

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

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



AUDIT COMMITTEE MEMBERS

John C. Speakman
Chairperson

R. Steve Wilkinson
Member

Kevin Traylor
Member

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

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

Wednesday, February 24, 2021

9:00 am

**Tele-Conference Board Meeting
via Zoom Webinar**

OBSERVE

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

PUBLIC COMMENTS

There are three ways to submit public comments.

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

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR AUDIT COMMITTEE MEETING
FEBRUARY 24, 2021**

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

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

--- ORDER OF BUSINESS ---

- 1. Subject: Oakland Police and Fire Retirement System (“PFRS”) Audit Committee Meeting Minutes**
From: Staff of the PFRS Board
Recommendation: **APPROVE** January 27, 2021 Audit Committee Meeting Minutes.
- 2. Subject: Administrative Expenses Report**
From: Staff of the PFRS Board
Recommendation: **ACCEPT** an informational report regarding PFRS administrative expenses as of December 31, 2021.
- 3. Subject: Report of Findings Regarding PFRS Actuarial Funding Date of July 1, 2026**
From: PFRS Ad Hoc Committee for July 1, 2026 Actuarial Funding Date
Recommendation: **ACCEPT** Informational Report regarding PFRS Actuarial Funding Date of July 1, 2026.
- 4. Subject: PFRS 2-Year Administrative Budget for Fiscal Years 2021/2022 and 2022/2023**
From: Staff of the PFRS Board
Recommendation: **RECOMMEND BOARD APPROVAL** of the PFRS 2-Year Administrative Budget for Fiscal Years 2021/2022 and 2022/2023.
- 5. REVIEW OF PENDING AUDIT COMMITTEE MEETING AGENDA ITEMS**
- 6. OPEN FORUM**
- 7. FUTURE SCHEDULING**
- 8. ADJOURNMENT**

AN AUDIT/OPERATIONS COMMITTEE REGULAR MEETING of the Oakland Police and Fire Retirement System (“PFRS”) was held on Wednesday, January 27, 2021 via Zoom Tele-Conference.

Committee Members Present:

- John C. Speakman Chairperson
- Kevin R. Traylor Member
- R. Steven Wilkinson Member

Additional Attendees:

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

The Meeting was called to order at 9:32 a.m. PST

1. **PFRS Audit Committee Meeting Minutes** – Member Traylor made a motion to approve the December 10, 2020 Audit Committee meeting minutes, second by Member Wilkinson. Motion passed.

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

2. **Administrative Expenses Report** – Investment Officer Teir Jenkins presented an informational report of the PFRS administrative expenditures as of November 30, 2020.

MOTION: Member Traylor made a motion to accept the administrative expenses report and forward to the Full Board for approval, second by Member Wilkinson. Motion passed.

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

3. **Annual Report for Fiscal Year Ending June 30, 2020** – PFRS Staff Member Jenkins presented the Draft Version of the PFRS Annual Report for Fiscal Year ending June 30, 2020. Mr. Jenkins and Mr. Jones thanked retirement staff, contributing partners, and members for their hard work putting the report together. Following printing and publication, Mr. Jones welcomed feedback for suggested enhancements or improvements to next year’s report.

4. **MOTION:** Member Wilkinson made a motion to approve the draft version and forward to the Board for approval of printing and publication of the Annual Report of the Oakland Police and Fire Retirement System for the fiscal Year Ending June 30, 2020, second by Member Traylor. Motion passed.

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

5. **Review of Pending Audit Committee Meeting Agenda Items** – David Jones provided a brief update on two pending items: (1) Ad Hoc Committee met January 25, 2021 and will provide a report to present findings at the February 2021 meeting; and (2) The 2006 Management Audit remains pending due to COVID-19 restrictions in place and the need for staff to be on-site to review records.

6. **Open Forum** – No Report

7. **Future Scheduling** – The next Regular Audit Committee Meeting is tentatively scheduled for February 24, 2021 at 9:00 a.m. PST.

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

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

The meeting adjourned at 9:43 a.m. PST

JOHN C. SPEAKMAN, COMMITTEE CHAIRMAN

DATE

DRAFT

Table 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Administrative Budget Spent to Date (Preliminary)

As of December 31, 2020

	Approved Budget		December 2020		FYTD		Remaining		Percent Remaining	
Internal Administrative Costs										
PFRS Staff Salaries	\$	1,200,000	\$	84,665	\$	559,186	\$	640,814		53.4%
Board Travel Expenditures		52,500		-		-		52,500		100.0%
Staff Training		20,000		-		110		19,890		99.5%
Staff Training - Tuition Reimbursement		7,500		-		-		7,500		100.0%
Annual Report & Duplicating Services		4,000		-		-		4,000		100.0%
Board Hospitality		3,600		-		-		3,600		100.0%
Payroll Processing Fees		40,000		-		-		40,000		100.0%
Miscellaneous Expenditures		40,000		1,404		6,748		33,252		83.1%
Internal Service Fees (ISF)		88,000		-		52,005		35,995		40.9%
Contract Services Contingency		50,000		-		1,200		48,800		97.6%
Internal Administrative Costs Subtotal :	\$	1,505,600	\$	86,069	\$	619,249	\$	886,351		58.9%
Actuary and Accounting Services										
Audit	\$	45,000	\$	2,731	\$	45,000	\$	-		0.0%
Actuary		46,500		6,165		6,165		40,335		86.7%
Actuary and Accounting Subtotal:	\$	91,500	\$	8,896	\$	51,165	\$	40,335		44.1%
Legal Services										
City Attorney Salaries	\$	188,000	\$	14,847	\$	90,945	\$	97,055		51.6%
Legal Contingency		150,000		-		-		150,000		100.0%
Legal Services Subtotal:	\$	338,000	\$	14,847	\$	90,945	\$	247,055		73.1%
Investment Services										
Money Manager Fees	\$	1,353,000	\$	-	\$	246,079	\$	1,106,921		81.8%
Custodial Fee		124,000		29,125		58,250		65,750		53.0%
Investment Consultant		100,000		25,000		50,000		50,000		50.0%
Investment Subtotal:	\$	1,577,000	\$	54,125	\$	354,329	\$	1,222,671		77.5%
Total Operating Budget	\$	3,512,100	\$	163,936	\$	1,115,689	\$	2,396,411		68.23%

Table 2

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Cash in Treasury (Fund 7100) - Preliminary

As of December 31, 2020

	December 2020
Beginning Cash as of 11/30/2020	\$ 6,136,562
Additions:	
City Pension Contribution - December	\$ 3,637,333
Investment Draw	\$ 1,000,000
Misc. Receipts	125
Total Additions:	\$ 4,637,459
Deductions:	
Pension Payment (November Pension Paid on 12/1/2020)	(4,407,505)
Expenditures Paid	(219,018)
Total Deductions	\$ (4,626,523)
 Ending Cash Balance as of 12/31/2020*	 \$ 6,147,498

* On 1/1/2021, December pension payment of appx \$4,400,000 will be made leaving a cash balance of \$1,747,000

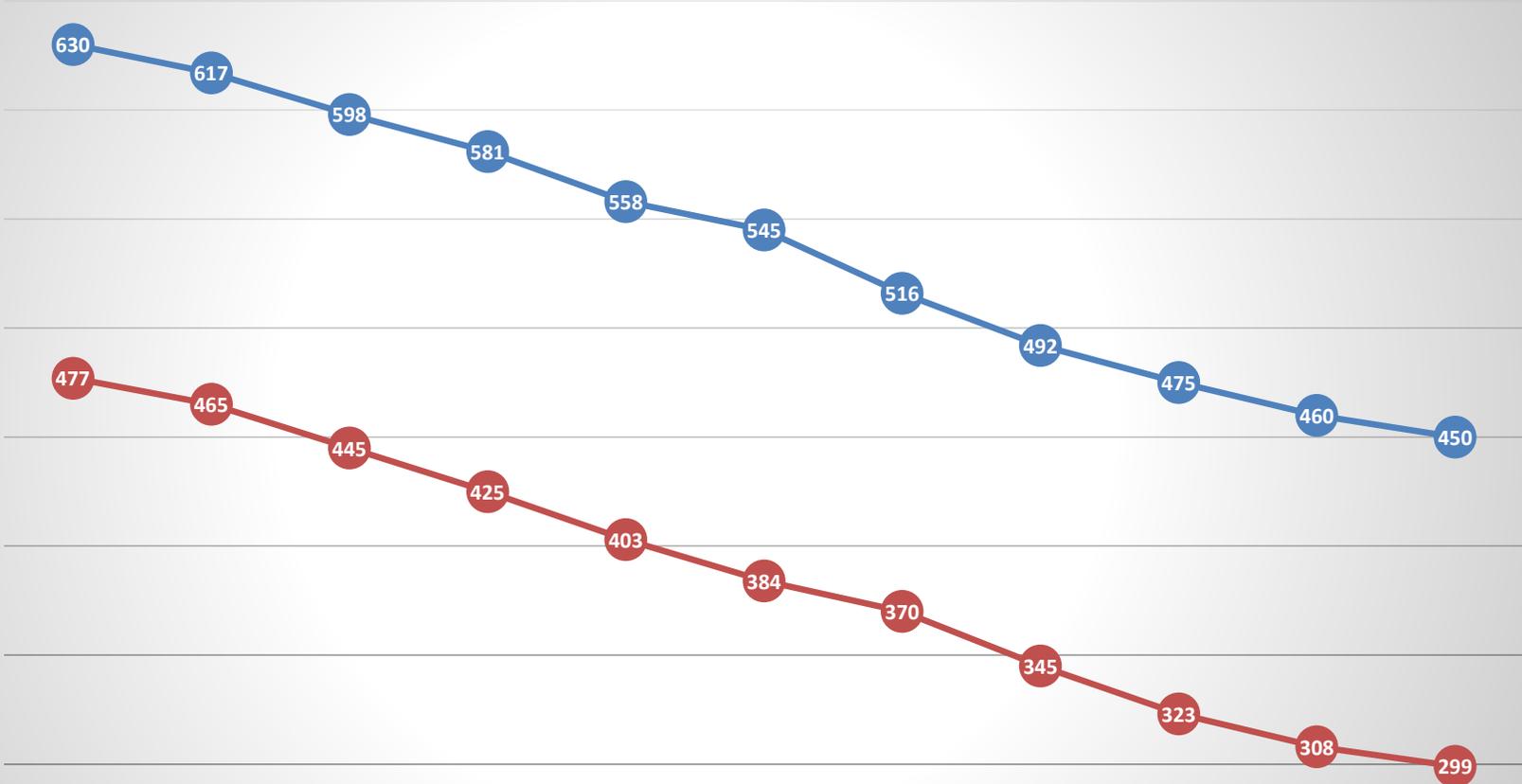
Table 3
CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Census
As of December 31, 2020

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Retiree	323	189	512
Beneficiary	127	110	237
<i>Total Retired Members</i>	450	299	749
<i>Total Membership:</i>	450	299	749

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Service Retirement	301	152	453
Disability Retirement	137	134	271
Death Allowance	12	13	25
<i>Total Retired Members:</i>	450	299	749
<i>Total Membership as of December 31, 2020:</i>	450	299	749
<i>Total Membership as of June 30, 2020:</i>	460	308	768
<i>Annual Difference:</i>	-10	-9	-19

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

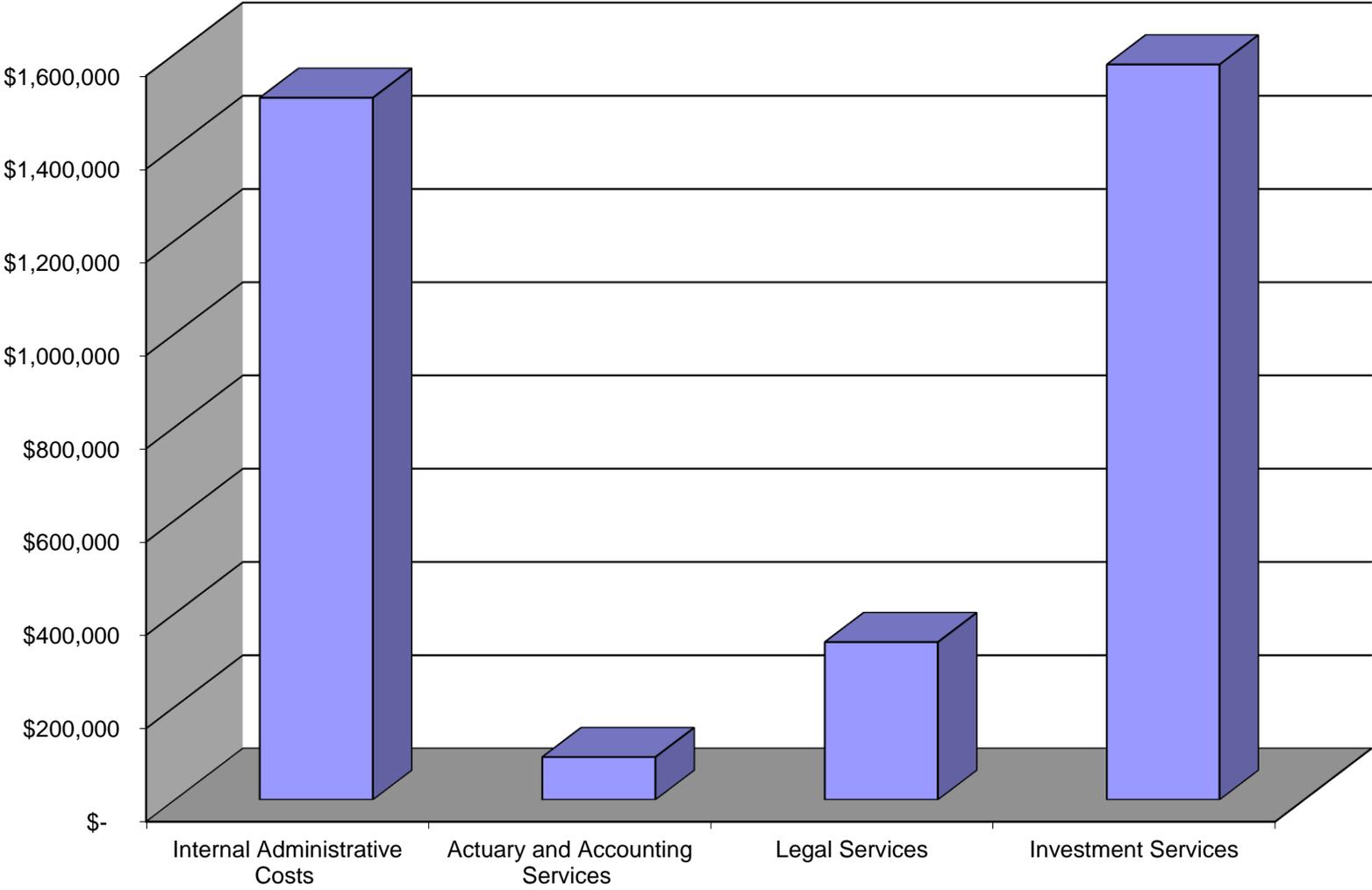


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021 FYTD
Police	630	617	598	581	558	545	516	492	475	460	450
Fire	477	465	445	425	403	384	370	345	323	308	299
Total	1107	1082	1043	1006	961	929	886	837	798	768	749

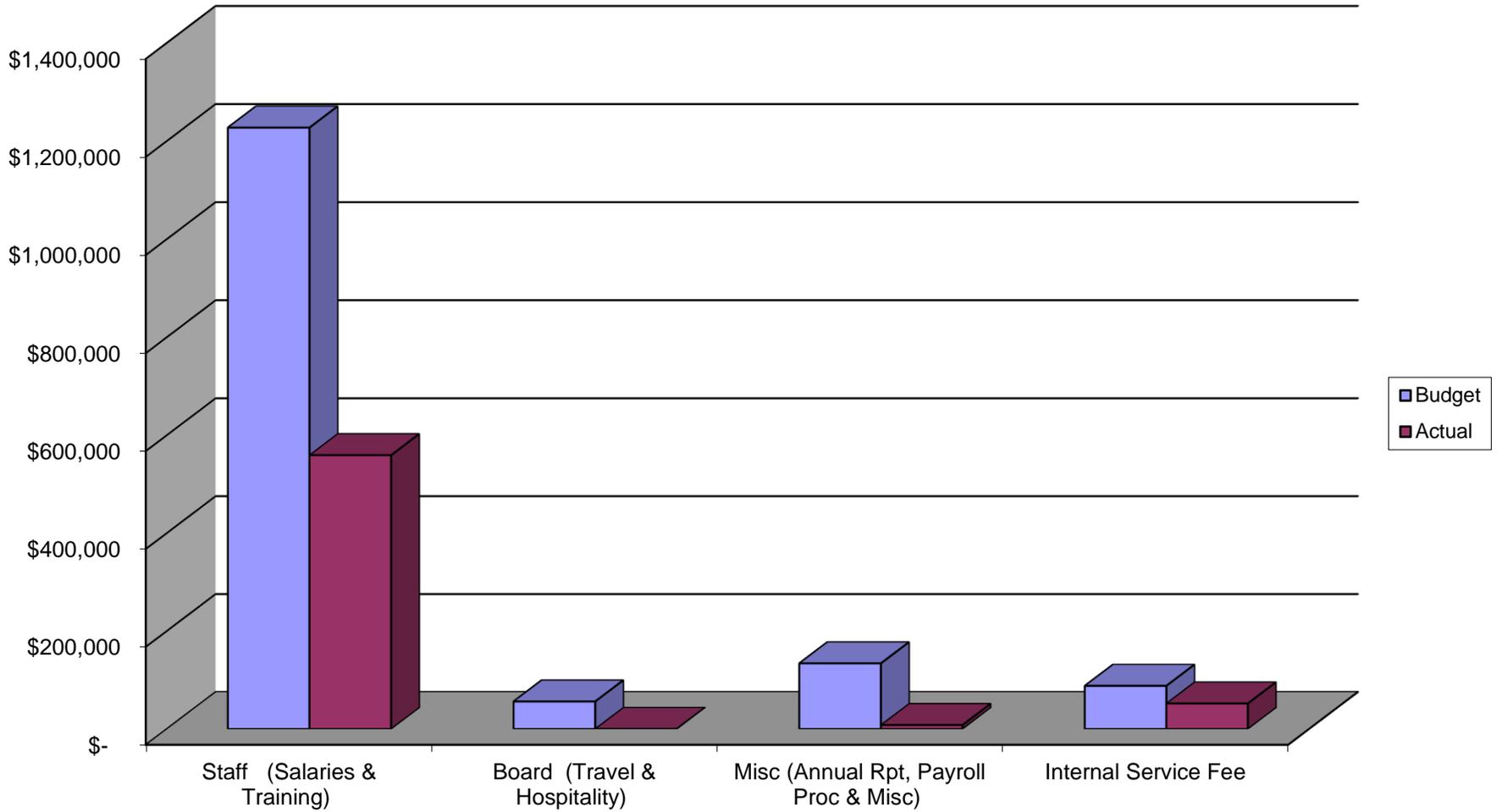
OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Approved Budget

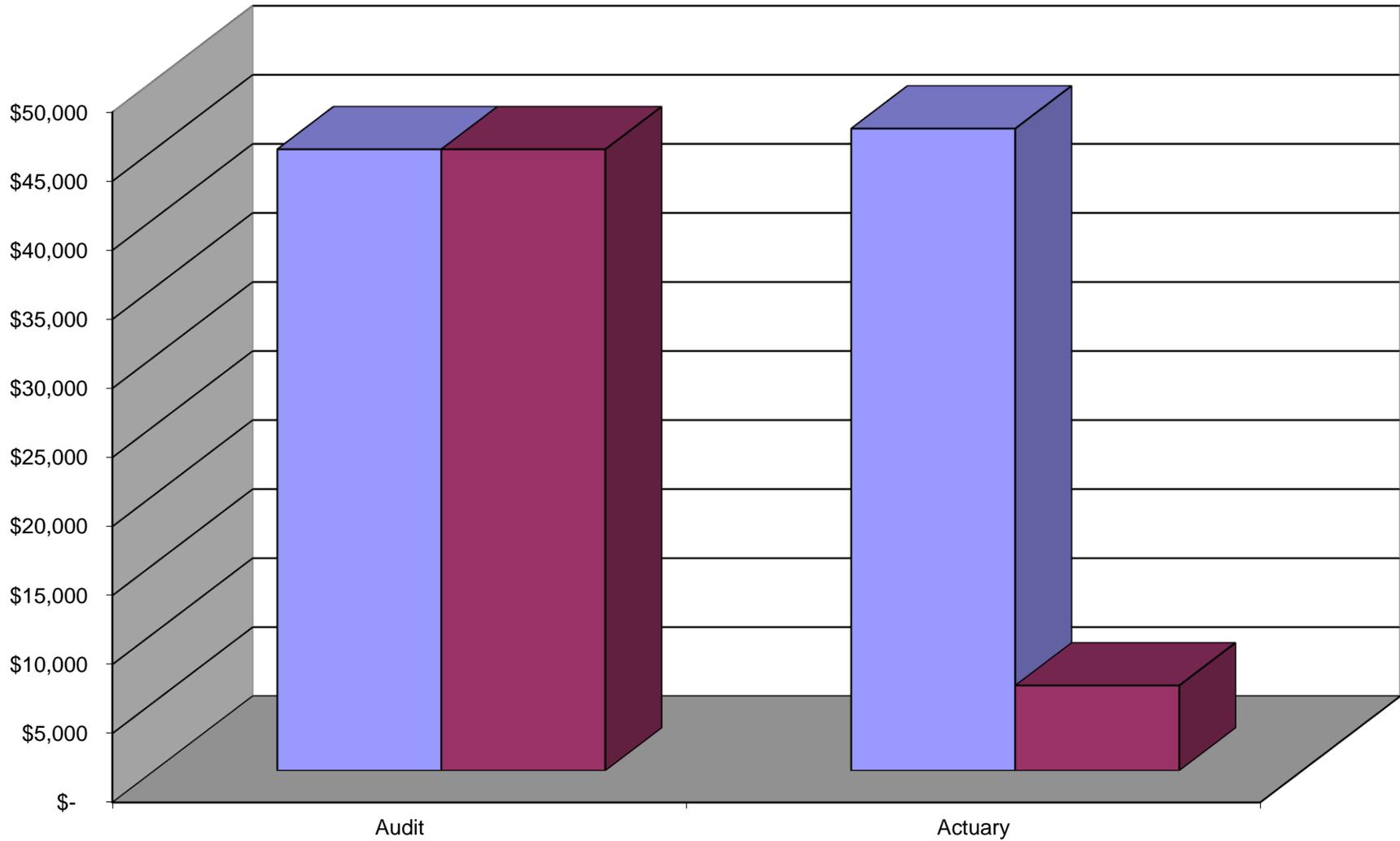
FY 2020-2021



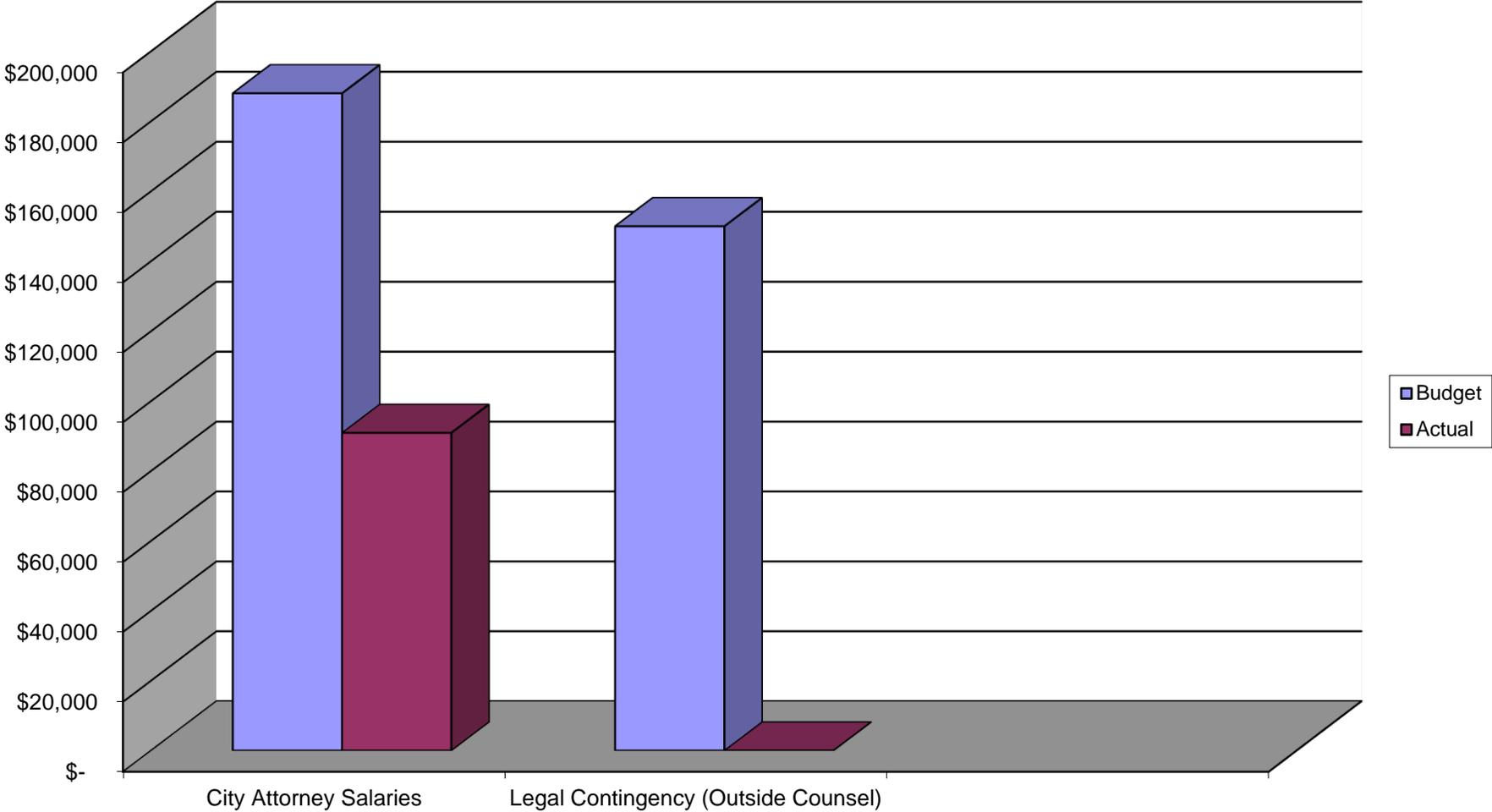
OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Budget vs Actual as of December 31, 2020
Internal Administrative Costs



