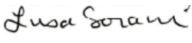


EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 20, 2021

MEMO TO: Members of the Retirement Board

THROUGH: Laura Acosta, Manager of Human Resources 

FROM: Lisa Sorani, Manager of Employee Services 

SUBJECT: Retirement Board Regular Meeting – 5/20/2021

A regular meeting of the Retirement Board will convene at 8:30 a.m. on Thursday, May 20, 2021. This meeting will be conducted via video and teleconference only. Public participation is available by live audio stream <https://www.ebmud.com/about-us/board-directors/board-meetings/retirement-board-meetings/>; however, listeners will not be able to provide public comment via live audio stream. To participate in the meeting or provide public comment, please see the Appendix of the Agenda for instructions on joining the Zoom meeting online or by phone.

1. Enclosed are the agenda for the May 20, 2021 meeting and the minutes for the March 18, 2021 regular meeting. The package also includes the following: **(1) CONSENT** items: Approval of Minutes–Regular meeting of March 18, 2021, Ratifying and Approving Investment Transactions by Retirement Fund Managers for February 2021 and March 2021, Ratifying and Approving Short-Term Investment Transactions for February 2021 and March 2021, Approving Treasurer’s Statement of Receipts and Disbursements for February 2021 and March 2021; **(2) ACTION** items: Declaring Election Results for an Employee Member of the Retirement Board, Resolution Recognizing Doug Higashi’s Service to the Retirement Board, Adoption of Active vs. Passive International Strategy; **(3) INFORMATION:** Performance Report and Economic Review (Meketa Investment Group), Staff Response to Board Data Requests, Cost of Living Adjustment (COLA) Bank Statistics, Review Update to Retirement Board Rule C-22 Minimum Required Distributions, Private Placement Update; **(4) REPORTS FROM THE RETIREMENT BOARD.**

LS:jm

Enclosures

AGENDA

EBMUD EMPLOYEES' RETIREMENT SYSTEM

May 20, 2021

Due to COVID-19 and in accordance with Alameda County's Health Order 20-04 (issued March 31, 2020), and with the Governor's Executive Order N-29-20 which suspends portions of the Brown Act, **this meeting will be conducted via video and teleconference only.** In compliance with said orders, a physical location will not be provided for this meeting. These measures will only apply during the period in which state or local public health officials have imposed or recommended social distancing.

Retirement Board Members: Clifford Chan, Frank Mellon, Marguerite Young, Doug Higashi (President), Tim McGowan, and Elizabeth Grassetti will participate via teleconference

Staff to the Retirement Board: Laura Acosta, Sophia Skoda, Lourdes Matthew, Lisa Sorani, Valerie Weekly, Robert Hannay, Damien Charléty, and Karyn Field will participate via teleconference

Consultants & Presenters: Meketa - Eric White, Sarah Bernstein, Eric Larsen will participate via teleconference

****Public Participation****

Please see Appendix at end of Agenda for Public Participation Details

ROLL CALL:

PUBLIC COMMENT: The Retirement Board is limited by State Law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.

CLOSED SESSION AGENDA

1. Significant Exposure to Litigation pursuant to Government Code Section 54956.9: one item
2. Personnel matters pursuant to Government Code Section 54957:
 - a. Application for Disability Retirement of Adam Erlach (R.B. Resolution No. 6936)

REGULAR BUSINESS MEETING: Upon completion of Closed Session

CONSENT CALENDAR:

1. Approval of Minutes of the Retirement Board – Regular meeting of March 18, 2021
2. Ratifying and Approving Investment Transactions by Retirement Fund Managers for February 2021 and March 2021 (R.B. Resolution No. 6932)
3. Ratifying and Approving Short-Term Investment Transactions for February 2021 and March 2021 (R.B. Resolution No. 6933)
4. Approving Treasurer's Statement of Receipts and Disbursements for February 2021 and March 2021

ACTION:

5. Declaring Election Results for an Employee Member of the Retirement Board (R.B. Resolution No. 6934) – L. Sorani
6. Resolution Recognizing Doug Higashi's Service to the Retirement Board (R.B. Resolution No. 6935) – L. Sorani
7. Adoption of Active vs. Passive International Strategy– S. Skoda

INFORMATION:

8. Performance Report and Economic Review (Meketa Investment Group) – S. Skoda
9. Staff Response to Board Data Requests, Cost of Living Adjustment (COLA) Bank Statistics – L. Sorani
10. Review Update to Retirement Board Rule C-22 Minimum Required Distributions – L. Sorani
11. Private Placement Update – S. Skoda

REPORTS FROM THE RETIREMENT BOARD:

12. Brief report on any course, workshop, or conference attended since the last Retirement Board Meeting

ITEMS TO BE CALENDARED:

13. Action to update to Retirement Board Rule C-22 Minimum Required Distributions – L. Sorani

MEETING ADJOURNMENT:

The next regular meeting of the Retirement Board will be held at 8:30 a.m. on Thursday, July 15, 2021.

2021 Retirement Board Meetings

July 15, 2021
September 16, 2021
November 18, 2021

APPENDIX

Retirement Board Meeting
Thursday, May 20, 2021
8:30 a.m.

EBMUD public Retirement Board meeting will be conducted via Zoom.
Please note that Retirement Board meetings are recorded, live-streamed, and posted on the District's website.

To **OBSERVE** the Retirement Board Meeting, without making public comment, please visit:
<https://www.ebmud.com/about-us/board-directors/board-meetings/retirement-board-meetings/>

If you wish to join the meeting, or to make public comment, please visit this page beforehand to familiarize yourself with Zoom.

<http://support.zoom.us/hc/en-us/articles/201362193-Joining-a-Meeting>

There will be a closed session occurring at 8:45am during the May 20, 2021 Retirement Board meeting. The main meeting will begin at 8:30 am, the closed session starts at 8:45am and will end at 9:45am, then a new meeting will begin after the closed session is completed. See further details below (highlighted in yellow color) for the meeting that will start after the closed session ends at 9:45am.

8:30 a.m. Retirement Board Meeting

You are invited to a Zoom webinar.

When: May 20, 2021 08:30 AM Pacific Time (US and Canada)

Topic: May 20, 2021 Retirement Board MeetingOpen

Please click the link below to join the webinar:

<https://ebmud.zoom.us/j/98200734446?pwd=Tjdzd29Vc3VETitSSmxsMFVYeTVqQT09>

Passcode: 602716

Or One tap mobile :

US: +16699006833,,98200734446# or +12532158782,,98200734446#

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: +1 669 900 6833 or +1 253 215 8782 or +1 346 248 7799 or +1 312 626 6799 or +1 929 205 6099
or +1 301 715 8592

Webinar ID: 982 0073 4446

International numbers available: <https://ebmud.zoom.us/u/abGkM2diUs>

Providing Public Comment

The EBMUD Retirement Board is limited by State Law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.

If you wish to provide public comment please:

- Use the raise hand feature in Zoom to indicate you wish to make a public comment
<https://support.zoom.us/hc/en-us/articles/20055661-Raising-your-hand-in-a-webinar>

- If you participate by phone, press *9 to raise your hand
- When prompted by the Asst. Secretary, please state your name, affiliation if applicable, and topic
- The Assistant Secretary will call each speaker in the order received
- Comments on non-agenda items will be heard at the beginning of the meeting
- Comments on agenda items will be heard when the item is up for consideration
- Each Speaker is allotted 3 minutes to speak; The Retirement Board President has the discretion to amend this time based on the number of speakers
- The Assistant Secretary will keep track of time and inform each speaker when time is up.

8:45a.m.-9:45 a.m. CLOSED SESSION: Significant Exposure to Litigation pursuant to Government Code Section 54956.9: two items

9:45 a.m. Retirement Board Meeting-Following Closed Session

You are invited to a Zoom webinar.

When: May 20, 2021 09:00 AM Pacific Time (US and Canada)

Topic: 5/20/2021 Retirement Board Meeting

Please click the link below to join the webinar:

<https://ebmud.zoom.us/j/96346755510?pwd=UjdWY1A5VHA2K2p6aXNYYYkh5bGRmdz09>

Passcode: 365883

Or One tap mobile :

US: +16699006833,,96346755510# or +12532158782,,96346755510#

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: +1 669 900 6833 or +1 253 215 8782 or +1 346 248 7799 or +1 301 715 8592 or +1 312 626 6799 or +1 929 205 6099

Webinar ID: 963 4675 5510

International numbers available: <https://ebmud.zoom.us/j/96346755510>

Providing Public Comment

The EBMUD Retirement Board is limited by State Law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.

If you wish to provide public comment please:

- Use the raise hand feature in Zoom to indicate you wish to make a public comment
<https://support.zoom.us/hc/en-us/articles/20055661-Raising-your-hand-in-a-webinar>
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- When prompted by the Asst. Secretary, please state your name, affiliation if applicable, and topic
- The Assistant Secretary will call each speaker in the order received
- Comments on non-agenda items will be heard at the beginning of the meeting
- Comments on agenda items will be heard when the item is up for consideration
- Each Speaker is allotted 3 minutes to speak; The Retirement Board President has the discretion to amend this time based on the number of speakers
- The Assistant Secretary will keep track of time and inform each speaker when time is up.

MINUTES OF THE RETIREMENT BOARD
March 18, 2021

A regular meeting of the Retirement Board convened on Thursday, March 18, 2021 at 8:34 a.m. The meeting was called to order by President Doug Higashi.

Due to COVID-19 and in accordance with Alameda County's Health Order 20-10 (issued April 29, 2020), and with the Governor's Executive Order N-29-20 which suspends portions of the Brown Act, **this meeting was conducted via teleconference only.** In compliance with said orders, a physical location was not provided for this meeting. These measures will only apply during the period in which state or local public health officials have imposed or recommended social distancing.

Roll Call – The following Retirement Board Members were present: Clifford Chan, Frank Mellon, Marguerite Young, Douglas Higashi, Timothy McGowan, and Elizabeth Grassetti.

The following staff members were present: Laura Acosta, Sophia Skoda, Lourdes Matthew, Lisa Sorani, Robert Hannay, Damien Charléty, and Valerie Weekly.

PUBLIC COMMENT

No public comment

CONSENT CALENDAR

1-4. Consent Calendar – Doug Higashi had a question on the minutes regarding the public comment from Eric Larsen and requested to confirm whether the information stated in the minutes for the public comment regarding the mortality rate tables is accurate. Damien Charléty confirmed the numbers in the minutes are correct. A motion to move the consent calendar was made by Frank Mellon and seconded by Clifford Chan. The motion carried (5-0) by the following voice vote: AYES (Chan, Higashi, McGowan, Mellon, Young), NOES (none), ABSTAIN (none), ABSENT (none).

ACTION

5. Determine the Annual Retiree Cost of Living Adjustment (COLA) to be effective July 1, 2021 (R.B. Resolution No. 6930) – Valerie Weekly presented this item. In accordance with the Retirement Ordinance, staff recommended a 1.7 percent COLA for retirees effective July 1, 2021 and a reduction of up to 1.3 percent to eligible retiree COLA banks as determined by the Retirement System's actuary, The Segal Company. Director Mellon requested information on the number of retirees with a non-zero COLA bank. Frank Mellon made the motion to adopt the recommendation and Doug Higashi seconded the motion. The motion carried (5-0) by the following voice vote: AYES (Chan, Higashi, McGowan, Mellon, Young), NOES (none), ABSTAIN (none), ABSENT (none).

6. Approve Changes to Retirement Board Rule No. C-4 Health Insurance Benefit (R.B. Resolution No. 6931) – Lisa Sorani presented this item. Staff is requesting an update to Retirement Ordinance Rule C-4 which requires staff to perform an annual audit of the HIB recipients to ensure that the HIB benefit is being used for the intended purpose. Currently the process to verify this information requires mailing letters and application forms to approximately 1,780 retirees. The retirees are required to return the signed application and approximately 894 are required to submit additional information to show proof of their non-District insurance coverage and payment for the insurance. Staff is recommending the following changes to help streamline the process: 1) remove the requirement of a signed application from retirees where 100% of their HIB reimbursement is paid toward District-sponsored health insurance plans or dental plans and base Medicare Part B; 2) allow for an automatic update of HIB records for the base cost of Medicare Part B; and 3) include in the rule a 10-year requirement for record retention related to the annual HIB reimbursements. Frank Mellon made the motion to adopt Resolution 6931 and Tim McGowan seconded the motion, and the motion carried (5-0) by the following voice vote: AYES (Chan, Mellon, Young, Higashi, McGowan), NOES (none), ABSTAIN (none), ABSENT (None).

INFORMATION

7. Performance Report and Economic Review – Eric White from Meketa reviewed the fourth quarter report. The fourth quarter showed good returns with the ending market value of the portfolio at \$2.1 billion. The increase was over \$200 million over one year, an almost 11% increase. Over the one-year period U.S equities were up 20.8%, international equities were up 10.5%, covered calls were up 7.9%, real estate was up 0.7%, and fixed income was up 6.5%.

8. Annual Environmental, Social and Governance (ESG) Survey of Investment Managers – Sarah Bernstein from Meketa provided an overview of the second annual ESG survey of the Retirement System's investment managers. Responses were received from all managers. Overall, there was a wide range of responses. This year's survey included three additional questions with respect to women and minority representation within the firm and current actions and initiatives to combat racism.

9. Environmental, Social and Governance (ESG) Annual Update and Potential Next Steps – Sarah Bernstein from Meketa reviewed four distinct elements to integrating ESG: portfolio and manager ESG monitoring, proxy voting, engagement, and shifting assets toward lower carbon/higher climate mitigation exposure. For portfolio and manager ESG monitoring, Meketa could work with staff to develop annual monitoring specific to the Board's key concerns and interests. To further improve consistency across proxy voting Meketa recommends the following options: 1) retain a passive equity manager with competitive fee structures whose votes are more consistent with EBMUDERS approach; 2) shift passive equity to separately managed accounts. Engagement geared at improving the long-term environment supporting investments can include engagement with government bodies, investment managers and companies. Meketa offers engagement services to support clients interested in furthering their engagement with companies on specific issues. Another element is shifting some passive equity assets to lower carbon/stronger ESG. Meketa is conducting a review of ESG and climate index products and could bring to the Board an overview of such market opportunities.

10. National Association of State Retirement Administration (NASRA) Report on Funding Status Metrics – Damien Charl  ty presented this item. At the January 21, 2021 Director Young requested the NASRA report be provided to the Retirement Board. In the report there are two different contexts under which funded ratios are considered. As a funding target, GFOA recommends 100 percent as the funded goal, while as a measure of plan health a benchmark of 80 percent has been used by several stakeholders.

11. Low Income Adjustment, Review of Ordinance Guidelines – Lisa Sorani presented this item. There was an error on the attachment. Rule C-3 was copied for this memo prior to staff updating Rule C-3 from the November 2020 meeting where the Total Gross Income definition was updated and the incorrect version was attached. A low-income adjustment for qualifying retirees or surviving beneficiaries is provided in Section 35 of the Retirement Ordinance. The following guidelines must be met: retiree must have retired with 20 or more years of service; receive a social security benefit; and all sources of income, including spouses', must fall below 200% of the California poverty level. Surviving beneficiaries total income must fall below 150% of the California poverty level. Staff is requesting the Retirement Board provide direction if any changes are needed to the metrics used to determine eligibility.

12. Update on 2021 Retirement Board Election – Valerie Weekly provided an update on the Retirement Board election. Doug Higashi's term expires on June 23, 2021 and he is not running for reelection. Staff is currently in the process of accepting requests for candidacy. Staff has added additional resources and communications options to the election activities. Staff has also increased outreach activities by incorporating two informational sessions to educate interested employees.

13. Update on the Human Resources Information System (HRIS) Replacement Project – Lisa Sorani provided an update on the HRIS Replacement Project. A full-time product owner was hired on November 9, 2020 which has cut several months from the schedule. The Request for Proposals (RFP) was posted on November 20, 2020. Four responses from vendors were received on January 6, 2021. An RFP Review Committee was created and a vendor selection is scheduled to occur in May 2021.

REPORTS FROM THE RETIREMENT BOARD

14. Brief report on any course, workshop, or conference attended since the last Retirement Board meeting

- Elizabeth Grassetti completed ethics training.
- Tim McGowan completed ethics training and attended the CALAPRS Conference online.
- Frank Mellon and Doug Higashi attended the CALAPRS Conference online.

ITEMS TO BE CALENDERED / UPCOMING ITEMS

- Review and Consider Revisions to Low Income Rules
- Review and Approve Revisions to Administration of the Annual Audit of the Health Insurance Benefit as Outlined in Retirement Board Rule C-4
- International Investment Allocation
- SECURE Act Ordinance Change
- Retirement System Software Upgrades Update
- COLA Bank Details
- Low-Income Adjustment

ADJOURNMENT – Frank Mellon moved to adjourn the meeting at 12:28 p.m. and Doug Higashi seconded the motion; the motion carried (5-0) by the following voice vote: AYES (Higashi, McGowan, Chan, Mellon and Young), NOES (none), ABSTAIN (none), ABSENT (none).

President

ATTEST: _____
Secretary

05/20/2021

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 20, 2021

MEMO TO: Members of the Retirement Board

FROM: Sophia D. Skoda, Director of Finance 

SUBJECT: Investment Transactions by Retirement Fund Managers for February 2021 and March 2021

The attached Investment Transactions by Retirement Fund Managers report for the months of February 2021 and March 2021 is hereby submitted for Retirement Board approval.

Attachment

SDS:AM:MH

INVESTMENT TRANSACTIONS BY RETIREMENT FUND MANAGERS			
February 2021			
	PURCHASES	SALES	PORTFOLIO VALUE
<u>FIXED INCOME</u>			
C.S. McKee	\$39,013,913	\$38,323,026	\$187,026,444
Federated Bank Loans	\$374,549	\$200,000	\$45,587,667
Garcia Hamilton Associates	\$37,649,042	\$37,800,803	\$192,915,753
Mackay Shields - HY	\$2,935,729	\$438,918	\$48,832,950
TOTAL	\$79,973,233	\$76,762,747	\$474,362,814
<u>DOMESTIC EQUITY</u>			
Russell 3000 Index Fund	\$0	\$0	\$573,351,499
Total Domestic Equity	\$0	\$0	\$573,351,499
<u>COVERED CALLS</u>			
Parametric (BXM)	\$3,425,586	\$3,353,597	\$141,875,026
Parametric (Delta-Shift)	\$408,074	\$409,541	\$152,583,713
Van Hulzen	\$26,967,369	\$27,538,153	\$133,212,141
Total Covered Calls	\$30,801,029	\$31,301,291	\$427,670,880
<u>INTERNATIONAL EQUITY</u>			
ACWI Index fund	\$0	\$0	\$400,262,531
Franklin/Templeton	\$0	\$0	\$697,532
Fisher Investments	\$2,864,124	\$3,158,499	\$175,483,894
Global Transition	\$0	\$0	\$658,737
Total International Equity	\$2,864,124	\$3,158,499	\$577,102,693
<u>REAL ESTATE EQUITY</u>			
RREEF America II	\$0	\$0	\$50,157,979
CenterSquare	\$4,356,201	\$4,325,659	\$53,155,429
Total Real Estate	\$4,356,201	\$4,325,659	\$103,313,408
TOTAL ALL FUND MANAGERS	\$117,994,587	\$115,548,196	\$2,155,801,295
March 2021			
	PURCHASES	SALES	PORTFOLIO VALUE
<u>FIXED INCOME</u>			
C.S. McKee	\$46,707,336	\$39,291,483	\$185,206,510
Federated Bank Loans	\$1,159,882	\$1,119,991	\$45,498,978
Garcia Hamilton Associates	\$35,996,164	\$34,015,579	\$191,859,114
Mackay Shields - HY	\$2,787,028	\$606,495	\$49,075,165
TOTAL	\$86,650,410	\$75,033,548	\$471,639,766
<u>DOMESTIC EQUITY</u>			
Russell 3000 Index Fund	\$0	\$0	\$593,925,997
Total Domestic Equity	\$0	\$0	\$593,925,997
<u>COVERED CALLS</u>			
Parametric (BXM)	\$3,786,322	\$3,557,510	\$146,671,009
Parametric (Delta-Shift)	\$1,582,440	\$1,383,943	\$159,071,904
Van Hulzen	\$29,392,853	\$25,469,500	\$139,105,738
Total Covered Calls	\$34,761,615	\$30,410,953	\$444,848,650
<u>INTERNATIONAL EQUITY</u>			
ACWI Index fund	\$0	\$0	\$405,854,529
Franklin/Templeton	\$0	\$0	\$31,413
Fisher Investments	\$690,549	\$726,449	\$175,179,407
Global Transition	\$0	\$0	\$1,302,844
Total International Equity	\$690,549	\$726,449	\$582,368,193
<u>REAL ESTATE EQUITY</u>			
RREEF America II	\$0	\$0	\$50,157,979
CenterSquare	\$3,177,857	\$3,078,244	\$55,868,751
Total Real Estate	\$3,177,857	\$3,078,244	\$106,026,730
TOTAL ALL FUND MANAGERS	\$125,280,431	\$109,249,195	\$2,198,809,336

Prepared By: Matt Houck
 Matt Houck, Accountant 1

Date: 4-27-2021

R.B. RESOLUTION NO. 6932

RATIFYING AND APPROVING INVESTMENT TRANSACTIONS BY FUND MANAGERS
FOR MONTHS OF FEBRUARY 2021 AND MARCH, 2021

Introduced by: ; Seconded by:

WHEREAS, Retirement Board Rule No. B-5 provides for investment transactions without prior specific approval by the Retirement Board; and

WHEREAS, investment transactions have been consummated during February, 2021 and March, 2021, in accordance with the provisions of said rule and in securities designated as acceptable by Retirement Board Resolution No. 4974, as amended;

NOW, THEREFORE, BE IT RESOLVED that the investment transactions appearing on the following exhibits are hereby ratified and approved.

President

ATTEST:

Secretary

05/20/2021

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 20, 2021
MEMO TO: Members of the Retirement Board
THROUGH: Sophia D. Skoda, Director of Finance *SDS*
FROM: Andrea Miller, Controller LF WOC for Andrea Miller
SUBJECT: Short Term Investment Transactions for February 2021

The attached Short Term Investment Transactions report for the month of February 2021 is hereby submitted for Retirement Board approval.

Attachment

SDS:AMM:aw

**EBMUD EMPLOYEES' RETIREMENT SYSTEM
SHORT TERM INVESTMENT TRANSACTIONS
CONSUMMATED BY THE TREASURER
MONTH OF FEBRUARY 2021**

<u>COST/ FACE VALUE</u>	<u>DESCRIPTION</u>	<u>DATE OF PURCHASE</u>	<u>DATE OF SALE/MATURITY</u>	<u>YIELD (%)</u>
\$ 4,205,000.00	Local Agency Investment Fund	5-Feb-21		0.407
4,201,000.00	Local Agency Investment Fund	19-Feb-21		0.407
(10,955,000.00)	Local Agency Investment Fund		25-Feb-21	0.407
 <u>\$ (2,549,000.00)</u>	Net Activity for Month			

\$ 11,344,961.86	Beginning Balance
<u>(2,549,000.00)</u>	Net Activity for Month
<u>\$ 8,795,961.86</u>	Ending Balance

**Fan,
Lawrence**

Digitally signed by Fan, Lawrence
DN: cn=Fan, Lawrence,
email=lawrence.fan@ebmud.com
Date: 2021.03.19 10:19:28 -07'00'

LF WOC for

Andrea Miller

SUBMITTED BY _____
Andrea Miller
Controller

DATE _____

Robby Cert
August
2018

Digitally signed by Robby
Cert August 2018
DN: cn=Robby Cert
August 2018
Date: 2021.03.24 06:41:49
-07'00'

Robert L. Hannay
Treasury Manager

Leanne
Maloney

Digitally signed by Leanne
Maloney
DN: cn=Leanne Maloney,
o=EBMUD, ou=EBMUD,
email=leanne.maloney@ebmud.com, c=US
Date: 2021.03.19 09:44:44
-07'00'

Sandy Lindley
Acctg. Systems Supvr.

prepared by Awalsh

LM
WOC
for SL

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 20, 2021

MEMO TO: Members of the Retirement Board

THROUGH: Sophia D. Skoda, Director of Finance *SDS*

FROM: Andrea Miller, Controller *AM*

SUBJECT: Short Term Investment Transactions for March 2021

The attached Short Term Investment Transactions report for the month of March 2021 is hereby submitted for Retirement Board approval.

Attachment

SDS:AM:MH

**EBMUD EMPLOYEES' RETIREMENT SYSTEM
SHORT TERM INVESTMENT TRANSACTIONS
CONSUMMATED BY THE TREASURER
MONTH OF MARCH 2021**

<u>COST/ FACE VALUE</u>	<u>DESCRIPTION</u>	<u>DATE OF PURCHASE</u>	<u>DATE OF SALE/MATURITY</u>	<u>YIELD (%)</u>
\$ 4,229,000.00	Local Agency Investment Fund	5-Mar-21		0.357
4,199,000.00	Local Agency Investment Fund	19-Mar-21		0.357
 <u>\$ 8,428,000.00</u>	Net Activity for Month			
 \$ 8,795,961.86	Beginning Balance			
<u>8,428,000.00</u>	Net Activity for Month			
<u>\$ 17,223,961.86</u>	Ending Balance			

SUBMITTED BY Andrea Miller
Andrea Miller
Controller

DATE 4/29/2021

Robert L. Hannay
Robert L. Hannay
Treasury Manager

Sandy Lindley
Sandy Lindley
Acctg. Systems Supvr.
prepared by MHouck

R.B. RESOLUTION NO. 6933

RATIFYING AND APPROVING SHORT TERM INVESTMENT TRANSACTIONS BY THE
TREASURER FOR FEBRUARY 2021 AND MARCH 2021

Introduced by: ; Seconded by:

WHEREAS, Retirement Board Rule No. B-7 provides for the temporary investment of retirement system funds by the Treasurer or Assistant Treasurer in securities authorized by Sections 1350 through 1366 of the Financial Code or holding funds in inactive time deposits in accordance with Section 12364 of the Municipal Utility District Act; and

WHEREAS, investment transactions during February, 2021 and March, 2021, have been made in accordance with the provisions of the said rule;

NOW, THEREFORE, BE IT RESOLVED that the investment transactions consummated by the Treasurer and included on the attached Exhibit A for February, 2021 and March, 2021 are hereby ratified and approved.

President

ATTEST:

Secretary

05/20/2021

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 20, 2021
MEMO TO: Members of the Retirement Board
THROUGH: Sophia D. Skoda, Director of Finance *SDS*
FROM: Andrea Miller, Controller LF for Andrea Miller
SUBJECT: Statement of Receipts and Disbursements for February 2021

The attached Statement of Receipts and Disbursements report for the month of February 2021 is hereby submitted for Retirement Board approval.

Attachment

SDS:AMM:aw

STATEMENT OF RECEIPTS AND DISBURSEMENTS
EMPLOYEES' RETIREMENT FUND
MONTH OF FEBRUARY 2021

CASH BALANCE at January 31, 2021 \$ 2,062,981.24

Receipts

Employees' Contributions	\$	1,502,435.31	
District Contributions		6,943,672.71	
LAIF Redemptions		10,955,000.00	
Refunds and Commission Recapture		<u>26,723.89</u>	
TOTAL Receipts			19,427,831.91

Disbursements

Checks/Wires Issued:			
Service Retirement Allowances	\$	9,806,138.52	
Disability Retirement Allowances		151,163.95	
Health Insurance Benefit		982,882.22	
Payments to Retiree's Resigned/Deceased		2,998.42	
LAIF Deposits		8,406,000.00	
Administrative Cost		<u>113,283.34</u>	
TOTAL Disbursements			<u>(19,462,466.45)</u>

CASH BALANCE at February 28, 2021 \$ 2,028,346.70

LAIF 8,795,961.86

LAIF and CASH BALANCE at February 28, 2021 \$ 10,824,308.56

Domestic Equity

Russell 3000 Index Fund	\$	573,351,499.42
Subtotal Domestic Equity		<u>573,351,499.42</u>

Covered Calls

Parametric (BXM)	\$	141,875,026.38
Parametric (Delta-Shift)		152,583,713.01
Van Hulzen		<u>133,212,141.05</u>
Subtotal Covered Calls		<u>427,670,880.44</u>

International Equity

ACWI Index fund	\$	400,262,530.56
Franklin Templeton		697,531.73
Fisher Investments		175,483,894.09
Global Transition		<u>658,736.68</u>
Subtotal International Equity		<u>577,102,693.06</u>

Real Estate

RREEF America REIT II	\$	50,157,979.00
Center Square		<u>53,155,429.46</u>
Subtotal Real Estate		<u>103,313,408.46</u>

Fixed Income

CS Mckee	\$	187,026,444.16
Federated Bank Loans		45,587,666.60
Garcia Hamilton Associates		192,915,752.87
Mackay Shields-High Yield		<u>48,832,949.93</u>
Subtotal Fixed Income		<u>474,362,813.56</u>

Total for Domestic and International Equities 2,155,801,294.94

MARKET VALUE of ASSETS at February 28, 2021 \$ 2,166,625,603.50

Respectfully submitted,

Fan, Lawrence

Digitally signed by Fan, Lawrence
DN: cn=Fan, Lawrence,
email=lawrence.fan@ebmud.com
Date: 2021.03.19 09:57:54 -0700

Andrea Miller
Controller

LF WOC for

Andrea Miller

Digitally signed by Robby
Cert August 2018
DN: cn=Robby Cert August
2018
Date: 2021.03.24 06:40:07
-0700

Robert L. Hannay
Treasury Mgr.

Digitally signed by Leanne
Maloney
DN: cn=Leanne Maloney,
email=leanne.maloney@ebmud.com
Date: 2021.03.24 06:40:07
-0700

S. F. Lindley
Acctg Sys Supvr.

LM
WOC
for SL

prepared by Awalsh

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 20, 2021

MEMO TO: Members of the Retirement Board

THROUGH: Sophia D. Skoda, Director of Finance *SDS*

FROM: Andrea Miller, Controller *AM*

SUBJECT: Statement of Receipts and Disbursements for March 2021

The attached Statement of Receipts and Disbursements report for the month of March 2021 is hereby submitted for Retirement Board approval.

Attachment

SDS:AM:MH

STATEMENT OF RECEIPTS AND DISBURSEMENTS
EMPLOYEES' RETIREMENT FUND
MONTH OF MARCH 2021

CASH BALANCE at February 28, 2021 \$ 2,028,346.70

Receipts

Employees' Contributions	\$	1,507,397.90	
District Contributions		6,969,749.61	
LAIF Redemptions		0.00	
Refunds and Commission Recapture		<u>66,097.42</u>	
TOTAL Receipts			8,543,244.93

Disbursements

Checks/Wires Issued:			
Service Retirement Allowances	\$	9,848,735.69	
Disability Retirement Allowances		151,163.95	
Health Insurance Benefit		1,004,347.34	
Payments to Retiree's Resigned/Deceased		0.00	
LAIF Deposits		8,428,000.00	
Administrative Cost		<u>287,821.46</u>	
TOTAL Disbursements			<u>(19,720,068.44)</u>

CASH BALANCE at March 31, 2021 \$ (9,148,476.81)

LAIF 17,223,961.86

LAIF and CASH BALANCE at March 31, 2021 \$ 8,075,485.05

Domestic Equity

Russell 3000 Index Fund	\$	<u>593,925,997.01</u>
Subtotal Domestic Equity		593,925,997.01

Covered Calls

Parametric (BXM)	\$	146,671,008.54
Parametric (Delta-Shift)		159,071,903.70
Van Hulzen		<u>139,105,737.78</u>
Subtotal Covered Calls		444,848,650.02

International Equity

ACWI Index fund	\$	405,854,529.12
Franklin Templeton		31,412.72
Fisher Investments		175,179,407.27
Global Transition		<u>1,302,844.11</u>
Subtotal International Equity		582,368,193.22

Real Estate

RREEF America REIT II	\$	50,157,979.00
Center Square		<u>55,868,751.12</u>
Subtotal Real Estate		106,026,730.12

Fixed Income

CS Mckee	\$	185,206,509.66
Federated Bank Loans		45,498,977.86
Garcia Hamilton Associates		191,859,113.72
Mackay Shields-High Yield		<u>49,075,164.50</u>
Subtotal Fixed Income		471,639,765.74

Total for Domestic and International Equities 2,198,809,336.11

MARKET VALUE of ASSETS at March 31, 2021 \$ 2,206,884,821.16

Respectfully submitted,

Andrea Miller

Andrea Miller
Controller

Robert L. Hannay

Robert L. Hannay
Treasury Mgr.

Sandy Lindley

S. F. Lindley
Acctg Sys Supvr.

prepared by Mhouck

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 20, 2021

MEMO TO: Members of the Retirement Board

FROM: Laura Acosta, Human Resources Manager 

SUBJECT: Declaring Results of the Election of an Employee Member of the Retirement Board

The election of an employee member to the District Retirement Board has been completed for the seat currently held by Doug Higashi.

Based on the social distancing requirements that began in 2020, staff made changes to the election process to allow completion of the election process within the social distancing constraints. On April 6, 2020 the 'Coronavirus Pandemic Response: Special Retirement Board Election Procedures' were sent to employees by e-mail. The revised election process is as follows:

1. If only one candidate submitted a Candidate form and received the necessary 50 nominations no further voting was needed,
2. Allowed nominations by email, and
3. Allowed for voting via Survey Monkey rather than paper ballots.

This process was used for both the employee member and retiree member elections in 2020 and was used again for the employee member election in 2021.

At this time the election of an employee member to the Retirement Board has been completed and the Retirement Board Secretary has certified the following results.

A total of 427 votes were cast in the 2021 election of an employee member to the Retirement Board. Valid Ballots of 407 were tallied by Employee Services staff.

The results of the tally were as follows:

Gus Cicala	117 votes
Jae Park	122 votes
Ken Minn	168 votes

For an employee to be elected as the employee member of the Retirement Board, they must earn the most votes, and also be eligible to serve on the Retirement Board. This year, the employee member who received the most votes, Ken Minn, terminated employment with the District

effective May 14, 2021, and is therefore no longer eligible to be elected to the employee Retirement Board member seat.

Mr. Minn noticed the employee services staff of his resignation on May 3, 2021. The Retirement Board does not have a rule that addresses this scenario so staff reviewed the information with legal counsel and chose to follow the state of California approach, wherein once a candidate is on the ballot they cannot be removed from the ballot, even if no longer eligible. A notice was sent out to all active employee members, with this information on May 3rd, and voting was finalized at 5pm on May 7th.

The employee member with the second highest vote count is Jae Park.

Therefore, I hereby certify that Jae Park has been elected to the Retirement Board for a two-year term beginning June 24, 2021.

LA:ls

R.B. RESOLUTION NO. 6934

DECLARING THE RESULTS OF AN ELECTION OF AN EMPLOYEE MEMBER OF THE
RETIREMENT BOARD

Introduced by: ; Seconded by:

WHEREAS, Section 4(a) of the Retirement Ordinance provides for election by and from membership of the Retirement System to fill a vacancy on the Retirement Board created by the expiration of the term of an elected Retirement Board member, and the Secretary of the Retirement Board has certified that Jae Park has been elected by the membership of the Retirement System as a member of the Retirement Board pursuant to an election conducted for said purpose;

NOW, THEREFORE, BE IT RESOLVED that Jae Park is hereby declared a member of the Retirement Board and that said member shall serve a period of two years commencing June 24, 2021.

President

ATTEST:

Secretary

05/20/2021



R.B. RESOLUTION NO. 6935

**EXPRESSING APPRECIATION TO DOUGLAS HIGASHI FOR HIS SERVICE TO THE
EAST BAY MUNICIPAL UTILITY DISTRICT RETIREMENT BOARD**

WHEREAS, Douglas Higashi has served as an employee of the East Bay Municipal Utility District for 25 years, and in the role of Manager of Waste Water Engineering since 2017 and;

WHEREAS, Douglas Higashi, as an elected Retirement Board member since June 24, 2007, ably served as a representative to the Retirement Board and;

WHEREAS, Douglas Higashi has acted as Retirement Board representative and President since January 19, 2012 maintaining fiduciary oversight and care of Retirement System assets and;

WHEREAS, during **Douglas Higashi's** term of office as a member of the Retirement Board, the Retirement System recovered from the 2008 market crash, the Retirement Board added the new investment tool, covered calls, as a way to help offset market volatility; California Pension Reform was enacted creating a new PEPRA Tier for all non-reciprocal members after January 1, 2013; there were 1215 retirements, the count of pension payees increased from 1136 to 1957; the Retirement Board took steps to understand and consider Environmental, Social and Governance (ESG) factors in investing adding language to this effect to the Investment Policy, and the Retirement System's assets grew from \$910.4 million (6/30/07) to \$2.22 billion (3/31/21);

WHEREAS, many significant improvements to administration of the Retirement System occurred during **Douglas Higashi's** term of office and;

WHEREAS, the East Bay Municipal Utility District Retirement Board recognizes and appreciates **Douglas Higashi's** many years of dedicated service to the Retirement System;

NOW, THEREFORE, BE IT RESOLVED that on behalf of the East Bay Municipal Utility District Retirement Board, we hereby commend **Douglas Higashi** and express our deepest gratitude for his years of service to the Employees' Retirement System.

Clifford Chan, Board Member

Frank Mellon, Board Member

Timothy McGowan, Board Member

Elizabeth Grassetti, Board Member

Marguerite Young, Board Member

05/20/2021

ATTEST: _____
Secretary

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 20, 2021

MEMO TO: Members of the Retirement Board

FROM: Sophia D. Skoda, Director of Finance *SDS*

SUBJECT: Adoption of Active vs. Passive International Strategy

SUMMARY

As a result of a reallocation of assets in 2018, the Retirement System has transitioned the majority of its equity assets to passive management. A subsequent international equity manager termination in 2020 prompted by underperformance further transitioned equity assets to passive management. As a result, the current international allocation deviates from the original 2018 plan and is susceptible to style biases. The Retirement Board has asked staff and Meketa to propose options to address its approach to the asset class. In response, staff and Meketa have proposed a step-by-step plan to help determine the future course of action. The first step of action proposed for today is to decide whether to continue with active management for portions of the international equity portfolio or to transition all international equities to passive management.

DISCUSSION

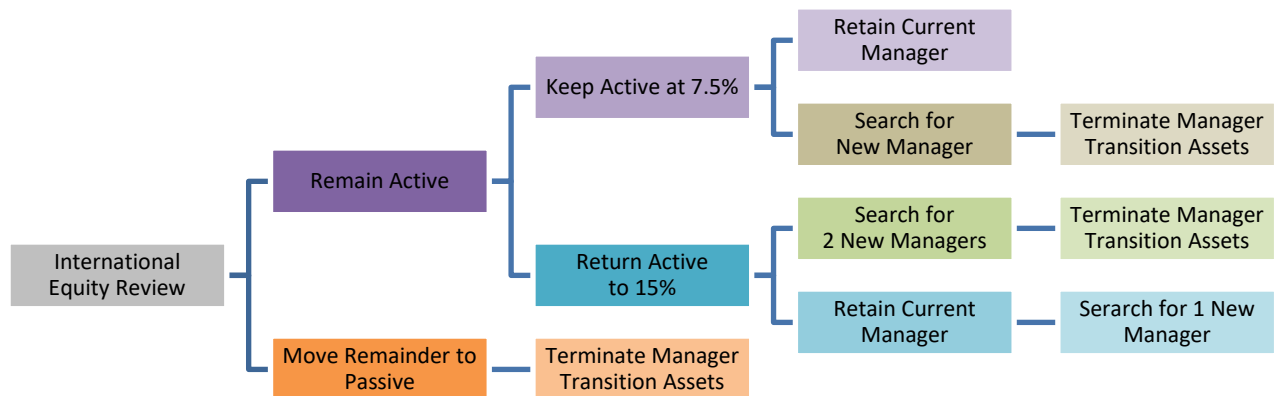
Since 2018, the Retirement System has transitioned the majority of its equity assets to passive management. The table below illustrates the recent changes in the management style of the portfolio.

Asset Class	Share of the Portfolio				
	Domestic Equity		International Equity		Other Asset Classes
	Active	Passive	Passive	Active	
<i>Management Style</i>					<i>n/a</i>
Previous allocation	40%	0%	0%	15%	45%
2018 Re-allocation	0%	25%	10%	15%	50%
2020 Manager change	0%	25%	17.5%	7.5%	50%
2021 Review	0%	25%	TBD	TBD	50%

Today, 100 percent of the Retirement System's domestic equities (25 percent of the total portfolio) is managed passively, and 70 percent of the Retirement System's international equities (17.5 percent of the total portfolio) is also managed passively. At present 30 percent of the Retirement System's international equities (7.5 percent of the total portfolio) is managed actively by a single manager.

A review of available data conducted by Meketa on performance over time of active and passive management for international equities, the impact of fees, and the effect of style biases are presented in the attached memorandum prepared by Meketa.

Staff requests that the Retirement Board consider the information presented and decide if it wishes to retain active management for portions of its international equities. Below is a step-by-step path for the Retirement Board to decide how it wishes to manage international equities (a change in color indicates a decision point at a Retirement Board meeting).



Should the Retirement Board decide today to keep active management in the international equity allocation, staff and Meketa will bring relevant items over the next several meetings, as needed, to assist the Retirement Board's decisions.

