377,277,249	100.0	3.5	-6.3	0.2	5.0	5.8	5.9	8.2	6.6	Dec-88
<i>OPFRS Policy Benchmark</i>			<i>2.9</i>	<i>-3.2</i>	<i>2.9</i>	<i>7.4</i>	<i>6.1</i>	<i>6.3</i>	<i>8.0</i>	<i>8.0</i>	<i>Dec-88</i>
Domestic Equity	156,187,490	41.4	5.9	-6.7	2.1	8.9	8.8	8.7	12.7	8.3	Jun-97
<i>Russell 3000 (Blend)</i>			<i>5.3</i>	<i>-5.6</i>	<i>4.1</i>	<i>11.5</i>	<i>9.5</i>	<i>9.2</i>	<i>12.8</i>	<i>8.4</i>	<i>Jun-97</i>
International Equity	43,863,443	11.6	3.5	-14.5	-7.0	-0.6	1.2	2.3	5.8	4.8	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			<i>3.3</i>	<i>-14.7</i>	<i>-8.6</i>	<i>-3.0</i>	<i>0.2</i>	<i>1.3</i>	<i>4.9</i>	<i>4.9</i>	<i>Jan-98</i>
Fixed Income	110,690,457	29.3	1.4	2.6	5.0	6.2	4.7	4.0	4.2	5.5	Dec-93
<i>Blmbg BC Universal (Blend)</i>			<i>0.9</i>	<i>4.3</i>	<i>7.0</i>	<i>8.5</i>	<i>4.8</i>	<i>4.0</i>	<i>4.2</i>	<i>5.4</i>	<i>Dec-93</i>
Covered Calls	27,324,293	7.2	4.3	-7.6	-0.1	5.8	5.2	6.7	--	6.9	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>			<i>4.4</i>	<i>-15.0</i>	<i>-10.1</i>	<i>-5.6</i>	<i>-0.1</i>	<i>2.9</i>	<i>6.0</i>	<i>3.5</i>	<i>Apr-14</i>
Crisis Risk Offset	31,695,698	8.4	-0.8	-19.6	-13.3	-9.2	--	--	--	-9.0	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>			<i>-1.6</i>	<i>-11.2</i>	<i>-10.3</i>	<i>-9.6</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.4</i>	<i>Aug-18</i>
Cash	7,515,866	2.0	0.0	1.0	2.3	2.6	2.1	1.4	--	0.8	Mar-11
<i>FTSE T-Bill 3 Months TR</i>			<i>0.0</i>	<i>0.5</i>	<i>1.5</i>	<i>1.8</i>	<i>1.7</i>	<i>1.1</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>

OPFRS Total Plan As of May 31, 2020

Trailing Net Performance													
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
OPFRS Total Plan	377,277,249	100.0	--	3.5	11.1	-6.3	0.2	5.0	5.8	5.9	8.2	6.6	Dec-88
<i>OPFRS Policy Benchmark</i>				<i>2.9</i>	<i>10.2</i>	<i>-3.2</i>	<i>2.9</i>	<i>7.4</i>	<i>6.1</i>	<i>6.3</i>	<i>8.0</i>	<i>8.0</i>	<i>Dec-88</i>
Domestic Equity	156,187,490	41.4	41.4	5.9	20.0	-6.7	2.1	8.9	8.8	8.7	12.7	8.3	Jun-97
<i>Russell 3000 (Blend)</i>				<i>5.3</i>	<i>19.3</i>	<i>-5.6</i>	<i>4.1</i>	<i>11.5</i>	<i>9.5</i>	<i>9.2</i>	<i>12.8</i>	<i>8.4</i>	<i>Jun-97</i>
Northern Trust Russell 1000	89,189,039	23.6	57.1	5.3	19.1	-5.0	5.1	12.5	10.1	9.6	13.1	13.1	Jun-10
<i>Russell 1000</i>				<i>5.3</i>	<i>19.2</i>	<i>-4.9</i>	<i>5.2</i>	<i>12.5</i>	<i>10.1</i>	<i>9.6</i>	<i>13.1</i>	<i>13.1</i>	<i>Jun-10</i>
EARNEST Partners	31,693,066	8.4	20.3	8.3	22.8	-6.2	2.2	10.2	10.0	10.6	13.3	9.4	Apr-06
<i>Russell MidCap</i>				<i>7.0</i>	<i>22.4</i>	<i>-10.7</i>	<i>-4.0</i>	<i>2.6</i>	<i>5.5</i>	<i>5.9</i>	<i>11.4</i>	<i>7.7</i>	<i>Apr-06</i>
Vanguard Russell 2000 Value	6,377,603	1.7	4.1	2.8	15.7	-25.2	--	--	--	--	--	-19.2	Aug-19
<i>Russell 2000 Value</i>				<i>2.9</i>	<i>15.6</i>	<i>-25.6</i>	<i>-19.8</i>	<i>-14.7</i>	<i>-4.2</i>	<i>0.7</i>	<i>6.5</i>	<i>-19.9</i>	<i>Aug-19</i>
Rice Hall James	11,284,227	3.0	7.2	9.2	32.1	-6.2	-1.8	4.8	--	--	--	5.7	Jul-17
<i>Russell 2000 Growth</i>				<i>9.4</i>	<i>25.8</i>	<i>-6.6</i>	<i>-0.4</i>	<i>7.3</i>	<i>7.7</i>	<i>6.3</i>	<i>11.7</i>	<i>6.7</i>	<i>Jul-17</i>
iShares Edge MSCI Min Vol	17,643,555	4.7	11.3	4.3	14.0	--	--	--	--	--	--	14.0	Mar-20
<i>S&P 500</i>				<i>4.8</i>	<i>18.2</i>	<i>-5.0</i>	<i>5.4</i>	<i>12.8</i>	<i>10.2</i>	<i>9.9</i>	<i>13.2</i>	<i>3.6</i>	<i>Mar-20</i>
International Equity	43,863,443	11.6	11.6	3.5	10.1	-14.5	-7.0	-0.6	1.2	2.3	5.8	4.8	Jan-98
<i>MSCI ACWI ex US (Blend)</i>				<i>3.3</i>	<i>11.2</i>	<i>-14.7</i>	<i>-8.6</i>	<i>-3.0</i>	<i>0.2</i>	<i>1.3</i>	<i>4.9</i>	<i>4.9</i>	<i>Jan-98</i>
Vanguard Developed Markets	12,900,239	3.4	29.4	5.4	12.7	-14.0	--	--	--	--	--	-3.9	Sep-19
<i>MSCI ACWI ex USA Gross</i>				<i>3.3</i>	<i>11.2</i>	<i>-14.7</i>	<i>-8.6</i>	<i>-3.0</i>	<i>0.2</i>	<i>1.3</i>	<i>4.9</i>	<i>-4.5</i>	<i>Sep-19</i>
iShares MSCI ACW exUS ETF	30,660,268	8.1	69.9	3.2	9.5	-13.8	--	--	--	--	--	-13.2	Dec-19
<i>MSCI ACWI ex USA Gross</i>				<i>3.3</i>	<i>11.2</i>	<i>-14.7</i>	<i>-8.6</i>	<i>-3.0</i>	<i>0.2</i>	<i>1.3</i>	<i>4.9</i>	<i>-10.9</i>	<i>Dec-19</i>
Fixed Income	110,690,457	29.3	29.3	1.4	3.9	2.6	5.0	6.2	4.7	4.0	4.2	5.5	Dec-93
<i>Blmbg BC Universal (Blend)</i>				<i>0.9</i>	<i>3.0</i>	<i>4.3</i>	<i>7.0</i>	<i>8.5</i>	<i>4.8</i>	<i>4.0</i>	<i>4.2</i>	<i>5.4</i>	<i>Dec-93</i>
Ramirez	75,245,266	19.9	68.0	1.1	3.6	1.3	4.0	5.2	4.5	--	--	4.7	Jan-17
<i>BBgBarc US Aggregate TR</i>				<i>0.5</i>	<i>2.3</i>	<i>5.5</i>	<i>8.1</i>	<i>9.4</i>	<i>5.1</i>	<i>3.9</i>	<i>3.9</i>	<i>5.2</i>	<i>Jan-17</i>
Reams	28,258,154	7.5	25.5	1.7	6.8	13.4	16.0	17.2	8.0	5.8	5.4	6.1	Feb-98
<i>Blmbg BC Universal (Blend)</i>				<i>0.9</i>	<i>3.0</i>	<i>4.3</i>	<i>7.0</i>	<i>8.5</i>	<i>4.8</i>	<i>4.0</i>	<i>4.2</i>	<i>5.1</i>	<i>Feb-98</i>
DDJ Capital	7,186,994	1.9	6.5	4.2	6.5	-10.4	-9.7	-9.5	-0.3	2.5	--	3.1	Feb-15
<i>ICE BofA High Yield Master TR</i>				<i>4.6</i>	<i>8.5</i>	<i>-5.7</i>	<i>-2.0</i>	<i>0.4</i>	<i>2.7</i>	<i>4.1</i>	<i>6.5</i>	<i>4.5</i>	<i>Feb-15</i>

Values for International Equity are inclusive of residual cash flows from Fisher and Hansberger transition accounts.

OPFRS Total Plan As of May 31, 2020

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Covered Calls	27,324,293	7.2	7.2	4.3	13.5	-7.6	-0.1	5.8	5.2	6.7	--	6.9	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>4.4</i>	<i>9.3</i>	<i>-15.0</i>	<i>-10.1</i>	<i>-5.6</i>	<i>-0.1</i>	<i>2.9</i>	<i>6.0</i>	<i>3.5</i>	<i>Apr-14</i>
Parametric BXM	12,577,795	3.3	46.0	3.8	9.2	-9.9	-4.2	0.1	2.5	4.8	--	5.1	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>4.4</i>	<i>9.3</i>	<i>-15.0</i>	<i>-10.1</i>	<i>-5.6</i>	<i>-0.1</i>	<i>2.9</i>	<i>6.0</i>	<i>3.5</i>	<i>Apr-14</i>
Parametric DeltaShift	14,746,497	3.9	54.0	4.6	17.4	-5.6	3.8	11.3	7.8	8.0	--	9.1	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>4.4</i>	<i>9.3</i>	<i>-15.0</i>	<i>-10.1</i>	<i>-5.6</i>	<i>-0.1</i>	<i>2.9</i>	<i>6.0</i>	<i>3.5</i>	<i>Apr-14</i>
Crisis Risk Offset	31,695,698	8.4	8.4	-0.8	-1.9	-19.6	-13.3	-9.2	--	--	--	-9.0	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>				<i>-1.6</i>	<i>-2.8</i>	<i>-11.2</i>	<i>-10.3</i>	<i>-9.6</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.4</i>	<i>Aug-18</i>
Parametric Systematic Alternative Risk Premia	16,000,591	4.2	50.5	0.0	-2.9	-40.1	-33.9	-30.1	--	--	--	-21.2	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>				<i>-1.6</i>	<i>-2.8</i>	<i>-11.2</i>	<i>-10.3</i>	<i>-9.6</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.4</i>	<i>Aug-18</i>
Vanguard Long-Term Treasury ETF	15,695,107	4.2	49.5	-1.7	-0.7	20.4	24.5	--	--	--	--	24.5	Jul-19
<i>BBgBarc US Govt Long TR</i>				<i>-1.8</i>	<i>0.1</i>	<i>20.8</i>	<i>25.0</i>	<i>26.6</i>	<i>12.0</i>	<i>8.3</i>	<i>8.2</i>	<i>25.0</i>	<i>Jul-19</i>
Cash	7,515,866	2.0	2.0	0.0	0.0	1.0	2.3	2.6	2.1	1.4	--	0.8	Mar-11
<i>FTSE T-Bill 3 Months TR</i>				<i>0.0</i>	<i>0.1</i>	<i>0.5</i>	<i>1.5</i>	<i>1.8</i>	<i>1.7</i>	<i>1.1</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>
Cash	143,866	0.0	1.9	0.1	0.1	1.1	2.4	2.7	2.1	1.5	--	0.8	Mar-11
<i>FTSE T-Bill 3 Months TR</i>				<i>0.0</i>	<i>0.1</i>	<i>0.5</i>	<i>1.5</i>	<i>1.8</i>	<i>1.7</i>	<i>1.1</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>
Cash - Treasury	7,372,000	2.0	98.1	0.0	0.0	0.0	0.0	0.0	0.0	--	--	0.0	Sep-16
<i>FTSE T-Bill 3 Months TR</i>				<i>0.0</i>	<i>0.1</i>	<i>0.5</i>	<i>1.5</i>	<i>1.8</i>	<i>1.7</i>	<i>1.1</i>	<i>0.6</i>	<i>1.5</i>	<i>Sep-16</i>

Values for Parametric Systematic Alternative Risk Premia are based on values as of 4/30/2020.

Cash Flow Summary				
Month to Date				
	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Cash	\$132,338	\$11,453	\$74	\$143,866
Cash - Treasury	\$8,298,000	-\$926,000	\$0	\$7,372,000
DDJ Capital	\$6,894,148	\$0	\$292,846	\$7,186,994
EARNEST Partners	\$29,257,726	\$0	\$2,435,340	\$31,693,066
iShares Edge MSCI Min Vol	\$16,917,811	\$0	\$725,744	\$17,643,555
iShares MSCI ACW exUS ETF	\$29,713,566	\$0	\$946,702	\$30,660,268
Northern Trust Russell 1000	\$84,727,762	\$0	\$4,461,277	\$89,189,039
Parametric BXM	\$12,117,822	\$0	\$459,974	\$12,577,795
Parametric DeltaShift	\$14,092,293	\$0	\$654,205	\$14,746,497
Parametric Systematic Alternative Risk Premia	\$16,000,591	\$0	\$0	\$16,000,591
Ramirez	\$74,457,774	\$0	\$787,491	\$75,245,266
Reams	\$27,793,940	\$0	\$464,214	\$28,258,154
Reams Low Duration	\$44	\$0	\$0	\$44
Rice Hall James	\$10,330,527	\$0	\$953,700	\$11,284,227
Vanguard Developed Markets	\$12,233,756	\$0	\$666,484	\$12,900,239
Vanguard Long-Term Treasury ETF	\$15,965,347	\$0	-\$270,240	\$15,695,107
Vanguard Russell 2000 Value	\$6,201,621	\$0	\$175,982	\$6,377,603
Total	\$365,580,912	-\$926,000	\$12,622,337	\$377,277,249

Values within the total row are inclusive of Securities Lending, Hansberger, and Fisher.

Benchmark History
As of May 31, 2020

OPFRS Total Plan

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
12/1/1988	3/31/1998	40% S&P 500 / 55% BBgBarc US Aggregate TR / 5% FTSE T-Bill 3 Months TR

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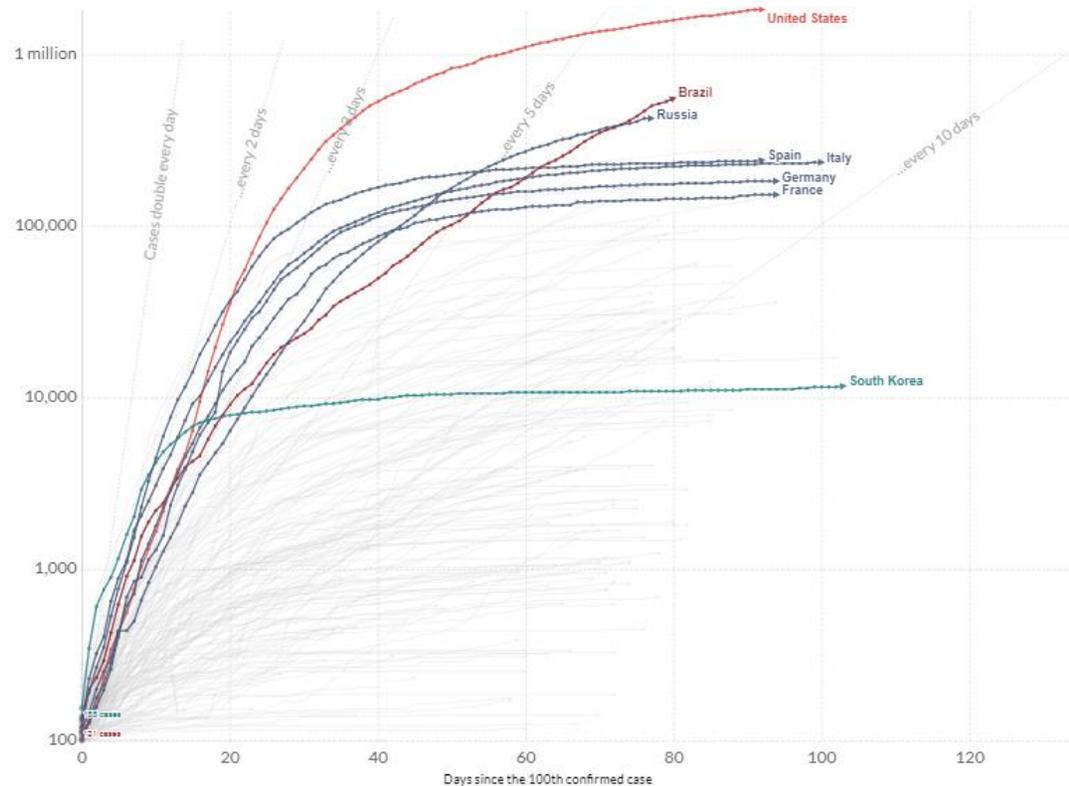
PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Economic and Market Update

Data as of May 29, 2020



Case Count by Select Country: Flattening the Curve¹



- There are over 6.4 million cases of coronavirus globally across 188 countries, with the US the epicenter and areas like Brazil and Russia emerging as hot spots.
- Following some improvements in outcomes, countries are starting to gradually reopen parts of their economies.

¹ Source: European CDC via Visual Capitalist. Data is as of June 3, 2020. Most data throughout the rest of the document is through May 29, 2020.

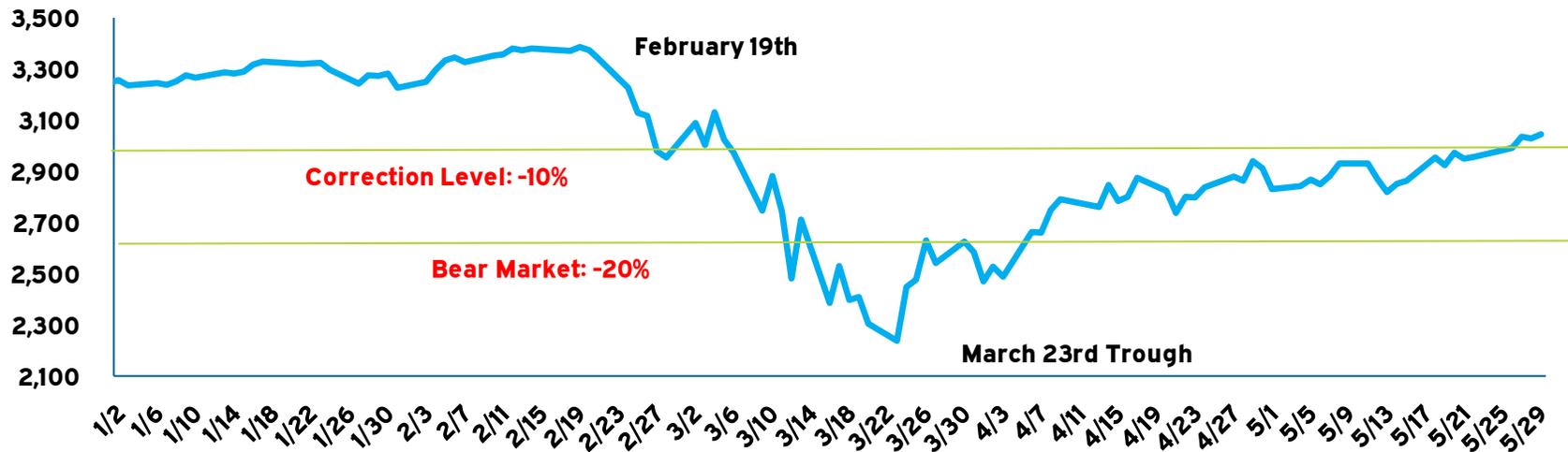
Market Returns¹

Indices	YTD	3 Year	5 Year	10 Year	20 Year
S&P 500	-5.0%	10.2%	9.9%	13.2%	6.1%
MSCI EAFE	-14.3%	-0.2%	0.8%	5.3%	2.8%
MSCI Emerging Markets	-16.0%	-0.5%	0.9%	2.6%	-
MSCI China	-5.0%	6.0%	2.3%	5.6%	-
Bloomberg Barclays Aggregate	5.5%	5.2%	3.9%	3.9%	5.2%
Bloomberg Barclays TIPS	4.8%	4.5%	3.3%	3.6%	5.5%
Bloomberg Barclays High Yield	-4.7%	3.1%	4.3%	6.7%	7.3%
10-year US Treasury	9.7%	7.0%	4.8%	5.0%	5.4%
30-year US Treasury	17.3%	14.4%	9.7%	9.0%	7.8%

- Global risk assets have recovered meaningfully from the recent lows, largely driven by record fiscal and monetary policy stimulus; the S&P 500 has recovered by over 36% from the mid-March lows.
- Risk assets have reacted positively to good news where it can be had, such as the gradual re-opening of the global economy, some economic data beating expectations, and the potential for a vaccine being developed sooner than initially expected.
- Despite the recovery in risk assets, yields on safe-haven assets like US Treasuries remain at record lows due to expectations for accommodative monetary policy for the foreseeable future; expectations for additional monetary policy stimulus is also being cited as a factor keeping interest rates low.

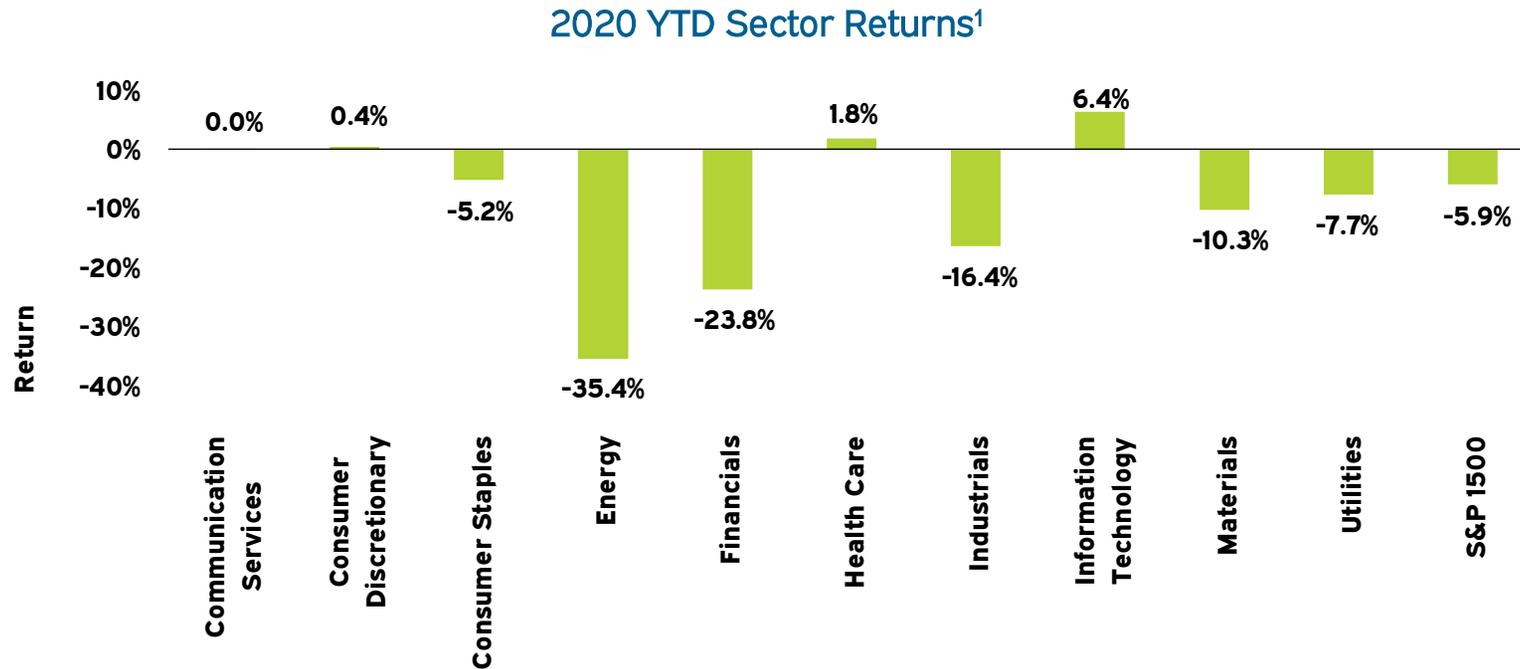
¹ Source: InvestorForce and Bloomberg. Data is as of May 29, 2020.

S&P 500 Recovers from Bear Market Levels¹



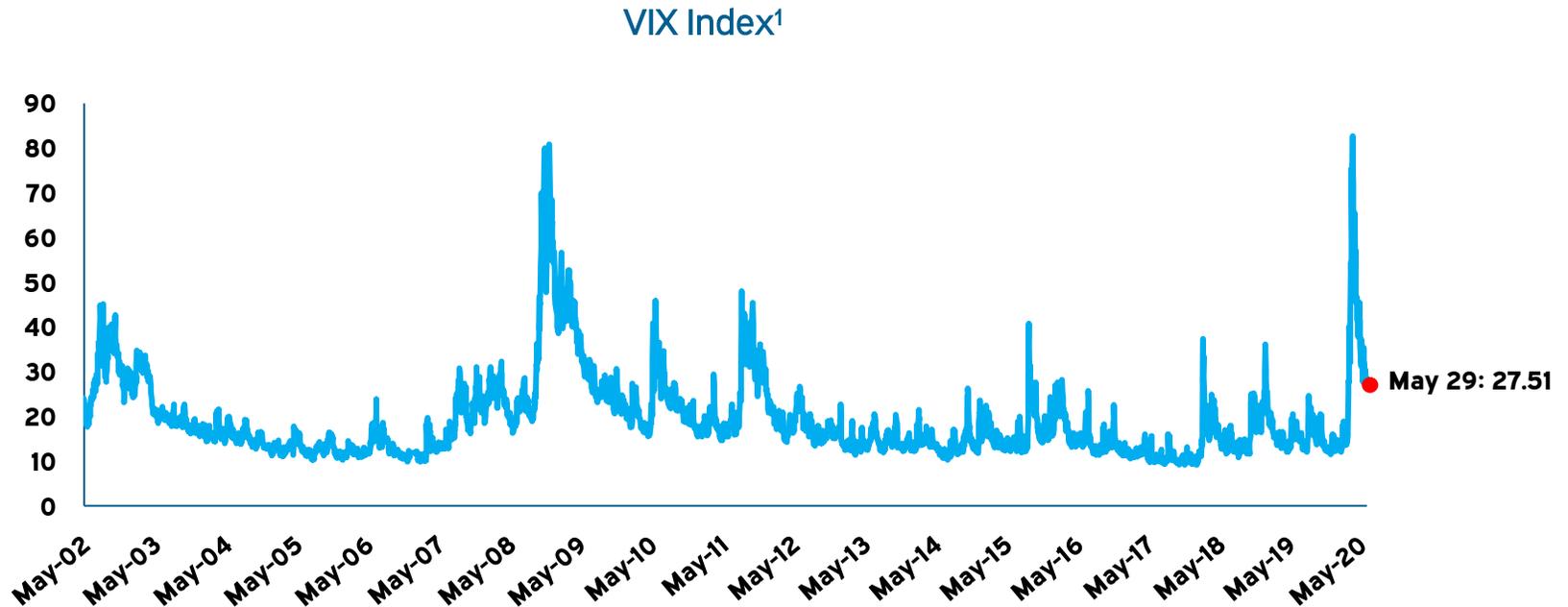
- Given the anticipated economic carnage surrounding the pandemic, US stocks declined from their February peak into bear market (-20%) territory at the fastest pace in history.
- From the February 19 peak, the S&P 500 declined 34% in just 24 trading days.
- The index rebounded from its lows, and is only down 5% year-to-date through the end of May, primarily due to the unprecedented monetary and fiscal stimulus announced in the US, as well as improvements in virus data, and some states reopening.
- It is unclear whether the US equity market's recent recovery is temporary, with additional declines to come as the impact of COVID-19 on the economy becomes more apparent.

¹ Source: Bloomberg. Data is as of May 29, 2020.



- The energy sector has seen some improvements given supply cuts and economies starting to reopen, but it remains the sector with the greatest decline, triggered by the fall in oil prices.
- Financials, industrials, and materials experienced the next largest declines, while sectors like health care and consumer discretionary experienced small gains.
- Information technology is the best performing sector as consumers moved to online purchases and entertainment under the stay-at-home restrictions.

¹ Source: Bloomberg. Data is as of May 29, 2020.



- Given the recent fiscal and monetary support and corresponding improvement in investor risk sentiment, expectations of short-term volatility, as measured by the VIX index, continue to decline from record levels but remains elevated.
- At the recent height, the VIX index reached 82.7, surpassing the pinnacle of volatility during the GFC, showing the magnitude of the crisis, and of investor fear.
- There remains the risk of additional spikes in volatility, as investors process the impacts of COVID-19 and the effectiveness of the policy response.

¹ Source: Chicago Board of Exchange. Data is as of May 29, 2020.

Global Financial Crisis Comparison

	2007-2009 Global Financial Crisis	COVID-19 Crisis
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Primary Causes

Excess Risk Taking Due to:

- Deregulation, un-constrained securitization, shadow banking system, fraud

Pandemic/Natural Disaster:

- Large scale global restrictions on businesses and individuals leading to immediate and significant deterioration in economic fundamentals

	2007-2009 Global Financial Crisis	COVID-19 Crisis
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Fiscal Measures

- American Recovery Reinvestment Act of 2009: \$787 billion
- Economic Stimulus Act of 2008: \$152 billion

- PPP Act: \$659 billion
- CARES Act of 2020: \$2.3 trillion
- Families First Coronavirus Response Act: \$150 billion
- Coronavirus Preparedness & Response Supplemental Appropriations Act 2020: \$8.3 billion
- National Emergency: \$50 billion

	2007-2009 Global Financial Crisis	COVID-19 Crisis
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Monetary Measures

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** COVID-19 Crisis response has been materially larger than 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 helps 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.

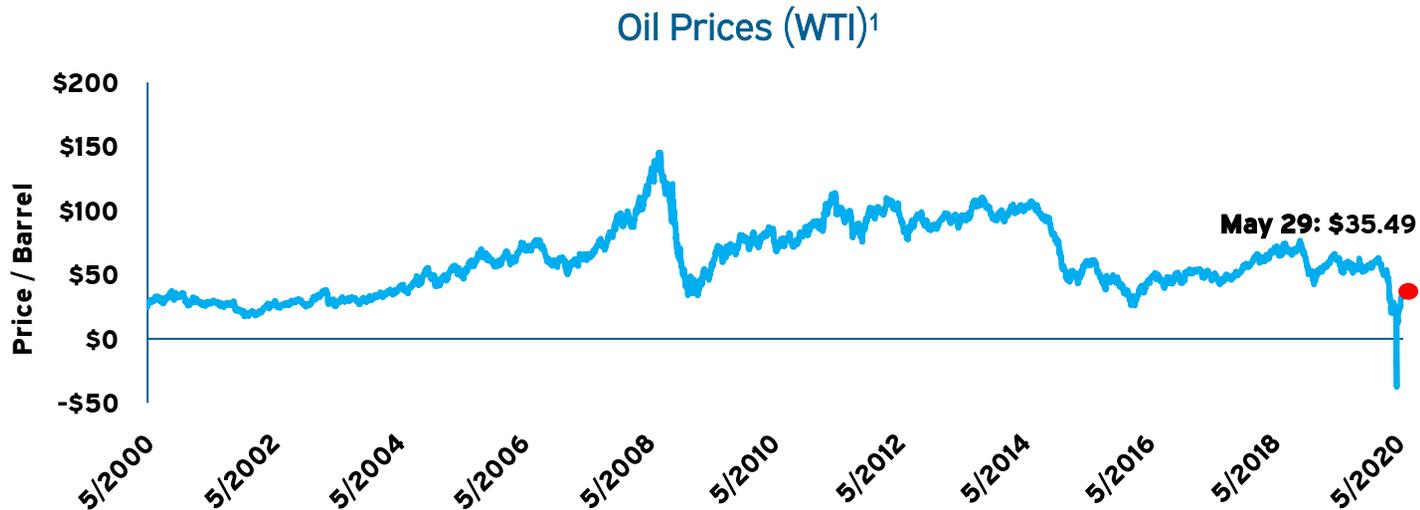
Historic \$2T US Fiscal Stimulus

Destination	Amount (\$ Billion)
Individuals	\$560
Large Corporations	\$500
Small Business	\$377
State & Local Governments	\$340
Public Health	\$154
Student Loans	\$44
Safety Net	\$26

- Late in March, a historic \$2 trillion fiscal package was approved in the US, representing close to 10% of GDP and including support across the economy.
- Individuals are actively receiving cash payments of up to \$1,200 per adult and \$500 per child, and extended and higher weekly unemployment benefits (+\$600/week).
- The package also includes a \$500 billion lending program for distressed industries like airlines, and \$377 billion in loans to small businesses.
- Other parts of the package include allocations to state and local governments, support for public health, student loan relief, and a safety net.
- Shortly after the initial measures, additional fiscal stimulus was approved with the majority targeted to replenish the depleted small business lending program.

Policy Responses

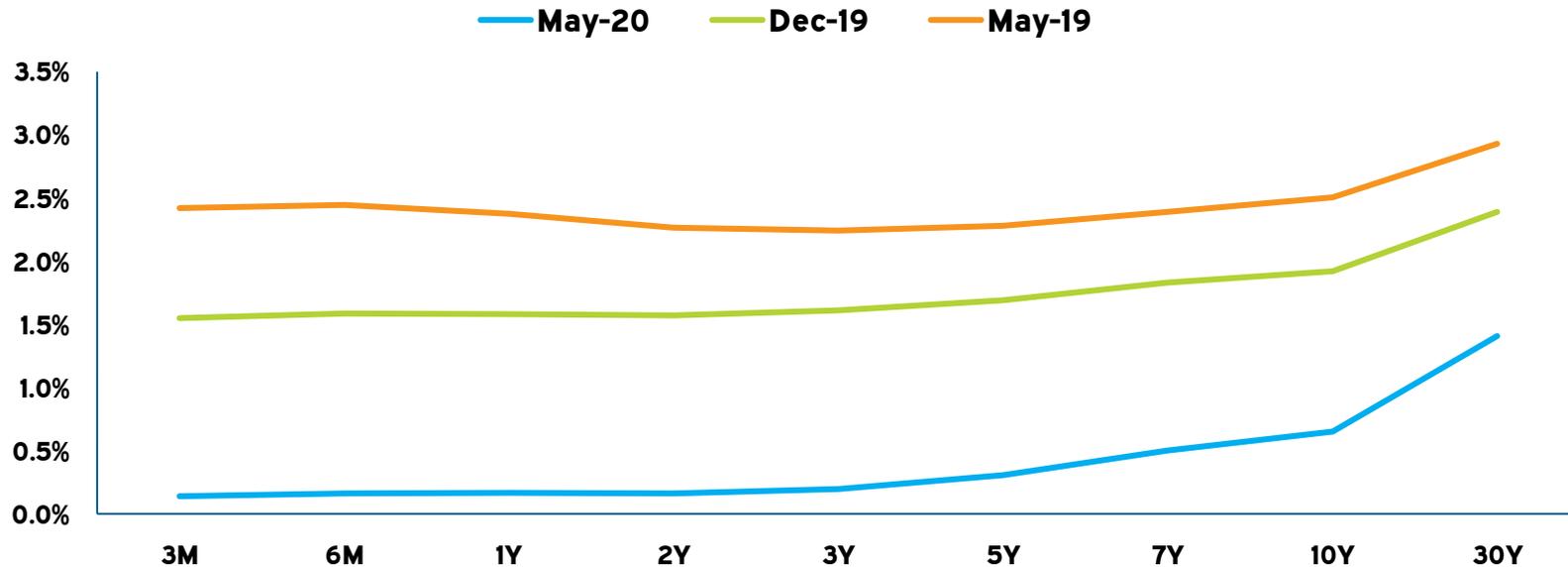
	Fiscal	Monetary
United States	\$50 billion to states for virus related support, interest waived on student loans, flexibility on tax payments and filings, expanded COVID-19 testing, paid sick leave for hourly workers, \$2 trillion package for individuals, businesses, and state/local governments. Additional \$484 billion package to replenish small business loans, provide funding to hospitals, and increase testing.	Cut policy rates to zero, unlimited QE4, offering trillions in repo market funding, restarted CPFF, PDCF, MMMF programs to support lending and financing market, 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, and easing of some financial regulations for lenders.
Euro Area	Germany: Launched 750 billion euro stimulus package. France: 45 billion euro for workers, guaranteed up to 300 billion euro in corporate borrowing. Italy: 25 billion euro emergency decree, suspending mortgage payments for impacted workers. 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	\$1.1 trillion in small business loans, direct funding program to stop virus spread among nursing homes and those affected by school closures, and direct payments to individuals	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, purchase of small business loans, and lowered reserve requirements.
Canada	\$7.1 billion in loans to businesses to help with virus damage.	Cut policy rates, expanded bond-buying and repos, lowered bank reserve requirements.
UK (BOE)	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.



- Global oil markets have rallied from April lows, including from the technically-induced negative levels that saw the May futures contract trade at nearly -\$40 per barrel.
- In addition to improvements in sentiment as the global economy begins to reopen and some measures of economic fundamentals reporting better than expected numbers, recent reports suggest OPEC+ is getting closer to an agreement on extending production cuts.
- As a challenge to the potential OPEC+ production cut agreement, US oil producers (particularly shale output) are reportedly turning wells back on as the price of oil rises.

¹ Source: Bloomberg. Represents WTI first available futures contract. Data is as of May 29, 2020.

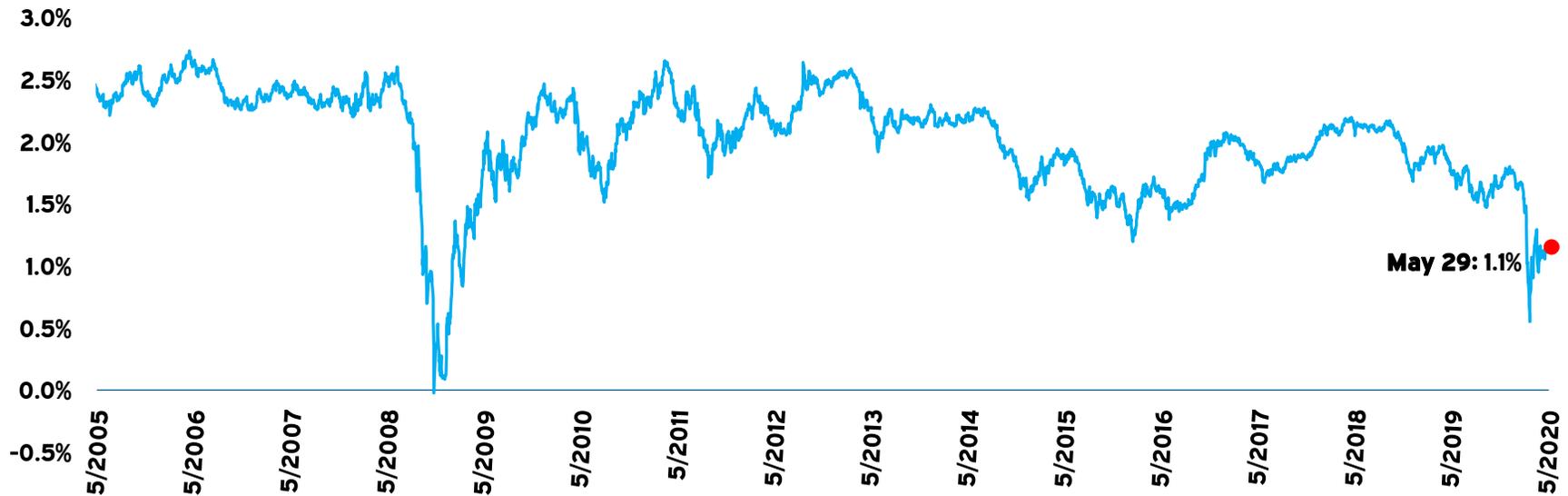
US Yield Curve Declines¹



- The US Treasury yield curve has declined materially since 2019.
- Cuts in monetary policy rates lowered yields in shorter maturities, while flight-to-quality flows, low inflation, and lower growth expectations, particularly given indications that economic growth could slow by record amounts, have driven the changes in longer-dated maturities.
- The Federal Reserve's unlimited quantitative easing purchase program has provided further downward pressure on interest rates, as well as building expectations for additional stimulus measures, including yield curve targeting that could anchor certain maturities.