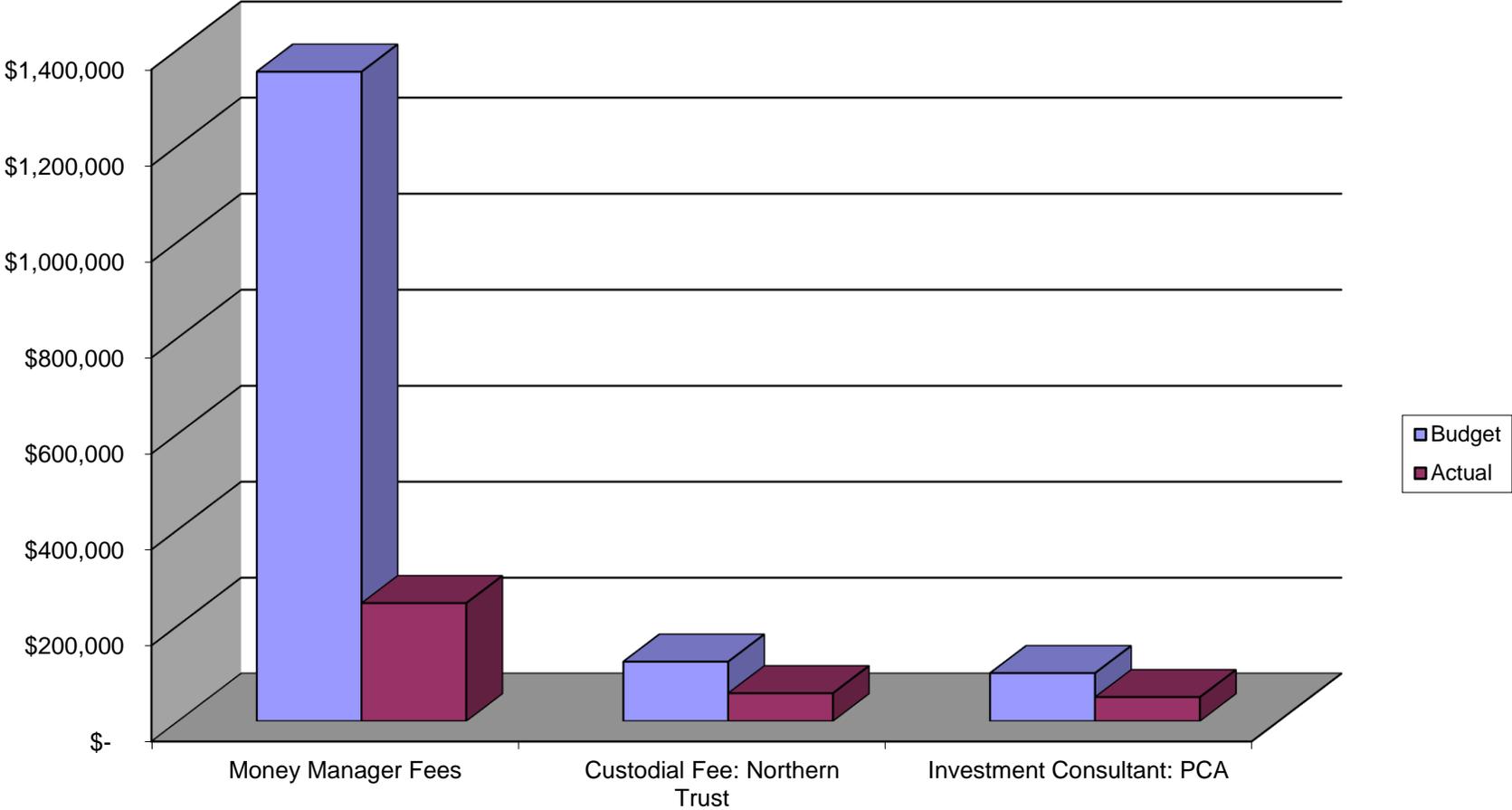
OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Budget vs. Actual as of December 31, 2020
Actuary and Accounting Services



OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Budget vs. Actual as of December 31, 2020
Legal Services



OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Budget vs. Actual as of December 31, 2020
Investment Services





AGENDA REPORT

TO: Oakland Police and Fire Retirement (PFRS) Board **FROM:** PFRS Ad Hoc Committee for July 1, 2026 Actuarial Funding Date
SUBJECT: PFRS July 1, 2026 Actuarial Funding Date **DATE:** February 24, 2021

SUMMARY

Oakland Charter section 2619 requires, among other things, that the City of Oakland contribute to the Police and Fire Retirement System (PFRS) amounts as may be necessary to provide the member benefits payable under the Charter and that the City's contributions be in amounts sufficient to **actuarially fund all liabilities for all members prior to July 1, 1976, by July 1, 2026**. In April 2018, an Ad Hoc Committee of the Police and Fire Retirement System Board ("Committee") was created to determine if the Oakland Charter needed to be amended to ensure that this actuarial funding requirement is met.

The Committee, through its work with the City Attorney's Office (including outside counsel retained by the City Attorney's Office) and City Finance staff, has determined that no Charter amendment is necessary at this time because under the terms of the Charter, the City of Oakland has an obligation to fund PFRS, *even after* actuarial funding is achieved by July 1, 2026. In addition, the Committee has learned that although the City has a mandatory duty to meet its PFRS actuarial funding obligation, the City alone may decide how to meet this obligation. As such, PFRS Board action will become necessary only if the City fails to meet its funding obligations.

RECOMMENDATION

The Committee will monitor City Council agendas for any proposed action to be taken in relation to the July 1, 2026 actuarial funding deadline. Upon learning of any proposed Council action related to the to the July 1, 2026 actuarial funding deadline, the Committee will reconvene to discuss what, if any, action the PFRS Board should take and report back to the Board.

Respectfully submitted,

Margaret L. O'Brien

Margaret O' Brien
Ad Hoc Committee Chair
Oakland Police and Fire Retirement System

Agenda Item B2
PFRS Board Meeting
February 24, 2021



AGENDA REPORT

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

SUBJECT: Proposed 2-year PFRS Administrative Budget for FY 2021/2022 and FY 2022/2023 **DATE:** February 17, 2021

RECOMENDATION

Staff recommends that the Board of the Oakland Police and Fire Retirement System (“PFRS Board”) approve the new two-year PFRS administrative budget for FY 2021/2022 and FY 2022/2023 as shown in Table 1.

SUMMARY

In order to be consistent with the City of Oakland budget process, PFRS staff is presenting a two-year administrative budget that reflects proposed PFRS expenditures for FY 2021/2022 and FY 2022/2023. Staff will work to incorporate the PFRS Board approved budget into the City of Oakland overall budget.

The overall PFRS budget is projected to be \$3,524,100 in FY 2021/2022 and \$3,584,600 in FY 2022/2023. The proposed budget changes reflect expected costs within the specified line items. The total proposed annual budget is approximately 0.80% of the Plan's current investment portfolio. The total PFRS Operating Budget is projected to increase 0.34% in FY 2021/2022 and an additional 1.72% in FY 2022/2023.

KEY CHANGES

Internal Administrative Costs

Staff costs are projected to increase by \$12,000 in FY 2021/2022 and an additional \$49,000 in FY 2022/2023. These increases are due to projected increases in the City of Oakland staff fringe benefits costs and projected step increases.

Internal Service Fees (“ISF”) are required costs for all City of Oakland funds. These costs are associated with city-wide services such as special setup, facilities general support, city accounting services, city contract services, phone and IT support and printing. The PFRS’ share of the ISF costs are projected to be \$88,000 in FY 2021/2022 and FY 2022/2023. The budget for the Annual Report and Duplicating Services is proposed to be eliminated because printing costs

OAKLAND POLICE & FIRE RETIREMENT SYSTEM

AGENDA REPORT – Proposed 2-year PFRS Administrative Staff Budget for FY 2021/2022 and FY 2022/2023

FEBRUARY 17, 2021

PAGE 2

are now included in the Internal Services Fees. Overall, Internal Administrative costs are projected to increase \$8,000 in FY 2021/2022 and \$54,000 in FY 2022/2023.

Actuary and Accounting Services

Actuary services are projected to be flat based on a recent contract extension the Board approved at the August 2018 Board meeting (Resolution No. 8003). The expenses for Audit Services is expected to increase \$ 4,000 in FY 2021/2022 and \$1,500 in FY 2022/2023 due to annual increases in the current contract.

Investment Services

The Money Manager budget is based on the fees charged by each PFRS money manager and the amount of funds they manage on behalf of the PFRS's investment portfolio. The Custodial Fee budget and the Investment Consultant's fees are fixed annual amounts based on the current contracts.

Respectfully submitted,



David Jones, Plan Administrator
Oakland Police and Fire Retirement System

Attachments (1):

- ***Table 1: Oakland Police and Fire Retirement System – Two-year Proposed Administrative Budgets***

ATTACHMENT 1

Table 1

**Oakland Police and Fire Retirement System
Two-year Proposed Administrative Budgets**

Table 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Two Year Proposed Administrative Budgets
FY 2021-2022 and FY 2022-2023

	FY 2020-2021	Proposed Budget		Budget Changes	
	Approved Budget	FY 2021-2022	FY 2022-2023	FY 2021-2022	FY 2022-2023
Internal Administrative Costs					
PFRS Staff Salaries	\$ 1,200,000	\$ 1,212,000	\$ 1,261,000	\$ 12,000	\$ 49,000
Board Travel Expenditures	52,500	52,500	52,500	-	-
Staff Training	20,000	20,000	20,000	-	-
Staff Training - Tuition Reimbursement	7,500	7,500	7,500	-	-
Annual Report & Duplicating Services	4,000	-	-	(4,000)	-
Board Hospitality	3,600	3,600	3,600	-	-
Payroll Processing Fees	40,000	40,000	40,000	-	-
Miscellaneous Expenditures	40,000	40,000	45,000	-	5,000
Internal Service Fees (ISF)	88,000	88,000	88,000	-	-
Contract Services Contingency	50,000	50,000	50,000	-	-
Internal Administrative Costs Subtotal :	\$ 1,505,600	\$ 1,513,600	\$ 1,567,600	\$ 8,000	\$ 54,000
Actuary and Accounting Services					
Audit	\$ 45,000	\$ 49,000	\$ 50,500	\$ 4,000	\$ 1,500
Actuary	46,500	46,500	46,500	-	-
Actuary and Accounting Subtotal:	\$ 91,500	\$ 95,500	\$ 97,000	\$ 4,000	\$ 1,500
Legal Services					
City Attorney Salaries	\$ 188,000	\$ 188,000	\$ 193,000	\$ -	\$ 5,000
Legal Contingency	150,000	150,000	150,000	-	-
Legal Services Subtotal:	\$ 338,000	\$ 338,000	\$ 343,000	\$ -	\$ 5,000
Investment Services					
Money Manager Fees	\$ 1,353,000	\$ 1,353,000	\$ 1,353,000	\$ -	\$ -
Custodial Fee	124,000	124,000	124,000	-	-
Investment Consultant (Meketa)	100,000	100,000	100,000	-	-
Investment Subtotal:	\$ 1,577,000	\$ 1,577,000	\$ 1,577,000	\$ -	\$ -
Total Operating Budget	\$ 3,512,100	\$ 3,524,100	\$ 3,584,600	\$ 12,000	\$ 60,500
				0.34%	1.72%



AGENDA REPORT

TO: Oakland Police and Fire
Retirement Board

FROM: David Jones
Plan Administrator

SUBJECT: Audit Committee Agenda Pending List

DATE: February 24, 2021

	SUBJECT	TENTATIVE SCHEDULED MTG DATE	STATUS
1	Staff review of the 2006 Management Audit.	TBD	Pending

Respectfully submitted,

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

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

AGENDA

INVESTMENT COMMITTEE MEMBERS

Jaime T. Godfrey
Chairperson

R. Steve Wilkinson
Member

Robert W. Nichelini
Member

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

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

Wednesday, February 24, 2021
9:30 AM
Tele-Conference Board Meeting
via Zoom Webinar

OBSERVE

- To observe the meeting by video conference, please click on this link: <https://us02web.zoom.us/j/82880493983> at the noticed meeting time.
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- iPhone one-tap: US: +16699006833, 82880493983# or +13462487799, 82880493983#
- US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 301 715 8592 or +1 312 626 6799 or +1 929 205 6099
- International numbers available: <https://us02web.zoom.us/j/82880493983>
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If asked for a participant ID or code, press #.

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**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR INVESTMENT COMMITTEE MEETING
FEBRUARY 24, 2021**

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

- - - ORDER OF BUSINESS - - -

- 1. Subject: Police and Fire Retirement System (“PFRS”) Investment Committee Meeting Minutes**
From: Staff of the PFRS Board

Recommendation: **APPROVE** January 27, 2021 Investment Committee Meeting Minutes.
- 2. Subject: Investment Manager Performance Review – Earnest Partners, LLC a PFRS Mid-Cap Core Domestic Equity Asset Class Investment Manager**
From: Earnest Partners, LLC

Recommendation: **ACCEPT** informational report regarding managerial assessment and investment portfolio performance of Earnest Partners, LLC, a PFRS Mid-Cap Core Domestic Equity Asset Class Investment Manager.
- 3. Subject: Investment Manager Performance Review – Earnest Partners, LLC a PFRS Mid-Cap Core Domestic Equity Asset Class Investment Manager**
From: Meketa Investment Group

Recommendation: **RECOMMEND BOARD APPROVAL** of evaluation and review of Earnest Partners, LLC a PFRS Mid-Cap Core Domestic Equity Asset Class Investment Manager.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR INVESTMENT COMMITTEE MEETING
FEBRUARY 24, 2021

4. **Subject:** Resolution No. 8011 - Resolution Authorizing a One-Year Extension of Professional Services Agreement with Earnest Partners, LLC a PFRS Mid-Cap Core Domestic Equity Asset Class Investment Manager
From: Staff of the PFRS Board
Recommendation: **RECOMMEND BOARD APPROVAL** of Resolution No. 8011 - Resolution Authorizing a One-Year Extension of Professional Services Agreement with Earnest Partners, LLC for Mid-Cap Core Domestic Equity Asset Class Investment Manager.
5. **Subject:** Investment Manager Performance Review – Reams Asset Management a PFRS Core Plus Fixed Income Asset Class Investment Manager
From: Reams Asset Management
Recommendation: **ACCEPT** informational report regarding managerial assessment, investment portfolio performance, and Diversity and Inclusion Policy of Reams Asset Management, a PFRS Core Plus Fixed Income Asset Class Investment Manager.
6. **Subject:** Investment Manager Performance Review – Reams Asset Management a PFRS Core Plus Fixed Income Asset Class Investment Manager
From: Meketa Investment Group
Recommendation: **RECOMMEND BOARD APPROVAL** of evaluation and review of Reams Asset Management a PFRS Core Plus Fixed Income Asset Class Investment Manager.
7. **Subject:** Draft Emergency Procedures for Terminating or Limiting Trading Discretion of PFRS Investment Managers to Protect PFRS Fund Assets
From: Staff of the PFRS Board
Recommendation: **REVIEW AND DISCUSS** second draft Emergency Procedures for terminating or limiting trading discretion of PFRS Investment Managers to protect PFRS Fund Assets **RECOMMEND BOARD APPROVAL** of Emergency Procedures or other course of action with regard to Emergency Procedures as determined by Committee.
8. **Subject:** Investment Fund Quarterly Performance Update as of December 31, 2020
From: Meketa Investment Group
Recommendation: **ACCEPT** the Investment Fund Quarterly Performance update as of December 31, 2020.

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR INVESTMENT COMMITTEE MEETING
FEBRUARY 24, 2021**

9. Subject: Preliminary Investment Fund Performance Update as of January 31, 2021
From: Meketa Investment Group

Recommendation: ACCEPT the Preliminary Investment Fund Performance update as of January 31, 2021.

10. Subject: Informational Report on Alternative Risk Premia Investment Strategy
From: Meketa Investment Group

Recommendation: ACCEPT an informational report on the Alternative Risk Premia Investment Strategy

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

AN INVESTMENT AND FINANCIAL MATTERS COMMITTEE REGULAR MEETING of the Oakland Police and Fire Retirement System (“PFRS”) was held Wednesday, January 27, 2021 via Zoom Tele-Conference.

- Committee Members:
- Jamie T. Godfrey Chairperson
 - R. Steven Wilkinson Member
 - Robert W. Nichelini Member
- Additional Attendees:
- David Jones Plan Administrator
 - Jennifer Logue PFRS Legal Counsel
 - Teir Jenkins PFRS Staff Member
 - Maxine Visaya PFRS Staff Member
 - David Sancewich Meketa Investment Group
 - Sidney Kawanguzi Meketa Investment Group
 - Paola Nealon Meketa Investment Group
 - Daniel Ryan Parametric Portfolio Associates, LLC
 - Melissa Fell Parametric Portfolio Associates, LLC
 - Jessica Kung Eaton Vance

The meeting was called to order at 10:00 am PST

1. **Approval of Investment Committee Meeting Minutes** Member Nichelini made a motion to approve the December 10, 2020 Investment Committee Meeting Minutes, second by Chairperson Godfrey. The motion passed.

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

2. **Investment Manager Performance Review – Parametric Portfolio Associates, LLC, a PFRS Covered Calls Asset Class Investment Manager** – Daniel Ryan and Melissa Fell of Parametric Portfolio Associates and Jessica Kung of Eaton Vance presented an updated and comprehensive report detailing the company’s Diversity and Inclusion Policy. The report emphasized a focus on recruitment, retention, and development of a diverse and inclusive workforce. In addition to the programs shared across and coordinated by Eaton Vance, Parametric has programs in place to meet specific needs unique to the company. Chairperson Godfrey asked how they see their role changing with the upcoming acquisition by Morgan Stanley and J. Kung acknowledged that their efforts and philosophies are very much aligned and does not foresee significant impact.

MOTION: Member Nichelini made a motion to accept and forward to the Board the informational report presented by Parametric Portfolio Associates and Eaton Vance, second by Member Wilkinson. The motion passed.

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

3. **Consent Form Regarding Merger of Parametric Portfolio Associates, LLC Parent Company, Eaton Vance Corp., and Morgan Stanley** – Daniel Ryan of Parametric Portfolio Associates, LLC presented an informational report regarding the acquisition of Eaton Vance and its affiliates by Morgan Stanley. Parametric will continue to operate as an autonomous business under Morgan Stanley Investment Management. There will be no changes to Parametric’s Executive Leadership Team, Investment Leadership Team, or Portfolio Managers and Investment Professionals that manage your portfolios or the Investment Strategies.

MOTION: Member Nichelini mad a motion to accept the informational report and recommend Board Approval of the Consent Form presented by Parametric Portfolio Associates, second by Member Wilkinson. The motion passed.

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

4. **Resolution No. 8006 - Resolution Authorizing a One-Year Extension of Professional Services Agreement with Parametric Portfolio Associates, LLC for Covered Calls Asset Class Investment Manager**

MOTION: Member Nichelini made a motion to recommend Board approval of Resolution No. 8006 authorizing a one-year extension of Professional Services agreement with Parametric Portfolio Associates, LLC for Covered Calls Asset Class Investment Manager, second by Member Wilkinson. Motion Passed.

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

5. **Investment Market Overview** – Paola Nealon of Meketa Investment Group provided a summary of the informational report on the global economic factors affecting the PFRS Fund as of December 31, 2020. P. Nealon highlighted strong market performance in the fourth quarter with Equities leading the way, driven by positive vaccine news and the end of the November elections fueling investor optimism in the reopening of the economy.

6. **MOTION:** Chairperson Godfrey made a motion to accept the informational report from Meketa regarding the investment market overview as of December 31, 2020, second by Member Wilkinson. Motion passed.

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

7. **Preliminary Investment Fund Performance Update as of December 31, 2020** – Sidney Kawanguzi of Meketa Investment Group provided a brief summary of the informational report regarding the PFRS Preliminary Investment Fund Performance Update as of December 31, 2020, highlighting the Total Portfolio Summary, Index Returns, Asset Class Performance, and Manager Performance.

MOTION: Chairperson Godfrey made a motion to accept the informational report from Meketa regarding the Preliminary Investment Fund Performance Update as of December 31, 2020, second by Member Wilkinson. Motion passed.