SDS:DC

Attachments

MEMORANDUM

TO: East Bay Municipal Utility District Employees' Retirement System
("EBMUDERS")
FROM: Meketa Investment Group ("Meketa")
DATE: May 20, 2021
RE: International Equity Portfolio Decision – Active vs. Passive

Summary & Recommendation

Meketa has analyzed the track record of active investment managers focused on the International equity asset class. We find that it has been extremely difficult to find active managers who consistently add value, net of fees. Our analysis shows that the median International Large Cap manager has underperformed its benchmark by 11 basis points annualized over our study period. This performance was prior to accounting for the median fee of 65 basis points for a \$100 million mandate.

We did find that interquartile spreads are higher in International Equities than other asset classes indicating there is greater potential value in selecting a superior manager. However, complicating the matter is the presence of style biases with core managers. It is far less common to have managers benchmarked to style-based benchmarks in International Equities than in the US. This means that individual managers can exhibit a significant style bias while remaining benchmarked to a Core index. Given the cyclical (but often long-lasting) relative performance of investment styles in international markets; managers can appear to add significant value relative to their benchmark (for relatively long periods of time) solely due to their style bias.

Meketa recommends that the Board decide whether to continue with a blended approach wherein the System's International Equity allocation is split between both active and passive management or to move to an allocation that is entirely passively managed. If the Board chooses to maintain the active management exposure the next step would be to decide the structure and composition of the active component.

Discussion

Whether active management adds value has been a common question for decades. For active investors, their goal is to outperform their target index (or benchmark) or to at least do better than their peers. The question, then, is whether these are practical goals, and if they are, whether they can be achieved consistently.

Meketa Analysis

In late 2019, Meketa published a comprehensive study of the efficacy of active management in different asset classes. Great strides were taken to ensure the quality of our data and safeguard against the well-known biases (survivorship, selection, etc.) present in this type of analysis.

All of the results in our study are shown *before fees*. The decision to compare gross of fee returns was made so that the benchmark index could be used directly for comparison. Furthermore, fees will vary for different investors. For example, institutions investing larger mandates will likely be able to negotiate lower fees than those available to smaller institutions. When comparing active and passive management, it is important that investors consider the fees they would likely bear. Expenses, fees, and trading costs can be a high hurdle for managers to overcome. Note that even index investing requires investors to bear some costs, albeit at a much lower level.

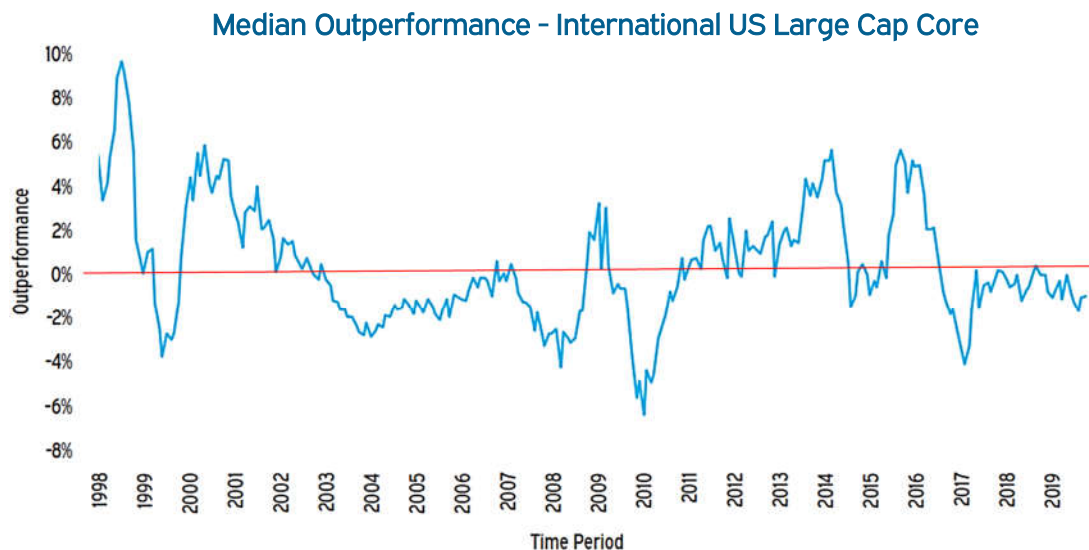
General Findings

The results of our analysis show how difficult it is for active managers to consistently add value. We found that the median manager in more than half of the observed asset classes outperformed their benchmark before fees. However, even in these cases, the outperformance was insufficient to overcome the median fee for that asset class. This is consistent with finance theory and with past versions of our research.

Our analysis indicates that there does not appear to be an asset class or style where it is particularly easy for active managers to add value, net of fees. That said, the level of dispersion among managers varies by asset class. This implies that skilled (or lucky) active management can add more value in certain asset classes than others. These tend to be more volatile asset classes, such as equities. In addition, there seems to be a connection between a temporary widening of interquartile spreads and extreme market events. Outperformance has also been cyclical, exhibiting long periods of median positive and negative relative performance. Across most asset classes, the interquartile spread has been declining. This implies that either markets have become more efficient over time, or that managers have structured their portfolios in a manner such that they more closely resemble each other.

International Equities

Our findings for International Equities resembles that for most other asset classes and points to the difficulty of active managers adding value relative to their benchmark. The results of our analysis show, that from inception (January 2001) through September of 2019, median outperformance for International Large Cap Core managers was an annualized -0.11% (or underperformance of 11 basis points) before accounting for fees. In other words, over this measurement period the majority of International Large Cap Core managers failed to add value relative to their benchmark. The percent of managers failing to add value grows significantly when fees are accounted for. The median fee for a \$100 million mandate is 65 basis points. Combining the median manager performance with the median fee results in an approximately -75 basis points underperformance for the median manager when fees are accounted for. Median outperformance has been cyclical over time as can be seen in the following graph.

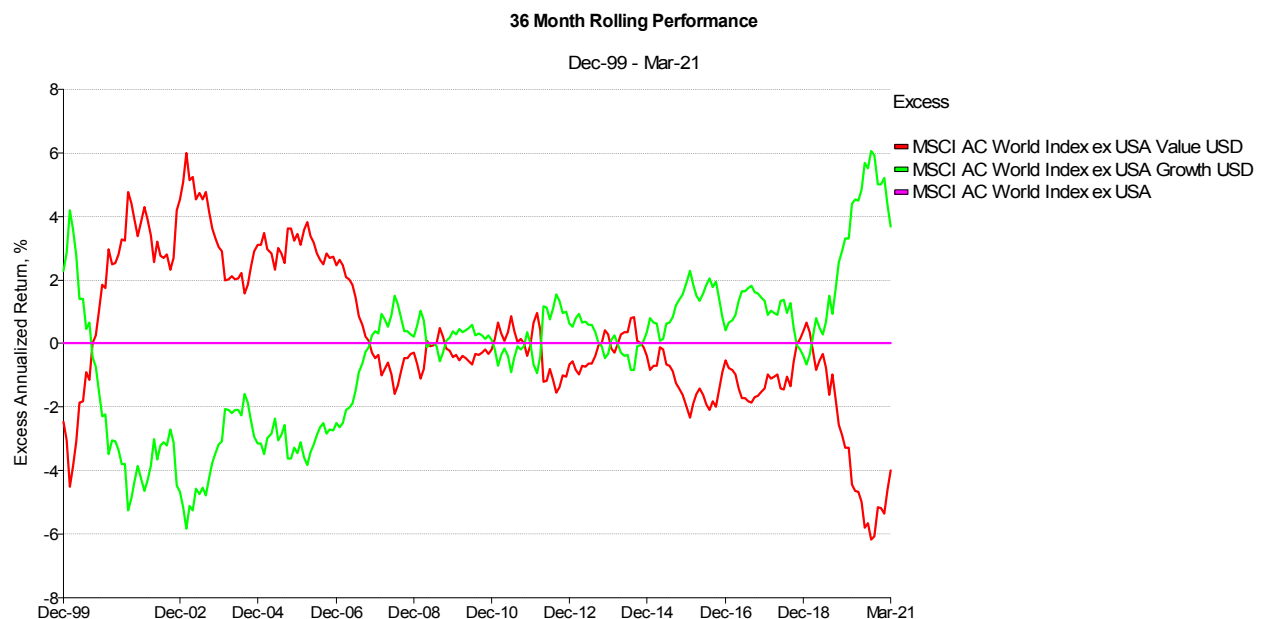


The median Emerging Market manager demonstrated improved performance relative to International Large Cap Core managers with the median manager outperforming by 0.24% annualized before accounting for fees. However, fees are significantly higher for Emerging Market managers with the median fee for a \$100 million mandate coming in at 90 basis points. As a result, the median net outperformance for Emerging Market managers was approximately -65 basis points (or underperformance of 65 basis points).

One finding that may support active management in International Equities is that the interquartile spread is higher for International Large Cap Core managers and for Emerging Market managers. The interquartile spread takes the return of the 25th percentile manager minus the return of the 75th percentile manager. The size of this spread is a good indicator of how much value a “skilled” (or lucky) manager can add relative to an “unskilled” (or unlucky) manager. Another way to interpret these results is to think of the size of the spread as an indicator of how much potential value lies in selecting a superior active manager within these asset classes.

For International Large Cap Core the interquartile spread was approximately 2.5% while the spread for Emerging Markets was roughly 3%. That compares to US Large Cap at approximately 2.25%. This indicates there is more value in selecting a good International manager relative to other asset classes.

One complicating factor for analyzing active International managers is that it is far more common for International managers exhibiting style biases to be benchmarked against core indices. Similar to other markets, International markets exhibit cyclical biases that favor either Growth or Value factors at different points in time. Over time these performance biases tend to even out but it can complicate analysis as one subset of managers does well versus the benchmark as their style is in favor. This tends to be a much smaller problem in US Equities as style benchmarks are the norm. The following chart, which shows the relative performance of style indices versus a core index, helps to illuminate this issue.



Conclusion

Our study finds that it is extremely difficult to find an active manager in any asset class that can consistently add value. The active International Core universe of managers exhibit the same difficulty in adding value with the median manager underperforming its benchmark by 11 basis points annualized over our study period. This performance was prior to accounting for the median fee of 65 basis points for a \$100 million mandate. Interquartile spreads are higher in International Equities than other asset classes indicating there is greater potential value in selecting a superior manager. However, complicating the matter is the presence of style biases by core managers. It is far less common to have managers benchmarked to style-based benchmarks in International Equities than in US Equities. This means that individual managers can exhibit a significant style bias while remaining benchmarked to a Core index. Given the cyclical (but often long-lasting) performance of investment styles in International markets, managers can appear to add significant value relative to the benchmark for relatively long periods of time solely due to their style bias.

EDW/STB/EL/ndb

Manager Alpha: Does Active Management Add Value?

WHITEPAPER
OCTOBER 2019

The purpose of this paper is to measure and analyze the historical outperformance of actively managed funds compared to market benchmarks. This topic has been discussed before in numerous platforms and contexts, but this paper aims to clear as much bias as possible to create an accurate historical and quantitative picture of outperformance over time.

CONTRIBUTORS

Rose Smith
Frank Benham, CFA, CAIA
Roberto Obregon, CFA, CAIA

We found that the median manager in more than half of the observed asset classes outperformed their benchmark before fees. However, even in these cases, the outperformance was insufficient to overcome the median fee for that asset class. This is consistent with finance theory and with past versions of our research. Our research continues to find that US small cap and emerging market equities have exhibited the largest positive median manager alpha. Still, our analysis indicates that there does not appear to be an asset class or style where it is particularly easy for active managers to add value, net of fees.

That said, the level of dispersion among managers varies by asset class. This implies that skilled (or lucky) active management can add more value in certain asset classes than others. These tend to be more volatile asset classes, such as equities. We also note that there seems to be a connection between a temporary widening of interquartile spreads and extreme market events.

Manager alpha has also been cyclical, exhibiting long periods of median out- and under performance relative to the benchmark. Across most asset classes, the interquartile spread has been declining. This implies that either markets have become more efficient over time or managers have structured their portfolios in a manner such that they more closely resemble each other.

Introduction

Whether active management adds value has been a common question for decades. For many active investors, their goal is to outperform their target market (or *benchmark*) or to at least do better than their peers. The question, then, is whether these are practical goals, and if they are, whether they can be achieved consistently.

Aside from the possible value of investing in an actively managed fund, this paper aims to ascertain whether a manager will likely outperform the market, and if it does, whether that benefit will go back to the investor after fees are applied. This paper will also endeavor to answer whether the odds of outperformance are high, low, or purely random, and whether the amount of value added from active management varies across asset classes, styles, and time.

To differentiate this paper from other research on the same topic, we will take the time to filter the data to clear it of as much bias as possible, including double counting and survivorship bias. This way, we can develop more reasonable expectations regarding the reality of investing in an actively managed fund.

Data

The two main data sources used for the paper are Morningstar Direct and eVestment.¹ Morningstar Direct allows us to sort through both 'living' (active) and 'dead' (inactive) funds. This should clear the data analysis from *survivorship bias*, or bias that comes from only viewing the funds that are still alive. If one were to look only at living funds, then the results would probably be skewed toward outperformance, as the majority of funds that have dropped out of the market are likely to have underperformed (see appendix).

¹ eVestment will only be used for fund fee calculations.

The second bias we consider is selection bias. In Morningstar Direct, all managers that are part of the database must report their returns (as opposed to databases such as eVestment, which allows managers to report different vehicles at their own discretion). This keeps managers from starting multiple vehicles, picking those that outperform, reporting them, and then omitting the vehicles that did not perform to satisfaction, thus skewing the data unrealistically. While selection bias is difficult to eliminate fully, one can at least work from a database with a better guarantee to root out selection bias. Morningstar also organizes its managed funds on the basis of return, benchmark, and structure, as opposed to allowing managers to self-report their fund asset class, even if the fund does not necessarily match the class in which it is included.

Morningstar also uses its own standardized benchmarks for each asset class, an approach that should prevent any potential artificial out- or underperformance due to non-standardized benchmarking. A large amount of "noise" can result from the mismatch between funds' strategies and their benchmarks. Often this takes the form of managers holding securities that are not included in their benchmark, or structuring their portfolio such that it is riskier than the benchmark. If a significant segment of managers in an asset class run portfolios that are meaningfully different

from the benchmark, it can lead to erroneous conclusions. Morningstar allocates funds to a standardized asset class independent of what a firm might market their fund to be, which allows us to better trust that the funds are actually aligned with their benchmark and minimizes the noise that comes from benchmark mismatching.

To prevent double counting, we opted to only consider a single share class of each fund. Share classes differ by fee structures but not by portfolio composition. To not incur selection bias and because we calculate performance before fees, we chose the oldest share class from duplicate funds to maintain uniformity.

To maintain the most accurate calculation methods, we removed any funds with less than twelve months of return history. While this decision does slightly increase the risk of survivorship bias and add a bias against new funds, the amount of funds deleted was small enough as to not warrant an extraordinary amount of concern (see the Appendix for the exact numbers for each asset class).

For our analysis, we decided to assess six asset classes: US Core Bonds, US High Yield Bonds, US Large Cap Equity, US Small Cap Equity, Foreign Large Cap Equity, and Emerging Market Equity. We chose these asset classes because they represent a broad collection of the public markets and have a long enough history to provide a comprehensive and robust picture of outperformance in their respective markets.

When comparing active and passive management, it is important that investors consider the fees they would likely bear.

The available data goes as far back as 1979, depending on the asset class. Using as long a historical period as possible should produce the most comprehensive results, as it includes multiple and different types of market cycles and environments. It should also minimize the impact of any possible *endpoint* or *recency bias*. Since we will be using the Morningstar-preferred benchmark, and some benchmarks started later than 1979, some asset classes will not have as long of a time window as others.²

² See the appendix for further explanation of our methodology regarding benchmark and timetable selection.

Fees and expenses

Expenses, fees, and trading costs can be a high hurdle for managers to overcome. All of the results in this paper are shown *before fees*. The decision to compare gross of fee returns was made so that the benchmark index could be used directly for comparison. Furthermore, fees will vary for different investors. For example, institutions investing larger mandates will likely be able to negotiate lower fees than those available to smaller institutions.

When comparing active and passive management, it is important that investors consider the fees they would likely bear. Note that even index investing requires investors to bear some costs, albeit at a much lower level.

Manager alpha

Calculations and results

The table below shows the median manager outperformance by broad asset class before fees. The comparison period goes as far back as each benchmark and asset class can. Outperformance is defined as the geometric mean of the manager performance minus the preferred benchmark performance over a rolling 12-month period.³

³ For each asset class, the medians were concatenated and evaluated, as opposed to the prior paper, which took a weighted average of the medians in each preferred benchmark.

Asset Class	Median Outperformance (Annualized)	Inception
US Core Bonds	18 bp	Jan. 1976
US High Yield Bonds	5 bp	Sep. 1986
US Large Cap	-40 bp	Jan. 1979
US Small Cap	49 bp	Jan. 1979
Foreign Large Cap	-11 bp	Jan. 2001
Emerging Markets	24 bp	Jan. 1999

TABLE 1
**Median Outperformance,
Gross of Fees
(From Inception Through
September 2019)**

As the table illustrates, the median active manager outperformed in four asset classes and underperformed in two of them. The highest outperforming median was US Small Cap, and the lowest was US Large Cap. For Foreign Large Cap, Core Bonds, and High Yield Bonds, the median was relatively close to zero.

Fees are a necessary part of evaluating the value of investing in an active manager. The following table displays the median fees for \$10 million and \$100 million mandates.⁴ Depending on the situation and size of the mandate, the investor can often negotiate a much lower fee than those listed below.

⁴ Data pulled from eVestment Alliance as of June 2019

Asset Class	Median Fee on \$10 mm	Median Fee on \$100 mm
Core Bonds	35 bp	28 bp
High Yield	55 bp	50 bp
US Large Cap	68 bp	55 bp
US Small Cap	98 bp	89 bp
Foreign Large Cap	75 bp	65 bp
Emerging Markets	95 bp	90 bp

TABLE 2
Median Fund Fee

When comparing the median performance to the median fee for each asset class, the gross performance of the median manager has not justified the historical median fee. In other words, performance would have to be much greater than median in order to justify the median level of fees. Two of the asset classes' median fund returns were negative already, so the fees would pull the loss amount even higher.⁵ On the other hand, the positive alpha asset classes' median fees would have nullified any of the positive alpha generated for the investor. The fees tended to be highest in those asset classes that many investors consider to be the least efficient (e.g., small cap stocks and emerging markets).

⁵ Traditionally, active management fees are often higher than passive management fees, so an active manager would have to outperform the benchmark by its higher fee for the investor to even break even.

Literature review

Our analysis appears to align well with other existing papers on the subject. Fama and French suggested in a 2009 essay⁶ that actively managed funds, in aggregate, are equal to the sum of the market, making active management a zero sum game, before trading costs and fees are applied. This implies that in aggregate, active managers will underperform the market by an amount equal to fees and expenses. A 2018 research note by Vanguard⁷ found that the majority of active managers do not always outperform in bear or bull markets.⁸ The note refers to the market as a 'zero-sum game' that turns into a negative-sum game once an investor factors in management fees. In another 2018 paper by AQR Management,⁹ researchers assessed actively managed fixed income funds and found that, after adjusting for risk premiums, there was very little significant alpha on average even before fees.

⁶ Source: "Why Active Investing Is a Negative Sum Game" Fama and French, 2009.

⁷ Source: "Myth: Active Management Performs Better in Bear Markets" Vanguard 2018.

⁸ Vanguard's note does not cover in detail the methodology, benchmarking, or asset classes of their study, even though all of these factors have the ability to affect the final results.

⁹ Source: "The Illusion of Active Fixed Income Alpha" AQR 2018.

Interquartile spreads

Another important metric to consider is the dispersion of manager performance. We measure this dispersion by interquartile spreads, which is the top quartile subtracted by the bottom quartile. For example, if 100 managers were ranked by performance, and 1 was the highest rank, the interquartile spread would be the 25th manager minus the 75th. The size of this spread is a good indicator of how much value a "skilled" (or lucky) manager can add relative to an "unskilled" (or unlucky) manager. Another way to interpret these results is to think of the size of the spread as an indicator of how much potential value lies in selecting a superior active manager within these asset classes.

The following chart illustrates interquartile spread for each asset class.

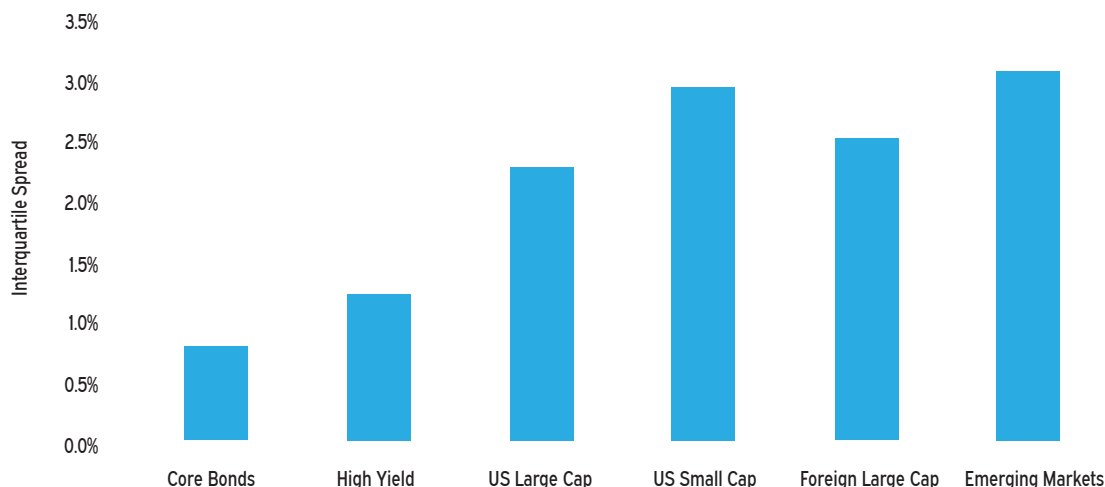


CHART 1
Interquartile Spreads¹⁰
(From Inception Through September 2019)

¹⁰ The interquartile spreads are evaluated by taking the historical medians of each firm's returns and taking the interquartile spread as far back as we can go.

As the chart illustrates, there is a relatively large difference in interquartile spreads among asset classes, reaching up to 3.1% for emerging market funds. There was much more divergence in the returns of equity managers than there was for bond managers, perhaps reflecting the difference in volatility of the underlying asset classes, or perhaps revealing the amount of heterogeneity in the securities held by managers in these sectors. Emerging Market equity managers exhibited the most divergence from each other historically, followed by US Small Cap managers. On the other hand, US High Yield Bond and US Core Bond managers had the lowest levels of historical divergence.

Style

In active equity management, managers may opt to invest from a value, growth, or core (blend) strategy. The following table illustrates the median outperformance of equities based on strategy.¹¹

¹¹ Each asset strategy was benchmarked against its value or growth counterpart i.e. Small Cap Growth equities were benchmarked against the Russell 2000 Growth, while Small Cap Core equities were benchmarked against the Russell 2000 standard.

Asset Class/Style	Median Outperformance (Annualized)	Inception
US Large Cap Core	-58 bp	Jan. 1979
US Large Cap Growth	-25 bp	Jan. 1979
US Large Cap Value	-27 bp	Jan. 1979
US Small Cap Core	+34 bp	Jan. 1979
US Small Cap Growth	+73 bp	Jan. 1979
US Small Cap Value	+30 bp	Jan. 1979
Foreign Large Cap Core	-49 bp	Jan. 2001
Foreign Large Cap Growth	+67 bp	Jan. 2001
Foreign Large Cap Value	-34 bp	Jan. 2001

TABLE 3
Median Outperformance, Gross of Fees
(From Inception Through May 2019)

Roughly half of the styles underperformed their benchmarks, regardless of cap size or whether they were domestic or overseas. The median growth-oriented manager tended to fare relatively well, especially in the US Small Cap and the Foreign Large Cap universes. Overall, the growth style outperformed its benchmark the most often, and it had a higher alpha than either the core or value style of the same asset class.

In this comparison, it is important to note that performance is being measured specifically against the style benchmark. Hence it is not measuring how well one style performs relative to another, but how well an actively managed style fund does against its own style peers.

Cyclicality

Up to this point, this paper has only shown snapshot estimates of outperformance using all available data. Using this method gives the most robust estimates due to the high number of data points, but it may be misleading because it implies a static level of outperformance. As the following charts indicate, this is not the case. For US large and small cap managers, periods of over- and under-performances are highly cyclical and can be rather long lived.

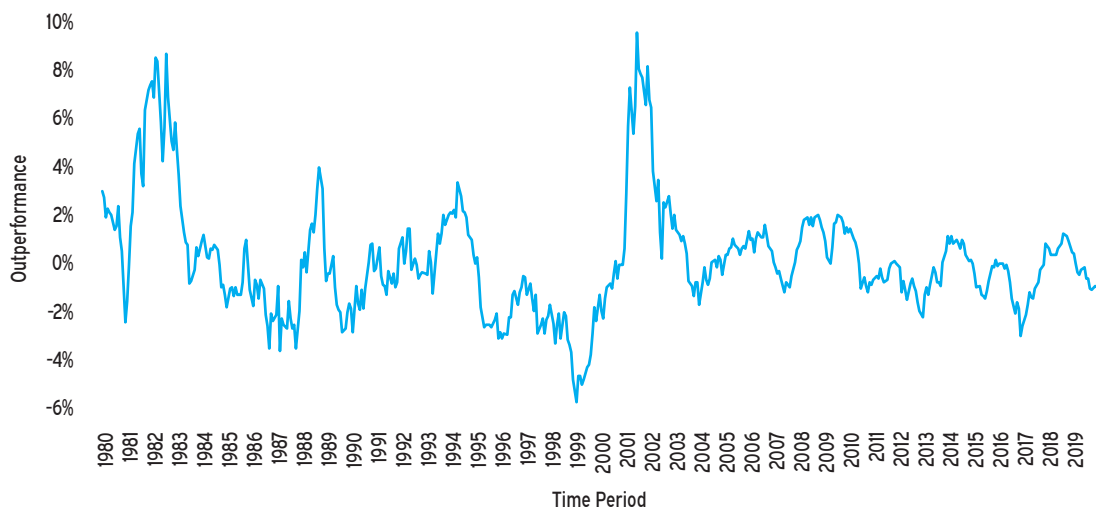


CHART 2
Rolling Median
Outperformance
US Large Cap

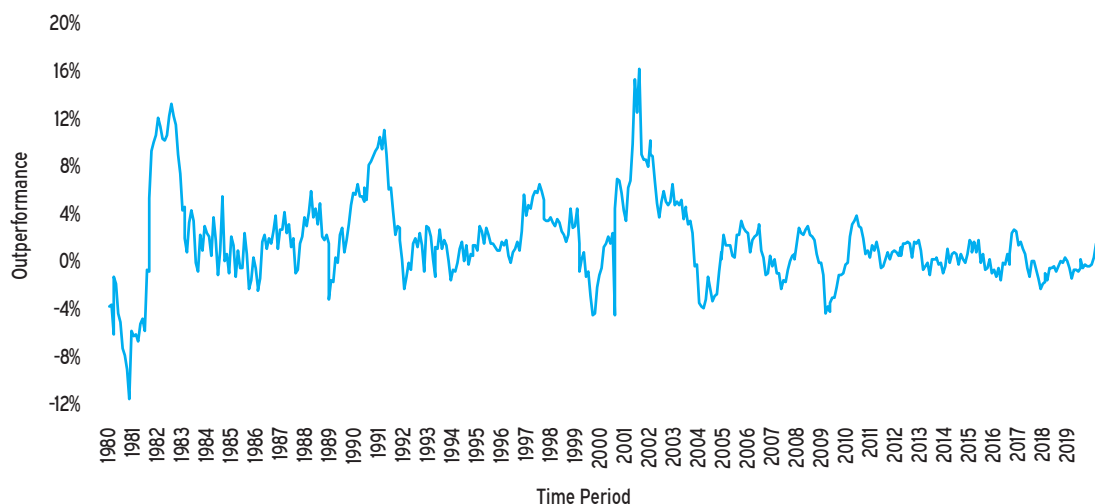


CHART 3
Rolling Median
Outperformance
US Small Cap

As the above graphs illustrate, the median outperformance for US Small and Large Cap Equities fluctuates, with cycles of positive and negative outperformance lasting for multiple years at a time. The other asset classes produce similar cycles (their respective graphs can be found in the appendix).

One very interesting aspect of both charts is that outperformance tended to occur during bear markets.¹² For example, during the bursting of the technology bubble from 2000 to 2002, there was a large amount of persistent manager outperformance. This implies that managers were more conservatively positioned and/or benefited from holding cash during these periods. However, this trend was less noticeable during the Global Financial Crisis (“GFC”).

¹² Please see our 2018 paper on Cycles in Active Management for a more detailed discussion of the topic.

In general, the domestic large and small cap medians follow a similar trend, in that their performance, both over and under the benchmark, has been trending closer to zero over time. However, high yield exhibits a different kind of behavior.

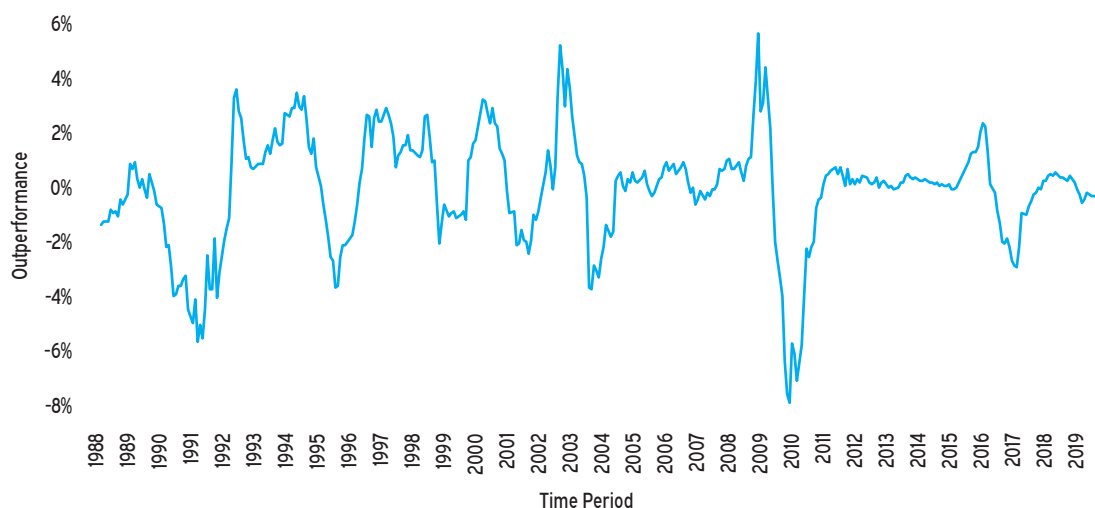


CHART 4
Rolling Median
Outperformance
High Yield Bonds

For high yield, the outperformance runs in an oscillating pattern, with the highest amplitudes being in the 2000s, coinciding with the Dot Com Bubble and the Global Financial Crisis. While the most recent spike and decline were not as drastic as prior cycles, there does not seem to be a trend towards zero.

Another way to look at cyclicalities is through the lens of manager dispersion. Below are the interquartile spreads for US High Yield bonds and US Large Cap Equities.

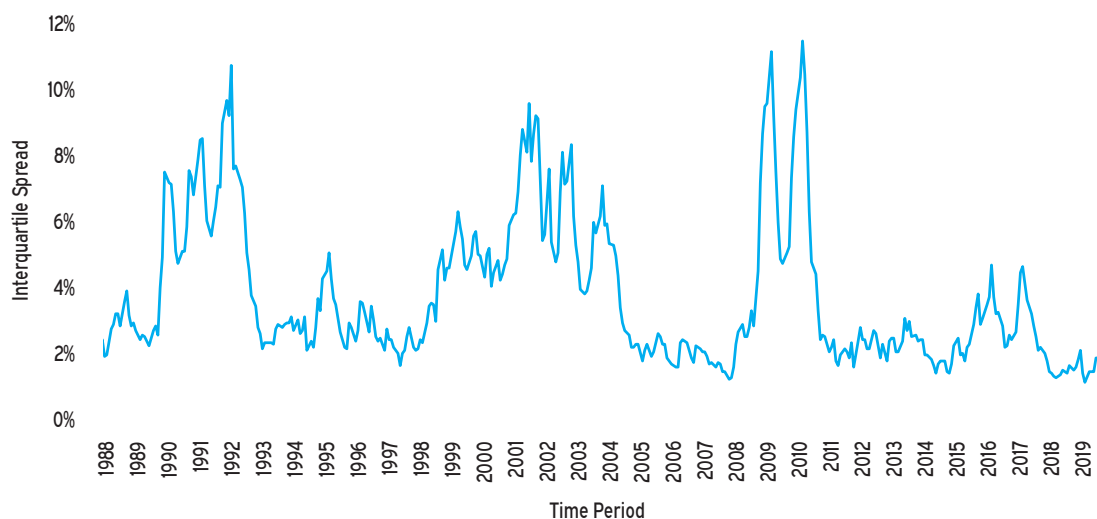


CHART 5
Rolling Interquartile
Spreads
High Yield Bonds

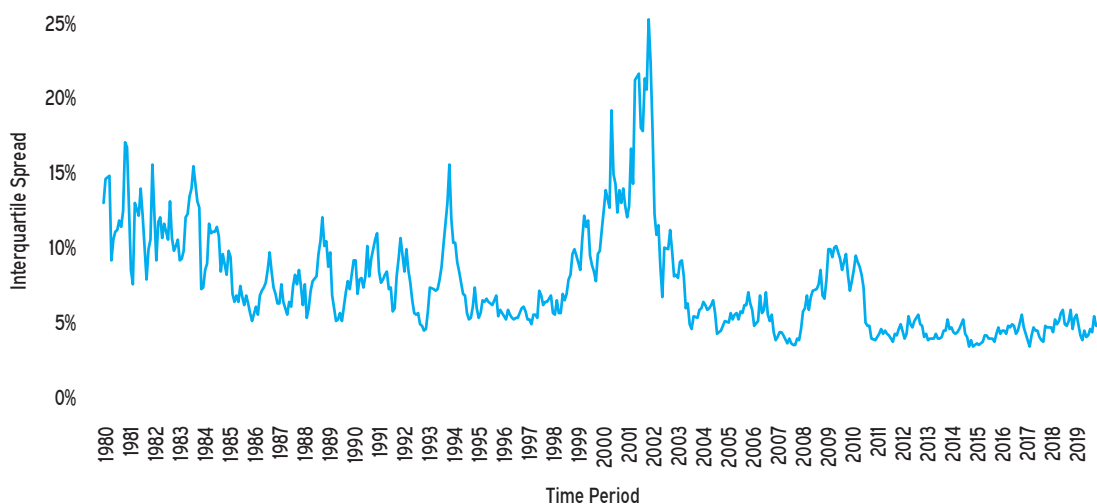


CHART 6
Rolling Interquartile
Spreads
US Large Cap

The interquartile spread greatly increases during periods of market stress, even if the median outperformance does not go above zero. For instance, during the 1989 High Yield Bond Crash, the spread increased, yet the outperformance remained negative. In the Large Cap case, the spread during the 2000s Dot Com Bubble Burst was large enough such that the top quartile outperformed well beyond its benchmark, while the lowest quarter performed below it.

Hence it appears - and seems intuitive—that active managers have a greater ability to add (or detract) value during periods of market stress (and the immediate recovery thereafter).¹³

¹³ While there does seem to be a correlation visible for these asset classes, there are times where this is not always true, such as the early 1990s recession for US Large Cap or the 1994 bond market crash.

Market efficiency

To evaluate market efficiency based on outperformance, we must define market efficiency and understand the implications of the given data sets. For our purposes, we will define an efficient market as a market in which it is difficult for active managers to consistently outperform the market (as proxied by an appropriate benchmark) and their peers. The idea on the market side is that when the investors learn about new information regarding a certain asset, the information is already incorporated into the current price of the asset, hence limiting the ability to find undervalued securities for arbitrage. On the peer group side, once a profitable, new investment strategy becomes known, then as other managers utilize it, the information is reflected in the market price, thus reducing the potential return of the previously profitable investment strategy.

Outperformance trends over time provide information on market efficiency. If the overall median outperformance trends down from positive outperformance, then it means that the median manager is not as readily able to find undervalued assets in the market in order to produce excess returns. In contrast, the interquartile spreads provide a better description of market efficiency on the peer level. If the interquartile spread trends down, then it means that the difference in potential value between the top quartile and the bottom quartile is shrinking, meaning the additive value of a successful actively managed strategy is declining.

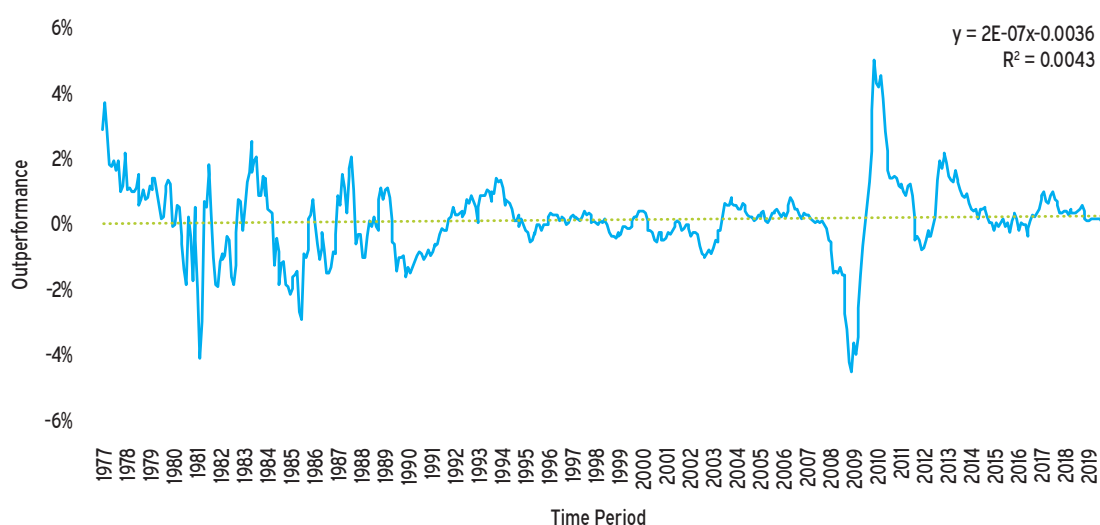


CHART 7
**Rolling Median
Outperformance
Core Bonds**

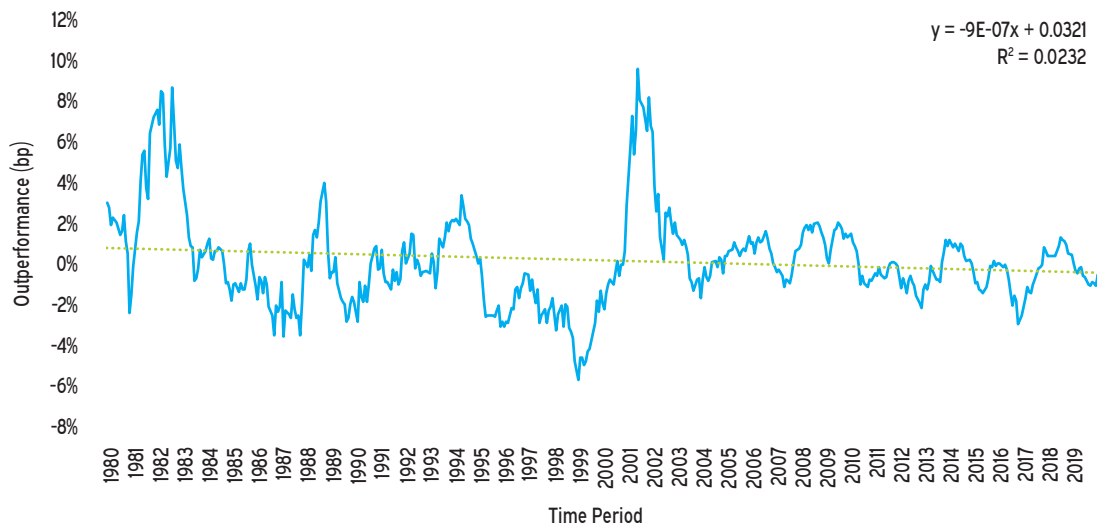


CHART 8
**Rolling Median
Outperformance
US Large Cap**

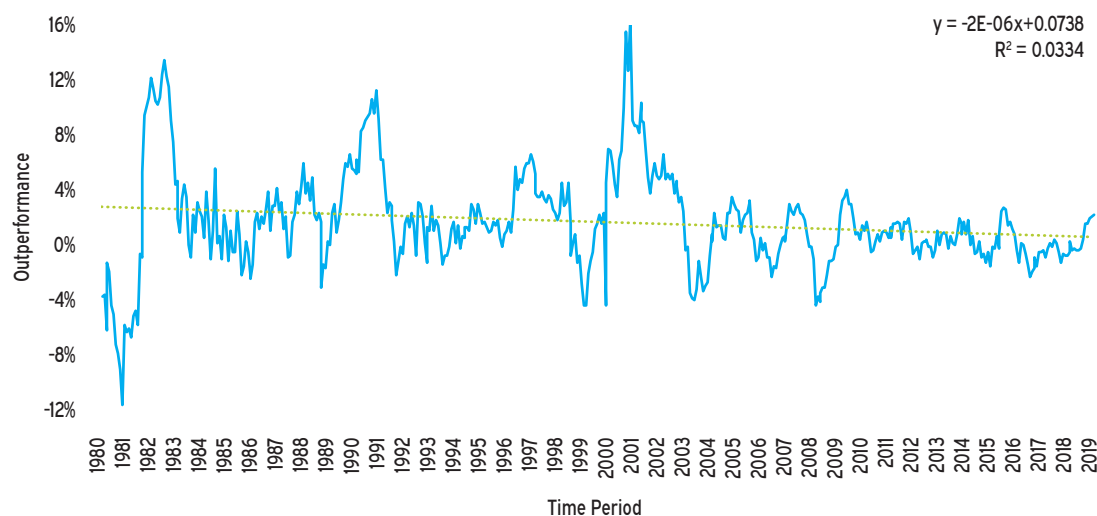


CHART 9
**Rolling Median
Outperformance
US Small Cap**

Each chart shows a “best fit” line that denotes the trend in median manager alpha. In most cases, the trend is down and approaching zero, implying greater market efficiency over time. However, these calculations should be taken with a large grain of salt, as the R2 value—the value that describes the relationship between the regression line and the actual data—is exceedingly low and close to zero, implying there is a very low correlation between the linear line and the actual data.