¹ Source: Bloomberg. Data is as of May 29, 2020.

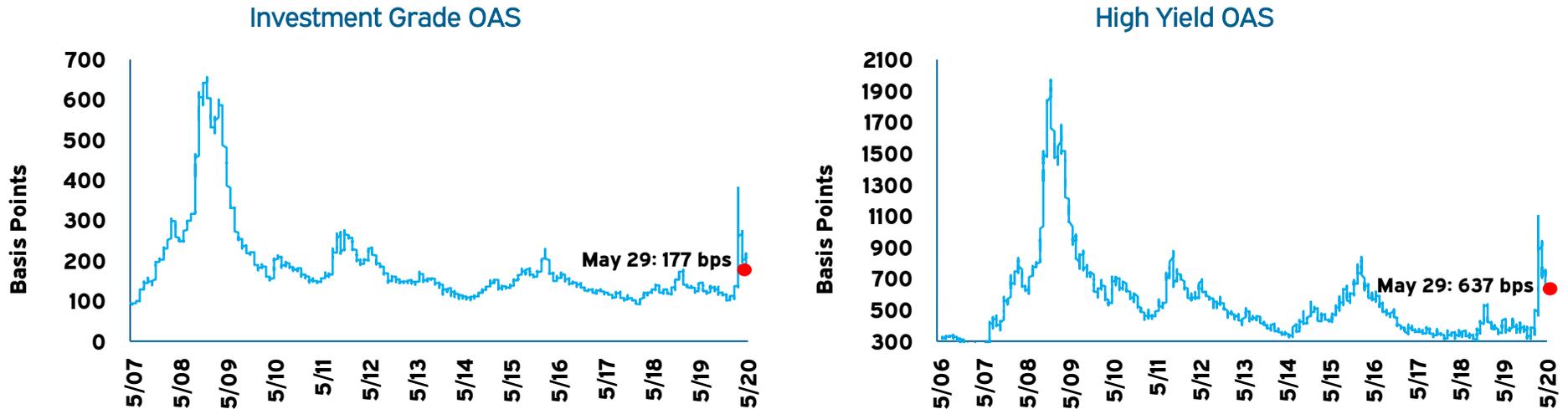
10-Year Breakeven Inflation¹



- Inflation breakeven rates declined sharply over the last two months, due to a combination of declines in growth and inflation expectations, as well as liquidity dynamics in TIPS during the height of rate volatility.
- Liquidity eventually improved and breakevens widened, but given the uncertainty regarding the economic growth and inflationary effects of the unprecedented US fiscal and monetary responses, inflation expectations remain well below historical averages.

¹ Source: Bloomberg. Data is as of May 29, 2020.

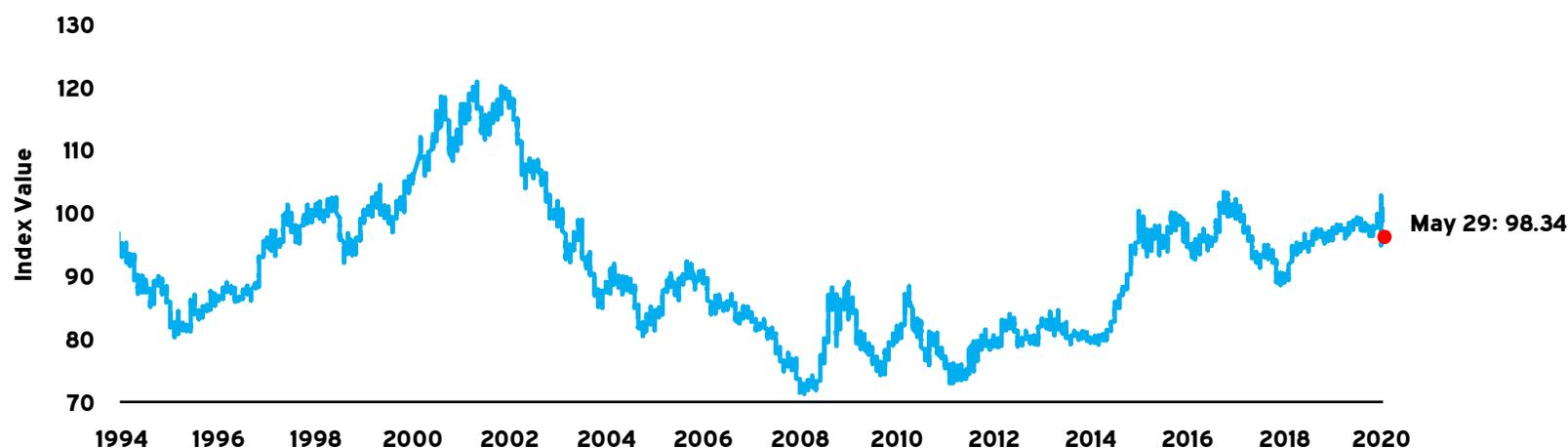
Credit Spreads (High Yield & Investment Grade)¹



- Credit spreads (the spread above a comparable Treasury bond) for investment grade and high yield corporate debt expanded sharply 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 that were recently downgraded from investment grade, was well received by investors, leading to a decline in spreads.
- Recently announced data from this program suggests purchases of high yield securities have been greater than expected, which has further supported the tightening of spreads for respective securities.
- 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 a large portion of the high yield bond market.

¹ Source: Federal Reserve Bank of St. Louis Economic Research. Data is as of May 29, 2020.

US Dollar versus Broad Currencies¹



- 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.
- 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.
- A relatively strong US dollar makes US goods more expensive for overseas consumers and causes commodity prices outside the US to rise, affecting foreign countries, and particularly emerging markets.
- 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.

¹ Source: Bloomberg. Represents the DXY Index. Data is as of May 29, 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.

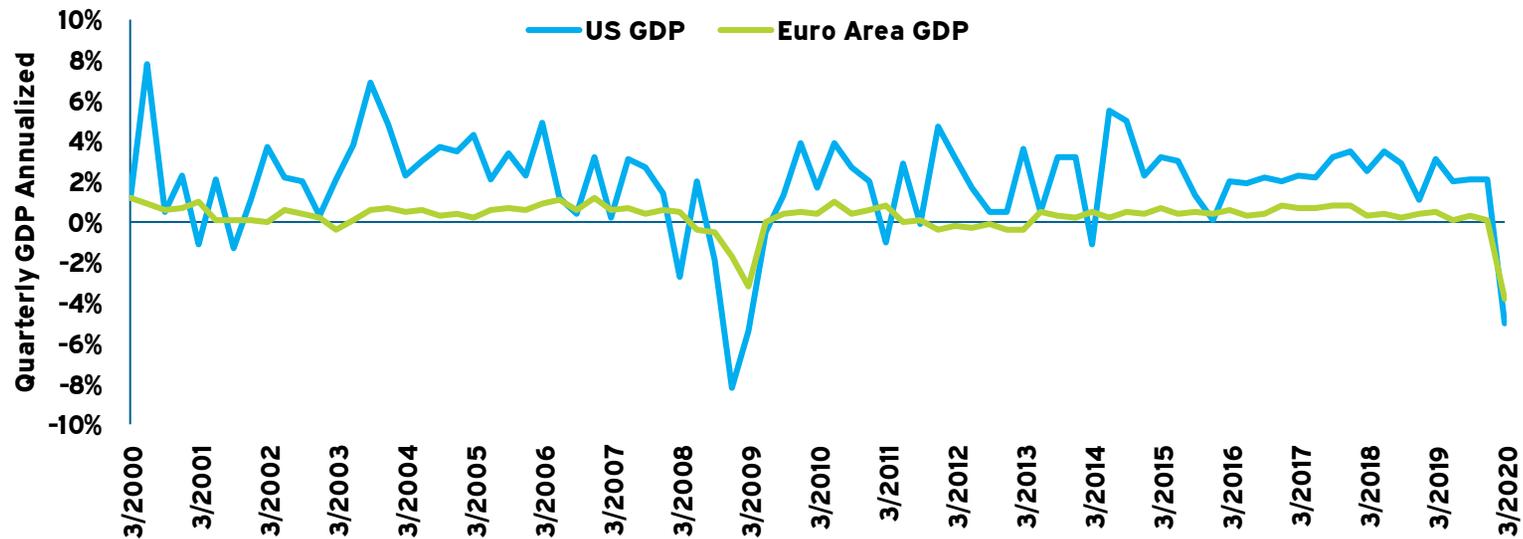
Declines in Business and Consumer Sentiment:

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

Wealth Effect:

- As financial markets decline and wealth deteriorates, consumer spending will be impacted.

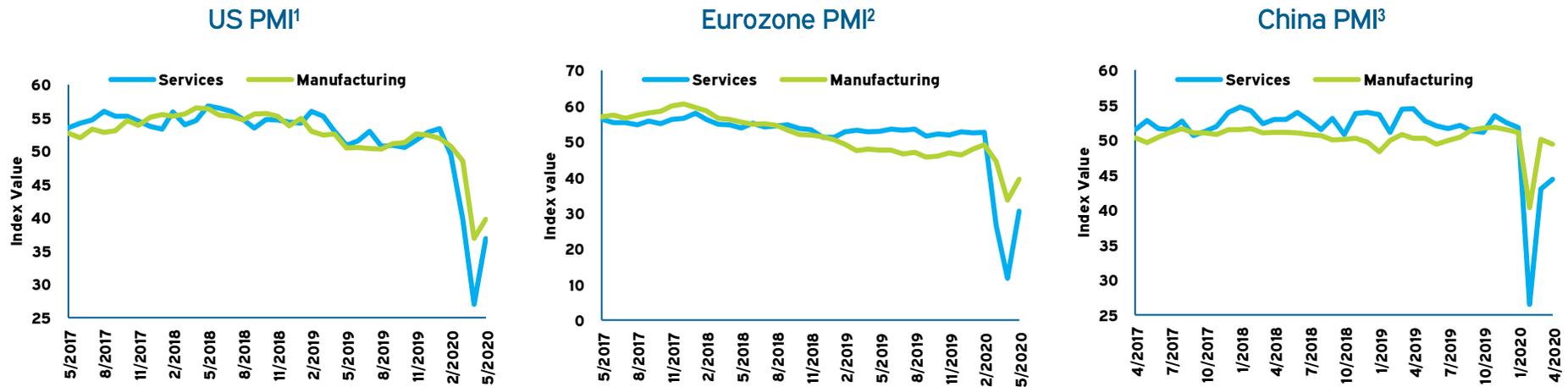
GDP Data Shows First Signs of Crisis¹



- 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, the second estimate for first quarter GDP came in at -5.0%, with personal consumption declining the most since 1980. Eurozone GDP also fell (-3.8%) with the major economies in France, Spain and Italy experiencing historic declines.
- Going forward, Bloomberg Economics estimates that second quarter US GDP could be as low as -34% (QoQ).

¹ Source: Bloomberg. Q1 2020 data represents first estimate of GDP for Euro Area and second estimate of GDP for United States.

Global PMIs

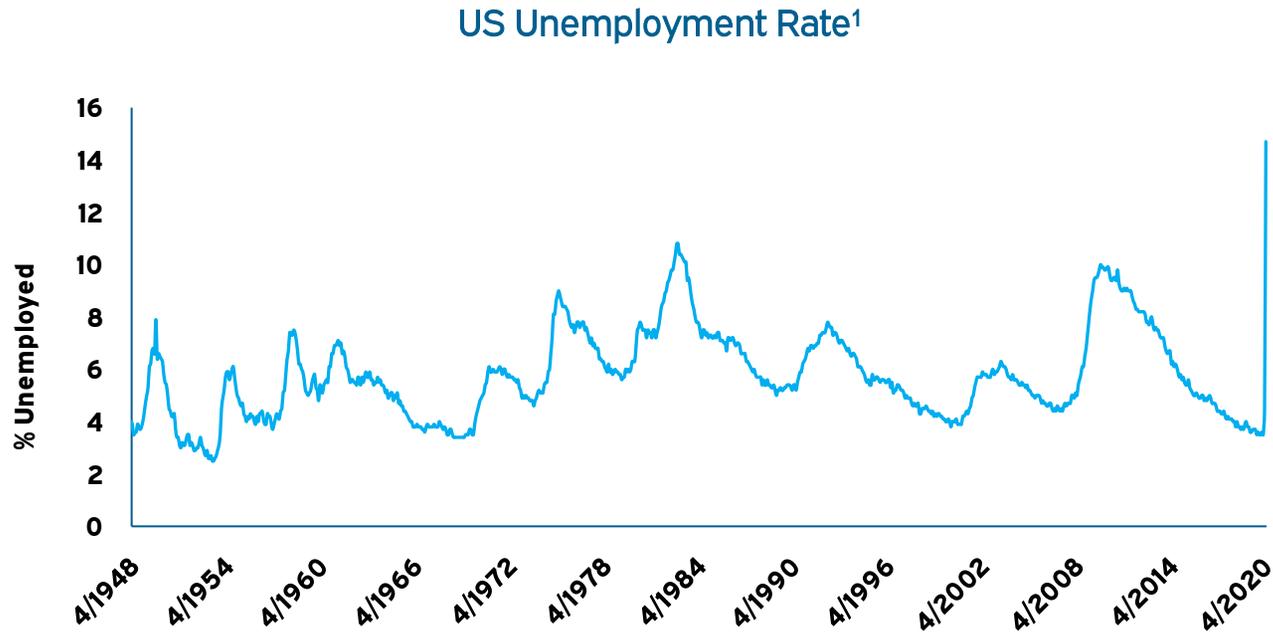


- Purchasing Managers Indices (PMI), which are based on surveys of private sector companies, collapsed across the world to record lows, as output, new orders, production, and employment have been materially impacted by closed economies.
- Readings below 50 represent contractions across underlying components and act as a leading indicator of economic activity, including the future paths of GDP, employment, and industrial production.
- The services sector has been particularly hard hit given the stay-at-home restrictions in many places.
- Recently, there have been slight improvements in data contributing to the optimism in equity markets, but readings remain in contraction territory.

¹ Source: Bloomberg. US Markit Services and Manufacturing PMI. Data is as of May 2020.

² Source: Bloomberg. Eurozone Markit Services and Manufacturing PMI. Data is as of May 2020.

³ Source: Bloomberg. Caixin Manufacturing and Services PMI. Data is as of April 2020.

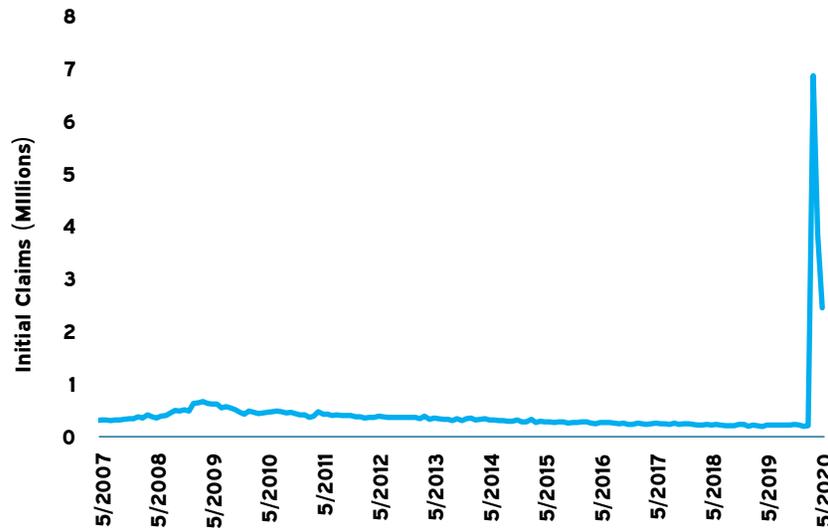


- The April reading of unemployment came in at 14.7%, slightly below estimates of 16%, but representing the highest level since the Great Depression.
- May payroll expectations are for an additional 8 million in job losses, and the unemployment rate to reach 19.5%.

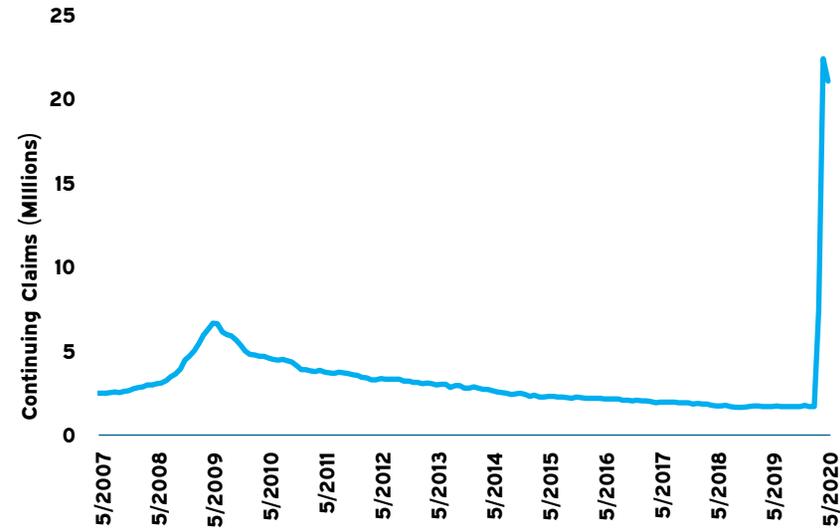
¹ Source: Bloomberg. Data is as of April 30, 2020.

US Jobless Claims

US Initial Jobless Claims¹



Continuing Claims²



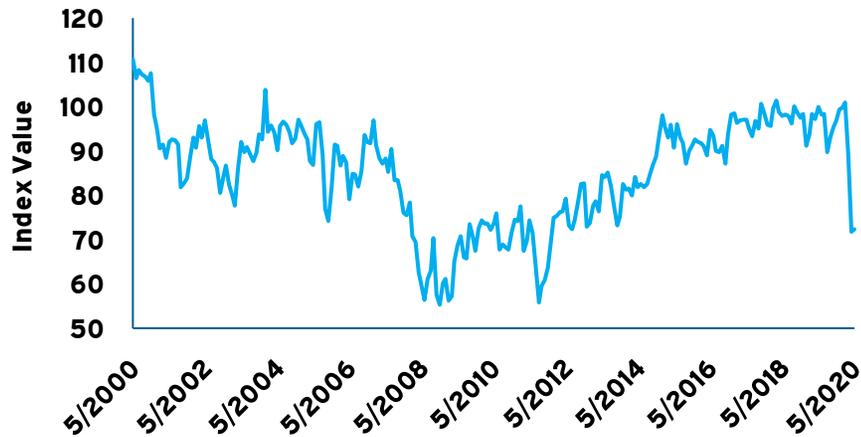
- Over the last seven weeks, close to 41 million people filed for initial unemployment. This level far exceeds the 22 million jobs added since the GFC, highlighting how unprecedented the impact of the virus is.
- Despite the recent decline in initial jobless claims, the 2.1 million level of the last reading remains many multiples above the worst reading during the Global Financial Crisis.
- Continuing jobless claims (i.e., those currently receiving benefits) also spiked to a record level of 24.9 million people in early May.

¹ Source: Bloomberg. First reading of seasonally adjusted initial jobless claims. Data is as of May 29, 2020.

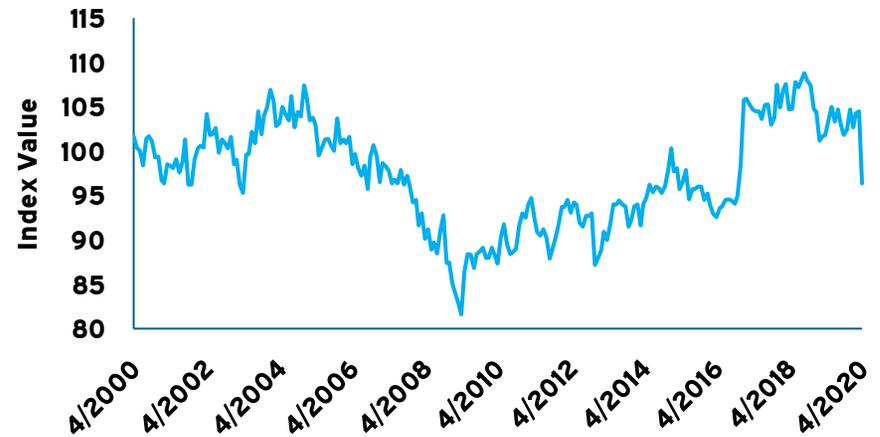
² Source: Bloomberg. US Continuing Jobless Claims SA. Data is as of May 29, 2020.

Sentiment Indicators

University of Michigan Consumer Sentiment¹



Small Business Confidence²



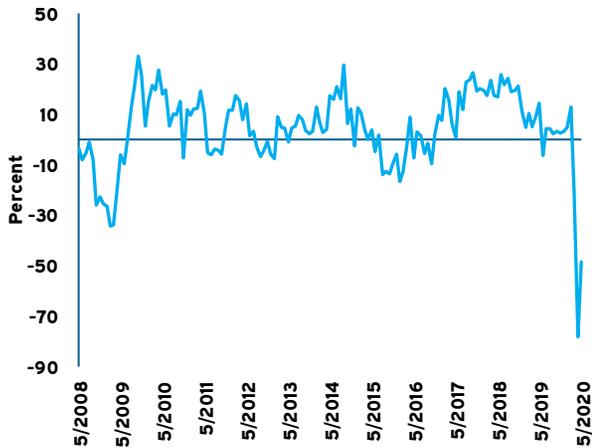
- A strong indicator of future economic activity are the attitudes of businesses and consumers today.
- Consumer spending comprises close to 70% of US GDP, making the attitudes of consumers an important driver of future economic growth. Additionally, small businesses comprise a majority of the economy, making sentiment in that segment important too.
- As restrictions caused many businesses to close and employees to be laid off, sentiment indicators have seen corresponding declines with potentially more to come as the impact of the virus evolves.

¹ Source: Bloomberg. University of Michigan Consumer Sentiment Index. Data is as of May 2020.

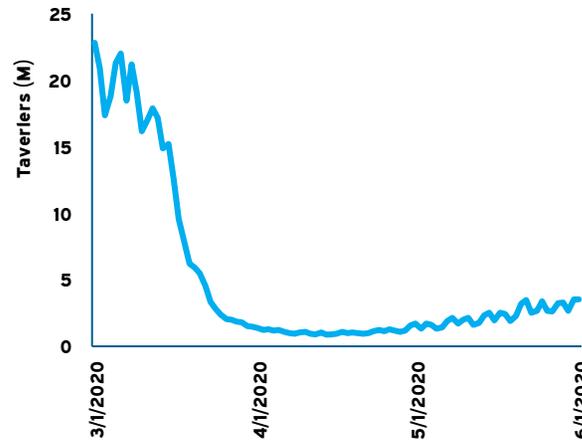
² Source: Bloomberg. NFIB Small Business Optimism Index. Data is as of April 30, 2020.

Some US Data has Improved Slightly

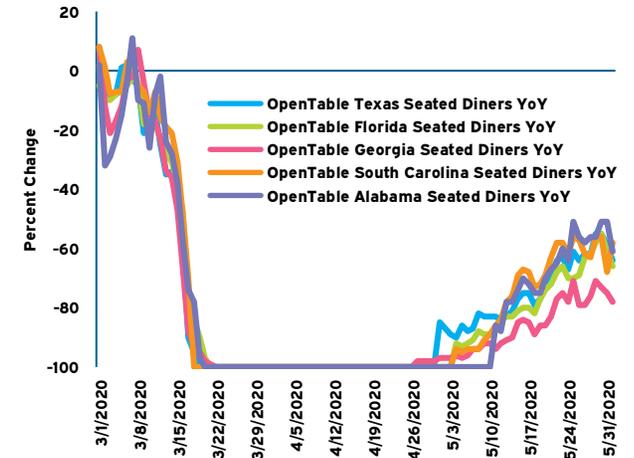
US Empire State Manufacturing Survey¹



US Daily Total Air Travelers²



OpenTable Seated Diners YoY % Change³



- There has been some recent improvements in high frequency data, but overall levels of activity remain very low.
- Manufacturing in New York during March and April declined at the fastest pace on record, falling 78.2%, the lowest on record, dating back to 2001, with readings below zero indicating economic contraction. The survey recovered modestly in May to -48.5%.
- Air travel has been one of the hardest hit sectors, and despite some slight improvements recently, is likely to be one of the slowest areas to recover.
- States that have eased restrictions on restaurants have seen some improvements, but capacity restrictions have hurt overall profitability.

¹ Source: Bloomberg. Data is as of May 31, 2020 and represents the US Empire State Manufacturing Survey General Business Conditions SA.

² Source: Bloomberg. Data is as of June 1, 2020 and represents the US TSA Checkpoint Numbers Total Traveler Throughput.

³ Source Bloomberg. Data is as of May 31, 2020 and represents some states that eased restaurant restrictions.

Government Re-Opening Recommendation¹

Phase One	Phase Two	Phase Three
<ul style="list-style-type: none"> • Vulnerable individuals continue to stay at home. • Avoid groups of more than 10 people if social distancing is not possible. • Minimize non-essential travel. • Work remotely if possible with restrictions in the office for those businesses that open. • Schools remain closed, but some larger venues can open with strict protocols. • Outpatient elective surgeries can resume. 	<ul style="list-style-type: none"> • Vulnerable individuals continue to stay at home. • Avoid groups of more than 50 people if social distancing is not possible. • Non-essential travel resumes. • Continue to work remotely if possible with restrictions in the office for those businesses that open. • Schools can reopen. • Inpatient elective surgeries can resume 	<ul style="list-style-type: none"> • Vulnerable individuals can return to public life with social distancing. • Workplaces can reopen without restrictions. • Larger venues can operate under reduced social distancing protocols.

- The Trump administration announced guidelines for re-opening the US economy last month.
- Guidelines recommend states document a “downward trajectory” in new cases for two weeks before beginning a three-phase process to scale back distancing measures and reopen local economies.
- States should also document an additional two-week period decline in instances between each of the three phases, and be prepared to reinstate social distancing measures should cases rebound.
- A number of states are currently in the reopening process, with others considering when to start the process.

¹ Source: <https://www.whitehouse.gov/openingamerica/>

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; however, individual countries are attempting to lay the groundwork to support a recovery in their economy.
- Central banks and governments are pledging support, but will it be enough?
 - Based on initial market reactions to announced policies, the answer is no, until the virus gets better contained.
- Expect heightened market volatility given the virus and previous high valuations.
 - This has been a consistent theme over the last two months; volatility is likely to remain elevated for some time.
- 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 1926-2020¹

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 May 2020	-34%	TBD
Average	-36%	41 months
Average ex. Great Depression	-33%	25 months

- Markets are continuing to reprice amid the uncertain impact of the virus on markets and the global economy, which means this drawdown is still being defined in the context of history.
- That said, financial markets have experienced material declines with some frequency, and while certain declines took a meaningful time to recover, in all cases they eventually did.

¹ Source: Goldman Sachs. Recent peak to trough declines are through May 29, 2020.

Implications for Clients

- Be prepared to rebalance and take advantage of the age-old wisdom “buy low, sell high”.
 - Before rebalancing, consider changes in liquidity needs given the potential for inflows to decline in some cases.
 - Also, consider the cost of rebalancing as investment liquidity declines.
- Diversification works. The latest decline was an example of a flight to quality leading to gains in very high quality bonds.

Performance YTD (through May 29, 2020)

S&P 500	ACWI (ex. US)	Aggregate Bond Index	Balanced Portfolio ¹
-5.0%	-14.9%	5.5%	-4.7%

- 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.
 - We would be glad to assist with performance estimates, memorandums, or phone calls.

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

Oakland Police and Fire Retirement System

Q1 2020

Quarterly Report

1. Total Portfolio Summary
2. World Markets First Quarter of 2020
3. Capital Markets Outlook & Risk Metrics
 - Meketa Market Sentiment Indicator
4. Total Portfolio Review
5. Manager Monitoring / Probation List
6. Individual Manager Performance
7. Disclaimer, Glossary, and Notes

Total Portfolio Summary

Total Portfolio Summary

As of March 31, 2020, the City of Oakland Police and Fire Retirement System (OPFRS) portfolio had an aggregate value of \$341.2 million. This represents a (\$63.4) million decrease in investment value and (\$3.3) million in benefit payments over the quarter. During the previous one-year period, the OPFRS Total Portfolio decreased in value by (\$24.6) million and withdrew (\$14.6) million for benefit payments.

Asset Allocation Trends

The asset allocation targets (see table on page 53) reflect those as of March 31, 2020. Target weightings reflect the interim phase (CRO = 10%) of the Plan's previously approved asset allocation (effective 5/31/2017).

With respect to policy targets, the portfolio ended the latest quarter overweight Fixed Income, Covered Calls and Cash, while underweight Domestic Equity, International Equity and Crisis Risk Offset.

Recent Investment Performance

During the most recent quarter, the OPFRS Total Portfolio generated an absolute return of (15.6%), gross of fees, underperforming its policy benchmark by (3.4%). The portfolio underperformed its benchmark by (3.5%) and (0.5%) over the 1- and 3-year periods, respectively, and underperformed by (50) basis points over the 5-year period.

The Total Portfolio underperformed the Median fund's return by (2.3%) over the most recent quarter. The Total Portfolio underperformed the Medianfund over the 1-year period by (1.8%), but outperformed over the 3- and 5-year periods 0.1% and 0.3% respectively. Performance differences with respect to the Median Fund continue to be attributed largely to differences in asset allocation.

	Quarter	Fiscal Year	1 Year	3 Year	5 Year
Total Portfolio ¹	-15.6	-9.8	-6.8	3.1	4.1
Policy Benchmark ²	-12.2	-6.6	-3.3	3.6	4.6
Excess Return	-3.4	-3.2	-3.5	-0.5	-0.5
Reference: Median Fund ³	-13.3	-7.9	-5.0	3.0	3.8
Reference: Total Net of Fees ⁴	-15.7	-9.9	-7.1	2.8	1.5

¹ Gross of Fees. Performance since 2005 includes securities lending.

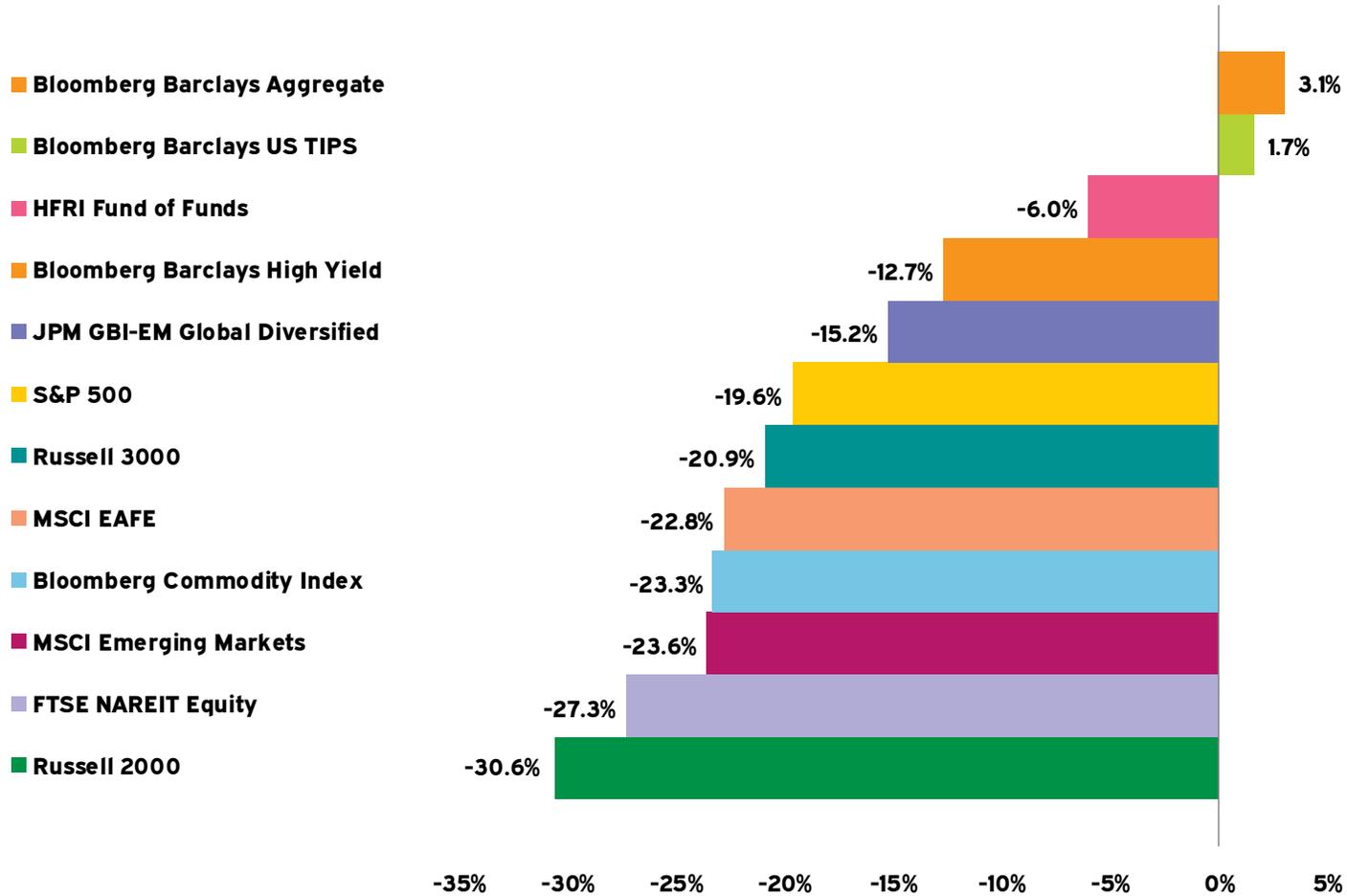
² Evolving Policy Benchmark consists of 40% Russell 3000, 12% MSCI ACWI ex U.S., 33% Bbg BC Universal, 5% CBOE BXM , 6.7% SG Multi Asset Risk Premia, 3.3% Bbg BC Long Treasury

³ Investment Metrics < \$1 Billion Public Plan Universe.

⁴ Longer-term (>1 year) Net of fee returns are estimated based on OPFRS manager fee schedule (approximately 34 bps)

The World Markets First Quarter of 2020

The World Markets¹ First Quarter of 2020



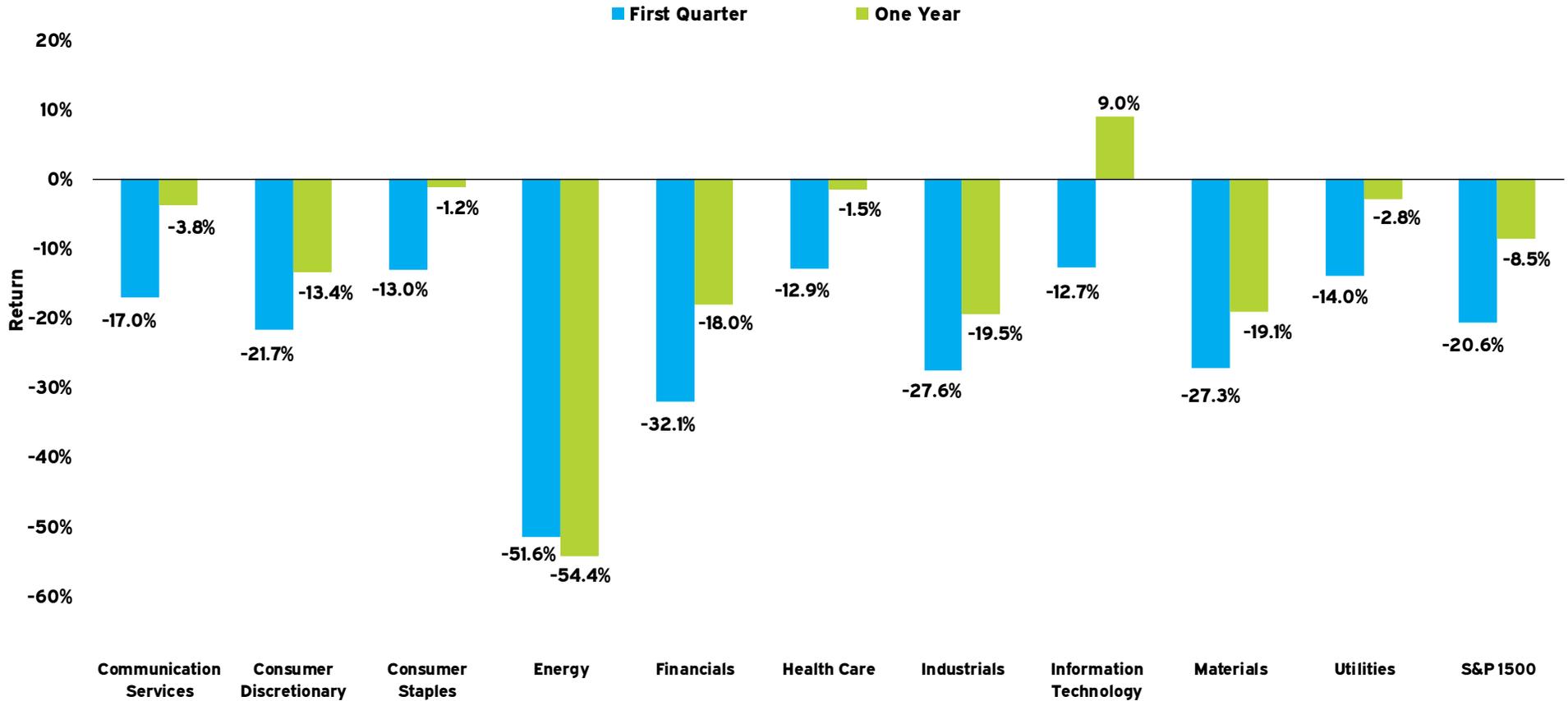
¹ Source: InvestorForce.