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

8. **Plan and Process for Selecting New PFRS Investment Manager to Implement the Crisis Risk Offset Investment Strategy**– David Sancewich of Meketa Investment Group provided an informational report detailing options to consider for selecting possible candidates to serve as the new PFRS Investment Manager to implement the PFRS Crisis Risk Offset Investment Strategy. Meketa recommends PFRS split the Alternative Risk Premia and Systematic Trend Following mandates and have two managers running single strategies of both components. Additionally, Meketa recommends creating a short-list of candidates via an updated questionnaire to the respondents of the most recent Request for Proposals conducted in 2019 and come back to the Board with candidates to consider for interviews at a future Board Meeting. David Sancewich emphasized that diversity and inclusion will be incorporated into the review of candidates, recognizing this is important to the PFRS Board.

MOTION: Member Nichelini made a motion to accept the updated informational report and recommendation from Meketa regarding the plan and process for selecting possible candidates to serve as the new PFRS Investment Manager to implement the PFRS Crisis Risk Offset Investment Strategy and forward to the Full Board for approval, second by Member Wilkinson. Motion passed.

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

9. **Annual Diversity Report of Current PFRS Investment Managers** – David Sancewich of Meketa Investment Group reported on the details of Annual Diversity Report of Current PFRS Investment Managers, Meketa included. Mr. Sancewich noted this analysis covers mainstream investors handling direct allocations and is reflective of the Board of Directors, Staff, and Investment Professionals. Board Members discussed the information provided and how best to utilize for future decision-making processes. Chairperson Godfrey requested that Reams Asset Management and DDJ Capital Management, LLC be invited to provide a presentation before the Board to provide additional information and address what their plans are moving forward in respect to improving diversity and inclusion within their organization, as well as a performance update.

MOTION: Chairperson Godfrey made a motion to accept the informational report regarding the Annual Diversity Report of Current PFRS Investment Managers and instruct Meketa to move forward with getting more information from DDJ Capital Management, LLC and Reams Asset Management, as well as having Reams Asset Management to present to us at an upcoming Investment Committee Meetings, second by Member Wilkinson. Motion passed.

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

10. **Draft Emergency Procedures for Terminating or Limiting Trading Discretion of PFRS Investment Managers to Protect PFRS Fund Assets** – Plan Administrator David Jones presented an overview of the first draft of the Emergency Procedures for Terminating or Limiting Trading Discretion of PFRS Investment Managers to Protect PFRS Fund Assets and turned to PFRS Legal Counsel Logue to lead the discussion. Highlighted items were discussed, and points were clarified with modifications made to the draft as a result.

MOTION: Chairperson Godfrey made a motion to move the draft with modifications to the Board and recommend Board Approval, second by Member Nichelini. Motion passed.

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

11. **Schedule of Pending Investment Committee Meeting Agenda Items** – PFRS Staff Member Jenkins suggested we replace the visit from Earnest Partners with Reams Asset Management at the February 2021 Board Meeting.
12. **Open Forum** – No Report
13. **Future Scheduling** – The next Regular Investment Committee Meeting is tentatively scheduled for February 24, 2021 at 10:00 a.m. PST
14. **Adjournment** – Member Nichelini made a motion to adjourn, second by Member Wilkinson. Motion passed.

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

The meeting adjourned at 12:03 p.m. PST

JAMIE T. GODFREY, COMMITTEE CHAIRPERSON

DATE



EARNEST
PARTNERS

1180 PEACHTREE STREET + SUITE 2300
ATLANTA + GA + 30309

INVEST@EARNESTPARTNERS.COM
WWW.EARNESTPARTNERS.COM

***Oakland Police and Fire Retirement Board
December 31, 2020***

Patmon Malcom, CFA
Partner

Mr. Malcom is responsible for product management at EARNEST Partners. Prior to joining EARNEST Partners, he worked for JPMorgan Chase in New York. He was a member of the Global Investment Bank providing corporate finance coverage to natural resource companies. He is a graduate of the United States Military Academy at West Point and holds an MBA from Emory University, where he was a Donald Keough Scholar. Mr. Malcom led the Varsity Football team at West Point in scoring for three consecutive years. In his senior year, he was named the "Chevrolet Player of the Game" in the annual Army-Navy game. He also served as a helicopter pilot in the United States Army for more than seven years, an experience that included commanding a Blackhawk Helicopter Company along the demilitarized zone between North and South Korea. Mr. Malcom is a member of the CFA Institute and the CFA Society Atlanta.

Jeffrey Jackson
Product Management

Mr. Jackson is a member of the product management team at EARNEST Partners. Prior to joining EARNEST Partners, he worked for the global investment bank, Evercore, in New York where he helped lead their Real Estate advisory practice as a Managing Director. His extensive background also includes experience in acquisitions, development and debt restructuring within Real Estate. He is a graduate of the Tuck School of Business at Dartmouth where he holds an MBA and was a Consortium Fellow and he holds a BS in Finance from Hampton University where he was a Presidential Scholar. Mr. Jackson was a member of the SEO Career Program and later served as a member of the SEO Junior Leadership Board. Mr. Jackson is a former collegiate basketball player and maintains an active lifestyle with his passion for cycling.



Guidelines and Investment Policy Audit

	Yes	No
• Benchmark: Exceed Russell Midcap® Index over a full market cycle	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Cash position is less than 10% of total portfolio value*	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• No industry sector weight greater than 25% of total portfolio	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• No security held is greater than 5% of total portfolio value* or 8% at market	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Proxies voted in accordance with guidelines	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• No prohibited securities held	<input checked="" type="checkbox"/>	<input type="checkbox"/>

EARNEST Partners believes that the attached information, along with other submissions, represents all the required reporting information. Please notify us immediately if any required information is missing.

**Threshold may be temporarily exceeded due to market conditions.*

Global equity markets continued their ascent in the fourth quarter of 2020 as investors gained confidence in the global economy's ability to adapt to the ongoing coronavirus pandemic. The S&P 500® rose 11.4% and finished the year up 17.6% to close near a record high. The U.S. large cap market, as represented by the Russell 1000® Index, gained 13.7% and finished the year up 20.9%. The U.S. midcap market, as represented by the Russell Midcap® index, gained 19.9% and finished the year up 17.1%. Small cap equities had a record quarter as the Russell 2000 rose 31.4% and finished the year up 20.0%. International equity markets, as represented by the MSCI ACWI ex-U.S.® Index, rose 17.1% and finished the year up 11.1%. Emerging markets continued to outperform developed markets as the MSCI Emerging Markets Index rose 19.8%, finishing up 18.7% on the year and the MSCI EAFE rose 16.1% in the quarter and finished up 8.3% on the year.

Equity markets rose to record levels as investors began to look beyond the near-term effects of the coronavirus pandemic and incorporated the progress of vaccines, the support of central governments, and the adaptability of businesses into future earnings growth. Despite ongoing concerns driven by growing case numbers and renewed restrictions on gatherings in many areas, consumer sentiment remained nearly unchanged from the end of the third quarter and retail sales increased versus 4Q 2019. Significant progress was made on vaccines, several of which were approved by the U.S. FDA. Many areas of the economy saw a continued recovery in activity as the government's stimulus measures supported renewed purchases of durable goods and record low mortgage rates buoyed the housing market. The U.S. Presidential election saw Democrat Joe Biden elected to become the nation's 46th president, and his path toward enacting legislation now depends on the results of the January Senate run-off elections of Georgia. If the Republicans retain control of the Senate, he will likely face greater obstacles to enacting policy changes despite a Democrat-controlled House of Representatives.

Once the economic impact of the crisis became apparent in the first quarter, the U.S. Federal Reserve (Fed) enacted an array of stimulative measures that included short-term rate reductions to near-zero and repurchases of Treasuries, mortgages and corporate debt, including high-yield notes. The Fed stated that it would "maintain an accommodative stance" until its goals of 2% long-term inflation and maximum employment are achieved. In its statement, the Fed specified that it will continue to hold rates near zero and provide stimulus via monthly repurchases of \$80 billion in Treasury securities and \$40 billion in agency mortgage-backed securities. These moves gave continued confidence to equity and fixed income investors who understood that the Fed will continue to act as a lender-of-last resort and that stimulus measures would be ongoing. Additionally, the central bank revised up its GDP forecast to a 2.4% contraction for 2020 versus its September projection of 3.7% and forecast a 4.2% gain in 2021 followed by a 3.2% increase in 2022. After hitting a record high of 14.7% in April, unemployment fell to 6.7% in November. The Fed also revised down its unemployment projections to 6.7% at the end of 2020 versus its earlier estimate of 7.6% and is forecasting unemployment to fall below 5% by the end of 2022. Previously in June, the Fed projected unemployment at 9.3% at the end of 2020.

In March, Congress' immediate reaction to the economic threat was to approve a \$2 trillion stimulus bill that included small business loans, direct payments to households and expanded unemployment benefits for workers displaced by the pandemic. After lengthy negotiations, Congress approved a second \$900 billion stimulus bill in late December that included \$325 billion in forgivable small business loans, extended supplemental unemployment benefits through March, and provided additional direct payments to households. After chaotic trading that saw crude oil futures briefly fall into negative territory and trade below \$20 per barrel for six weeks in the spring, the price of crude oil sharply recovered and stabilized as travel resumed following the relaxation of shelter-in-place orders. The commodity settled at about \$48 per barrel, 20% higher than the \$40 per barrel price at the end of the second quarter, but still substantially lower than the \$61 per barrel it commanded at the beginning of the year.

After formally leaving the European Union on January 31st, the U.K. and the EU finally reached a trade deal near year end that provided for the tax-free transfer of goods between the U.K. and EU nations, although there are new rules regarding customs declarations and regulatory compliance. The European Central Bank (ECB) maintained the interest rate on deposits at -0.5% and increased its QE program to EU1,850 billion from EU1,350 billion and extended its duration to run through March of 2022 from June of 2021.



EARNEST Partners Mid Cap Core Portfolio Review

Oakland Police and Fire Retirement
Board
December 31, 2020

The U.S. mid cap equity market, as represented by the Russell Midcap® Index, saw a strong end to the 2020 year and gained over 19% in the fourth quarter. The EARNEST Partners Mid Cap Core strategy also posted a strong gain in the quarter, but underperformed the Index for the period. Extending to the past 1-year period, the strategy remains ahead of the Index, net of fees, through the end of the year. The underperformance in the quarter is attributable to being underweight some of the stronger rebounding sectors such as Energy. All sectors in the Index were positive for the quarter as the COVID-19 vaccine roll out produced an optimistic outlook. Strategy performance in the year was driven by strong stock selection, most notably in the Real Estate, Financials, and Communication Services sectors.

Contributing to performance, Eastman Chemical Company is a specialty chemical company that produces a variety of advanced materials and specialty additives found in every-day items ranging from tires to crop protection to animal nutrition. Eastman maintains four business segments: Additives & Functional Products, Advanced Materials, Chemical Intermediaries, and Fibers. The stock outperformed the Index in the period as the company reported earnings and revenue that topped the market expectations. Demand picked back up in the back half of 2020 as the world reverts back to the “physical” world from the “virtual” world. Eastman exhibits strong valuation measures compared to industry peers and has the means to continue to generate profits while controlling costs. The company’s focus on productivity measures and its ability to increase product prices moving forward to expand margins are likely to help it offset the impact of recent COVID-19 headwinds to drive earnings growth.

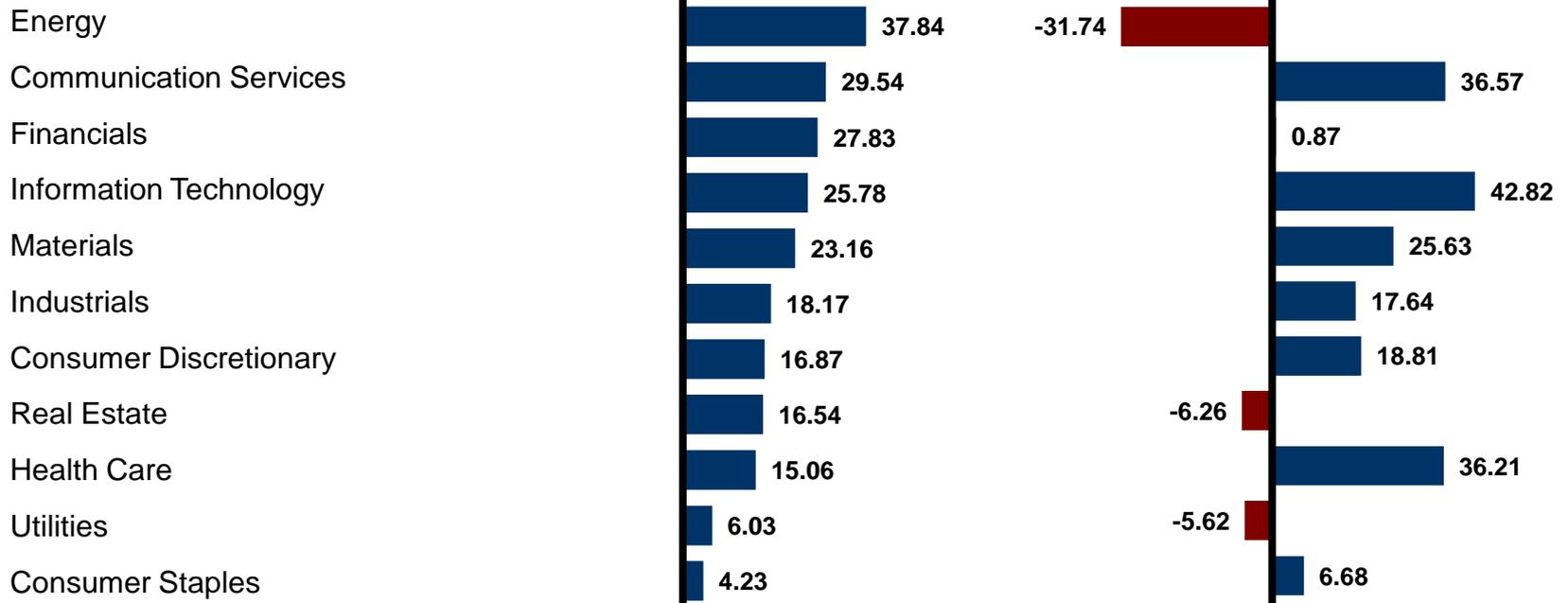
Albemarle Corporation is a fine chemical manufacturing company based in Charlotte, North Carolina and with operations in Chile, Australia, China and the US. It operates 3 divisions: lithium, bromine specialties and catalysts. Albemarle is the world’s largest provider of lithium used in electric vehicle batteries. During the period, Albemarle reported strong performance relative to market expectations across the board. In particular, earnings were driven by improving volumes as bromine sales proved to be resilient due to the segment’s electronics exposure. The stock was outperformed in the quarter. The market is underappreciating the complexity, time and cost of adding capacity to extract and refine lithium ore into high-purity compounds fit for use in battery applications which should constrain supply. On the demand side, we expect the next wave of growth to be characterized by larger vehicles possessing increased driving range requiring larger batteries resulting in increased lithium content per automobile. These factors should lead to strong earnings growth over the next market cycle.

Detracting from performance, Progressive is one of the largest providers of automobile insurance and other specialty property-casualty (P&C) insurance in the United States, with over 13 million auto policies in force alone. Although the company reported strong earnings growth during the quarter, greater than 30% higher than the same period one year ago, the stock lagged the benchmark during the period as sentiment around the financial sector as a whole was damped by the uncertainty of COVID-19. Relying on the unique use of telematics data and proactive risk management, Progressive has shown an ability to outperform the industry in its underwriting of personal auto insurance. Additionally, its focus in insuring trucks, cars, and vans of small and middle-sized enterprises, whose risk profiles are closer to personal auto rather than commercial auto, sets the company apart from peers which should continue to be a strong driver of growth over the next market cycle.

Equity Market Performance By Sector

Russell Midcap® Index
4th Quarter 2020 Returns
Percent

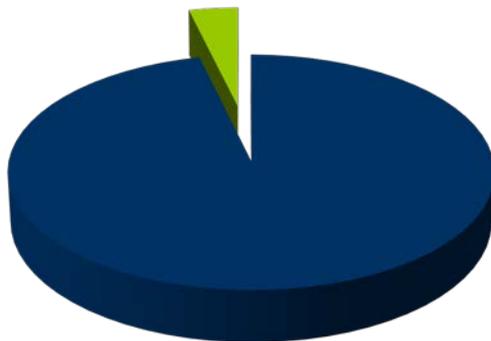
Russell Midcap® Index
YTD Returns
Percent



Fund Totals

Ending Portfolio Value	\$40,963,482
Estimated Annual Income	\$430,190
Yield on Equities	1.1%

Asset Distribution



	<u>Portfolio %</u>
Equities	96.3%
Short-term Investments	3.7%

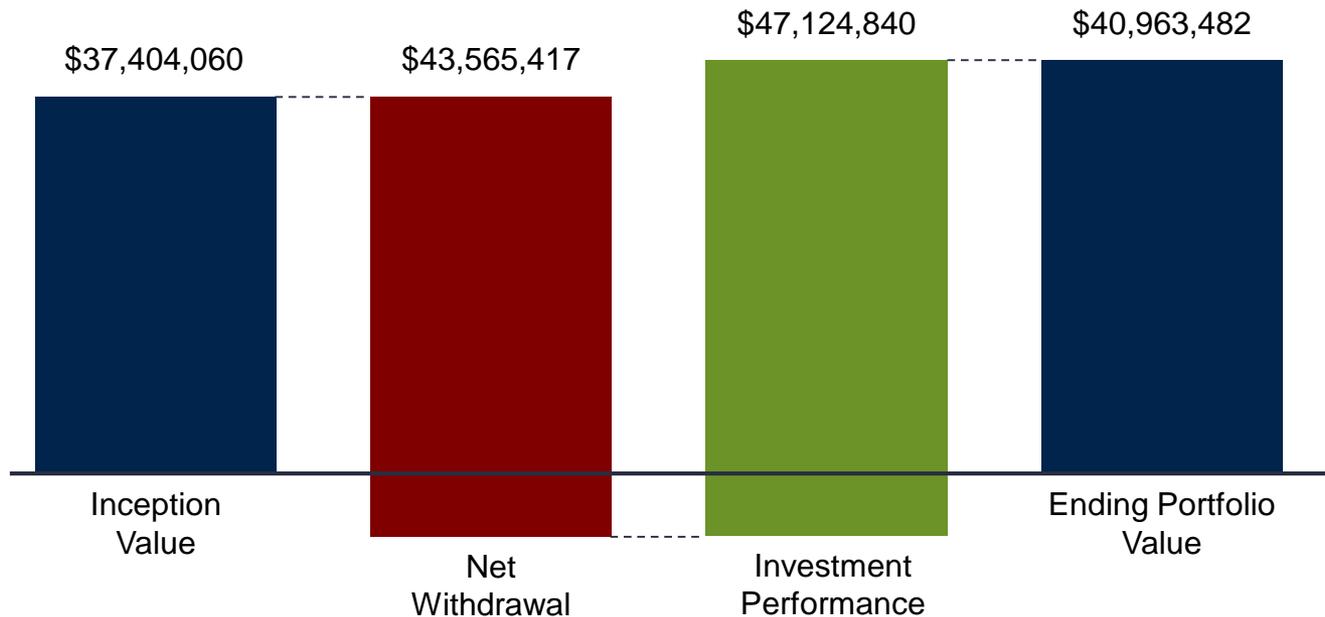
Performance

	<u>Total Portfolio</u>	<u>Equities</u>	<u>Russell Midcap® Index</u>	<u>Excess Return (Basis Points)</u>
1 Year	21.19	21.22	17.10	409
3 Years*	14.84	15.00	11.60	324
5 Years*	17.36	17.61	13.38	398
7 Years*	13.93	14.17	10.95	298

*Annualized.
Performance Inception is 3/28/2006.



Asset Growth Since Inception



Eastman Chemical Company



- Eastman Chemical Company is a specialty chemical company that produces a variety of advanced materials and specialty additives found in every-day items ranging from tires to crop protection to animal nutrition. Eastman maintains four business segments: Additives & Functional Products, Advanced Materials, Chemical Intermediaries, and Fibers.
- The stock outperformed the Index in the period as the company reported earnings and revenue that topped the market expectations. Demand picked back up in the back half of 2020 as the world reverts back to the “physical” world from the “virtual” world.
- Eastman exhibits strong valuation measures compared to industry peers and has the means to continue to generate profits while controlling costs. The company’s focus on productivity measures and its ability to increase product prices moving forward to expand margins are likely to help it offset the impact of recent COVID-19 headwinds to drive earnings growth.

Albemarle Corporation



ALBEMARLE

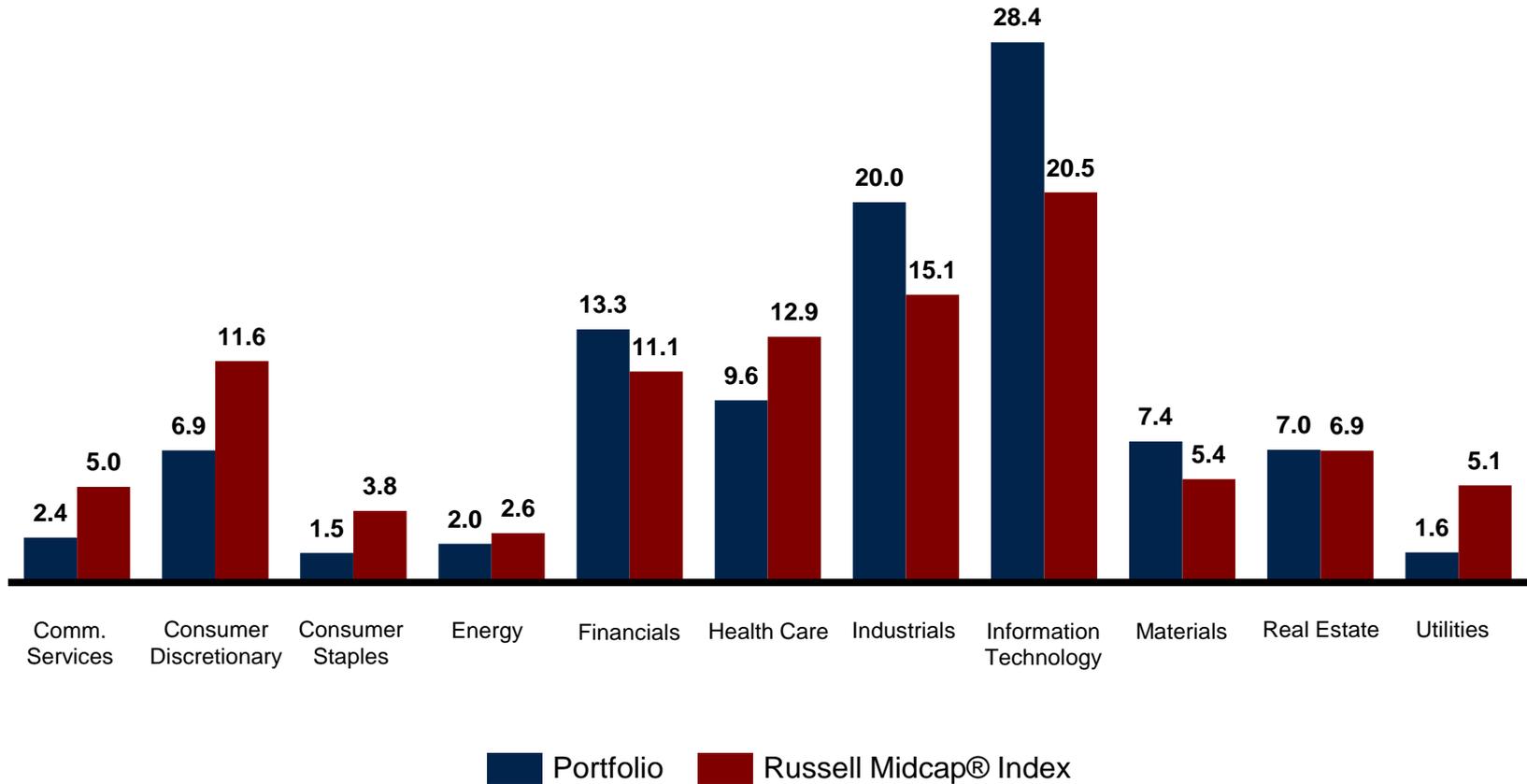
- Albemarle Corporation is a fine chemical manufacturing company based in Charlotte, North Carolina and with operations in Chile, Australia, China and the US. It operates 3 divisions: lithium, bromine specialties and catalysts. Albemarle is the world’s largest provider of lithium used in electric vehicle batteries.
- During the period, Albemarle reported strong performance relative to market expectations across the board. In particular, earnings were driven by improving volumes as bromine sales proved to be resilient due to the segment’s electronics exposure. The stock was outperformed in the quarter.
- The market is underappreciating the complexity, time and cost of adding capacity to extract and refine lithium ore into high-purity compounds fit for use in battery applications which should constrain supply. On the demand side, we expect the next wave of growth to be characterized by larger vehicles possessing increased driving range requiring larger batteries resulting in increased lithium content per automobile. These factors should lead to strong earnings growth over the next market cycle.