The next question to answer is whether the markets have become more efficient by the peer metric. The following charts illustrate the historical interquartile spread for US Large Cap and Core Bonds, as well as a linear best-fit line for each.

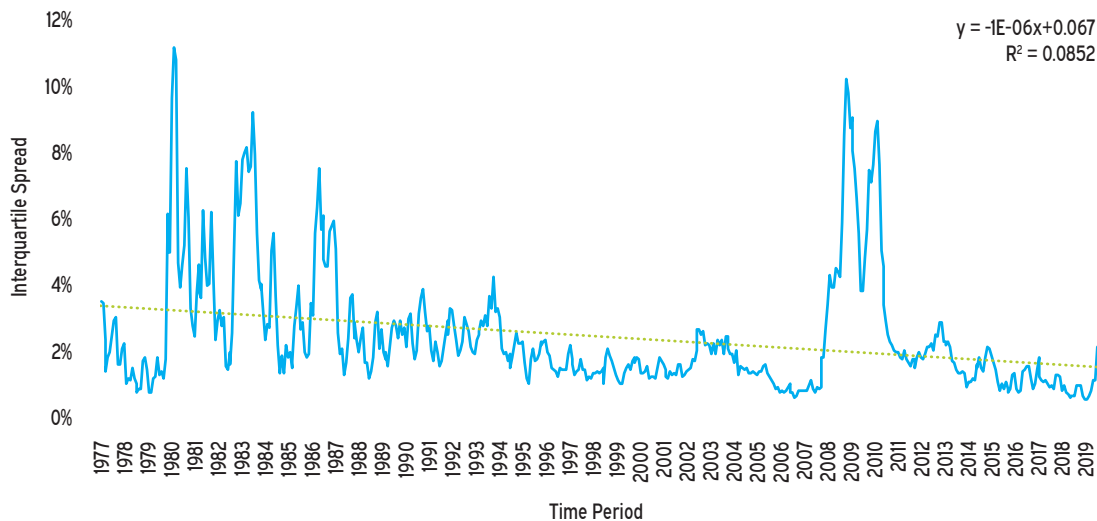


CHART 10
**Rolling Interquartile
Spread
Core Bonds**

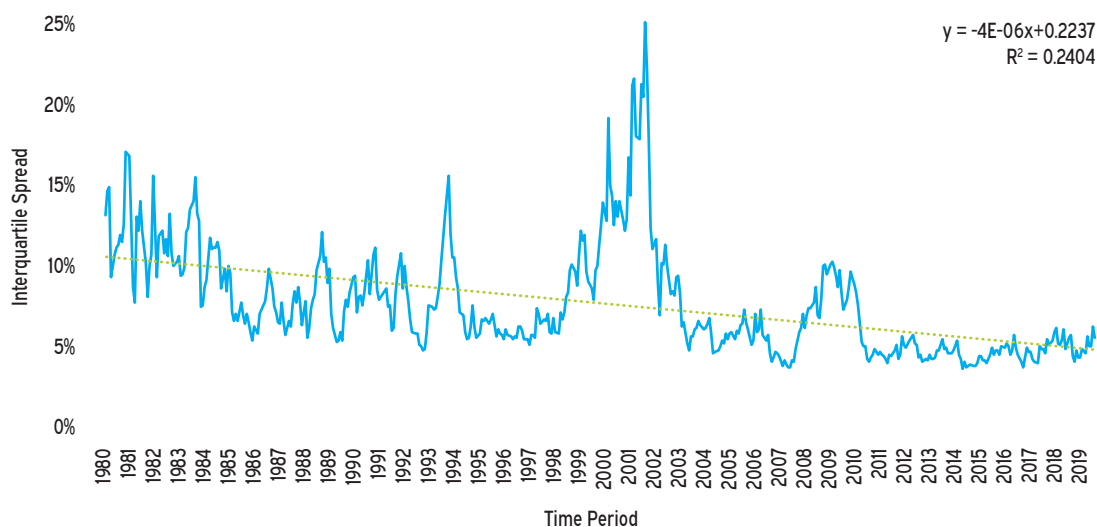


CHART 11
**Rolling Interquartile
Spread
US Large Cap**

Both of these graphs' linear best-fit lines illustrate a downward trend over time, and the magnitude of cyclicity has decreased. However, the R2 value is still low, implying again that there is little explanatory power to these trend lines.

To get a better idea of the change in spread over time, we conducted a comparison between the average interquartile spread before and after 2001.¹⁴

¹⁴ 2001 was chosen as a cutoff because of the likely impact of the internet and Reg FD (see subsequent footnote).

Asset Class	Avg. IQ Spread Pre–2001 (%)	IQ Spread 2001 – 2019 (%)	Difference ¹⁵ (%)
Core Bonds	2.67	2.02	-0.65
High Yield	4.06	3.51	-0.55
US Large Cap	8.81	6.27	-2.54
US Small Cap	12.37	8.47	-3.90
Foreign Large Cap	10.82	5.86	-4.96
Emerging Markets	8.42	6.54	-1.88

TABLE 4

¹⁵ These measurements were statistically significant on a 95% confidence interval.

For all asset classes, there has been a decrease in the average interquartile spread since 2001. Foreign Large Cap experienced the largest decrease with -4.96%. US Small Cap had the highest pre-2001 and post-2001 interquartile spreads.

The supporting argument for the thesis that markets are becoming more efficient is that, as time passes, successful investment strategies become more widely known.

The supporting argument for the thesis that markets are becoming more efficient is that, as time passes, successful investment strategies become more widely known. As more managers adopt and execute the strategy, the informational advantages of the strategy decrease as more information is reflected in market prices, thus reducing arbitrage opportunities and mispricings.

While we cannot know for sure why this has happened, several possible theories stand out. First, the advent of the internet and the adoption of Regulation FD¹⁶ made security analysis more of a commodity than it was in the 1980s and 1990s. This development likely reduced the information advantage that some managers possessed. Although correlation does not suggest or imply causation, the fact that the reduction in the magnitude of outperformance occurred at roughly the same time as these events lends some credence to this theory. In addition, as mentioned earlier, the strategies used by managers have become more widely known and adopted, resulting in portfolios more closely resembling each other (and the market) than they did in the 1980s and 1990s.

¹⁶ On August 15, 2000, the SEC adopted Regulation FD to address the selective disclosure of information by publicly traded companies and other issuers. Regulation FD provides that when an issuer discloses material nonpublic information to certain individuals or entities—generally, securities market professionals, such as stock analysts, or holders of the issuer's securities who may well trade on the basis of the information—the issuer must make public disclosure of that information.

Conclusion

The results of our analysis show how difficult it is for active managers to consistently add value. We found that the median manager in more than half of the observed asset classes outperformed their benchmark before fees. However, even in these cases, the outperformance was insufficient to overcome the median fee for that asset class. This is consistent with finance theory and with past versions of our research. Our research continues to find that US small cap and emerging market equities have exhibited the largest positive median manager alpha. Still, our analysis indicates that there does not appear to be an asset class or style where it is particularly easy for active managers to add value, net of fees.

That said, the level of dispersion among managers varies by asset class. This implies that skilled (or lucky) active management can add more value in certain asset classes than others. These tend to be more volatile asset classes, such as equities. In addition, there seems to be a connection between a temporary widening of interquartile spreads and extreme market events.

Outperformance has also been cyclical, exhibiting long periods of median positive and negative relative performance. Across most asset classes, the interquartile spread has been declining. This implies that either markets have become more efficient over time or that managers have structured their portfolios in a manner such that they more closely resemble each other.



Appendix A: Data filtering

All the manager and benchmark data was gathered from MorningStar Direct’s online database. We gathered data for 5,320 managers across the asset classes. From the outset, we included inactive funds (to ward off survivorship bias) and only used the oldest share class of each fund (to prevent double counting).

MorningStar Direct filters and sorts funds by asset class using their own definitions. Unlike a manager-reporting platform like eVestment, MorningStar allocates funds to their asset class using their standardized definitions of asset classes and taking into account returns and fund composition. To keep out subjectivity, we decided to use only Morningstar’s definitions of asset classes and did not try to filter based on fund name (which a previous version of this paper did). The reason is that choosing a benchmark based on fund names can be subjective, and if Morningstar has already allocated the fund based on its own definition of an asset class, it would prove neither productive nor practical to make a separate judgement based on the fund’s name.

We next had to make sure that we were not double counting funds that were the same but in different vehicles. To do so, if we found a pair of funds from the same firm that exhibited a correlation above 99.8%, we deleted one of the funds in the pair.

Asset Class	Original Number of Funds	Funds After Scrub	Funds After Rolling	Difference
Core Bonds	407	403	378	-29
High Yield	305	298	281	-24
US Large Cap	2,515	2,392	2,259	-256
US Small Cap	1,013	985	938	-75
Foreign Large Cap	724	684	619	-105
Emerging Markets	356	344	316	-40
Total	5,320	5,106	4,791	-529



TABLE 5



Appendix B: Bias and areas for improvement

While this data analysis takes lengths to scrub the data and processing from bias, possible skewing is inevitable. With that said, this allows for new opportunities regarding areas for further research and analysis.

We gathered our data from MorningStar Direct's database. The benchmarks used are located in another appendix. The magnitudes of the outperformance of the asset classes will inevitably be different depending on the benchmark chosen to measure outperformance, but the basic trends and spreads should be the same.

While MorningStar Direct allows us to root out selection bias as opposed to a database like eVestment, there were less available funds on MorningStar than on eVestment, thus slightly limiting the amount of data points. However, because we cannot guarantee selection bias or asset class mismatch like we can with MorningStar, we opted for using MorningStar Direct. One could possibly do a comparison of the data between the two and find out if there is any difference when assessing the two databases. If the data skews more positively in the eVestment data, it could be possible evidence of selection bias at play.



Appendix C: Benchmarking and time periods

Morningstar Direct only provides single benchmarks per asset class at a time. The following table illustrates the benchmark we used for each asset class. The style benchmarks for US Large Cap, US Small Cap, and Foreign Large Cap have the same respective inception dates.¹⁷

Asset Class	Benchmark	Inception Date
Core Bonds	Bloomberg Barclays US Aggregate Bond	Jan. 1976
High Yield	BofAML US High Yield	Sep. 1986
US Large Cap	Russell 1000	Jan. 1979
US Small Cap	Russell 2000	Jan. 1979
Foreign Large Cap	MSCI ACWI ex-US	Jan. 1988 ¹⁸
Emerging Markets	MSCI-EM	Jan. 1988 ¹⁹



TABLE 6

¹⁷ For asset classes with certain styles (i.e., growth or value), we used the style benchmark for outperformance (such as using the Russell Value for US Value Large Cap Equity). The growth and value variants were applied to the US Large Cap, US Small Cap, and Foreign Large Cap benchmarks when necessary. Unless otherwise noted, the style benchmarks' inception dates were the same as their core counterparts.

¹⁸ The MSCI ACWI ex-US started in January 1988, but the style benchmarks started in January 1997. For uniformity and accuracy when comparing style strategies, the Foreign Large Cap funds were assessed from January 1997 on.

¹⁹ While the Emerging Market Index started in 1988, the graph for outperformance did not start until 1991, as there was not enough fund data.

Appendix D: Reasons for fund closures

Fund closures are a common yet dreaded part of the market landscape. Funds can close to new investors and become closed-ended, or they can fully close and liquidate. The primarily accepted cause of fund closures is that the fund was underperforming and/or did not have sufficient assets under management. Investors tend to not buy into a fund that is not doing well, and once the fund becomes unprofitable, a firm will likely terminate it.

Not all funds are closed due to underperformance. For example, in January 2019 the Vanguard Convertible Securities Fund shut down after 33 years. It had been returning a positive performance on average for the prior decade, but according to Vanguard, it was one of the smallest offerings and struggled to gain any broad acceptance. Funds, even if they are performing well, can close due to lack of investors. Niche market funds can also suffer from lack of investor traction and close. According to Scott Cody of Latitude Financial Group, funds can even close because they were doing so well that it cannot buy hard-to-find assets in its asset class.

Appendix E: Median outperformance graph by asset class²⁰

²⁰ Due to lack of fund data, some of the asset classes' early year relative returns may be skewed.

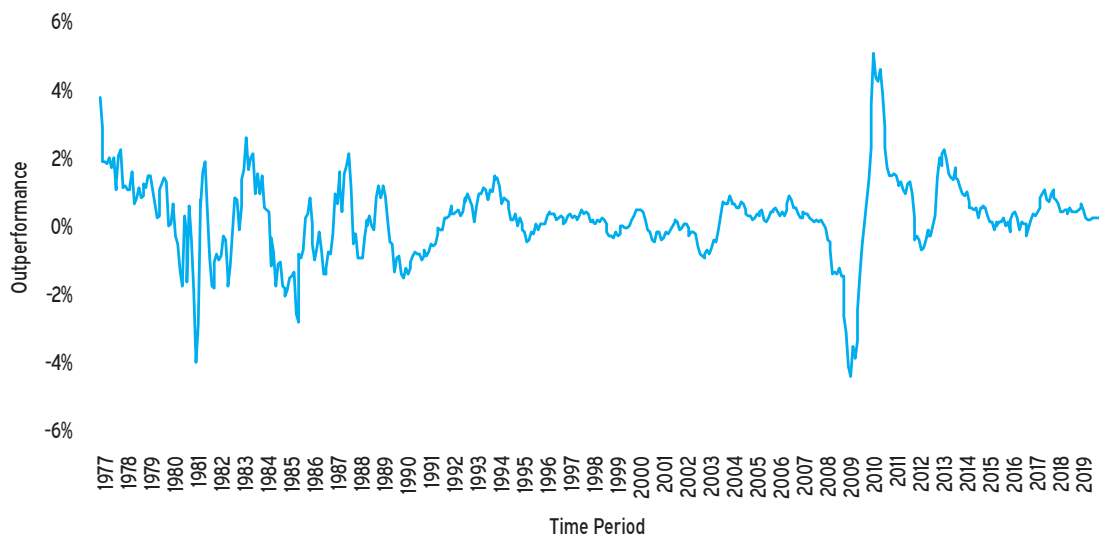


CHART 12
Core Bonds Median Outperformance

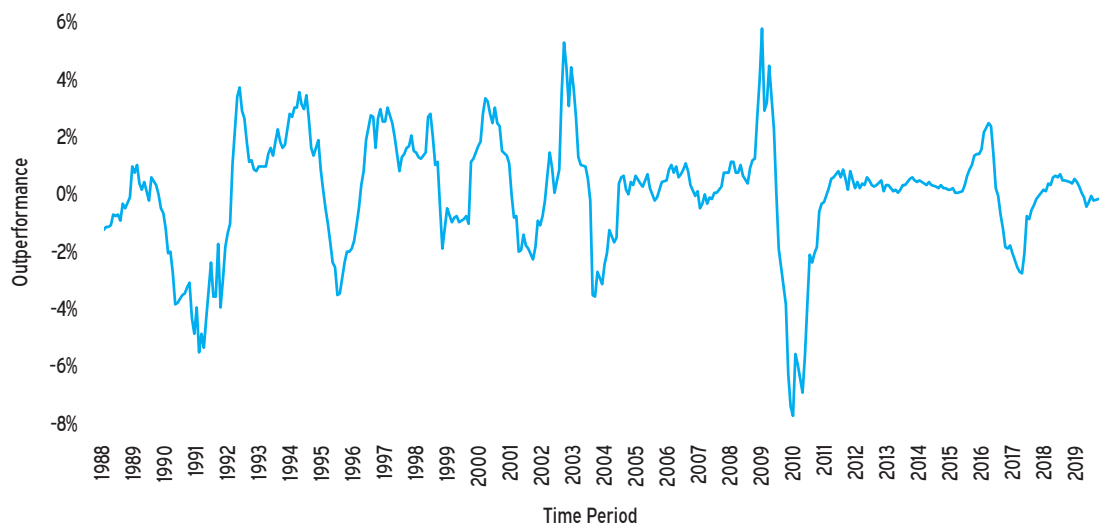


CHART 13
High Yield Median Outperformance

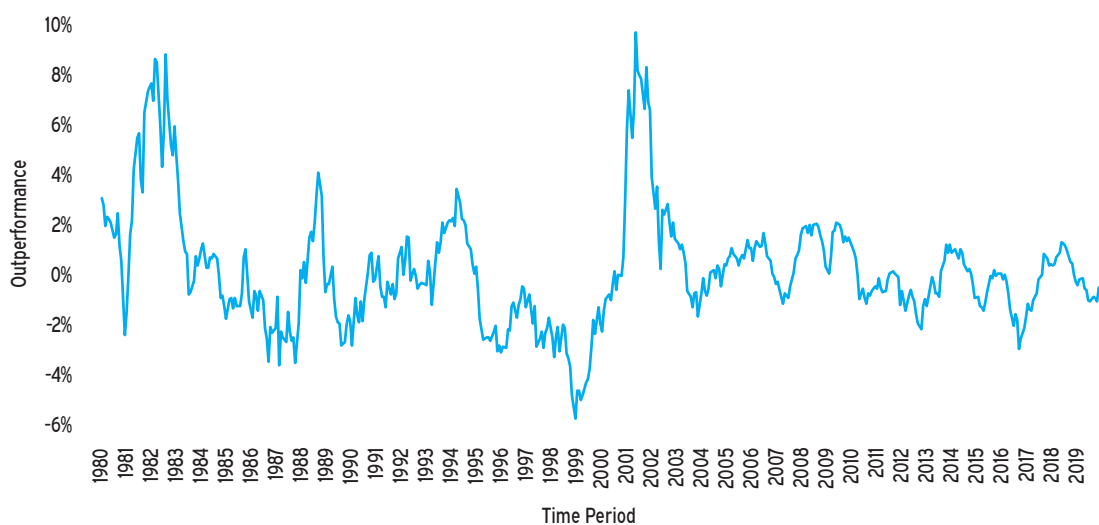


CHART 14
US Large Cap Median Outperformance

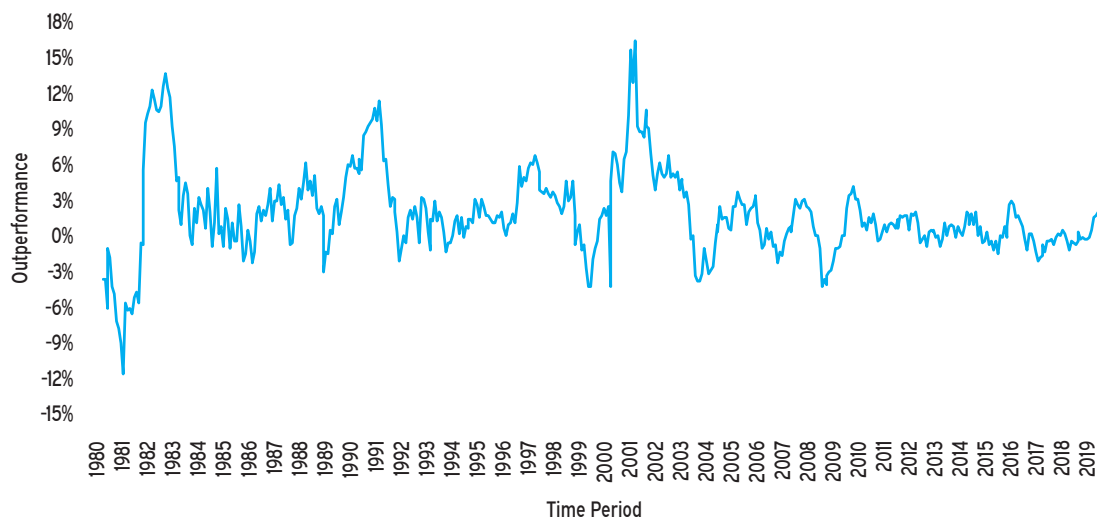


CHART 15
**US Small Cap Median
Outperformance**

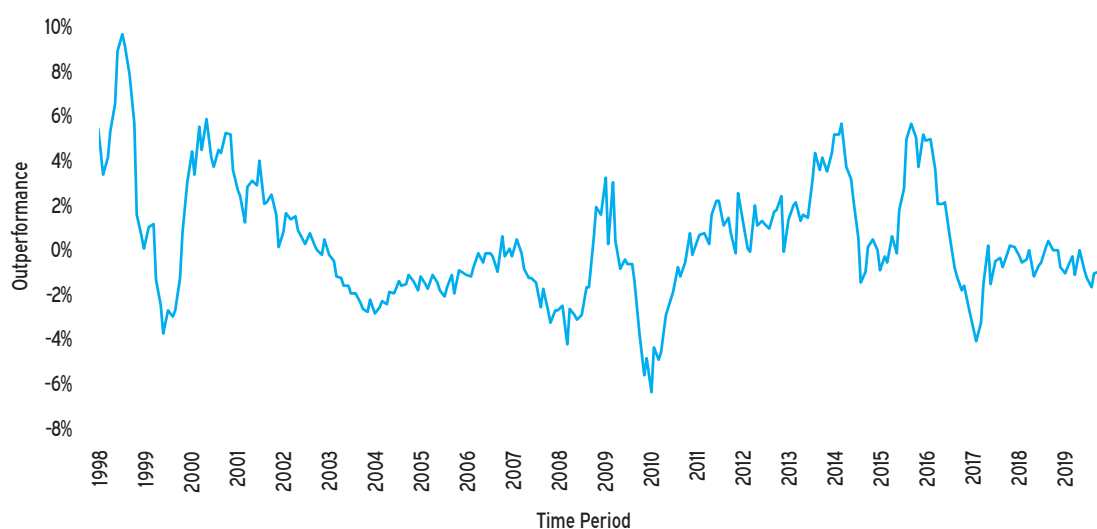


CHART 16
**Foreign Large Cap
Outperformance**

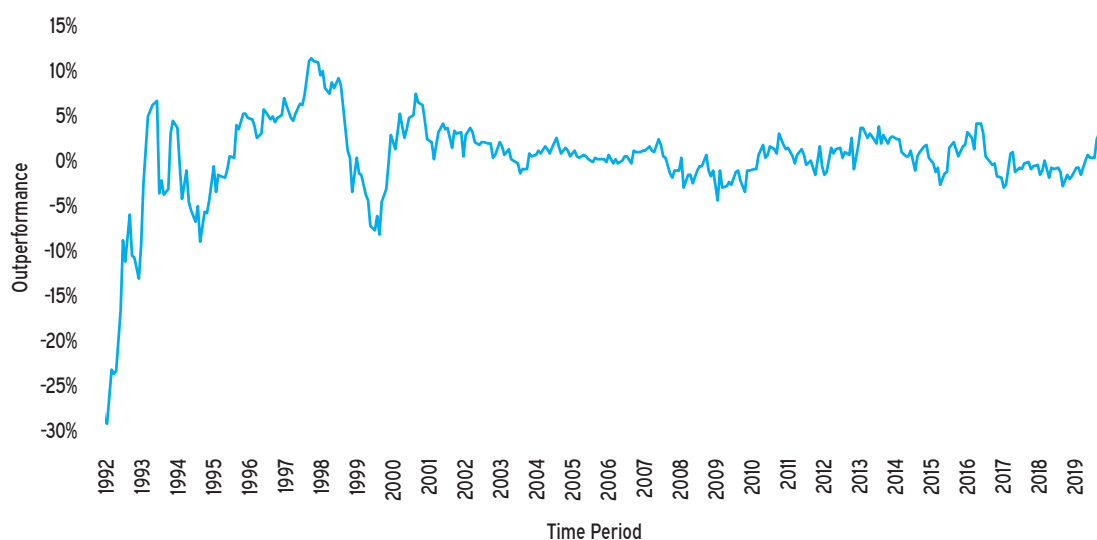


CHART 17
**Emerging Market
Outperformance**



Appendix F: Areas for further research

While we covered a relatively wide array of asset classes and styles, there is still opportunity to analyze other asset classes such as global equities, emerging market bonds, and commodities, though some of these may be harder to benchmark or study in the same manner as the asset classes we surveyed in this paper. While this paper reviews the more commonly used public market asset classes, it may prove useful to find out if any other areas fare better in beating the market or more consistently beat the market. It may also be useful to look further into the effects of bear markets, bull markets, and recessions on active manager performance.

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East Bay Municipal Utility District Employees' Retirement System

May 20, 2021

Q1 2021 Performance Report

1. Introduction
2. Economic & Market Update
3. World Markets in the First Quarter of 2021
4. EBMUD Portfolio Review
 - a. First Quarter Performance Review
5. Manager Watch Screens
6. Manager Compliance Certification Responses
7. Appendix

Introduction

EBMUDERS Total Plan Composite | As of March 31, 2021

Performance Summary								
	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)
EBMUDERS Total Plan Composite	2,216,033,299	100.0	3.6	36.0	10.3	10.8	9.4	7.7
<i>Total Plan Bench ¹</i>			<i>2.8</i>	<i>34.8</i>	<i>8.8</i>	<i>9.8</i>	<i>8.6</i>	<i>7.3</i>
US Equity Composite	595,228,841	26.9	6.4	62.2	17.5	17.2	14.0	9.2
<i>Russell 3000 Hybrid ²</i>			<i>6.3</i>	<i>62.5</i>	<i>17.1</i>	<i>16.6</i>	<i>13.8</i>	<i>9.3</i>
NonUS Equity Composite	581,065,349	26.2	3.4	49.5	6.0	9.4	5.5	6.6
<i>MSCI ACWI xUS (blend) ³</i>			<i>3.6</i>	<i>50.0</i>	<i>7.0</i>	<i>10.3</i>	<i>5.4</i>	<i>6.1</i>
Covered Calls Composite	444,848,650	20.1	6.0	38.1	10.5	10.3	--	--
<i>CBOE S&P 500 BuyWrite USD ⁴</i>			<i>2.6</i>	<i>28.3</i>	<i>4.0</i>	<i>6.2</i>	--	--
Real Estate Composite	106,026,730	4.8	4.7	19.8	9.2	7.0	10.6	--
<i>NCREIF NPI Lag</i>			<i>5.0</i>	<i>18.7</i>	<i>7.7</i>	<i>6.0</i>	<i>9.5</i>	--
Fixed Income Composite	471,639,766	21.3	-1.8	5.4	4.9	4.0	3.8	4.9
<i>Fixed Income Composite Bench ⁵</i>			<i>-1.9</i>	<i>4.1</i>	<i>4.5</i>	<i>3.7</i>	<i>3.6</i>	<i>4.6</i>
Cash Composite	17,223,962	0.8	0.2	1.4	2.0	1.5	0.9	2.0
<i>FTSE T-Bill 3 Months TR</i>			<i>0.0</i>	<i>0.2</i>	<i>1.5</i>	<i>1.2</i>	<i>0.6</i>	<i>1.4</i>

¹ Policy Benchmark consists of 25% Russell 3000 / 20% CBOE S&P 500 BuyWrite USD / 25% MSCI ACWI ex USA Gross / 10% BBgBarc US Aggregate TR / 10% BBgBarc US Intermediate Gov/Cred / 2.5% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr / 2.5% 60% CredSuisLevLoan/40% BBStGovCorp / 2.5% FTSE NAREIT Equity REIT / 2.5% S&P/LSTA Performing Loan TR USD index 12/1/2019 - present; see Appendix for historical Policy Benchmark composition.

² Russell 3000 as of 10/1/05. Prior: 30% S&P500, 10% S&P400, 10% Russell 2000 (4/1/05-9/30/05); 33% S&P500, 10% S&P400, 10% Russell 2000 (9/1/98-3/31/05); 30% S&P500, 15% Wilshire 5000 (4/1/96-8/31/98).

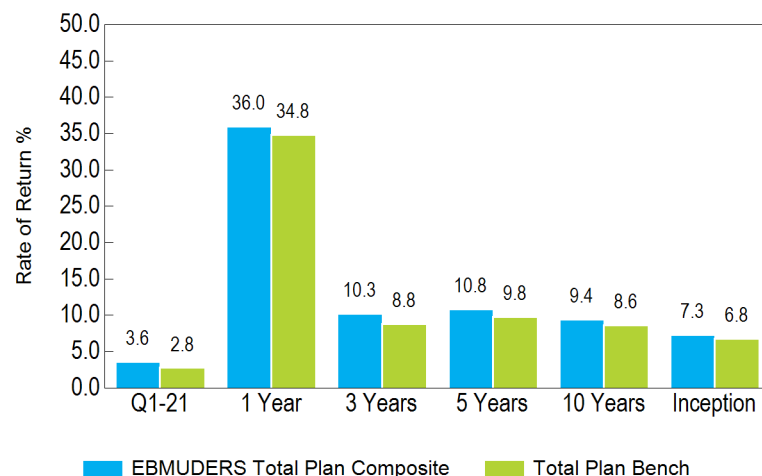
³ MSCI ACWixU.S. as of 1/1/07; MSCI EAFE ND thru 12/31/06.

⁴ 40% BB Aggregate, 40% BBgBarc US Intermediate Gov/Cred, 10% ICE BofA ML U.S. Corp Cash Pay BB-B 1-5 Year, and 10% Blend 60% Credit Suisse Leverage Loan/40% BBg BC Short Term Gov/Corp 12/1/2019-present. See Appendix for historical Composite benchmark.

⁵ 50% NCREIF (lagged), 50% FTSE NAREIT Equity REITs Index as of 11/1/11; NCREIF (lagged) thru 10/31/11.

EBMUDERS Total Plan Composite | As of March 31, 2021

Return Summary* Ending March 31, 2021



* Performance is gross of fees.

Summary of Cash Flows

	First Quarter	One Year
Beginning Market Value	\$2,136,702,861	\$1,638,344,551
Net Cash Flow	\$3,816,676	-\$6,566,200
Capital Appreciation	\$75,513,762	\$584,254,947
Ending Market Value	\$2,216,033,299	\$2,216,033,299

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)
EBMUDERS Total Plan Composite - Gross	3.6	36.0	10.3	10.8	9.4	7.7
EBMUDERS Total Plan Composite - Net¹	3.5	35.7	10.0	10.6	9.1	--
<i>Total Plan Bench</i>	<i>2.8</i>	<i>34.8</i>	<i>8.8</i>	<i>9.8</i>	<i>8.6</i>	<i>7.3</i>
<i>InvMetrics Public DB > \$1B Gross Median²</i>	<i>3.4</i>	<i>33.1</i>	<i>9.3</i>	<i>10.2</i>	<i>8.3</i>	<i>7.1</i>

¹ Historical net returns for the Total Portfolio aggregate are currently available from 2Q 2011.

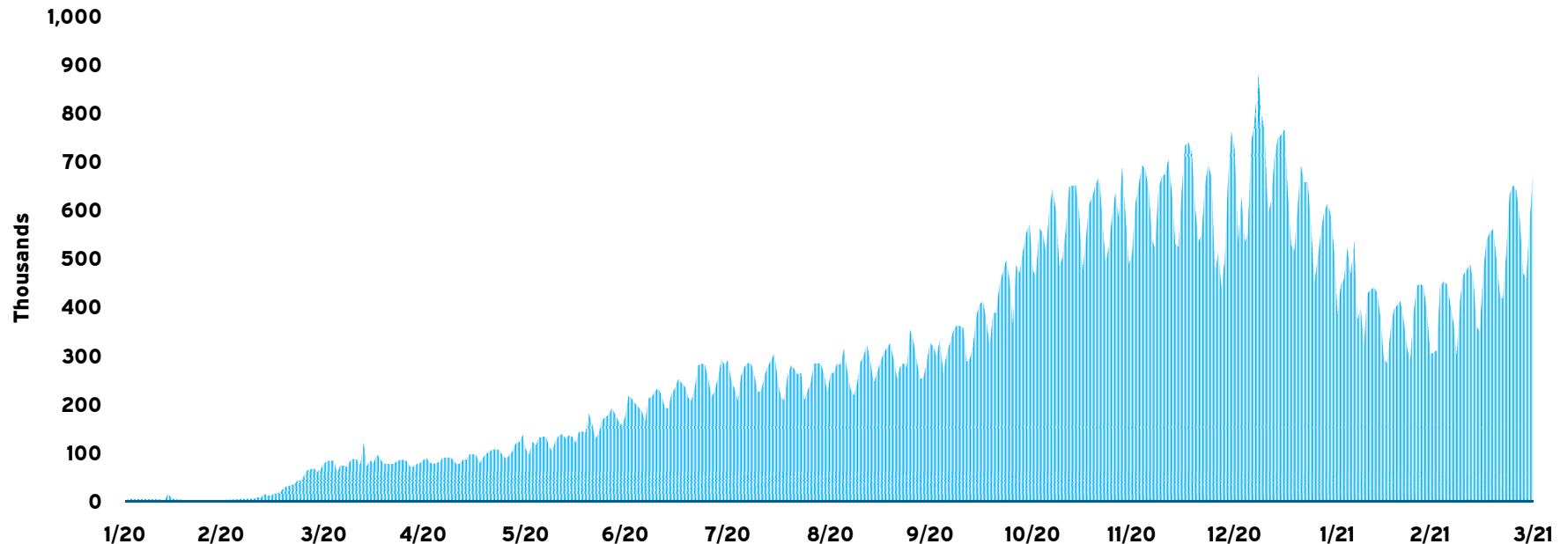
² InvMetrics Public DB > \$1B Universe includes BNY Mellon Public > \$1B Fund Universe and IM client data.

Economic and Market Update

Data as of March 31, 2021



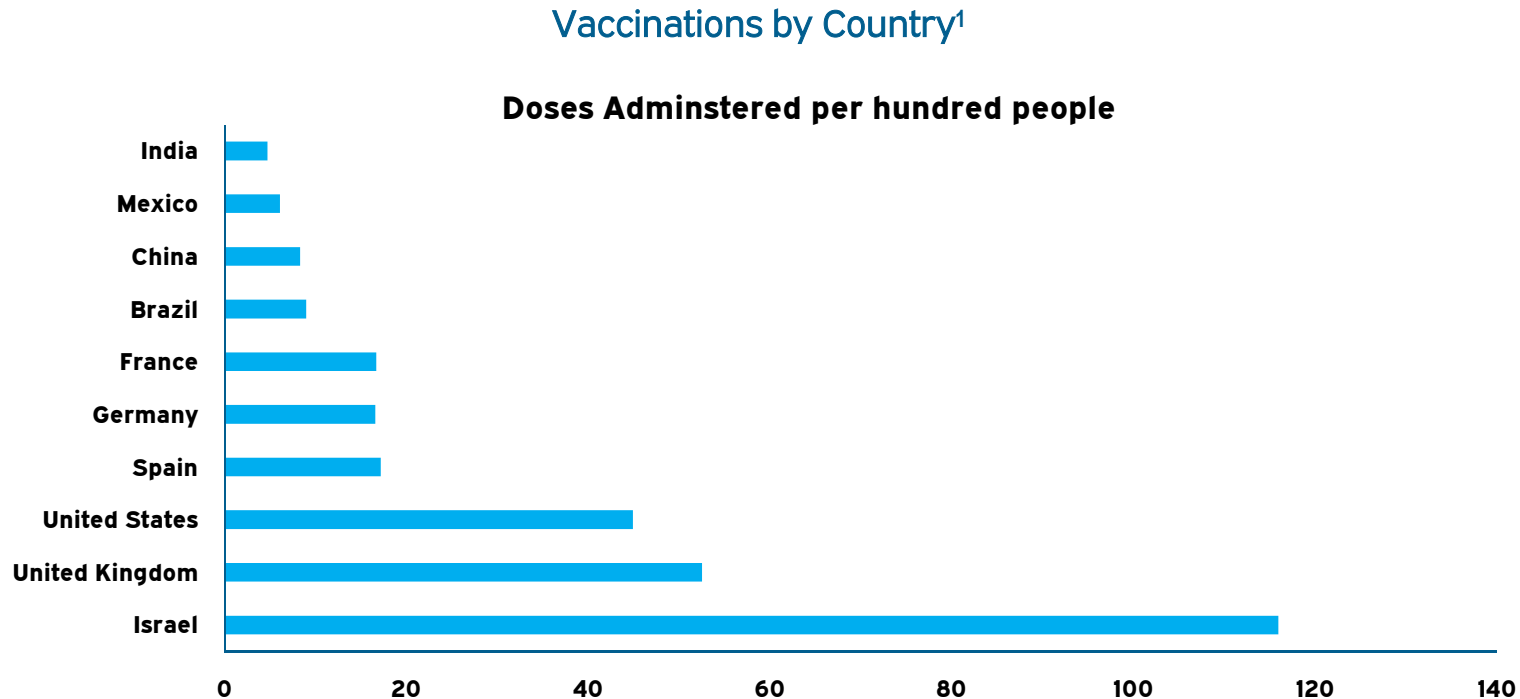
Global Daily Cases¹



- After peaking in early January at ~858,000, the number of global daily cases steadily declined to ~303,000 at the end of February, before increasing again in March, driven by new variants.
- Looking ahead, the rollout of multiple vaccines continues to gather momentum, with roughly 800 million total doses administered as of mid-April.²
- In the US, the Biden administration set a goal of the vaccine being available to the general population by April 19.

¹ Source: Our World in Data. Data is as of March 31, 2021.

² Source: Bloomberg. <https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/?sref=sA9cMIUe>



- Vaccine distribution has ramped up in many countries, including the Pfizer-BioNTech, Moderna, and Johnson & Johnson vaccines in the US. Outside the US, vaccines have also been developed by China, Russia, India, and the UK.
- Some countries have done better with the vaccine rollout, with Israel being at the forefront. The United Kingdom's and the United States' vaccination rates have exceeded many other countries. Early immunization efforts focused on the most vulnerable populations with eligibility expanding recently.

¹ Source: Our World in Data. Data is as of March 31, 2021. Vaccination totals include first and second doses.

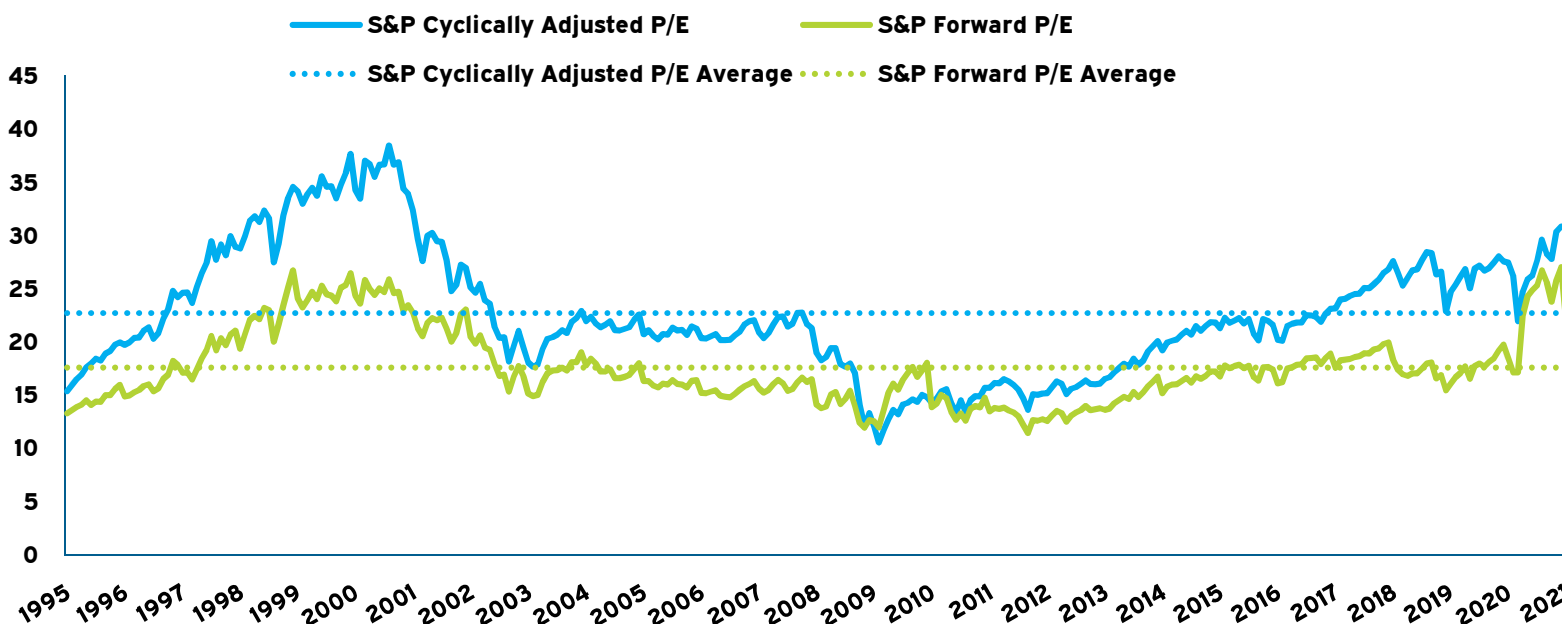
Market Returns¹

Indices	March	YTD	1 Year	3 Year	5 Year	10 Year
S&P 500	4.4%	6.2%	56.4%	16.8%	16.3%	13.9%
MSCI EAFE	2.3%	3.5%	44.6%	6.0%	8.9%	5.5%
MSCI Emerging Markets	-1.5%	2.3%	58.4%	6.5%	12.1%	3.7%
MSCI China	-6.3%	-0.4%	43.6%	8.2%	16.1%	7.3%
Bloomberg Barclays Aggregate	-1.3%	-3.4%	0.7%	4.7%	3.1%	3.4%
Bloomberg Barclays TIPS	-0.2%	-1.5%	7.5%	5.7%	3.9%	3.4%
Bloomberg Barclays High Yield	0.2%	0.9%	23.7%	6.8%	8.1%	6.5%
10-year US Treasury	-3.1%	-7.0%	-8.1%	4.7%	1.7%	3.7%
30-year US Treasury	-6.1%	-15.8%	-20.6%	5.6%	2.7%	6.5%

- Over the last year, global risk assets produced significant returns, largely driven by record fiscal and monetary policy stimulus and positive developments with the COVID-19 vaccine. One-year returns are also being heavily influenced by the roll-off the significant declines in March 2020.
- In March, rising inflation and US economic growth expectations continued to drive longer-dated Treasury yields higher, leading to negative returns across most maturities.
- Equity markets across developed economies showed a notable level of resilience to the tighter financial conditions. Emerging markets were impacted by rising COVID-19 cases and re-shuttering of some economies, as well as rising inflation risks prompting some central banks to consider tightening measures.