Index Returns¹

	1Q20 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Domestic Equity					
S&P 500	-19.6	-7.0	5.1	6.7	10.5
Russell 3000	-20.9	-9.1	4.0	5.8	10.1
Russell 1000	-20.2	-8.0	4.6	6.2	10.4
Russell 1000 Growth	-14.1	0.9	11.3	10.4	13.0
Russell 1000 Value	-26.7	-17.2	-2.2	1.9	7.7
Russell MidCap	-27.1	-18.3	-0.8	1.8	8.8
Russell MidCap Growth	-20.0	-9.4	6.5	5.6	10.9
Russell MidCap Value	-31.7	-24.1	-6.0	-0.8	7.2
Russell 2000	-30.6	-24.0	-4.6	-0.2	6.9
Russell 2000 Growth	-25.8	-18.6	0.1	1.7	8.9
Russell 2000 Value	-35.7	-29.6	-9.5	-2.4	4.8
Foreign Equity					
MSCI ACWI (ex. US)	-23.4	-15.6	-2.0	-0.6	2.1
MSCI EAFE	-22.8	-14.4	-1.8	-0.6	2.7
MSCI EAFE (Local Currency)	-20.5	-12.6	-1.8	-0.1	4.4
MSCI EAFE Small Cap	-27.5	-18.1	-2.9	1.0	4.8
MSCI Emerging Markets	-23.6	-17.7	-1.6	-0.4	0.7
MSCI Emerging Markets (Local Currency)	-19.1	-13.0	1.3	2.0	3.8
Fixed Income					
Bloomberg Barclays Universal	1.3	7.2	4.4	3.4	4.0
Bloomberg Barclays Aggregate	3.1	8.9	4.8	3.4	3.9
Bloomberg Barclays US TIPS	1.7	6.9	3.5	2.7	3.5
Bloomberg Barclays High Yield	-12.7	-6.9	0.8	2.8	5.6
JPM GBI-EM Global Diversified	-15.2	-6.5	-0.8	0.3	0.4
Other					
FTSE NAREIT Equity	-27.3	-21.3	-3.1	-0.3	7.4
Bloomberg Commodity Index	-23.3	-22.3	-8.6	-7.8	-6.7
HFRI Fund of Funds	-6.0	-2.6	1.0	0.6	2.1

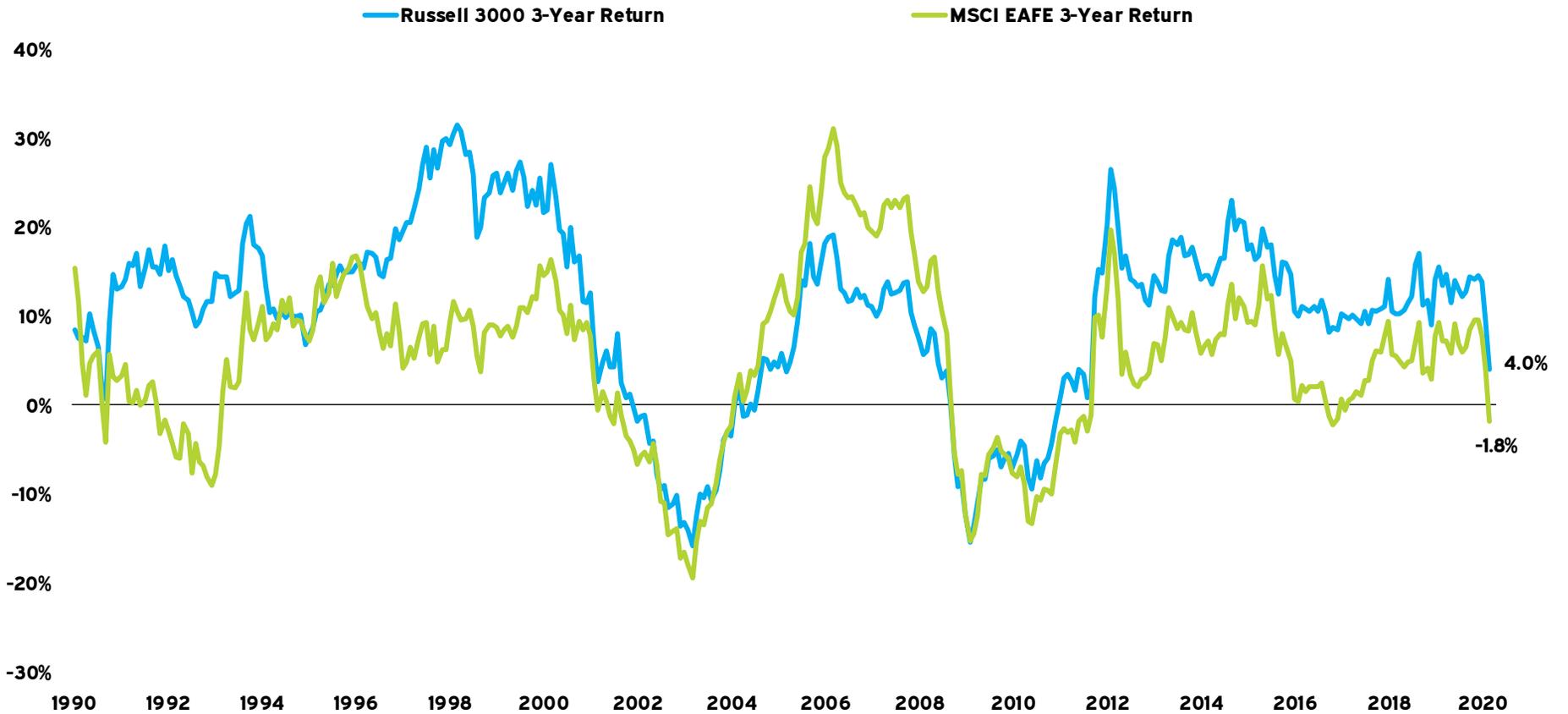
¹ Source: InvestorForce.

S&P Sector Returns¹



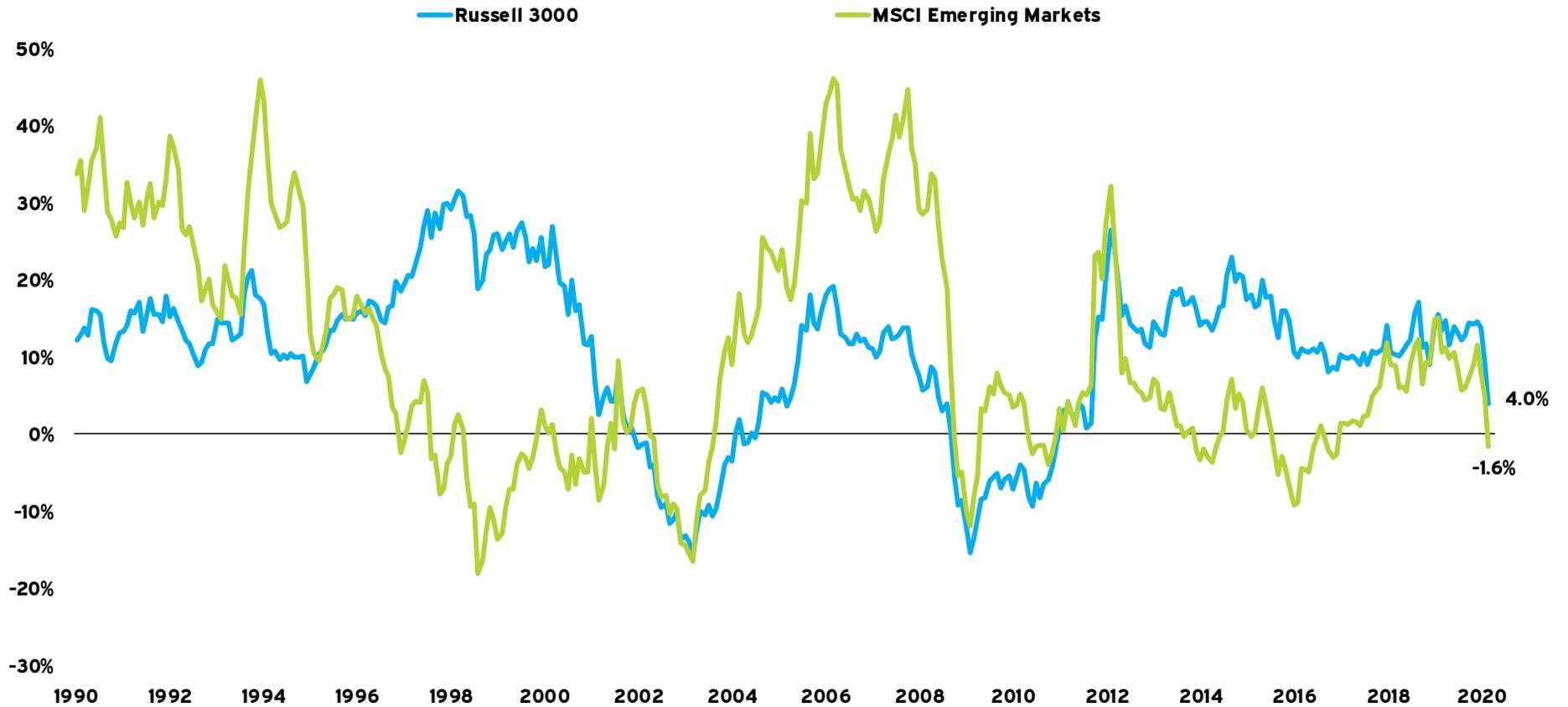
¹ Source: InvestorForce. Represents S&P 1500 (All Cap) data.

US and Developed Market Foreign Equity Rolling Three-Year Returns¹



¹ Source: InvestorForce.

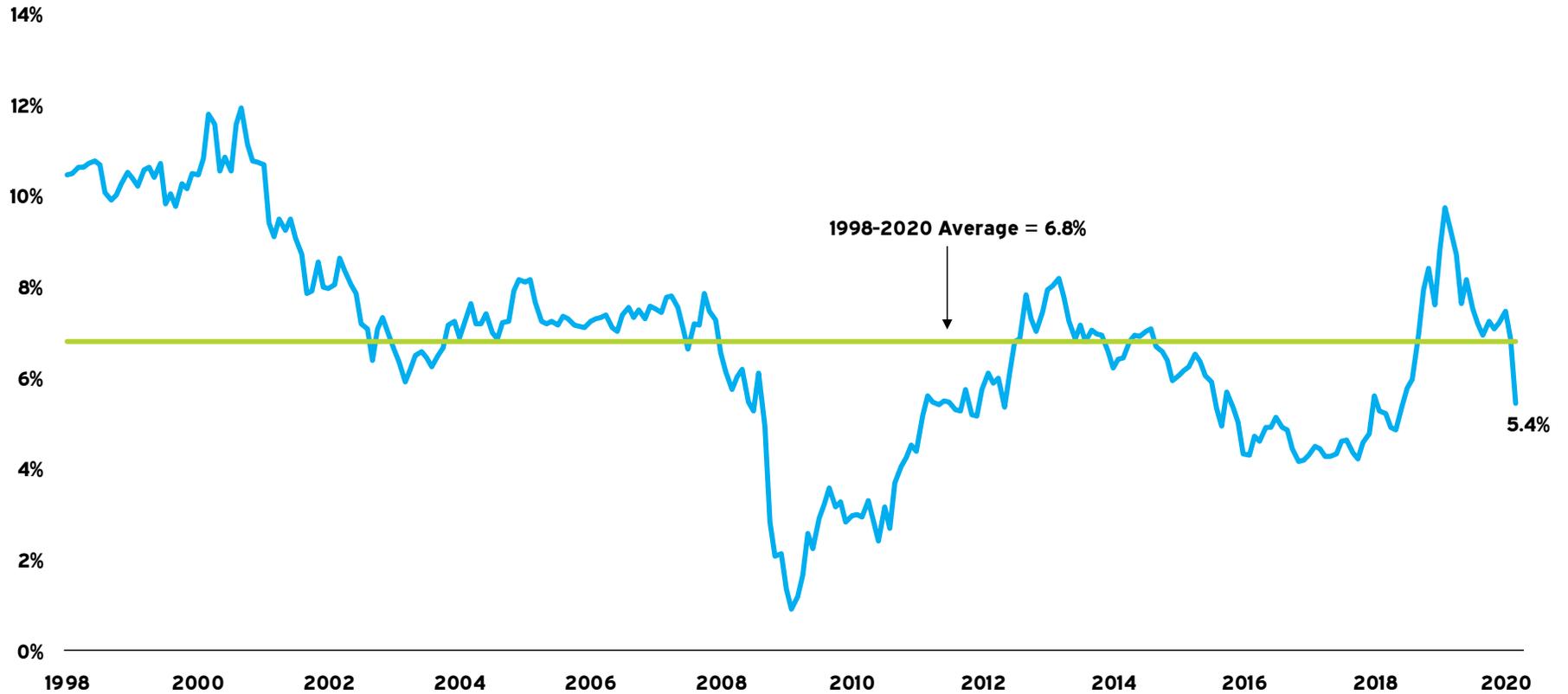
US and Emerging Market Equity Rolling Three-Year Returns¹



¹ Source: InvestorForce.

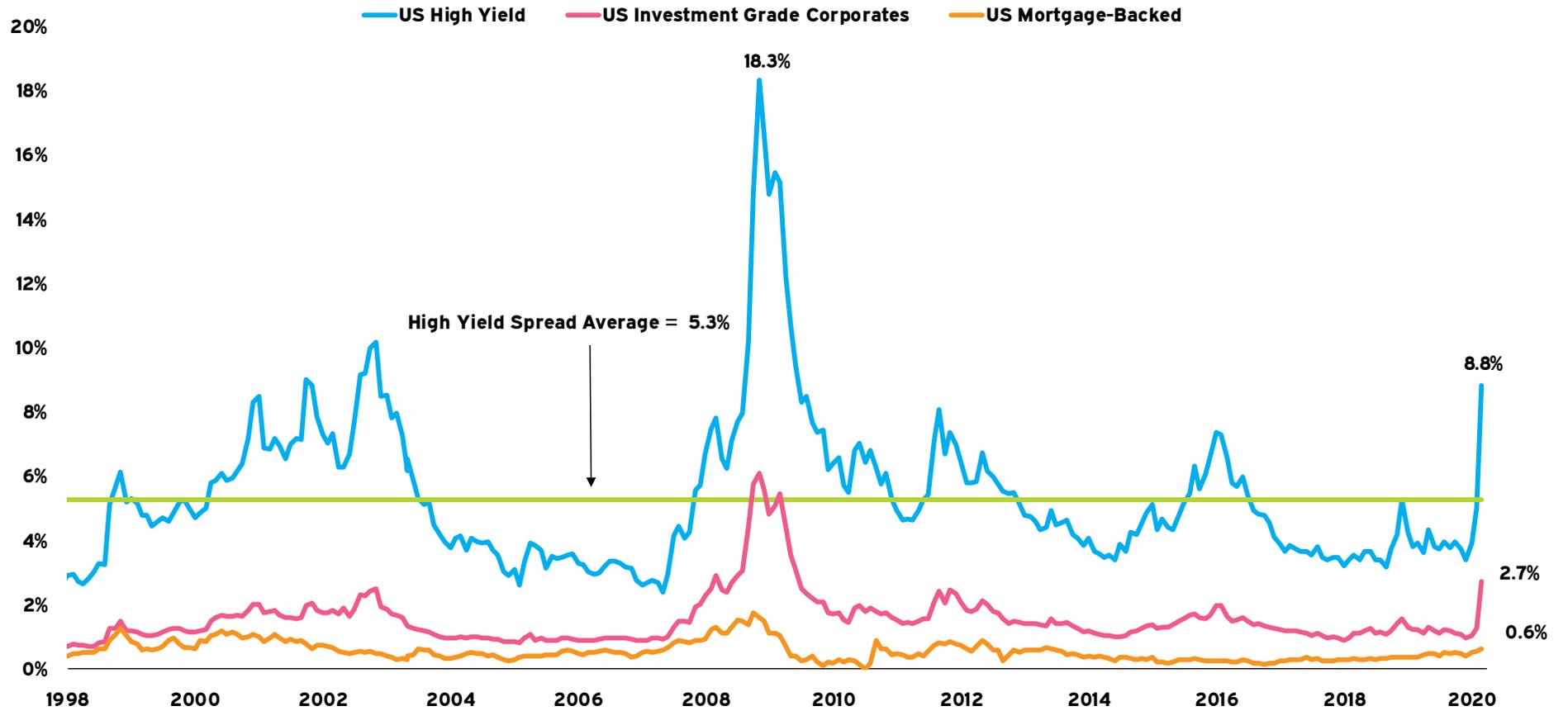
Rolling Ten-Year Returns: 65% Stocks and 35% Bonds¹

— 65% Stocks (MSCI ACWI) / 35% Bonds (Bloomberg Barclays Aggregate) 10-Year Rolling Return



¹ Source: InvestorForce.

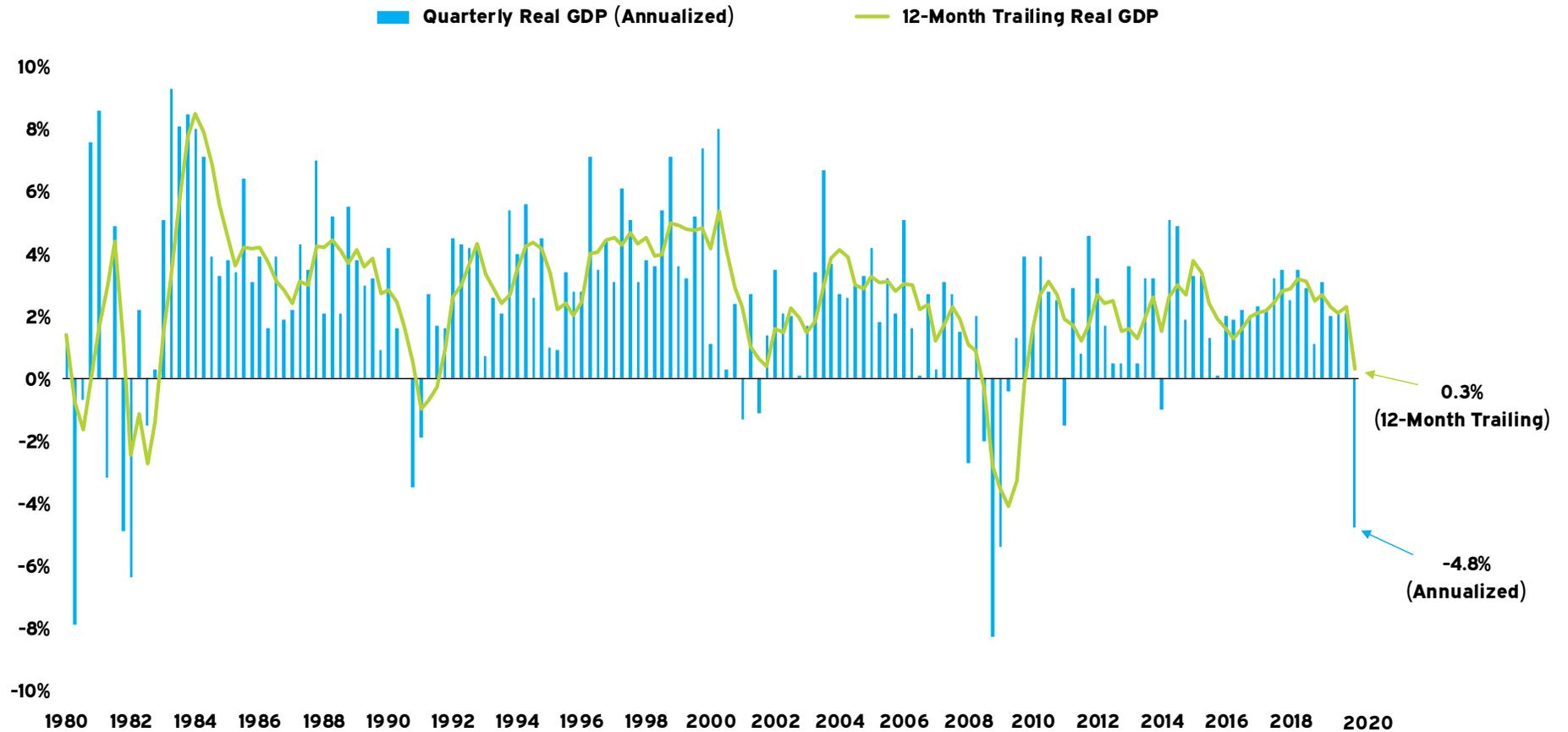
Credit Spreads vs. US Treasury Bonds^{1,2}



¹ Source: Barclays Live. Data represents the OAS.

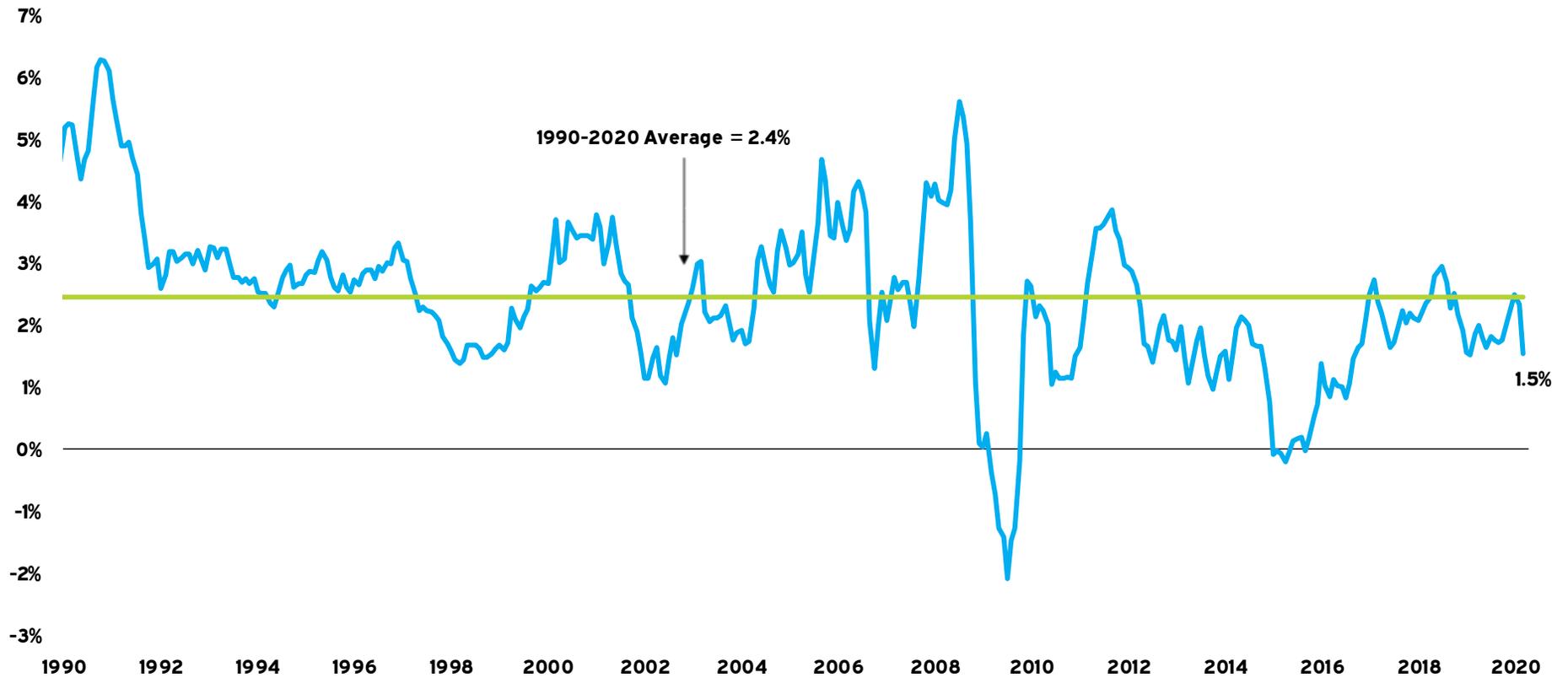
² The median high yield spread was 4.8% from 1997-2020.

US Real Gross Domestic Product (GDP) Growth¹



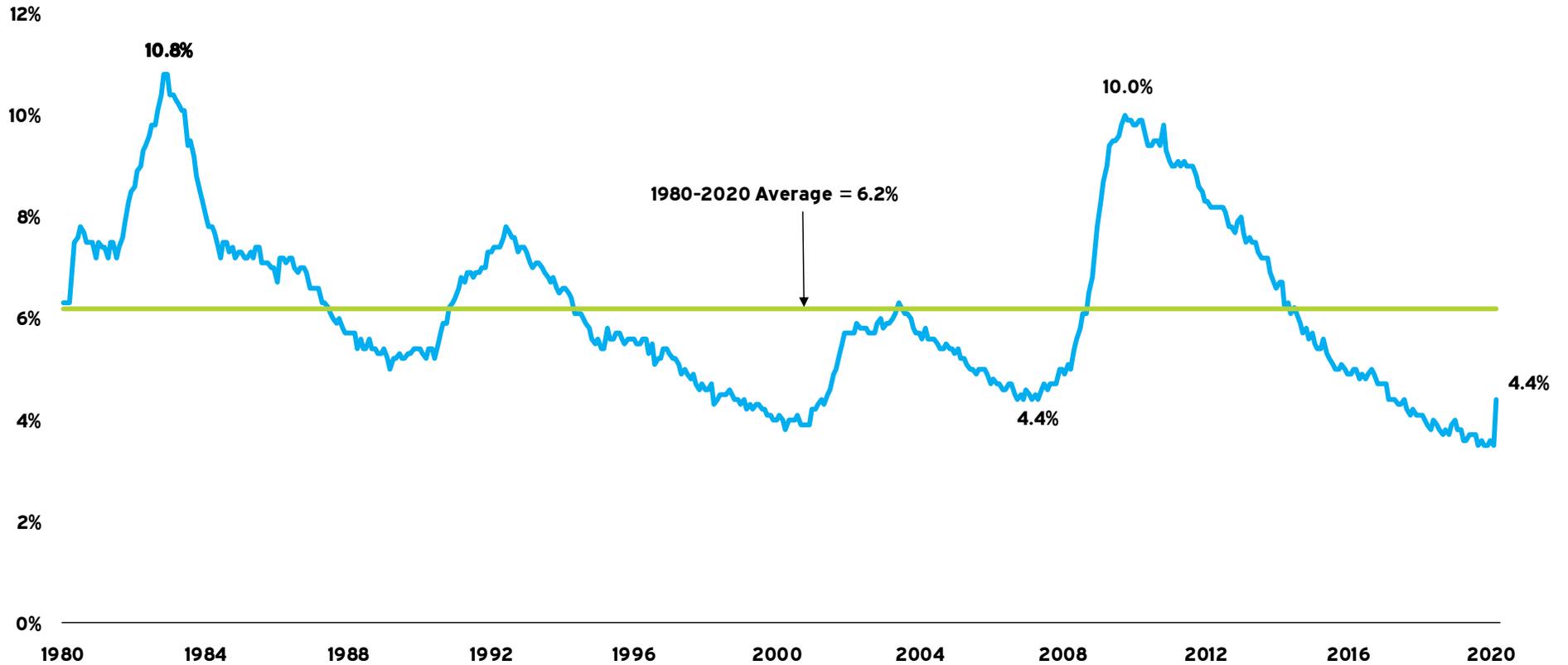
¹ Source: Bureau of Economic Analysis. Data is as of Q1 2020 and represents the first estimate.

US Inflation (CPI) Trailing Twelve Months¹



¹ Source: Bureau of Labor Statistics. Data is non-seasonally adjusted CPI, which may be volatile in the short-term. Data is as of March 31, 2020.

US Unemployment¹



¹ Source: Bureau of Labor Statistics. Data is as of March 31, 2020.

Capital Markets Outlook & Risk Metrics

As of April 30, 2020

Capital Markets Outlook

Takeaways

- After Q1 turned out to be a historically challenging quarter, the month of April proved to be one of history's strongest months on record for a variety of risk-based assets. Moreover, safe-haven assets such as US Treasury bonds also produced positive returns during the month.
- From a performance perspective, US equity indices were generally up in the 10-15% range, developed international equity markets (in aggregate) produced returns in the 6-8% range, and emerging markets equity generated returns near 10%.
- Growth continued to outperform value. However, in a reversal from Q1, small cap stocks outperformed large cap stocks. An interesting outcome from these market movements is that large cap growth stocks, in aggregate, are only down -2% to -4% YTD as a variety of technology companies have proved resilient.
- US interest rates were stable throughout the month of April as the Federal Reserve continued to remain extremely accommodative. This level of accommodation is also seen in global fiscal policies as authorities continue to rollout historic efforts to combat the economic fallout from the pandemic.
- While valuations for most risk-based asset classes appear attractive at first glance, it is important to note that the full impact on corporate earnings and solvencies remains unknown. The actual path that the global economy will take moving forward is uncertain.

Capital Markets Outlook

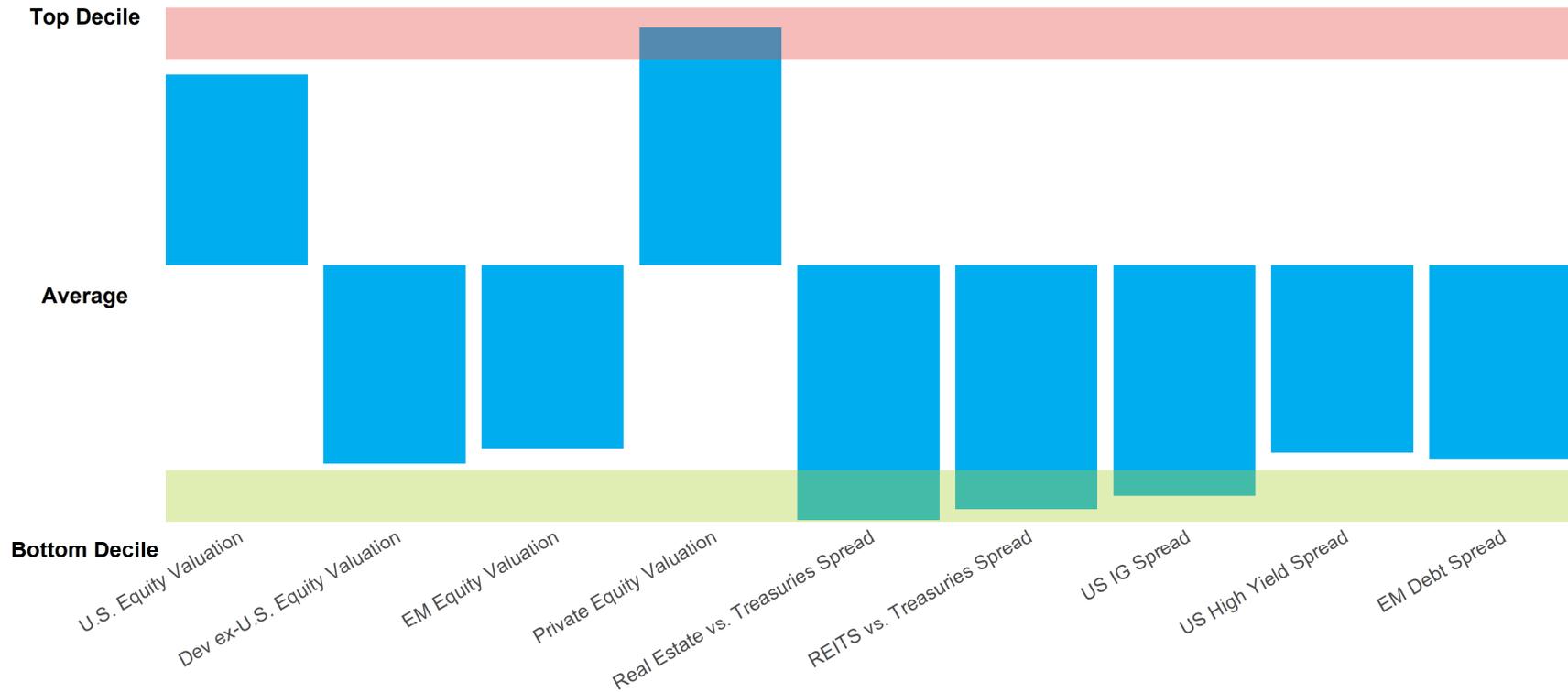
Takeaways

- Implied equity market volatility¹ began April at around 55 but declined over the course of the month to end the period at around 34. To put that level in context, the market is currently implying that, over the next month, equities will be about two times as volatile as the long-term average.
- The Market Sentiment Indicator² flipped to **grey** (i.e., neutral) at month-end.

¹ As measured by VIX Index.

² See Appendix for the rationale for selection and calculation methodology used for the risk metrics.

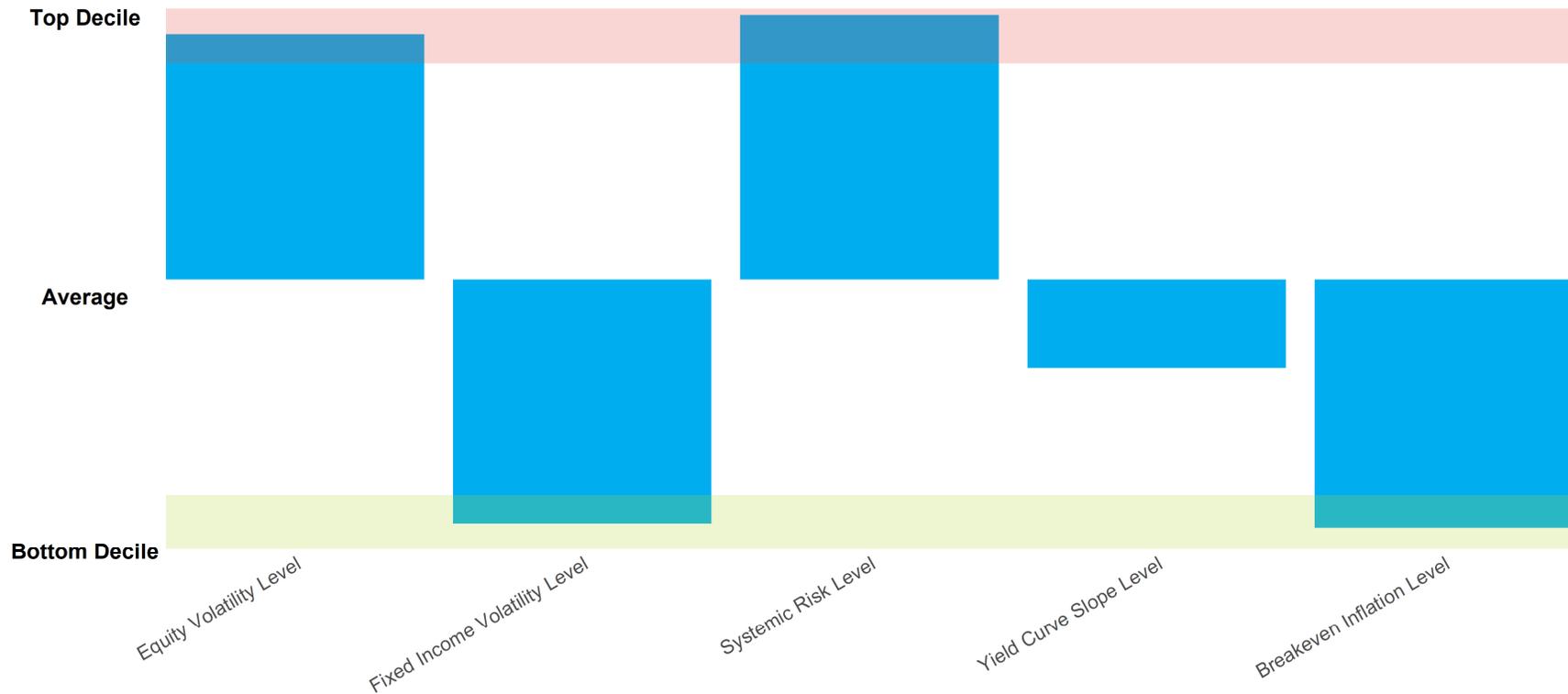
Risk Overview/Dashboard (1) (As of April 30, 2020)¹



- Dashboard (1) summarizes the current state of the different valuation metrics per asset class relative to their own history.

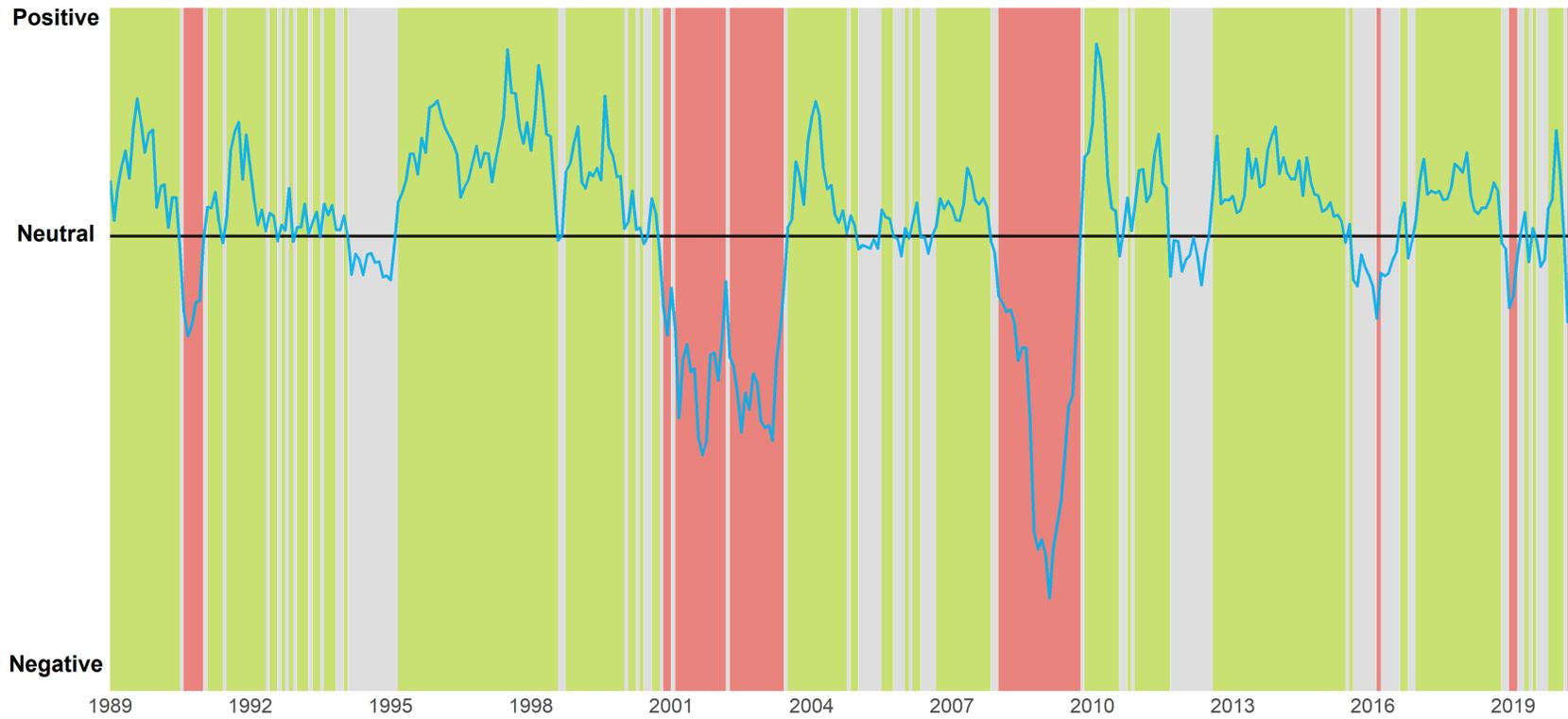
¹ With the exception of Private Equity Valuation, that is YTD as of December 31, 2019.