Progressive Corporation



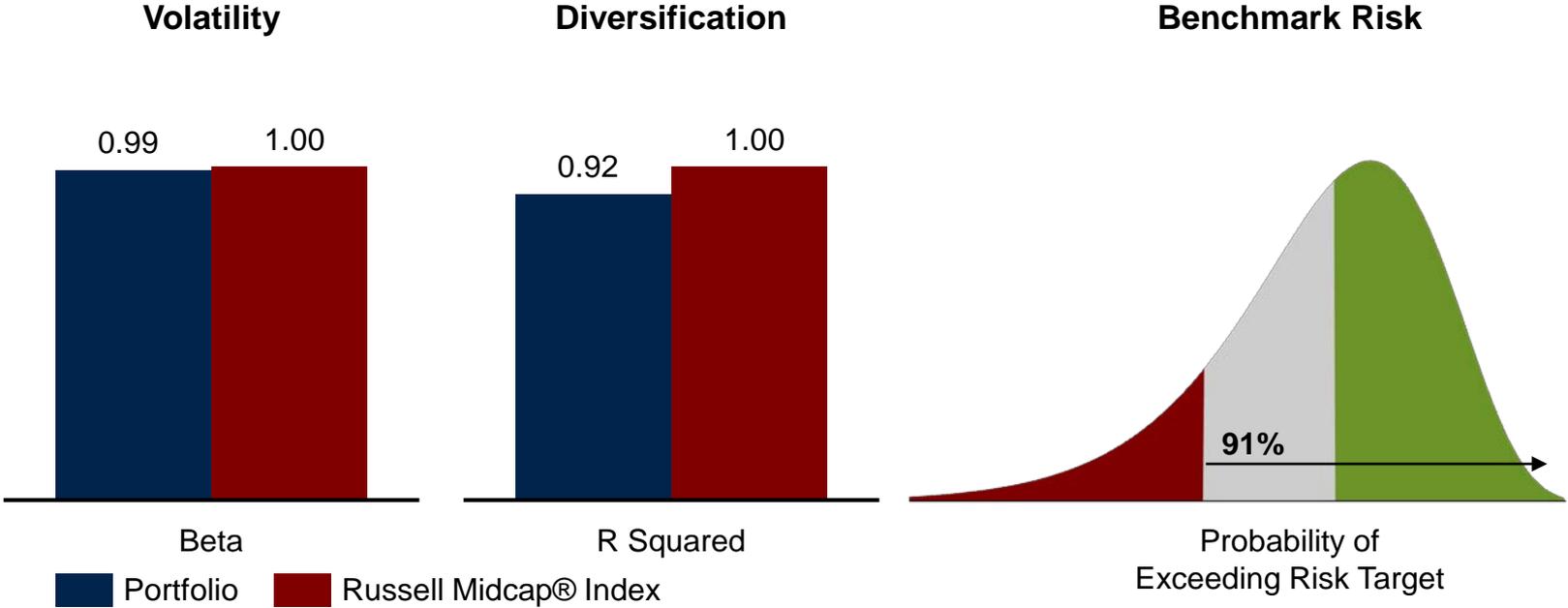
- Progressive is one of the largest providers of automobile insurance and other specialty property-casualty (P&C) insurance in the United States, with over 13 million auto policies in force alone.
- Although the company reported strong earnings growth during the quarter, greater than 30% higher than the same period one year ago, the stock lagged the benchmark during the period as sentiment around the financial sector as a whole was damped by the uncertainty of COVID-19.
- Relying on the unique use of telematics data and proactive risk management, Progressive has shown an ability to outperform the industry in its underwriting of personal auto insurance. Additionally, its focus in insuring trucks, cars, and vans of small and middle-sized enterprises, whose risk profiles are closer to personal auto rather than commercial auto, sets the company apart from peers which should continue to be a strong driver of growth over the next market cycle.

Percentage Held





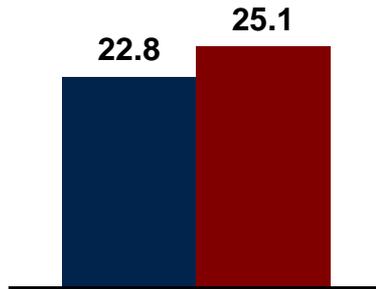
Risk Profile



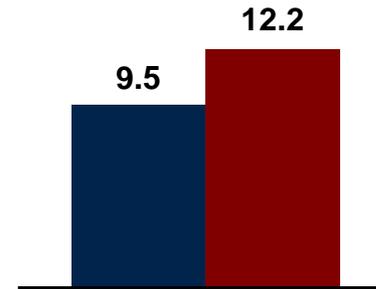


Equity Portfolio Characteristics

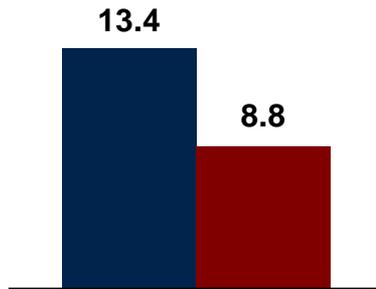
Price to Earnings



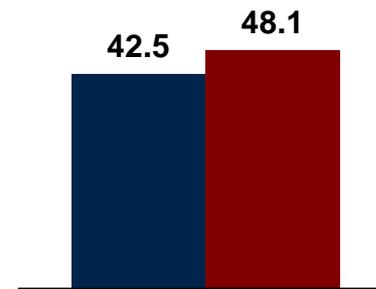
Earnings Growth



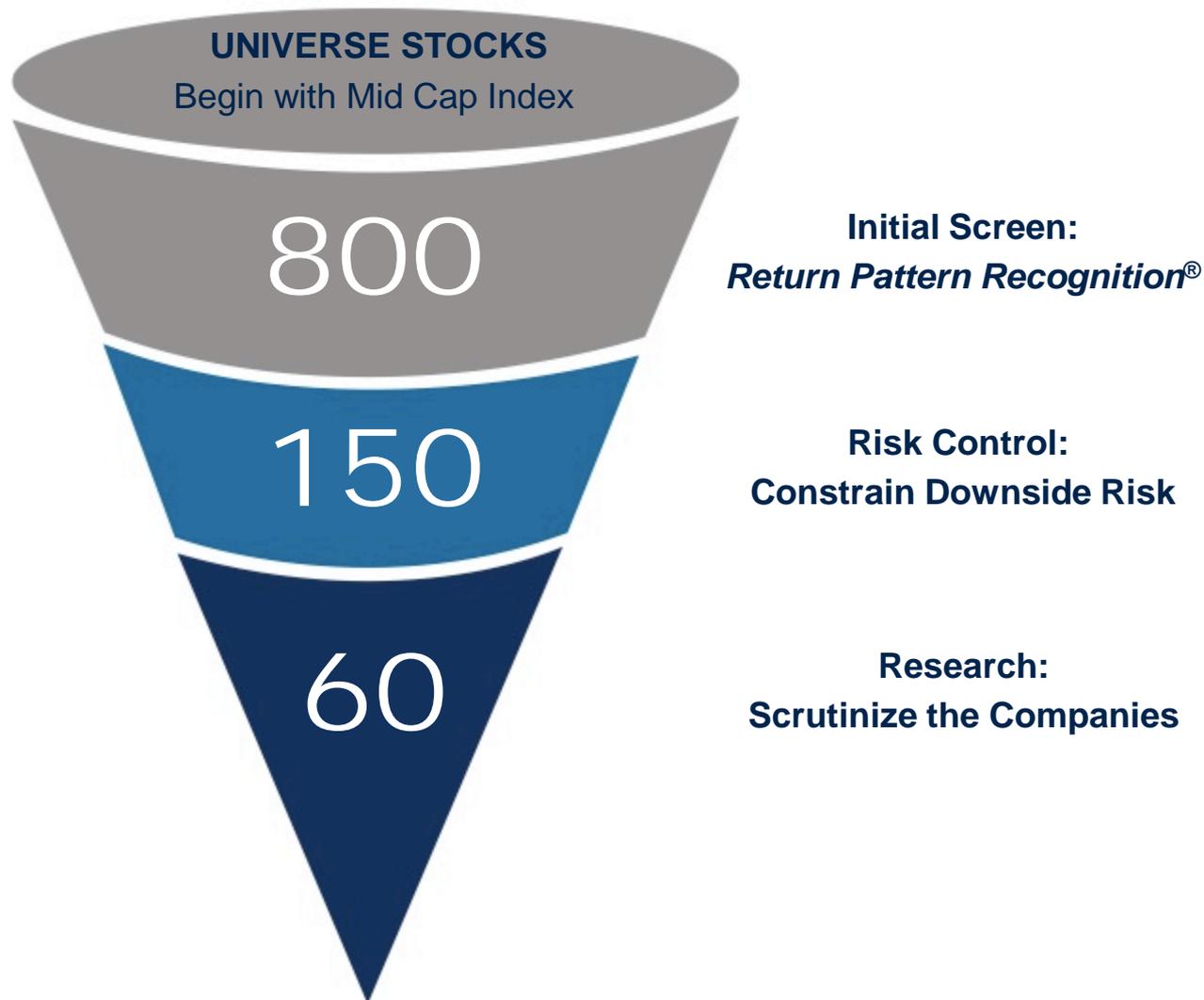
Return on Equity



Debt to Capitalization



■ Portfolio ■ Russell Midcap® Index



For those clients on whose behalf the Firm votes proxies, clients can elect to have the Firm utilize (a) the client's own proxy voting policies and procedures ("P&P") or (b) the Firm's P&P.

Proxy Policy-Overview

- As a general rule, the Firm will seek to vote the proxies received timely and in good order, in accordance with its then current proxy voting policies and procedures. A partial list of issues that may require special attention are as follows: classified boards, change of state of incorporation, poison pills, unequal voting rights plans, provisions requiring supermajority approval of a merger, executive severance agreements, and provisions limiting shareholder rights.
- In addition, the following will generally be adhered to:
 - The Firm will not (1) actively engage in conduct that involves an attempt to change or influence the control of a portfolio company, (2) announce its voting intentions or the reasons for a particular vote, (3) participate in a proxy solicitation or otherwise seek proxy voting authority from any other portfolio company shareholder, or (4) act in concert with any other portfolio company shareholders in connection with any proxy issue or other activity involving the control or management of a portfolio company.
 - All communications with portfolio companies or fellow shareholders will be for the sole purpose of expressing and discussing the Firm's concerns for its Clients' interests and not in an attempt to influence the control of management.

Proxy Procedures-Overview

The Firm has designated a Proxy Director. The Proxy Director, in consultation with the Firm's Investment Team, will consider each issue presented on each portfolio company proxy. The Proxy Director will also use available resources, including proxy evaluation services, to assist in the analysis of proxy issues. Absent any written direction from the Client, proxy issues presented to the Proxy Director will be voted in accordance with the judgment of the Proxy Director, taking into account the general policies outlined above and the Firm's Proxy Voting Guidelines. Therefore, it is possible that actual votes may differ from the general policies and the Firm's Proxy Voting Guidelines. In the case where the Firm believes it has a material conflict of interest with a Client, the Proxy Director will utilize the services of outside third party professionals (currently ISS) to assist in its analysis of voting issues and the actual voting of proxies to ensure that a decision to vote the proxies was based on the Client's best interest and was not the product of a conflict of interest. In the event the services of an outside third party professional are not available in connection with a conflict of interest, the Firm will seek the advice of the Client.

Statement of Assets

Quantity	Security	Price	Market Value	Pct. Asset	Annual Income	Yield
Common Stock						
Communication Services						
10,010.00	ACTIVISION BLIZZ	92.85	929,428.50	2.27	4,157.42	0.45
			929,428.50	2.27	4,157.42	0.45
Consumer Discretionary						
14,514.00	DR HORTON INC	68.92	1,000,304.88	2.44	12,361.65	1.24
7,886.00	DARDEN RESTAURAN	119.12	939,380.32	2.29	26,093.90	2.78
11,693.00	TJX COS INC	68.29	798,514.97	1.95	13,067.06	1.64
			2,738,200.17	6.68	51,522.62	1.88
Consumer Staples						
8,169.00	SYSCO CORP	74.26	606,629.94	1.48	12,780.50	2.11
			606,629.94	1.48	12,780.50	2.11
Energy						
20,722.00	CONTL RES INC/OK	16.30	337,768.60	0.82	0.00	
12,286.00	CIMAREX ENERGY C	37.51	460,847.86	1.13	2,922.54	0.63
			798,616.46	1.95	2,922.54	0.37
Financials						
8,420.00	HOULIHAN LOKEY I	67.23	566,076.60	1.38	11,887.28	2.10
9,320.00	INTERCONTINENTAL	115.29	1,074,502.80	2.62	13,969.70	1.30
28,403.00	KEYCORP	16.41	466,093.23	1.14	11,414.53	2.45
9,269.00	PROGRESSIVE CORP	98.88	916,518.72	2.24	17,315.78	1.89

Statement of Assets

Quantity	Security	Price	Market Value	Pct. Asset	Annual Income	Yield
4,440.00	REINSURANCE GROU	115.90	514,596.00	1.26	7,716.24	1.50
6,850.00	RAYMOND JAMES FINANCIAL INC	95.67	655,339.50	1.60	8,686.70	1.33
2,512.00	RENAISSANCERE HOLDINGS LTD	165.82	416,539.84	1.02	4,583.85	1.10
12,639.00	STIFEL FINANCIAL	50.46	637,763.94	1.56	5,790.18	0.91
			5,247,430.63	12.81	81,364.26	1.55
Health Care						
7,071.00	AGILENT TECH INC	118.49	837,842.79	2.05	8,147.40	0.97
4,245.00	AMERISOURCEBERGE	97.76	414,991.20	1.01	7,326.21	1.77
1,547.00	BIO-RAD LABS-A	582.94	901,808.18	2.20	0.00	
2,443.00	LABORATORY CP	203.55	497,272.65	1.21	0.00	
8,106.00	SYNEOS HEALTH INC	68.13	552,261.78	1.35	0.00	
10,901.00	DENTSPLY SIRONA	52.36	570,776.36	1.39	4,577.72	0.80
			3,774,952.96	9.22	20,051.33	0.53
Industrials						
16,343.00	AIR LEASE C	44.42	725,956.06	1.77	7,003.92	0.96
2,943.00	CUMMINS INC	227.10	668,355.30	1.63	21,669.88	3.24
7,350.00	CSX CORP	90.75	667,012.50	1.63	0.00	
4,408.00	DOVER CORP	126.25	556,510.00	1.36	14,377.34	2.58
5,652.00	GATX CORP	83.18	470,133.36	1.15	11,977.92	2.55
2,454.00	GENERAL DYNAMICS	148.82	365,204.28	0.89	7,247.97	1.98
13,595.00	MASCO CORP	54.93	746,773.35	1.82	8,444.93	1.13

Statement of Assets

Quantity	Security	Price	Market Value	Pct. Asset	Annual Income	Yield
10,130.00	REPUBLIC SVCS	96.30	975,519.00	2.38	19,552.89	2.00
3,350.00	SNAP-ON INC	171.14	573,319.00	1.40	11,607.94	2.02
10,283.00	STERICYCLE INC	69.33	712,920.39	1.74	0.00	0.00
13,107.00	SENSATA TECHNOLO	52.74	691,263.18	1.69	0.00	0.00
6,001.00	WOODWARD INC	121.53	729,301.53	1.78	5,479.13	0.75
			7,882,267.95	19.24	107,361.92	1.36
Information Technology						
4,175.00	AKAMAI TECHNOLOG	104.99	438,333.25	1.07	0.00	
12,874.00	APPLIED MATERIAL	86.30	1,111,026.20	2.71	19,625.10	1.77
3,257.00	ANSYS INC	363.80	1,184,896.60	2.89	0.00	
6,656.00	ARROW ELECTRONIC	97.30	647,628.80	1.58	0.00	
8,653.00	BLACK KNIGHT	88.35	764,492.55	1.87	0.00	
3,845.00	CMC MATERIALS INC	151.30	581,748.50	1.42	8,797.71	1.51
5,381.00	GLOBAL PAYMENTS	215.42	1,159,175.02	2.83	421.56	0.04
7,584.00	KEYSIGHT TEC	132.09	1,001,770.56	2.45	0.00	
8,982.00	REALPAGE INC	87.24	783,589.68	1.91	0.00	
5,314.00	SYNOPSIS INC	259.24	1,377,601.36	3.36	0.00	
7,325.00	SKYWORKS SOLUTIO	152.88	1,119,846.00	2.73	14,844.69	1.33
7,281.00	XILINX INC	141.77	1,032,227.37	2.52	22,822.17	2.21
			11,202,335.89	27.35	66,511.22	0.59
Materials						

Statement of Assets

Quantity	Security	Price	Market Value	Pct. Asset	Annual Income	Yield
4,652.00	ALBEMARLE CORP	147.52	686,263.04	1.68	9,820.51	1.43
5,141.00	EASTMAN CHEMICAL	100.28	515,539.48	1.26	11,582.83	2.25
3,978.00	PACKAGING CORP	137.91	548,605.98	1.34	15,467.48	2.82
9,641.00	SEALED AIR CORP	45.79	441,461.39	1.08	6,658.86	1.51
3,652.00	SCOTTS MIRACLE-A	199.14	727,259.28	1.78	18,704.23	2.57
			2,919,129.17	7.13	62,233.91	2.13
Real Estate						
13,851.00	CBRE GROUP INC	62.72	868,734.72	2.12	0.00	
			868,734.72	2.12	0.00	0.00
Utilities						
6,746.00	WEC ENERGY GROUP	92.03	620,834.38	1.52	21,285.20	3.43
			620,834.38	1.52	21,285.20	3.43
			37,588,560.77	91.76	430,190.92	1.14
Real Estate Investment Trust						
Real Estate						
6,383.00	BOSTON PROPERTIE	94.53	603,384.99	1.47	0.00	
17,903.00	AMERICOLD REALTY	37.33	668,318.99	1.63	0.00	
2,151.00	SBA COMM CORP	282.13	606,861.63	1.48	0.00	
			1,878,565.61	4.59	0.00	0.00
			1,878,565.61	4.59	0.00	0.00
Cash and Equivalents						

Statement of Assets

Quantity	Security	Price	Market Value	Pct. Asset	Annual Income	Yield
1,467,323.03	U.S. DOLLARS	1.00	1,467,323.03	3.58	0.00	
29,033.31	USD - DIVIDENDSRECEIVABLE	1.00	29,033.31	0.07	0.00	
			1,496,356.34	3.65	0.00	0.00
			1,496,356.34	3.65	0.00	0.00
Total Portfolio			40,963,482.72	100.00	430,190.92	1.05

Statement Of Transactions

From 10/1/2020 to 12/31/2020

<u>Quantity</u>	<u>Security</u>	<u>Sec Symbol</u>	<u>Unit Price</u>	<u>Total Amount</u>
PURCHASES				
2,201.00	ARROW ELECTRONIC	ARW	88.14	194,006.90
2,290.00	BOSTON PROPERTIE	BXP	96.17	220,226.89
6,609.00	AIR LEASE C	AL	38.67	255,583.63
8,982.00	REALPAGE INC	RP	66.59	598,106.78
				<u>1,267,924.20</u>
SALES				
10,248.00	EATON VANCE CORP	EV	65.75	673,767.00
1,033.00	INTUIT INC	INTU	354.85	366,558.55
4,003.00	AUTODESK INC	ADSK	256.09	1,025,148.14
				<u>2,065,473.69</u>

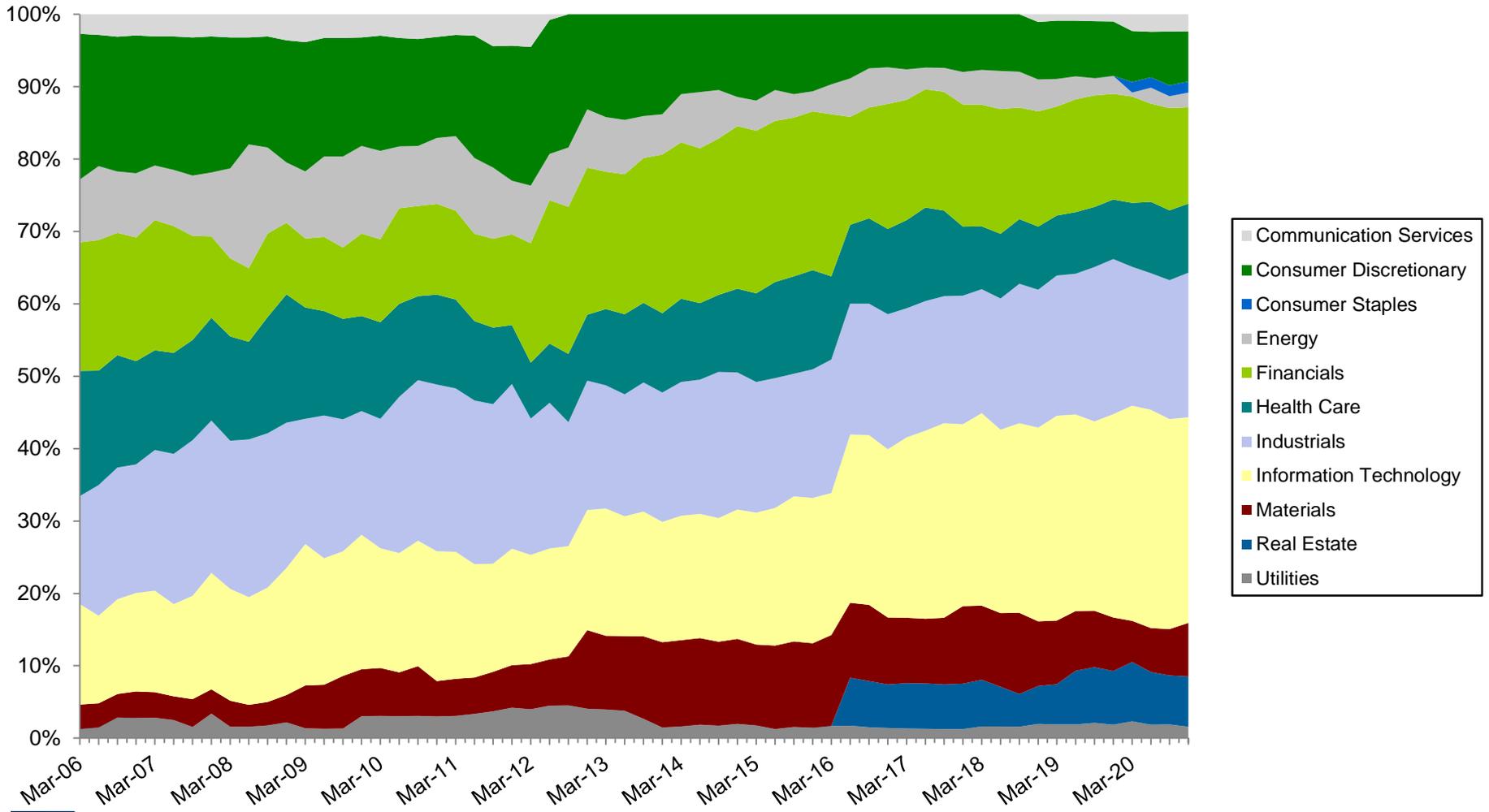
Performance

	<u>Total Portfolio</u>	<u>Equities</u>	<u>Russell Midcap® Index</u>
<i>Inception 3/28/2006</i>			
2006	3.56%	3.47%	7.92%
2007	8.78	8.99	5.60
2008	-37.51	-39.47	-41.46
2009	37.48	37.94	40.48
2010	27.22	28.53	25.47
2011	-0.79	-0.11	-1.56
2012	16.36	17.82	17.29
2013	31.25	32.42	34.78
2014	10.32	10.87	13.22
2015	1.40	1.33	-2.44
2016	16.55	16.85	13.80
2017	26.22	26.73	18.52
2018	-9.63	-9.94	-9.05