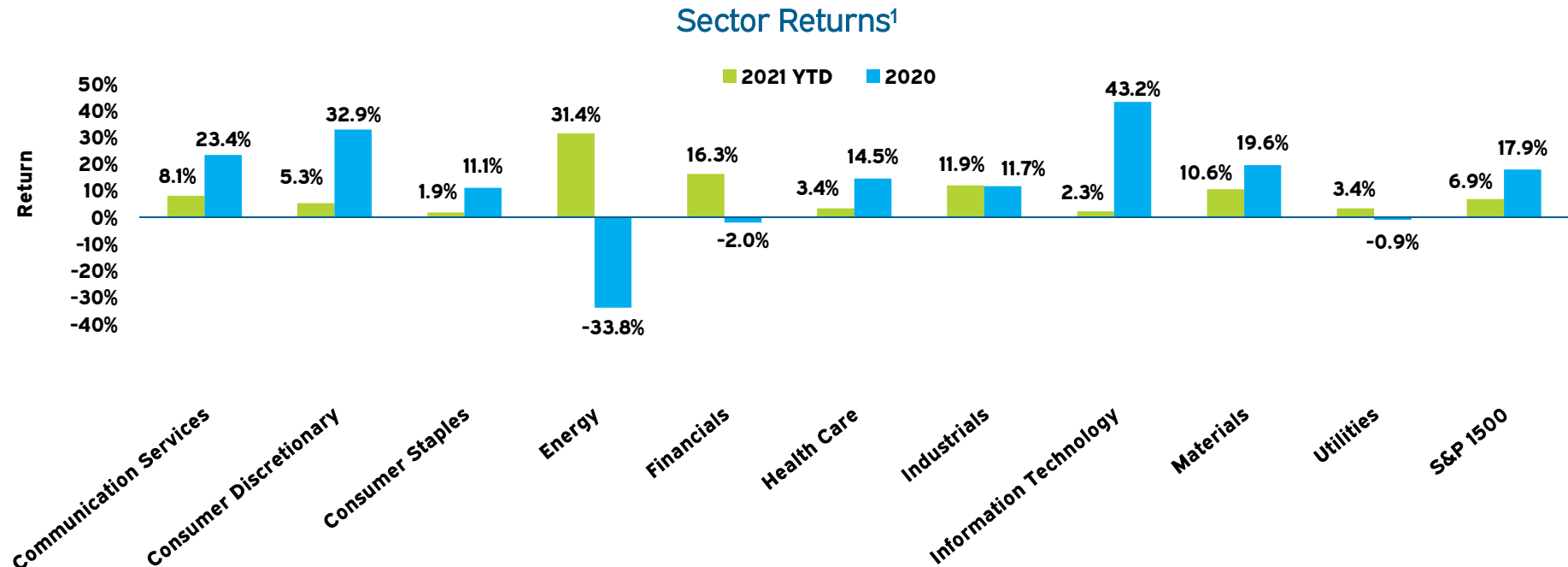
¹ Source: Investment Metrics and Bloomberg. Data is as of March 31, 2021.

S&P Equity Valuations¹



- With positive developments regarding COVID-19 vaccines, valuations based on backward-looking earnings rose to levels not seen since 2001.
- By contrast, valuations based on forward-looking earnings recently declined due to continued improvements in earnings expectations. Despite the decline in forward P/E ratios, they remain well above long-term averages.

¹ Source: Bloomberg. Data is as of March 31, 2021.

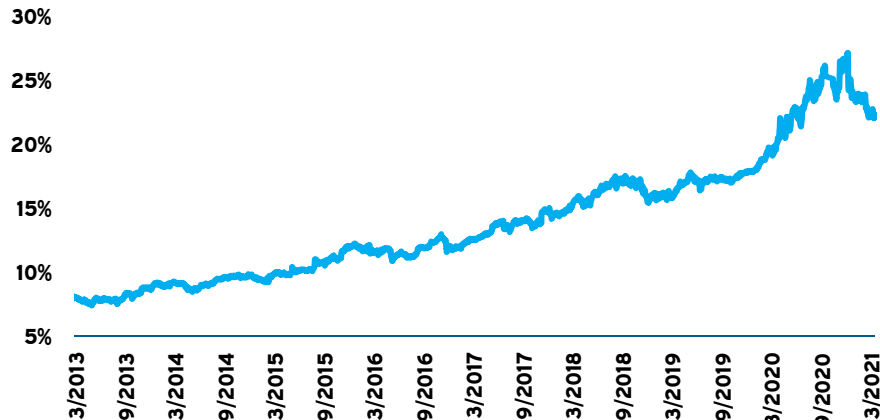


- Cyclical sectors like energy and financials have led the way in 2021, as investors rotate out of the stay-at-home focused companies in the technology sector.
- The recent rotation into value stocks has largely been driven by expectations for the economy to reopen, potentially higher taxes, and rising interest rates. Growth stocks typically produce more of their cash flows further into the future and increased interest rates lead to a larger discounts, reducing present value.
- Energy has been a particular standout this year, supported by record low active rig counts, Saudi Arabia's reductions in output, and expectations of rising demand later in 2021.
- Higher interest rates have benefited lending institutions within the financial sector.

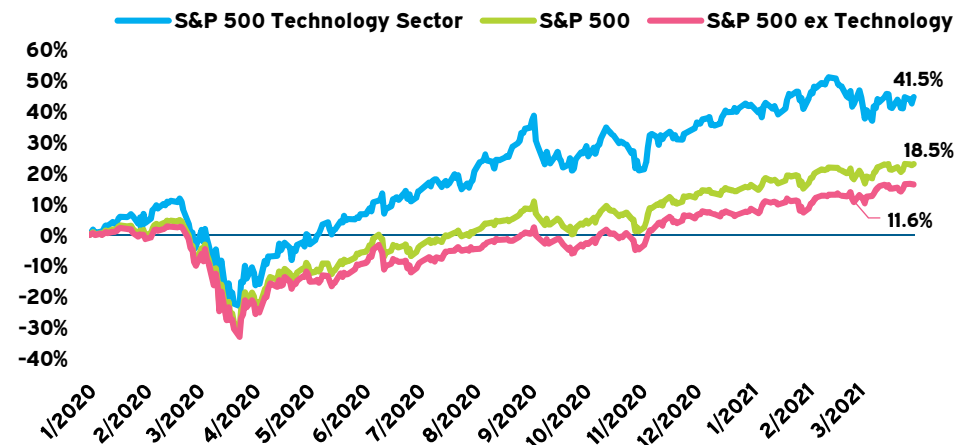
¹ Source: Bloomberg. Data is as of March 31, 2021

Growth stocks led the way for most of 2020, but have recently lagged

FAANG+M Share of S&P 500¹



Returns from Start of 2020 through March 31 2021²

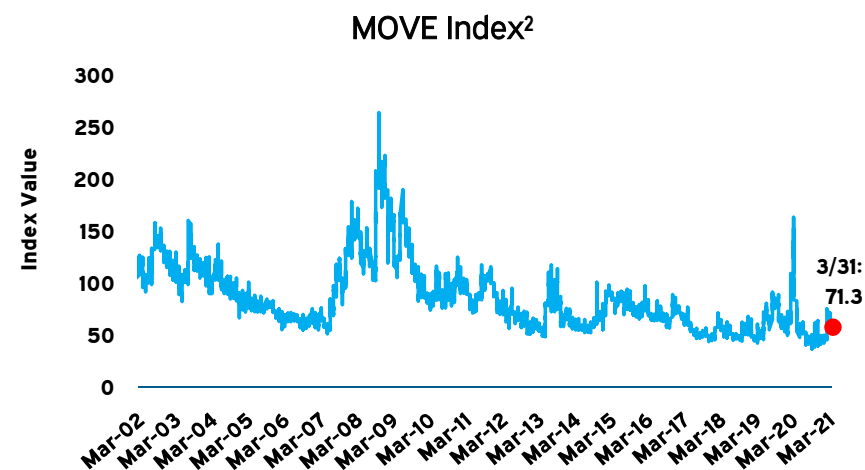
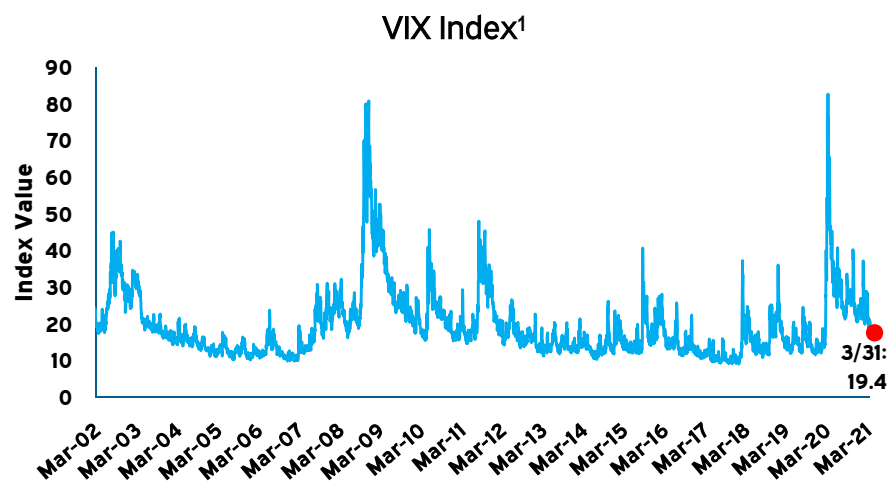


- During much of 2020, market gains were driven by a few technology companies that benefited from the stay-at-home environment related to the virus.
- The outsized relative returns of these companies last year caused them to comprise an increasingly large portion of the S&P 500, making their performance going forward impactful to overall market results.
- Recently, their proportion of the index declined as value stocks outpaced growth stocks by over 10% in 2021.

¹ FAANG+M = Facebook, Amazon, Apple, Netflix, Google (Alphabet), and Microsoft. The percentage represents the aggregate market capitalization of the 6 companies compared to the total market capitalization of the S&P 500 as of March 31, 2021.

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

Volatility



- Equity market volatility, as measured by the VIX, declined over the month to levels last experienced just prior to the spike of market volatility in March 2020.
- Counter to the experience in equity markets, volatility levels within fixed income, as represented by the MOVE index, increased in March due to building expectations for higher growth and inflation. Uncertainty regarding the future path of interest rates could keep fixed income volatility elevated.

¹ Source: Chicago Board of Exchange. Data is as of March 31, 2021.

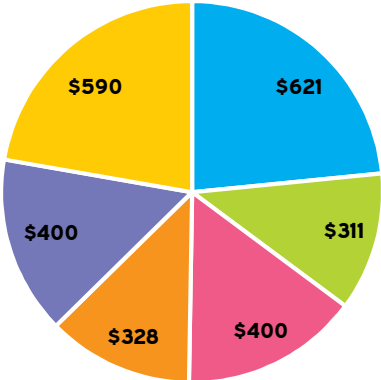
² Source: Bloomberg. Data is as of March 31, 2021.

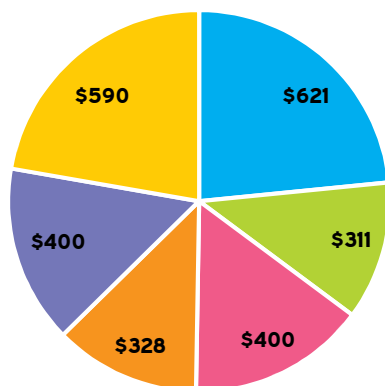
Key Elements of the Latest Round of US Fiscal Stimulus

Joint Proposal	
Status	Signed by President Biden on March 11, 2021
Direct Payments	Up to \$1,400 per eligible recipient
Enhanced Unemployment	\$300 per week through September
State & Local Aid	\$360 billion
Vaccines, testing and tracing	\$123 billion
School aid/Education Grants	\$176 billion
Health Insurance Support	\$105 billion
Transportation	\$56 billion
Food / Agriculture aid	\$16 billion
Rental Assistance	\$1 billion
Small Business Assistance	\$59 billion
Total	\$1.9 trillion

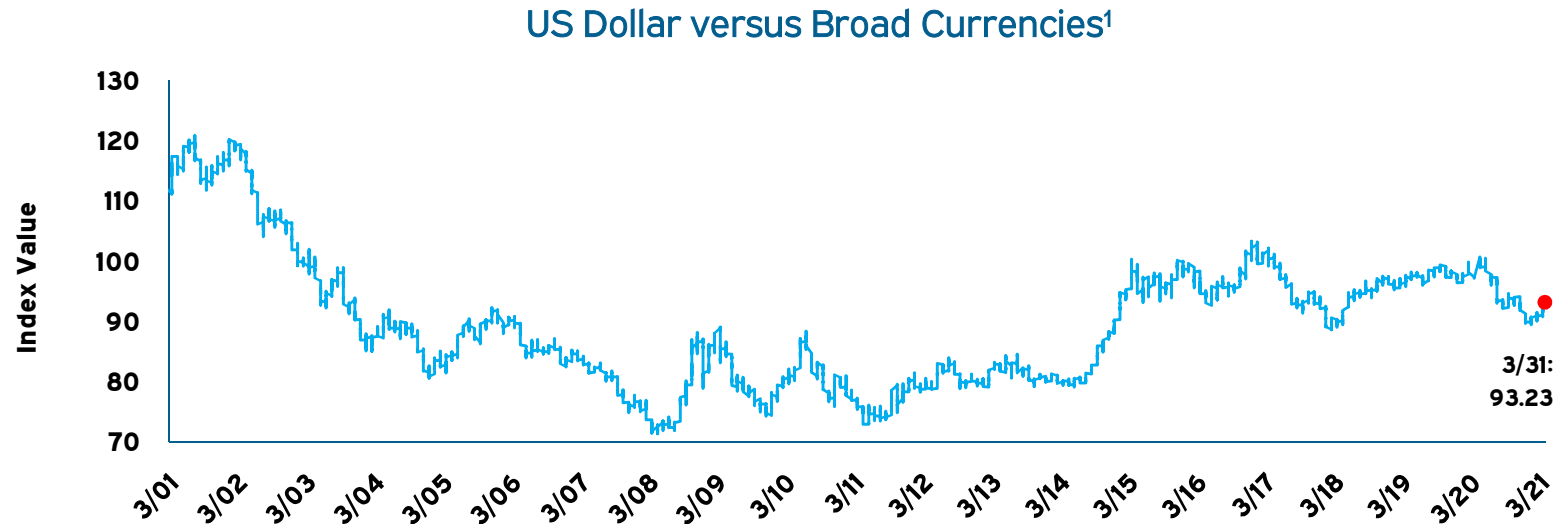
- Fiscal stimulus totaling ~\$900 billion, representing the second largest package in history at the time, was finalized in late December 2020.
- President Biden signed an additional \$1.9 trillion stimulus package in March that includes another round of direct payments to individuals, \$300 extra per week in unemployment benefits, and aid to state and local governments.
- Concerns have increased significantly that the historic infusion into the economy could lead to excessive inflation and put pressure on borrowing costs.

Key Elements of the ~\$2.65 Trillion American Jobs Plan (2021 – 2031)

		Key Pillars	Plan Highlights
Key Elements of Proposal \$ Billions ■ Transportation Infrastructure ■ Broadband, Electrical Grid, and Clean Drinking Water ■ Caregivers for Elderly & Disabled ■ Improve Housing Stock, Schools and other Facilities ■ Clean Energy Tax Credits ■ Domestic Manufacturing, R&D, and Job Training Initiatives 	Transportation	• \$174B to electric vehicles-replacing diesel school buses and transport vehicles • \$115B to fix roads and bridges • \$165B to the transit system • \$80B to Amtrak • \$25B to airports • \$17B to ports and ferries	
	Quality of life at home: Invest in broadband, the electrical grid, and clean drinking water	• \$111B on clean water • \$100B on broadband networks • \$100B on electrical transmission upgrades	
	Improve housing stock, schools, and other facilities	• \$213B on affordable homes and commercial buildings • \$100B on modernizing schools	
	Caregivers for elderly and people with disabilities	• Improve access to quality, affordable home or community-based care for the elderly • Expand the Medicaid program to make more services available • It would also boost pay for care workers.	
	Research, development, and manufacturing	• \$100B for domestic manufacturing and supply chains • \$50B to semiconductor manufacturing and research • \$100B for worker training and increasing of worker protection	

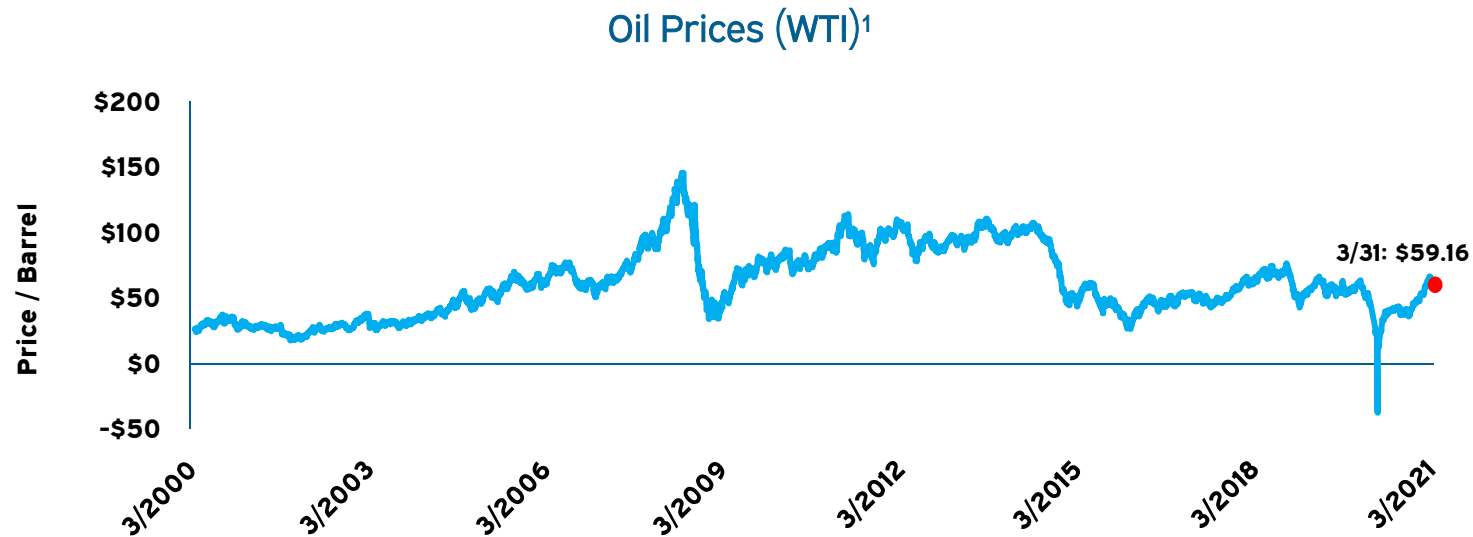


¹ Dollar amounts are estimates. Source: <https://www.crfb.org/blogs/whats-president-bidens-american-jobs-plan>.



- The US dollar has benefited from higher US growth estimates and rising interest rates. Growth and interest rate differentials have put pressure on emerging market asset prices.
- A stronger US dollar may deepen the US trade deficit and offer a competitive advantage to exporters in Asia and Europe.
- Going forward, the dollar's safe-haven quality and the higher interest rates in the US could continue to provide support.

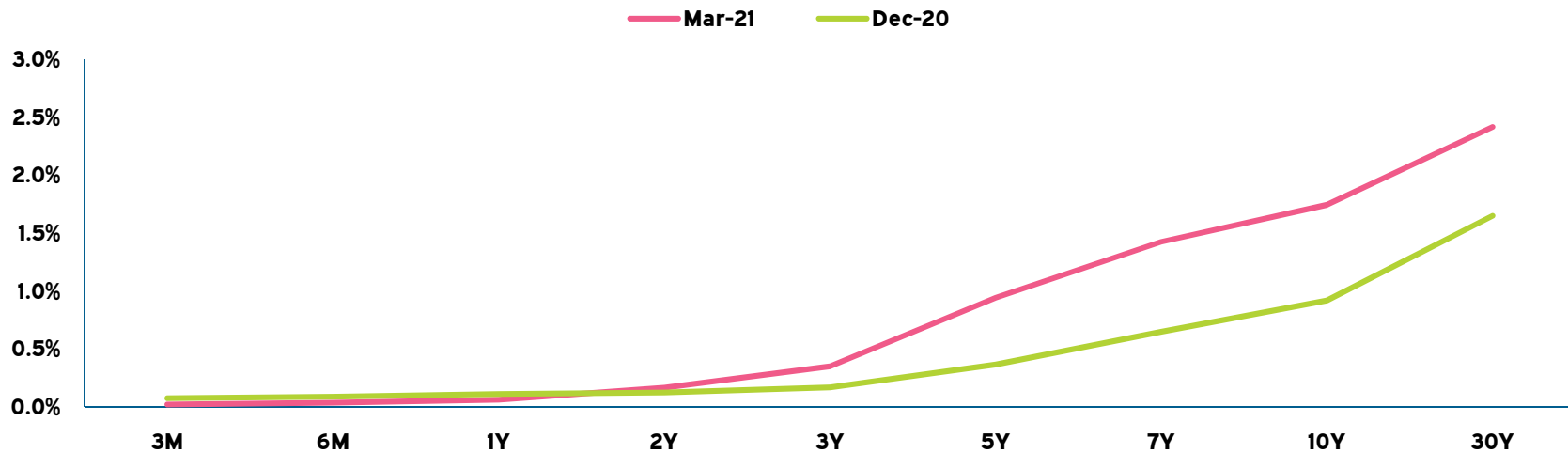
¹ Source: Bloomberg. Represents the DXY Index. Data is as of March 31, 2021.



- Global oil prices rallied from April 2020 lows, and have recovered to pre-crisis levels.
- In 2020 the collapse in global oil demand led to the shuttering of active drilling in North America and international markets and production capacity has been slow to come back online.
- In a surprise decision, OPEC+ recently announced they would not be increasing production despite signs that the global economy could absorb the additional supply.
- Low production capacity and tight supply may help balance oil markets and drawdown reserves offering support for oil prices as global demand recovers.
- Once reserves are used, and if production remains tight, oil prices could continue to rise, contributing to inflationary pressures, and weighing on the global economic recovery.

¹ Source: Bloomberg. Represents WTI first available futures contract. Data is as of March 31, 2021.

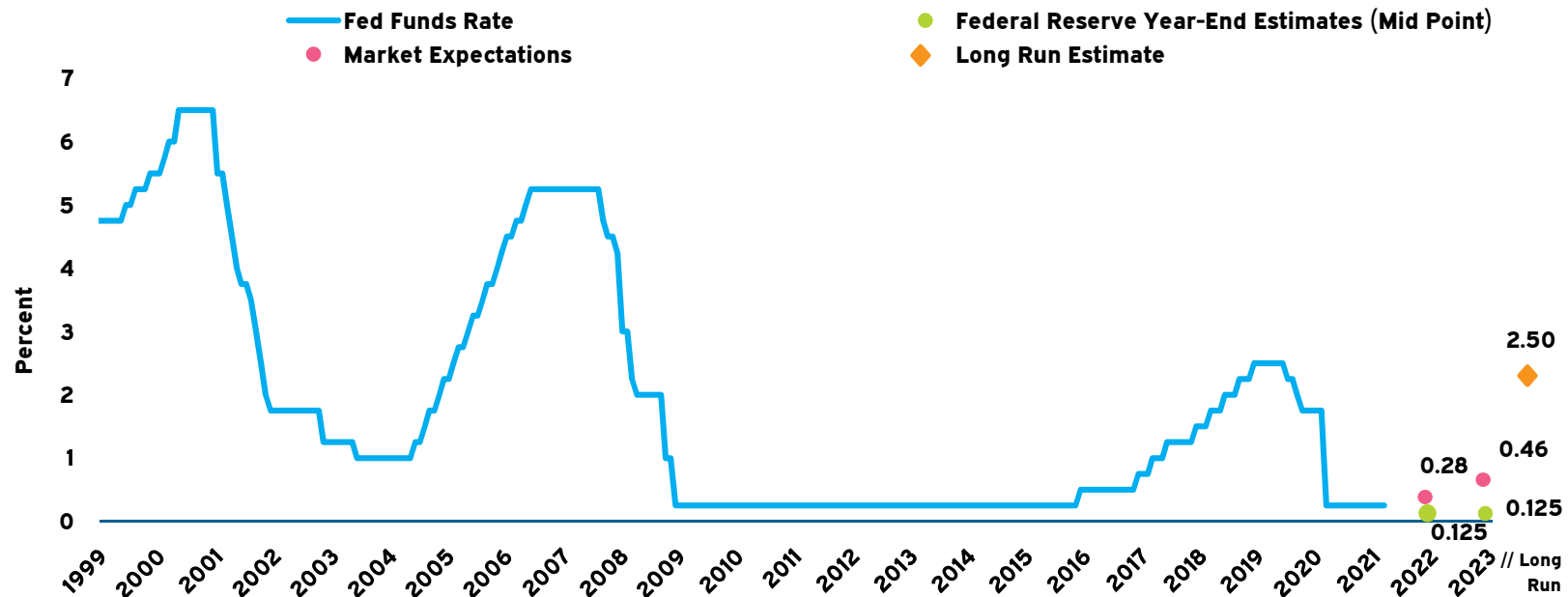
US Yield Curve Steepens¹



- The US Treasury yield curve declined materially during 2020, driven by safe-haven demand, Federal Reserve policies (policy rate cuts and the quantitative easing program), and weak US economic fundamentals.
- Thus far in 2021, the curve has steepened on inflation fears related to gradual signs of economic improvement, vaccine developments, and expectations for increased Treasury issuance to support fiscal policy measures.
- Higher yields relative to other countries, and the Fed potentially extending the duration of QE purchases to mitigate tightening financial conditions, could counterbalance steepening trends, but the risk remains that the yield curve could continue to steepen if growth and inflationary pressures build.

¹ Source: Bloomberg. Data is as of March 31, 2021.

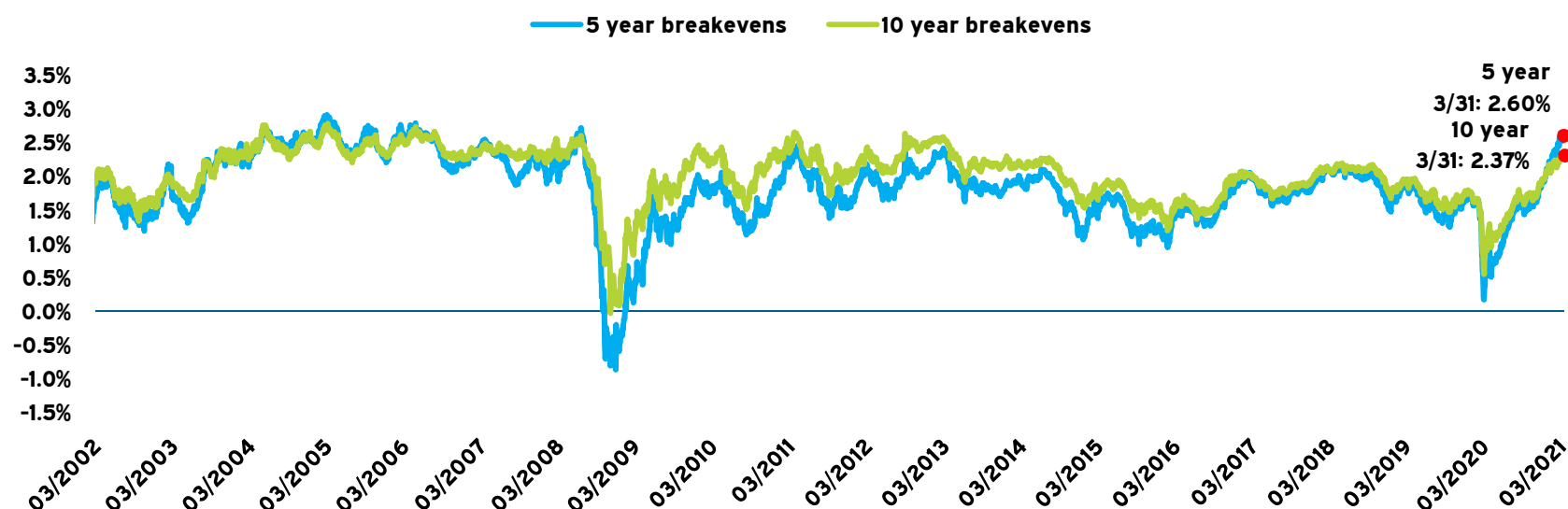
Dot Plot Continues to Indicate Rate Hikes are Some Time Away¹



- The FOMC continues to indicate they do not anticipate increasing policy rates for the next few years, as delivered through the FOMC's meeting statements and the supporting Summary of Economic Projections report (aka the "Dot Plot").
- Policy expectations as measured by current asset prices, including fed funds futures, are suggesting more aggressive policy actions, with 1-2 policy rate increases by the end of 2023.

¹ Source: Bloomberg. Data is as of the March 17, 2021 FOMC meeting. Market Expectations reflect Fed Fund Futures

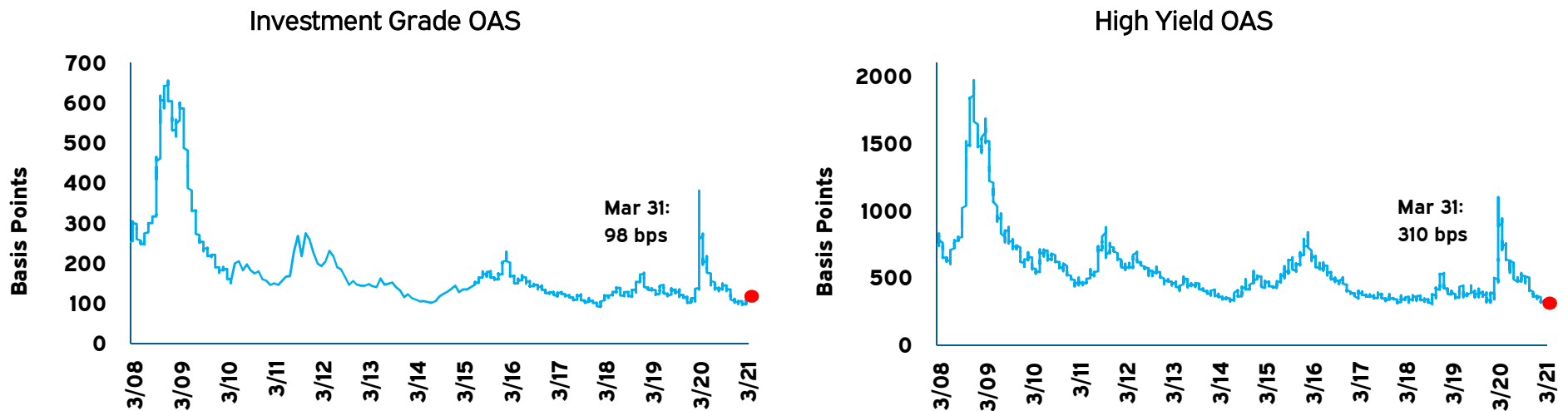
10-Year Breakeven Inflation¹



- Inflation breakeven rates declined sharply in early 2020, due to a combination of lower growth and inflation expectations, as well as liquidity dynamics in TIPS during the height of market volatility. Breakeven rates increased as deflationary concerns moderated.
- Inflation expectations have risen abruptly in recent months to slightly above long-term averages, with the vaccine roll-out and expected additional fiscal stimulus as key drivers.
- Looking forward, the track of economic growth and the inflationary effects of the unprecedented US fiscal response will be key issues. Additionally, changes to Fed policy focused on an average inflation target may play a role in the inflation market dynamics going forward.

¹ Source: Bloomberg. Data is as of March 31, 2021.

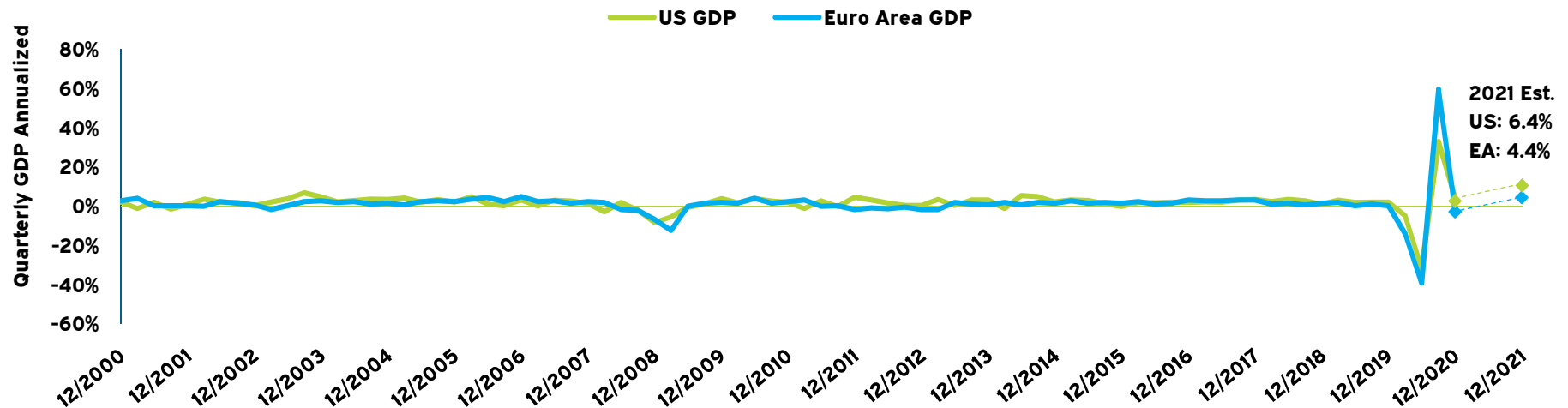
Credit Spreads (High Yield & Investment Grade)¹



- Credit spreads (the spread above a comparable maturity Treasury) for investment grade and high yield corporate debt widened sharply at the start of the pandemic as investors sought safety.
- Policy support, the search for yield in the low rate environment, and recent increases in Treasury rates have led to a decline in credit spreads to below long-term averages, particularly for high yield.

¹ Source: Bloomberg. High Yield represents US Corporate High Yield average OAS. Investment grade represents liquid investment grade corporate average OAS. Data is as of March 31, 2021.

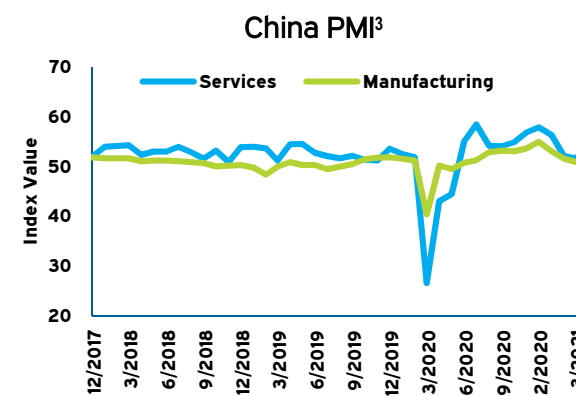
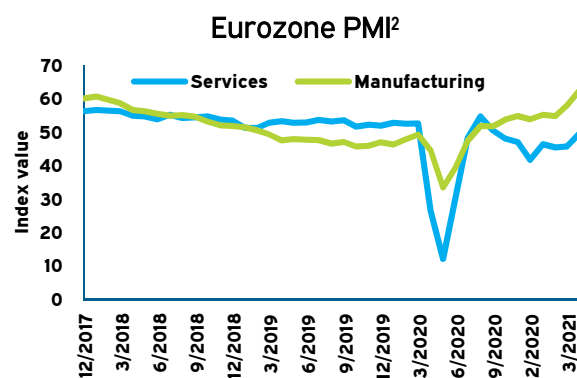
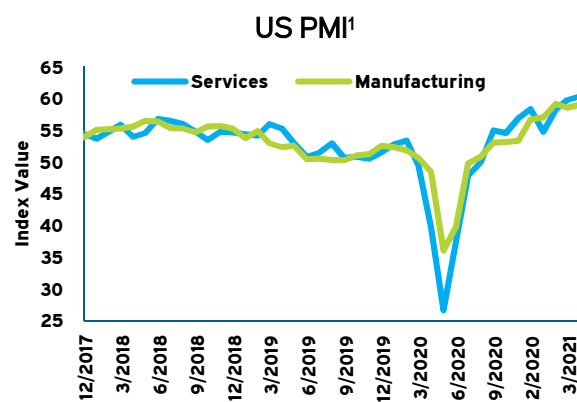
GDP Data Shows Projected Improvements in 2021¹



- The global economy faced major recessionary pressures last year, but significant optimism remains for improvements in 2021 as economies are gradually reopening. The IMF is forecasting US 2021 growth at 6.4% and 2022 growth at 3.5%. The IMF has projected 4.4% euro area growth for 2021 and 3.8% in 2022
- Historic declines in US and European growth during the second quarter were followed by record increases in the third quarter of 2020, due to pent-up demand from the lockdown measures earlier in the year.
- Fourth quarter 2020 US GDP growth was 4.1% (QoQ annualized). Full year US GDP growth declined 2.4%, better than the IMF's forecasted decline of 3.4%.
- In the euro area, increased virus cases and a return to restrictions weighed on fourth quarter growth (-2.8% QoQ annualized). For the year, the euro area economy declined 4.9%, worse than the US, but also ahead of forecasts of a 7.2% decline.

¹ Source: Bloomberg, and IMF; Euro Area figures annualized by Meketa. Projections via April 2021 IMF World Economic Outlook and represent annual numbers.

Global PMIs



- Purchasing Managers Indices (PMI), based on surveys of private sector companies, initially collapsed across the world to record lows, as closed economies depressed output, new orders, production, and employment.
- Readings below 50 represent contractions across underlying components and are a leading indicator of economic activity, including the future paths of GDP, employment, and industrial production.
- After a period of underperformance, US services and manufacturing are accelerating. In Europe, manufacturing continues to improve, led by Germany, with services lagging given on-going restrictions. After a notable return to full economic activity in the second half of 2020, the Chinese economy has stabilized in positive territory.

¹ Source: Bloomberg. US Markit Services and Manufacturing PMI. Data is as of March 2021.

² Source: Bloomberg. Eurozone Markit Services and Manufacturing PMI. Data is as of March 2021.