Risk Overview/Dashboard (2)
(As of April 30, 2020)

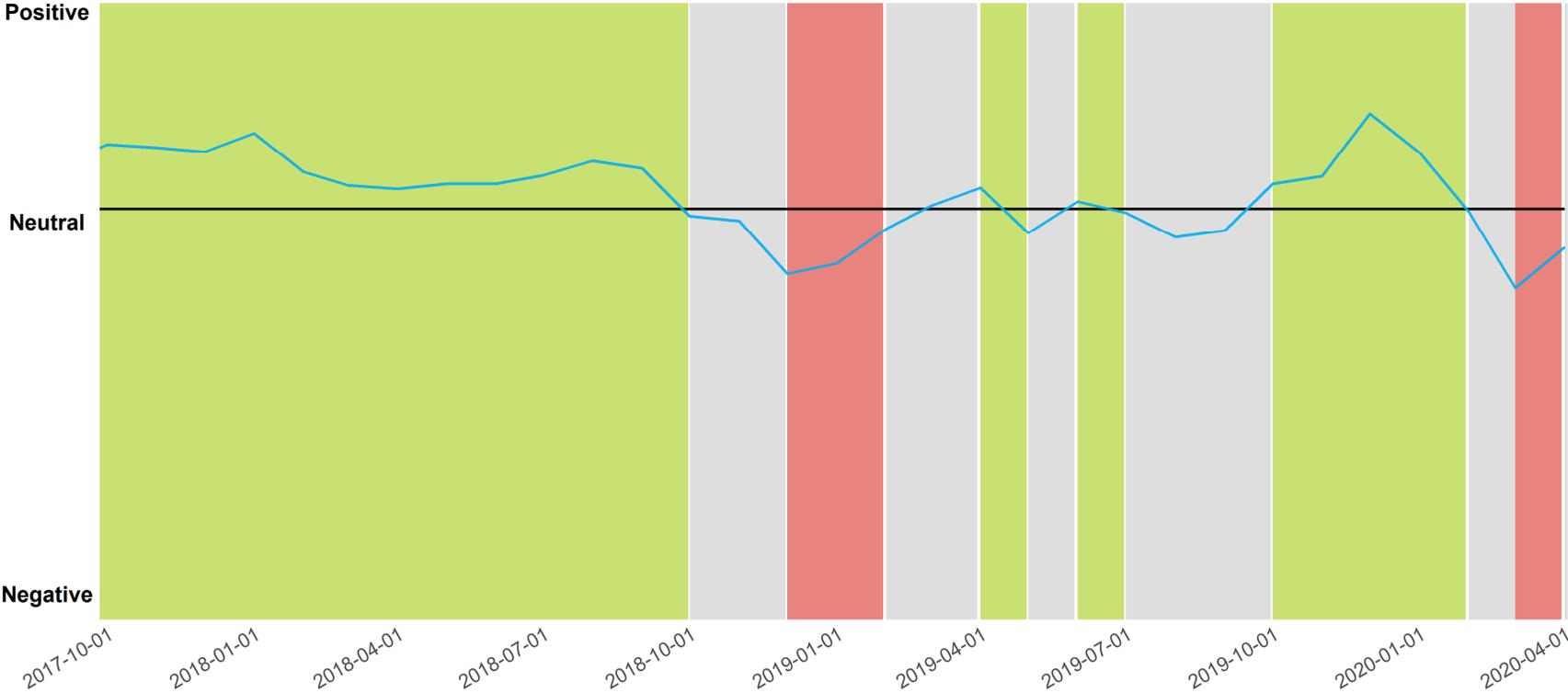


- Dashboard (2) shows how the current level of each indicator compares to its respective history.

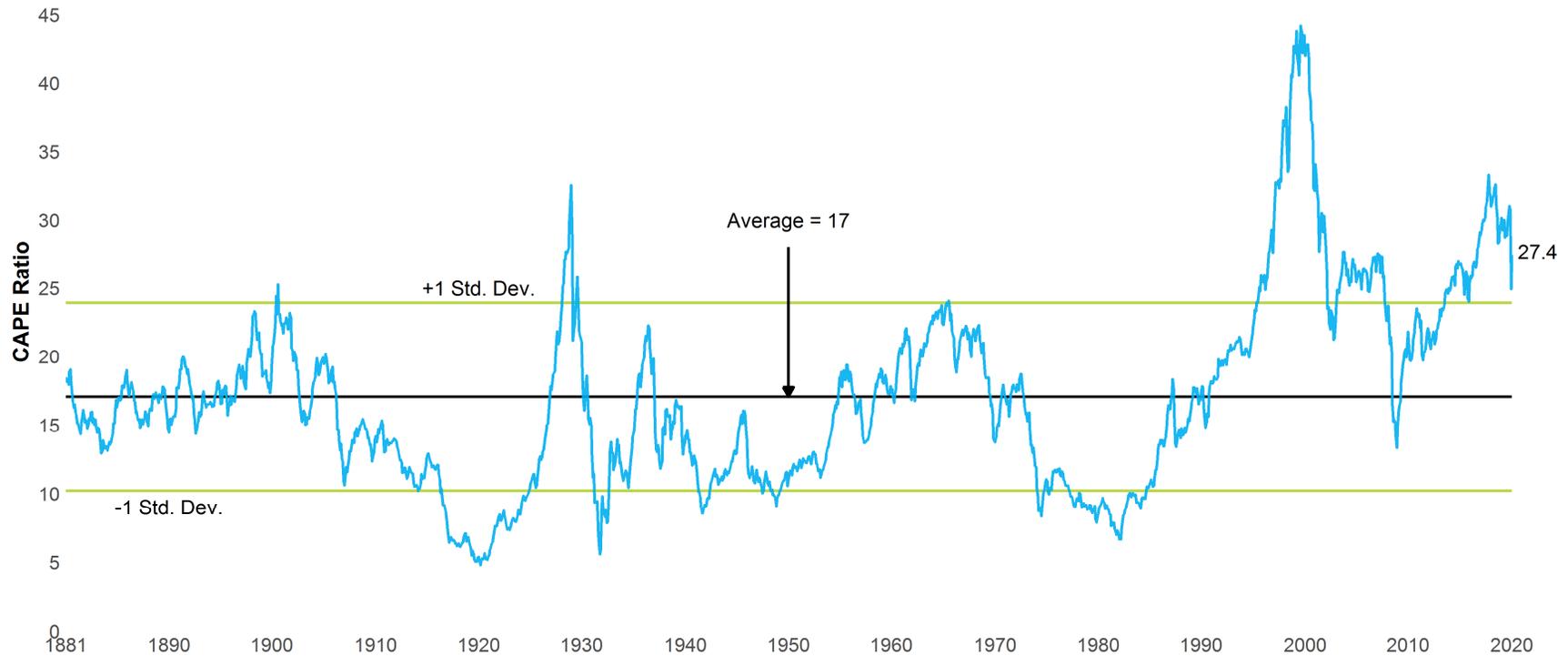
Market Sentiment Indicator (All History)
(As of April 30, 2020)



Market Sentiment Indicator (Last Three Years)
(As of April 30, 2020)



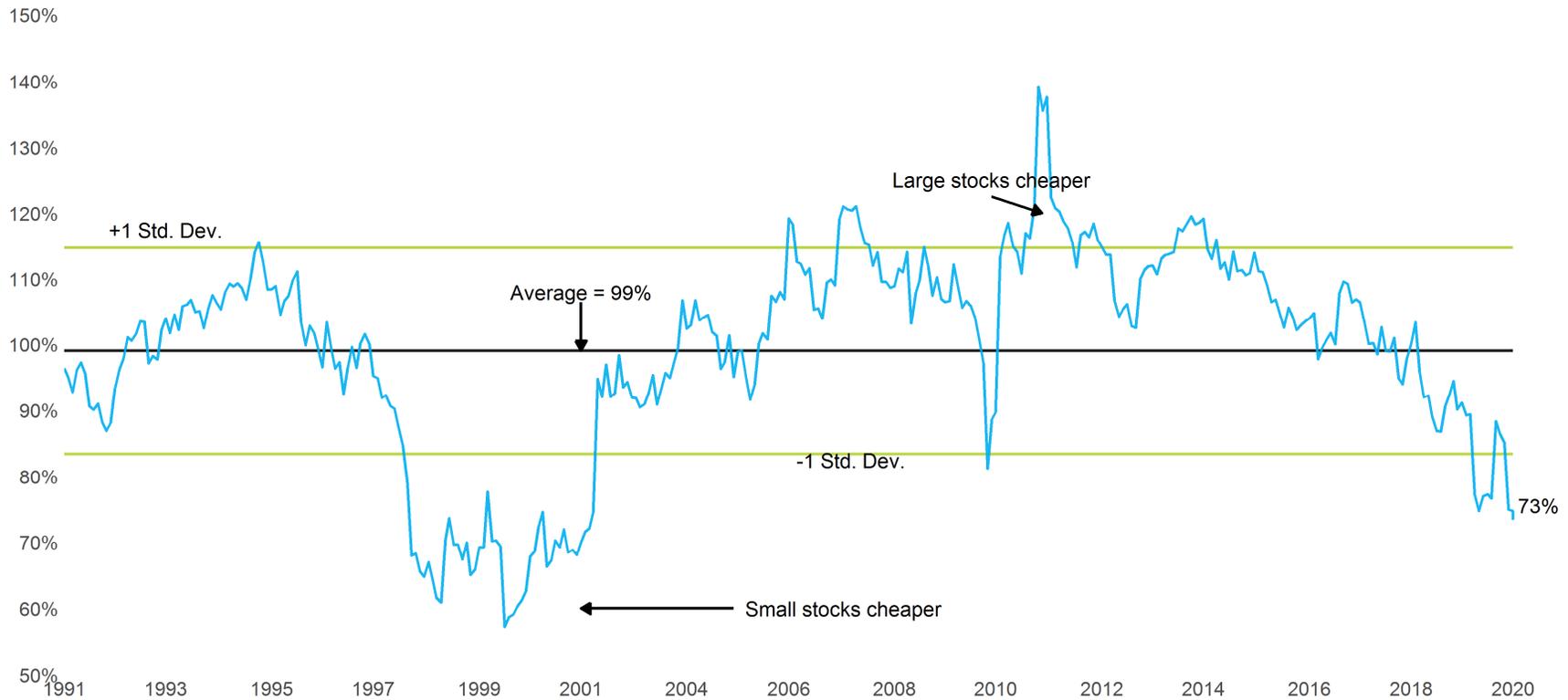
US Equity Cyclically Adjusted P/E¹
(As of April 30, 2020)



- This chart details one valuation metric for US equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. - Source: Robert Shiller, Yale University, and Meketa Investment Group.

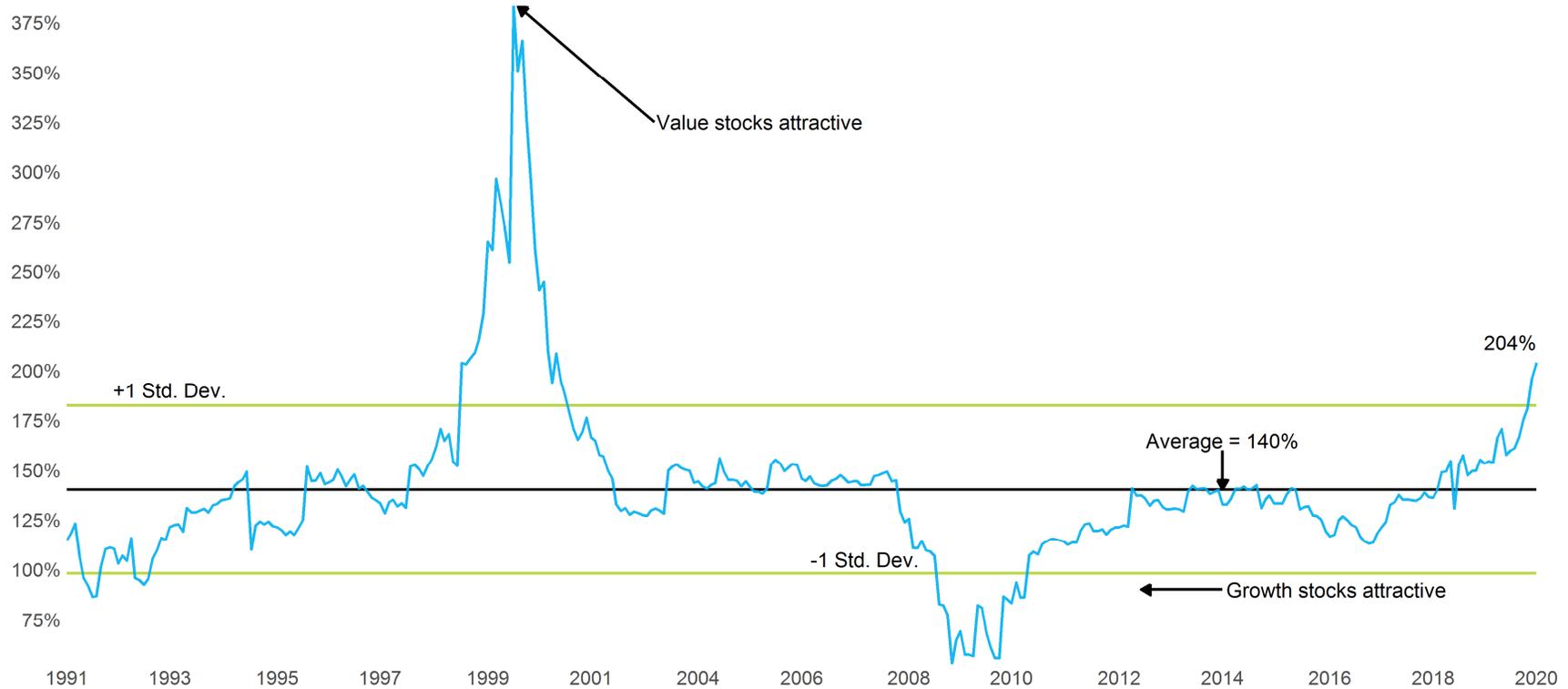
Small Cap P/E vs. Large Cap P/E¹
(As of April 30, 2020)



- This chart compares the relative attractiveness of small cap US equities vs. large cap US equities on a valuation basis. A higher (lower) figure indicates that large cap (small cap) is more attractive.

¹ Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings.

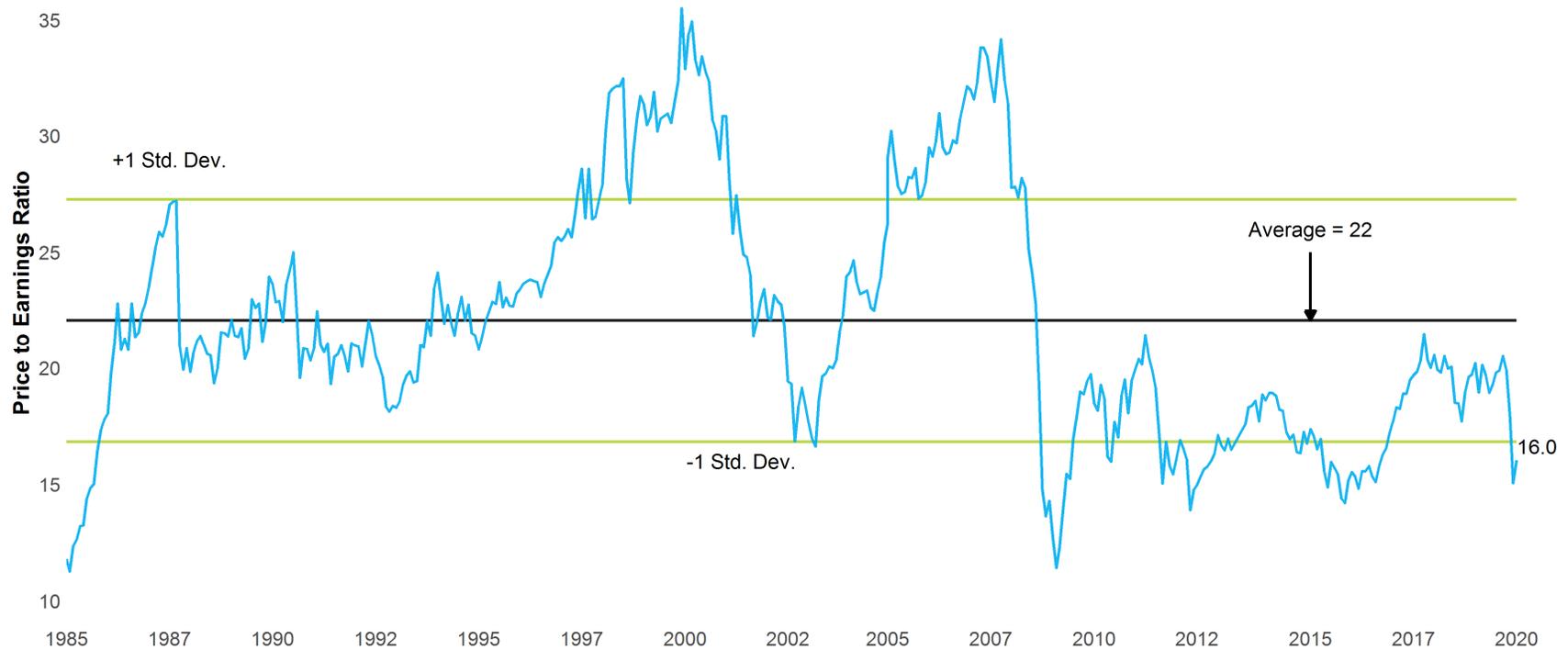
Growth P/E vs. Value P/E¹
(As of April 30, 2020)



- This chart compares the relative attractiveness of US growth equities vs. US value equities on a valuation basis. A higher (lower) figure indicates that value (growth) is more attractive.

¹ Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings.

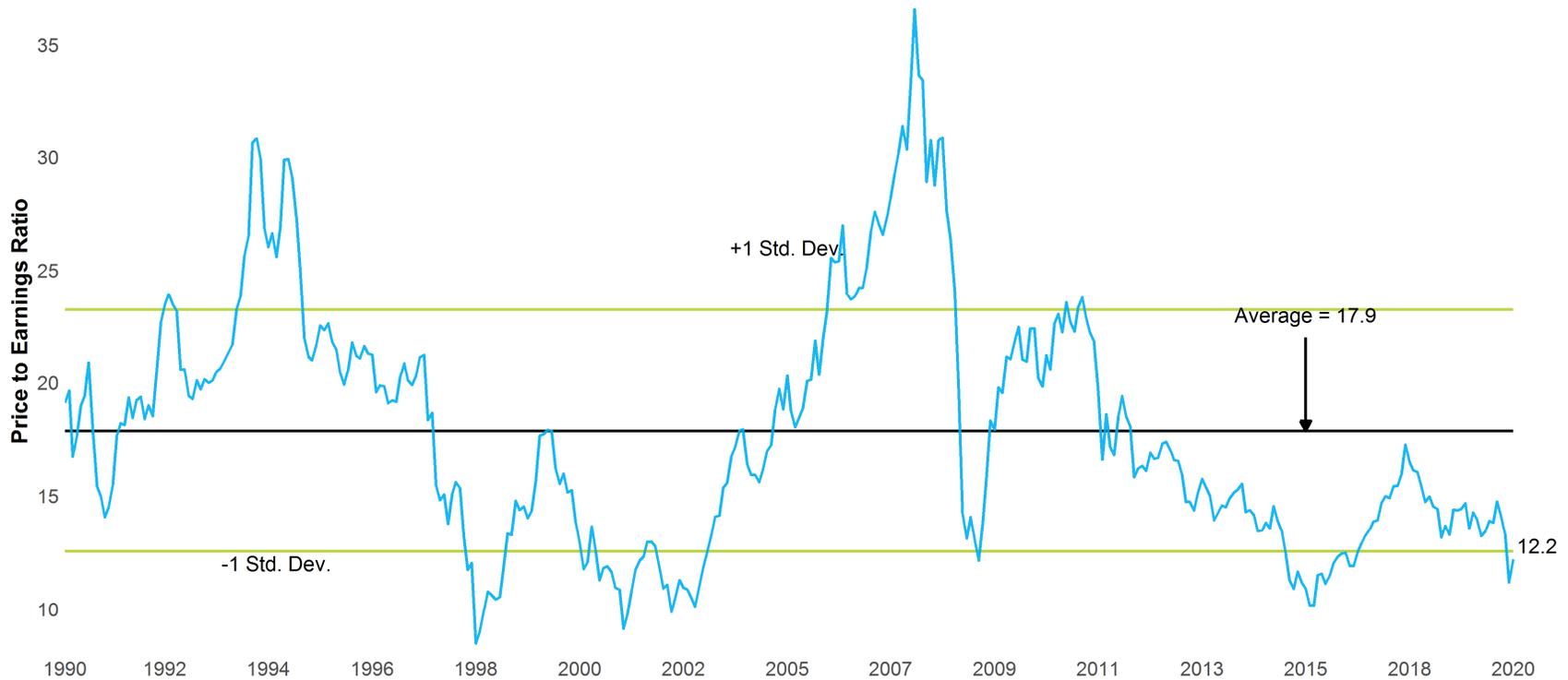
Developed International Equity Cyclically Adjusted P/E¹
(As of April 30, 2020)



- This chart details one valuation metric for developed international equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

¹ Developed International Equity (MSCI EAFE ex Japan Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.

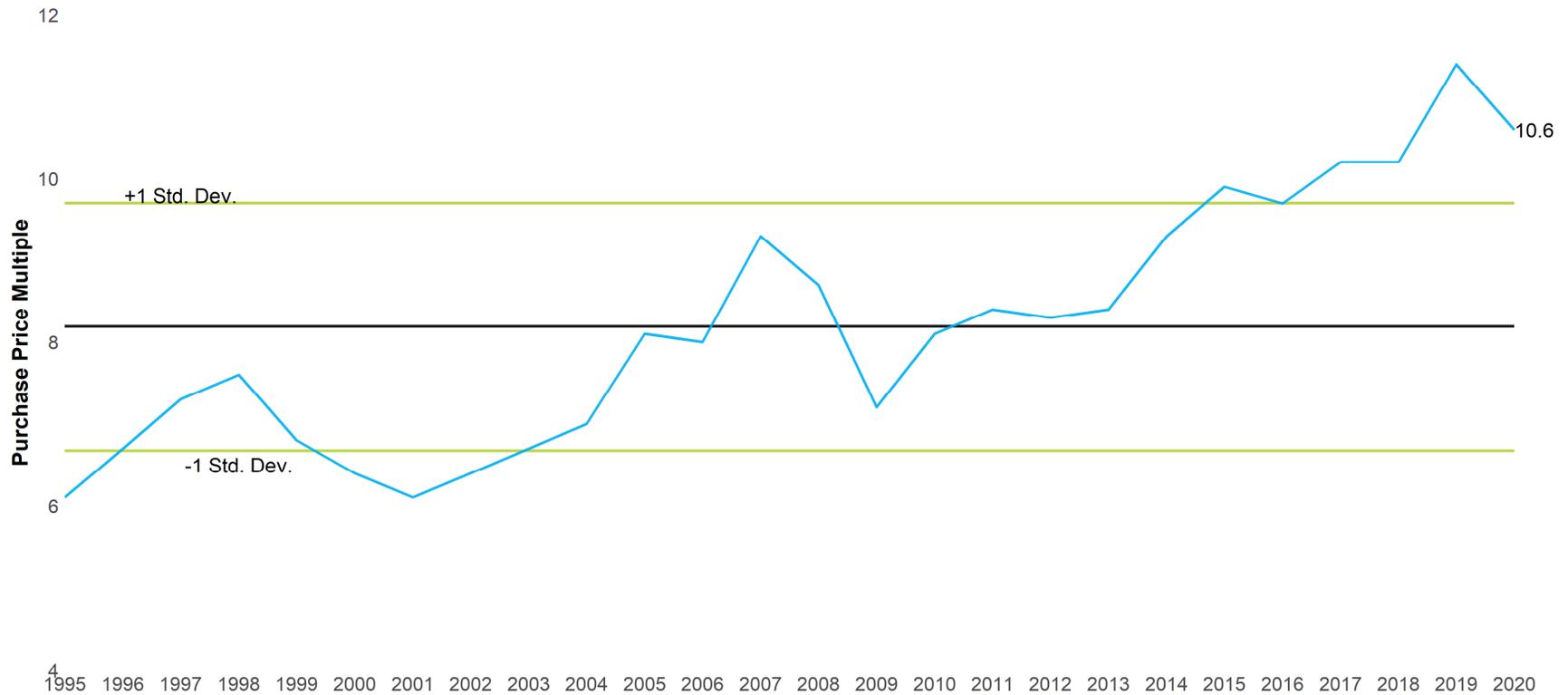
Emerging Market Equity Cyclically Adjusted P/E¹
(As of April 30, 2020)



- This chart details one valuation metric for emerging markets equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

¹ Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.

Private Equity Multiples¹ (As of February 29, 2020)²

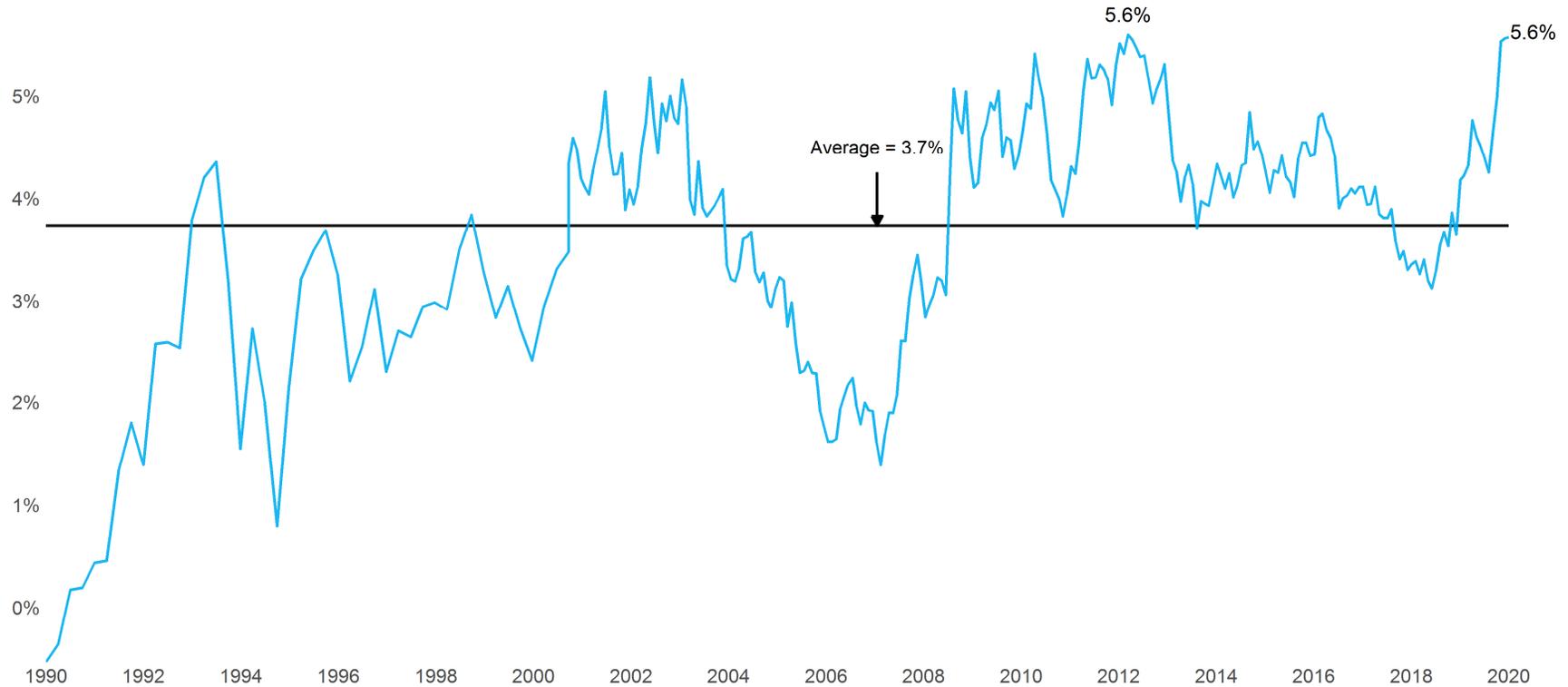


- This chart details one valuation metric for the private equity market. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

¹ Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs.

² Annual figures, except for 2020 (YTD).

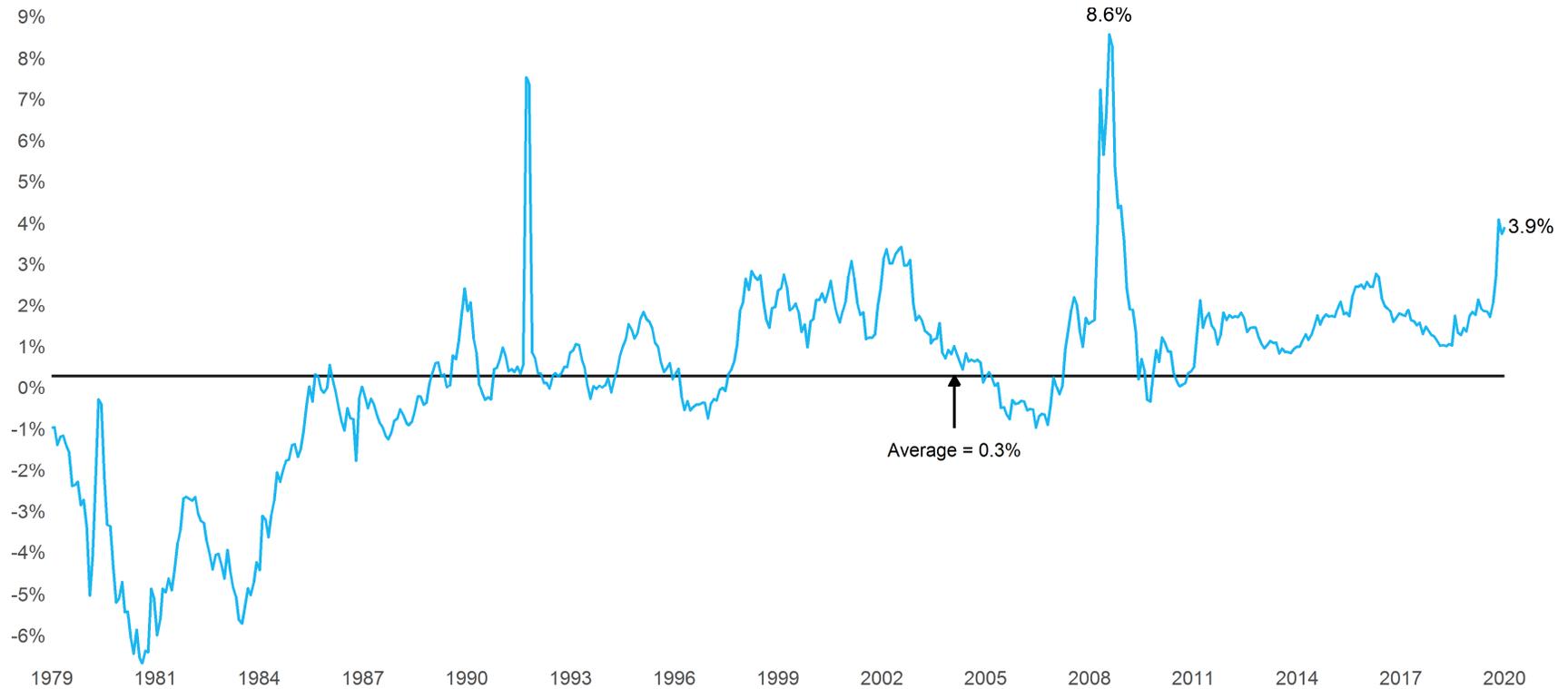
Core Real Estate Spread vs. Ten-Year Treasury¹
(As of April 30, 2020)



- This chart details one valuation metric for the private core real estate market. A higher (lower) figure indicates cheaper (more expensive) valuation.

¹ Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction based indices from Real Capital Analytics and Meketa Investment Group.

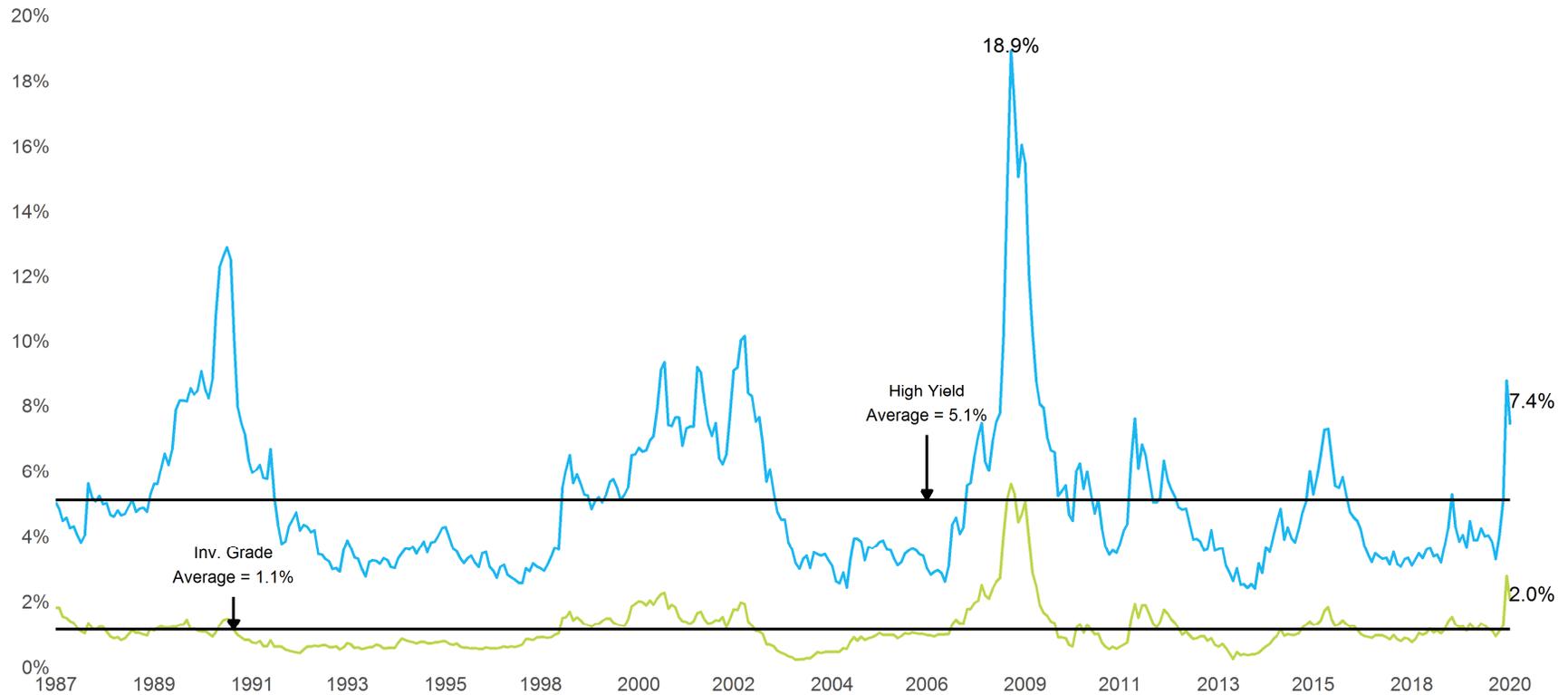
REITs Dividend Yield Spread vs. Ten-Year Treasury¹
(As of April 30, 2020)



- This chart details one valuation metric for the public REITs market. A higher (lower) figure indicates cheaper (more expensive) valuation.

¹ REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity index.

Credit Spreads¹
(As of April 30, 2020)



- This chart details one valuation metric for the US credit markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

¹ Credit Spreads – Source: Barclays Capital. High Yield is proxied by the Barclays High Yield index and Investment Grade Corporates are proxied by the Barclays US Corporate Investment Grade index. Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year US Treasury yield.

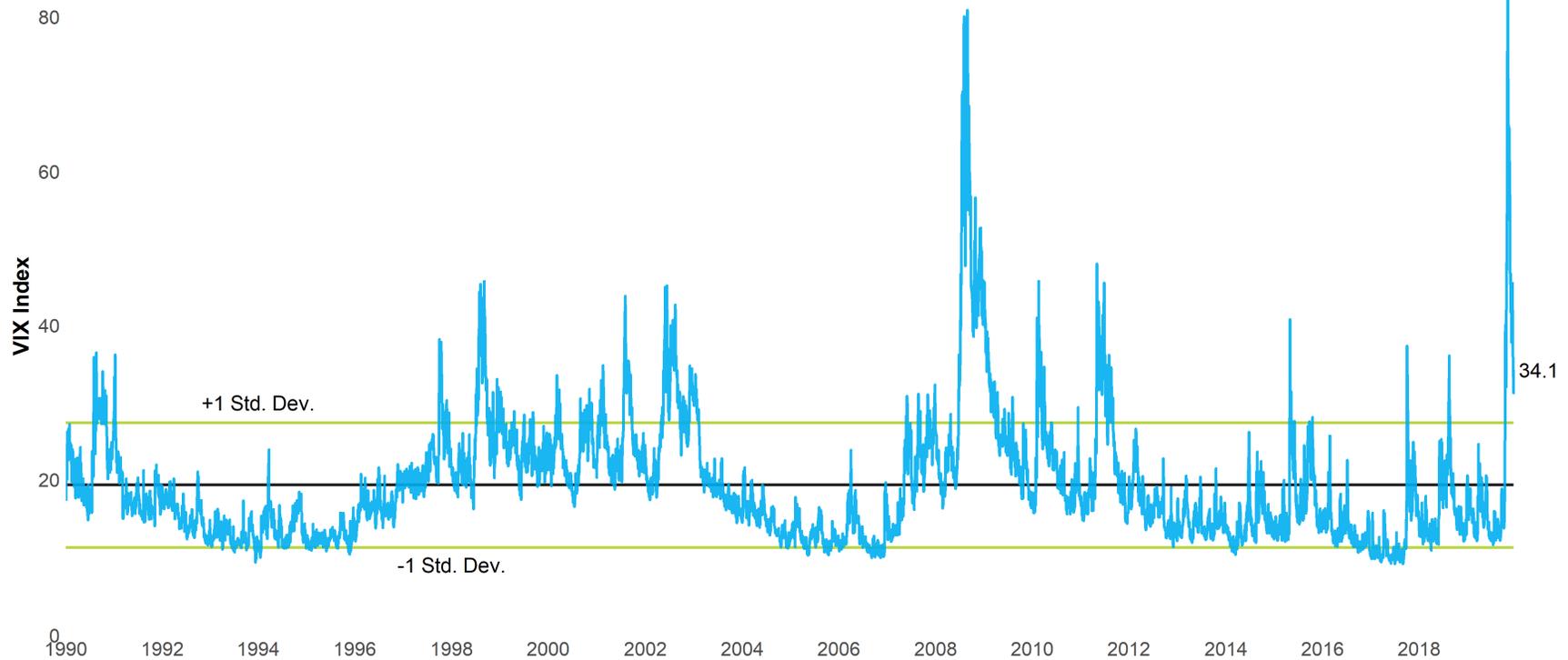
Emerging Market Debt Spreads¹ (As of April 30, 2020)



- This chart details one valuation metric for the EM debt markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

¹ EM Spreads – Source: Bloomberg. Option Adjusted Spread (OAS) for the Bloomberg Barclays EM USD Aggregate Index.