Performance

	<u>Total Portfolio</u>	<u>Equities</u>	<u>Russell Midcap® Index</u>
<i>2019</i>	38.36	39.38	30.54
<i>3/31/2020</i>	-23.63	-24.16	-27.07
<i>6/30/2020</i>	23.81	24.03	24.61
<i>9/30/2020</i>	8.46	8.59	7.46
<i>12/31/2020</i>	18.18	18.69	19.91
<i>Year-to-Date</i>	21.19	21.22	17.10
<i>Since Inception</i>			
<i>-Annualized</i>	10.96	11.16	9.43
<i>-Cumulative</i>	365.22	367.81	278.96

EARNEST Partners MARKET Model Portfolio



Asset Growth

Period Ending	Ending Portfolio Value	Withdrawals	Contributions	Investment Change	
				Period	Since Inception
3/28/2006	\$37,404,060				
2006	\$38,599,735	\$0	\$0	\$1,195,675	\$1,195,675
2007	51,982,630	3,500,000	14,238,849	2,644,046	3,839,721
2008	26,001,788	10,000,000	0	-15,980,842	-12,141,121
2009	32,406,299	3,000,000	0	9,404,511	-2,736,610
2010	31,053,473	8,500,000	0	7,147,174	4,410,564
2011	23,758,477	7,500,000	0	205,004	4,615,568
2012	27,646,027	0	0	3,887,550	8,503,118
2013	40,899,931	0	3,802,146	9,451,898	17,955,016
2014	31,527,407	13,001,627	0	3,629,103	21,584,119
2015	29,934,966	2,000,704	0	408,263	21,992,382

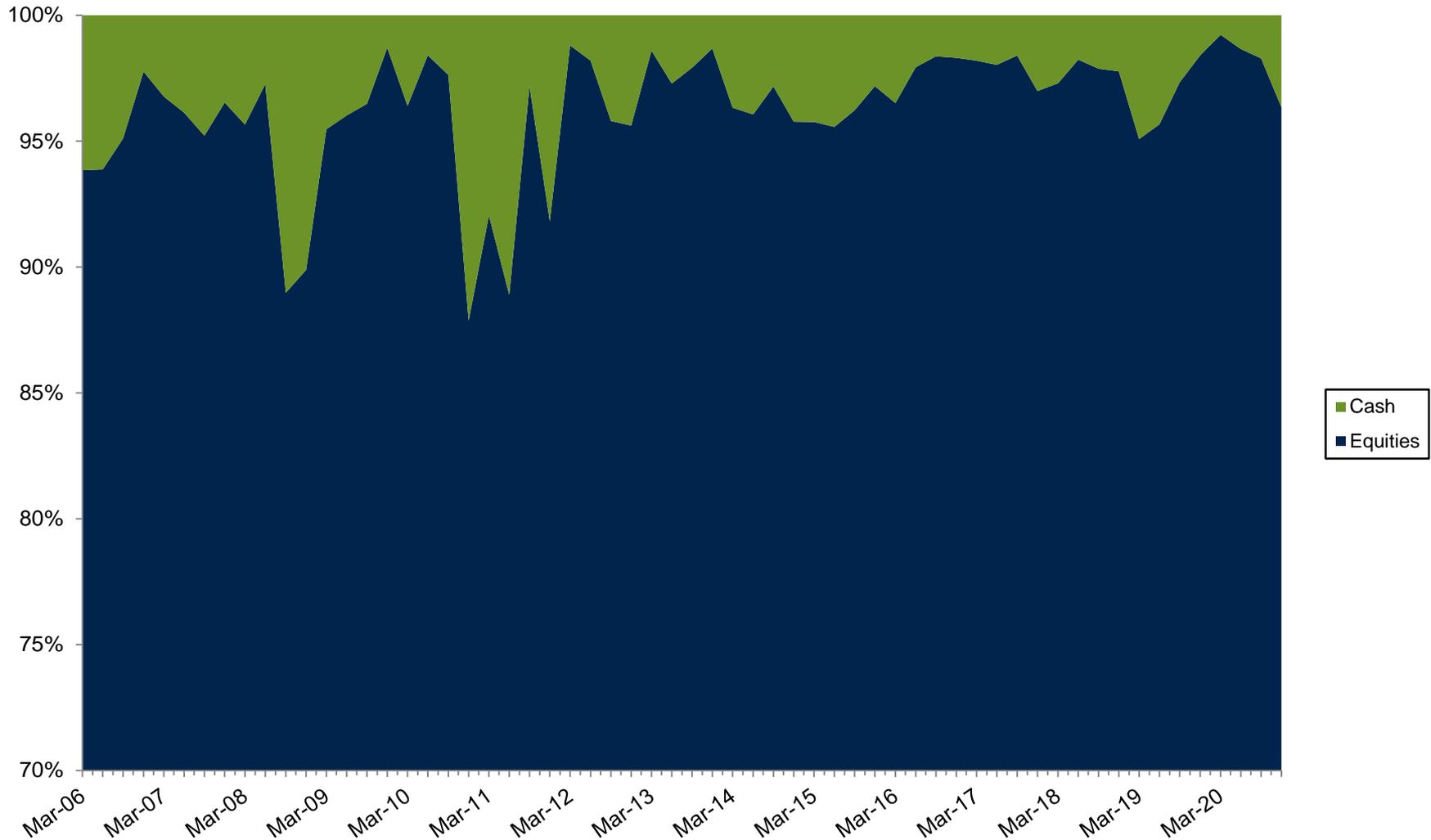
Asset Growth

Period Ending	Ending Portfolio Value	Withdrawals	Contributions	Investment Change	
				Period	Since Inception
2016	\$27,890,394	\$6,500,289	\$0	\$4,455,717	\$26,448,099
2017	29,426,736	5,000,733	0	6,537,075	32,985,174
2018	25,674,345	1,000,929	0	-2,751,462	30,233,712
2019	33,800,363	1,601,235	0	9,727,253	39,960,965
3/31/2020	25,813,594	0	0	-7,986,566	31,974,399
6/30/2020	31,958,974	0	0	6,145,518	38,119,917
9/30/2020	34,661,808	0	0	2,702,995	40,822,912
12/31/2020	40,963,482	0	0	6,301,928	47,124,840



Asset Allocation

Oakland Police and Fire Retirement Board
December 31, 2020





**Russell Midcap®
Index**

The Russell Midcap® Index offers investors access to the mid-cap segment of the U.S. equity universe. It is constructed to provide a comprehensive and unbiased barometer for the mid-cap segment and is completely reconstituted annually to ensure larger stocks do not distort the performance and characteristics of the true mid-cap opportunity set. The Russell Midcap® Index includes the smallest 800 securities in the Russell 1000® Index. The index is unmanaged and it is not possible to invest directly in an index.



Oakland-Based Brokers Only

Oakland Police and Fire Retirement
Board
December 31, 2020

No trades through Oakland-based brokers in 4Q2020.

Nothing presented herein is intended to constitute investment advice and no investment decision should be made based on any information provided herein. Investments cited may not represent current or future holdings of EARNEST Partners, LLC (“EP”) investment products and nothing presented should be construed as a recommendation to purchase or sell a particular type of security or follow any investment technique or strategy. Information provided reflects EP’s views as of a particular time. Such views are subject to change at any point and EP shall not be obligated to provide any notice of such change. Any forward-looking statements or forecasts are based on assumptions and actual results are expected to vary from any such statements or forecasts. No reliance should be placed on any such statements or forecasts when making any investment decision. While EP has used reasonable efforts to obtain information from reliable sources, we make no representations or warranties as to the accuracy, reliability or completeness of third-party information presented herein. Performance assumes the reinvestment of dividends and capital gains. No guarantee of investment performance is being provided and no inference to the contrary should be made.

MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: David Sancewich, Paola Nealon, Sidney Kawanguzi
 Meketa Investment Group
DATE: February 24, 2021
RE: EARNEST Partners – Manager Update

Manager: EARNEST Partners

Inception Date: 04/2006 **OPFRS AUM (12/31/20):** \$40.96 Million (9.0%)

Management Fee: 79 bps (\$323,612)¹

Investment Strategy: Domestic Mid-Cap Equity

Benchmark: Russell Midcap Index **Firm-wide AUM (9/30/20):** \$22.0 billion²

Summary & Recommendation

EARNEST Partners has managed the Midcap Core portfolio since the first quarter of 2006. Since inception, EARNEST has outperformed its benchmark. *Meketa does not have any major concerns with Earnest Partners and does not recommend any action be taken at this time.*

Discussion

In reviewing EARNEST, Meketa considered investment performance and recent organizational / personnel issues.

Annualized Investment Performance (as of 12/31/2021)

Manager	MKT Value (\$000)	Quarter	1 YR	3 YR	5 YR	Since Inception	Inception Date ³
Earnest Partners (Gross of Fees)	40,963	18.2	21.2	14.9	17.3	10.9	3/2006
Earnest Partners (Net of Fees)	40,963	18.0	20.4	14.1	16.5	10.1	--
<i>Russell Midcap Index</i>	--	<i>19.9</i>	<i>17.1</i>	<i>11.6</i>	<i>13.4</i>	<i>9.4</i>	--
Excess Return (Net of Fees)	--	<i>-1.9</i>	<i>+3.3</i>	<i>+2.5</i>	<i>+3.1</i>	<i>+0.7</i>	--

EARNEST has outperformed the Russell Midcap Index by 70 basis points since inception in 2006. EARNEST has been a part of the portfolio for over a decade and continues to deliver outperformance, even in recent years.

¹ Estimate based on AUM as of 12/31/20.

² Source: eVestment. 12/31/20 data was not available at the time of production

³ Inception date reflects the first full month after portfolio received initial funding.



Organizational Issues

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

Investment Philosophy & Process, per manager

EARNEST Partners is a fundamental, bottom-up investment manager. The investment objective is to outperform the assigned benchmark while seeking to control volatility and risk. EARNEST implements this philosophy using an internally developed screen called Return Pattern Recognition® that seeks to identify the specific drivers of each stock rather than attempting to apply the same dogma to each stock. They believe that companies are unique and consider the specific characteristics of each company when selecting companies. They continue to search for mispriced and misunderstood opportunities within the market.

EARNEST Partners does not target sector or industry weights. Instead, the weightings are an outgrowth of the bottom-up, fundamental stock selection process. The process is designed to put the client in the individual securities that the firm believes have the most attractive expected returns; relative overweights and underweights are an outgrowth of where the team is finding those individual opportunities. The risk management process also influences the weights taken in any one sector. As a general rule, larger sectors will not represent more than 2x the benchmark weight. No individual holding generally exceeds 5.0% of the portfolio's value.

DS/PN/SK/pq



AGENDA REPORT

TO: Oakland Police and Fire Retirement System (PFRS) Board of Administration
FROM: David F. Jones
Plan Administrator
SUBJECT: Expiration Notice of PFRS Investment Manager Service Agreement and Action to Extend Service Agreements
DATE: February 24, 2021

SUMMARY

The Service Contract for the following Investment Manager for the Oakland Police & Fire Retirement Systems (PFRS) is set to expire March 24, 2021. The PFRS Board is asked to consider acting to extend the service agreement for this manager for one additional year pursuant to their service agreements.

BACKGROUND

The Service Agreement for the following Investment Manager who provides services for the PFRS Board will expire shortly. The following table describes the investment manager contract:

Investment Manager	Investment Class	Hire Date	Contract/Extension Expiration Date
Earnest Partners, LLC	Mid-Cap Core Domestic Equity	March 16, 2006	March 24, 2021

RECOMMENDATION

Staff recommends that the PFRS Board approve the implementation of the relevant service agreement provision for the manager to extend the service agreement between the above mentioned PFRS Investment Manager and PFRS.

Respectfully submitted,

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

Attachments:
Resolution # 8011

Agenda Item C3
PFRS Board Meeting
February 24, 2021

ATTACHMENT 1

**Resolution No.
8011**

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

*Approved to Form
and Legality*



RESOLUTION NO. 8011

ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

RESOLUTION AUTHORIZING ONE-YEAR EXTENSION OF PROFESSIONAL SERVICES AGREEMENT WITH EARNEST PARTNERS, LLC TO PROVIDE MID-CAP CORE DOMESTIC EQUITY ASSET CLASS INVESTMENT MANAGER SERVICES FOR THE CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

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

WHEREAS, Oakland City Charter section 2601(e) also states that the PFRS Board may secure from competent investment counsel such counsel and advice as to investing the funds of the Retirement System as it deems necessary and that discretionary powers granted such investment counsel will be at the option of the Board; and

WHEREAS, at the November 30, 2005 Board meeting, the PFRS Board awarded a professional service agreement (“the Agreement”) to Earnest Partners, LLC (“Investment Counsel”) to provide advice and counsel regarding investments of the assets of the Police and Fire Retirement Fund (“Fund”) for a five-year term commencing March 24, 2006 and ending March 24, 2011; and

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

WHEREAS, Section IV(B) of the Agreement gave the PFRS Board the option to extend the initial term of the Agreement for three addition one-year terms; and

WHEREAS, on January 26, 2011, the Agreement with Investment Counsel was extend by Board motion for an additional five-year term, commencing March 24, 2011, and

WHEREAS, on March 30, 2016, the Agreement with Investment Counsel was extended by Board motion for an addition one-year term, effective March 24, 2016, and

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

RESOLUTION NO. 8011

WHEREAS, on March 29, 2017, the PFRS Board passed Resolution No. 6957 which authorized amendment of Section IV(B) of the Agreement to provide the PFRS Board with unlimited one-year extension options, and

WHEREAS, on January 31, 2018, the PFRS Board passed Resolution No. 6993 which authorized a one-year extension of the Agreement with Investment Counsel commencing March 24, 2018, and

WHEREAS, on January 30, 2019, the PFRS Board passed Resolution No. 7036 which authorized a one-year extension of the Agreement with Investment Counsel, commencing March 24, 2019, and

WHEREAS, on January 29, 2020, the PFRS Board passed Resolution No. 7080 which authorized a one-year extension of the Agreement with Investment Counsel, commencing March 24, 2020, and

WHEREAS, the Board now wishes to exercise its option to renew the Agreement with Investment Council for an additional one-year term, commencing March 24, 2021; now, therefore, be it

RESOLVED: That the Board hereby authorizes a one-year extension of the professional service agreement between the City of Oakland Police and Fire Retirement System and Earnest Partners, LLC for the Mid-Cap Core Domestic Equity Asset Class Investment Manager Services, commencing March 24, 2021 and ending March 24, 2022.

IN BOARD MEETING, VIA ZOOM TELE-CONFERENCE FEBRUARY 24, 2021

PASSED BY THE FOLLOWING VOTE:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST: _____
PRESIDENT

ATTEST: _____
SECRETARY



Presented to:

City of Oakland Police and Fire Retirement System

Conference Call:

February 24, 2021

Presented by:

Jason J. Hoyer, CFA
Portfolio Manager

Presenter Biography



Jason Hoyer, CFA
Portfolio Manager

Jason Hoyer is a portfolio manager at Reams Asset Management. Jason has 17 years of experience as a portfolio manager and a fixed income and equity analyst. Prior to joining Reams in 2015, Jason was a senior credit analyst at 40|86 Advisors and a director in the research department at Fiduciary Management Associates. Mr. Hoyer earned his bachelor's degree from the University of Michigan. He holds the Chartered Financial Analyst (CFA) designation and is a member of the CFA Institute.



Table of Contents

- 1 Organizational Updates
- 2 Current Views & Investment Themes
- 3 Client Relationship Overview
- 4 Performance Review
- 5 Portfolio Characteristics
- 6 Diversity at Reams
- 7 Disclosures



Firm Overview

Reams at a Glance

- Founded in 1981
- Headquartered in Columbus, Indiana
- \$22.5 billion in assets under management
- 8 fixed income strategies along with extensive custom separate account capabilities
- Affiliate of Carillon Tower Advisers, Inc., a subsidiary of Raymond James Financial, Inc., since November 2017

Firm Overview

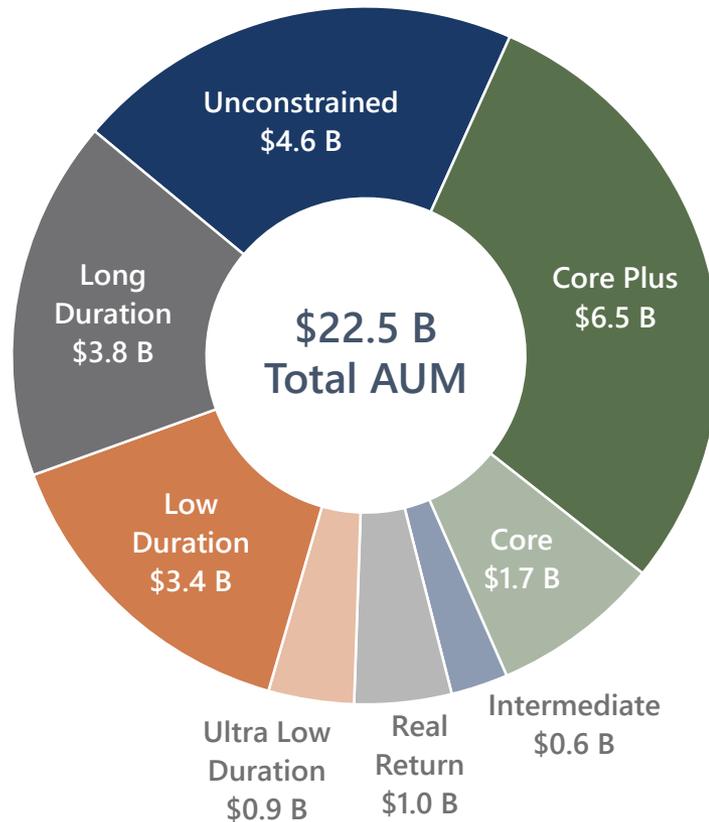
Differentiating Features

- Fixed income specialist with a focused product lineup
- Experienced and stable investment team
- Opportunistic investment style driven by long-term value and risk-adjusted total returns
- Flexible, benchmark-agnostic portfolio construction
- Distinct risk management framework
- High-touch client service model



Firm Overview

Strategy Lineup



Available Investment Vehicles

Separate Accounts

- All Strategies

U.S. Institutional Commingled Funds:

- Columbus Core Plus Bond Fund
- Columbus Unconstrained Bond Fund
- Columbus Ultra Low Duration Bond Fund

U.S. Institutional Mutual Funds (sub-advised):

- Carillon Reams Core Bond Fund (SCCIX)
- Carillon Reams Core Plus Bond Fund (SCPZX)
- Carillon Reams Unconstrained Bond Fund (SUBFX)

Non-U.S. Commingled Fund (sub-advised):

- Raymond James Funds Reams Unconstrained Bond SICAV (Class A USD | SCUCBDA LX)

Data as of
December 31, 2020

For Institutional Use Only

SR21-0075 | Exp. 04/15/2021

Firm Overview

Investment Team

Investment Committee

Mark Egan, CFA

Chief Investment Officer
Managing Director
(34 years / 30 years)

Todd Thompson, CFA

Portfolio Manager
Corporate Team Leader
Managing Director
(26 years / 19 years)

Bob Crider, CFA

Co-Founder
Managing Director
(43 years / 39 years)

Corporate Team

Todd Thompson, CFA

Jason Hoyer, CFA

Portfolio Manager
(17 years / 5 years)

Clark Holland, CFA

Portfolio Manager
Client Relations
(26 years / 18 years)

Scott Rosener, CFA

Senior Analyst
(23 years / 15 years)

Trey Harrison, CFA, ASA

Senior Analyst / Actuary
(26 years / 10 years)

Bobby Flynn, CFA

Fixed Income Analyst
(8 years / 8 years)

Securitized Team

Steve Vincent, CFA

Portfolio Manager
Securitized Team Leader
(29 years / 26 years)

Kevin Salsbery, CFA

Senior Analyst
(19 years / 15 years)

Patrick Laughlin

Senior Analyst
(25 years / 16 years)

Taylor Harris, CFA

Fixed Income Analyst
(3 years / 3 years)

(Years of Industry Experience / Reams Tenure)

Please see Investment Professional Biographies section for detailed biographies

Firm Overview

Representative Client List

Corporate

American Honda Motor Company
Cummins Inc.
Emerson Electric Company
NCR Corporation
Omaha Public Power District
Southern California Rock Products

Health Care

University of Colorado Health
Johns Hopkins Health System
NorthShore University HealthSystem
Northwestern Memorial HealthCare
OhioHealth Corporation
Shirley Ryan AbilityLab

Non-Profit

American Heart Association
Archdiocese of Miami
Board of Pensions/Presbyterian Church, USA
Chicago Symphony Orchestra
Cleveland Museum of Art
Veterans of Foreign Wars of the U.S.