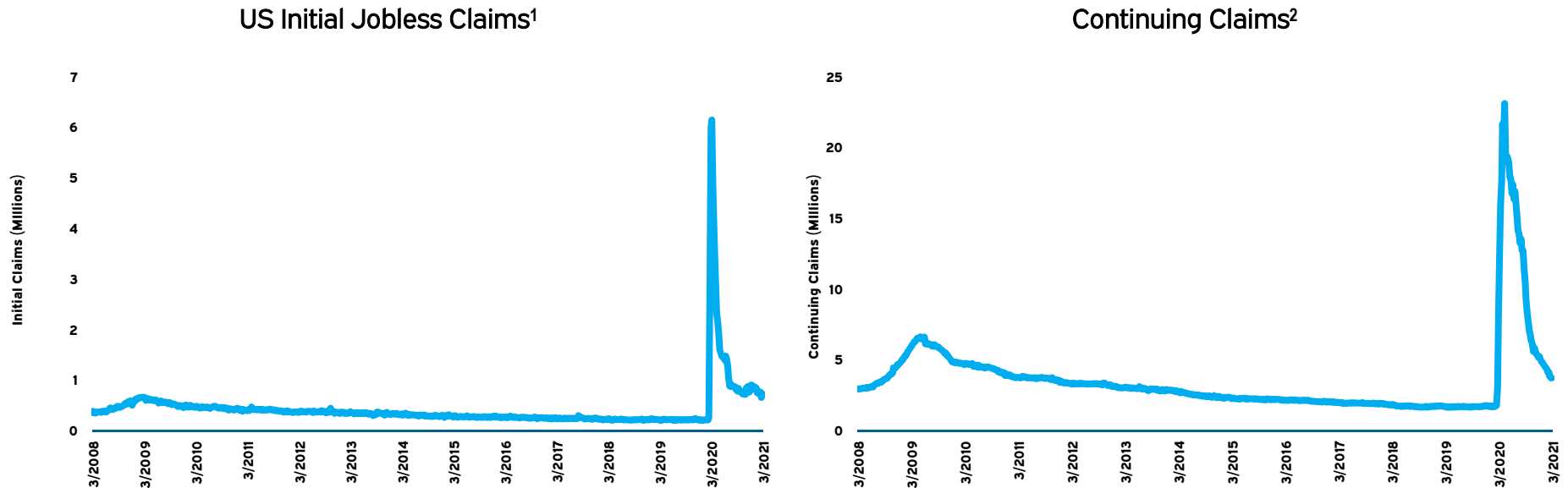
³ Source: Bloomberg. Caixin Services and Manufacturing PMI. Data is as of March 2021.



- In March, the unemployment rate (U3) continued its steep decline from the April 2020 peak of 14.7%, falling to 6.0%.
- The broader measure of unemployment (U6) that includes discouraged and underemployed workers is much higher at 10.7%, showing further evidence of the slack in the labor market.
- Despite recent improvements, unemployment levels remain above pre-virus readings and are likely higher than reported, as the total labor force participation rate remains below pre-COVID levels.
- A counterforce to the recent inflation concerns remains the slack in the labor market and corresponding weak wage pressures.

¹ Source: Bloomberg. Data is as of March 31, 2021. Bars represent recessions as observed by the National Bureau of Economic Research.

US Jobless Claims

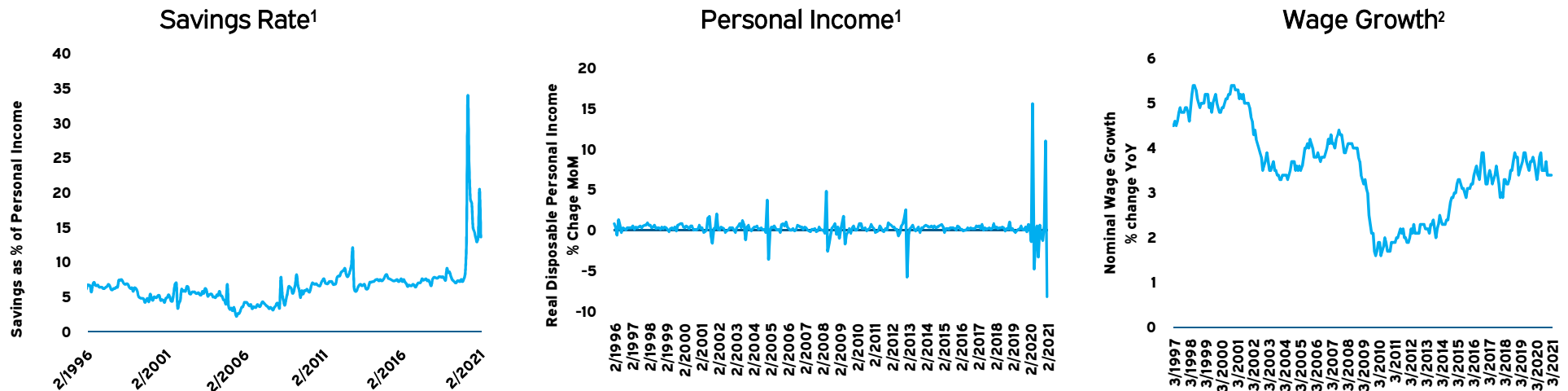


- Since the start of the crisis, ~78 million people filed for initial unemployment. This level is approaching four times the 22 million jobs added since the GFC, highlighting the unprecedented impact of the virus.
- Despite the stabilization in initial jobless claims to below one million per week, levels remain near the worst reading during the Global Financial Crisis.
- Continuing jobless claims (i.e., those currently receiving benefits) have also declined from record levels but remain elevated at 3.7 million.

¹ Source: Bloomberg. First reading of seasonally adjusted initial jobless claims. Data is as of March 26, 2021.

² Source: Bloomberg. US Continuing Jobless Claims SA. Data is as of March 26, 2021.

Savings, Wages and Spending



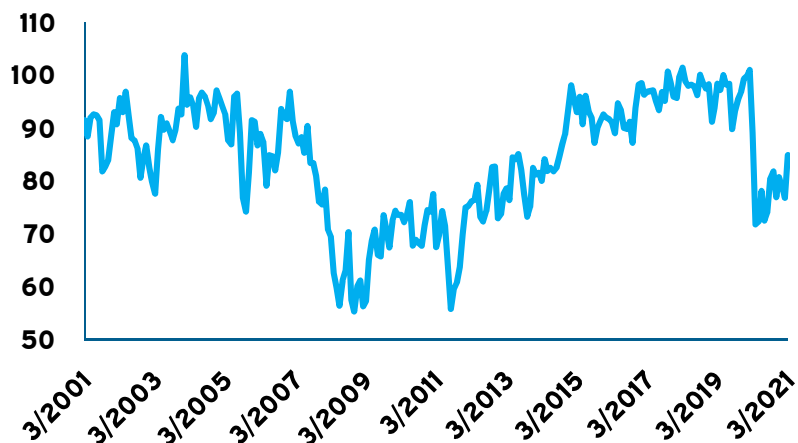
- Fiscal programs including stimulus checks, enhanced unemployment benefits, and loans to small businesses through the Paycheck Protection Program (PPP) have largely supported income levels through the shutdown.
- While estimates of personal income have been extremely volatile since 2020, wage growth has remained relatively stable.
- Despite the income support, the savings rate increased due to the decline in consumer spending, driven by the initial lock-down of the economy, and by uncertainties about the future of the job market and stimulus programs.
- More recently, the savings rate declined from its peak as spending increased with the economy slowly reopening. Going forward, questions remain about how consumers will use the recently approved stimulus programs with concerns over the potential inflationary impacts.

¹ Source: Bloomberg. Latest data is as of February 2021.

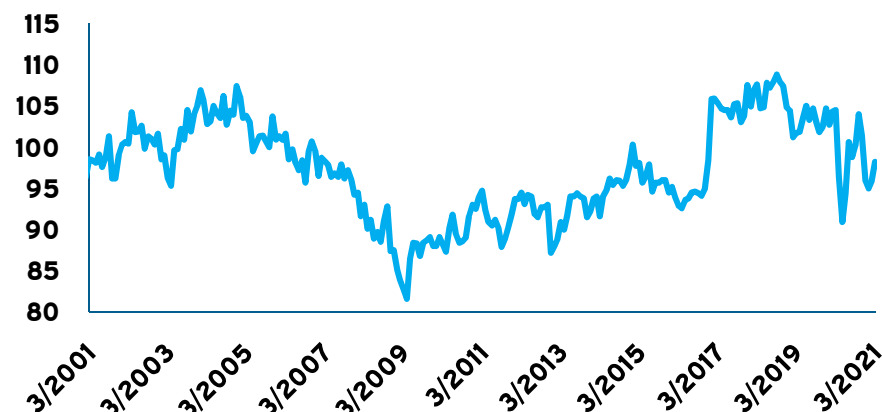
² Source: Bloomberg. Represents Atlanta FED wage growth tracker. Latest data is as of March 2021.

Sentiment Indicators

University of Michigan Consumer Sentiment¹



Small Business Confidence²

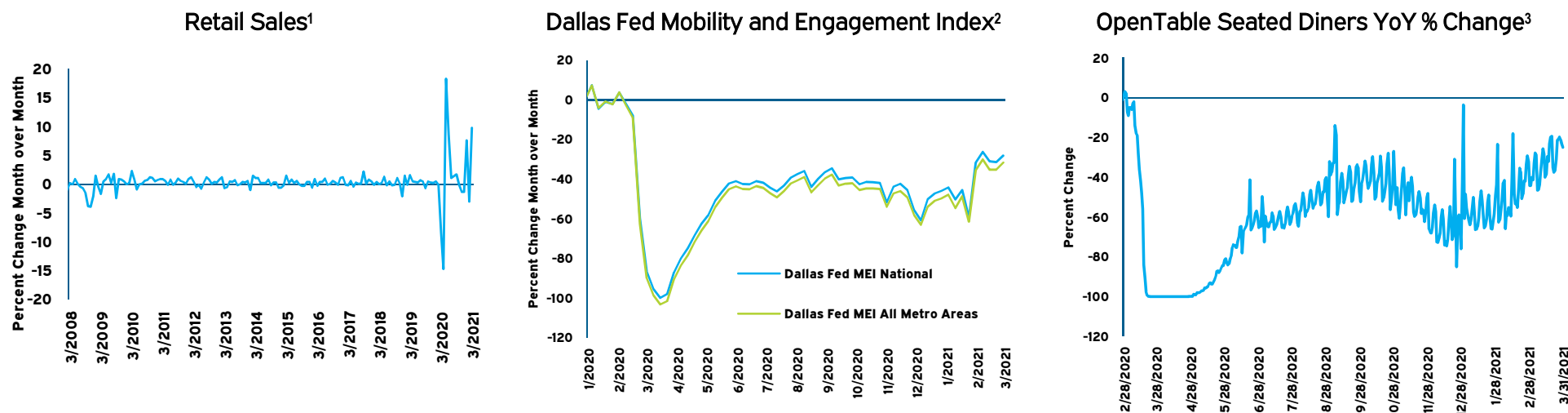


- The attitudes of businesses and consumers are useful indicators of future economic activity.
- Consumer spending comprises close to 70% of US GDP, making the attitudes of consumers an important driver of economic growth. Additionally, small businesses generate around half of US GDP, making sentiment in that segment important.
- Sentiment indicators showed improvements as the economy re-opened, particularly for small businesses. Increasing cases, including from new variants, and the initial slow vaccine rollout have recently weighed on short-term sentiment. This trend could change based on improvements in vaccine distribution and the recent fiscal stimulus.

¹ Source: Bloomberg. University of Michigan Consumer Sentiment Index. Data is as of March 31, 2021.

² Source: Bloomberg. NFIB Small Business Optimism Index. Data is as of March 31, 2021.

US Consumers are beginning to venture out again



- There have been improvements in high frequency data, but overall levels remain well below historical averages, and have slowed in some instances given the recent spike in cases.
- Generally, people have become more active as restrictions eased and stores reopened. Retail sales recovered from a record decline with five consecutive months of growth, and notably beat estimates for March as consumers spent recently received stimulus checks.
- Restaurants saw initial improvements before declining with the fall spike in cases and rising again after the holidays. In-store dining has been cited as a key contributor to increases in infections.

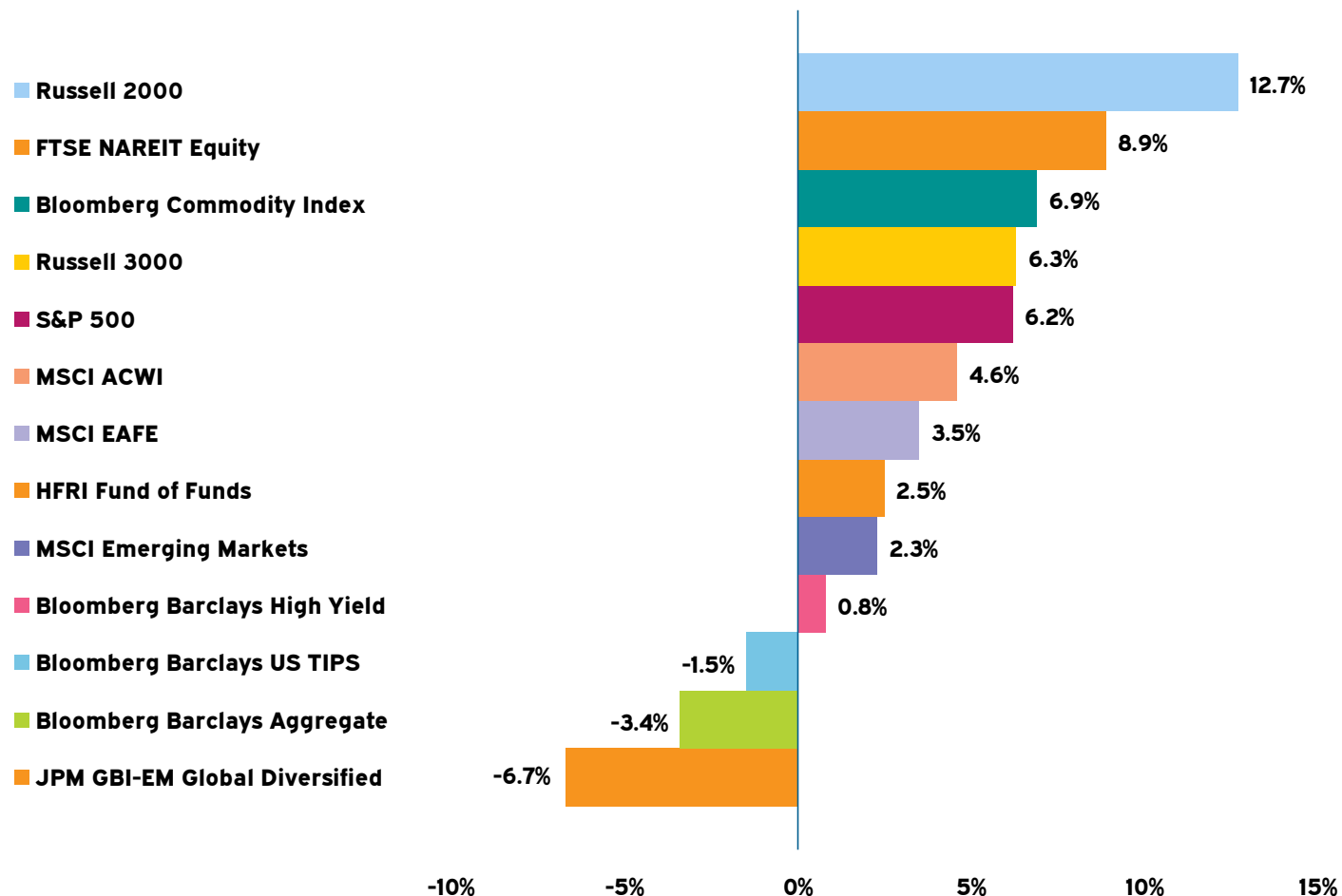
¹ Source: Bloomberg. Data is as of March 31, 2021 and represents the US Retail Sales SA MoM%.

² Source: Bloomberg. Data is as of March 26, 2021 and represents the deviation from normal mobility behaviors induced by COVID-19 (formerly the "Social Distancing Index"). The index represents a weighted average of various lengths of time that a mobile device, like a cell phone, leaves its "home" or place of residence, and/or how long a device stays at home. A decline in this index represents a mobile device at home for a longer period than average.

³ Source: Bloomberg. This data shows year-over-year seated diners at restaurants on the OpenTable network across all channels: online reservations, phone reservations, and walk-ins. Only states or cities with 50+ restaurants in the sample are included. All such restaurants on the OpenTable network in either period are included. Data is as of March 31, 2021. Index start date 2/19/20.

The World Markets First Quarter of 2021

The World Markets¹ First Quarter of 2021



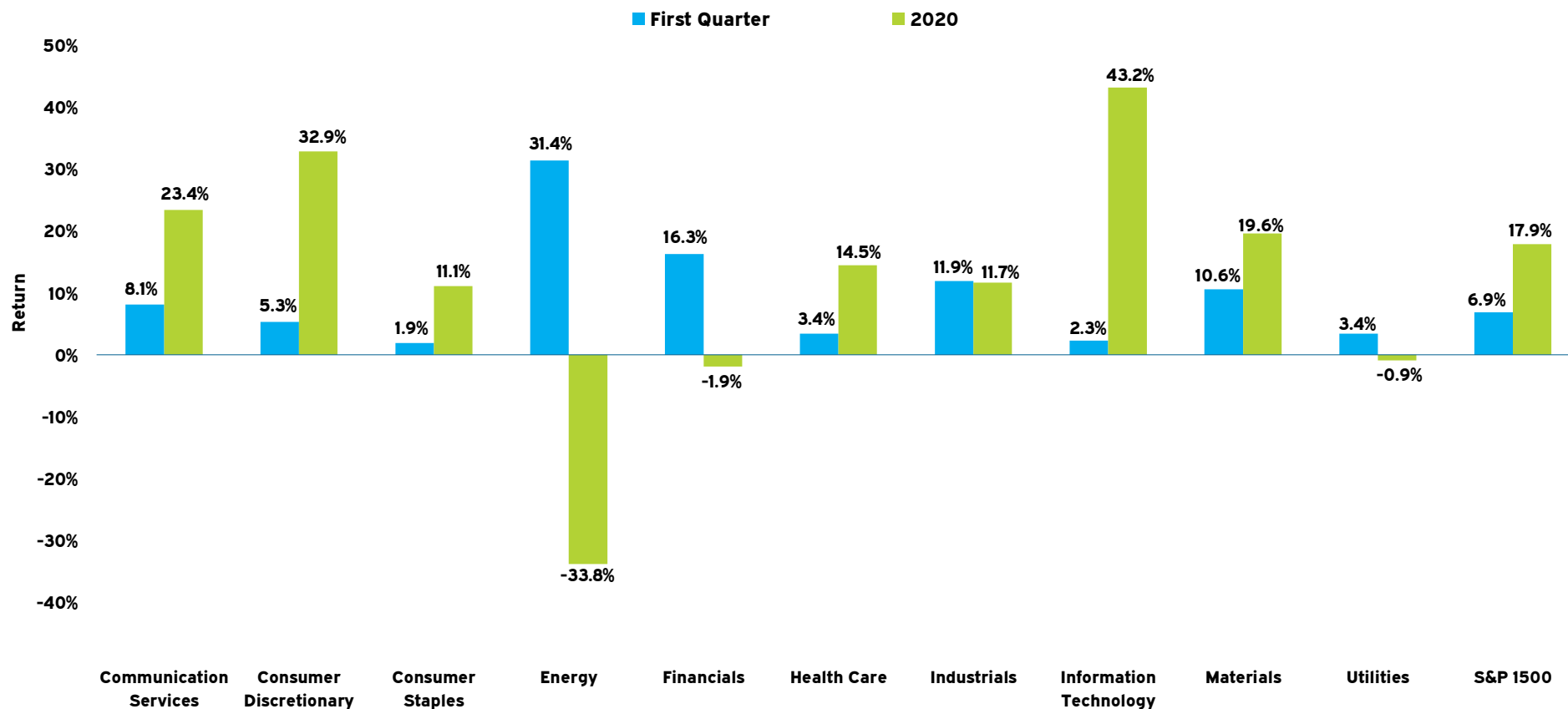
¹ Source: InvestorForce.

Index Returns¹

	1Q21 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Domestic Equity					
S&P 500	6.2	56.4	16.8	16.3	13.9
Russell 3000	6.3	62.5	17.1	16.6	13.8
Russell 1000	5.9	60.6	17.3	16.7	14.0
Russell 1000 Growth	0.9	62.7	22.8	21.0	16.6
Russell 1000 Value	11.3	56.1	11.0	11.7	11.0
Russell MidCap	8.1	73.6	14.7	14.7	12.5
Russell MidCap Growth	-0.6	68.6	19.4	18.4	14.1
Russell MidCap Value	13.1	73.8	10.7	11.6	11.1
Russell 2000	12.7	94.9	14.8	16.4	11.7
Russell 2000 Growth	4.9	90.2	17.2	18.6	13.0
Russell 2000 Value	21.2	97.1	11.6	13.6	10.1
Foreign Equity					
MSCI ACWI (ex. US)	3.5	49.4	6.5	9.8	4.9
MSCI EAFE	3.5	44.6	6.0	8.8	5.5
MSCI EAFE (Local Currency)	7.6	36.6	7.1	8.8	7.5
MSCI EAFE Small Cap	4.5	62.0	6.3	10.5	8.0
MSCI Emerging Markets	2.3	58.4	6.5	12.1	3.7
MSCI Emerging Markets (Local Currency)	4.0	53.0	9.3	12.9	6.9
Fixed Income					
Bloomberg Barclays Universal	-3.1	3.0	4.9	3.6	3.8
Bloomberg Barclays Aggregate	-3.4	0.7	4.7	3.1	3.4
Bloomberg Barclays US TIPS	-1.5	7.5	5.7	3.9	3.4
Bloomberg Barclays High Yield	0.8	23.7	6.8	8.1	6.5
JPM GBI-EM Global Diversified	-6.7	13.0	-0.8	3.1	0.5
Other					
FTSE NAREIT Equity	8.9	37.8	9.5	5.3	8.6
Bloomberg Commodity Index	6.9	35.0	-0.2	2.3	-6.3
HFRI Fund of Funds	2.5	24.6	5.6	5.7	3.5

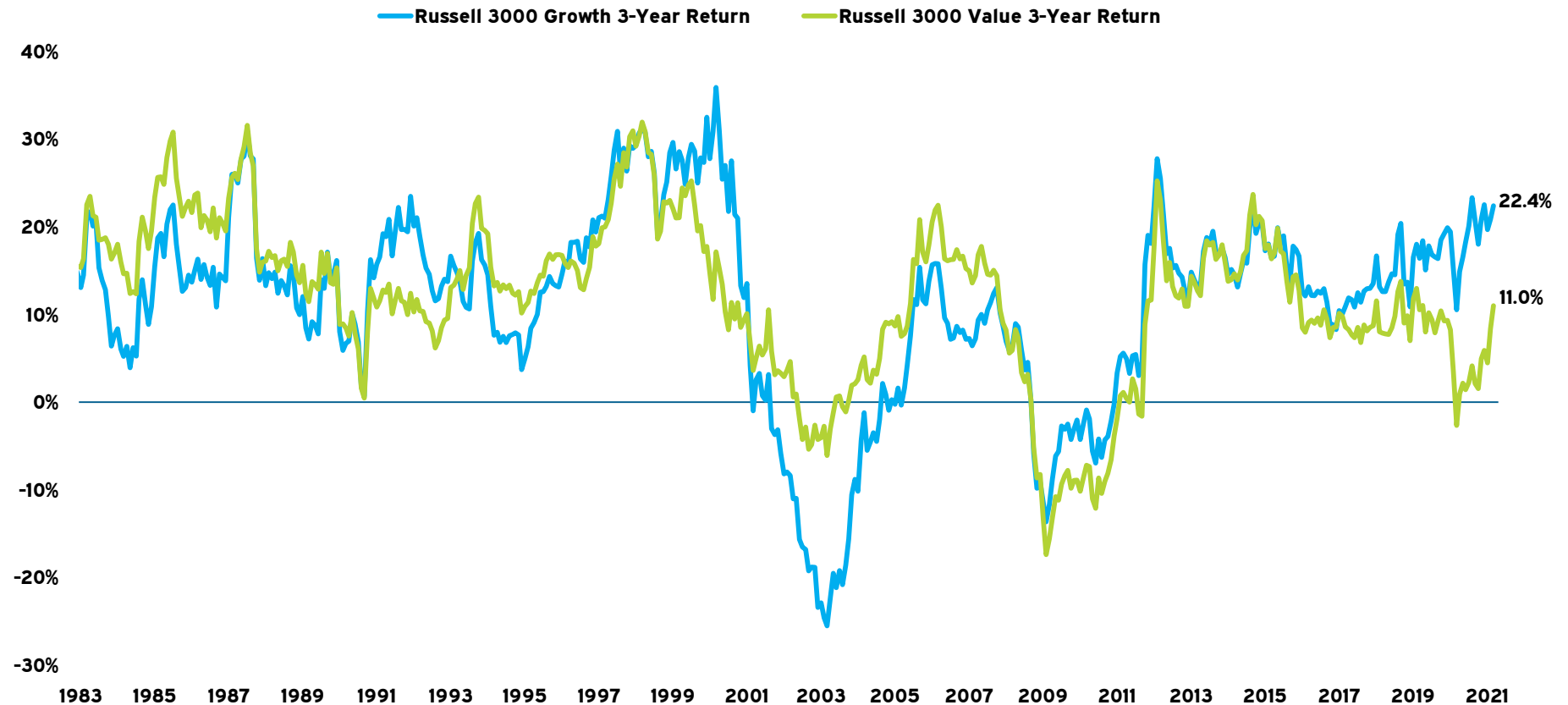
¹ Source: InvestorForce.

S&P Sector Returns¹



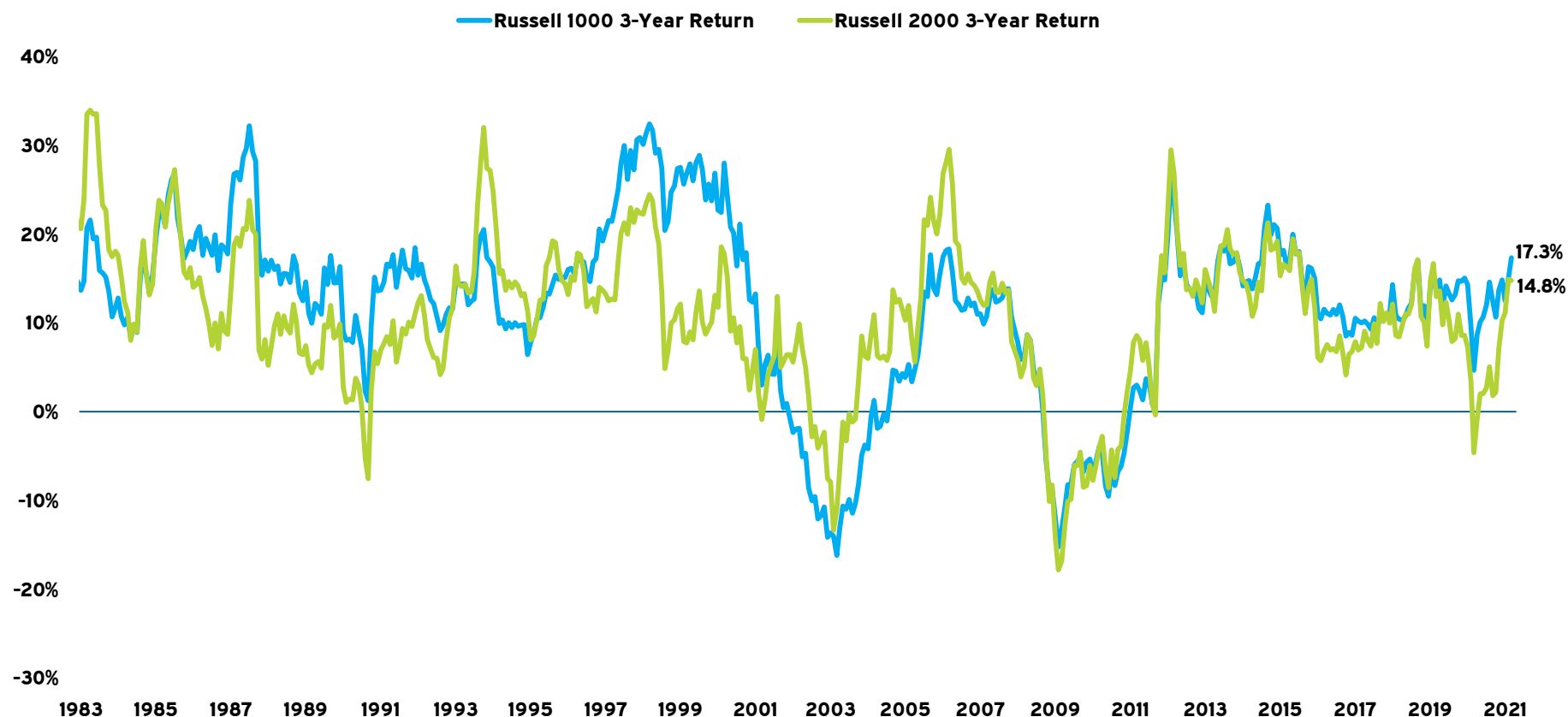
¹ Source: InvestorForce. Represents S&P 1500 (All Cap) data.

Growth and Value Rolling Three Year Returns¹



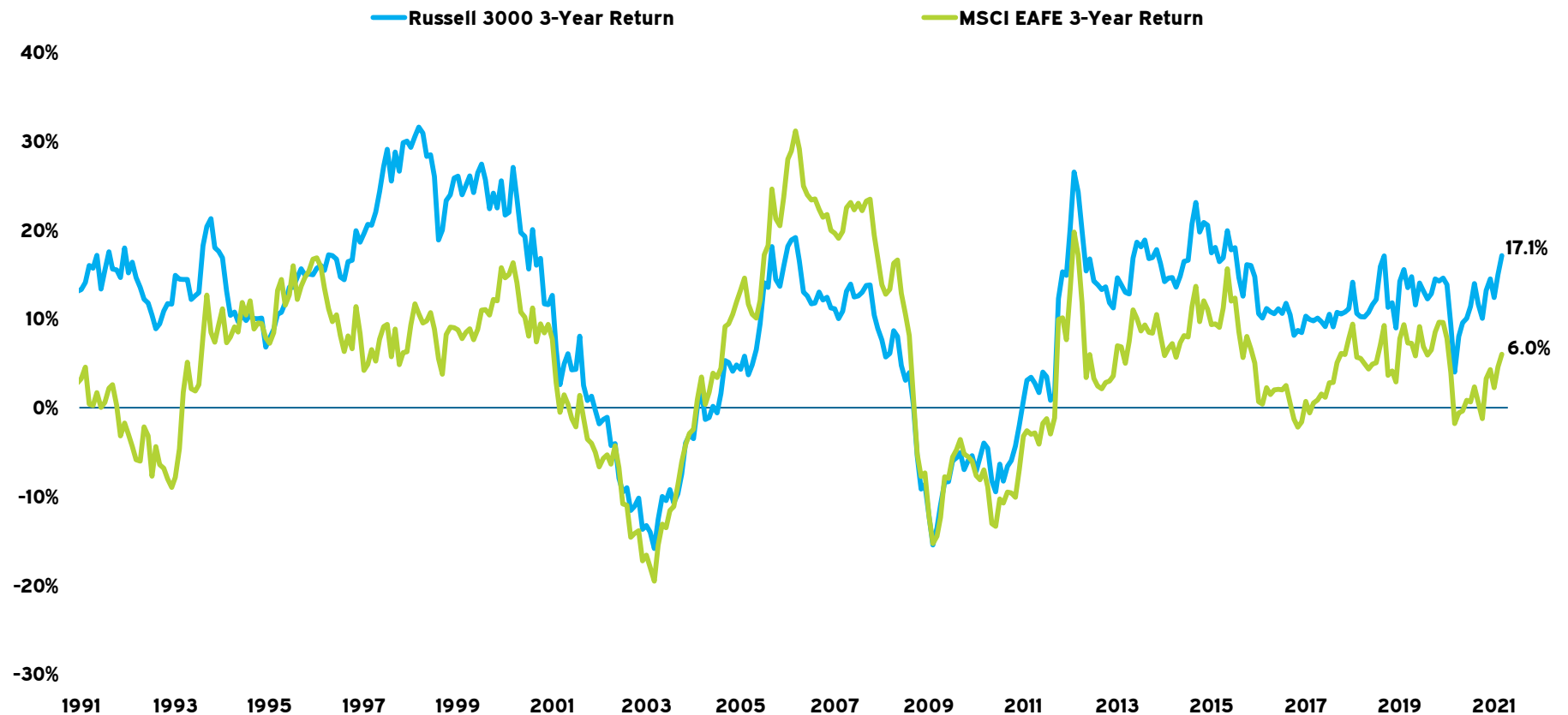
¹ Source: InvestorForce.

Large Cap (Russell 1000) and Small Cap (Russell 2000) Rolling Three Year Returns¹



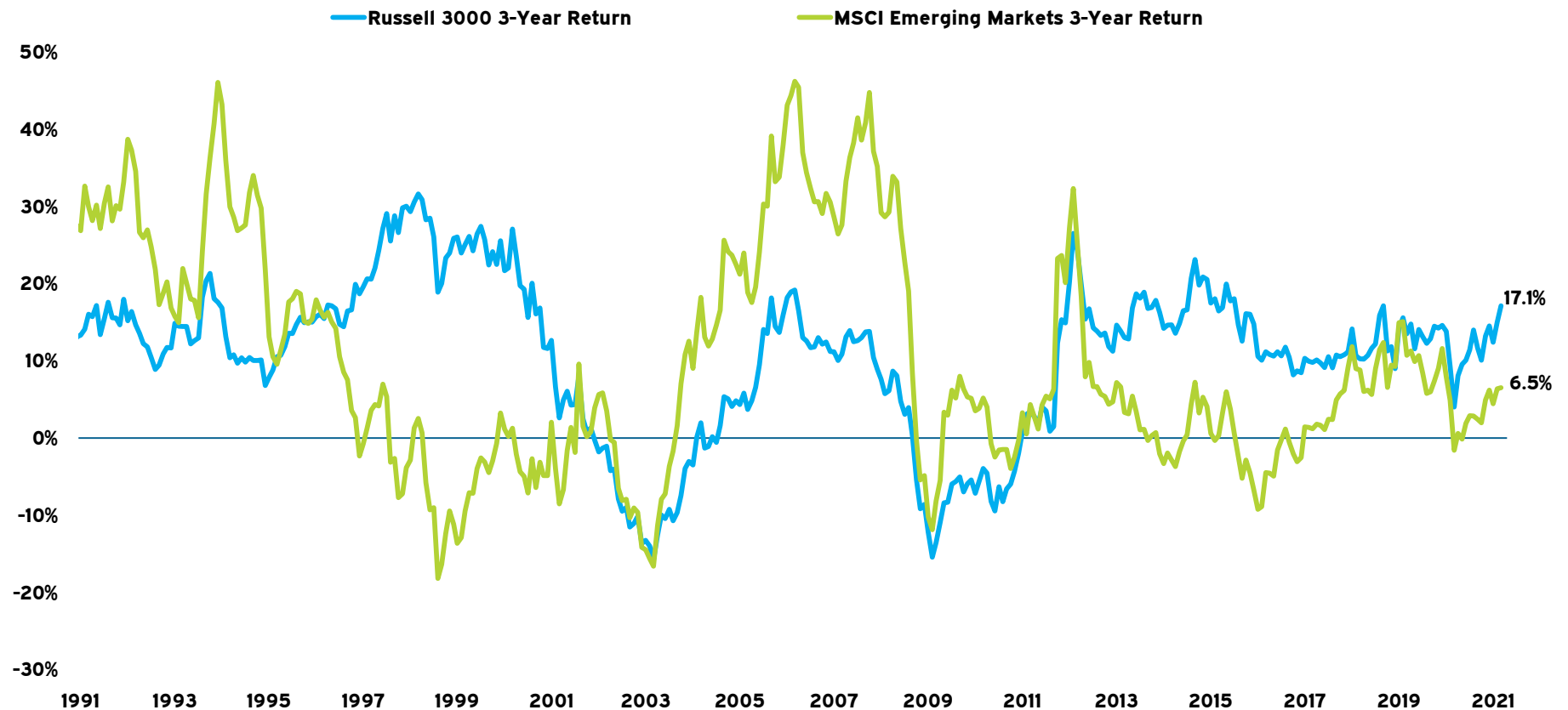
¹ Source: InvestorForce.

US and Developed Market Foreign Equity Rolling Three-Year Returns¹



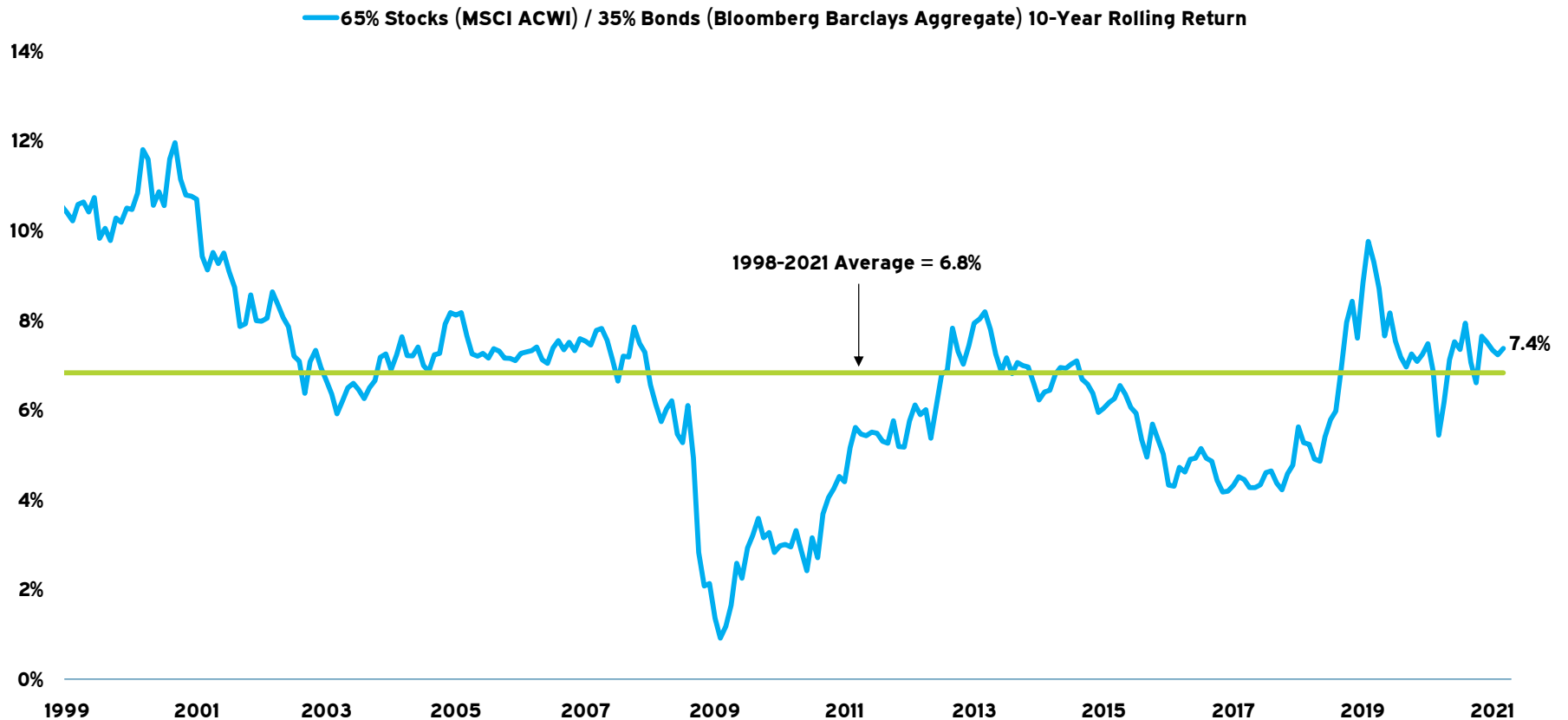
¹ Source: InvestorForce.