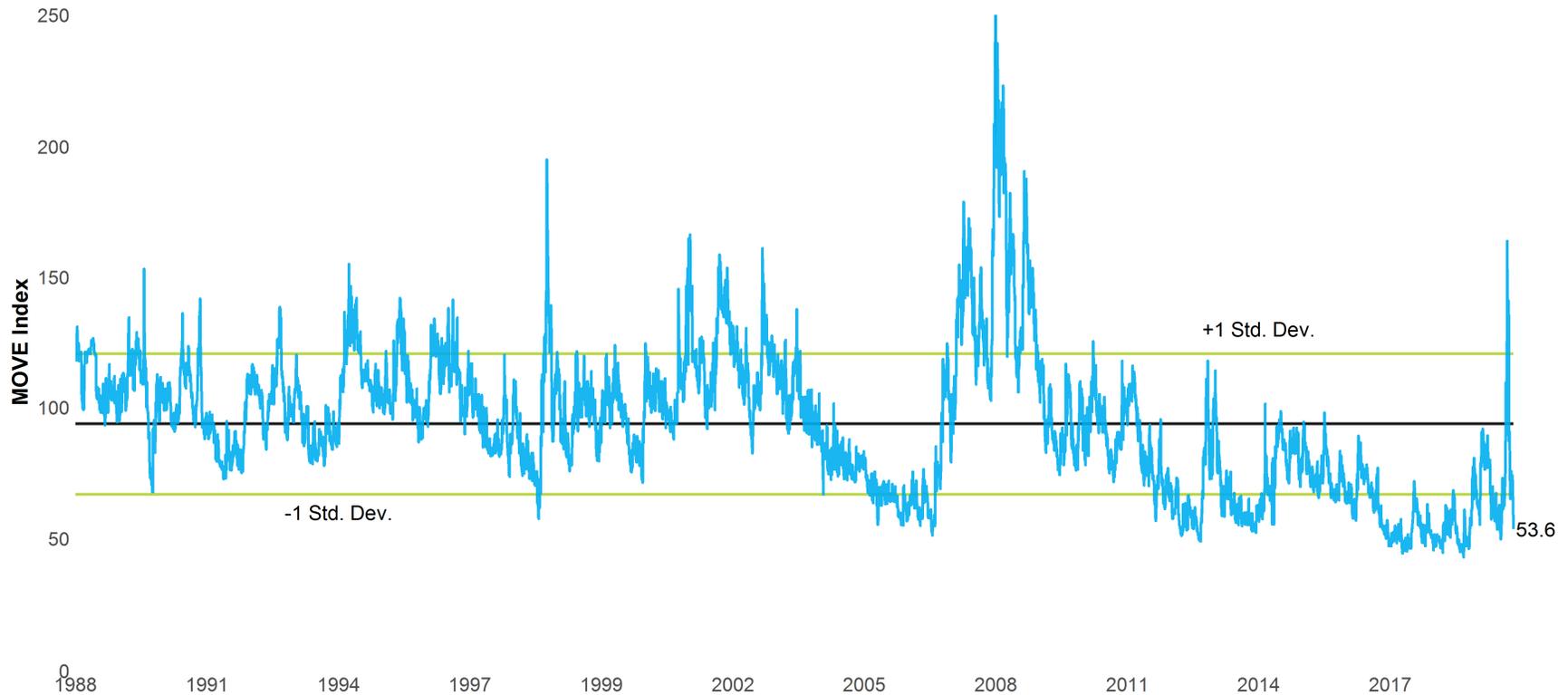
Equity Volatility¹
(As of April 30, 2020)



- This chart details historical implied equity market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

¹ Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.

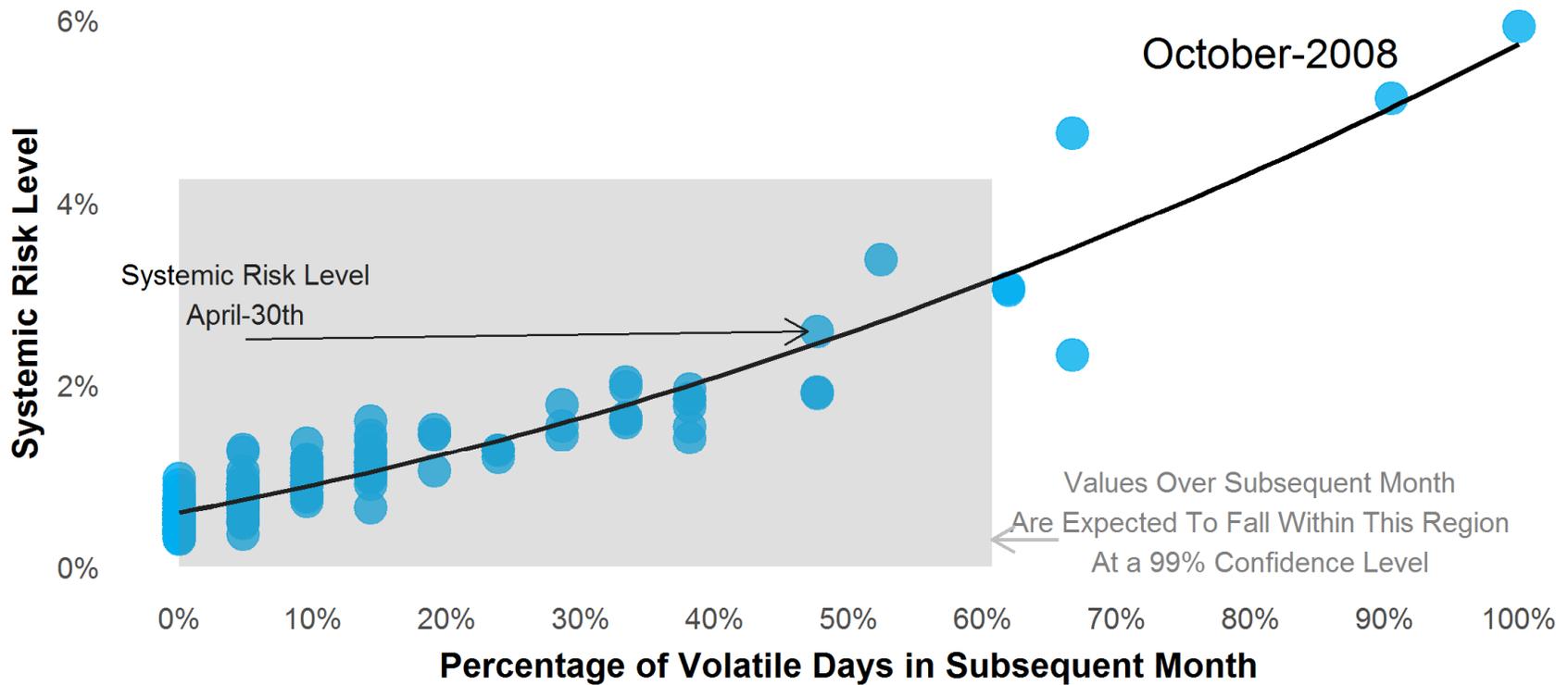
Fixed Income Volatility¹
(As of April 30, 2020)



- This chart details historical implied fixed income market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

¹ Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Fixed Income Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.

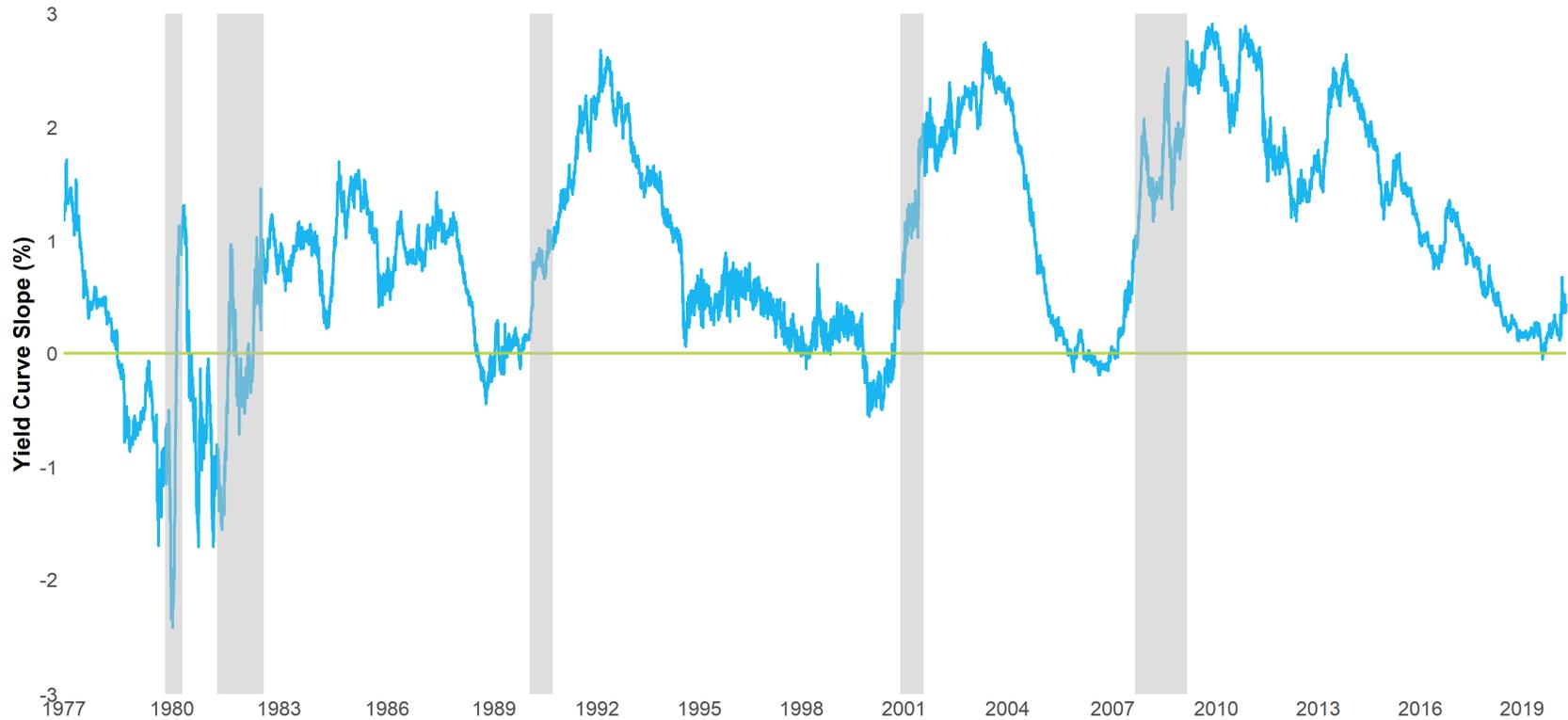
Systemic Risk and Volatile Market Days¹
(As of April 30, 2020)



- Systemic Risk is a measure of 'System-wide' risk, which indicates herding type behavior.

¹ Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.

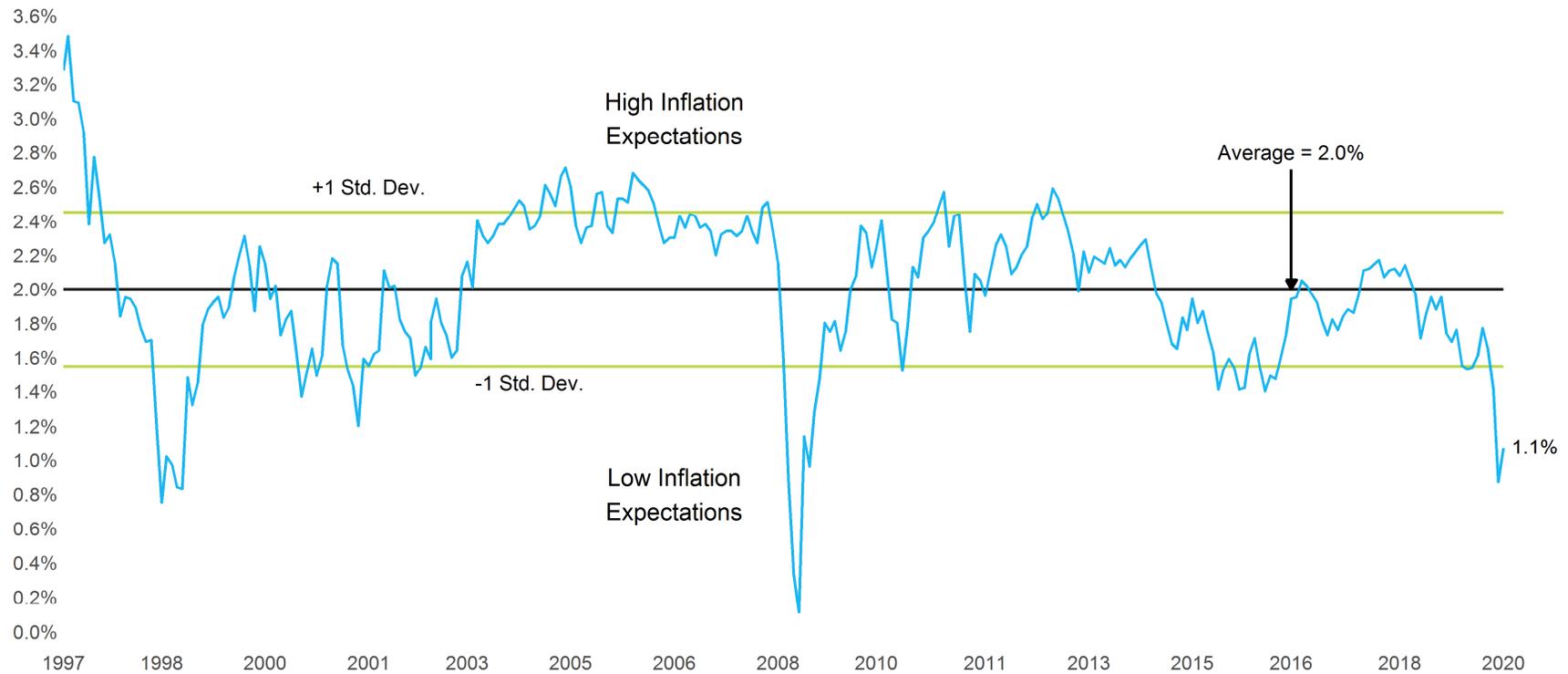
Yield Curve Slope (Ten Minus Two)¹
(As of April 30, 2020)



- This chart details the historical difference in yields between ten-year and two-year US Treasury bonds/notes. A higher (lower) figure indicates a steeper (flatter) yield curve slope.

¹ Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.

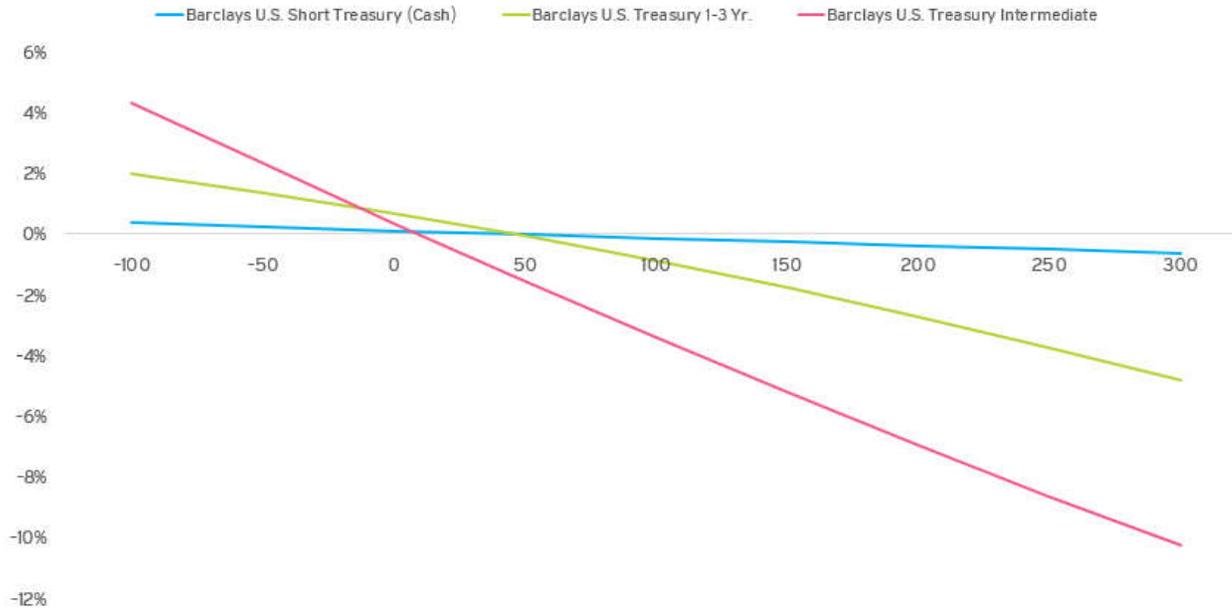
Ten-Year Breakeven Inflation¹
(As of April 30, 2020)



- This chart details the difference between nominal and inflation-adjusted US Treasury bonds. A higher (lower) figure indicates higher (lower) inflation expectations.

¹ Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

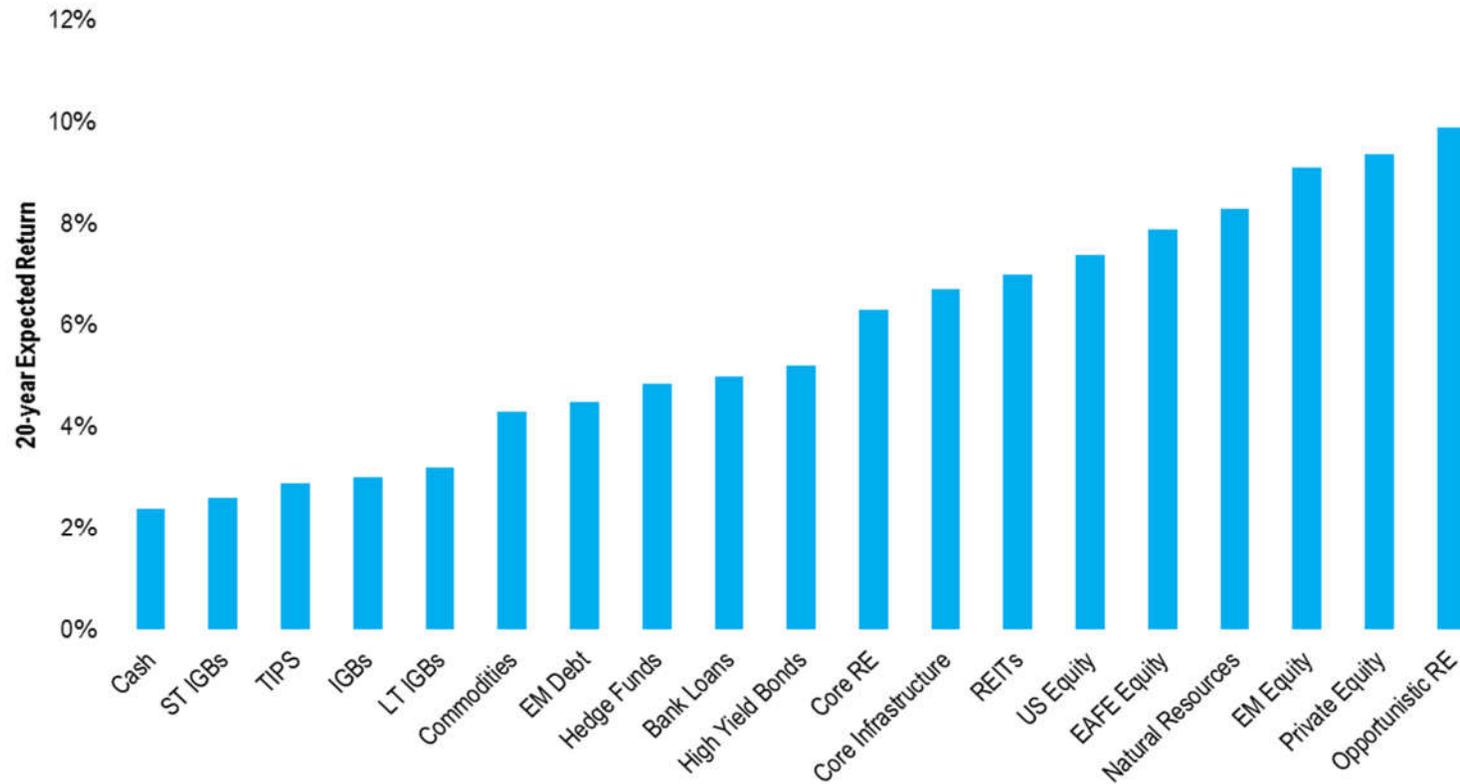
Total Return Given Changes in Interest Rates (bps)¹
(As of April 30, 2020)



	Total Return for Given Changes in Interest Rates (bps)									Statistics	
	-100	-50	0	50	100	150	200	250	300	Duration	YTW
Barclays US Short Treasury (Cash)	0.4%	0.2%	0.1%	0.0%	-0.1%	-0.3%	-0.4%	-0.5%	-0.6%	0.25	0.10%
Barclays US Treasury 1-3 Yr.	2.0%	1.4%	0.7%	-0.1%	-0.9%	-1.8%	-2.7%	-3.7%	-4.8%	1.42	0.68%
Barclays US Treasury Intermediate	4.3%	2.3%	0.3%	-1.6%	-3.4%	-5.2%	-7.0%	-8.7%	-10.3%	3.87	0.33%
Barclays US Treasury Long	22.8%	11.4%	1.2%	-7.9%	-15.8%	-22.6%	-28.2%	-32.7%	-36.0%	19.3	1.21%

¹ Data represents the expected total return from a given change in interest rates (shown in basis points) over a 12-month period assuming a parallel shift in rates. Source: Bloomberg, and Meketa Investment Group.

Long-Term Outlook – 20-Year Annualized Expected Returns¹



- This chart details Meketa’s long-term forward-looking expectations for total returns across asset classes.

¹ Source: Meketa Investment Group’s 2020 Annual Asset Study.

Appendix

Data Sources and Explanations¹

- US Equity Cyclically Adjusted P/E on S&P 500 Index – Source: Robert Shiller and Yale University.
- Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month “as reported” earnings.
- Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month “as reported” earnings.
- Developed International Equity (MSCI EAFE ex Japan Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.
- Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years
- Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs
- Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction based indices from Real Capital Analytics and Meketa Investment Group.

¹ All Data as of March 31, 2020 unless otherwise noted.

Appendix

Data Sources and Explanations¹

- REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity index.
- Credit Spreads – Source: Barclays Capital. High Yield is proxied by the Barclays High Yield index and Investment Grade Corporates are proxied by the Barclays US Corporate Investment Grade index.
 - Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year Treasury Yield.
- EM Debt Spreads – Source: Bloomberg, and Meketa Investment Group. Option Adjusted Spread (OAS) for the Bloomberg Barclays EM USD Aggregate Index.
- Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.
- Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.
- Systemic Risk and Volatile Market Days – Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.

¹ All Data as of April 30, 2020 unless otherwise noted.

Appendix

Data Sources and Explanations¹

- Systemic Risk, which measures risk across markets, is important because the more contagion of risk that exists between assets, the more likely it is that markets will experience volatile periods.
- Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.
- Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

¹ All Data as of April 30, 2020 unless otherwise noted.

Meketa Market Sentiment Indicator
Explanation, Construction and Q&A

Meketa has created the MIG Market Sentiment Indicator (MIG-MSI) to complement our valuation-focused Risk Metrics. This measure of sentiment is meant to capture significant and persistent shifts in long-lived market trends of economic growth risk, either towards a risk-seeking trend or a risk-aversion trend.

This appendix explores:

- What is the Meketa Market Sentiment Indicator?
- How do I read the indicator graph?
- How is the Meketa Market Sentiment Indicator constructed?
- What do changes in the indicator mean?

Meketa has created a market sentiment indicator for monthly publication (the MIG-MSI – see below) to complement Meketa’s Risk Metrics.

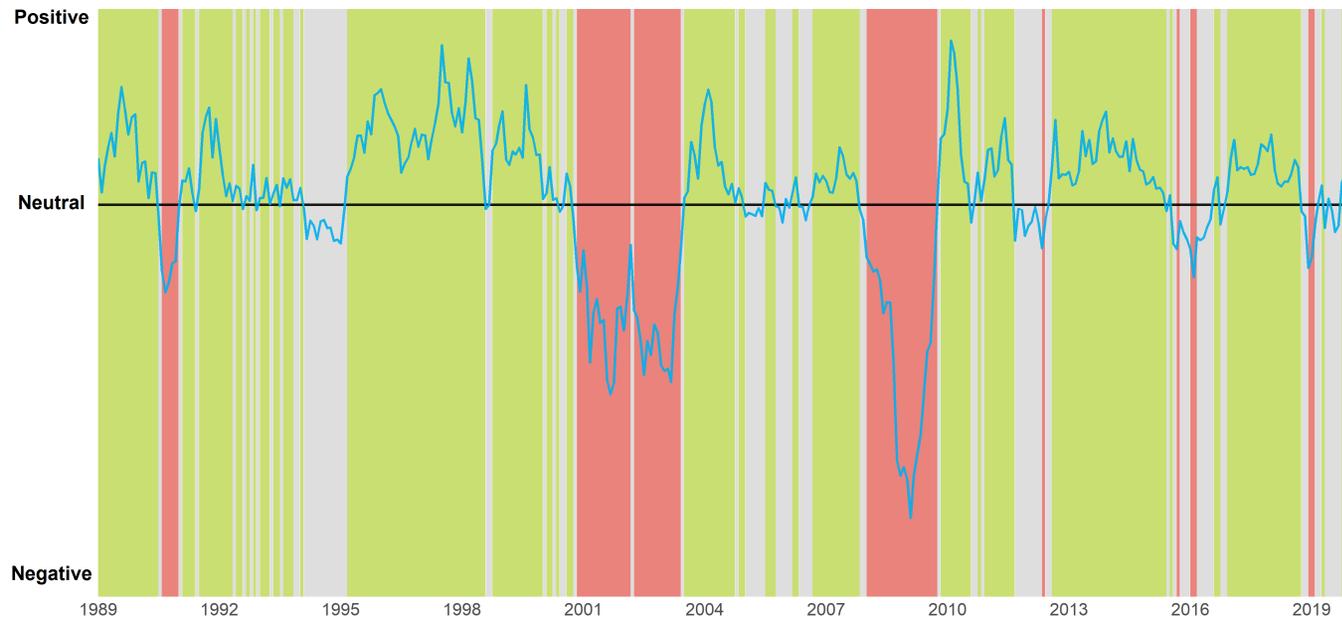
- Meketa’s Risk Metrics, which rely significantly on standard market measures of relative valuation, often provide valid early signals of increasing long-term risk levels in the global investment markets. However, as is the case with numerous valuation measures, the Risk Metrics may convey such risk concerns long before a market corrections take place. The MIG-MSI helps to address this early-warning bias by measuring whether the markets are beginning to acknowledge key Risk Metrics trends, and / or indicating non-valuation based concerns. Once the MIG-MSI indicates that the market sentiment has shifted, it is our belief that investors should consider significant action, particularly if confirmed by the Risk Metrics. Importantly, Meketa believes the Risk Metrics and MIG-MSI should always be used in conjunction with one another and never in isolation. The questions and answers below highlight and discuss the basic underpinnings of the Meketa MIG-MSI:

What is the Meketa Market Sentiment Indicator (MIG-MSI)?

- The MIG-MSI is a measure meant to gauge the market’s sentiment regarding economic growth risk. Growth risk cuts across most financial assets, and is the largest risk exposure that most portfolios bear. The MIG-MSI takes into account the momentum (trend over time, positive or negative) of the economic growth risk exposure of publicly traded stocks and bonds, as a signal of the future direction of growth risk returns; either positive (risk seeking market sentiment), or negative (risk averse market sentiment).

How do I read the Meketa Market Sentiment Indicator graph?

- Simply put, the MIG-MSI is a color-coded indicator that signals the market's sentiment regarding economic growth risk. It is read left to right chronologically. A green indicator on the MIG-MSI indicates that the market's sentiment towards growth risk is positive. A gray indicator indicates that the market's sentiment towards growth risk is neutral or inconclusive. A red indicator indicates that the market's sentiment towards growth risk is negative. The black line on the graph is the level of the MIG-MSI. The degree of the signal above or below the neutral reading is an indication the signal's current strength.
- Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.



How is the Meketa Market Sentiment Indicator (MIG-MSI) Constructed?

- The MIG-MSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:
 - Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months)
 - Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration US Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight).
 - Both measures are converted to Z-scores and then combined to get an “apples to apples” comparison without the need of re-scaling.
- The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure.¹ The color reading on the graph is determined as follows:
 - If both stock return momentum and bond spread momentum are positive = GREEN (positive)
 - If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive)
 - If both stock return momentum and bond spread momentum are negative = RED (negative)

¹ Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.

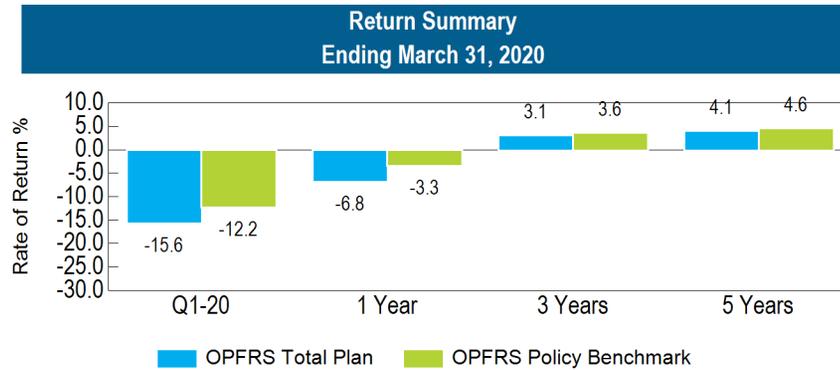
“Time Series Momentum” Moskowitz, Ooi, Pedersen, August 2010. <http://pages.stern.nyu.edu/~lpederse/papers/TimeSeriesMomentum.pdf>

What does the Meketa Market Sentiment Indicator (MIG-MSI) mean? Why might it be useful?

- There is strong evidence that time series momentum is significant and persistent. In particular, across an extensive array of asset classes, the sign of the trailing 12-month return (positive or negative) is indicative of future returns (positive or negative) over the next 12-month period. The MIG-MSI is constructed to measure this momentum in stocks and corporate bond spreads. A reading of green or red is agreement of both the equity and bond measures, indicating that it is likely that this trend (positive or negative) will continue over the next 12 months. When the measures disagree, the indicator turns gray. A gray reading does not necessarily mean a new trend is occurring, as the indicator may move back to green, or into the red from there. The level of the reading (black line) and the number of months at the red or green reading, gives the user additional information on which to form an opinion, and potentially take action.

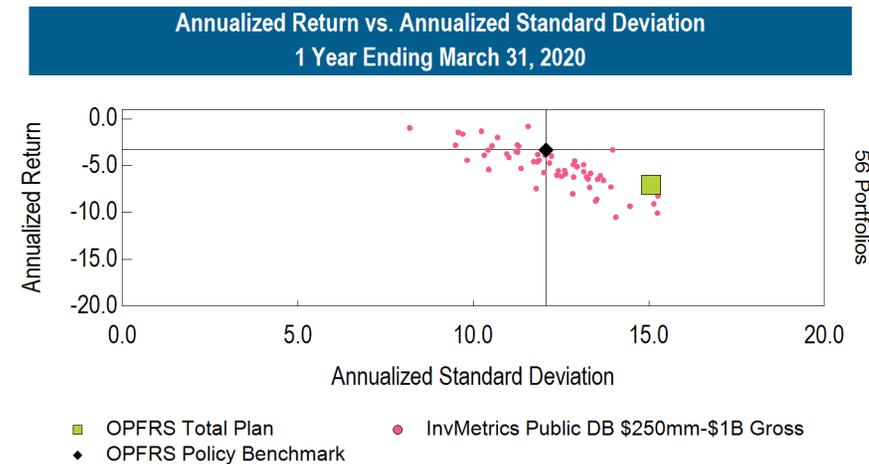
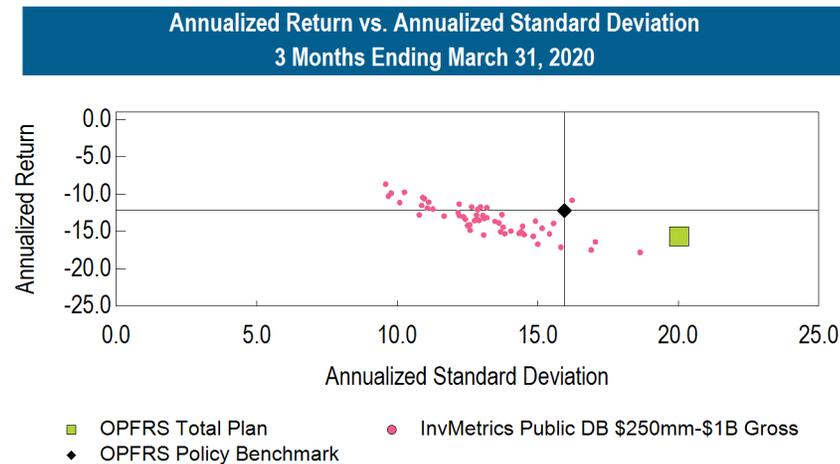
Total Portfolio Review

OPFRS Total Plan | As of March 31, 2020



Summary of Cash Flows

	Quarter-To-Date	One Year
Beginning Market Value	\$408,226,525	\$380,733,118
Net Cash Flow	-\$3,267,185	-\$14,563,690
Capital Appreciation	-\$63,428,831	-\$24,638,919
Ending Market Value	\$341,530,510	\$341,530,510



	Anlzd Return	Standard Deviation
OPFRS Total Plan	-11.30%	5.36%
OPFRS Policy Benchmark	-7.91%	4.30%
InvMetrics Public DB \$250mm-\$1B Gross	-8.50%	4.20%
Median		

	Anlzd Return	Standard Deviation
OPFRS Total Plan	-7.06%	4.35%
OPFRS Policy Benchmark	-3.32%	3.49%
InvMetrics Public DB \$250mm-\$1B Gross	-5.01%	3.55%
Median		

Evolving Policy Benchmark consists of 40% Russell 3000, 12% MSCI ACWI ex U.S., 33% Bbg BC Universal, 5% CBOE BXM, 6.7% SG Multi Asset Risk Premia, 3.3% Bbg BC Long Treasury.

Asset Class Performance (gross of fees) | As of March 31, 2020

	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
OPFRS Total Plan	-15.6	-6.8	3.1	4.1	5.8	6.6
<i>OPFRS Policy Benchmark</i> ¹	<u>-12.2</u>	<u>-3.3</u>	<u>3.6</u>	<u>4.6</u>	<u>5.9</u>	<u>6.4</u>
Excess Return	-3.4	-3.5	-0.5	-0.5	-0.1	0.2
Domestic Equity	-22.2	-11.5	3.1	5.1	8.6	10.1
<i>Russell 3000 (Blend)</i> ²	<u>-20.9</u>	<u>-9.1</u>	<u>4.0</u>	<u>5.8</u>	<u>9.0</u>	<u>10.1</u>
Excess Return	-1.3	-2.4	-0.9	-0.7	-0.4	0.0
International Equity	-22.4	-11.4	0.4	1.1	3.0	3.4
<i>MSCI ACWI ex US (Blend)</i> ³	<u>-23.3</u>	<u>-15.1</u>	<u>-1.5</u>	<u>-0.2</u>	<u>1.5</u>	<u>2.5</u>
Excess Return	0.9	3.7	1.9	1.3	1.5	0.9
Fixed Income	-1.3	4.1	4.0	3.2	3.0	4.0
<i>Bloomberg BC Universal (Blend)</i> ⁴	<u>1.3</u>	<u>7.2</u>	<u>4.4</u>	<u>3.4</u>	<u>3.2</u>	<u>4.0</u>
Excess Return	-2.6	-3.1	-0.4	-0.2	-0.2	0.0
Covered Calls	-18.6	-9.0	1.7	4.5	--	--
<i>CBOE S&P 500 BuyWrite USD</i>	<u>-22.2</u>	<u>-15.1</u>	<u>-2.1</u>	<u>1.6</u>	--	--
Excess Return	3.6	6.1	3.8	2.9		
Crisis Risk Offset	-18.1	-13.0	--	--	--	--
<i>SG Multi Alternative Risk Premia Index</i>	<u>-8.7</u>	<u>-8.2</u>	--	--	--	--
Excess Return	-9.4	-4.8				
Cash	1.0	3.1	2.1	1.4	1.0	--
<i>FTSE T-Bill 3 Months TR</i>	<u>0.4</u>	<u>2.0</u>	<u>1.7</u>	<u>1.1</u>	<u>0.8</u>	--
Excess Return	0.6	1.1	0.4	0.3	0.2	

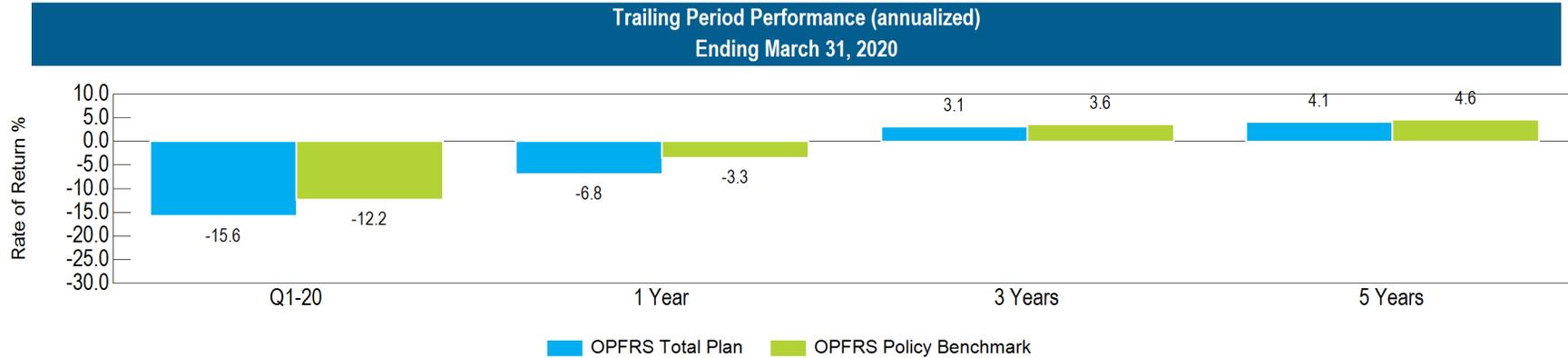
1. Evolving Policy Benchmark consists of 40% Russell 3000, 12% MSCI ACWI ex U.S., 33% Bbg BC Universal, 5% CBOE BXM , 6.7% SG Multi Asset Risk Premia, 3.3% Bbg BC Long Treasury.

2. Domestic Equity Benchmark consists of S&P 500 thru 3/31/98, 10% R1000, 20% R1000V, 5% RMC from 4/1/98 - 12/31/04, and Russell 3000 from 1/1/05 to present.

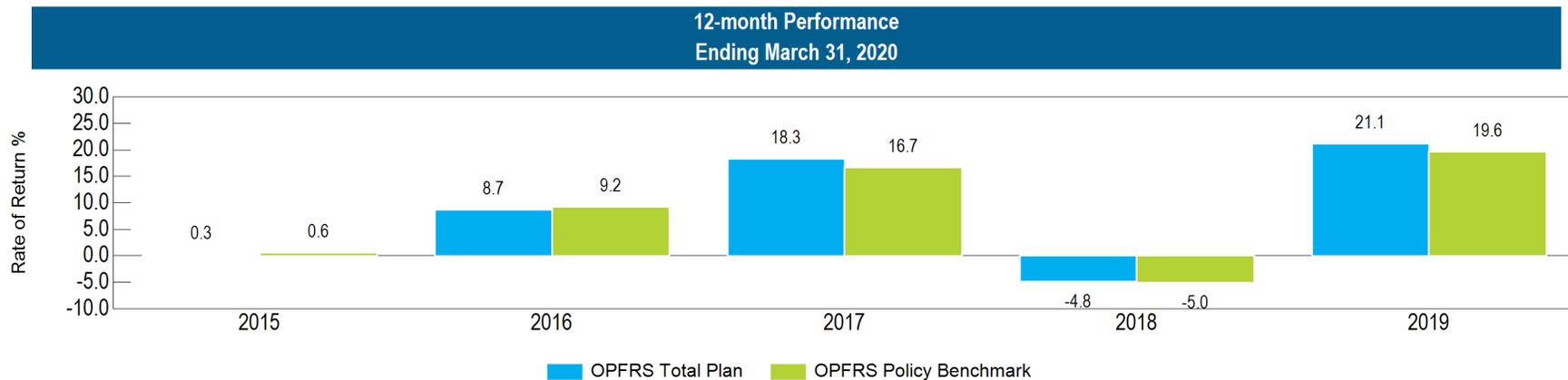
3. International Equity Benchmark consists of MSCI EAFE thru 12/31/04, and MSCI ACWI x US thereafter.