Sub-Advisory

Prudential Retirement Insurance & Annuity Co.
Russell Investment Management Company

Public

Arkansas Teacher Retirement System
Employees' Retirement System of Baltimore County
Indiana State Police Pension Trust
Los Angeles Fire & Police Pensions
City of Milwaukee Employees' Retirement System
Montana Board of Investments
City of Oakland Police & Fire Retirement System
San Francisco Bay Area Rapid Transit District
Sonoma County Employees' Retirement Association
Spokane Firefighters' Pension Fund
Ventura County Employees' Retirement Association

Taft-Hartley

Carpenters District Council of Kansas City Pension Fund
Carpenters Pension Fund of Illinois
Gulf Coast Carpenters and Millwrights Health Trust
IBEW 8th District Electrical Pension Trust
Inter-Local Pension Fund, GCC/IBT

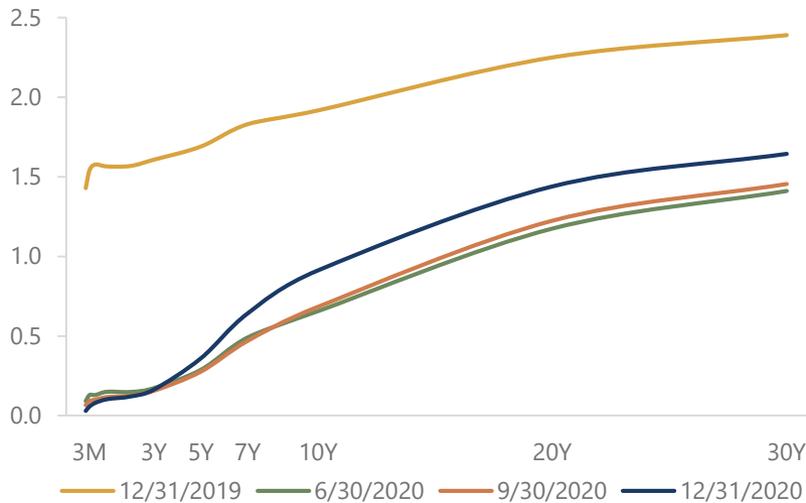
University/Endowment/Foundation

Trustees of Indiana University
University of Kentucky
Purdue University
Regents of the University of Minnesota

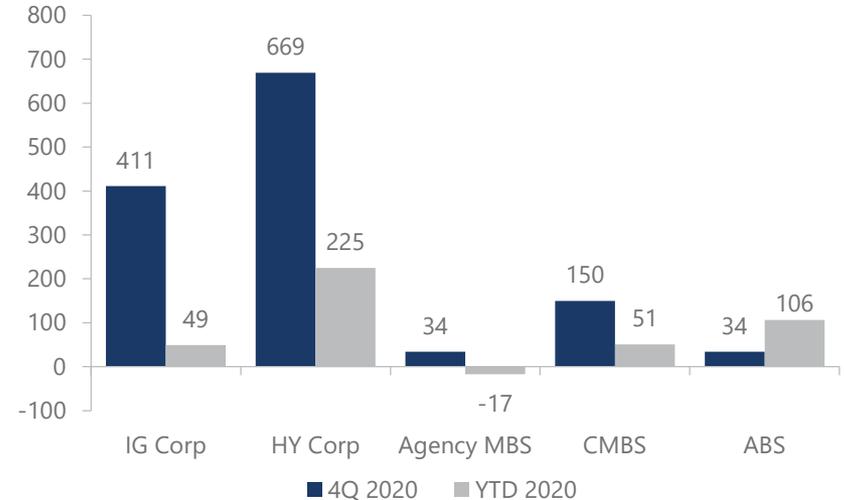
This Representative Client List includes institutional clients whose permission has been received for inclusion. No specific selection criteria were used. It is not known whether or not the listed clients approve of the advisory services provided by Reams Asset Management or Scout Investments.

Fixed Income Dashboard

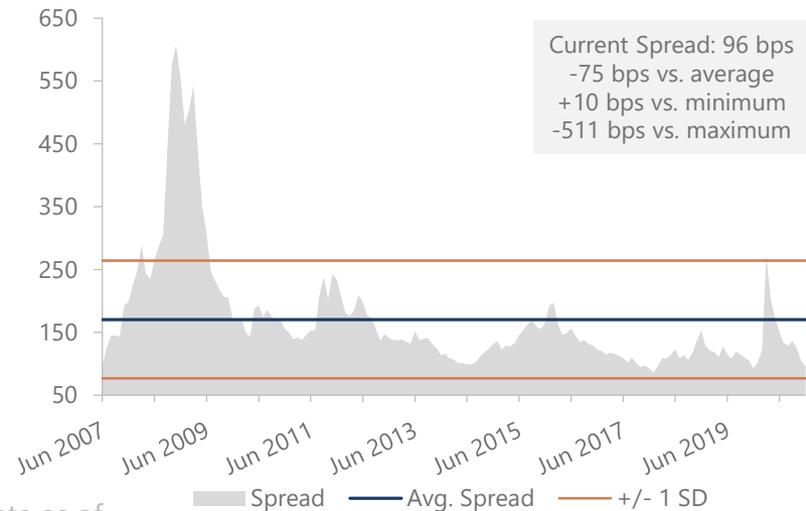
U.S. Treasury Yield Curves, Percent



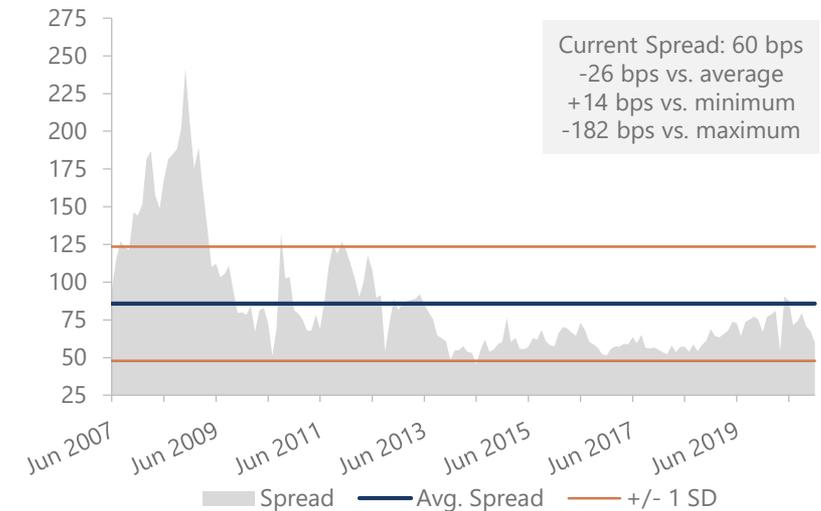
Sector Excess Returns vs. U.S. Treasuries, Basis Points



Investment Grade Corporate OAS, Basis Points



Agency MBS Zero-Volatility Spread, Basis Points

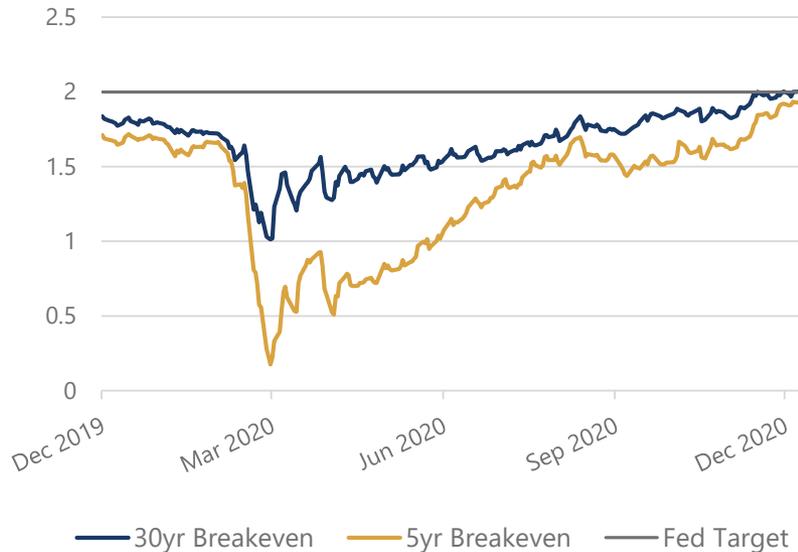


Data as of
December 31, 2020

Source: Bloomberg Index Services Limited; Bloomberg L.P.

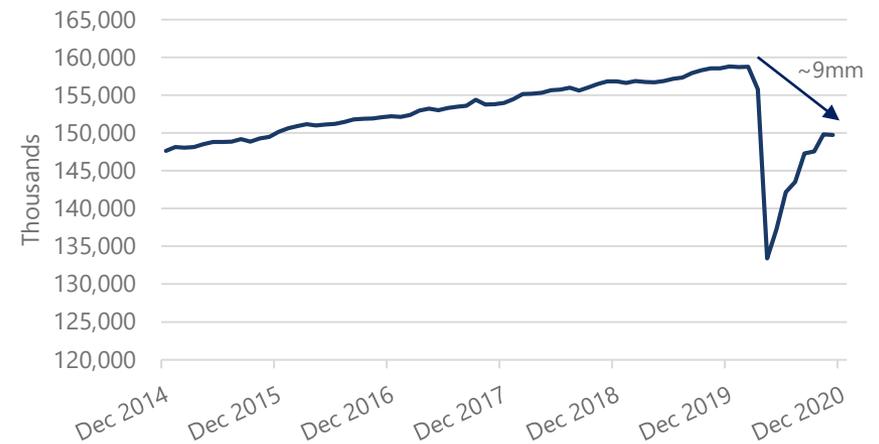
Market Insights

Inflation Breakevens vs. Fed Inflation Target



In response to fiscal stimulus, the Fed's quantitative easing purchases, and vaccination production, intermediate and long-term inflation expectations are nearing the Fed's target.

Total U.S. Household Employment



U.S. employment has recovered steadily following the precipitous drop in April related to COVID-19; however, employment has recently stalled out at approximately 9 million fewer than the pre-virus peak of early 2020.

Data as of
December 31, 2020

Source: Bloomberg

Investment Themes

Risk markets moved significantly higher on election and vaccine news

- Election clarity, coupled with vaccine approval, dominated headlines and drove risk asset performance.
- COVID-19 cases surged during the quarter, and the economy faced new bouts of retrenchment and weakness.
- The second stimulus package finally came to fruition and will be critical to bolstering consumption spending since the first stimulus benefits have expired.
- The Fed committed to maintain asset purchases for the foreseeable future, but continued to defer to fiscal tools.

Outlook for economic recovery in 2021 is cloudy with myriad challenges

- The return of lost jobs is highly uncertain, which will shape the trajectory of consumption.
- The gap between risk valuations and fundamentals widened further and looms large into 2021.
- The prospect for elevated inflation has garnered attention, as fiscal and monetary stimulus finally work in tandem.

Reams moved to a more defensive stance on risk and duration

- Credit risk has been reduced to benchmark levels, with rotation into lower beta credits.
- In MBS, we continue to focus on less negatively convex structures as well as ABS subsectors such as auto finance.
- Duration exposure has been reduced as we see heightened risk factors for an upside to rates.



Investment Objective and Guidelines

Objective

- To exceed the Bloomberg Barclays Universal Index, net of fees, over a complete market cycle.

Investment Guidelines

- Maximum average portfolio duration is 10 years with a targeted average portfolio duration in the range of 3 to 8 years.
- Maximum remaining term to maturity (per single issue) is 31 years at purchase.
- No single issue shall exceed 10% of the portfolio, excluding government and agency issues.
- No single issue shall account for more than 10% of the outstanding issue, excluding government and agency issuers.
- The portfolio must have an overall weighted average quality of at least BBB-.
- All securities must have a rating of B- or higher (S&P, Moody's or Fitch), using the middle of three or lower of two ratings.
- Credit default swaps are limited to a notional value of 10% of the portfolio.
- Coal-Related Companies are restricted from purchase in the portfolio.

Source: OPFRS Investment Guidelines (Rev. 9/1/2016)



Relationship Summary

City of Oakland Police and Fire Retirement System

Relationship Inception	February 1, 1998
------------------------	------------------

Investment Style	Core Plus Fixed Income
------------------	------------------------

Performance Benchmark	Bloomberg Barclays Universal Index
-----------------------	------------------------------------

Financial Data as of December 31, 2020

Initial Investment	\$97.5 million
Contributions	\$146.0 million
(Withdrawals)	(\$338.2 million)
Portfolio Gains	\$124.6 million
Portfolio Value	\$29.9 million



Performance Review

For Periods Ending December 31, 2020

	Percent Gain or Loss					
	Quarter Ending	Last 12 Months	Two Years (annualized)	Three Years (annualized)	Five Years (annualized)	Since Inception* (annualized)
City of Oakland Police and Fire Retirement System (a)	1.83	20.18	14.09	9.73	7.26	6.20
City of Oakland Police and Fire Retirement System (b)	1.78	20.00	13.89	9.53	7.05	6.00
Benchmark**	1.29	7.58	8.42	5.45	4.87	5.15

* Inception Date: 2/1/1998

**The benchmark consists of the Bloomberg Barclays U.S. Aggregate Index from 2/1/1998 - 6/30/2006 and the Bloomberg Barclays Universal Index as of 7/1/2006.

(a) Gross of Investment Management Fees

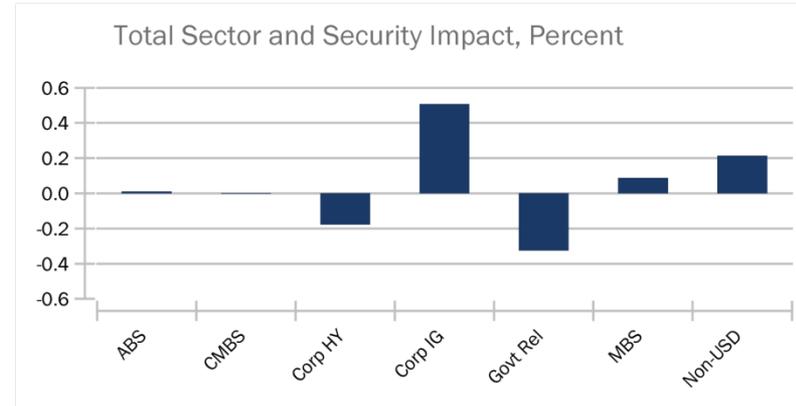
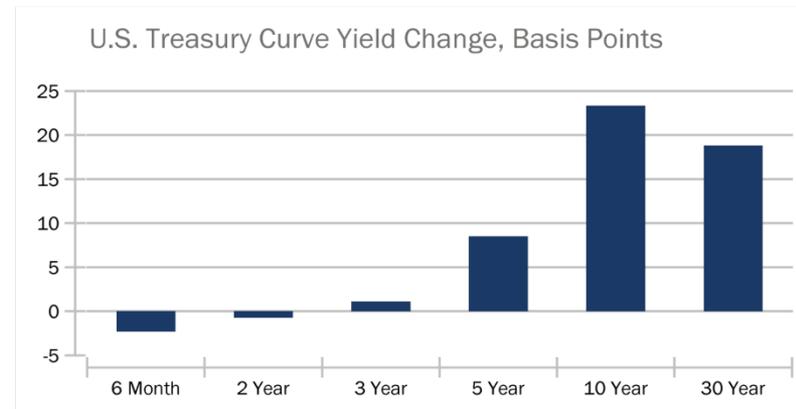
(b) Net of Investment Management Fees (recorded on cash basis)

Excess Return Detail

City of Oakland Police and Fire Retirement System: 10/1/2020 - 12/31/2020

	Portfolio (%)
Total Return	1.83
Index Return	1.29
Excess Return	<u>0.54</u>
Duration	0.16
Curve	0.06
Total Macro	<u>0.22</u>
Sector Selection	-0.12
Security Selection	0.44
Total Selection	<u>0.32</u>

Sector	Sector Impact	Security Impact	Total Impact
ABS	0.01	0.00	0.01
CMBS	0.00	0.00	0.00
Corp HY	-0.10	-0.07	-0.18
Corp IG	0.07	0.43	0.51
Govt Rel	-0.32	-0.01	-0.32
MBS	0.00	0.09	0.09
Non-USD	0.21	0.00	0.21
	-0.12	0.44	0.32

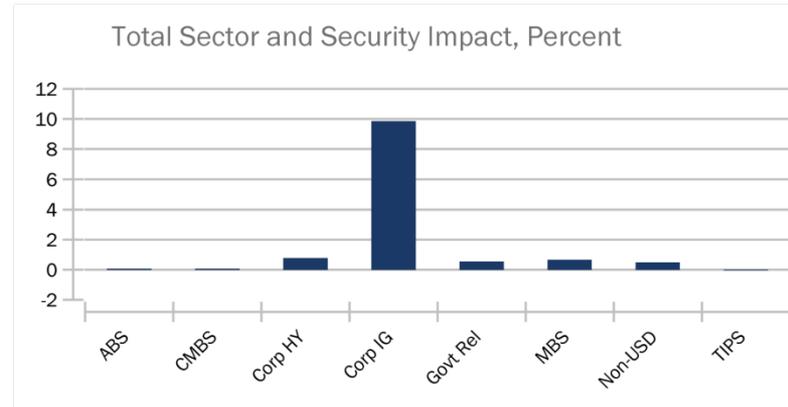
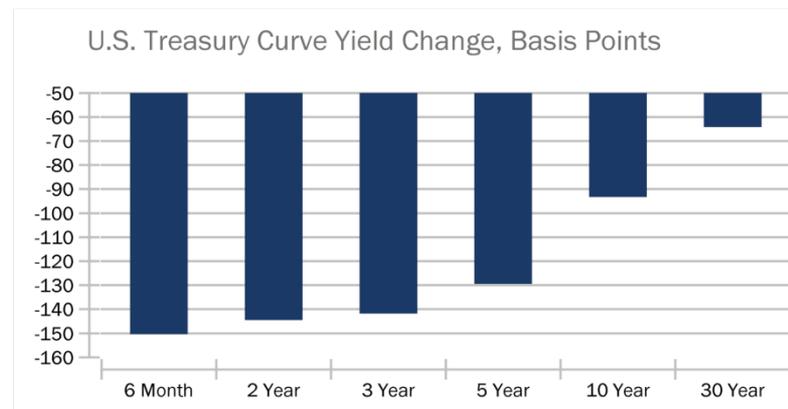


Excess Return Detail

City of Oakland Police and Fire Retirement System: 1/1/2020 - 12/31/2020

	Portfolio (%)
Total Return	20.18
Index Return	7.58
Excess Return	12.60
Duration	-0.34
Curve	0.58
Total Macro	0.23
Sector Selection	8.00
Security Selection	4.37
Total Selection	12.37

Sector	Sector Impact	Security Impact	Total Impact
ABS	0.07	-0.02	0.06
CMBS	0.06	-0.01	0.06
Corp HY	0.83	-0.07	0.76
Corp IG	6.28	3.57	9.85
Govt Rel	0.37	0.18	0.55
MBS	-0.05	0.70	0.65
Non-USD	0.48	0.00	0.48
TIPS	-0.04	0.00	-0.04
	8.00	4.37	12.37



Portfolio Characteristics

City of Oakland Police and Fire Retirement System: 12/31/2020

	Portfolio	Index
Total Market Value (\$)	29,933,609	30,416 billion
Avg. Duration (Years)	4.9	6.0
Avg. Convexity	0.26	0.37
Avg. Yield to Worst (%)	1.2	1.5
Avg. Maturity (Years)	6.0	8.2
Avg. Quality	Aa3	Aa3

Quality Structure (% of Portfolio)	Portfolio *	Index
AAA	54.5	58.3
AA	1.4	4.1
A	15.6	12.9
BBB	25.8	16.4
Other	2.7	8.2
Total	100.0	100.0

* The methodology used is consistent with client investment guidelines.

Sector Structure (% of Portfolio)	Portfolio	Index
Treasury	15.3	30.6
Govt Related	0.3	11.4
Mortgage-Backed	21.7	24.2
Asset-Backed	4.9	0.3
Corporate	42.6	33.6
Non-US Dollar	2.0	0.0
Cash and Equivalents	13.2	0.0
Total	100.0	100.0

Duration Distribution (Years)	Portfolio	Index
0 - 1 yr.	0.1	0.0
1 - 3	0.7	0.7
3 - 4	0.2	0.5
4 - 6	0.5	0.8
6 - 8	0.9	0.7
8 +	2.4	3.4
Total	4.9	6.0

Maturity Distribution (%)	Portfolio	Index
0 - 1 yr.	21.6	0.0
1 - 3	18.3	25.8
3 - 5	25.1	31.7
5 - 7	6.9	13.1
7 - 10	13.5	10.3
10 - 20	8.3	5.6
20 +	6.3	13.6
Total	100.0	100.0



Diversity at Reams

- As an affiliate of Carillon Tower Advisors, a division of Raymond James, Reams Asset Management is committed to fostering a diverse and inclusive workplace, welcoming to all cultures and backgrounds. This is consistent with our values-based culture upon which the firm was founded.

- For more information on the extensive inclusion efforts of our parent firm, including outreach, career development and recruitment, and community efforts, please visit:
 - <https://www.raymondjames.com/careers/diversity-and-inclusion>

- Reams Asset Management currently has 35 employees, of which 17 (48%) are female, including key leadership positions:
 - Head of Operations
 - Head of Client Service
 - Head of Portfolio Accounting

- Reams has several employees in various minority groups, and has taken concrete steps to address historical lack of diversity on its long-tenured investment team.



Diversity at Reams – Hiring Action Plan

- Significant New Hire for Investment Team:
 - Effective March 5, 2021, Reams Asset Management will publicly announce a new hire to the investment team for a Senior Portfolio Manager starting in office that day
 - This new position will be a major investment on the part of the firm to broaden skill set of existing team
 - Individual is a member of a minority group, mid-career, with extensive capital markets experience
 - Individual will initially focus on macroeconomic positioning and international trades for all Reams Portfolios

- Increased Development and Recruitment of Minorities via Summer Intern Program:
 - Formalized intern program has been expanded last five years, with increased participation (record 5 interns in 2019, COVID-pandemic impact limited 2020 participation to 2 interns)
 - Reams has cultivated both females and other minorities in the intern program, including Notre Dame MBA candidate Paul Adzokpa, a native of Ghana, last summer
 - Already, a female actuarial student has accepted a spot for Summer 2021, with further plans to build out Summer Intern capacity



Diversity at Reams – Office Location Action Plan

- Reams can announce a signed intent to relocate its primary office from Columbus, IN to Indianapolis, IN with an estimated timing of Q4 2021:
 - Office will be located directly downtown Indianapolis, the hub of business in the state of Indiana
 - New location provides easier access to clients, consultants, management teams, and other guests/visitors – just 20 minutes from Indianapolis International Airport (IND)
 - New location will also raise Reams profile and stature within the city and the investment community, by joining a growing and dynamic urban environment
 - Reams is committed to being a good neighbor and continuing a history of outreach, charity, and community engagement

- Most critically, the new office location will aid recruitment and retention of professionals for a first-class investment firm:
 - Reams has a 5 year staffing plan that intends to build out investment and support teams beyond current new hire, primarily via internship program and recruitment of young, entry-level candidates
 - Indianapolis location is projected to increase applicant pool in similar fashion as Purdue University's investment team move from West Lafayette to Indianapolis
 - Parent company is supportive of move and has resources to ensure a modern, urban office with proper amenities and desirable location for young professionals



Disclosures

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NOT FDIC INSURED/NO BANK GUARANTEE/MAY LOSE VALUE



MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: David Sancewich, Paola Nealon, Sidney Kawanguzi
 Meketa Investment Group
DATE: February 24, 2021
RE: Reams – Manager Update

Manager: Reams Asset Management (Reams)

Inception Date: 02/1998

Management Fee: 20 bps (\$59,862)¹

Benchmark: BB Aggregate Index

OPFRS AUM (12/31/20): \$29.9 Million (7.0%)

Investment Strategy: Core Plus Fixed Income

Firm-wide AUM (12/31/20): \$22.5 billion

Summary & Recommendation

Reams has managed the Core Plus fixed income portfolio since the first quarter of 1998. Since inception, Reams has outperformed its benchmark. *Meketa does not have any major concerns with Reams and does not recommend any action be taken at this time.*

Discussion

In reviewing Reams, Meketa considered investment performance and recent organizational / personnel issues.

Annualized Investment Performance (as of 12/31/2020)

Manager	MKT Value (\$000)	Quarter	1 YR	3 YR	5 YR	Since Inception	Inception Date ²
Reams (Gross of Fees)	29,931	1.8	20.2	9.7	7.2	6.2	2/1998
Reams (Net of Fees)	29,931	1.8	20.0	9.5	7.0	6.0	--
<i>BB Universal Index</i>	--	<i>1.3</i>	<i>7.6</i>	<i>5.5</i>	<i>4.9</i>	<i>5.1</i>	--
Excess Return (Net of Fees)	--	+0.5	+12.4	+4.0	+2.2	+1.1	--

¹ Estimate based on AUM as of 12/31/20.