US and Emerging Market Equity Rolling Three-Year Returns¹



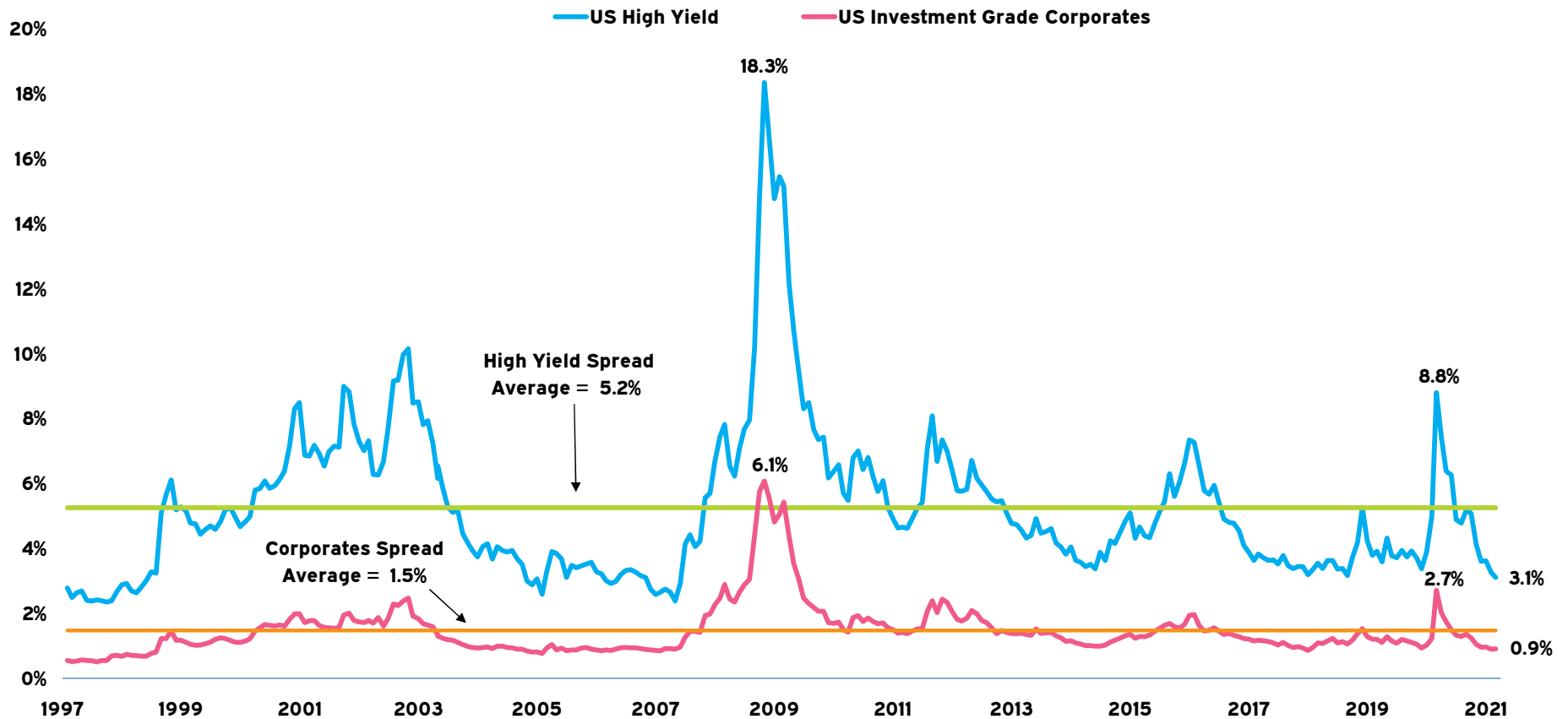
¹ Source: InvestorForce.

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



¹ Source: InvestorForce.

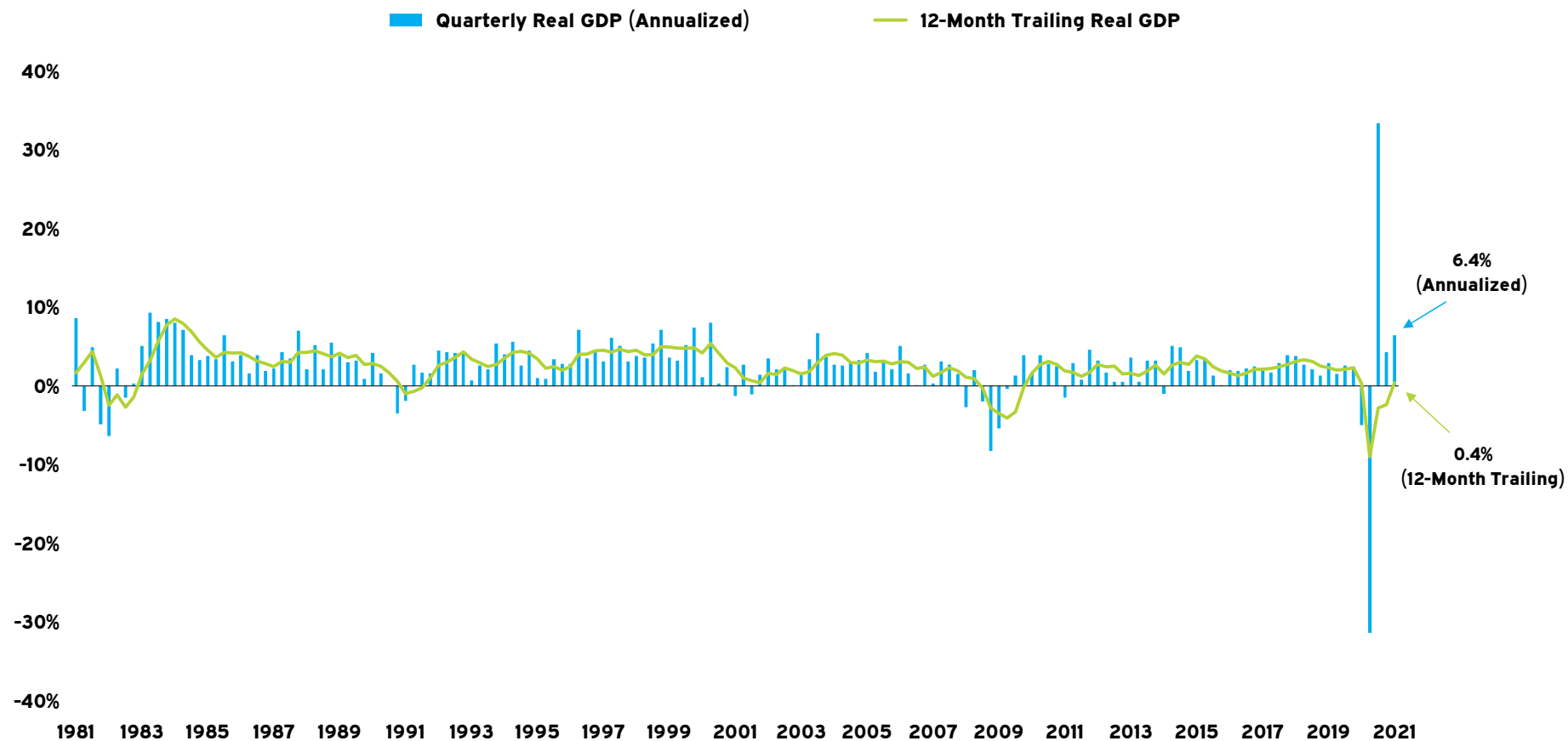
Credit Spreads vs. US Treasury Bonds^{1,2}



¹ Source: Barclays Live. Data represents the OAS.

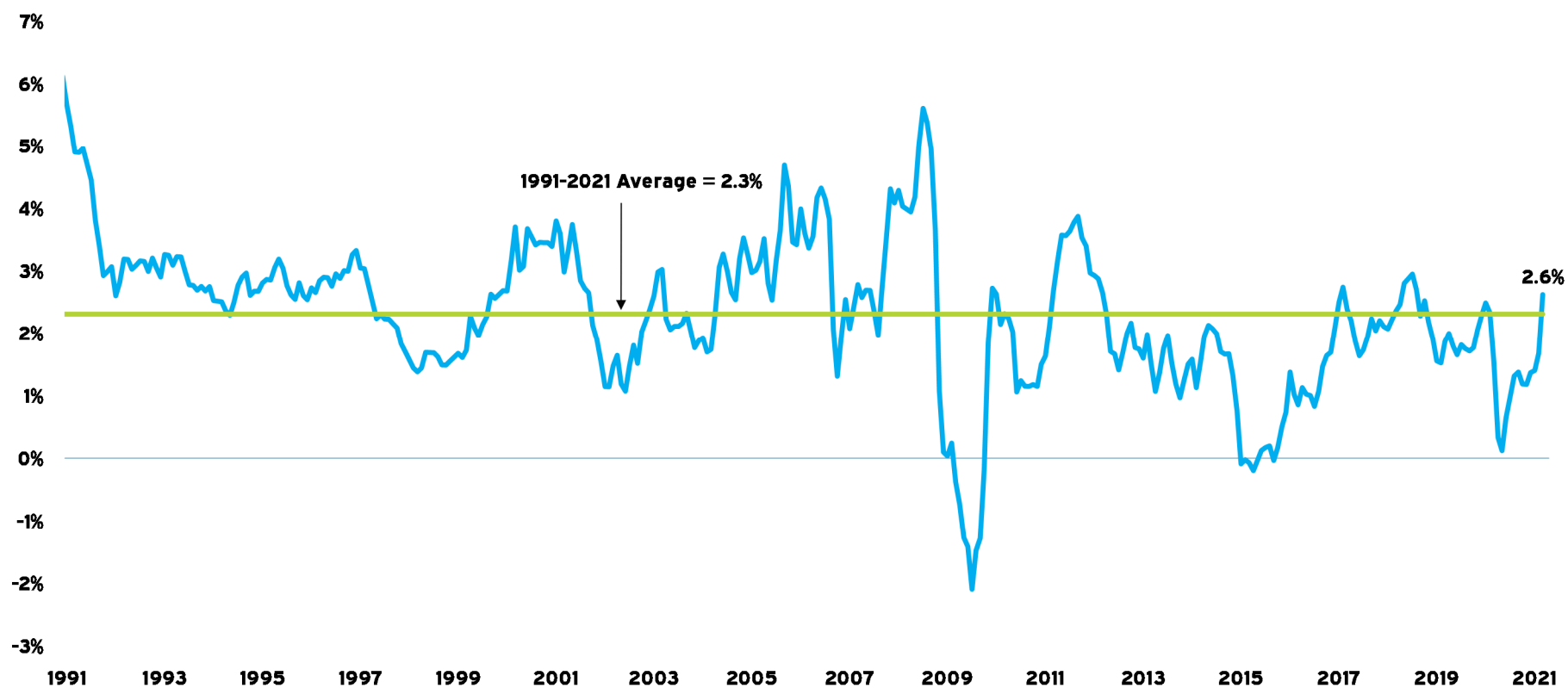
² The median high yield spread was 4.8% from 1997-2021.

US Real Gross Domestic Product (GDP) Growth¹



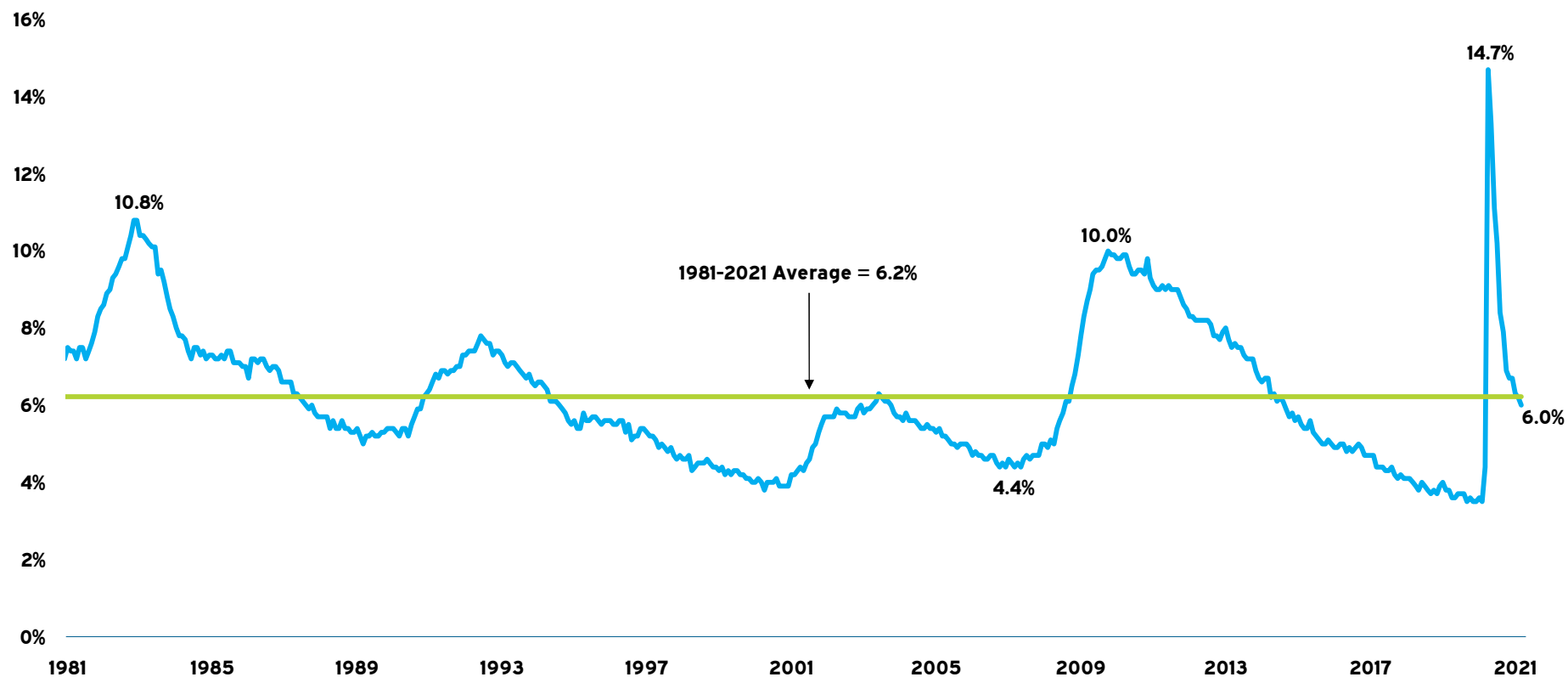
¹ Source: Bureau of Economic Analysis. Data is as of Q1 2021 and represents the first estimate.

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, 2021.

US Unemployment¹

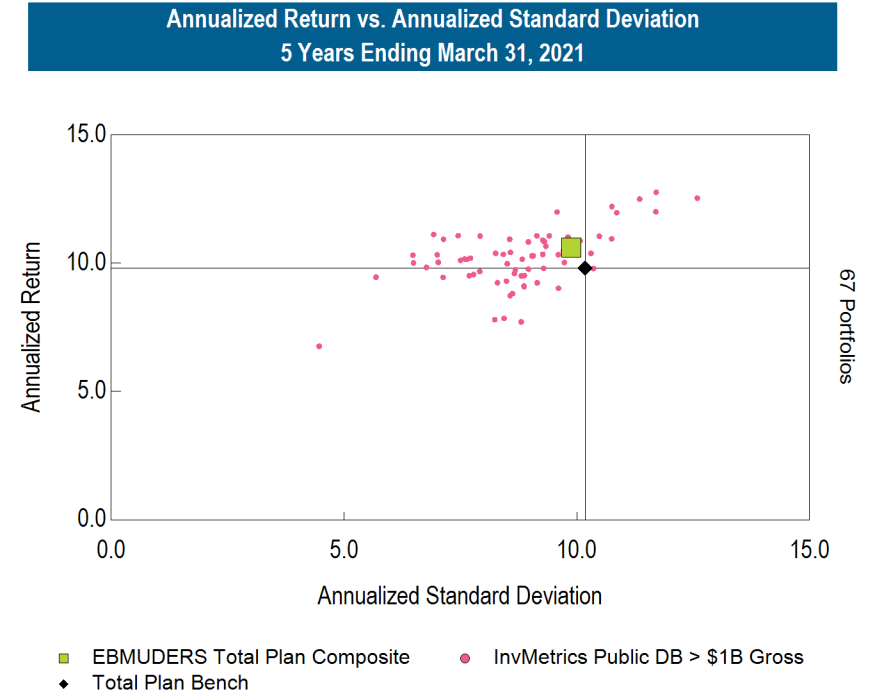
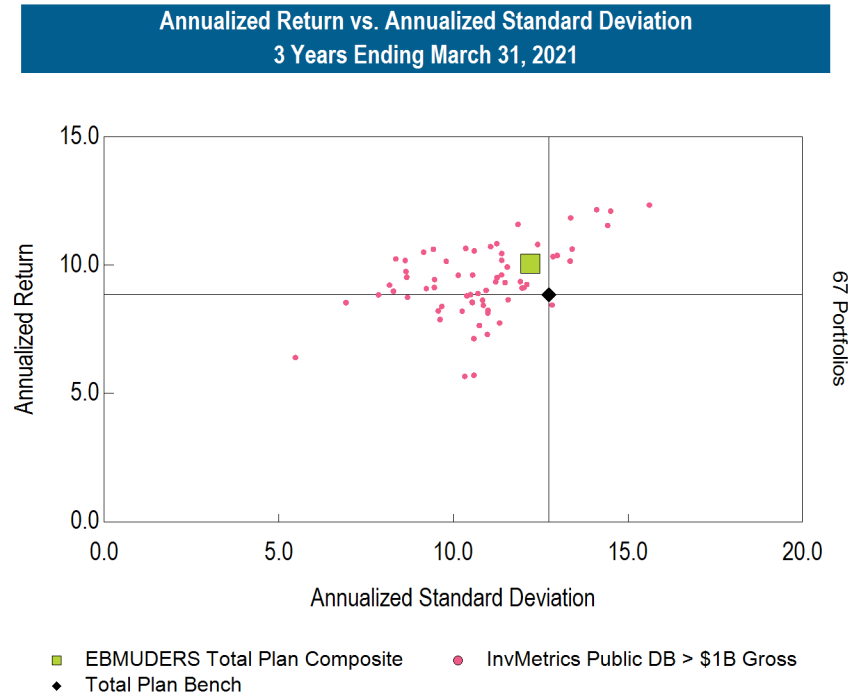


¹ Source: Bureau of Labor Statistics. Data is as of March 31, 2021.

EBMUD Portfolio Review

First Quarter Performance Review

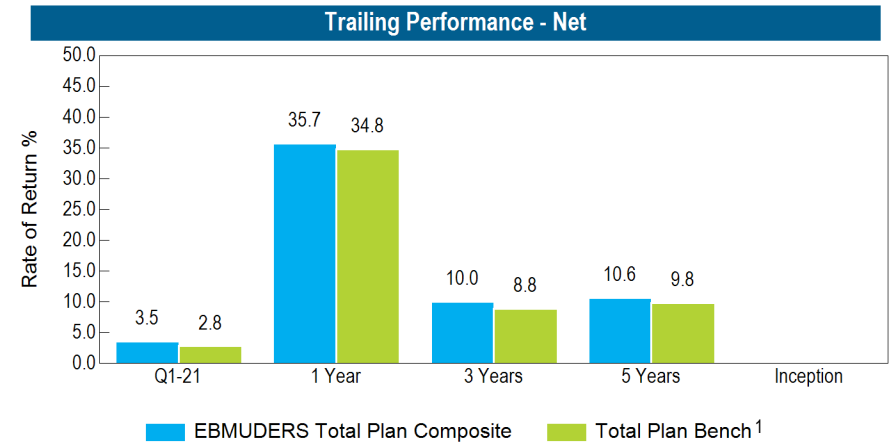
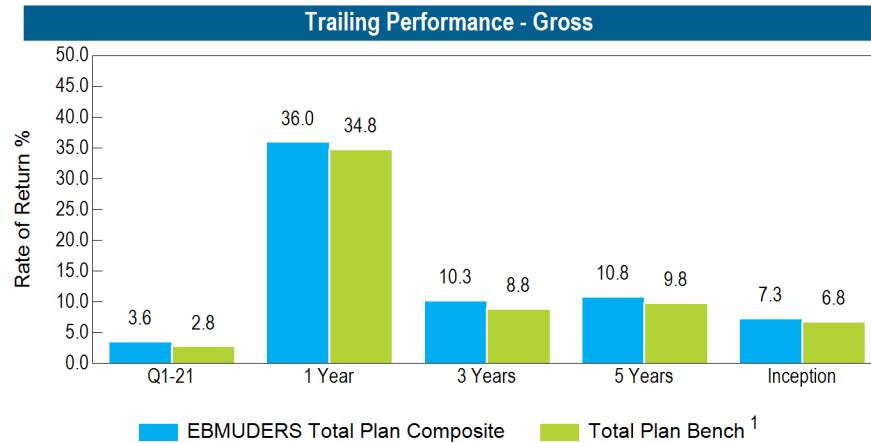
EBMUDERS Total Plan Composite | As of March 31, 2021



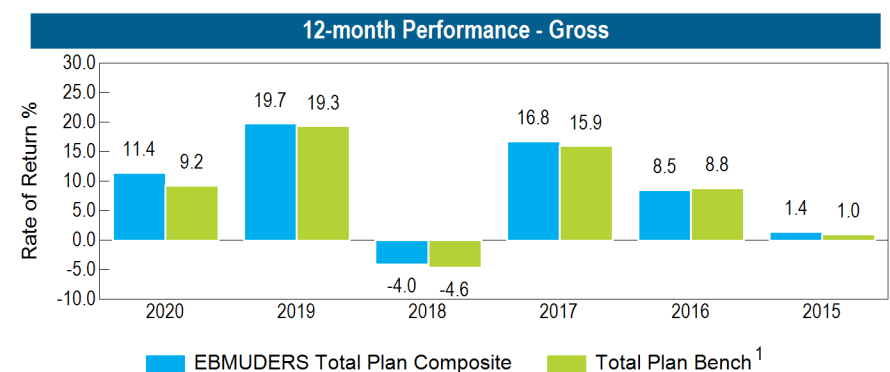
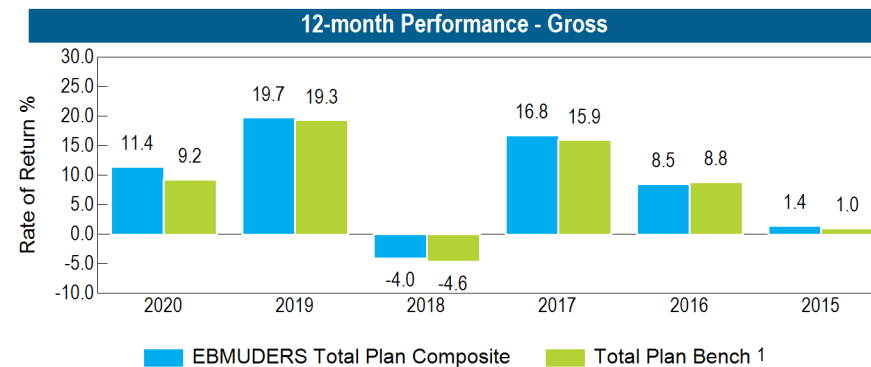
3 Years Ending March 31, 2021			
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
EBMUDERS Total Plan Composite	10.25%	12.21%	0.73
Total Plan Bench	8.85%	12.74%	0.59

5 Years Ending March 31, 2021			
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
EBMUDERS Total Plan Composite	10.84%	9.88%	0.98
Total Plan Bench	9.80%	10.18%	0.85

EBMUDERS Total Plan Composite | As of March 31, 2021



	QTD	1 Yr	3 Yrs	5 Yrs	Inception	2020	2019	2018	2017	2016	2015
EBMUDERS Total Plan Composite - Gross	3.6	36.0	10.3	10.8	--	11.4	19.7	-4.0	16.8	8.5	1.4
EBMUDERS Total Plan Composite - Net	3.5	35.7	10.0	10.6	--	11.2	19.5	-4.3	16.4	8.2	1.1
<i>Total Plan Bench</i>	<i>2.8</i>	<i>34.8</i>	<i>8.8</i>	<i>9.8</i>	--	<i>9.2</i>	<i>19.3</i>	<i>-4.6</i>	<i>15.9</i>	<i>8.8</i>	<i>1.0</i>
<i>InvMetrics Public DB > \$1B Gross Median</i>	<i>3.4</i>	<i>33.1</i>	<i>9.3</i>	<i>10.2</i>	--	<i>11.5</i>	<i>16.7</i>	<i>-3.7</i>	<i>16.2</i>	<i>8.0</i>	<i>0.3</i>



¹ Policy Benchmark consists of 25% Russell 3000 / 20% CBOE S&P 500 BuyWrite USD / 25% MSCI ACWI ex USA Gross / 10% BBgBarc US Aggregate TR / 10% BBgBarc US Intermediate Gov/Cred / 2.5% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr / 2.5% 60% CredSuisLevLoan/40% BBStGovCorp / 2.5% FTSE NAREIT Equity REIT / 2.5% S&P/LSTA Performing Loan TR USD index 12/1/2019 - present; see Appendix for historical Policy Benchmark composition.

² InvMetrics Public DB > \$1B Universe includes BNY Mellon Public > \$1B Fund Universe and IM client data.

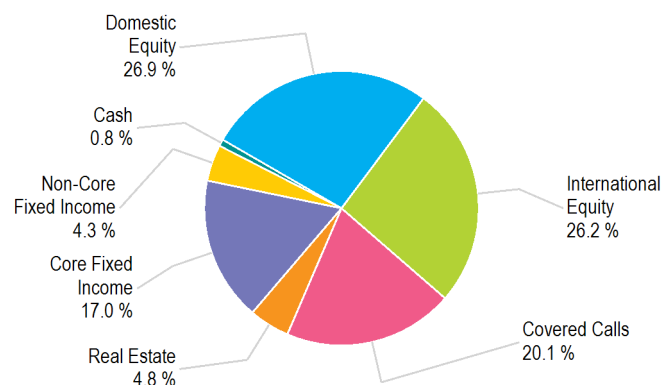
EBMUDERS Total Plan Composite | As of March 31, 2021

Asset Allocation vs. Target¹

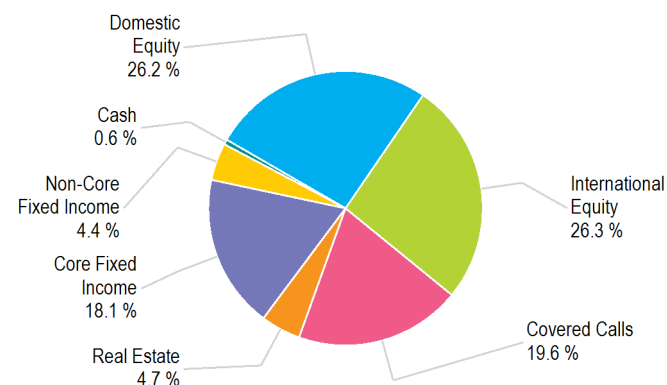
	Current (\$)	Current (%)	Policy (%)	Difference* (%)	Within Range ²
Domestic Equity ³	595,228,841	26.9	25.0	1.9	Yes
International Equity	581,065,349	26.2	25.0	1.2	Yes
Covered Calls	444,848,650	20.1	20.0	0.1	Yes
Real Estate ⁴	106,026,730	4.8	5.0	-0.2	Yes
Core Fixed Income	377,065,623	17.0	20.0	-3.0	Yes
Non-Core Fixed Income	94,574,142	4.3	5.0	-0.7	Yes
Cash	17,223,963	0.8	0.0	0.8	No
Total	2,216,033,299	100.0	100.0		

*Difference between Policy and Current Allocation

March 31, 2021 : \$2,216,033,299



December 31, 2020 : \$2,136,702,861



¹ Current policy target allocations elected by the Board in January 2019 took effect March 2019 upon the transition to the new long-term strategic allocation.

² Policy rebalancing ranges shown are for non-turbulent market periods. The Plan also has established rebalancing ranges to be in effect during turbulent market periods.

³ Includes approximately \$658,745 in the global transition account.

⁴ RREEF performance results and allocation are lagged one-quarter.

Manager Performance - Gross of Fees | As of March 31, 2021

Domestic and International Equity					
	Market Value	QTD	1 Yr	3 Yrs	5 Yrs
US Equity Composite	595,228,841	6.4	62.2	17.5	17.2
<i>Russell 3000 Hybrid</i>		<i>6.3</i>	<i>62.5</i>	<i>17.1</i>	<i>16.6</i>
Northern Trust Russell 3000	593,925,997	6.4	62.3	--	--
<i>Russell 3000</i>		<i>6.3</i>	<i>62.5</i>	--	--
NonUS Equity Composite	581,065,349	3.4	49.5	6.0	9.4
<i>MSCI ACWI xUS (blend) ¹</i>		<i>3.6</i>	<i>50.0</i>	<i>7.0</i>	<i>10.3</i>
Northern Trust ACWI ex US	405,854,529	3.4	48.1	--	--
<i>MSCI ACWI ex USA Gross</i>		<i>3.6</i>	<i>50.0</i>	--	--
Fisher Investments	175,179,407	3.6	57.3	10.2	12.5
<i>MSCI ACWI xUS (blend)</i>		<i>3.6</i>	<i>50.0</i>	<i>7.0</i>	<i>10.3</i>
Franklin Templeton	31,413	-6.7	0.3	-9.8	-1.2
<i>MSCI ACWI xUS (blend)</i>		<i>3.6</i>	<i>50.0</i>	<i>7.0</i>	<i>10.3</i>

The EBMUD Domestic Equity class is currently 100% passively-managed. The Plan liquidated all of its actively-managed domestic equity mandates in June 2018 to move towards the Plan's new strategic policy target allocations effective July 1, 2018.

The International Equity class is primarily managed passively through the Northern Trust ACWI ex US Index fund. Fisher remains the lone active manager in the international portfolio, representing about 30% of assets.

- Fisher tracked the MSCI ACWI x US (blend) Index during the first quarter and has outperformed over the longer trailing periods. Equities continue to perform well on vaccine optimism, most notably in developed countries. For the recent quarter value has outperformed as valuations remain inflated.

¹ As of January 1, 2007, the benchmark changed from MSCI EAFE to MSCI ACWI xUS.

Manager Performance - Gross of Fees | As of March 31, 2021

	Covered Calls				
	Market Value	QTD	1 Yr	3 Yrs	5 Yrs
Parametric BXM	146,671,009	5.8	36.1	9.2	9.4
<i>CBOE S&P 500 BuyWrite USD</i>		<i>2.6</i>	<i>28.3</i>	<i>4.0</i>	<i>6.2</i>
Parametric Delta Shift	159,071,904	6.7	53.6	15.2	14.3
<i>CBOE S&P 500 BuyWrite USD</i>		<i>2.6</i>	<i>28.3</i>	<i>4.0</i>	<i>6.2</i>
Van Hulzen	139,105,738	5.5	24.8	6.8	7.0
<i>CBOE S&P 500 BuyWrite USD</i>		<i>2.6</i>	<i>28.3</i>	<i>4.0</i>	<i>6.2</i>

Over the latest quarter ending March 31, 2021, all of EBMUDERS's Covered Calls mandates outperformed the CBOE BXM Index. Optimism regarding economic recovery and business reopening continues to drive equity performance with increased participation from retail investors.

- The Parametric BXM strategy outperformed the CBOE BXM Index over the most recent quarter by 3.2%. The fund has outperformed its respective benchmark over the trailing 1-, 3-, and 5- year periods by 7.8%, 5.2%, and 2.8% respectively. The Buy-Write Portfolio is implemented by writing at-the money options and diversifying option expiration dates which eliminates the path-dependency of the mechanical, passive BXM Index.
- Parametric Delta Shift strategy outperformed the benchmark over all reported periods by 4.1%, 25.3%, 11.2%, and 8.1% respectively. Delta Shift generally performs best in down, flat, moderately trending or range bound equity markets.
- Van Hulzen, outperformed the CBOE BXM Index in the first quarter by 2.9%. The fund trails the benchmark slightly over the trailing 1-year period by 3.5%, though still leads the index for 3- and 5- year trailing 2.8%, and 0.8% respectively. The Van Hulzen covered call strategy uses call options with the goal of reducing portfolio volatility and creating incremental income.

Manager Performance - Gross of Fees | As of March 31, 2021

Fixed Income Composite					
	Market Value	QTD	1 Yr	3 Yrs	5 Yrs
CS McKee	185,206,510	-3.5	2.4	4.9	3.3
<i>BBgBarc US Aggregate TR</i>		<i>-3.4</i>	<i>0.7</i>	<i>4.7</i>	<i>3.1</i>
Garcia Hamilton	191,859,114	-1.8	3.8	--	--
<i>BBgBarc US Intermediate Gov/Cred</i>		<i>-1.9</i>	<i>2.0</i>	<i>--</i>	<i>--</i>
MacKay Shields (HY)	49,075,165	1.8	18.8	--	--
<i>ICE BofA ML US Corp Cash Pay BB-B 1-5Yr</i>		<i>0.9</i>	<i>18.7</i>	<i>--</i>	<i>--</i>
Federated Investment Counseling (Bank Loans)	45,498,978	1.2	12.1	--	--
<i>60% CredSuisLevLoan/40% BBStGovCorp</i>		<i>1.2</i>	<i>12.3</i>	<i>--</i>	<i>--</i>

Over the latest quarter ending March 31, 2021, both of EBMUDERS' Core Fixed Income mandates performed in line with their respective benchmarks. The portfolio's high yield manager MacKay outperformed their respective benchmark while bank loans manager, Federated Investment Counseling, also tracked the blended bank loans benchmark.

- CS McKee performed in line with the BBgBarc US Aggregate Index for the quarter and has outperformed over all longer trailing periods.
- Garcia Hamilton performed in line with the BBgBarc US Aggregate Index over the quarter.
- MacKay Shields outperformed the ICE BofAML US Corp Cash Pay BB-B 1-5Yr Index by 0.9% over the quarter and has matched the index for the 1-year period. As rates rose through the first quarter the portfolio's underweight to longer duration assets provided a positive impact as did allocation to and selection within the energy sector.
- Federated Investment Counseling (Bank Loans) has performed in line with the 60% CredSuisLevLoan/40% BBStGovCorp benchmark over the most recent quarter and trailing 1-year period. Performance has been driven primarily increased risk appetite due to expectations of a strengthening recovery.

Manager Performance - Gross of Fees | As of March 31, 2021

	Real Estate Composite				
	Market Value	QTD	1 Yr	3 Yrs	5 Yrs
RREEF America II Lag ¹	50,157,979	1.0	1.5	5.7	6.7
<i>NCREIF NPI Mo 1 Qtr Lag</i>		<i>1.2</i>	<i>1.6</i>	<i>4.9</i>	<i>5.9</i>
CenterSquare	55,868,751	8.1	36.9	10.7	6.6
<i>FTSE NAREIT Equity REIT</i>		<i>8.9</i>	<i>37.8</i>	<i>9.5</i>	<i>5.3</i>

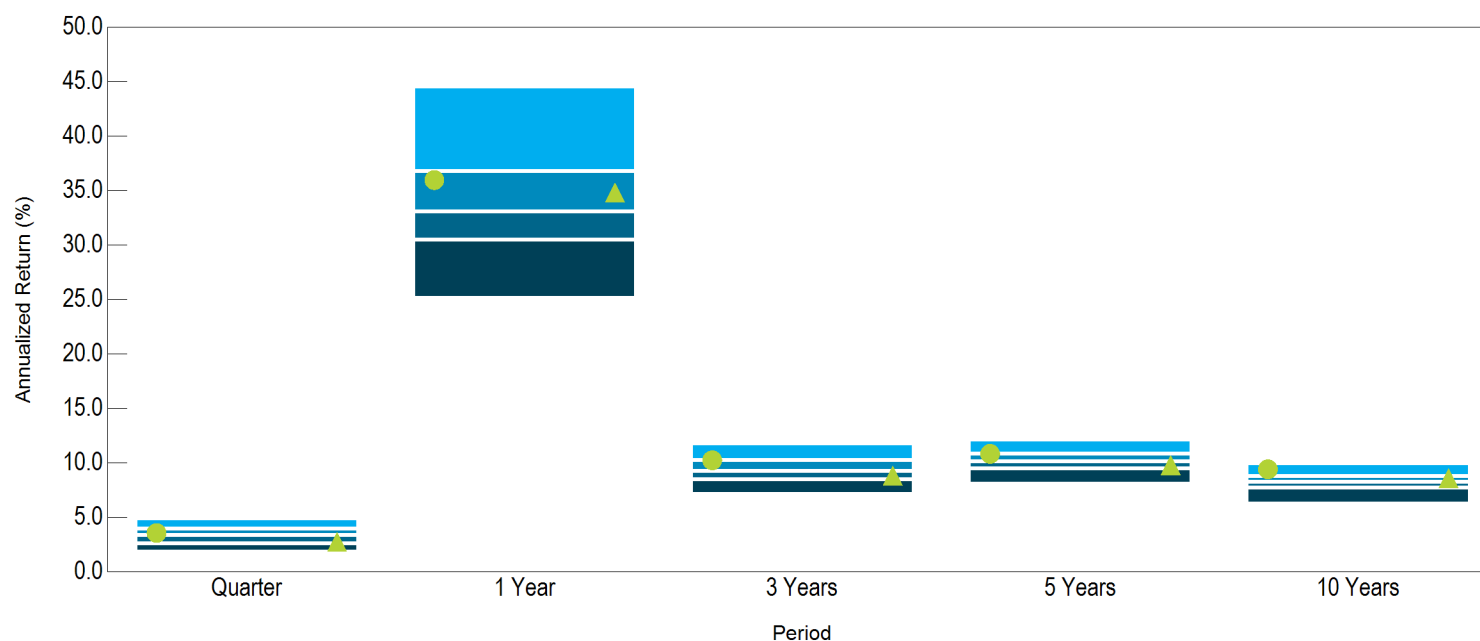
East Bay's Real Estate manager, RREEF II, underperformed its benchmark, the NCREIF Property Index, over the quarter and 1-year periods. The fund has outperformed over the trailing 3- and 5-year periods. Income producing assets are starting to recover as optimism about the reopening economy continues to grow. During the lagged 12-month period, RREEF America REIT II operations generated an income return of 4.1% before fees. Same store net operating income for the 1-year period decreased 1.5%. Occupancy at the end of the quarter at 91 percent overall, slightly decreasing from the prior quarter.

CenterSquare, East Bay's REIT manager, underperformed the FTSE NAREIT Equity REITs Index for the first quarter and 1-year trailing period. The fund has outperformed over longer periods. REIT performance for the quarter was driven by Malls, Hotels, and Apartments as they were the hardest hit during the pandemic and have improved on positive vaccine news. EBMUDERS portfolio's underperformance was primarily a result of a substantial underweight to Malls, the strongest performing sector.

¹ Results are lagged one quarter.

EBMUDERS Total Plan Composite | As of March 31, 2021

InvMetrics Public DB > \$1B Gross Return Comparison¹
Ending March 31, 2021

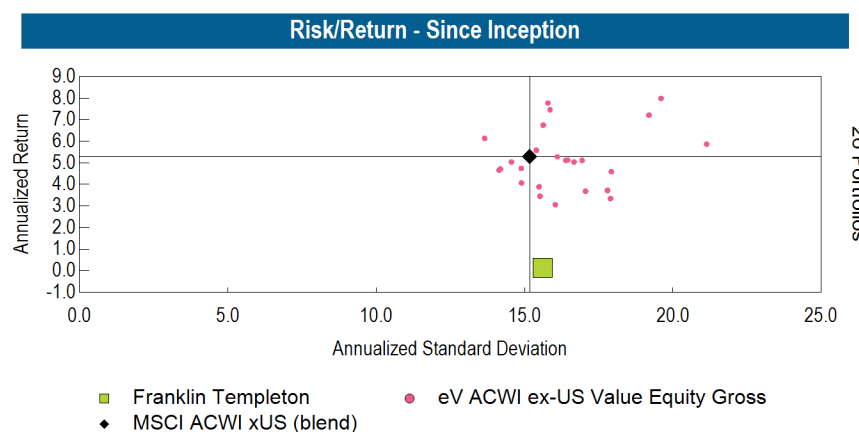
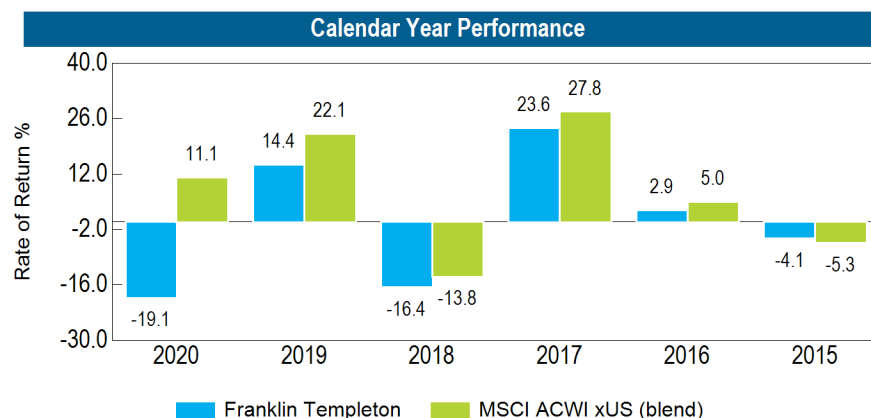
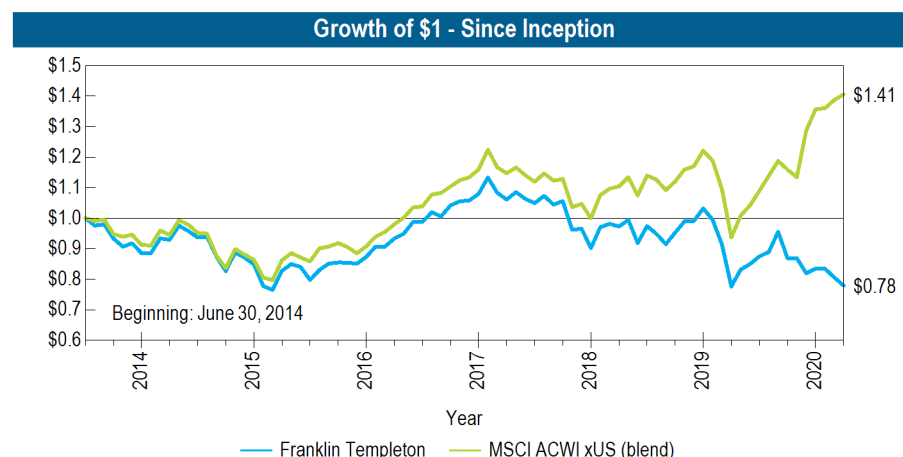
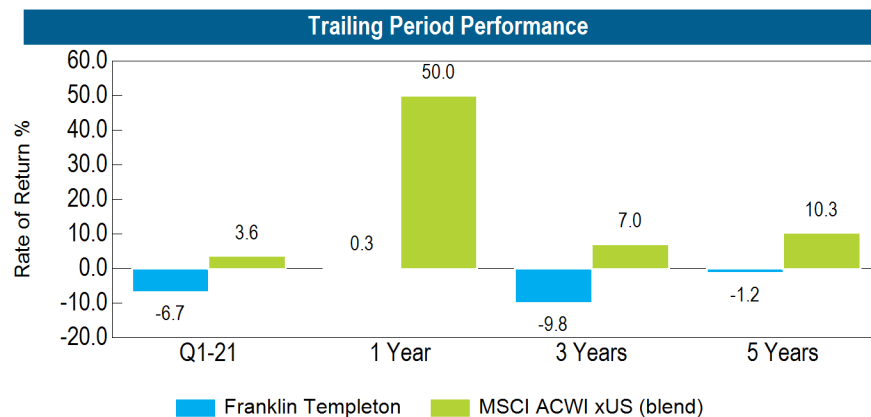


	Return (Rank)									
5th Percentile	4.9		44.6		11.8		12.1		9.9	
25th Percentile	4.0		36.8		10.3		10.9		8.9	
Median	3.4		33.1		9.3		10.2		8.3	
75th Percentile	2.7		30.5		8.5		9.5		7.8	
95th Percentile	1.9		25.2		7.2		8.1		6.3	
# of Portfolios	67		67		67		67		65	
● EBMUDERS Total Plan Composite	3.6	(37)	36.0	(31)	10.3	(26)	10.8	(29)	9.4	(12)
▲ Total Plan Bench	2.8	(72)	34.8	(37)	8.8	(66)	9.8	(65)	8.6	(36)

¹ Calculation based on monthly periodicity.