4. Fixed Income Benchmark consists of Bbg BC Aggregate prior to 4/1/06, and Bbg BC Universal thereafter.

Portfolio Relative Performance Results | As of March 31, 2020



	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)
OPFRS Total Plan	-15.7	-7.1	2.8	1.5	-15.2	8.3	18.0	-5.1	20.8
<i>OPFRS Policy Benchmark</i>	<i>-12.2</i>	<i>-3.3</i>	<i>3.6</i>	<i>4.6</i>	<i>0.6</i>	<i>9.2</i>	<i>16.7</i>	<i>-5.0</i>	<i>19.6</i>
<i>InvMetrics Public DB \$250mm-\$1B Gross Median</i>	<i>-13.3</i>	<i>-5.0</i>	<i>3.0</i>	<i>3.8</i>	<i>0.0</i>	<i>7.8</i>	<i>15.8</i>	<i>-4.1</i>	<i>18.6</i>



Portfolio Relative Performance Results | As of March 31, 2020

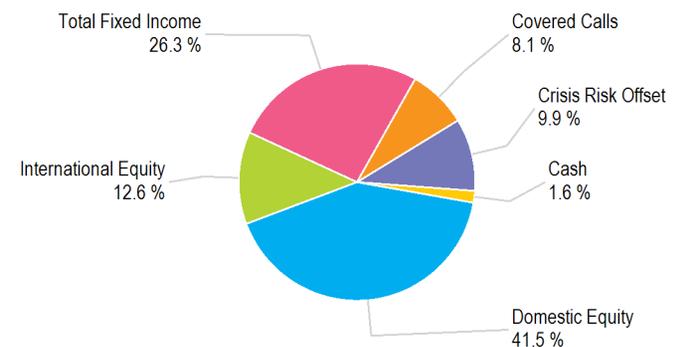
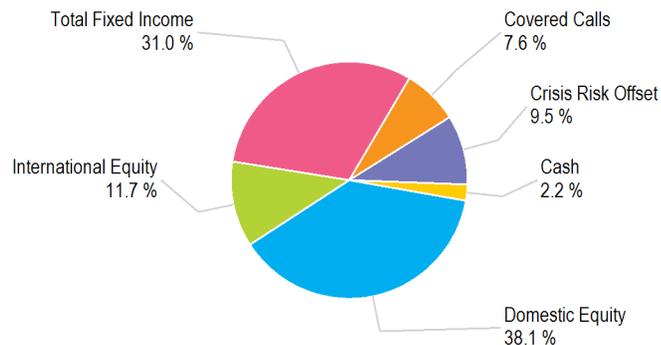
Asset Allocation vs. Target ¹ As Of March 31, 2020

	Current	%	Policy	Difference*
Domestic Equity	\$130,193,710	38.1%	40.0%	-1.9%
International Equity	\$39,823,657	11.7%	12.0%	-0.3%
Total Fixed Income	\$105,804,029	31.0%	33.0%	-2.0%
Covered Calls	\$25,955,463	7.6%	5.0%	2.6%
Crisis Risk Offset	\$32,299,476	9.5%	10.0%	-0.5%
Cash	\$7,454,175	2.2%	0.0%	2.2%
Total	\$341,530,510	100.0%	100.0%	

*Difference between Policy and Current Allocation

March 31, 2020 : \$341,530,510

December 31, 2019 : \$408,226,525.37



1. Target weightings reflect the Plan's evolving asset allocation (effective 5/31/2017.)

Manager Performance - Gross of Fees | As of March 31, 2020

	Market Value	3 Mo Rank	1 Yr Rank	3 Yrs Rank	5 Yrs Rank	S.I.	S.I. Date
Domestic Equity	130,193,710						
Northern Trust Russell 1000	74,854,604	-20.2 56	-8.0 50	4.6 43	6.2 42	11.3	Jun-10
<i>Russell 1000</i>		<i>-20.2 56</i>	<i>-8.0 50</i>	<i>4.6 43</i>	<i>6.2 42</i>	<i>11.3</i>	<i>Jun-10</i>
Excess Return		0.0	0.0	0.0	0.0	0.0	
EARNEST Partners	25,814,131	-23.6 27	-12.0 27	3.9 21	6.5 7	7.9	Apr-06
<i>Russell MidCap</i>		<i>-27.1 54</i>	<i>-18.3 55</i>	<i>-0.8 51</i>	<i>1.8 54</i>	<i>6.3</i>	<i>Apr-06</i>
Excess Return		3.5	6.3	4.7	4.7	1.6	
Vanguard Russell 2000 Value	5,513,548	-35.3 54	-- --	-- --	-- --	-30.1	Aug-19
<i>Russell 2000 Value</i>		<i>-35.7 58</i>	<i>-- --</i>	<i>-- --</i>	<i>-- --</i>	<i>-30.7</i>	<i>Aug-19</i>
Excess Return		0.4				0.6	
Rice Hall James	8,539,043	-29.0 85	-23.5 85	-- --	-- --	-4.2	Jul-17
<i>Russell 2000 Growth</i>		<i>-25.8 69</i>	<i>-18.6 66</i>	<i>-- --</i>	<i>-- --</i>	<i>-1.4</i>	<i>Jul-17</i>
Excess Return		-3.2	-4.9			-2.8	
iShares Edge MSCI Min Vol	15,472,384	-- --	-- --	-- --	-- --	--	

Over the three months ending March 31, 2020, only one active managers in the Domestic Equity portfolio outperformed their respective benchmark. Passive managers performed in line with, or modestly outperformed their respective benchmarks.

Northern Trust Russell 1000, the Plan's passive large cap core transition account, continues to perform in-line with its benchmark over all time periods measured. This performance is within exceptions for a passive mandate.

Vanguard Russell 2000 Value, the Plan's passive small cap manager, outperformed its benchmark by 0.4% over the most recent quarter, and by 0.6% since inception (August 2019).

Earnest Partners, the Plan's active mid cap core manager, outperformed its Russell Midcap benchmark by 3.5% placing it in the 28th percentile of its peer group. The portfolio has also outperformed its benchmark over all periods with excess returns of 6.3%, 4.7% and 4.7% over the 1-year, 3-year and 5-year periods respectively.

Rice Hall James, the Plan's active small cap value manager, underperformed its benchmark over the recent quarter by (3.2%), placing the portfolio in the 85th percentile of its peer group. The portfolio has underperformed its benchmark over the 1-year period by (4.9%).

SPI Active, the Plan's active Defensive Equity manager, was terminated in March and temporarily replaced by the iShares Edge MSCI Min Vol ETF.

Manager Performance - Gross of Fees | As of March 31, 2020

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
International Equity¹	39,823,657						
Vanguard Developed Markets	11,450,040	-23.6	--	--	--	-14.7	Sep-19
<i>MSCI ACWI ex USA Gross</i>		<i>-23.3</i>	--	--	--	<i>-14.2</i>	<i>Sep-19</i>
Excess Return		-0.3				-0.5	
iShares MSCI ACW exUS ETF	27,996,931	-21.3	--	--	--	-20.8	Dec-19
<i>MSCI ACWI ex USA Gross</i>		<i>-23.3</i>	--	--	--	<i>-19.9</i>	<i>Dec-19</i>
Excess Return		2.0				-0.9	

As of March 31, 2020, the Plan's international equity portfolio was entirely composed of passive managers. Over the quarter, managers produced mixed results versus their respective benchmarks.

Vanguard Developed Markets, the Plan's passive international developed markets (ex US), trailed its benchmark by (0.3%) over the most recent quarter. This tracking error is within the expected range. iShares MSCI ACWI ex US ETF, the Plan's temporary passive international equity manager, outperformed its benchmark by 2.0% over the most recent quarter.

1. Total International Equity market value includes cash held in closed accounts Fisher and Hansberger.

Manager Performance - Gross of Fees | As of March 31, 2020

	Market Value	3 Mo	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	S.I.	S.I. Date
Total Fixed Income	105,804,029										
Ramirez	72,611,274	-2.2	96	3.7	94	3.8	85	--	--	3.8	Jan-17
<i>BBgBarc US Aggregate TR</i>		<u>3.1</u>	<u>15</u>	<u>8.9</u>	<u>13</u>	<u>4.8</u>	<u>15</u>	--	--	<u>4.7</u>	<u>Jan-17</u>
Excess Return		-5.3		-5.2		-1.0				-0.9	
Reams	26,446,804	6.2	1	11.7	1	6.2	2	4.4	5	5.8	Feb-98
<i>Blmbg BC Universal (Blend)</i>		<u>1.3</u>	<u>22</u>	<u>7.2</u>	<u>26</u>	<u>4.4</u>	<u>42</u>	<u>3.4</u>	<u>61</u>	<u>5.0</u>	<u>Feb-98</u>
Excess Return		4.9		4.5		1.8		1.0		0.8	
DDJ Capital	6,745,908	-15.9	92	-14.9	99	-1.3	99	1.6	96	1.9	Feb-15
<i>ICE BofAML High Yield Master TR</i>		<u>-13.1</u>	<u>67</u>	<u>-7.4</u>	<u>73</u>	<u>0.6</u>	<u>74</u>	<u>2.7</u>	<u>59</u>	<u>3.0</u>	<u>Feb-15</u>
Excess Return		-2.8		-7.5		-1.9		-1.1		-1.1	

Over the three months ending March 31, 2020, one of three active managers in the Plan's Fixed Income portfolio outperformed their respective benchmark.

Ramirez, the Plan's core fixed income manager, returned -2.2% compared to the benchmark return of 3.1% during the quarter, ranking the portfolio in the 96th percentile of its peergroup. Ramirez has underperformed its benchmark by (5.2%) and (1.0%) over the 1-year and 3-year periods respectively, ranking in 93rd and 85th percentiles versus peers.

Reams, the Plan's core plus fixed income manager returned 6.2%, beating its benchmark by 4.9% during the quarter and ranked in the 1st percentile of its peer group. Over the mostrecent 12-month period,Reams outperformed its benchmark by 4.5%, earning a 1st percentile ranking. Reams did outperform its benchmark over the 3- and 5-year periods by 1.8%and 1.0% respectively.

DDJ, the Plan's High Yield & Bank Loan manager, returned -15.9% during the most recent quarter, underperforming the benchmark by (2.8%). DDJ now trails the benchmark in all periods with underperformance of (7.5%), (1.9%) and (1.1%) over the 1, 3 and 5-year periods respectively.

Manager Performance - Gross of Fees | As of March 31, 2020

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
Covered Calls	25,955,463	-18.6	-9.0	1.7	4.5	4.8	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>		<i>-22.2</i>	<i>-15.1</i>	<i>-2.1</i>	<i>1.6</i>	<i>2.1</i>	<i>Apr-14</i>
Excess Return		3.6	6.1	3.8	2.9	2.7	
Parametric BXM	12,476,733	-17.5	-10.5	0.3	3.5	3.7	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>		<i>-22.2</i>	<i>-15.1</i>	<i>-2.1</i>	<i>1.6</i>	<i>2.1</i>	<i>Apr-14</i>
Excess Return		4.7	4.6	2.4	1.9	1.6	
Parametric DeltaShift	13,478,731	-19.6	-7.6	3.0	5.2	6.5	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>		<i>-22.2</i>	<i>-15.1</i>	<i>-2.1</i>	<i>1.6</i>	<i>2.1</i>	<i>Apr-14</i>
Excess Return		2.6	7.5	5.1	3.6	4.4	

Over the three months ending March 31, 2020, the Covered Calls portfolio outperformed its benchmark by 3.6%.

Parametric BXM, the Plan's passive covered calls allocation outperformed its CBOE BXM index by 4.7% over the most recent quarter. The portfolio has outperformed over the most recent 1-year, 3- and 5-year periods by 4.6%, 2.4% and 1.9% respectively.

Parametric DeltaShift, the Plan's active covered calls allocation outperformed its CBOE BXM index by 2.6% over the most recent quarter. The portfolio has outperformed over the most recent 1-year, 3- and 5-year periods by 7.5%, 5.1% and 3.6% respectively.

Manager Performance - Gross of Fees | As of March 31, 2020

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
Crisis Risk Offset	32,299,476	-18.1	-13.0	--	--	-9.3	Sep-18
<i>SG Multi Alternative Risk Premia Index</i>		<i>-8.7</i>	<i>-8.2</i>	--	--	<i>-4.1</i>	<i>Sep-18</i>
Excess Return		-9.4	-4.8			-5.2	
Parametric Systematic Alternative Risk Premia	16,485,876	-38.2	-32.4	--	--	-21.6	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>		<i>-8.7</i>	<i>-8.2</i>	--	--	<i>-4.3</i>	<i>Aug-18</i>
Excess Return		-29.5	-24.2			-17.3	
Vanguard Long-Term Treasury ETF	15,813,600	21.3	--	--	--	25.5	Jul-19
<i>BBgBarc US Govt Long TR</i>		<i>20.6</i>	--	--	--	<i>24.8</i>	<i>Jul-19</i>
Excess Return		0.7				0.7	

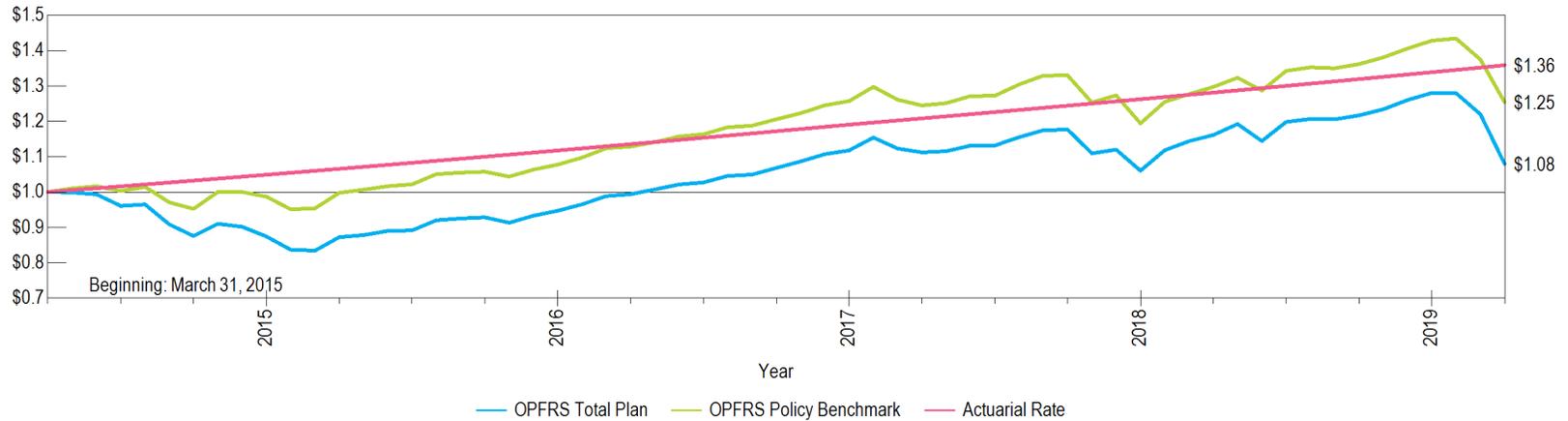
Over the three months ending March 31, 2020, the Crisis Risk Offset portfolio underperformed its benchmark by (9.4%).

Parametric Systematic Alternative Risk Premia, the Plan's Risk Premia / Trend Following manager returned -38.2%, significantly underperforming its benchmark by (29.5%) during the quarter. This resulted in underperformance at the 1-year mark of (24.2%) and (17.3%) since inception.

Vanguard Long Duration ETF, the Plan's Long Duration allocation returned 21.3%, beating its benchmark by 0.7% over the quarter. The Vanguard Long-Term Treasury ETF is a placeholder in the Long Duration allocation until a permanent manager is selected.

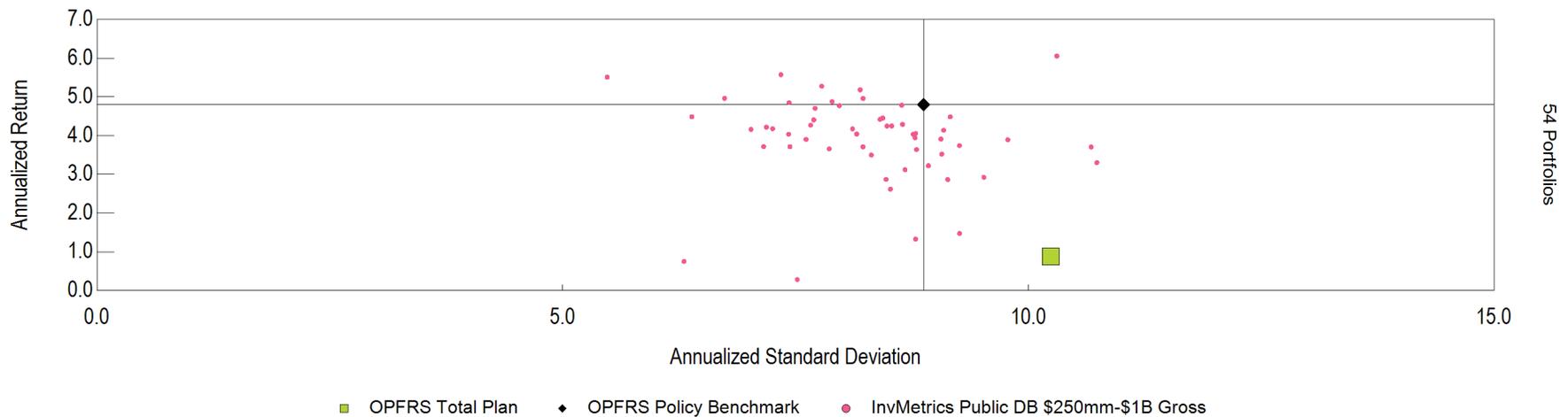
Total Portfolio 5-Year Performance | As of March 31, 2020

Growth of a Dollar

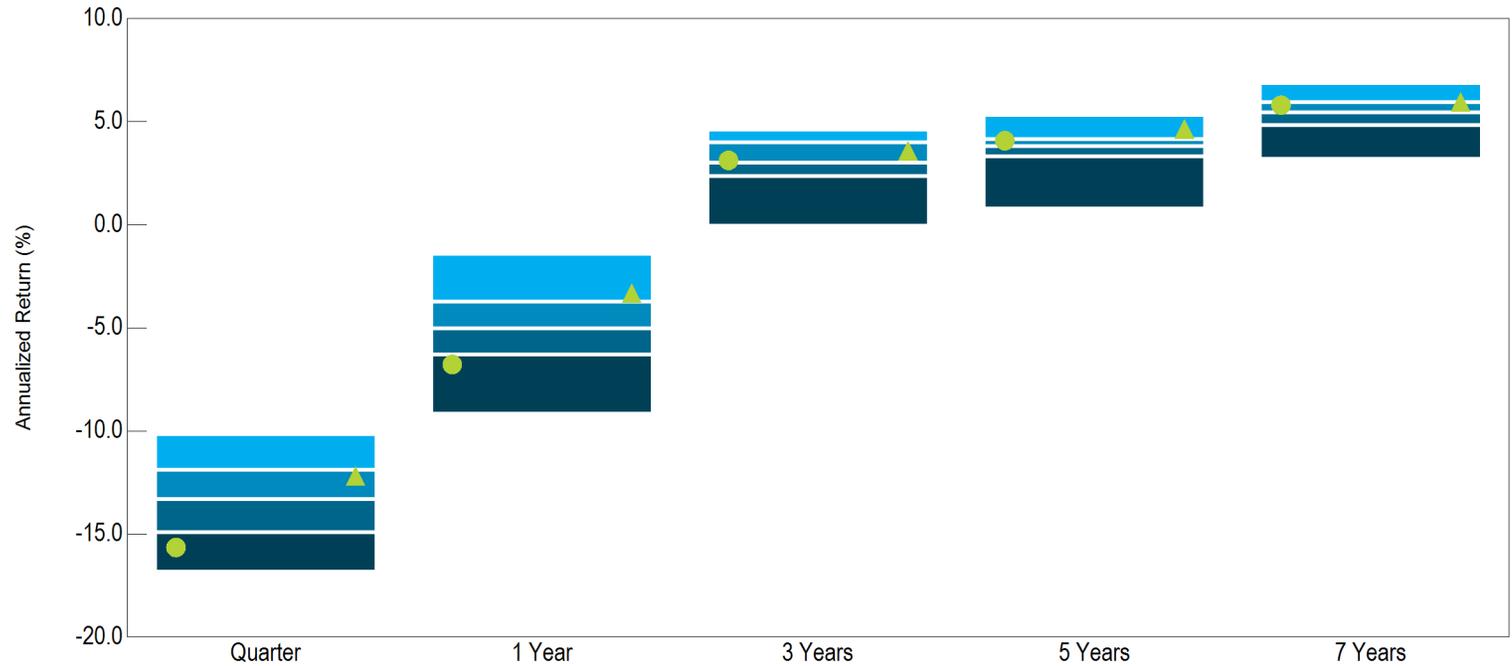


The actuarial expected rate of return was 8% through 6/30/2009, 7.5% through 6/30/2010, 7% through 6/30/2011, 6.75% through 6/30/2014, 6.5% through 2/31/2017 and 6.0% currently.

Annualized Return vs. Annualized Standard Deviation 5 Years 3 Months Ending March 31, 2020



InvMetrics Public DB \$250mm-\$1B Gross Return Comparison



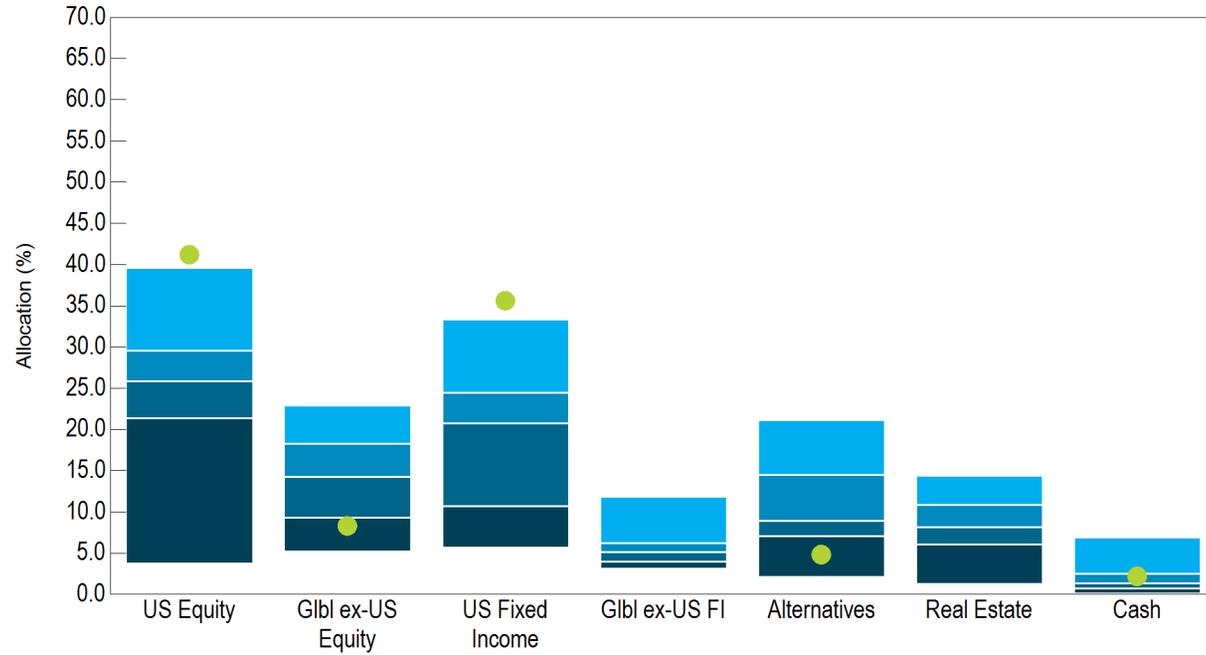
Return (Rank)

5th Percentile	-10.2		-1.4		4.6		5.3		6.8	
25th Percentile	-11.9		-3.7		4.0		4.2		5.9	
Median	-13.3		-5.0		3.0		3.8		5.5	
75th Percentile	-14.9		-6.3		2.4		3.3		4.8	
95th Percentile	-16.8		-9.1		0.0		0.8		3.2	
# of Portfolios	56		56		54		54		52	
● OPFRS Total Plan	-15.6	(91)	-6.8	(81)	3.1	(49)	4.1	(29)	5.8	(29)
▲ OPFRS Policy Benchmark	-12.2	(30)	-3.3	(19)	3.6	(35)	4.6	(15)	5.9	(26)

Calculation based on monthly periodicity.

Plan Sponsor Total Fund Asset Allocation | As of March 31, 2020

Total Plan Allocation vs. InvMetrics Public DB \$250mm-\$1B Gross



	Allocation (Rank)						
	US Equity	Gbl ex-US Equity	US Fixed Income	Gbl ex-US FI	Alternatives	Real Estate	Cash
5th Percentile	39.6	22.9	33.3	11.8	21.2	14.4	6.9
25th Percentile	29.6	18.3	24.5	6.3	14.5	10.9	2.6
Median	26.0	14.3	20.8	5.2	9.0	8.2	1.4
75th Percentile	21.4	9.4	10.8	4.1	7.1	6.2	0.8
95th Percentile	3.8	5.3	5.7	3.2	2.2	1.3	0.1
# of Portfolios	35	37	31	11	47	33	47
● OPFRS Total Plan	41.2 (4)	8.3 (82)	35.6 (1)	--	4.8 (89)	--	2.2 (29)

Calculation based on monthly periodicity.

Manager Monitoring / Probation List

Monitoring/Probation Status

Return vs. Benchmark since Corrective Action As of March 31, 2020

Portfolio	Status	Concern	Months Since Corrective Action	Performance [^] Since Corrective Action (Gross)	Peer Group Percentile Ranking	Date of Corrective Action*
DDJ Capital	On Watch	Performance	7	-15.1	92	5/29/2019
Ice BofAML US High Yield			---	-7.5		
Rice Hall James	On Watch	Performance	7	-20.7	85	5/29/2019
Russell 2000 Growth	---	---	---	-14.7		

[^] Annualized performance if over one year.

* Approximate date based on when Board voted to either monitor a manager at a heightened level or place it on probation.

Investment Performance Criteria For Manager Monitoring/Probation Status

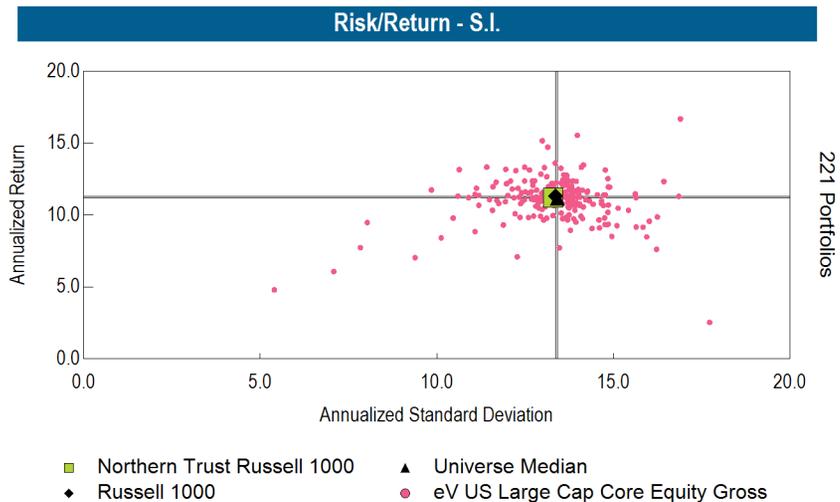
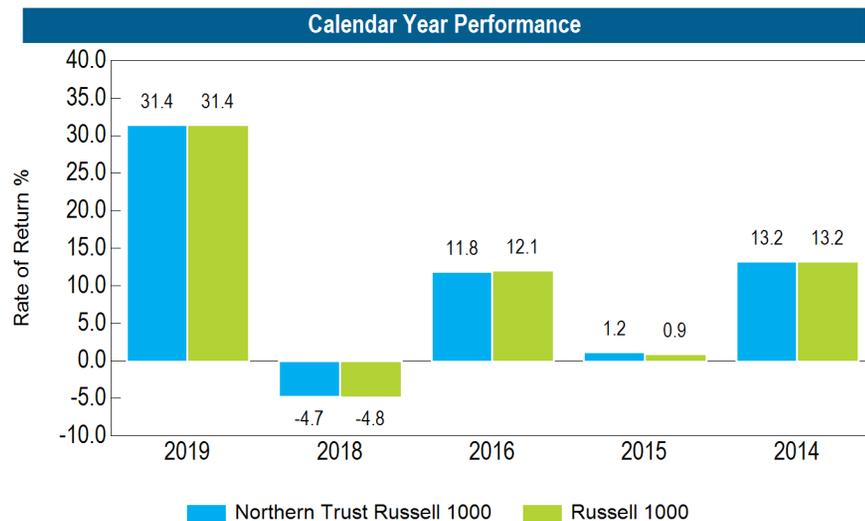
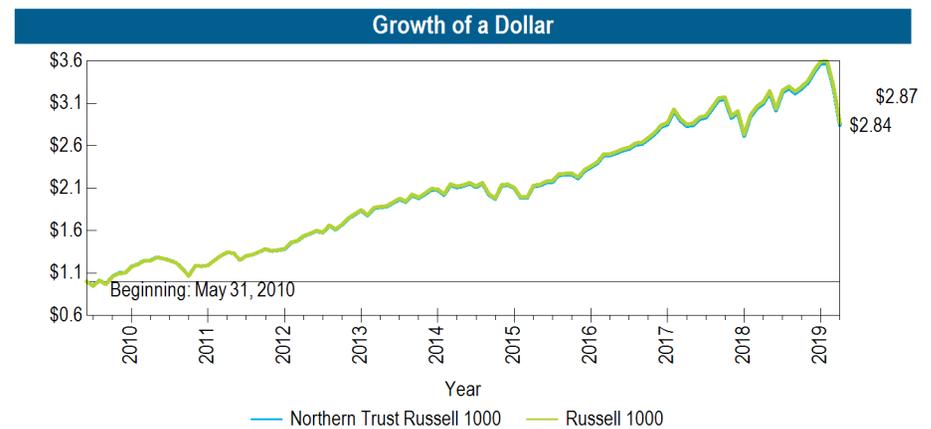
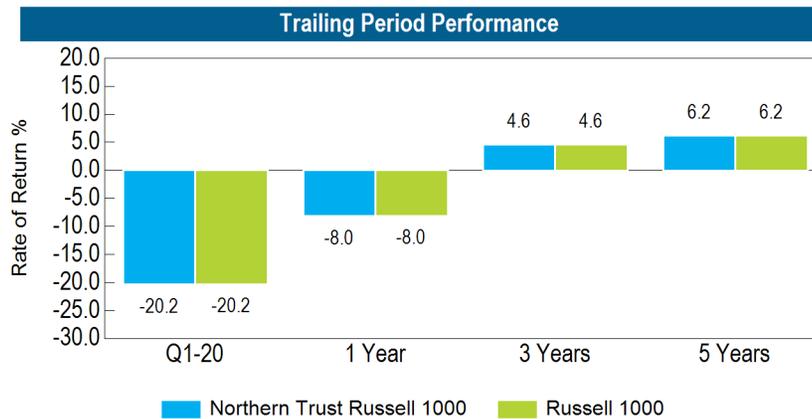
Asset Class	Short-term (Rolling 12 mth periods)	Medium-term (Rolling 36 mth periods)	Long-term (60 + mths)
Active Domestic Equity	Fd return < bench return - 3.5%	Fd annlzd return < bench annlzd return - 1.75% for 6 consecutive months	VRR** < 0.97 for 6 consecutive months
Active International Equity	Fd return < bench return - 4.5%	Fd annlzd return < bench annlzd return - 2.0% for 6 consecutive months	VRR < 0.97 for 6 consecutive months
Passive International Equity	Tracking Error > 0.50%	Tracking Error > 0.45% for 6 consecutive months	Fd annlzd return < bench annlzd return - 0.40% for 6 consecutive months
Fixed Income	Fd return < bench return - 1.5%	Fd annlzd return < bench annlzd return - 1.0% for 6 consecutive months	VRR < 0.98 for 6 consecutive months

** VRR – Value Relative Ratio – is calculated as: manager cumulative return / benchmark cumulative return.

Individual Manager Performance

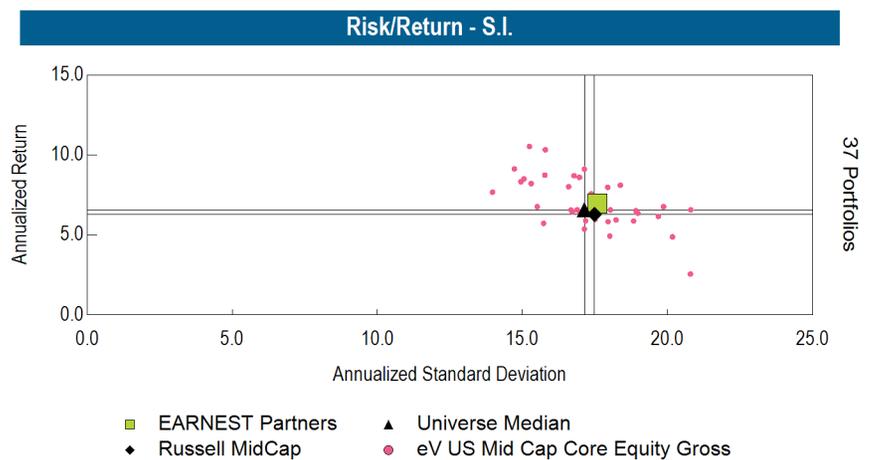
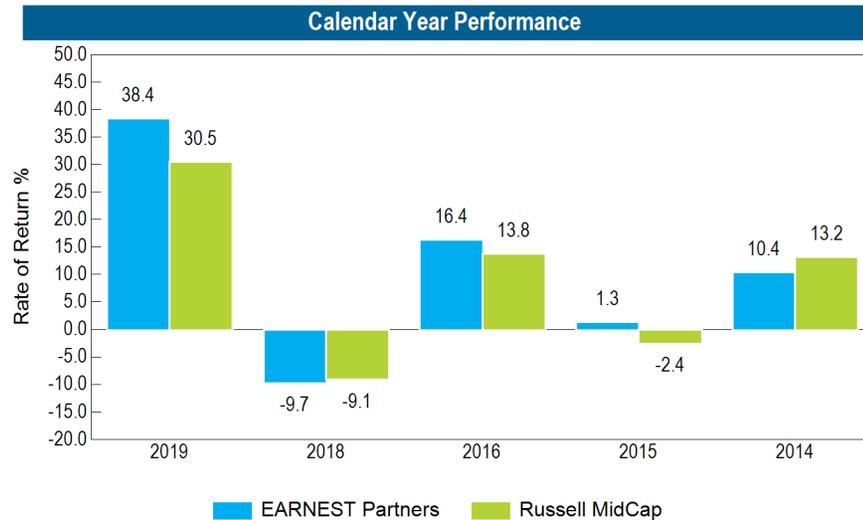
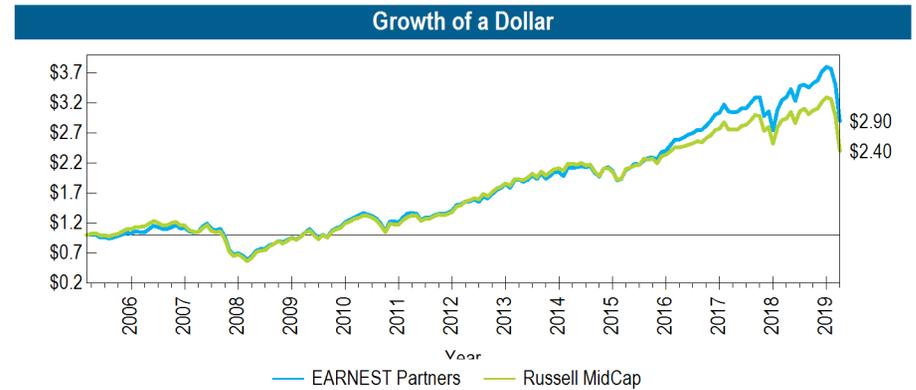
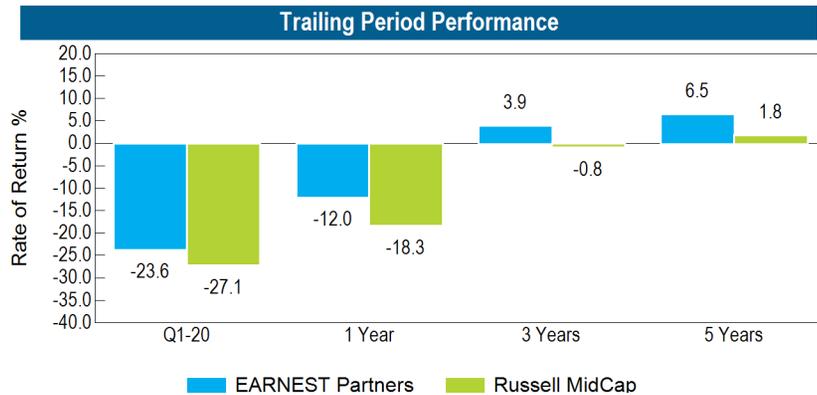
Northern Trust Russell 1000 | As of March 31, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Northern Trust Russell 1000	0.00%	1.00	-0.63	0.80	0.14%	1.00	98.43%	99.74%
Russell 1000	0.00%	1.00	--	0.80	0.00%	1.00	100.00%	100.00%