² Inception date reflects the first full month after portfolio received initial funding.

Reams has outperformed the Bloomberg Barclays Universal Index by 110 basis points since inception in 1998. Reams has been a part of the portfolio for over twenty years and continues to deliver outperformance, even in recent years.

Organizational Issues

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

Investment Philosophy & Process, per manager

Reams' investment philosophy is based on the premise that volatility is a key driver of performance in the fixed income market. Volatility is usually higher than commonly perceived and is often mispriced in the marketplace. This core belief leads the firm to focus on long-term value and "total return," employ macro and bottom-up strategies to uncover unique opportunities, and react opportunistically to valuation discrepancies and volatility in the bond market.

Reams manages portfolios using three basic steps, which are best described as a combination of top-down and bottom-up. The first step is to establish the portfolio's overall duration and yield curve characteristics, often referred to as the top-down or macro portfolio characteristics. Reams approaches the duration decision as a valuation problem, utilizing below-benchmark or short-duration portfolios when the market is unattractive or overvalued and above-benchmark or long-duration portfolios when the market is attractive or undervalued. The main tool used to establish value is the real or inflation-adjusted Treasury bond rate. Depending on Reams' assessment of relative values along the yield curve, portfolios may be barbelled, bulleted, or laddered.

The second step of the investment process is to consider sector exposures. Sector exposure decisions are made on both a top-down and bottom-up basis. For most sectors, the bottom-up issue selection process is the major determinant of sector exposure. As securities are analyzed on a risk/return or upside/downside basis, attention is paid to which sectors are producing the most attractive securities. When a number of the most attractive securities are coming from a certain sector, this area will be researched further to determine whether the sector should be consciously overweighted. Conversely, underweighting might result from a predominance of relatively unattractive issues within a sector. In this manner, security selection will tend to determine sector selection, with top-down objectives used mostly for risk control to avoid over-concentration. However, for some more generic parts of the portfolio, such as mortgage pass-throughs or agencies, top-down considerations will drive the sector allocation process as overall sector measures of value, such as spreads or price levels, will be used to make sector decisions. This is more generally the case when credit quality is not an issue.

The third step of the investment process is individual security selection. Reams approaches security selection on a total return basis assuming that the market will exhibit a considerable degree of both interest rate and credit volatility. Therefore, the firm's focus is generally on securities that will benefit from dynamic interest rate and credit environments. Pockets of the market that exhibit good dynamic and structural characteristics may be used intensively, allowing Reams to take advantage of its relatively moderate size.

Reams relies primarily on internal research in the bond selection process. A great deal of emphasis is placed on using scenario analysis as an analytical tool, allowing Reams to determine how each security will perform in a variety of potential interest rate and credit environments. Value is determined based on the distribution of potential returns. The firm's outlook for interest rates, fundamental credit analysis, and option-adjusted spread analysis are the primary tools used when constructing these scenarios. This process identifies which bonds should perform the best under the most likely scenarios. Importantly, this process will also point out those bonds that, while attractive on the surface, are most vulnerable to risks in the bond market and inappropriate for the portfolio. Ultimately, investment opportunities are compared, and the bonds with the highest risk-adjusted return are selected.

DS, PN, SK, pq



CITY OF OAKLAND

AGENDA REPORT

TO: Oakland Police and Fire Retirement System Board of Administration (PFRS) **FROM:** David F. Jones
Plan Administrator

SUBJECT: Emergency Procedure Policy to Terminate/Limit Trading Discretion of PFRS Investment Managers to Protect PFRS Fund Assets **DATE:** February 24, 2021

SUMMARY

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

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

At the October 28, 2020 PFRS Board Meeting, staff was directed to work with PFRS Legal Counsel to refine the language of the proposed Emergency Procedure Policy for the System and identify specific scenarios to further define what constitutes an emergency and put in place procedures to determine what actions can be taken to remedy a financial emergency. Staff was directed to bring a final version to present as an actionable item at a subsequent meeting.

At the January 24, 2021 PFRS Board Meeting, Plan Administrator David Jones introduced and presented an overview of the First Draft of the Emergency Procedure Policy. Board Members and Legal Counsel discussed the First Draft of the of the Emergency Procedure Policy. Board Members clarified points in question and suggested modifications to the first draft. The Board directed Legal Counsel to incorporate modifications and bring a final version to present as an actionable item at a subsequent meeting. **ATTACHMENT 1** shows the Second Draft of the Emergency Procedure Policy for the System.

Attachment (1):

· *Emergency Procedure Policy to Terminate/Limit Investment Managers - Second Draft*

Agenda Item C6
PFRS Board Meeting
February 24, 2021

RECOMMENDATION

Staff recommends that the Board review the attached Second Draft of the Emergency Procedures and approve for further action. Upon approval, staff recommends that these procedures be added to the existing PFRS Investment Policy.

Respectfully submitted,



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

Attachment (1):

· *Emergency Procedure Policy to Terminate/Limit Investment Managers - Second Draft*

ATTACHMENT 1

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

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM POLICIES AND PROCEDURES FOR EMERGENCY TERMINATION OR LIMITATION OF INVESTMENT MANAGER POWERS AND AUTHORITY

The Police and Fire Retirement System (“PFRS”) was established in 1951 by Article XXVI of the Charter of the City of Oakland (“Charter”) and is a closed City of Oakland-operated retirement system for retirees of the Oakland Police and Fire Departments. Section 2601 of the Charter creates the Police and Fire Retirement System Board (“Board”), authorizes the Board to make all necessary rules and regulations for its guidance, and provides that the Board shall have exclusive control of the administration and investment of the PFRS fund. The PFRS Board has determined that it is necessary to establish a policy and procedures for the emergency termination or limitation of the powers and authority of PFRS investment managers in situations where immediate action is necessary to protect PFRS assets and the Board is unable to convene an emergency meeting. Accordingly, the PFRS Board has promulgated these Policies and Procedures for emergency termination or limitation of investment manager powers and authority pursuant to its authority under Section 2601 of the Charter.

1. EMERGENCY DEFINED

The emergency procedures for terminating or limiting the powers and authority of a PFRS investment manager set forth below shall be utilized *only* in the following emergency situations:

- a. War, terrorist attack or natural disaster that disrupts a PFRS investment manager’s ability manage PFRS assets;
- b. Verified reports of misconduct or fraud by **or threatened litigation against** a PFRS investment management firm, its officers or employees;
- c. Mass departure of critical investment personnel from a PFRS investment management firm;
- d. Sudden closure of a fund in which PFRS assets are invested;
- e. Sudden shutdown or closure of an PFRS investment management firm; and

2. EMERGENCY ACTION TEAM

The Emergency Action Team shall include:

- a. The PFRS Plan Administrator *or* the PFRS Investment Operations Manager, **who shall serve in an advisory non-voting capacity only.**
- b. At least two of the following PFRS Board members: 1) PFRS Board President; 2) Chair of the PFRS Investment Committee; or 3) Chair of the PFRS Audit Committee. **At least one the two PFRS Board members on the Emergency Action Team shall be an elected, as opposed to an appointed, member of the Board.**
- c. PFRS Investment Consultant who is currently under contract with PFRS to provide investment advice to the PFRS Board. **PFRS Investment Consultant shall serve in an advisory non-voting capacity only.**

Any action taken pursuant to these emergency policies and procedures shall only be taken **by unanimous vote of the Board members serving on the Emergency Action Team.**

The Emergency Action Team shall have the authority to consult PFRS counsel as necessary prior to taking any action to terminate or limit the power or authority of a PFRS investment manager pursuant to these emergency policies and procedures.

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**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
POLICIES AND PROCEDURES FOR EMERGENCY TERMINATION OR LIMITATION
OF INVESTMENT MANAGER POWERS AND AUTHORITY**

3. EMERGENCY ACTION TEAM AUTHORITY

The Emergency Action Team shall be authorized to take the following actions in the above-defined emergency situations:

- a. Terminate a PFRS investment managers trading and investment authority **indefinitely**; or
- b. Terminate a PFRS Investment manager, hold the asset(s), or liquidate the fund and **hold the funds in cash or** purchase an Exchange Traded Fund (ETF). This action shall be taken *only as a last resort* and in circumstances where the Emergency Action Team has determined that the temporary termination of an investment managers trading and investment authority will not be sufficient to protect PFRS assets until an emergency meeting of the PFRS Board can be convened.

4. EMERGENCY ACTION PROCEDURES

Prior to taking the emergency actions authorized in subsection 3 above, the Emergency Action Team shall take the following steps:

- a. Meet to discuss the triggering event and the action that should be taken to protect PFRS assets. The Emergency Action Team shall not be required to meet in person to satisfy this step; a telephone conference or other virtual meeting will suffice as long as four (4) members of the Emergency Action Team, *including two of the designated Board members and PFRS Investment Consultant*, are present during the meeting.
- b. Vote on the action to be taken to protect PFRS assets.
- c. Report the action taken and any action not taken, the basis for the Emergency Action Team's decision and the names of the Emergency Action Team members that participated in the decision making process to the PFRS Board at a meeting **to be held within 7 days of the action being taken**.

The Oakland Police and Fire Retirement System Policies and Procedures for Emergency Termination or Limitation of Investment Manager Powers and Authority have been approved by vote of the Oakland Police and Fire Retirement Board, effective _____.

Walter L. Johnson, Sr., President
Oakland Police & Fire Retirement System Board

David Jones, Pan Administrator and Secretary
Oakland Police & Fire Retirement System Board

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Oakland Police and Fire Retirement System

February 24, 2021

Q4 2020 Performance Report

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

Total Portfolio Summary

Total Portfolio Summary

As of December 31, 2020, the City of Oakland Police and Fire Retirement System (OPFRS) portfolio had an aggregate value of \$434.1 million. This represents a \$37.3 million increase in investment value and (\$3.0) million in benefit payments funded from investments over the quarter. For the calendar year, the OPFRS Total Portfolio value is higher by \$38.8 million, after withdrawals totaling (\$12.0) million for benefit payments.

Asset Allocation Trends

- The asset allocation targets throughout this report reflect those as of December 31, 2020. Target weightings reflect the interim phase (CRO = 10%) of the Plan's previously approved asset allocation (effective 5/31/2017).
- Relative to policy targets, the portfolio ended the latest quarter overweight Equities, Covered Calls and Cash, while underweight Crisis Risk Offset and Fixed Income. All asset classes were, however, within acceptable ranges from their policy targets.

Recent Investment Performance

- During the most recent quarter, the OPFRS portfolio generated an absolute return of 9.3%, gross of fees, outperforming its policy benchmark by 1.2%. The portfolio, however, underperformed its benchmark by (2.0%) and (0.1%) over the 1- and 3-year periods respectively, but outperformed by 10 basis points over the 5-year period.
- The OPFRS portfolio underperformed the Median fund's return over the fourth quarter by (1.4%), and by (3.1%) and (0.7%) over the one and three-year periods respectively, while outperforming the median fund by 0.1% over the 5-year period. Performance differences with respect to the Median Fund are attributed largely to differences in asset allocation.

	Quarter	Fiscal YTD	1 Year	3 Year	5 Year
Total Portfolio ¹	9.3	15.0	9.7	8.2	10.2
Policy Benchmark ²	8.1	13.6	11.7	8.3	10.1
Excess Return	1.2	1.4	-2.0	-0.1	0.1
Reference: Median Fund ³	10.7	16.7	13.1	8.9	10.1
Reference: Total Net of Fees ⁴	9.3	14.9	9.5	7.8	9.9

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

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

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

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

Domestic Equity

Over the quarter ending December 31, 2020, both active managers in the Domestic Equity portfolio underperformed their respective benchmark. Passive managers performed in line with their respective benchmarks.

Northern Trust Russell 1000, the Plan's passive large cap core account matched its benchmark over the quarter and longer trailing periods. The account's tracking error is within expectations for a passive mandate.

Vanguard Russell 2000 Value, the Plan's passive small cap value manager, kept pace with its benchmark over the most recent quarter, and outperformed by +0.4% year-to-date. This portfolio has posted +0.5% outperformance since inception (August 2019).

Earnest Partners, the Plan's active mid cap core manager, trailed its Russell Midcap benchmark by (1.7%), placing in the 61st percentile of its peer group for the quarter. The portfolio has, however, outperformed its benchmark over longer trailing periods with excess returns of +4.1%, +3.3% and +3.9% over the 1-year, 3-year and 5-year periods respectively, with top quartile performance in each period. Since inception (April 2006) benchmark-relative outperformance is +1.5%.

Rice Hall James, the Plan's active small cap value manager, trailed its benchmark over the recent quarter by (8.6%), placing in the 92nd percentile of its peer group. The portfolio has underperformed its benchmark over the 1-year and 3-year periods by (9.9%) and (1.4%) respectively. Since inception relative performance is (3.6%). The manager is on watch status for performance concerns.

iShares Edge MSCI Min Vol ETF, funded in March 2020 to temporarily fill the role of the Plan's active Defensive Equity manager, outpaced its benchmark by +0.1% over the quarter.

International Equity

For the quarter ended December 31, 2020, the both managers in the Plan's international equity portfolio posted strong positive returns.

iShares MSCI ACWI ex US ETF, the Plan's passive international equity manager, trailed its benchmark by (3.0%) and (3.5%) over the quarter and one-year periods respectively. Underperformance in the fourth quarter was driven by poor stock selection versus the index.

Vanguard Developed Markets, the Plan's passive international developed markets (ex US) fund, underperformed its benchmark by (0.6%) and (0.3%) over the quarter and one-year periods respectively based on market price returns. The fund's tracking error, based on net asset values was much lower -0.1% and +0.3% over the quarter and year-to-date periods.

Fixed Income

For the quarter ended December 31, 2020, the Fixed Income aggregate posted positive returns as both active managers in the Plan's Fixed Income portfolio outperformed their respective benchmarks.

Ramirez returned +5.8% compared to the benchmark return of 1.3% over the quarter, placing in the 31st percentile of its peer group. Ramirez, however, underperformed its benchmark by (0.7%) year-to-date, but outperformed the benchmark over longer trailing periods with +0.1% over the 3-year period, and +0.5% since inception.

Reams returned 1.8% for the quarter, beating its benchmark by +0.5% and placing in the 68th percentile of its peer group. Reams outperformed its benchmark by +12.6%, +4.2% and +2.3% over 1-, 3- and 5-year periods respectively, placing in the first quintile among peers in each period. Strong performance was due to defensive positioning going into 2020 and capitalizing on the market dislocations in March and April.

Covered Calls

Over the fourth quarter, the Covered Calls portfolio returned 10.5%, outperforming its benchmark by +2.8 %.

Parametric DeltaShift, the Plan's active covered calls allocation returned 12.1%, outperforming its benchmark, the CBOE BXM, index by +4.6% over the quarter. The portfolio has outperformed over the most recent 1-year, 3- and 5-year periods by +19.2%, +9.5% and +7.6% respectively. Since inception outperformance is +6.4%

Parametric BXM, the Plan's passive covered calls allocation returned 8.0%, outperforming its benchmark, the CBOE BXM index, by +0.5% over the quarter. The portfolio has outperformed over the most recent 1-year, 3- and 5-year periods by +8.8%, +3.3% and +2.4% respectively. Since inception outperformance is +1.9%.

Credit

DDJ, the Plan's High Yield & Bank Loan manager, returned 7.4% over the quarter, outpacing its benchmark, the Barclays US High Yield, by +0.9%. DDJ, outperformed the benchmark over the 1-year period by +1.7%, but trailed the benchmark by (1.4%) and (0.3%) over the 3 and 5-year periods respectively. Since inception underperformance is (0.1%).

Crisis Risk Offset

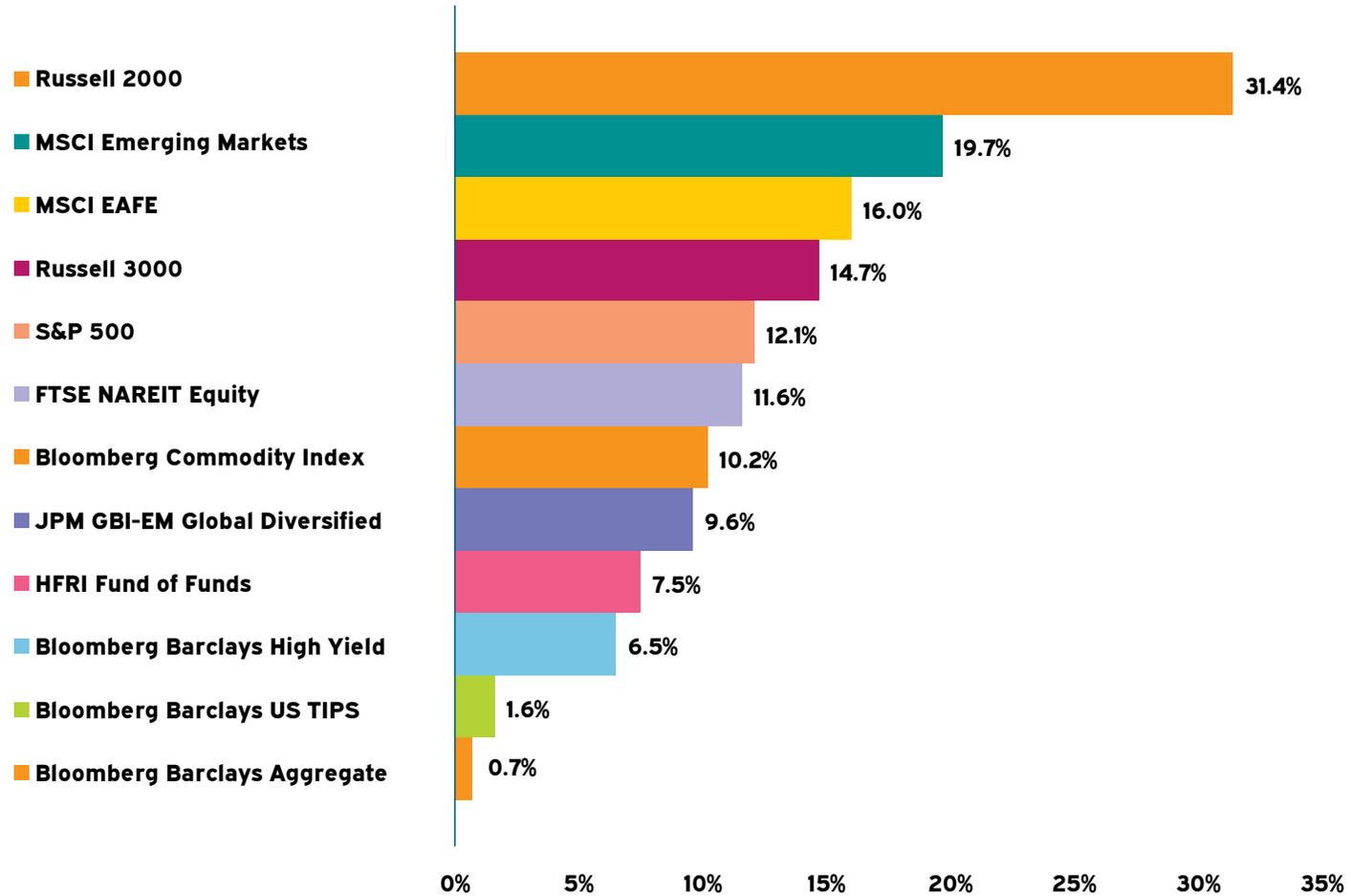
Over quarter ending December 31, 2020, the Crisis Risk Offset portfolio returned (2.8%), trailing its benchmark by (0.8%).

Vanguard Long Duration ETF, the Plan's Long Duration allocation returned (0.3%) on a market price basis, matching its benchmark. Over the 1-year and since inception returns were 17.4% and 13.8% respectively.

Parametric Systematic Alternative Risk Premia, the Plan's Risk Premia / Trend Following manager shuttered its fund at the end of October, as investors withdrew capital following a -38.2% return in the first quarter. Parametric's underperformance accounts for the Crisis Risk Offset aggregate's negative year-to-date return. A search is ongoing to replace Parametric.

The World Markets Fourth Quarter of 2020

The World Markets¹ Fourth Quarter of 2020



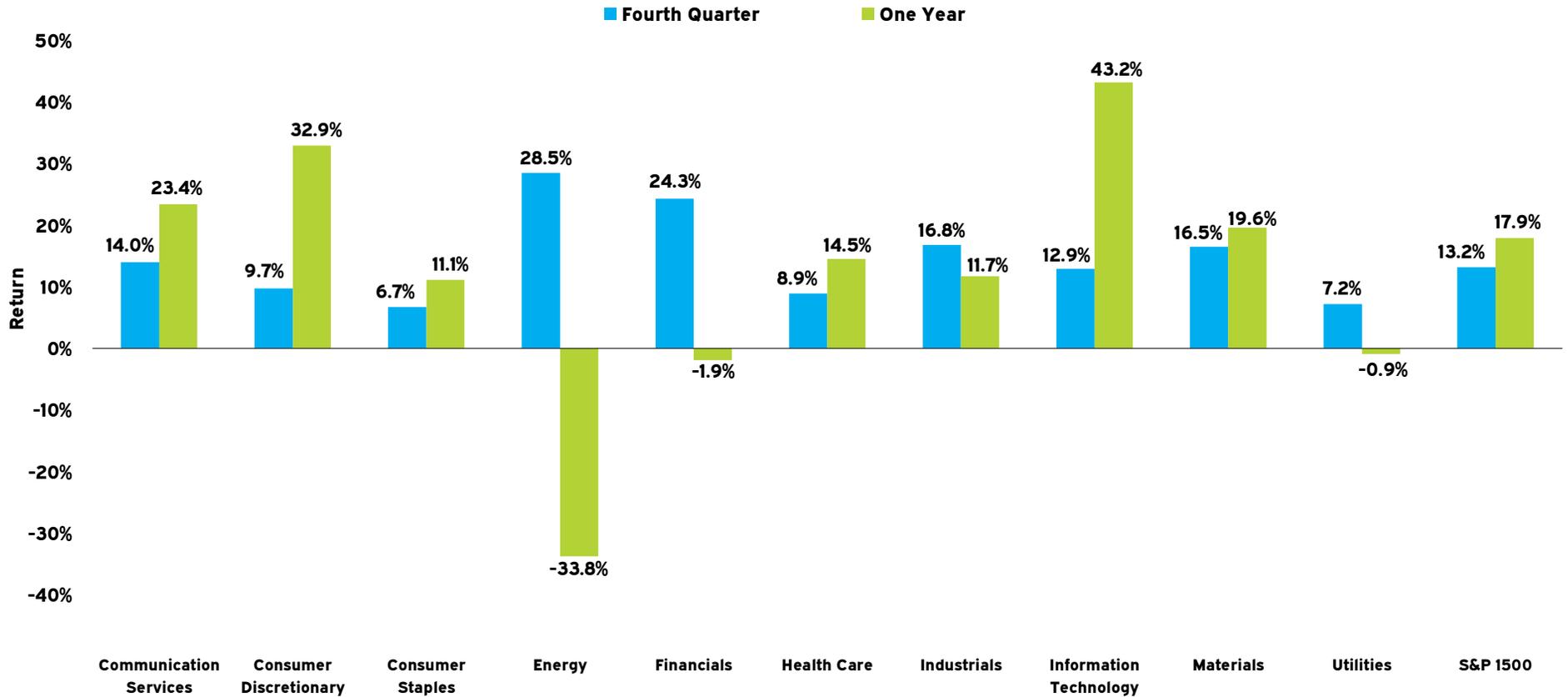
¹ Source: InvestorForce.