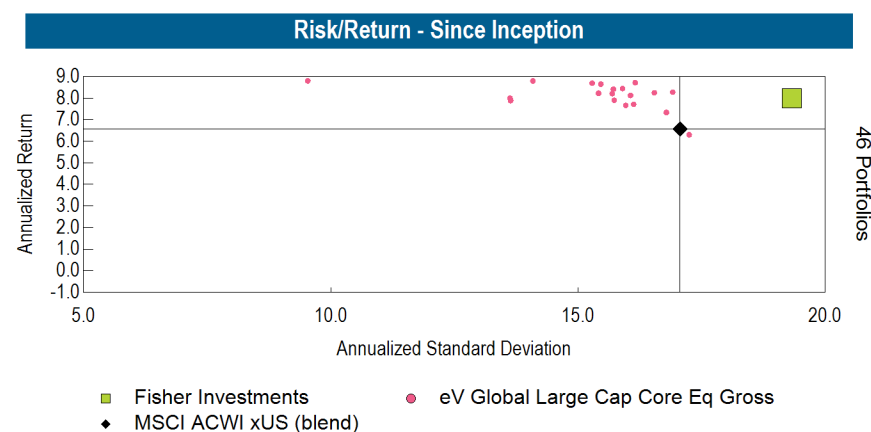
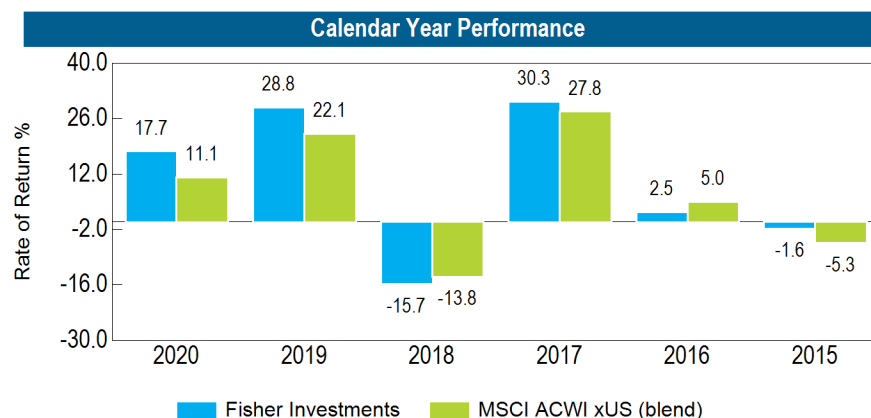
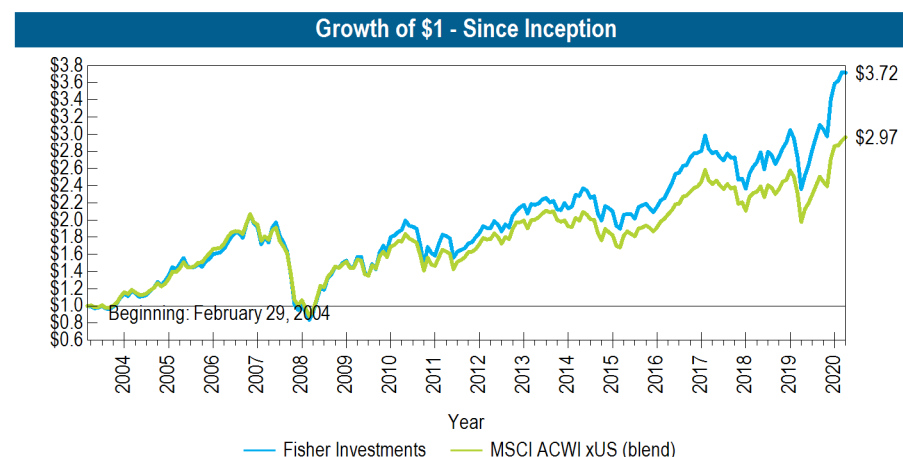
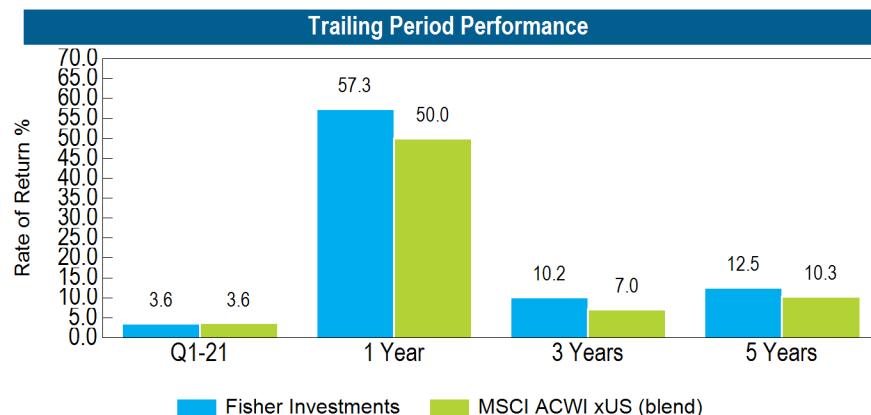
Franklin Templeton | As of March 31, 2021

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Franklin Templeton	-0.36%	0.90	-0.66	-0.03	7.81%	0.76	65.58%	102.56%
MSCI ACWI xUS (blend)	0.00%	1.00	--	0.31	0.00%	1.00	100.00%	100.00%



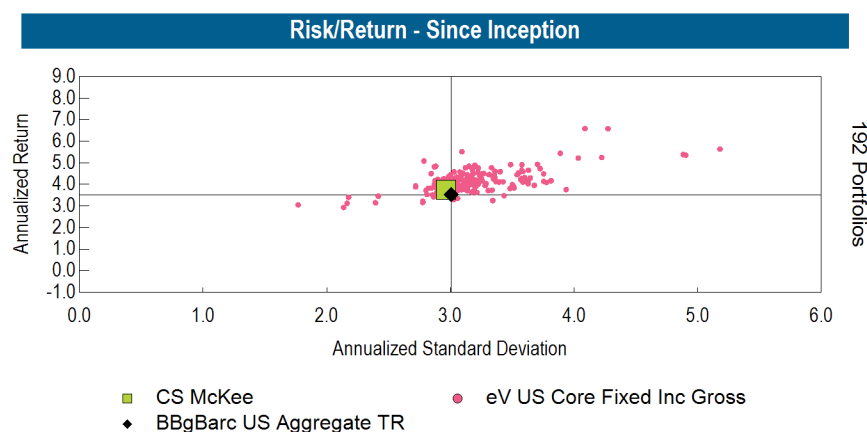
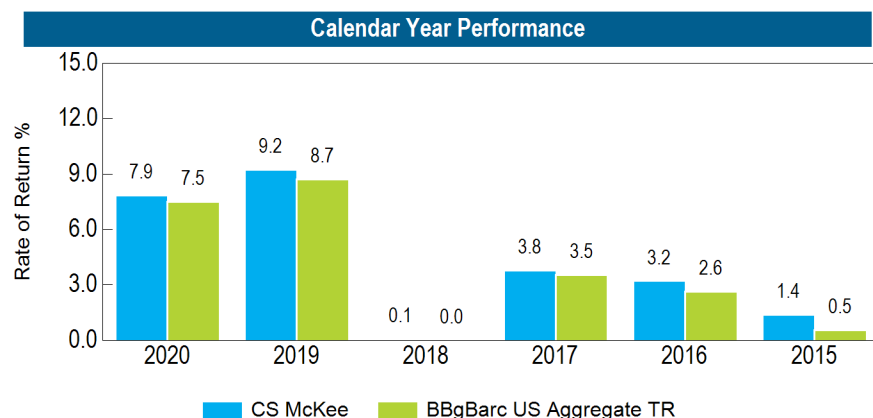
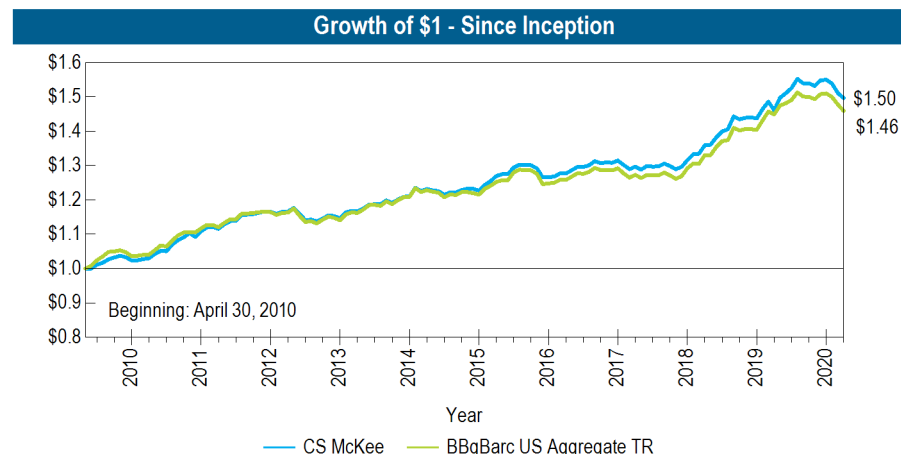
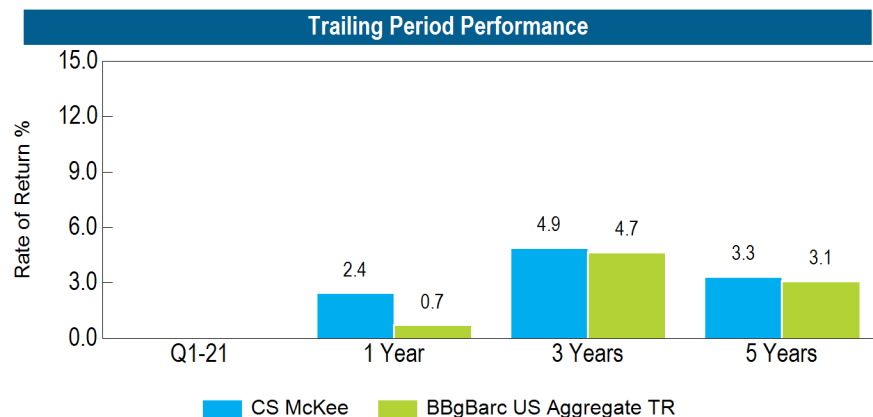
Fisher Investments | As of March 31, 2021

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Fisher Investments	0.10%	1.08	0.44	0.38	3.66%	0.96	128.84%	101.58%
MSCI ACWI xUS (blend)	0.00%	1.00	--	0.32	0.00%	1.00	100.00%	100.00%



CS McKee | As of March 31, 2021

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
CS McKee	0.04%	0.94	0.27	1.08	0.88%	0.92	101.88%	94.80%
BBgBarc US Aggregate TR	0.00%	1.00	--	0.99	0.00%	1.00	100.00%	100.00%



Asset Class Returns - Net of Fees | As of March 31, 2021

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
EBMUDERS Total Plan Composite¹	3.5	35.7	10.0	10.6
<i>Total Plan Bench²</i>	<i>2.8</i>	<i>34.8</i>	<i>8.8</i>	<i>9.8</i>
US Equity Composite	6.4	62.2	17.5	17.1
<i>Russell 3000 Hybrid³</i>	<i>6.3</i>	<i>62.5</i>	<i>17.1</i>	<i>16.6</i>
NonUS Equity Composite	3.4	49.2	5.7	9.0
<i>MSCI ACWI xUS (blend)⁴</i>	<i>3.6</i>	<i>50.0</i>	<i>7.0</i>	<i>10.3</i>
Covered Calls Composite	5.9	37.8	10.3	10.1
<i>CBOE S&P 500 BuyWrite USD</i>	<i>2.6</i>	<i>28.3</i>	<i>4.0</i>	<i>6.2</i>
Real Estate Composite	4.5	19.4	8.7	6.5
<i>NCREIF NPI Lag⁵</i>	<i>5.0</i>	<i>18.7</i>	<i>7.7</i>	<i>6.0</i>
Fixed Income Composite	-1.9	5.2	4.7	3.8
<i>Fixed Income Composite Bench⁶</i>	<i>-1.9</i>	<i>4.1</i>	<i>4.5</i>	<i>3.7</i>
Cash Composite	0.2	1.4	2.0	1.5
<i>FTSE T-Bill 3 Months TR</i>	<i>0.0</i>	<i>0.2</i>	<i>1.5</i>	<i>1.2</i>

¹ Historical net returns for the Total Portfolio aggregate is currently available from 2Q 2011

² Policy Benchmark consists of 25% Russell 3000 / 20% CBOE S&P 500 BuyWrite USD / 25% MSCI ACWI ex USA Gross / 10% BBgBarc US Aggregate TR / 10% BBgBarc US Intermediate Gov/Cred / 2.5% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr / 2.5% 60% CredSuisLevLoan/40% BBStGovCorp / 2.5% FTSE NAREIT Equity REIT / 2.5% S&P/LSTA Performing Loan TR USD index 12/1/2019-present; see Appendix for historical Policy Benchmark composition.

³ Russell 3000 as of 10/1/05. Prior: 30% S&P500, 10% S&P400, 10% Russell 2000 (4/1/05-9/30/05); 33% S&P500, 10% S&P400, 10% Russell 2000 (9/1/98-3/31/05); 30% S&P500, 15% Wilshire 5000 (4/1/96-8/31/98)

⁴ MSCI ACWIX.U.S. as of 1/1/07; MSCI EAFE ND thru 12/31/06

⁵ 50% NCREIF (lagged), 50% FTSE NAREIT Equity REITs Index as of 11/1/11; NCREIF (lagged) thru 10/31/11

⁶ 60% BC Aggregate, 20% BC US 1-3 Year Government/Credit, 10% ICE BofA ML U.S. Corp Cash Pay BB-B 1-5 Year, and 10% Blend 60% Credit Suisse Leverage Loan/40% BBg BC Short Term Gov/Corp 3/1/2019-present; 60% BC Aggregate, 20% BC US 1-3 Year Government/Credit, 10% BC 1-5 Year U.S. High Yield Cash Pay, and 10% S&P/LSTA Performing Loans index 7/1/18-2/28/2019; 50% BC Aggregate, 25% BC US 1-3 Year Government/Credit, 12.5% BC 1-5 Year U.S. High Yield Cash Pay, and 12.5% S&P/LSTA Performing Loans index 4/1/14-6/30/18; 75% BC Aggregate, 12.5% BC 1-5 Year U.S. High Yield Cash Pay, and 12.5% S&P/LSTA Performing Loans index 3/1/14-3/31/14; BC Universal 1/1/08-2/28/14; BC Aggregate thru 12/31/07

Manager Returns - Net of Fees | As of March 31, 2021

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
US Equity Composite	6.4	62.2	17.5	17.1
<i>Russell 3000 Hybrid</i>	<i>6.3</i>	<i>62.5</i>	<i>17.1</i>	<i>16.6</i>
Northern Trust Russell 3000	6.4	62.3	--	--
<i>Russell 3000</i>	<i>6.3</i>	<i>62.5</i>	--	--
NonUS Equity Composite	3.4	49.2	5.7	9.0
<i>MSCI ACWI xUS (blend)¹</i>	<i>3.6</i>	<i>50.0</i>	<i>7.0</i>	<i>10.3</i>
Northern Trust ACWI ex US	3.4	48.0	--	--
<i>MSCI ACWI ex USA Gross</i>	<i>3.6</i>	<i>50.0</i>	--	--
Fisher Investments	3.4	56.4	9.5	11.9
<i>MSCI ACWI xUS (blend)</i>	<i>3.6</i>	<i>50.0</i>	<i>7.0</i>	<i>10.3</i>
Franklin Templeton	-6.7	0.2	-10.1	-1.6
<i>MSCI ACWI xUS (blend)</i>	<i>3.6</i>	<i>50.0</i>	<i>7.0</i>	<i>10.3</i>
Covered Calls Composite	5.9	37.8	10.3	10.1
<i>CBOE S&P 500 BuyWrite USD</i>	<i>2.6</i>	<i>28.3</i>	<i>4.0</i>	<i>6.2</i>
Parametric BXM	5.8	35.9	9.0	9.2
<i>CBOE S&P 500 BuyWrite USD</i>	<i>2.6</i>	<i>28.3</i>	<i>4.0</i>	<i>6.2</i>
Parametric Delta Shift	6.6	53.1	14.9	14.0
<i>CBOE S&P 500 BuyWrite USD</i>	<i>2.6</i>	<i>28.3</i>	<i>4.0</i>	<i>6.2</i>
Van Hulzen	5.4	24.4	6.5	6.7
<i>CBOE S&P 500 BuyWrite USD</i>	<i>2.6</i>	<i>28.3</i>	<i>4.0</i>	<i>6.2</i>

¹ As of January 1, 2007, the benchmark changed from MSCI EAFE to MSCI ACWI x U.S.

Manager Returns - Net of Fees | As of March 31, 2021

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Real Estate Composite	4.5	19.4	8.7	6.5
<i>NCREIF NPI Lag</i>	<i>5.0</i>	<i>18.7</i>	<i>7.7</i>	<i>6.0</i>
RREEF America II Lag	0.8	0.6	4.7	5.7
<i>NCREIF NPI Mo 1 Qtr Lag</i>	<i>1.2</i>	<i>1.6</i>	<i>4.9</i>	<i>5.9</i>
CenterSquare	8.0	36.5	10.4	6.4
<i>FTSE NAREIT Equity REIT</i>	<i>8.9</i>	<i>37.8</i>	<i>9.5</i>	<i>5.3</i>
Fixed Income Composite	-1.9	5.2	4.7	3.8
<i>Fixed Income Composite Bench</i>	<i>-1.9</i>	<i>4.1</i>	<i>4.5</i>	<i>3.7</i>
Fixed Income Core Fixed Income Composite	-2.7	3.0	4.7	3.2
<i>Fixed Income Core Composite Bench</i>	<i>-2.6</i>	<i>1.4</i>	<i>--</i>	<i>--</i>
CS McKee	-3.5	2.3	4.7	3.1
<i>BBgBarc US Aggregate TR</i>	<i>-3.4</i>	<i>0.7</i>	<i>4.7</i>	<i>3.1</i>
Garcia Hamilton	-1.9	3.6	--	--
<i>BBgBarc US Intermediate Gov/Cred</i>	<i>-1.9</i>	<i>2.0</i>	<i>--</i>	<i>--</i>
Fixed Income Non-Core Fixed Income Composite	1.4	15.1	4.2	4.2
<i>Fixed Income Non-Core Composite Bench</i>	<i>1.1</i>	<i>15.5</i>	<i>4.0</i>	<i>4.2</i>
MacKay Shields (HY)	1.7	18.3	--	--
<i>ICE BofA ML US Corp Cash Pay BB-B 1-5Yr</i>	<i>0.9</i>	<i>18.7</i>	<i>--</i>	<i>--</i>
Federated Investment Counseling (Bank Loans)	1.1	11.6	--	--
<i>60% CredSuisLevLoan/40% BBStGovCorp</i>	<i>1.2</i>	<i>12.3</i>	<i>--</i>	<i>--</i>

EBMUDERS Total Plan Composite | As of March 31, 2021
Benchmark History
As of March 31, 2021
EBMUDERS Total Plan Composite

12/1/2019	Present	25% Russell 3000 / 20% CBOE S&P 500 BuyWrite USD / 25% MSCI ACWI ex USA Gross / 10% BBgBarc US Aggregate TR / 10% BBgBarc US Intermediate Gov/Cred / 2.5% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr / 2.5% 60% CredSuisLevLoan/40% BBStGovCorp / 2.5% FTSE NAREIT Equity REIT / 2.5% S&P/LSTA Performing Loan TR USD
3/1/2019	11/30/2019	25% Russell 3000 / 20% CBOE S&P 500 BuyWrite USD / 25% MSCI ACWI ex USA Gross / 15% BBgBarc US Aggregate TR / 5% BBgBarc US Govt/Credit 1-3 Yr. TR / 2.5% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr / 2.5% 60% CredSuisLevLoan/40% BBStGovCorp / 2.5% FTSE NAREIT Equity REIT / 2.5% S&P/LSTA Performing Loan TR USD
7/1/2018	2/28/2019	25% Russell 3000 / 20% CBOE S&P 500 BuyWrite USD / 25% MSCI ACWI ex USA Gross / 15% BBgBarc US Aggregate TR / 5% BBgBarc US Govt/Credit 1-3 Yr. TR / 2.5% BBgBarc US High Yield 1-5Yr Cash Pay 2% / 2.5% NCREIF NPI Mo 1 Qtr Lag / 2.5% FTSE NAREIT Equity REIT / 2.5% S&P/LSTA Performing Loan TR USD
4/1/2014	6/30/2018	40% Russell 3000 / 20% CBOE S&P 500 BuyWrite USD / 15% MSCI ACWI ex USA Gross / 10% BBgBarc US Aggregate TR / 5% BBgBarc US Govt/Credit 1-3 Yr. TR / 2.5% BBgBarc US High Yield 1-5Yr Cash Pay 2% / 2.5% NCREIF NPI Mo 1 Qtr Lag / 2.5% FTSE NAREIT Equity REIT / 2.5% S&P/LSTA Performing Loan TR USD
3/1/2014	3/31/2014	40% Russell 3000 / 20% CBOE S&P 500 BuyWrite USD / 15% MSCI ACWI ex USA Gross / 15% BBgBarc US Aggregate TR / 2.5% BBgBarc US High Yield 1-5Yr Cash Pay 2% / 2.5% NCREIF NPI Mo 1 Qtr Lag / 2.5% FTSE NAREIT Equity REIT / 2.5% S&P/LSTA Performing Loan TR USD
11/1/2011	2/28/2014	50% Russell 3000 / 20% MSCI ACWI ex USA Gross / 25% BBgBarc US Universal TR / 2.5% NCREIF NPI Mo 1 Qtr Lag / 2.5% FTSE NAREIT Equity REIT
1/1/2008	10/31/2011	50% Russell 3000 / 20% MSCI ACWI ex USA Gross / 25% BBgBarc US Universal TR / 5% NCREIF NPI Mo 1 Qtr Lag
1/1/2007	12/31/2007	50% Russell 3000 / 20% MSCI ACWI ex USA Gross / 25% BBgBarc US Aggregate TR / 5% NCREIF Property Index
10/1/2005	12/31/2006	50% Russell 3000 / 25% BBgBarc US Aggregate TR / 5% NCREIF NPI Mo 1 Qtr Lag / 20% MSCI EAFE
4/1/2005	9/30/2005	30% S&P 500 / 10% S&P 400 MidCap / 10% Russell 2000 / 20% MSCI EAFE / 25% BBgBarc US Aggregate TR / 5% NCREIF NPI Mo 1 Qtr Lag
9/1/1998	3/31/2005	33% S&P 500 / 10% S&P 400 MidCap / 10% Russell 2000 / 17% MSCI EAFE / 30% BBgBarc US Aggregate TR
3/31/1996	8/31/1998	30% S&P 500 / 15% Wilshire 5000 / 15% MSCI EAFE / 30% BBgBarc US Aggregate TR / 5% NCREIF Property Index / 5% FTSE T-Bill 3 Months TR

Fixed Income Composite | As of March 31, 2021
Benchmark History
As of March 31, 2021
Fixed Income Composite

12/1/2019	Present	40% BBgBarc US Aggregate TR / 10% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr / 40% BBgBarc US Intermediate Gov/Cred / 10% 60% CredSuisLevLoan/40% BBStGovCorp
3/1/2019	11/30/2019	60% BBgBarc US Aggregate TR / 10% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr / 20% BBgBarc US Govt/Credit 1-3 Yr. TR / 10% 60% CredSuisLevLoan/40% BBStGovCorp
7/1/2018	2/28/2019	60% BBgBarc US Aggregate TR / 10% S&P/LSTA Performing Loan TR USD / 20% BBgBarc US Govt/Credit 1-3 Yr. TR / 10% BBgBarc US High Yield 1-5Yr Cash Pay 2%
4/1/2014	6/30/2018	50% BBgBarc US Aggregate TR / 12.5% S&P/LSTA Performing Loan TR USD / 25% BBgBarc US Govt/Credit 1-3 Yr. TR / 12.5% BBgBarc US High Yield 1-5Yr Cash Pay 2%
3/1/2014	3/31/2014	75% BBgBarc US Aggregate TR / 12.5% BBgBarc US High Yield 1-5Yr Cash Pay 2% / 12.5% S&P/LSTA Performing Loan TR USD
1/1/2008	2/28/2014	BBgBarc US Universal TR
1/1/1976	12/31/2007	BBgBarc US Aggregate TR

Fixed Income Core Fixed Income Composite

12/1/2019	Present	50% BBgBarc US Aggregate TR / 50% BBgBarc US Intermediate Gov/Cred
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Fixed Income Non-Core Fixed Income Composite

12/1/2019	Present	50% 60% CredSuisLevLoan/40% BBStGovCorp / 50% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr
3/1/2019	11/30/2019	25% 60% CredSuisLevLoan/40% BBStGovCorp / 25% ICE BofA ML US Corp Cash Pay BB-B 1-5Yr / 50% BBgBarc US Govt/Credit 1-3 Yr. TR
3/1/2014	2/28/2019	25% S&P/LSTA Performing Loan TR USD / 25% BBgBarc US High Yield 1-5Yr Cash Pay 2% / 50% BBgBarc US Govt/Credit 1-3 Yr. TR

Summary of Cash Flows		
	First Quarter	Year-To-Date
Beginning Market Value	\$2,136,702,861	\$2,136,702,861
Net Cash Flow	\$3,816,676	\$3,816,676
Capital Appreciation	\$75,513,762	\$75,513,762
Ending Market Value	\$2,216,033,299	\$2,216,033,299

Manager Watch Screens

Performance Monitoring Summary

Portfolio	Violation Type (Window) ¹	Date of Initial Violation	Correction Action(s)	Current Status			
				Current Status	Est. Beg. Date of Current Status	Months Since Est. Beg. Date	Performance Since Est. Beg. Date ²
Parametric BXM	Qualitative	10/08/2020	Placed on Watch (Nov-23)	Watch	12/01/2020	4	8.8
CBOE S&P 500 BuyWrite							4.4
Parametric Delta Shift	Qualitative	10/08/2020	Placed on Watch (Nov-23)	Watch	12/01/2020	4	6.0
CBOE S&P 500 BuyWrite							4.4

- Parametric was placed on a qualitative watch as a firm following the October 2020 announcement that Morgan Stanley would be purchasing Eaton Vance, Parametric's parent company.
- Fisher and CS McKee were removed from watch status at the January 21st Board Meeting.

¹ Defined as: Short-Term (12 months), Medium-Term (36 months), Long-Term (60 months).

² Annualized for periods greater than 12 months.

Quantitative Compliance Monitoring per Watch Criteria

Active Management Criteria

- Active investment managers are expected to outperform their respective passive benchmarks related to both their asset class and investment style.
- Relative excess performance that falls below the red acceptable threshold stated in the Watch Criteria for six consecutive months may be a trigger for Watch status.

Passive Management Criteria

- Passive investment managers are expected to track the performance of their respective passive benchmarks related to both their asset class and their investment style.
- Tracking error is a measure of how closely a portfolio follows the index to which it is benchmarked.
- For short- and medium-term performance monitoring, a portfolio with tracking error that is above the red acceptable threshold stated in the Watch Criteria for six consecutive months may be a trigger for Watch status.
- For long-term performance monitoring, relative excess performance that falls below the red acceptable threshold stated in the Watch Criteria for six consecutive months may be a trigger for Watch status.

Quantitative Monitoring Results - Overall Status Summary

	Prior Qtr Status	Current Qtr Status
Northern Trust – R3000	Acceptable	Acceptable
Fisher Investments	Acceptable	Acceptable
Northern Trust – ACWIxUS	N/A	N/A
Parametric – BXM	Caution	Caution
Parametric – Delta Shift	Caution	Caution
Van Hulzen	Acceptable	Acceptable
CS McKee	Acceptable	Acceptable
Garcia Hamilton	Acceptable	Acceptable
Mackay Shields – Short Term HY	Acceptable	Acceptable
Federated – Bank Loans	Acceptable	Acceptable
CenterSquare	Acceptable	Acceptable

Investment Performance Criteria by Asset Class

Asset Class	Short-term (rolling 12-month periods)	Medium-term (rolling 36-month periods)	Long-term (60+ months)
Domestic Equity - Active	Fund return < benchmark return - 3.5%	Fund annualized return < benchmark annualized return - 1.75% for 6 consecutive months	VRR < 0.97 for 6 consecutive months
Domestic Equity - Passive	Tracking error > 0.30%	Tracking error > 0.25% for 6 consecutive months	Fund annualized return < benchmark annualized return - 0.40% for 6 consecutive months
International Equity - Active	Fund return < benchmark return - 4.5%	Fund annualized return < benchmark annualized return - 2.0% for 6 consecutive months	VRR < 0.97 for 6 consecutive months
Covered Calls - Active	Fund return < benchmark return - 3.5%	Fund annualized return < benchmark annualized return - 1.75% for 6 consecutive months	VRR < 0.97 for 6 consecutive months
Covered Calls - Replication	Fund return < benchmark return - 3.5%	Fund annualized return < benchmark annualized return - 1.75% for 6 consecutive months	Fund annualized return < benchmark annualized return - 0.40% for 6 consecutive months
Fixed Income - Core - Active	Fund return < benchmark return - 1.5%	Fund annualized return < benchmark annualized return - 1.0% for 6 consecutive months	VRR < 0.98 for 6 consecutive months
Fixed Income - Core - Passive	Tracking error > 0.25%	Tracking error > 0.20% for 6 consecutive months	Fund annualized return < benchmark annualized return - 0.30% for 6 consecutive months
Fixed Income - Non-Core	Fund return < benchmark return - 4.5%	Fund annualized return < benchmark annualized return - 2.0% for 6 consecutive months	VRR < 0.97 for 6 consecutive months

All criteria are on an annualized basis.

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

Manager Performance		
	QTD	1 Yr
Northern Trust Russell 3000	6.4	62.3
<i>Russell 3000</i>	6.3	62.5

Short-Term Criteria (rolling 12-month periods)

Tracking error > 0.30% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Tracking error > 0.25% for 6 consecutive months

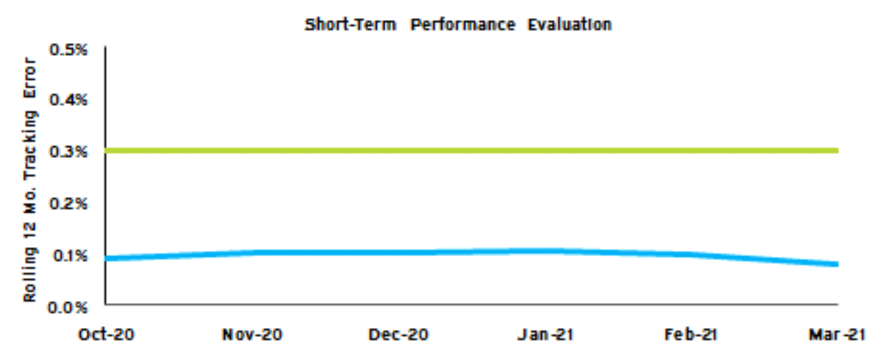
Current Status: Not Applicable

Long-Term Criteria (60+ months)

Fund annualized return < benchmark annualized return
-0.40% for 6 consecutive months

Current Status: Not Applicable

Overall Status: **Acceptable**



Fisher Investments | As of March 31, 2021

Overall Status: **Acceptable**

Manager Performance				
	QTD	1 Yr	3 Yrs	5 Yrs
Fisher Investments	3.4	56.4	9.5	11.9
MSCI ACWI xUS (blend)	3.6	50.0	7.0	10.3

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -4.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

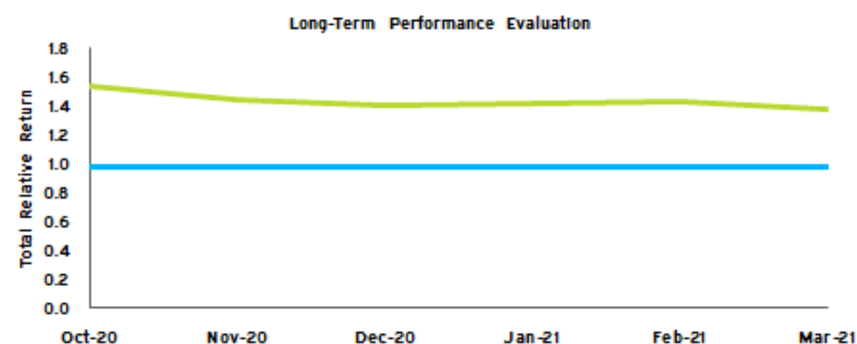
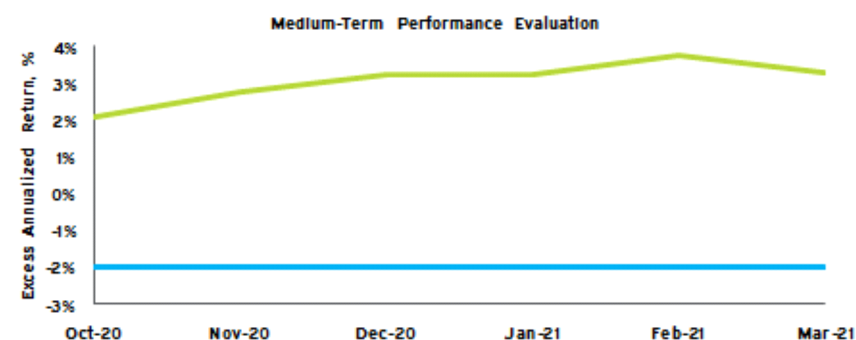
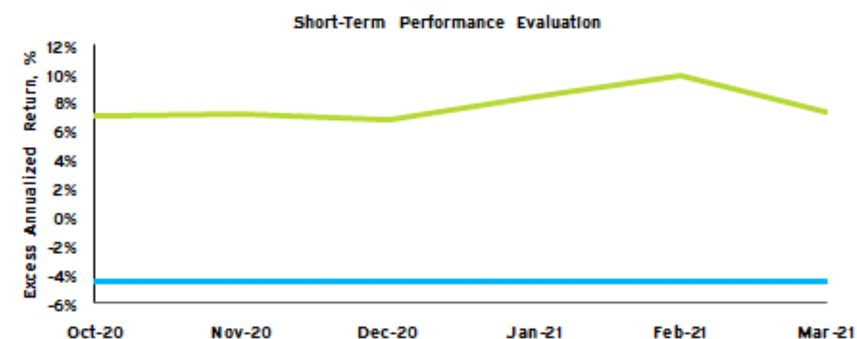
Fund annualized return < benchmark annualized return -2.0% for 6 consecutive months

Current Status: **Acceptable**

Long-Term Criteria (60+ months)

VRR < 0.97 for 6 consecutive months

Current Status: **Acceptable**



Fisher Investments is on watch for qualitative reasons.