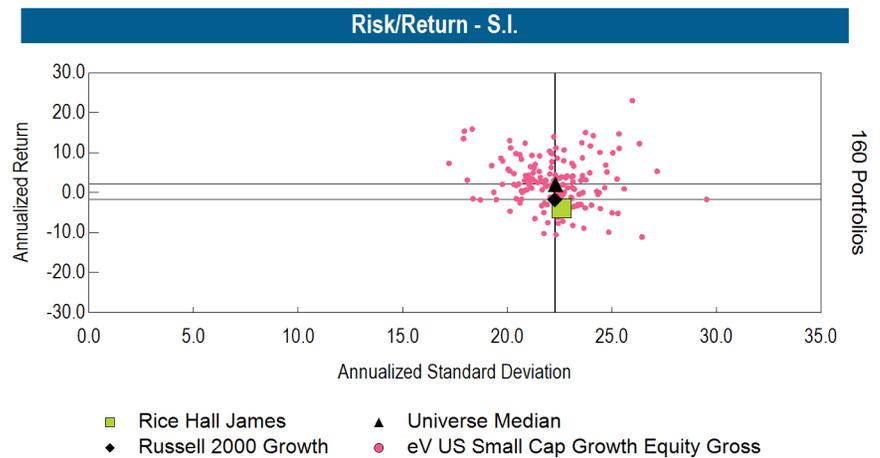
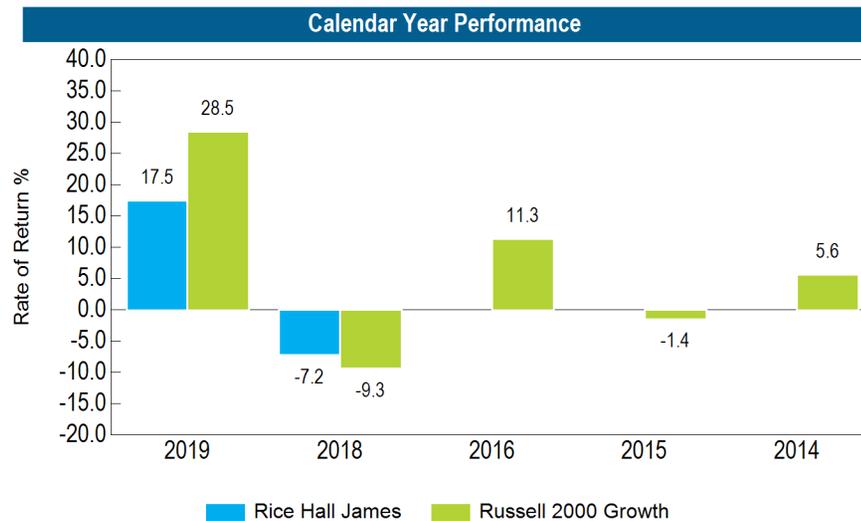
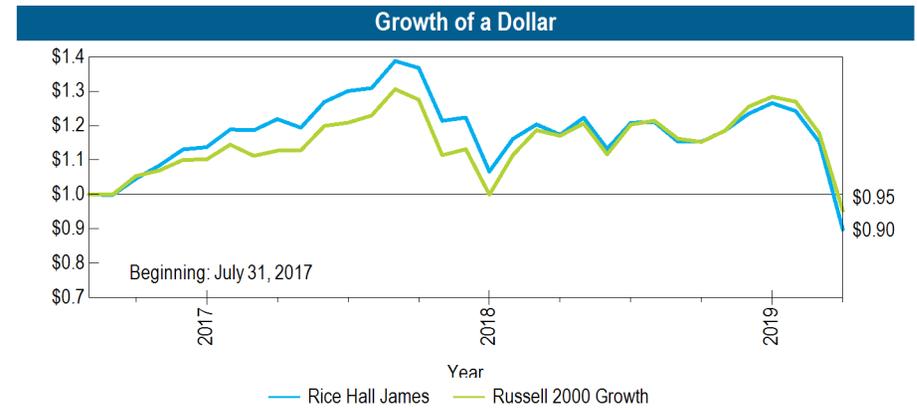
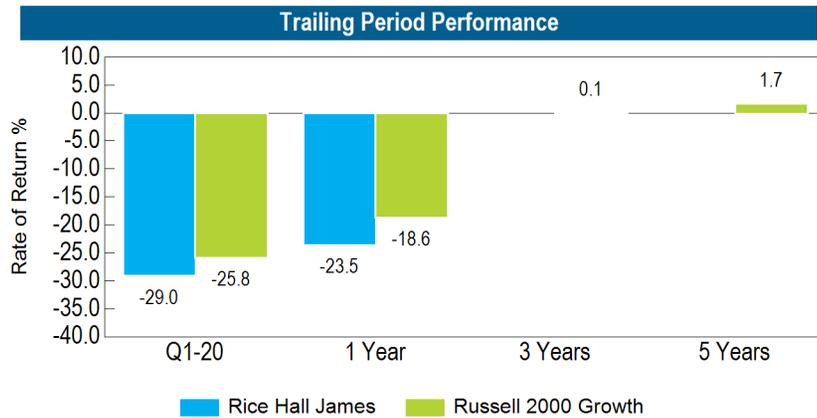
EARNEST Partners | As of March 31, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
EARNEST Partners	0.14%	0.99	0.49	0.39	3.33%	0.96	105.22%	98.71%
Russell MidCap	0.00%	1.00	--	0.29	0.00%	1.00	100.00%	100.00%

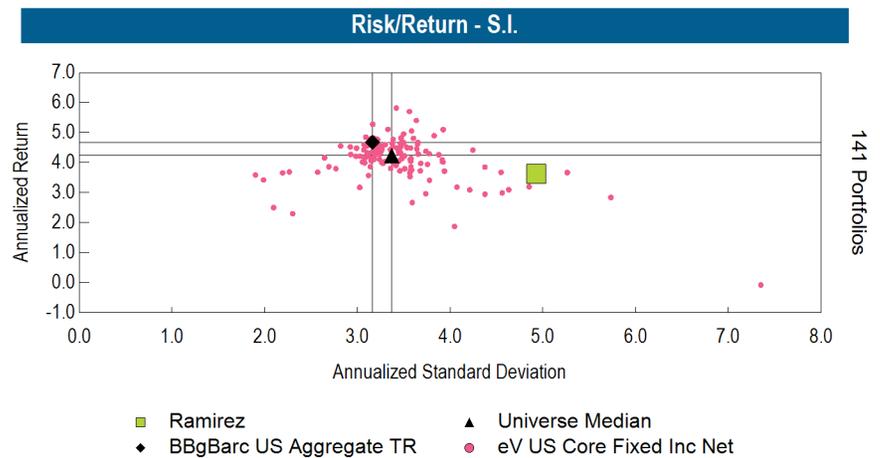
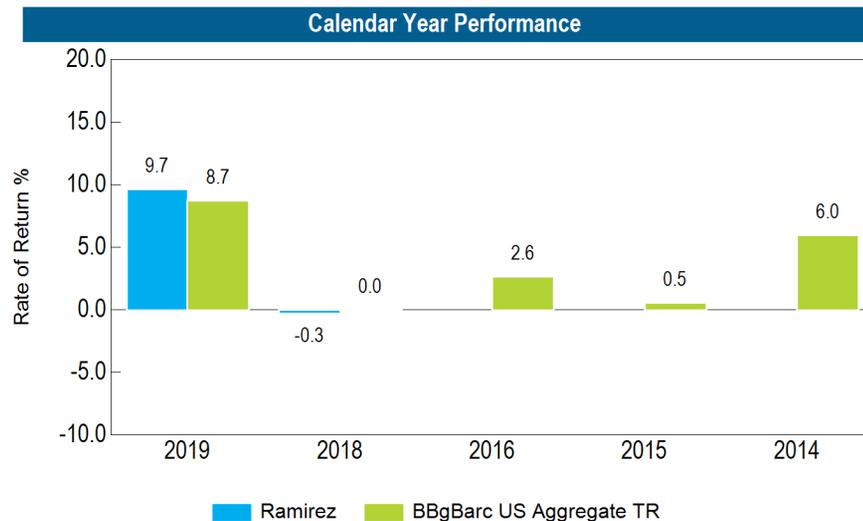
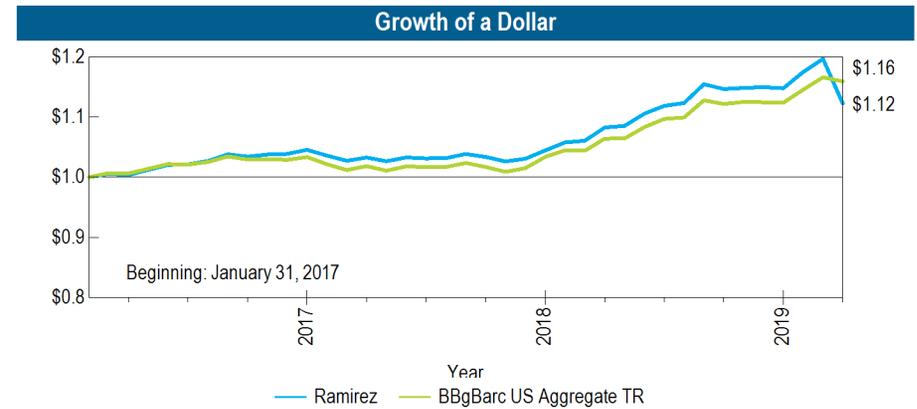
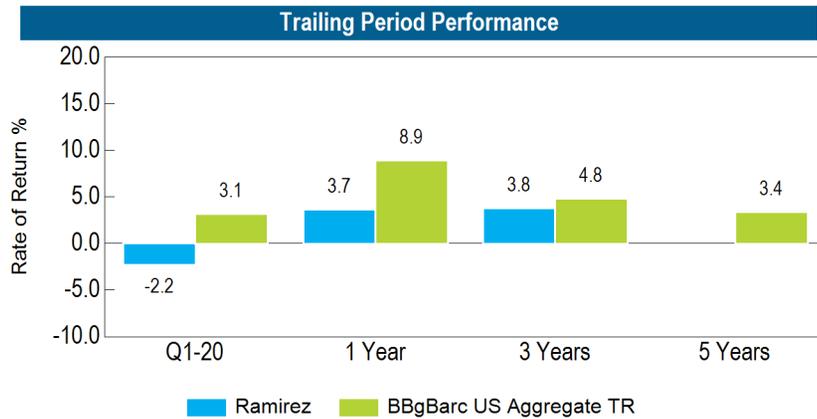


Rice Hall James | As of March 31, 2020

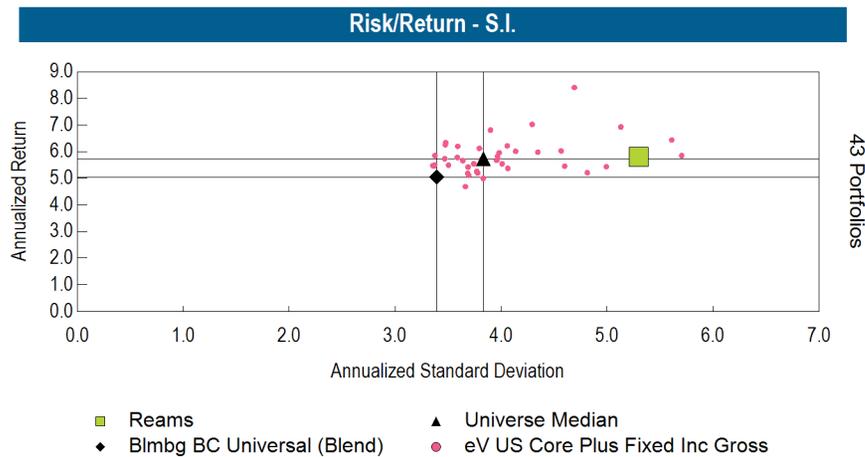
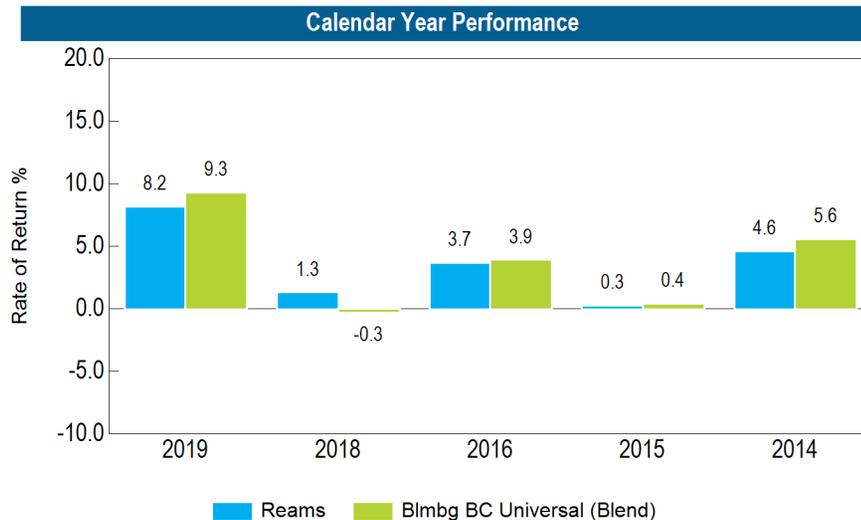
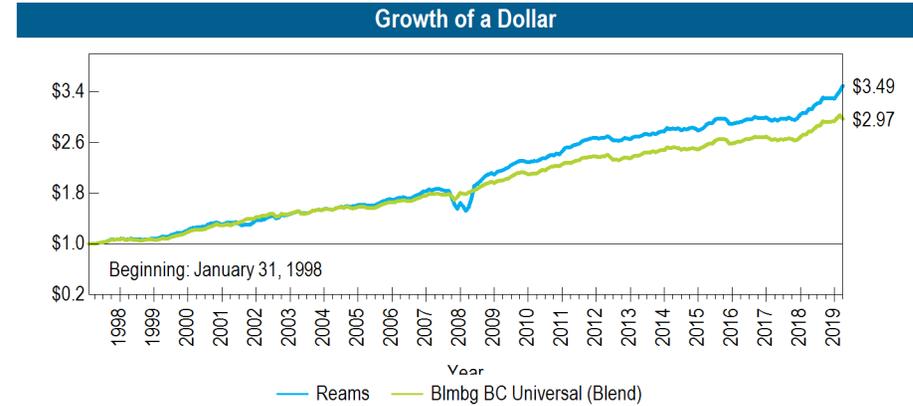
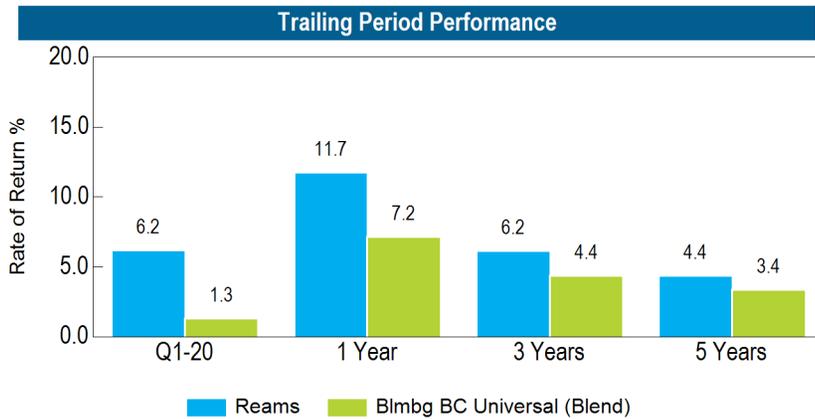
	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Rice Hall James	-0.17%	0.99	-0.44	-0.26	4.89%	0.95	91.43%	101.33%
Russell 2000 Growth	0.00%	1.00	--	-0.17	0.00%	1.00	100.00%	100.00%



	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Ramirez	-0.14%	1.17	-0.33	0.42	3.26%	0.56	106.60%	165.41%
BBgBarc US Aggregate TR	0.00%	1.00	--	0.99	0.00%	1.00	100.00%	100.00%

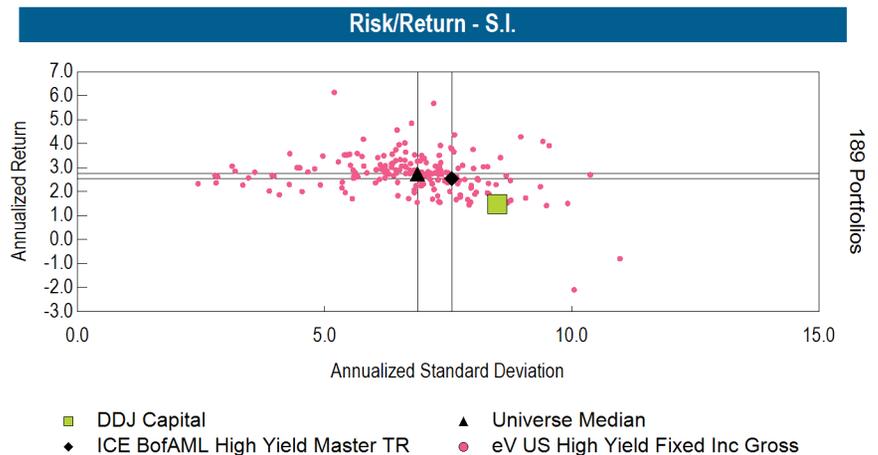
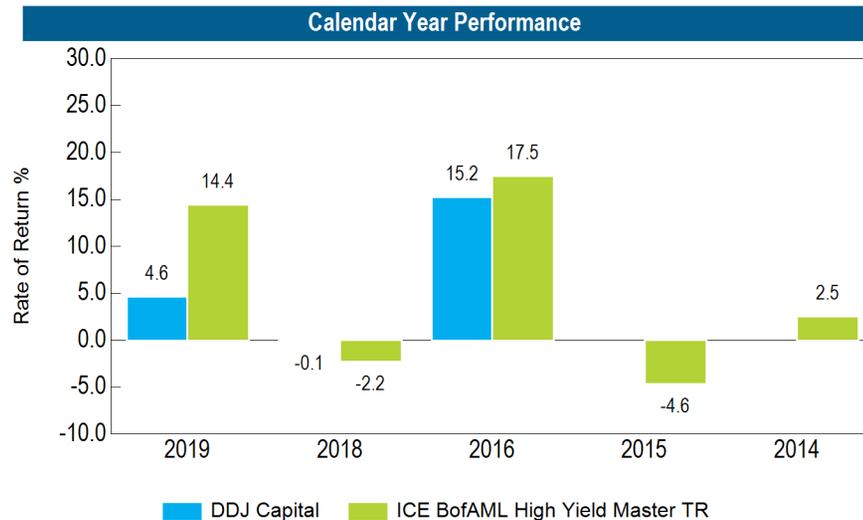
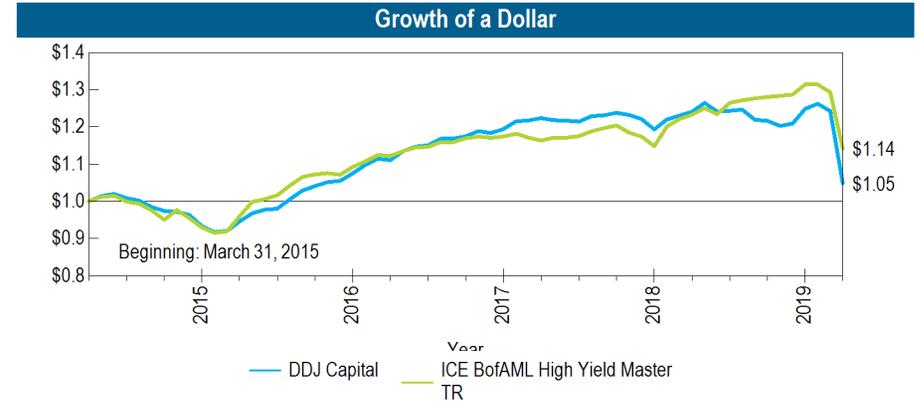
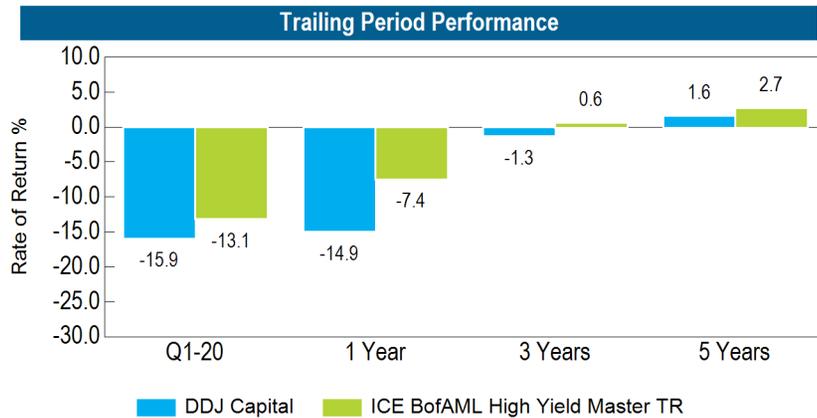


	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Reams	0.06%	1.02	0.19	0.74	4.00%	0.43	119.11%	97.58%
Blmbg BC Universal (Blend)	0.00%	1.00	--	0.92	0.00%	1.00	100.00%	100.00%



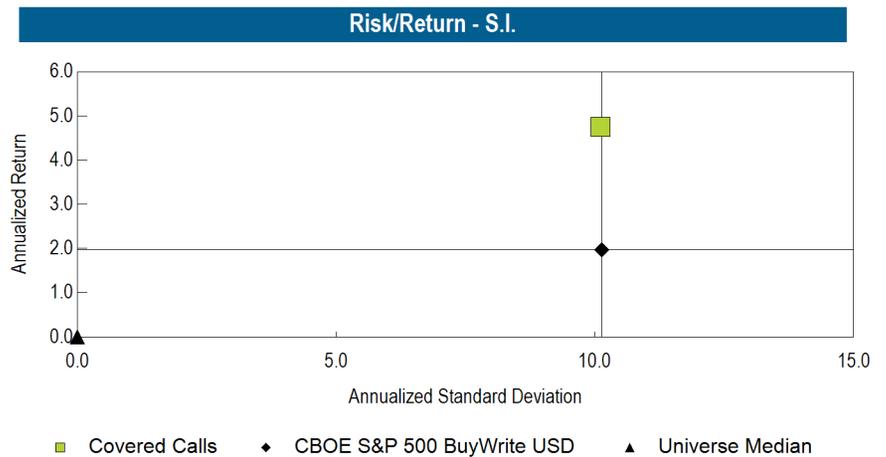
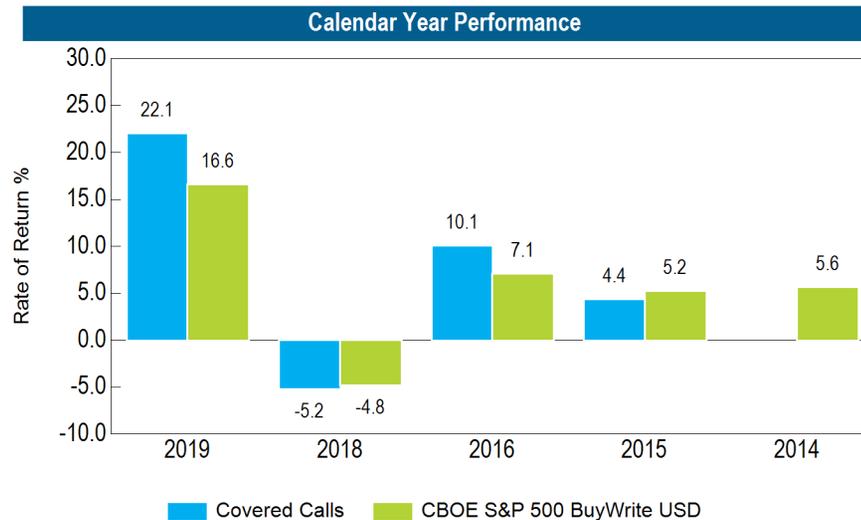
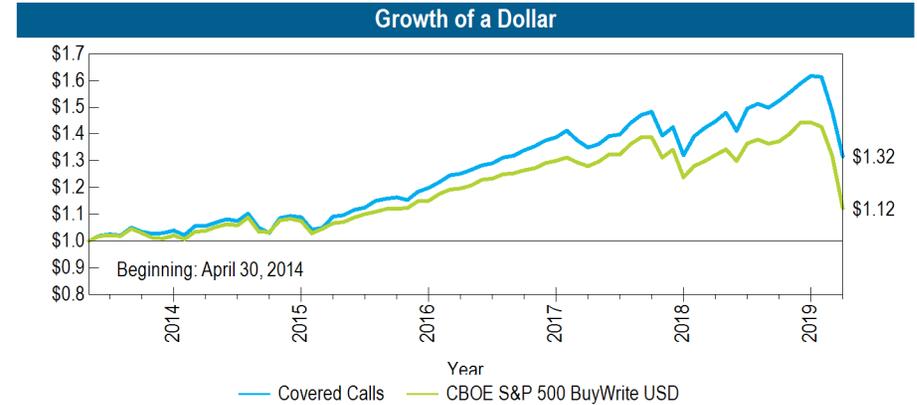
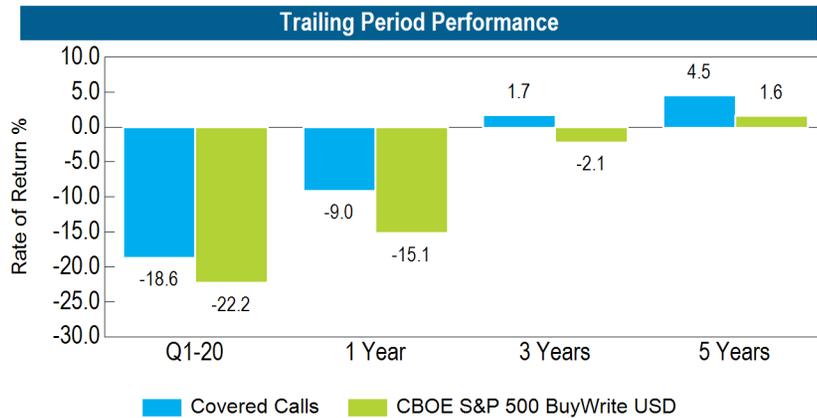
DDJ Capital | As of March 31, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
DDJ Capital	-0.08%	1.01	-0.28	0.04	3.72%	0.81	80.78%	94.25%
ICE BofAML High Yield Master TR	0.00%	1.00	--	0.19	0.00%	1.00	100.00%	100.00%



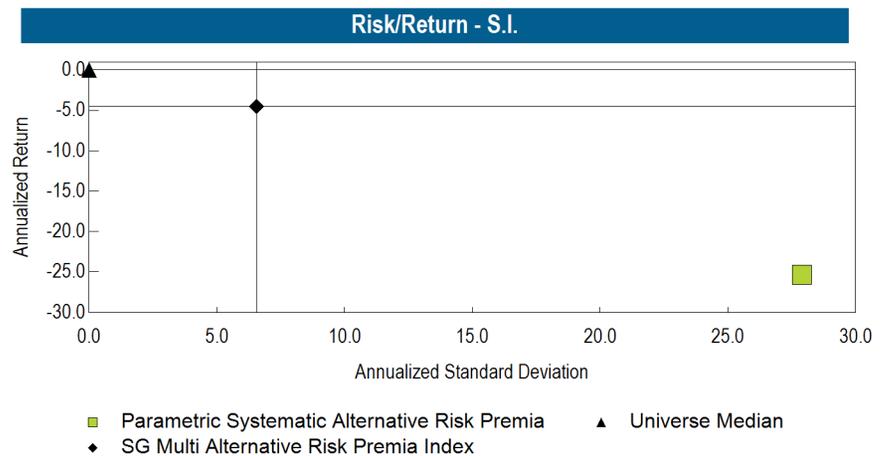
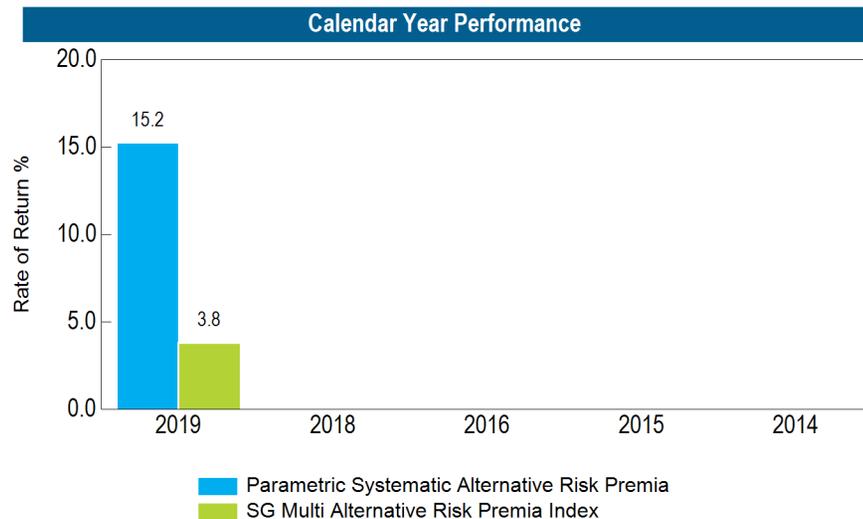
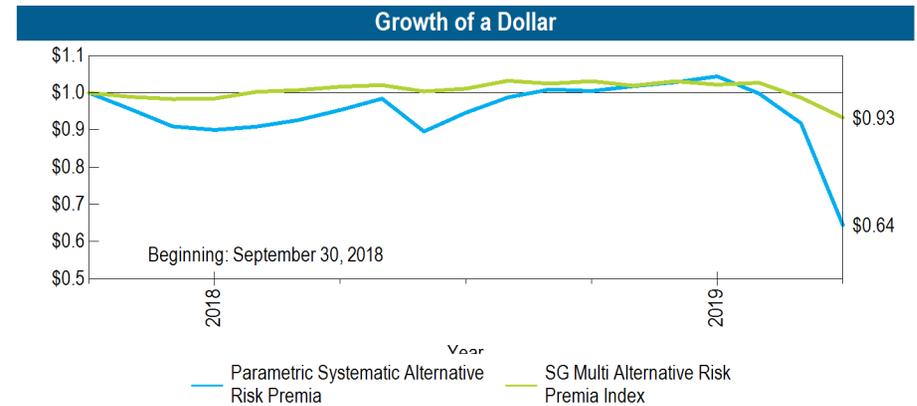
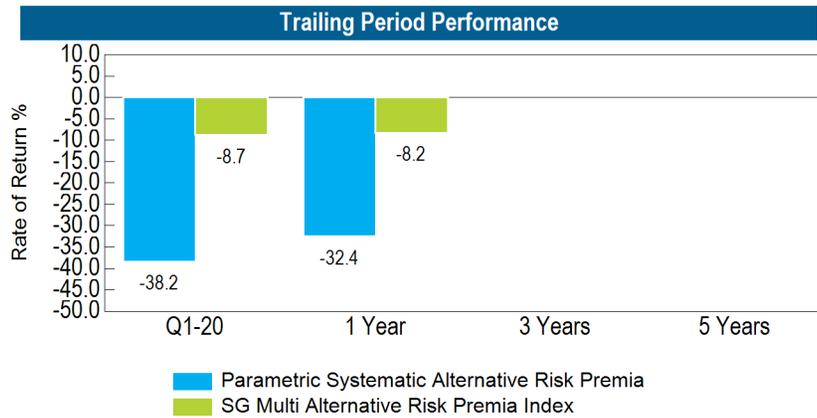
Covered Calls | As of March 31, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Covered Calls	0.23%	0.96	1.00	0.38	2.78%	0.93	130.60%	98.61%
CBOE S&P 500 BuyWrite USD	0.00%	1.00	--	0.10	0.00%	1.00	100.00%	100.00%



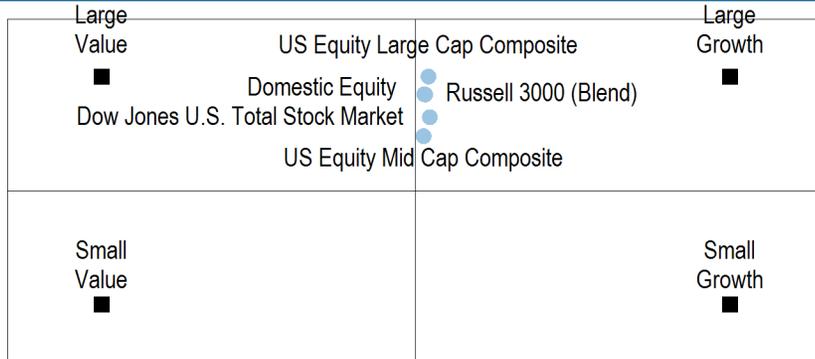
Parametric Systematic Alternative Risk Premia | As of March 31, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Parametric Systematic Alternative Risk Premia	-0.57%	3.58	-0.83	-0.90	22.41%	0.69	194.24%	300.45%
SG Multi Alternative Risk Premia Index	0.00%	1.00	--	-0.97	0.00%	1.00	100.00%	100.00%

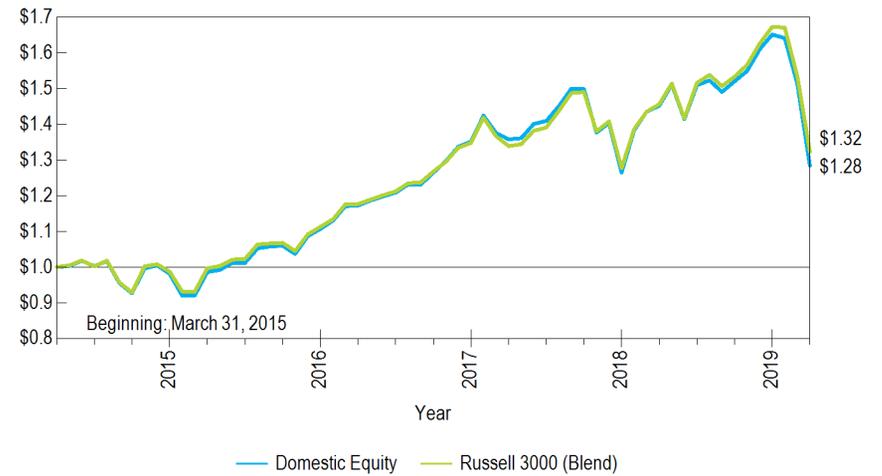


Domestic Equity | As of March 31, 2020

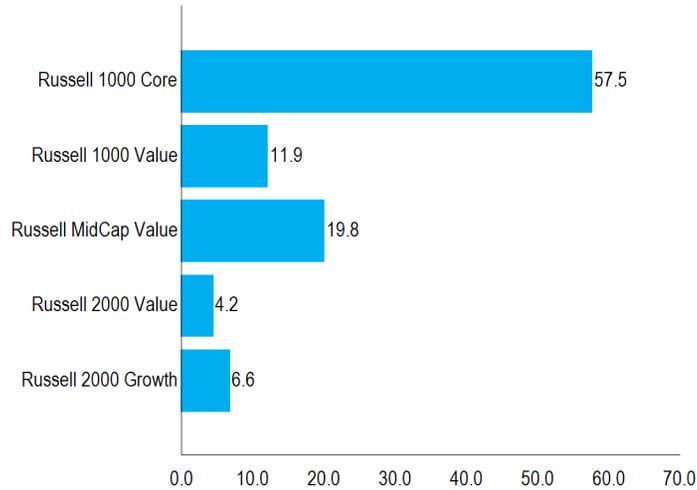
Style Map (5-Year)



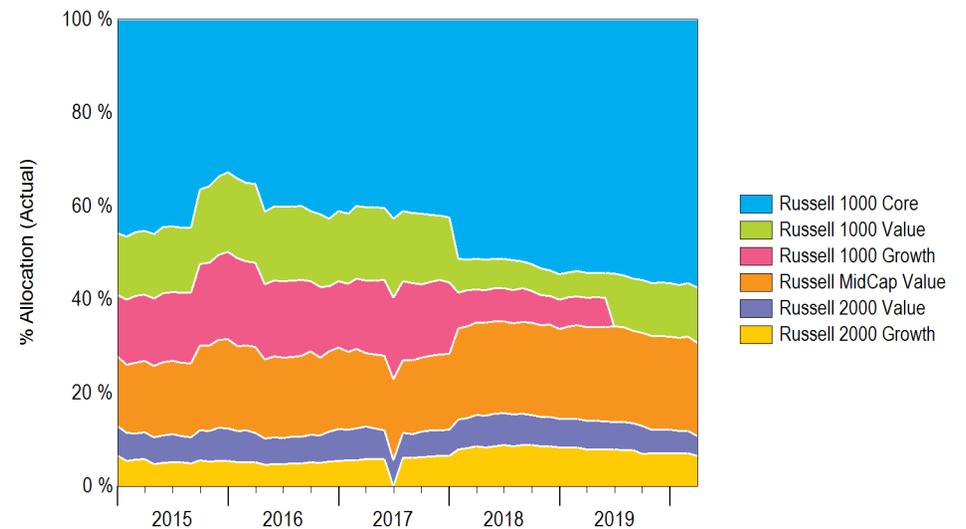
Growth of a Dollar



Style Exposure

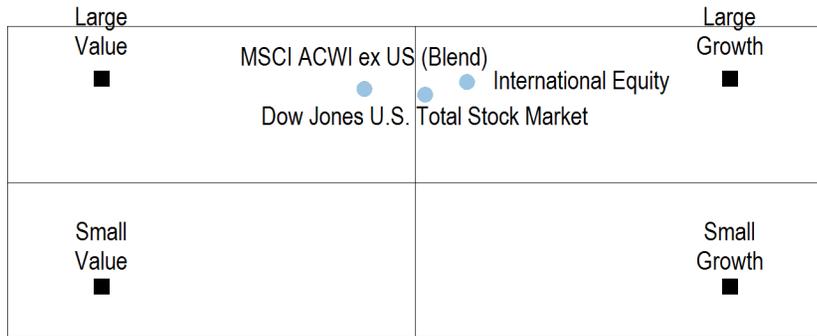


Style History (5-Year)



International Equity | As of March 31, 2020

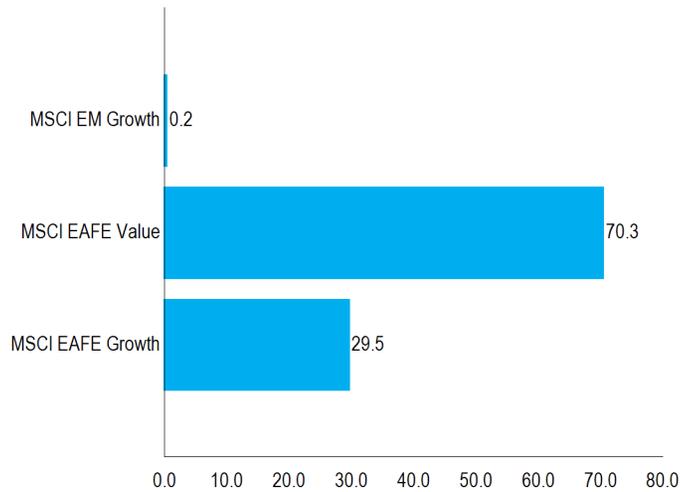
U.S. Effective Style Map
5 Years 3 Months Ending March 31, 2020



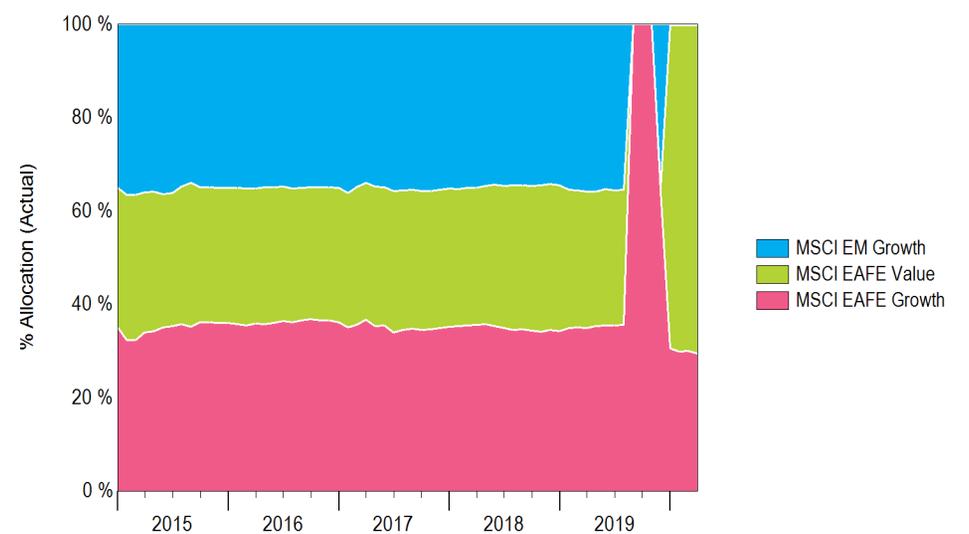
Growth of a Dollar
5 Years Ending March 31, 2020

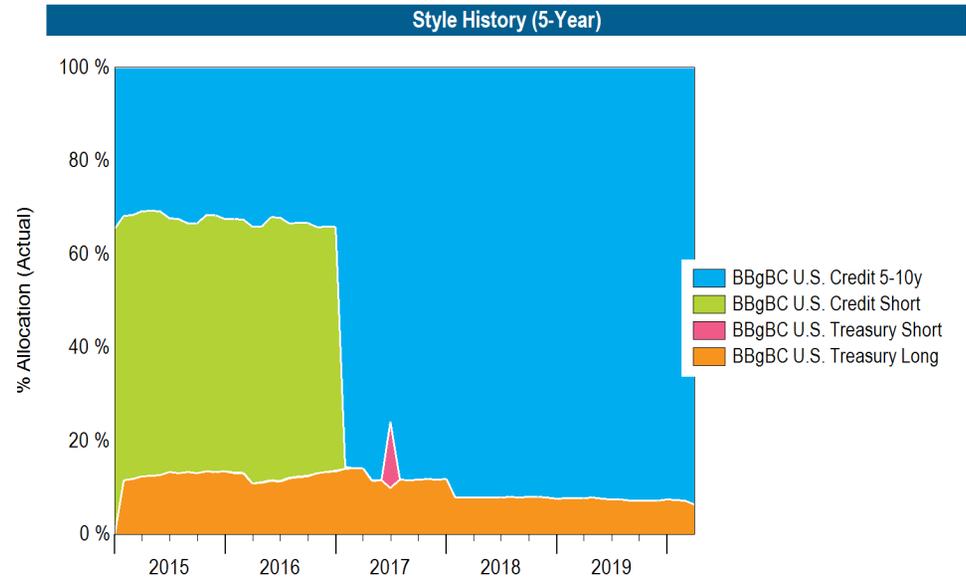
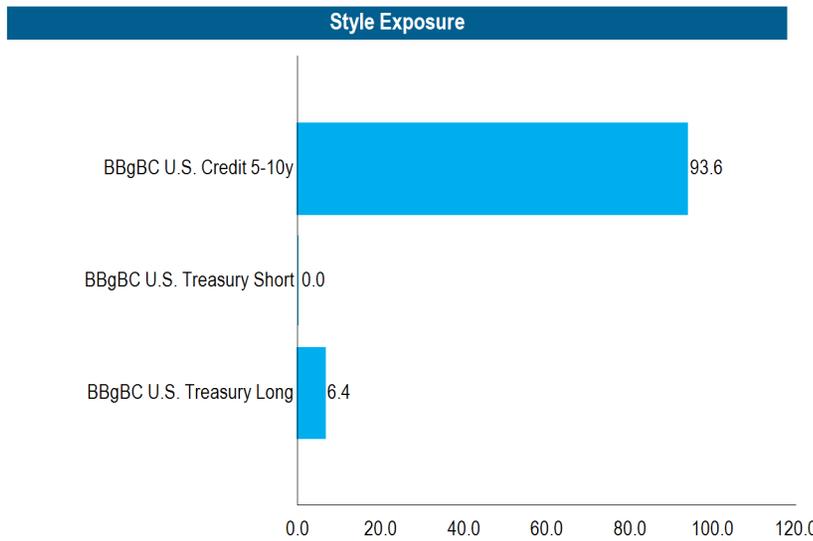
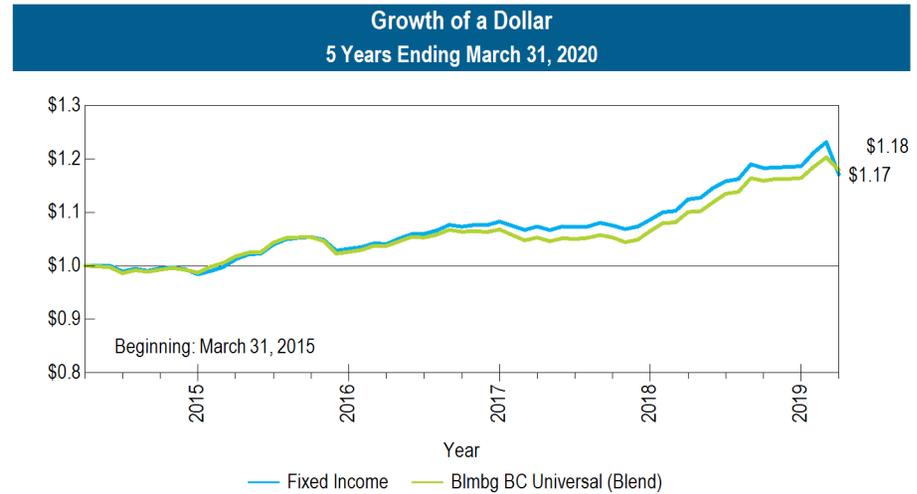
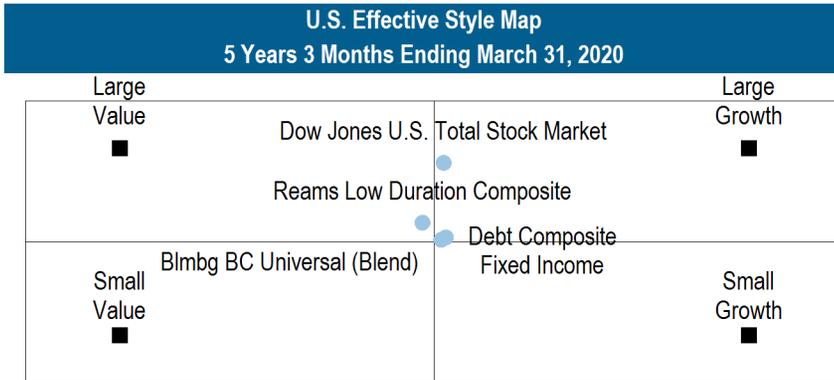


Style Exposure



Style History (5-Year)





Disclaimer, Glossary, and Notes

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

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

Credit Risk: Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

Duration: Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

Information Ratio: This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Jensen's Alpha: A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk. $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} * (\text{market return} - \text{Risk Free Rate})]$.

Market Capitalization: For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

Market Weighted: Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

Maturity: The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

Prepayment Risk: The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

Price-Book Value (P/B) Ratio: The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

Price-Earnings (P/E) Ratio: A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about its future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

Quality Rating: The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

STIF Account: Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

Standard Deviation: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

Style: The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

Tracking Error: A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark, as defined by the difference in standard deviation.

Yield to Maturity: The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a “basis book.” For example, a 5% bond pays \$5 a year interest on each \$100 par value. To figure its current yield, divide \$5 by \$95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay \$100 for the bond that can be bought now for \$95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\% \text{ (discount)}}{5 \text{ (yrs. to maturity)}} = 1\% \text{ pro rata, plus } 5.26\% \text{ (current yield)} = 6.26\% \text{ (yield to maturity)}$$

Yield to Worst: The lowest potential yield that can be received on a bond without the issuer actually defaulting. The yield to worst is calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if provisions, including prepayment, call, or sinking fund, are used by the issuer.

NCREIF Property Index (NPI): Measures unleveraged investment performance of a very large pool of individual commercial real estate properties acquired in the private market by tax-exempt institutional investors for investment purposes only. The NPI index is capitalization-weighted for a quarterly time series composite total rate of return.

NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE): Measures the investment performance of 28 open-end commingled funds pursuing a core investment strategy that reflects funds' leverage and cash positions. The NFI-ODCE index is equal-weighted and is reported gross and net of fees for a quarterly time series composite total rate of return.

Sources: Investment Terminology, International Foundation of Employee Benefit Plans, 1999.
The Handbook of Fixed Income Securities, Fabozzi, Frank J., 1991

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Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.

**City of Oakland Police and Fire Retirement System
Cash Flow Recommendation Summary**

Asset Class / Manager / Liquidity April - June 2020 Report		
		Tier
Domestic Equity	Northern Trust	1
Domestic Equity	SPI	3
Domestic Equity	EARNEST Partners	3
Domestic Equity	Vanguard Russell 2000 Value ETF	3
Domestic Equity	Rice Hall James	3
	<i>Total Domestic Equity</i>	
International Equity	Vanguard Developed ETF	3
International Equity	iShares MSCI ACWI ex-US ETF	3
	<i>Total International Equity</i>	
	<i>Total Public Equity</i>	
Covered Calls	Parametric	2
	<i>Total Covered Calls</i>	
Crisis Risk Offset	Long Duration ETF	3
Crisis Risk Offset	Parametric Risk Premia	3
	<i>Total Crisis Risk Offset</i>	
Domestic Fixed Income	Reams	2
Credit	DDJ	2
Domestic Fixed Income	Ramirez	2
	<i>Total Public Fixed</i>	
Cash	Cash	1
	<i>Total Stable</i>	
	<i>Total Portfolio</i>	

Description of Liquidity Tiers

<u>Tier</u>	<u>Description</u>	<u>Amount</u>	<u>in Months</u>
Tier 1	Public, Scheduled Withdrawal Allowances	\$94.0	15.7
Tier 2	Public, Accommodating of Withdrawals	140.4	23.4
Tier 3	Public, Must Plan Withdrawals	152.1	25.4
Tier 4	Closely Held	0.0	-
		\$386.5	

City of Oakland Police and Fire Retirement System Cash Flow Recommendation Summary

PFRS Asset Allocation (February 29th Market Values)*					Actual Cash Flows (For Jan - Mar Benefits) Payable the 1st of each month				Suggested Cash Flows (For Apr - June Benefits) Payable the 1st of each month			
	Market Value (\$mm)	Market Value (%)	Target (%)	\$ Variance (from basic target)	Inflow	(\$mm)	Outflow	(\$mm)	Inflow	\$mm	Outflow	(\$mm)
Northern Trust	87.2	22.6%	20.0%	9,892,600								
SPI	17.8	4.6%	6.0%	(5,392,220)								
EARNEST Partners	31.2	8.1%	8.0%	277,040								
Vanguard Russell 2000 Value ETF	7.3	1.9%	3.0%	(4,296,110)								
Rice Hall James	10.9	2.8%	3.0%	(696,110)								
Total Domestic Equity	154.4	39.9%	40.0%	(214,800)								
Vanguard Developed ETF	13.5	3.5%	3.6%	(415,332)								
iShares MSCI ACWI ex-US ETF	32.2	8.3%	8.4%	(269,108)								
Total International Equity	45.7	11.8%	12.0%	(684,440)								
Total Public Equity	200.1	51.8%	52.0%	(899,240)								
Parametric	29.3	7.6%	5.0%	9,973,150			(2.0)				(2.0)	
Total Covered Calls	29.3	7.6%	5.0%	9,973,150								
Long Duration ETF	15.8	4.1%	3.3%	2,915,446							(1.0)	
Parametric Risk Premia	23.4	6.1%	6.7%	(2,368,876)								
Crisis Risk Offset	39.2	10.1%	10.0%	546,571								
Reams	25.8	6.7%	12.0%	(20,584,440)								
DDJ	7.9	2.0%	2.0%	169,260								
Ramirez	77.4	20.0%	19.0%	3,957,970			(1.0)					
Total Public Fixed	111.1	28.7%	33.0%	(16,457,210)								
Cash	6.8	1.8%	0.0%	6,837,000		10.85	(10.85)		10.85		(10.85)	
Total Stable	117.9	30.5%	33.0%	(9,620,210)								
Total Portfolio	386.5	100.0%	100.0%	---		10.85	(13.85)		10.85		(13.85)	

October 31st Market Values by Portfolio Segment

Portfolio Segment	MV (\$mm)
Total Domestic Equity	154.4
Total International Equity	45.7
Total Public Equity	200.1
Total Covered Calls	29.3
Total Crisis Risk Offset	39.2
Total Public Fixed	111.1
Total Stable	117.9
Total Portfolio	386.5

Suggested Cash Withdrawals

Manager	Amount
Cash in Treasury	\$10.85 million
Parametric - CC	\$2.00 million
Long Duration ETF	\$1.00 million

Projected Equity to Fixed Allocation (MV)



* Estimated based on PFRS February 29, 2020 Northern Trust statement.

** Preliminary value as of February 29, 2019 per OPFRS staff.

**City of Oakland Police and Fire Retirement System
Cash Flow Recommendation Summary**

Projected PFRS Asset Allocation (As of June 30th)					
	Est Mkt Value (\$mm)	Est Mkt Value (%)	Target (%)	Projected % Variance <i>(from target)</i>	Projected \$ Variance <i>(from target)</i>
Northern Trust	87.2	22.9%	20.0%	2.9%	11,092,600
SPI	17.8	4.7%	6.0%	-1.3%	(5,032,220)
EARNEST Partners	31.2	8.2%	8.0%	0.2%	757,040
Vanguard Russell 2000 Value ETF	7.3	1.9%	3.0%	-1.1%	(4,116,110)
Rice Hall James	10.9	2.9%	3.0%	-0.1%	(516,110)
Total Domestic Equity	154.4	40.6%	40.0%	0.6%	2,185,200
Vanguard Developed ETF	13.5	3.5%	3.6%	-0.1%	(199,332)
iShares MSCI ACWI ex-US ETF	32.2	8.5%	8.4%	0.1%	234,892
Total International Equity	45.7	12.0%	12.0%	0.0%	35,560
Total Public Equity	200.1	52.6%	52.0%	0.6%	2,220,760
Parametric	25.3	6.6%	5.0%	1.6%	6,273,150
Total Covered Calls	25.3	6.6%	5.0%	1.6%	6,273,150
Long Duration ETF	14.8	3.9%	3.3%	0.6%	2,115,446
Parametric Risk Premia	23.4	6.1%	6.7%	-0.5%	(1,968,880)
Total Crisis Risk Offset	38.2	10.0%	10.0%	0.0%	146,566
Reams	25.8	6.8%	12.0%	-5.2%	(19,864,440)
DDJ	7.9	2.1%	2.0%	0.1%	289,260
Ramirez	76.4	20.1%	19.0%	1.1%	4,097,970
Total Public Fixed	110.1	28.9%	33.0%	-4.1%	(15,477,210)
Cash	6.8	1.8%	0.0%	1.8%	6,837,000
Total Stable	116.9	30.7%	33.0%	-2.3%	(8,640,210)
Total Portfolio	380.5	100.0%	100.0%	---	---

Notes

- February 28th market values are those listed by Northern Trust.
- Report reflects change in asset allocation and beneficiary payments of rebalancing on a quarterly basis. (Estimated at \$13.85 million per OPFRS).
- Report reflects quarterly City of Oakland contributions of approximately \$10.85 million.
- Current City of Oakland quarterly contribution amount is based on FY 2019/2020 actuarial annual required contribution of \$43.4 million. (City of Oakland contribution was \$46.4 million for FY 2018/2019).
- As of February 28th, the projected public equity portfolio represents 52.6% of the portfolio (\$2.2 million more than the target allocation of 52.0%).

MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: David Sancewich - Meketa Investment Group
DATE: June 15, 2020
RE: U.S. Core Fixed Income Search Finalists

This memo provides OPFRS with a summary of the Core Fixed Income Manager Request-For-Proposal (RFP) process and provides a recommended list of finalist managers for further consideration.

Recommendation

Meketa recommends that the OPFRS board select the three following Core Fixed Income managers as finalists to be interviewed by OPFRS Investment Committee, based on our review of the managers' RFP responses.

Recommended Finalists¹

1. Income Research & Management
 - IR+M Aggregate
2. Longfellow Investment Management Co.
 - Core
3. Wellington Management Company LLP
 - Core Bond

Upon completion of the search process, Meketa recommends that the Investment Committee select one manager. The new Core Fixed Income manager will be allocated a total of approximately \$25 to \$30 million.

¹ Alphabetical Ranking

Summary

In the first quarter of 2020, an RFP was issued on behalf of OPFRS. As a result of the RFP, Meketa Investment Group received a total of 38 responses from 38 firms for the Core Fixed Income mandate. Meketa Investment Group evaluated the RFPs and analyzed performance, risk data, and other qualitative factors from each of the responding firms. Based on both qualitative and quantitative analysis, Meketa Investment Group narrowed the field to a shortlist of seven managers for further consideration. Upon further analysis, Meketa narrowed the short list down to three finalists for consideration by OPFRS.

Manager Search Process

Meketa Investment Group received responses from the 38 firms listed in the table below.

OPFRS Core Fixed Income Manager Search Respondents	
Aegon Asset Management US	Manulife Investment Management
AFL-CIO Housing Investment Trust	Metlife Investment Management
AQR Capital Management	Mondrian Investment Partners
BMO Global Asset Management	Morgan Stanley Investment Management (MSIM)
Community Capital Management	Neuberger Berman
C.S. McKee	Nuveen
Dimensional Fund Advisors	PGIM Fixed Income
Diamond Hill Capital Management	Pacific Investment Management Company (PIMCO)
Earnest Partners	Sawgrass Asset Management
Fort Washington Investment Advisors	Segall Bryant & Hamill
Garcia Hamilton & Associates	Sit Fixed Income Advisors
GW&K Investment Management	SLC Management
Invesco Advisers	Stone Harbor Investment Partners
Income Research and Management	The TCW Group
Lazard Asset Management	Ullico Investment Advisors
LM Capital Group	Wedge Capital Management
Longfellow Investment Management	Wellington Trust Company
Loomis, Sayles & Company	Western Asset Management Company
MacKay Shields	William Blair Investment Management

To narrow the list to the seven managers in the table below, respondents were removed for the following reasons:

- Consistency with scope of manager search
- Ownership Structure
- Level of conviction in manager strategy/process.
- Track record and consistency of risk-adjusted returns

Manager Candidates
As of April 30, 2020

	Dimensional Fund Advisors	Income Research & Management	Longfellow Investment Management	Mondrian Investment Partners
Firm Location	Austin, TX	Boston, MA	Boston, MA	London, England
Firm Inception	1981	1987	1986	1990
Ownership Structure	Delaware limited partnership under Dimensional Holdings Inc.	Employee-owned	Employee-owned	Employee-owned
% of Firm Owned by Minority or Women Employees	Undisclosed	8.7%	61% Women Ownership 11.3% Minority	31%
Strategy Name	Investment Grade Portfolio	Core Bond	Core Fixed Income	US Aggregate Fixed Income
Strategy Inception	April 2011	February 2010	October 2006	January 2009
AUM (Firm)	\$529.6 billion	\$75.3 billion	\$11.8 billion	\$43.9 billion
AUM (Strategy)	\$9.5 billion	\$11.8 billion	\$2.9 billion	\$256 million



Manager Candidates (Continued)
As of April 30, 2020

	Sit Investment Associates	WEDGE Capital Management	Wellington Management Company
Firm Location	Minneapolis, MN	Charlotte, NC	Boston, MA
Firm Inception	1981	1984	1982
Ownership Structure	Employee-owned	Limited Liability Partnership	Limited Liability Partnership
% of Firm Owned by Minority or Women Employees	85%	Undisclosed	31%
Strategy Name	Taxable Total Return	Core Aggregate	Core Bond
Strategy Inception	December 1987	January 1992	October 1982
AUM (Firm)	\$13.1 billion	\$9 billion	\$1.0 trillion
AUM (Strategy)	\$759.8 million	\$687 million	\$43 billion

The remaining 7 firms were then analyzed on a quantitative and qualitative basis to determine a recommended list of finalists. The table below is sorted in order of the firms who scored the highest in Meketa’s overall rank. The major areas of focus for each considered manager were:

Organization: Focuses on the capacity of the firm to provide the required services. Also includes consideration of issues that may impact a firm’s operational stability, such as litigation brought against firm.

Investment Professionals: Explores the experience, capacity, and depth of firm’s professionals, particularly with respect to the mandate under consideration.

Investment Strategy: Review of investment philosophy, approach, strategy, and risk management to ensure they are consistent with the considered mandate.

Client Base/Services: Seeks to identify whether the manager has experience servicing mandates similar in size and type to the one considered by OPFRS.

Quantitative Analysis of Historical Performance and Characteristics: An analysis of actual representative portfolio performance and characteristics to determine whether actual management of the portfolio has been consistent with results expected under the considered mandate.

Fees: The costs of implementing the mandate deserve separate consideration and can vary substantially across a subset of candidates. Fees were computed based on an assumed mandate size of \$30 million.

All three of the recommended finalists were identified as possessing the ability to provide OPFRS with the appropriate services.

Finalist Manager Candidates:

	Income Research & Management	Longfellow Investment Management	Wellington Management Company
Firm Location	Boston, MA	Boston, MA	Boston, MA
Firm Inception	1987	1986	1982
Ownership Structure	Employee-owned	Employee-owned	Limited Liability Partnership
Strategy Name	Core Bond	Core Fixed Income	Core Bond
Strategy Inception	February 2010	October 2006	October 1982
AUM (Firm)	\$75.3 billion	\$11.8 billion	\$1.0 trillion
AUM (Strategy)	\$11.8 billion	\$2.9 billion	\$43 billion

Finalist Manager Candidates Performance (Net of Fees), as of March 31, 2020²:

	Income Research & Management	Longfellow Investment Management	Wellington Management Company	Bloomberg Barclays US Aggregate
Trailing Period Returns (%):				
YTD	2.3%	1.5%	1.9%	3.1%
1 Year	8.1%	7.1%	7.9%	8.9%
3 Years	4.5%	4.3%	4.6%	4.8%
5 Years	3.2%	3.2%	3.5%	3.4%
7 Years	3.2%	3.1%	3.4%	3.2%
10 Years	4.1%	4.1%	4.4%	3.9%
Calendar Year Returns (%)				
2019	8.9%	8.6%	9.5%	8.7%
2018	-0.3%	0.0%	-0.6%	0.0%
2017	3.6%	3.9%	4.4%	3.5%
2016	3.2%	2.7%	4.0%	2.6%
2015	0.2%	1.4%	0.4%	0.5%
2014	6.7%	5.4%	6.2%	6.0%
2013	-1.7%	-1.0%	-1.3%	-2.0%
2012	7.0%	6.3%	6.7%	4.2%
2011	6.9%	7.5%	8.3%	7.9%
2010	6.8%	7.5%	8.5%	6.6%

Finalist Manager Candidates: Fees and Terms

	Income Research & Management	Longfellow Investment Management	Wellington Management Company
Investment Vehicle Type	Private Investment Fund	Separately Managed Account	Commingled Fund
Liquidity	Daily	Daily	Daily
All-in-Fee	25 bps	31.5 bps	17 bps 12bps Management Fee 5bps capped Operating Expense
Peer Group Percentile Rank ³	19 – Commingled Fund 10 – Separate Account	61 – Commingled Fund 59 – Separate Account	5 – Commingled Fund 3 – Separate Account

² Manager performance displayed as net of fees composite returns provided by manager.

³ Peer group rankings displayed represent lowest fees as 1 to highest fees as 100. Rankings compare effective fees from manager RFP responses against the eVestment US Core Fixed Income Universe for mandate size of \$25 million.

MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: David Sancewich - Meketa Investment Group
DATE: June 24, 2020
RE: U.S. Small Cap Value Search Update

Summary:

At the February 26, 2020 OPFRS investment committee meeting, the trustees and those in attendance, interviewed four candidates for a small cap value mandate. This search was being conducted to find a replacement for the portfolio that was previously managed by NWQ. Following the interviews, the PFRS board asked Meketa to compile additional information do that the board can make a better informed decision. However, as a result of the COVID-19 crisis, OPFRS has not conducted a board meeting since that time. The memo is being provided to refresh the board on the current status of the search and seek direction on how to proceed forward.

The four firms that were interviewed by OPFRS Investment Committee, were:

Interviewed Finalists¹:

1. Brown Advisory
 - Small Cap Fundamental Value
2. Phocas
 - Small Cap Value Equity
3. Systematic
 - Small Cap Value Free Cash Flow
4. Vaughn Nelson
 - Small Cap Value

The new Small Cap Value equity manager will be allocated a total of approximately \$10 million.

¹ Alphabetical

Discussion:

In the third quarter of 2019, an RFP was issued on behalf of OPFRS. As a result of the RFP, Meketa Investment Group received a total of 56 responses from 55 firms for the Small Cap Value mandate. Meketa Investment Group evaluated the RFPs and analyzed performance, risk data, and other qualitative factors from each of the responding firms. Based on both qualitative and quantitative analysis, Meketa Investment Group narrowed the field to a shortlist of eight managers for further consideration. Upon further analysis, Meketa narrowed the short list down to four finalists for consideration by OPFRS.

Manager Search Process:

Meketa Investment Group received responses from the 55 firms listed in the table below.

OPFRS Small Cap Value Manager Search Respondents		
Advisory Research	Huber Capital Management	RBC Global Asset Management
AllianceBernstein	Keeley Teton Advisors	Sasco Capital
Alpha Architect	Kennedy Capital Management	Segall Bryant & Hamill
American Century Investments	Legion Partners Asset Management	Skyline Asset Management
Ariel Investments	Macquarie Investment Management	Snow Capital Management
BMO Asset Management Corp.	Mellon Investments	SouthernSun Asset Management
Boston Partners Global Investors	Monarch Partners	Snyder Capital Management.
Brown Advisory	Mondrian Investment Partners	Systematic Financial Management
Channing Capital Management	NewSouth Capital Management	Teton Advisors, Inc.
Chicago Equity Partners	Northern Trust Investments	The London Company of Virginia
CornerCap Investment Counsel	Nuveen Asset Management	Vaughan Nelson
Cramer Rosenthal McGlynn	Pacific Ridge Capital Partners	Victory Capital
Davenport Asset Management	Paradigm Capital Management	Wasatch Global Investors
Denali Advisors, LLC	Peregrine Capital Management	Wellington Trust Company
DePrince, Race & Zollo, Inc.	Perkins Investment Management	Wells Fargo Asset Management
DGHM & Co.	Phocas Financial	William Blair
Driehaus Capital Management	Port Capital	Ziegler Capital Management
GAMCO Investors	PPM America	
Hotchkis & Wiley	Pzena Investment Management	

To narrow the list to the eight managers in the table below, respondents were removed for the following reasons:

- Consistency with scope of manager search
- Material personnel turnover
- Organizational risk
- Level of conviction in manager strategy/process.
- Track record and consistency of risk-adjusted returns

**Manager Candidates
As of September 30, 2019**

	AllianceBernstein	Brown Advisory	Nuveen	Phocas	Segall Bryant & Hamill
Firm Location	New York, NY	Baltimore, MD	Minneapolis, MN	Alameda, CA	St. Louis, MO
Firm Inception	1971	1993	1989	2005	1994
Ownership Structure	65.3% owned by Axa Equitable Holdings (NYSE:EGH), 26.4% publicly held (NYSE:AB), 8.3% employee-owned	95% employee-owned, 30% held by members of Brown Advisory's board and a small group of clients and investors	95% owned by TIAA-CREF, 5% owned by employees	100% employee-owned	53% employee-owned, 47% owned by Thomas Bravo
% of Firm Owned by Minority or Women Employees	Undisclosed	11.5%	Undisclosed	66%	2.5%
Strategy Name	US Small Cap Value	Small Cap Fundamental Value	Small Cap Value	Small Cap Value Equity	Small Cap Value
Strategy Inception	January 1991	January 2009	July 1997	May 2006	January 2008
AUM (Firm)	\$592.4 billion	\$34.7 billion	\$202.1 billion	\$1 billion	\$20.1 billion
AUM (Strategy)	\$2.6 billion	\$1.6 billion	\$2.3 billion	\$862 million	\$701 million



Manager Candidates (Continued)
As of September 30, 2019

	Systematic	Vaughan Nelson	Victory
Firm Location	Teaneck, NJ	Houston, TX	Rocky River, OH
Firm Inception	1982	1970	1894
Ownership Structure	100% owned by Affiliated Managers Group (NYSE: AMG)	100% owned by Natixis Investment Managers	28% employee-owned, 16% publicly held (NASDAQ: VCTR), 44% owned by Crestview Partners, 12% owned by Reverence Capital Partners
% of Firm Owned by Minority or Women Employees	Undisclosed	Undisclosed	Undisclosed
Strategy Name	Small Cap Value Free Cash Flow	Small Cap Value	Integrity Small Cap Value Equity
Strategy Inception	January 1993	April 1997	May 1999
AUM (Firm)	\$2.6 billion	\$12.3 billion	\$145.8 billion
AUM (Strategy)	\$2.1 billion	\$3.2 billion	\$3.7 billion

The remaining 8 firms were then analyzed on a quantitative and qualitative basis to determine a recommended list of finalists. The table below is sorted in order of the firms who scored the highest in Meketa’s overall rank. The major areas of focus for each considered manager were:

Organization: Focuses on the capacity of the firm to provide the required services. Also includes consideration of issues that may impact a firm’s operational stability, such as litigation brought against firm.

Investment Professionals: Explores the experience, capacity, and depth of firm’s professionals, particularly with respect to the mandate under consideration.

Investment Strategy: Review of investment philosophy, approach, strategy, and risk management to ensure they are consistent with the considered mandate.

Client Base/Services: Seeks to identify whether the manager has experience servicing mandates similar in size and type to the one considered by OPFRS.

Quantitative Analysis of Historical Performance and Characteristics: An analysis of actual representative portfolio performance and characteristics to determine whether actual management of the portfolio has been consistent with results expected under the considered mandate.

Fees: The costs of implementing the mandate deserve separate consideration and can vary substantially across a subset of candidates. Fees were computed based on an assumed mandate size of \$10 million.

All four of the recommended finalists were identified as possessing the abilities to provide OPFRS with the appropriate services.

Finalist Manager Candidates:

	AllianceBernstein	Brown Advisory	Systematic	Vaughan Nelson
Firm Location	New York, NY	Baltimore, MD	Teaneck, NJ	Houston, TX
Firm Inception	1971	1993	1982	1970
Ownership Structure	65.3% owned by Axa Equitable Holdings (ticker: EQH) / 26.4% publicly traded / 8.3% employee-owned	70% employee-owned / 30% owned by Brown Advisory board members and a small group of clients and investors	100% owned by Affiliated Managers Group	100% owned by Natixis
Strategy Name	US Small Cap Value Equity	Small Cap Fundamental Value	Small Cap Value Free Cash Flow	Small Cap Value
Strategy Inception	January 1991	January 2009	January 1993	April 1997
Assets Under Management (Strategy)	\$2.7 billion	\$1.7 billion	\$2.4 billion	\$3.2 billion
Asset Under Management (Firm)	\$623 billion	\$81.3 billion	\$29 billion	\$131 billion

Asset Class / Manager / Liquidity April - June 2020 Report		
Domestic Equity	Northern Trust	Tier 1
Domestic Equity	iShares MSCI Min Vol ETF	3
Domestic Equity	EARNEST Partners	3
Domestic Equity	Vanguard Russell 2000 Value ETF	3
Domestic Equity	Rice Hall James	3
	<i>Total Domestic Equity</i>	
International Equity	Vanguard Developed ETF	3
International Equity	iShares MSCI ACWI ex-US ETF	3
	<i>Total International Equity</i>	
	<i>Total Public Equity</i>	
Covered Calls	Parametric	2
	<i>Total Covered Calls</i>	
Crisis Risk Offset	Long Duration ETF	3
Crisis Risk Offset	Parametric Risk Premia	3
	<i>Total Crisis Risk Offset</i>	
Domestic Fixed Income	Reams	2
Credit	DDJ	2
Domestic Fixed Income	Ramirez	2
	<i>Total Public Fixed</i>	
Cash	Cash	1
	<i>Total Stable</i>	
	<i>Total Portfolio</i>	

Description of Liquidity Tiers

Tier	Description	Amount	in Months
Tier 1	Public, Scheduled Withdrawal Allowances	\$96.7	16.1
Tier 2	Public, Accommodating of Withdrawals	138.0	23.0
Tier 3	Public, Must Plan Withdrawals	142.3	23.7
Tier 4	Closely Held	0.0	-
		\$377.0	



PFRS Asset Allocation (May 31st Market Values)*					Actual Cash Flows (For Apr - June Benefits) Payable the 1st of each month				Suggested Cash Flows (For July - Sept Benefits) Payable the 1st of each month			
	Market Value (\$mm)	Market Value (%)	Target (%)	\$ Variance (from basic target)	Inflow	(\$mm)	Outflow	(\$mm)	Inflow	\$mm	Outflow	(\$mm)
Northern Trust	89.2	23.7%	20.0%	13,800,000								(3.0)
iShares MSCI Min Vol ETF	17.6	4.7%	6.0%	(5,020,000)								
EARNEST Partners	31.7	8.4%	8.0%	1,540,000								
Vanguard Russell 2000 Value ETF	6.4	1.7%	3.0%	(4,910,000)								
Rice Hall James	11.3	3.0%	3.0%	(10,000)								
Total Domestic Equity	156.2	41.4%	40.0%	5,400,000								
Vanguard Developed ETF	12.9	3.4%	3.6%	(672,000)								
iShares MSCI ACWI ex-US ETF	30.7	8.1%	8.4%	(968,000)								
Total International Equity	43.6	11.6%	12.0%	(1,640,000)								
Total Public Equity	199.8	53.0%	52.0%	3,760,000								
Parametric	27.3	7.2%	5.0%	8,450,000			(2.0)					
Total Covered Calls	27.3	7.2%	5.0%	8,450,000								
Long Duration ETF	15.7	4.2%	3.3%	3,133,346			(1.0)					
Parametric Risk Premia	16.0	4.2%	6.7%	(9,133,082)								
Crisis Risk Offset	31.7	8.4%	10.0%	(5,999,736)								
Reams	28.3	7.5%	12.0%	(16,940,000)								
DDJ	7.2	1.9%	2.0%	(340,000)								
Ramirez	75.2	19.9%	19.0%	3,570,000								
Total Public Fixed	110.7	29.4%	33.0%	(13,710,000)								
Cash	7.5	2.0%	0.0%	7,500,000	10.85	(10.85)			10.90	(10.90)		
Total Stable	118.2	31.4%	33.0%	(6,210,000)								
Total Portfolio	377.0	100.0%	100.0%	---	10.85	(13.85)			10.90	(13.90)		

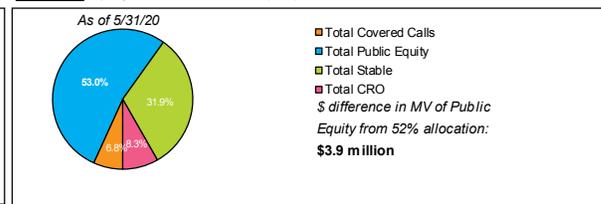
October 31st Market Values by Portfolio Segment

Portfolio Segment	MV (\$mm)
Total Domestic Equity	156.2
Total International Equity	43.6
Total Public Equity	199.8
Total Covered Calls	27.3
Total Crisis Risk Offset	31.7
Total Public Fixed	110.7
Total Stable	118.2
Total Portfolio	377.0

Suggested Cash Withdrawals

Manager	Amount
Cash in Treasury	\$10.9 million
NT R1000	\$3.00 million

Projected Equity to Fixed Allocation (MV)



* Estimated based on PFRS May 31, 2020 Northern Trust statement.

** Preliminary value as of May 31, 2020 per OPFRS staff.



Projected PFRS Asset Allocation (As of September 30th)					
	Est Mkt Value (\$mm)	Est Mkt Value (%)	Target (%)	Projected % Variance (from target)	Projected \$ Variance (from target)
Northern Trust	86.2	23.2%	20.0%	3.2%	12,000,000
iShares MSCI Min Vol ETF	17.6	4.7%	6.0%	-1.3%	(4,660,000)
EARNEST Partners	31.7	8.5%	8.0%	0.5%	2,020,000
Vanguard Russell 2000 Value ETF	6.4	1.7%	3.0%	-1.3%	(4,730,000)
Rice Hall James	11.3	3.0%	3.0%	0.0%	170,000
Total Domestic Equity	153.2	41.3%	40.0%	1.3%	4,800,000
Vanguard Developed ETF	12.9	3.5%	3.6%	-0.1%	(456,000)
iShares MSCI ACWI ex-US ETF	30.7	8.3%	8.4%	-0.1%	(464,000)
Total International Equity	43.6	11.8%	12.0%	-0.2%	(920,000)
Total Public Equity	196.8	53.0%	52.0%	1.0%	3,880,000
Parametric	25.3	6.8%	5.0%	1.8%	6,750,000
Total Covered Calls	25.3	6.8%	5.0%	1.8%	6,750,000
Long Duration ETF	14.7	4.0%	3.3%	0.6%	2,333,346
Parametric Risk Premia	16.0	4.3%	6.7%	-2.4%	(8,733,086)
Total Crisis Risk Offset	30.7	8.3%	10.0%	-1.7%	(6,399,740)
Reams	28.3	7.6%	12.0%	-4.4%	(16,220,000)
DDJ	7.2	1.9%	2.0%	-0.1%	(220,000)
Ramirez	75.2	20.3%	19.0%	1.3%	4,710,000
Total Public Fixed	110.7	29.8%	33.0%	-3.2%	(11,730,000)
Cash	7.5	2.0%	0.0%	2.0%	7,500,000
Total Stable	118.2	31.9%	33.0%	-1.1%	(4,230,000)
Total Portfolio	371.0	100.0%	100.0%	—	—

Notes

- May 31st market values are those listed by Northern Trust.
- Report reflects change in asset allocation and beneficiary payments of rebalancing on a quarterly basis. (Estimated at \$13.9 million per OPFRS).
- Report reflects quarterly City of Oakland contributions of approximately \$10.9 million.
- Current City of Oakland quarterly contribution amount is based on FY 2020/2021 actuarial annual required contribution of \$43.65 million. (City of Oakland contribution was \$43.4 million for FY 2018/2019).
- As of May 31st, the projected public equity portfolio represents 53.0% of the portfolio (\$3.9 million more than the target allocation of 52.0%).

OAKLAND POLICE AND FIRE RETIREMENT BOARD

CITY OF OAKLAND, CALIFORNIA

RESOLUTION No. 7095

Approved to Form and Legality

[Signature]

ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

RESOLUTION APPROVING DEATH BENEFIT PAYMENTS AND DIRECTING WARRANTS THEREUNDER IN THE TOTAL SUM OF \$1,000.00 PAYABLE TO THE BENEFICIARIES OF DECEASED MEMBERS AS FOLLOWS: ROBERT A. SEBASTIANI, HARLAN GOODSON

WHEREAS, due proof having been received of the death of the persons named in Column (1) below, retired members of the Oakland Police or Fire Department, under XXVI of the Charter of the City of Oakland; and

WHEREAS, the beneficiaries to whom the death benefit provided in Charter Section 2612 are payable, are the persons whose names are stated in Column (2) opposite the respective names of the deceased retired member; and

WHEREAS, the amount of said death benefit is stated in Column (3) opposite said respective names; now, therefore, be it

RESOLVED: That the Retirement Board does hereby approve the Death Benefit payment to the persons named in Column (2); and be it

FURTHER RESOLVED: That the Director of Finance, be and is hereby directed to draw and sign warrants for the amount in Column (3) payable to the respective persons whose name(s) appear(s) in Column (2):

Table with 3 columns: (1) Name of Deceased Member, (2) Name of Beneficiary(ies), (3) Death Benefit Amount. Rows include Robert A. Sebastiani (Linda L. Sebastiani, \$1,000.00) and Harlan Goodson (Valla Hoffman, \$1,000.00).

DURING BOARD MEETING, TELE-CONFERENCE _____

PASSED BY THE FOLLOWING VOTE:

AYES: BENSON, GODFREY, NICHELINI, TRAYLOR, SPEAKMAN, WILKINSON, AND PRESIDENT JOHNSON

NOES:

ABSENT:

ATTEST: _____ PRESIDENT

ATTEST: _____ SECRETARY

RESOLVED: That the Police and Fire Retirement Board does hereby fix the amount in Column (7) as the monthly allowance that each surviving spouse is entitled to receive, effective on the date shown in Column (4):

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Name of Deceased Member	Date of Death	Name of Surviving Spouse	Effective Date of Allowance	Form of Retirement	% of Compensation Attached to Avg. Rank Held	Monthly Allowance
John. A. Owen (P)	12/30/2019	Renta C. Owen	12/31/2019	Disability	30.37%	\$4,110.18
Vaughn, Harry L.	2/13/2020	Elaine D. Vaughn	2/14/2020	Disability	33.83%	\$3,774.60
Burnett, Donald B.	2/14/2020	Beverly A. Burnett	2/15/2020	Service	33.73%	\$3,958.76
Whitfield, George E.	3/7/2020	Phyllis Whitfield	3/8/2020	Service	40.79%	\$4,791.65
Buna, Jody	2/29/2020	Marilyn D. Buna	3/1/2020	Service	26.74%	\$4,175.08
Aboussleman, Donald A.	4/22/2020	June T. Aboussleman	4/23/2020	Disability	33.33%	\$3,905.58

DURING BOARD MEETING (VIA TELE-CONFERENCE) JUNE 24, 2020

PASSED BY THE FOLLOWING VOTE:

AYES: BENSON, GODFREY, NICHELINI, TRAYLOR, SPEAKMAN, WILKINSON,
AND PRESIDENT JOHNSON

NOES:

ABSTAIN:

ABSENT:

ATTEST: _____
PRESIDENT

ATTEST: _____
SECRETARY