Manager Performance				
	QTD	1 Yr	3 Yrs	5 Yrs
Parametric BXM	5.8	35.9	9.0	9.2
CBOE S&P 500 BuyWrite USD	2.6	28.3	4.0	6.2

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -3.5% for 6 consecutive months

Current Status: Acceptable

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.75% for 6 consecutive months

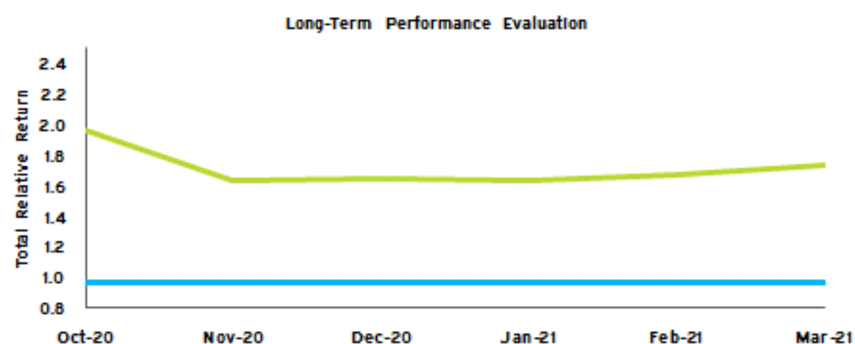
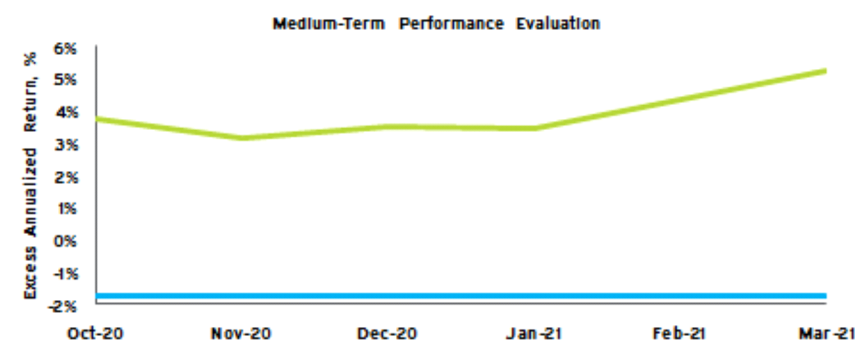
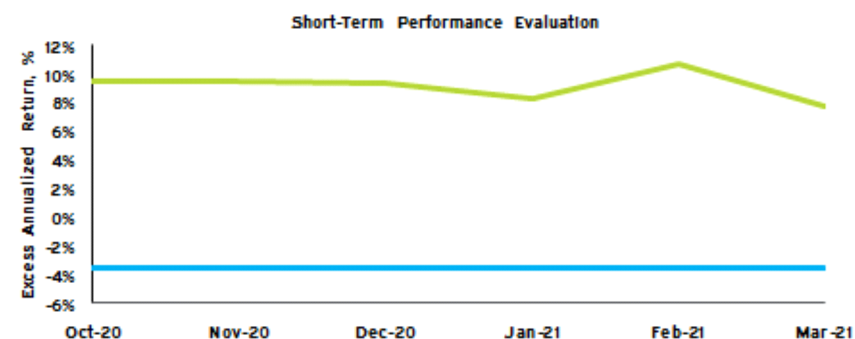
Current Status: Acceptable

Long-Term Criteria (60+ months)

VRR < 0.97 for 6 consecutive months

Current Status: Acceptable

Overall Status: Caution



Parametric Delta Shift | As of March 31, 2021

Manager Performance				
	QTD	1 Yr	3 Yrs	5 Yrs
Parametric Delta Shift	6.6	53.1	14.9	14.0
CBOE S&P 500 BuyWrite USD	2.6	28.3	4.0	6.2

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -3.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.75% for 6 consecutive months

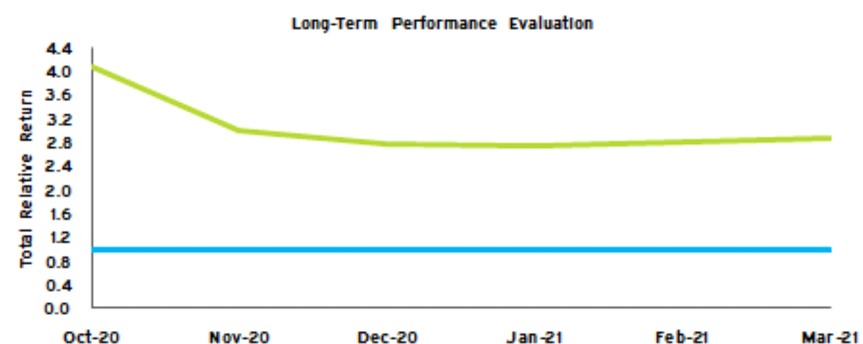
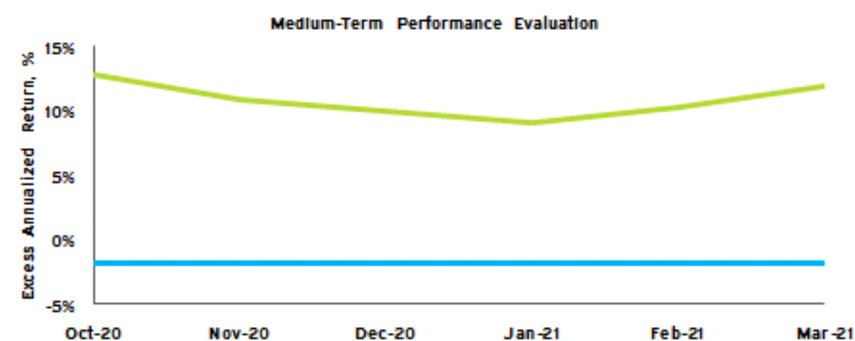
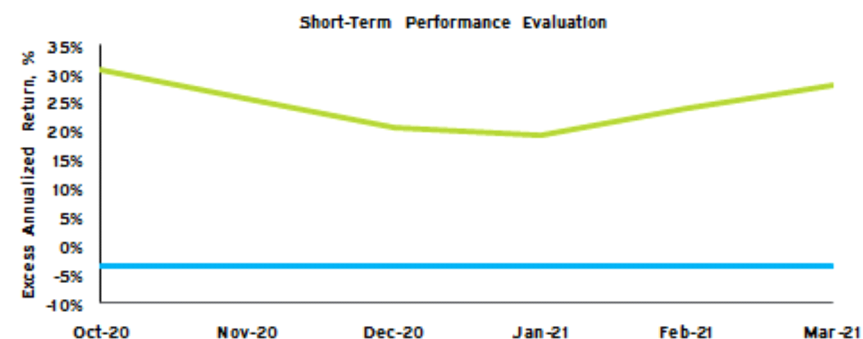
Current Status: **Acceptable**

Long-Term Criteria (60+ months)

VRR < 0.97 for 6 consecutive months

Current Status: **Acceptable**

Overall Status: **Caution**



Van Hulzen | As of March 31, 2021

Manager Performance

	QTD	1 Yr	3 Yrs	5 Yrs
Van Hulzen	5.4	24.4	6.5	6.7
CBOE S&P 500 BuyWrite USD	2.6	28.3	4.0	6.2

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -3.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.75% for 6 consecutive months

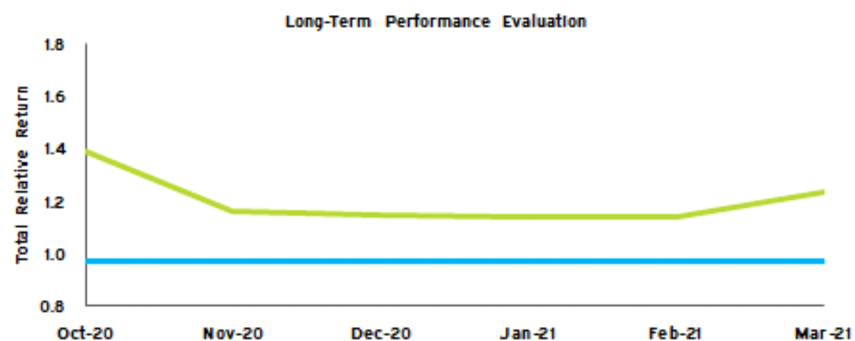
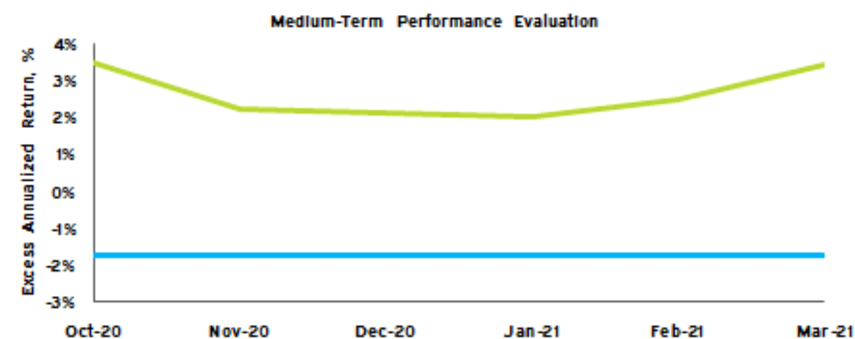
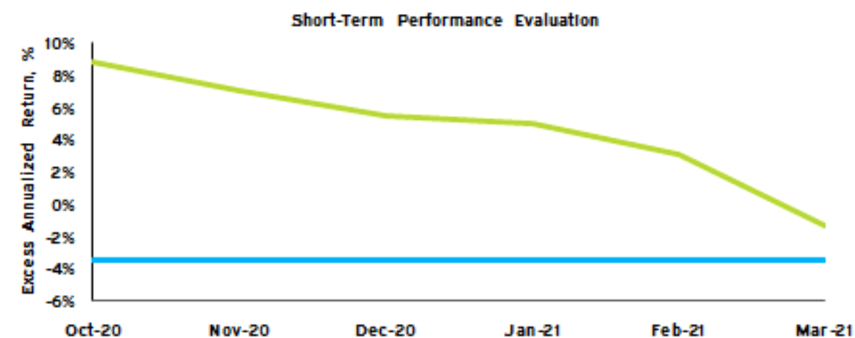
Current Status: **Acceptable**

Long-Term Criteria (60+ months)

VRR < 0.98 for 6 consecutive months

Current Status: **Acceptable**

Overall Status: **Acceptable**



Manager Performance				
	QTD	1 Yr	3 Yrs	5 Yrs
CS McKee	-3.5	2.3	4.7	3.1
BBqBarc US Aggregate TR	-3.4	0.7	4.7	3.1

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -1.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.0% for 6 consecutive months

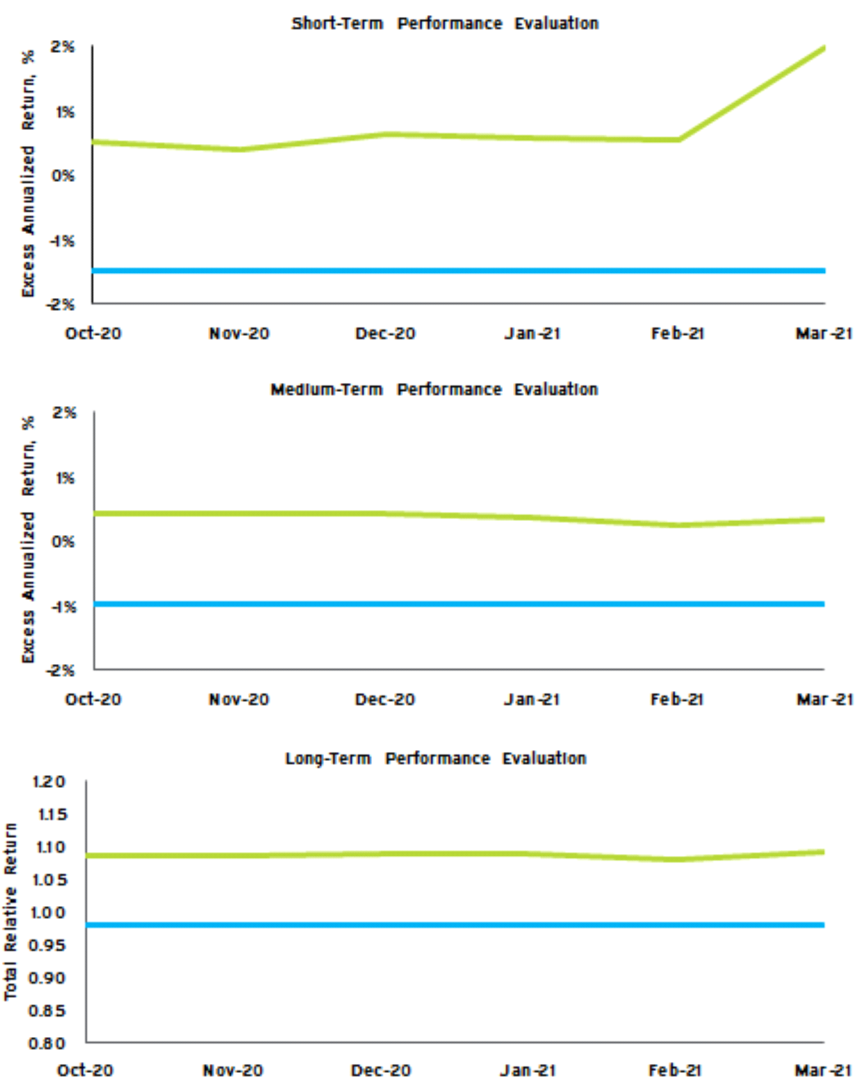
Current Status: **Acceptable**

Long-Term Criteria (60+ months)

VRR < 0.98 for 6 consecutive months

Current Status: **Acceptable**

Overall Status: **Acceptable**



Garcia Hamilton | As of March 31, 2021

Manager Performance				
	QTD	1 Yr	3 Yrs	5 Yrs
Garcia Hamilton	-1.9	3.6	--	--
<i>BBgBarc US Intermediate Gov/Cred</i>	-1.9	2.0	4.4	2.8

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -1.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.0% for 6 consecutive months

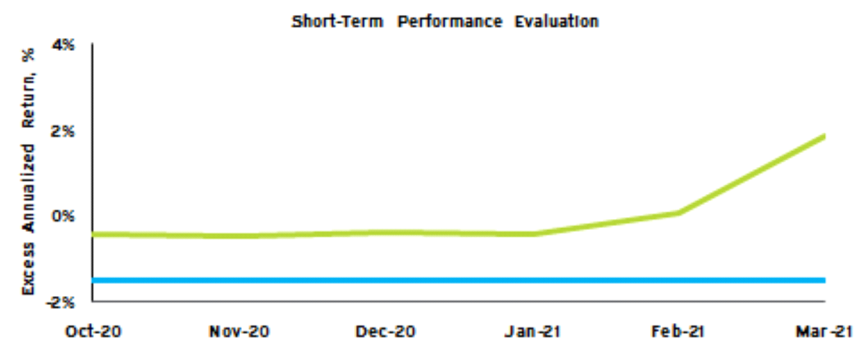
Current Status: Not Applicable

Long-Term Criteria (60+ months)

VRR < 0.98 for 6 consecutive months

Current Status: Not Applicable

Overall Status: **Acceptable**



MacKay Shields (HY) | As of March 31, 2021

Manager Performance

	QTD	1 Yr	3 Yrs	5 Yrs
MacKay Shields (HY)	1.7	18.3	--	--
ICE BofA ML US Corp Cash Pay BB-B 1-5Yr	0.9	18.7	5.3	6.3

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -4.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -2.0% for 6 consecutive months

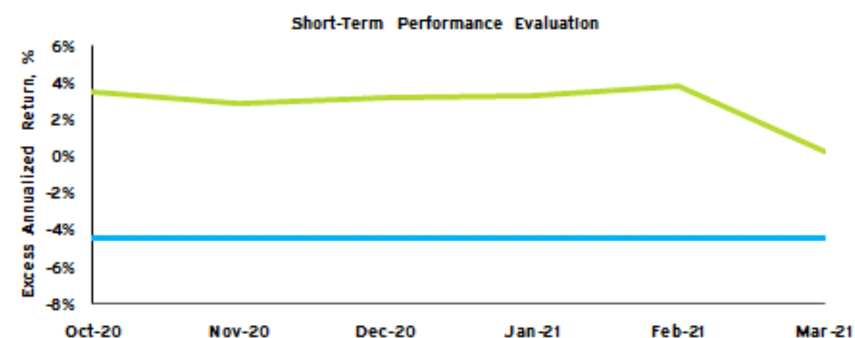
Current Status: Not Applicable

Long-Term Criteria (60+ months)

VRR < 0.97 for 6 consecutive months

Current Status: Not Applicable

Overall Status: **Acceptable**



Federated Investment Counseling (Bank Loans) | As of March 31, 2021

Manager Performance				
	QTD	1 Yr	3 Yrs	5 Yrs
Federated Investment Counseling (Bank Loans)	1.1	11.6	--	--
60% CredSuisLevLoan/40% BBStGovCorp	1.2	12.3	3.3	3.9

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -4.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -2.0% for 6 consecutive months

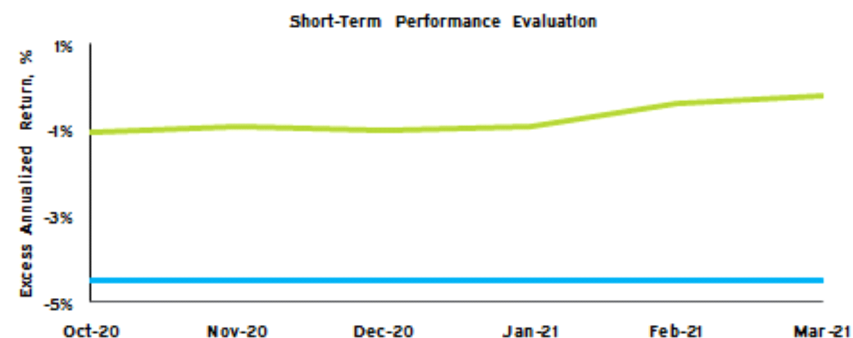
Current Status: Not Applicable

Long-Term Criteria (60+ months)

VRR < 0.97 for 6 consecutive months

Current Status: Not Applicable

Overall Status: **Acceptable**



Manager Performance				
	QTD	1 Yr	3 Yrs	5 Yrs
CenterSquare	8.0	36.5	10.4	6.4
FTSE NAREIT Equity REIT	8.9	37.8	9.5	5.3

Short-Term Criteria (rolling 12-month periods)

Fund return < benchmark return -3.5% for 6 consecutive months

Current Status: **Acceptable**

Medium-Term Criteria (rolling 36-month periods)

Fund annualized return < benchmark annualized return -1.75% for 6 consecutive months

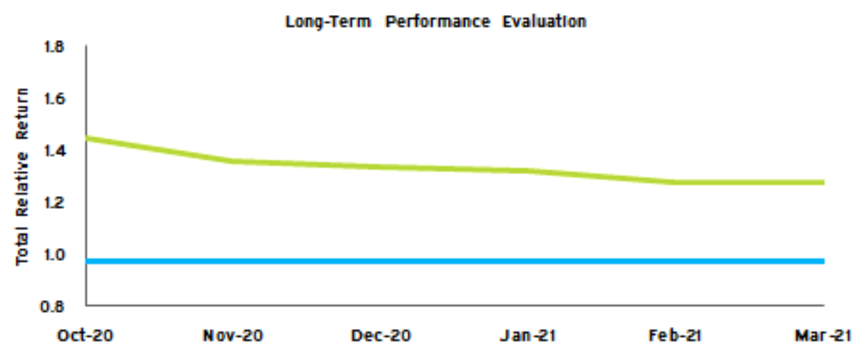
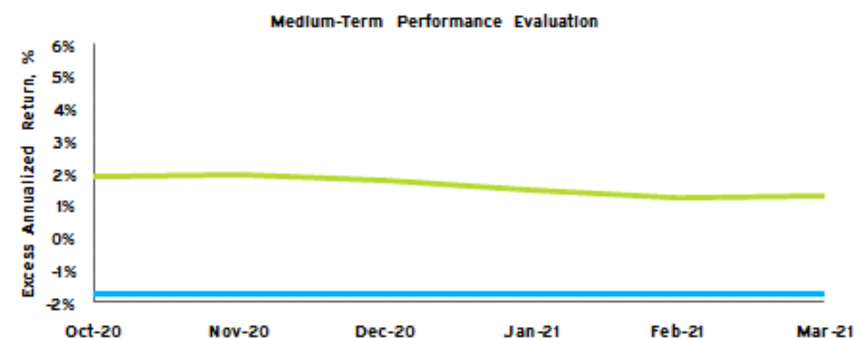
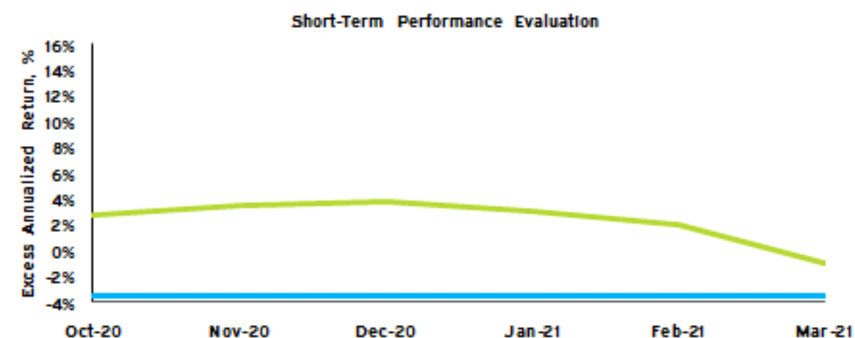
Current Status: **Acceptable**

Long-Term Criteria (60+ months)

VRR < 0.97 for 6 consecutive months

Current Status: **Acceptable**

Overall Status: **Acceptable**



Manager Compliance Certification Responses

Manager Compliance Certification Responses**Manager Compliance Certification Responses****Qualitative Compliance Monitoring per EBMUD Investment Policy**

Each of EBMUD's managers is required to respond to a questionnaire on a quarterly basis to certify their compliance with EBMUD's Investment Policy Statement and provide an update on specific qualitative indicators to be evaluated.

These indicators include:

- Compliance with the guidelines of 'Eligible Investments' for the manager's specific mandate
- Any litigation or governmental regulatory proceedings involving the firm/manager
- Changes to the manager's investment outlook, investment strategy, and/or portfolio structure
- Personnel changes to the investment team responsible for the EBMUD mandate
- Significant personnel changes at the management level of the firm
- Material client terminations
- Compliance with EBMUD's current Investment Policy Statement

The manager's responses are rated based on the potential effects these factors could pose to the performance and management of the EBMUD portfolio.

Reasons for heightened concern triggering Watch status include, but are not limited to:

- Instability of key members of the portfolio management team and organization
- Changes in investment strategy and style
- Failure to comply with investment guidelines

A summary of manager responses as of the latest quarter-end is provided below.

Manager Compliance Certification Responses
Manager Compliance Certification Responses

		Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7	Question 8
Manager	Asset Class	Compliance with 'Eligible Investments' for mandate	Good standing as Registered Investment Advisor	Litigation?	Changes in manager's investment outlook, strategy, structure	Investment team personnel changes	Management level personnel changes	Material business changes	Compliance with IPS
Northern Trust R3000	Domestic Equity – All Cap	Yes	Yes	Yes*	No	Yes*	No	No	Yes
Fisher	International Equity	Yes	Yes	No	No	No	No	No	Yes
Northern Trust ACWI ex US	International Equity	Yes	Yes	Yes*	No	Yes*	No	No	Yes
Parametric	Covered Calls	Yes	Yes	No	No	No	Yes*	No	Yes
Van Hulzen	Covered Calls	Yes	Yes	No	No	No	No	No	Yes
CS McKee	Fixed Income – Core	Yes	Yes	No	No	No	No	No	Yes
Garcia Hamilton	Fixed Income – Core	Yes	Yes	No	No	Yes	Yes	No	Yes
Mackay Shields	Fixed Income – Short-term HY	Yes	Yes	Yes	No	No	No	No	Yes
Federated	Fixed Income – Bank Loans	Yes	Yes	No	No	No	No	No	Yes
RREEF	Real Estate	Yes	Yes	No	No	No	No	No	Yes
CenterSquare	Real Estate	Yes	Yes	No	No	No	No	No	Yes

■ no concern
 ■ low concern
 ■ high concern (Watch status)

* see detailed manager response below

Manager Compliance Certification Responses**Northern Trust – R3000 and ACWI ex US****Question 3: Is there any litigation or governmental regulatory proceedings involving your Firm, the Manager?**

- Yes; As one of the world's largest asset managers, Northern Trust Investments, Inc. (NTI) is occasionally named as a defendant in asset management-related litigation. NTI is not currently party to any litigation that has had (or will have) a material effect on its ability to perform services for its clients. At this time, there are no significant pending cases. As one of the world's leading providers of asset servicing, Northern Trust and its subsidiaries occasionally receive requests for information from government and regulatory agencies. Northern Trust frequently does not know if such requests are related to a formal government or regulatory investigations or, assuming an investigation is underway, whether Northern Trust is a target of such investigation or simply thought to be in possession of information pertinent to such investigation. Northern Trust is not currently involved in any government or regulatory investigation or proceeding that would have a material impact on its ability to provide advisory services to its clients.

Question 5: Have there been any personnel changes to the investment team responsible for the EBMUD portfolio during the quarter?

- Yes; There were two departures to the Global Index Equity Team. Basit Amin (PM) and Masahiro Aikawa (PM) left the firm.

Manager Compliance Certification Responses

Garcia Hamilton

Question 5: Have there been any personnel changes to the investment team responsible for the EBMUD portfolio during the quarter?

- Yvette Dueñas was promoted from Investment Analyst to Portfolio Manager in January 2021.

Question 6: Have there been any significant personnel changes at the management level of the Firm during the quarter?

- Yvette Dueñas was named a new Firm Partner in January 2021.

Manager Compliance Certification Responses**Required California AB 2833 Disclosure – RREEF AMERICA II**

Effective January 1, 2017 RREEF America REIT II, Inc. (“alternative investment vehicle”) is required to provide to the East Bay Municipal Utility District (“public investment fund” or “District”) specific information at least annually pursuant to Section 7514.7 of the California Government Code (“Section 7514.7”).

1. The fees and expenses that the public investment fund pays directly to the alternative investment vehicle, the fund manager, or related parties.

EBMUD asset management fees – January 2018 – December 2018 = \$359,713.64

2. The public investment fund’s pro rata share of fees and expenses not included in paragraph (1) that are paid from the alternative investment vehicle to the fund manager or related parties.

\$0.00

3. The public investment fund’s pro rata share of carried interest distributed to the fund manager or related parties.

N/A

4. The public investment fund’s pro rata share of aggregate fees and expenses paid by all of the portfolio companies held within the alternative investment vehicle to the fund manager or related parties.

EBMUD asset management fees – January 2018 – December 2018 = \$359,713.64

5. Any additional information described in subdivision (b) of Section 6254.26.

N/A

6. The gross and net rate of return of each alternative investment vehicle since inception.

Gross = 6.46% Net = 5.65% (as of December 31, 2018)

7. Any other information required to be collected pursuant to Section 7514.7.

N/A

Source: Deutsche Asset Management

Appendix

Glossary of Terms

Alpha: The premium an investment earns above a set standard. This is usually measured in terms of a common index (i.e., how the stock performs independent of the market). An Alpha is usually generated by regressing a security's excess return on the S&P 500 excess return.

Annualized Performance: The annual rate of return that when compounded t times generates the same t -period holding return as actually occurred from period 1 to period t .

Batting Average: Percentage of periods a portfolio outperforms a given index.

Beta: The measure of an asset's risk in relation to the Market (for example, the S&P 500) or to an alternative benchmark or factors. Roughly speaking, a security with a Beta of 1.5 will have moved, on average, 1.5 times the market return.

Bottom-up: A management style that de-emphasizes the significance of economic and market cycles, focusing instead on the analysis of individual stocks.

Dividend Discount Model: A method to value the common stock of a company that is based on the present value of the expected future dividends.

Growth Stocks: Common stock of a company that has an opportunity to invest money and earn more than the opportunity cost of capital.

Information Ratio: The ratio of annualized expected residual return to residual risk. A central measurement for active management, value added is proportional to the square of the information ratio.

R-Squared: Square of the correlation coefficient. The proportion of the variability in one series that can be explained by the variability of one or more other series a regression model. A measure of the quality of fit. 100% R-square means perfect predictability.

Standard Deviation: The square root of the variance. A measure of dispersion of a set of data from its mean.

Sharpe Ratio: A measure of a portfolio's excess return relative to the total variability of the portfolio.

Style Analysis: A returns-based analysis using a multi-factor attribution model. The model calculates a product's average exposure to particular investment styles over time (i.e., the product's normal style benchmark).

Top-down: Investment style that begins with an assessment of the overall economic environment and makes a general asset allocation decision regarding various sectors of the financial markets and various industries.

Tracking Error: The standard deviation of the difference between the performance of a portfolio and an appropriate benchmark.

Turnover: For mutual funds, a measure of trading activity during the previous year, expressed as a percentage of the average total assets of the fund. A turnover rate of 25% means that the value of trades represented one-fourth of the assets of the fund.

Value Stocks: Stocks with low price/book ratios or price/earnings ratios. Historically, value stocks have enjoyed higher average returns than growth stocks (stocks with high price/book or P/E ratios) in a variety of countries.

Definition of Benchmarks

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

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

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

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

BC US Government: includes treasuries (i.e., public obligations of the U.S. Treasury that have remaining maturities of more than one year) and agencies (i.e., publicly issued debt of U.S. Government agencies, quasi-federal corporations, and corporate or foreign debt guaranteed by the U.S. Government).

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

Citigroup 3-Month Treasury Bills (T-bills): tracks the performance of U.S. Treasury bills with 3-month maturity.

MSCI ACWI x US ND: comprises both developed and emerging markets less the United States. As of August 2008, the index consisted of 23 countries classified as developed markets and 25 classified as emerging markets. This series approximates the minimum possible dividend reinvestment. The dividend is reinvested after deduction of withholding tax, applying the rate to non-resident individuals who do not benefit from double taxation treaties. MSCI Barra uses withholding tax rates applicable to Luxembourg holding companies, as Luxembourg applies the highest rates.

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

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

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

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

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

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

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

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

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

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

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

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

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

Value Relative Ratio (VRR): Performance metric used to evaluate long-term manager performance relative to a benchmark and to highlight compounded over/under performance data over a certain time frame. VRR is calculated by the growth of a dollar invested with the manager divided by the growth of a dollar invested in the benchmark for the same time period.

Risk Metric Description – Rationale for Selection and Calculation Methodology

US Equity Markets

Metric: P/E ratio = Price / “Normalized” earnings for the S&P 500 Index

To represent the price of US equity markets, we have chosen the S&P 500 index. This index has the longest published history of price, is well known, and also has reliable, long-term, published quarterly earnings. The price=P of the P/E ratio is the current price of the market index (the average daily price of the most recent full month for the S&P 500 index). Equity markets are very volatile. Prices fluctuate significantly during normal times and extremely during periods of market stress or euphoria. Therefore, developing a measure of earnings power (E) which is stable is vitally important, if the measure is to provide insight. While equity prices can and do double, or get cut in half, real earnings power does not change nearly as much. Therefore, we have selected a well known measure of real, stable earnings power developed by Yale Professor Robert Shiller known as the Shiller E-10. The calculation of E-10 is simply the average real annual earnings over the past 10 years. Over 10 years, the earnings shenanigans and boom and bust levels of earnings tend to even out (and often times get restated). Therefore, this earnings statistic gives a reasonably stable, slow-to-change estimate of average real earnings power for the index. Professor Shiller’s data and calculation of the E-10 are available on his website at <http://www.econ.yale.edu/~shiller/data.htm>. We have used his data as the base for our calculations. Details of the theoretical justification behind the measure can be found in his book *Irrational Exuberance* [Princeton University Press 2000, Broadway Books 2001, 2nd ed., 2005].

Developed Equity Markets Excluding the US

Metric: P/E ratio = Price / “Normalized” earnings for the MSCI EAFE Index

To represent the price of non-US developed equity markets, we have chosen the MSCI EAFE index. This index has the longest published history of price for non-US developed equities. The price=P of the P/E ratio is the current price of the market index (the average daily price of the most recent full month for the MSCI EAFE index). The price level of this index is available starting in December 1969. Again, for the reasons described above, we elected to use the Shiller E-10 as our measure of earnings (E). Since 12/1972, a monthly price earnings ratio is available from MSCI. Using this quoted ratio, we have backed out the implied trailing-twelve month earnings of the EAFE index for each month from 12/1972 to the present. These annualized earnings are then inflation adjusted using CPI-U to represent real earnings in US dollar terms for each time period. The Shiller E-10 for the EAFE index (10 year average real earnings) is calculated in the same manner as detailed above.

However, we do not believe that the pricing and earnings history of the EAFE markets are long enough to be a reliable representation of pricing history for developed market equities outside of the US. Therefore, in constructing the Long-Term Average Historical P/E for developed ex-US equities for comparison purposes, we have elected to use the US equity market as a developed market proxy, from 1881 to 1982. This lowers the Long-Term Average Historical P/E considerably. We believe this methodology provides a more realistic historical comparison for a market with a relatively short history.

Emerging Market Equity Markets

Metric: Ratio of Emerging Market P/E Ratio to Developed Market P/E Ratio

To represent the Emerging Markets P/E Ratio, we have chosen the MSCI Emerging Market Free Index, which has P/E data back to January 1995 on Bloomberg. To represent the Developed Markets PE Ratio, we have chosen the MSCI World Index, which also has data back to January 1995 on Bloomberg. Although there are issues with published, single time period P/E ratios, in which the denominator effect can cause large movements, we feel that the information contained in such movements will alert investors to market activity that they will want to interpret.

US Private Equity Markets

Metrics: S&P LCD Average EBITDA Multiples Paid in LBOs and US Quarterly Deal Volume

The Average Purchase Price to EBITDA multiples paid in LBOs is published quarterly by S&P in their LCD study. This is the total price paid (both equity and debt) over the trailing-twelve month EBITDA (earnings before interest, taxes, depreciation and amortization) as calculated by S&P LCD. This is the relevant, high-level pricing metric that private equity managers use in assessing deals. Data is published monthly.

US quarterly deal volume for private equity is the total deal volume in \$ billions (both equity and debt) reported in the quarter by Thomson Reuters Buyouts. This metric gives a measure of the level of activity in the market. Data is published quarterly.

US Private Real Estate Markets

Metrics: US Cap Rates, Cap Rate Spreads, and Transactions as a % of Market Value

Real estate cap rates are a measure of the price paid in the market to acquire properties versus their annualized income generation before financing costs (NOI=net operating income). The data, published by NCREIF, describes completed and leased properties (core) on an unleveraged

basis. We chose to use current value cap rates. These are capitalization rates from properties that were revalued during the quarter. This data relies on estimates of value and therefore tends to be lagging (estimated prices are slower to rise and slower to fall than transaction prices). The data is published quarterly.

Spreads between the cap rate (described above) and the 10-year nominal Treasury yield, indicate a measure of the cost of properties versus a current measure of the cost of financing.

Transactions as a % of Market Value Trailing-Four Quarters is a measure of property turnover activity in the NCREIF Universe. This quarterly metric is a measure of activity in the market.

Credit Markets Fixed Income

Metric: Spreads

The absolute level of spreads over treasuries and spread trends (widening / narrowing) are good indicators of credit risk in the fixed income markets. Spreads incorporate estimates of future default, but can also be driven by technical dislocations in the fixed income markets. Abnormally narrow spreads (relative to historical levels) indicate higher levels of valuation risk, wide spreads indicate lower levels of valuation risk and / or elevated default fears. Investment grade bond spreads are represented by the Barclays Capital US Corporate Investment Grade Index Intermediate Component. The high yield corporate bond spreads are represented by the Barclays Capital US Corporate High Yield Index.

Measure of Equity Market Fear / Uncertainty

Metric: VIX – Measure of implied option volatility for US equity markets

The VIX is a key measure of near-term volatility conveyed by implied volatility of S&P 500 index option prices. VIX increases with uncertainty and fear. Stocks and the VIX are negatively correlated. Volatility tends to spike when equity markets fall.

Measure of Monetary Policy

Metric: Yield Curve Slope

We calculate the yield curve slope as the 10 year treasury yield minus the 1 year treasury yield. When the yield curve slope is zero or negative, this is a signal to pay attention. A negative yield curve slope signals lower rates in the future, caused by a contraction in economic activity. Recessions are typically preceded by an inverted (negatively sloped) yield curve. A very steep yield curve (2 or greater) indicates a large difference between shorter-term interest rates (the 1 year rate) and longer-term rates (the 10 year rate). This can signal expansion in economic activity in the future, or merely higher future interest rates.

Measures of US Inflation Expectations

Metrics: Breakeven Inflation and Inflation Adjusted Commodity Prices

Inflation is a very important indicator impacting all assets and financial instruments. Breakeven inflation is calculated as the 10 year nominal treasury yield minus the 10 year real yield on US TIPS (treasury inflation protected securities). Abnormally low long-term inflation expectations are indicative of deflationary fears. A rapid rise in breakeven inflation indicates an acceleration in inflationary expectations as market participants sell nominal treasuries and buy TIPS. If breakeven inflation continues to rise quarter over quarter, this is a signal of inflationary worries rising, which may cause Fed action and / or dollar decline.

Commodity price movement (above the rate of inflation) is an indication of anticipated inflation caused by real global economic activity putting pressure on resource prices. We calculate this metric by adjusted in the Dow Jones UBS Commodity Index (formerly Dow Jones AIG Commodity Index) by US CPI-U. While rising commodity prices will not necessarily translate to higher US inflation, higher US inflation will likely show up in higher commodity prices, particularly if world economic activity is robust.

These two measures of anticipated inflation can, and often are, conflicting.

Measures of US Treasury Bond Interest Rate Risk

Metrics: 10-Year Treasury Forward-Looking Real Yield and 10-Year Treasury Duration

The expected annualized real yield of the 10 year US Treasury Bond is a measure of valuation risk for US Treasuries. A low real yield means investors will accept a low rate of expected return for the certainty of receiving their nominal cash flows. Meketa estimates the expected annualized real yield by subtracting an estimate of expected 10 year inflation (produced by the Survey of Professional Forecasters as collected by the Federal Reserve Bank of Philadelphia), from the 10 year Treasury constant maturity interest rate.

Duration for the 10-Year Treasury Bond is calculated based on the current yield and a price of 100. This is a measure of expected percentage movements in the price of the bond based on small movements in percentage yield. We make no attempt to account for convexity.

Definition of “Extreme” Metric Readings

A metric reading is defined as “extreme” if the metric reading is in the top or bottom decile of its historical readings. These “extreme” reading should cause the reader to pay attention. These metrics have reverted toward their mean values in the past.

RISK METRICS DESCRIPTION – Meketa Market Sentiment Indicator

What is the Meketa Market Sentiment Indicator (MMSI)?

The MMSI 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 MMSI takes into account the momentum¹ (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 (MMSI) graph?

Simply put, the MMSI 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 MMSI 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 MMSI. The degree of the signal above or below the neutral reading is an indication the signal’s current strength.

How is the Meketa Market Sentiment Indicator (MMSI) Constructed?

The MMSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:

¹ Momentum is defined as the persistence of relative performance. There is a significant amount of academic evidence indicating that positive momentum (e.g., strong performing stocks over the recent past continue to post strong performance into the near future) exists over near-to-intermediate holding periods. See, for example, “Understanding Momentum,” *Financial Analysts Journal*, Scowcroft, Sefton, March, 2005.

1. Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months)
2. Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration U.S. Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight). The scale of this measure is adjusted to match that of the stock return momentum measure.

The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure. The color reading on the graph is determined as follows:

1. If both stock return momentum and bond spread momentum are positive = GREEN (positive)
2. If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive)
3. If both stock return momentum and bond spread momentum are negative = RED (negative)

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

There is strong evidence that time series momentum is significant and persistent.¹ 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 MMSI 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.

¹ "Time Series Momentum" Moskowitz, Ooi, Pedersen, August 2010 <http://pages.stern.nyu.edu/~lpederse/papers/TimeSeriesMomentum.pdf>

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

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

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

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

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

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 20, 2021

MEMO TO: Members of the Retirement Board

FROM: Laura Acosta, Human Resources Manager 

SUBJECT: Details of Retiree COLA Banks

At the March 18, 2021 Retirement Board meeting, when the 2021 Cost of Living Adjustment was authorized, Retirement Board member Frank Mellon requested information on the balances in Retirement System payee COLA banks. The 2021 COLA is 1.7% to reach the 3% maximum COLA payment, 1.3% would be needed from a retiree's COLA bank.

The table below shows the range of COLA bank balances based on the year of a retirement. Those payees with a retirement date prior to 2018 (1664 of 1,854) have 1.3% or more available in their COLA bank.

COLA Bank Balances from 2020 COLA Output files

# of Payees in Group	Calendar Year of Retirement	Value in COLA Bank
43	2020	< .20
45	2019	.20 - .68
102	2018	.83 - 1.28
1640	2017 – 1982	1.30 - 1.40
24	1966 - 1981	1.70 - 11.00

LA:ls

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 20, 2021

MEMO TO: Members of the Retirement Board

THROUGH: Laura Acosta, Manager of Human Resources

FROM: Lisa Sorani, Manager of Employee Services *Lisa Sorani*

SUBJECT: Review Update to Retirement Board Rule C-22 Minimum Required Distributions

Staff reported to the Retirement Board at the January 21, 2021 meeting that the Setting Every Community Up for Retirement Enhancement Act of 2019 (SECURE Act) amends the Internal Revenue Code Section 401(a)(9)(C) to change the age for minimum required distributions from 70 ½ to 72. This information is noted in the Retirement Ordinance and staff are in the process of updating the Retirement Ordinance with this update.

Retirement Board Rule C-22 outlines the process District staff will follow to find and notice members who are nearing the deadline for beginning the minimum required distributions. The rule references the age of 70 ½ and needs to be updated to age 72.

A redlined version of Board Rule C-22 showing the changes is attached. Please provide any questions or feedback on this update to staff today. The rule update will be brought back as an action item at the July 15, 2021 Retirement Board Meeting.

LA:ls

RULE NO. C-22

Minimum Required Distributions

Adopted by motion 5/20/10

Resolution No. 6712

Updated by motion

Resolution No. xxxx

In order to comply with Federal Minimum Required Distribution (MRD) requirements, Members of the EBMUDERS must begin receiving a retirement benefit or take a refund of their retirement contributions by the required beginning date which is April 1 of the calendar year following the year in which they attain age ~~70½~~ **72** unless they are still employed by the District, **or a reciprocal agency.**

Annually, the EBMUDERS will verify which Members are actively employed or separated and who will attain the age of ~~70½~~ **72** in the following year.

Separated Members will be notified in writing that they will be subject to MRD and will be given two options:

1. Retire no later than April 1 the year following the year in which they attain age ~~70½~~ **72**, or
2. Receive a full refund of their contributions and interest no later than April 1 of the calendar year following the year in which the Member attains the age of ~~70½~~ **72** and forfeit future benefits from Plan.

Active Members who are employed by the District beyond ~~70½~~ **72** years of age will be subject to MRD in the year they leave employment with the District, when they must choose one of the two options listed above. These Members will be notified of the MRD requirements at the time of separation from the District.

This rule will follow guideline of the Internal Revenue Code Section 401(a)(9)(C), as amended if it is in conflict with the timeframes noted in this rule C-22

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 20, 2021

MEMO TO: Members of the Retirement Board

FROM: Sophia D. Skoda, Director of Finance 

SUBJECT: Private Placements Update

As part of the 2018 Asset Reallocation, several holdings of the Retirement System were identified as private placement securities. Because these securities are unregistered, the transition manager was unable to sell them as part of the transition. At its November 15, 2018 meeting, the Retirement Board elected to hold those securities until a liquidity event, such as an Initial Public Offering (IPO). Details on the individual holdings and current status follow.

Airbnb, Inc.

The private placement securities held by the Retirement include shares in Airbnb, Inc. After initially considering a direct listing on an exchange, Airbnb launched its IPO on December 10, 2020. Airbnb now trades on the Nasdaq stock exchange. Staff is working with Northern Trust to sell the Retirement System's shares upon the expiration of the IPO-induced lockout period, expected on May 17, 2021. At the time of the 2018 Asset Reallocation, T. Rowe Price listed 1,619 shares at a value of \$171,574 (\$105.98 per share) for the Retirement System. Current records show a larger number of shares (6,110), most likely due to additional activity, such as splits, conducted between the transition period and the IPO. We expect discrepancies in share totals to be resolved before the sale can occur. Airbnb opened its IPO at \$68 per share and, after a large increase on the first day of trading, has since traded between \$121.50 and \$219.94. Because the share number is still uncertain there is not currently an estimated total value of these assets. We will continue using Northern Trust's transition management services for the sale of former private placements.

Other Holdings

Since the last update to the Retirement Board in May 2020, and considering the effects of the pandemic on the global economy, companies have updated their IPO plans. Below is an update on the other private placement holdings of the Retirement System based on recent news reports. Staff will continue to monitor their status and work with Northern Trust, as necessary, to sell shares when possible.

- Didi Chuxing Technology Co. reportedly filed for an IPO in April 2021 with plans for a public listing in the summer of 2021. The T. Rowe Price listed value of the Retirement System shares at transition was \$73,804 for 2,691 shares (\$27.43 per share).
- Magic Leap's founder resigned in 2020 and the company is looking at a pivot from consumer goods to enterprise goods. There has been no recent report of plans for an IPO. The T. Rowe Price listed value of the Retirement System shares at transition was \$ 174,020 for 6,990 shares (\$24.90 per share).

- WeWork Companies Inc. announced earlier this year that it will merge with BowX Acquisition Company (a special purpose acquisition company or SPAC), with the transaction expected to close in the third quarter of this year. The merger currently values the company at an initial enterprise valuation of \$9 billion; , its valuation in 2019 prior to its failed IPO attempt was \$47 billion. The T. Rowe Price listed value of the Retirement System shares at transition was \$63,181 for 1,921 shares (\$32.89 per share).

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