Index Returns¹

	4Q20 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Domestic Equity					
S&P 500	12.1	18.4	14.2	15.2	13.9
Russell 3000	14.7	20.9	14.5	15.4	13.8
Russell 1000	13.7	21.0	14.8	15.6	14.0
Russell 1000 Growth	11.4	38.5	23.0	21.0	17.2
Russell 1000 Value	16.3	2.8	6.1	9.7	10.5
Russell MidCap	19.9	17.1	11.6	13.4	12.4
Russell MidCap Growth	19.0	35.6	20.5	18.7	15.0
Russell MidCap Value	20.4	5.0	5.4	9.7	10.5
Russell 2000	31.4	20.0	10.2	13.3	11.2
Russell 2000 Growth	29.6	34.6	16.2	16.4	13.5
Russell 2000 Value	33.4	4.6	3.7	9.7	8.7
Foreign Equity					
MSCI ACWI (ex. US)	17.0	10.7	4.9	8.9	4.9
MSCI EAFE	16.0	7.8	4.3	7.4	5.5
MSCI EAFE (Local Currency)	11.4	0.8	3.0	5.8	6.8
MSCI EAFE Small Cap	17.3	12.3	4.9	9.4	7.8
MSCI Emerging Markets	19.7	18.3	6.2	12.8	3.6
MSCI Emerging Markets (Local Currency)	16.0	19.1	8.1	12.6	6.6
Fixed Income					
Bloomberg Barclays Universal	1.3	7.6	5.5	4.9	4.2
Bloomberg Barclays Aggregate	0.7	7.5	5.3	4.4	3.8
Bloomberg Barclays US TIPS	1.6	11.0	5.9	5.1	3.8
Bloomberg Barclays High Yield	6.5	7.1	6.2	8.6	6.8
JPM GBI-EM Global Diversified	9.6	2.7	3.0	6.7	1.5
Other					
FTSE NAREIT Equity	11.6	-8.0	3.4	4.8	8.3
Bloomberg Commodity Index	10.2	-3.1	-2.5	1.0	-6.5
HFRI Fund of Funds	7.5	10.3	4.7	4.4	3.3

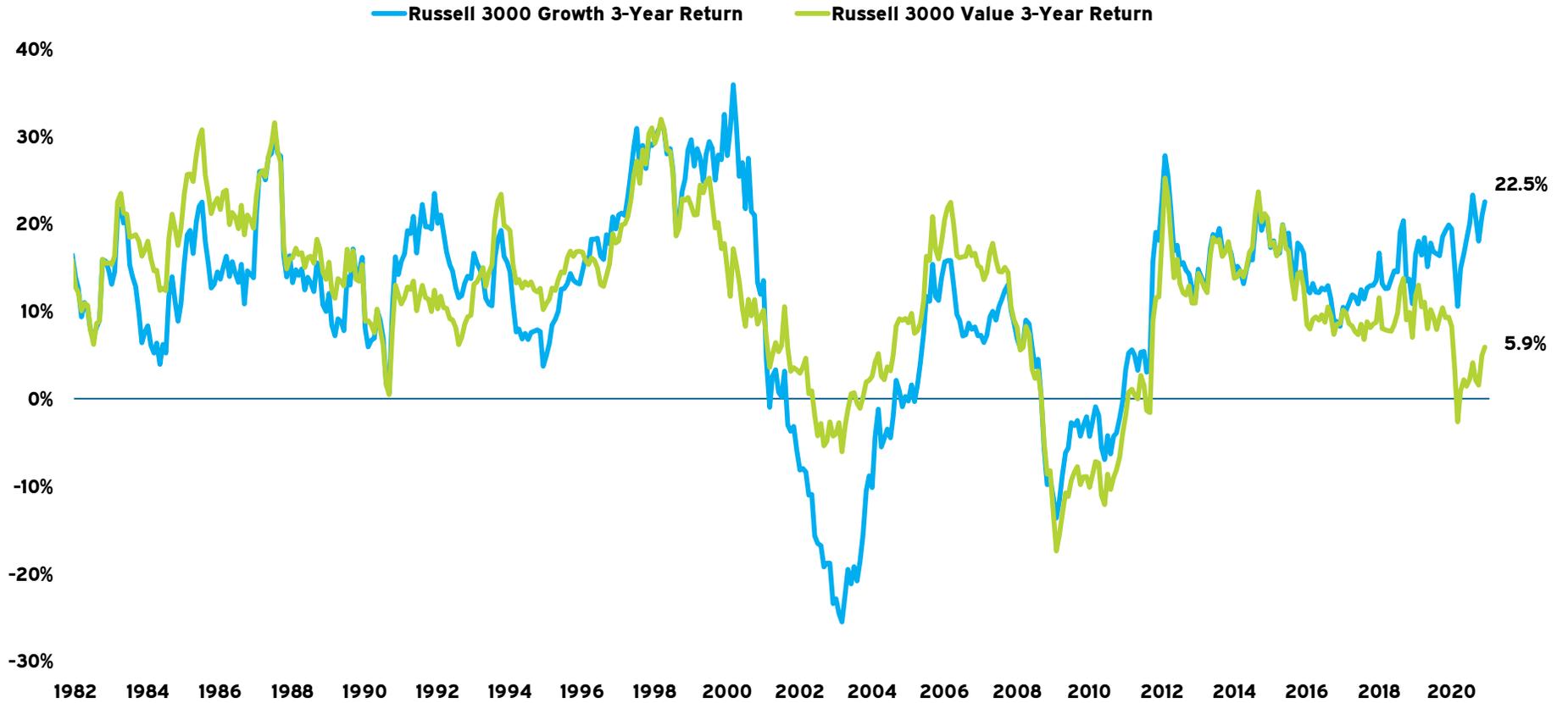
¹ Source: InvestorForce.

S&P Sector Returns¹



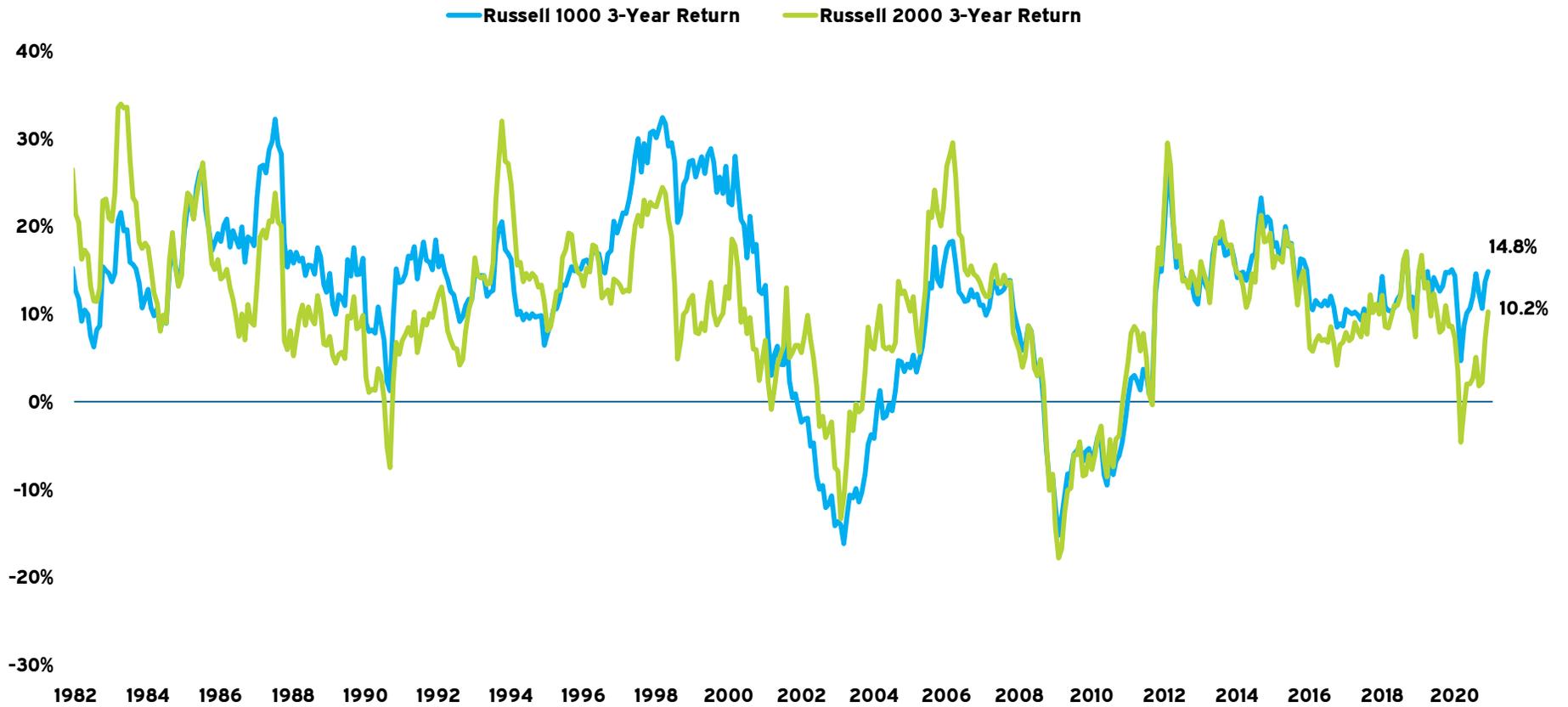
¹ Source: InvestorForce. Represents S&P 1500 (All Cap) data.

Growth and Value Rolling Three Year Returns¹



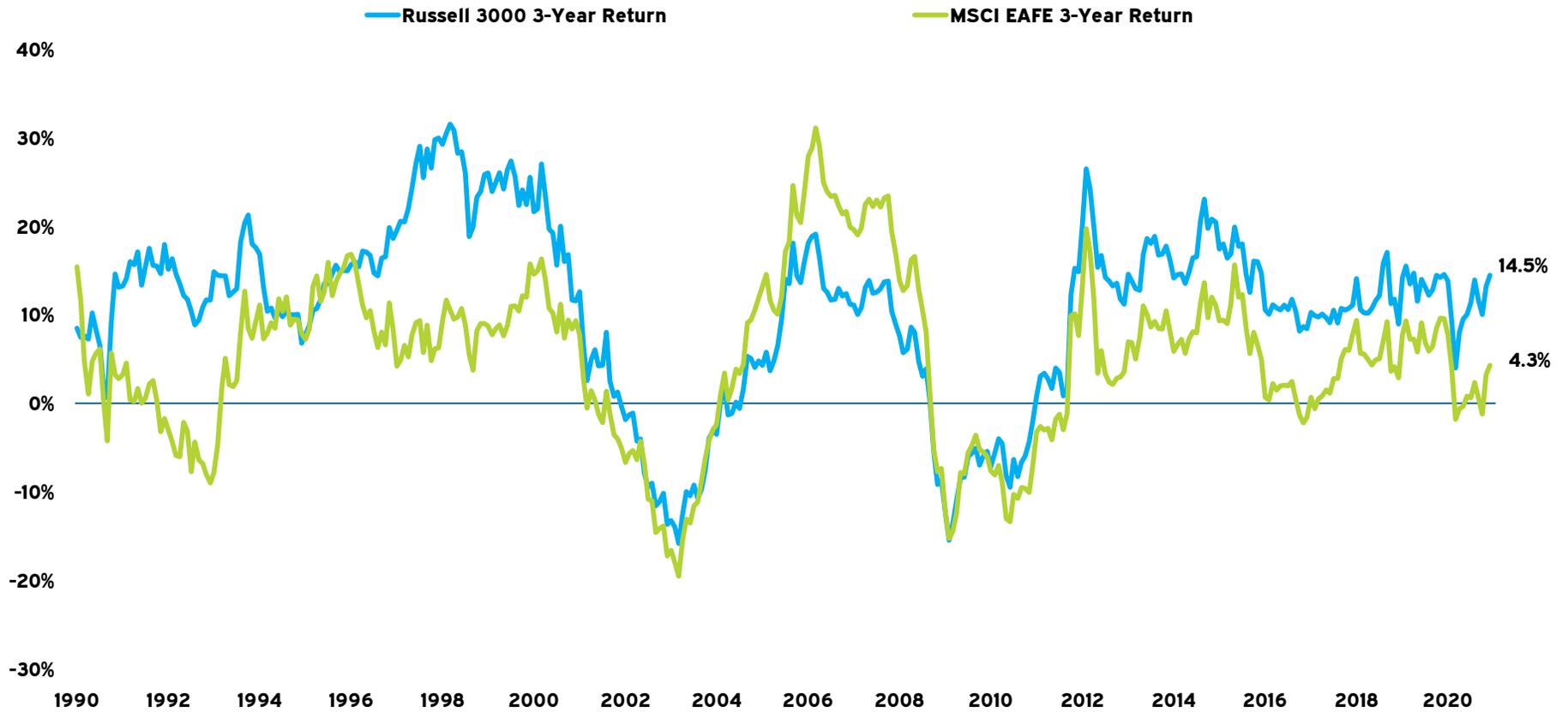
¹ Source: InvestorForce.

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



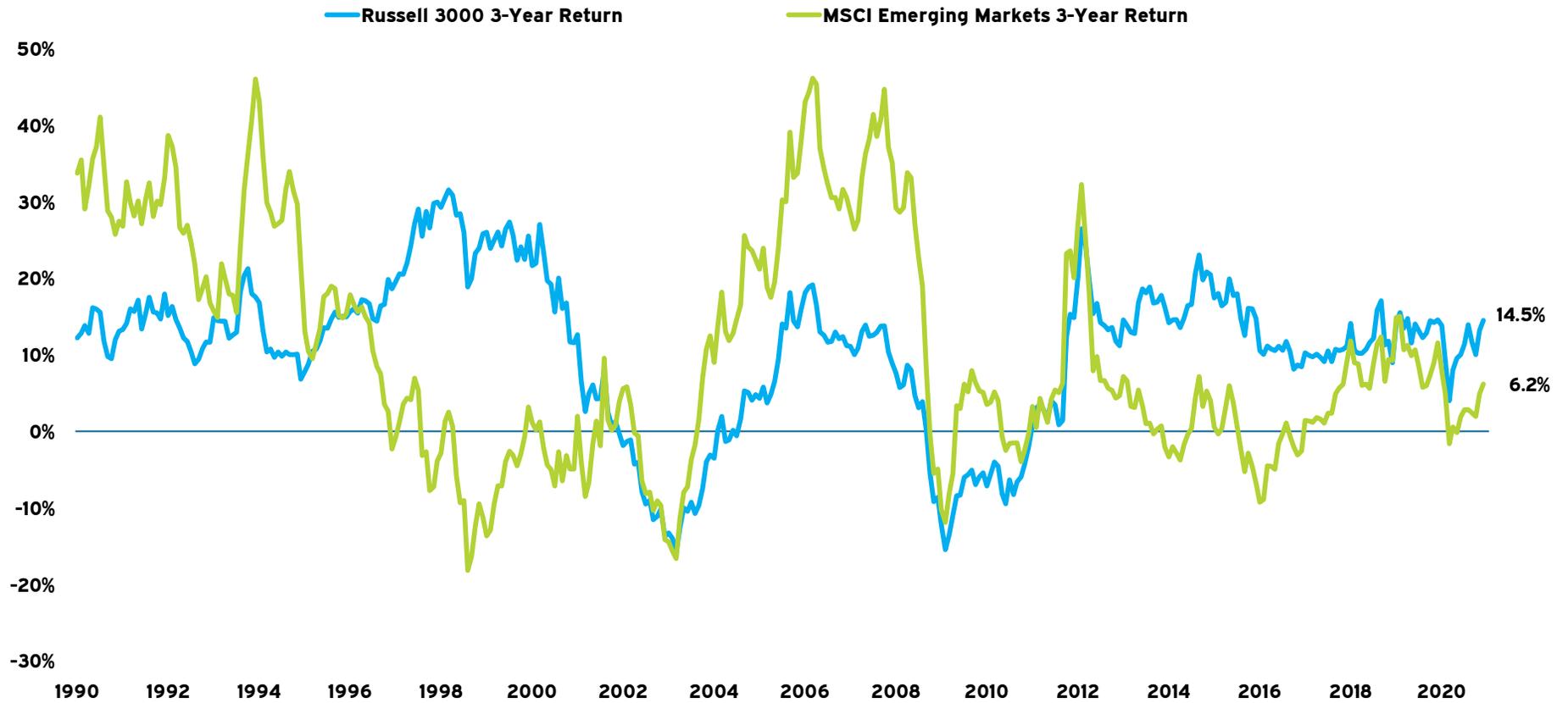
¹ Source: InvestorForce.

US and Developed Market Foreign Equity Rolling Three-Year Returns¹



¹ Source: InvestorForce.

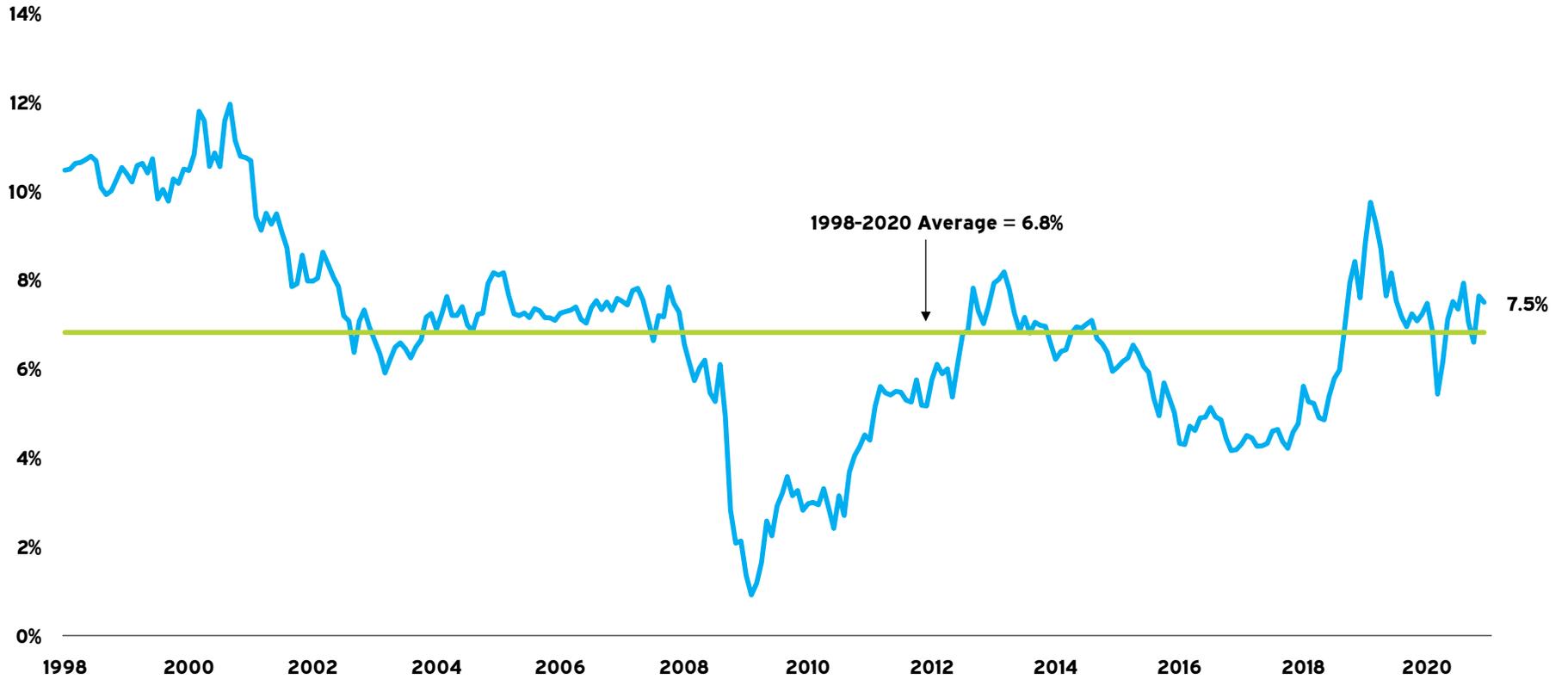
US and Emerging Market Equity Rolling Three-Year Returns¹



¹ Source: InvestorForce.

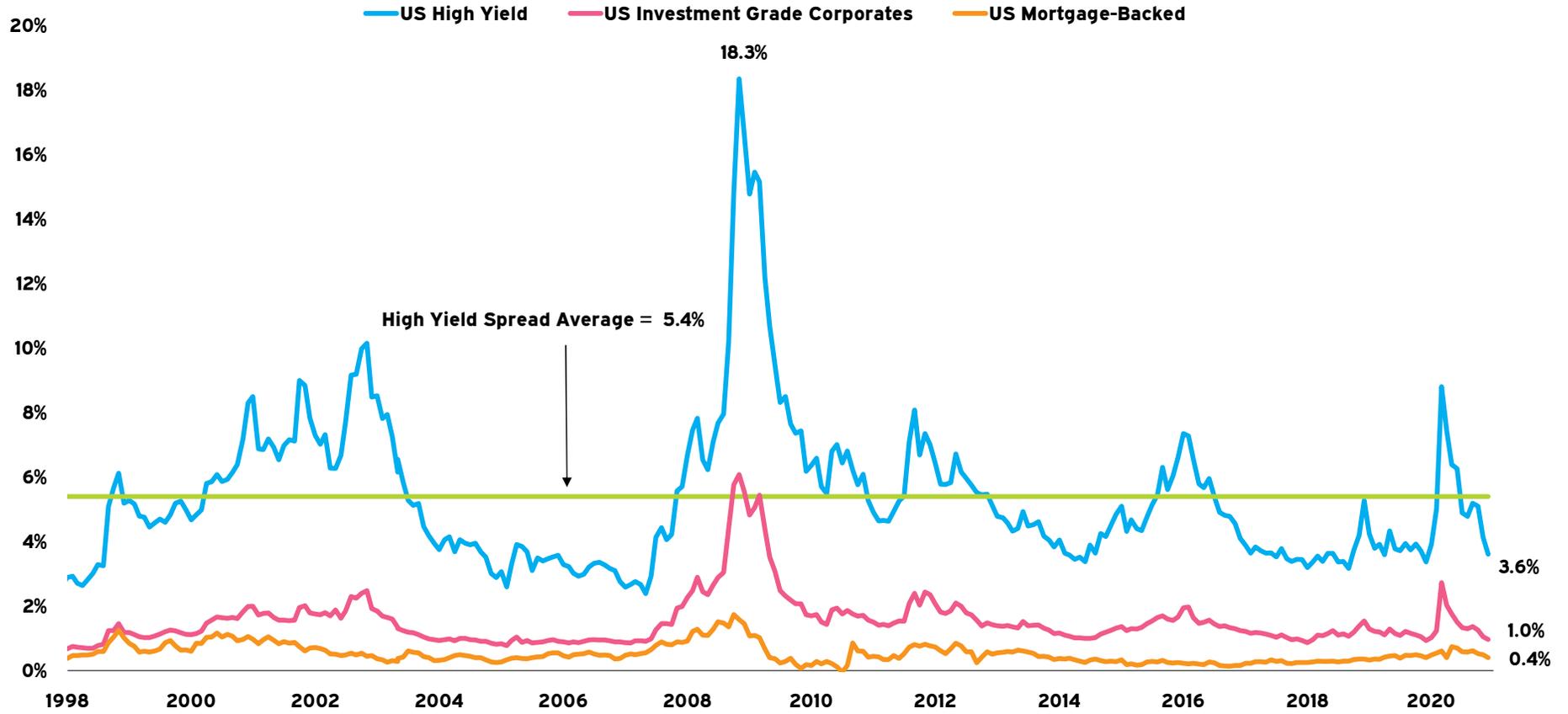
Rolling Ten-Year Returns: 65% Stocks and 35% Bonds¹

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



¹ Source: InvestorForce.

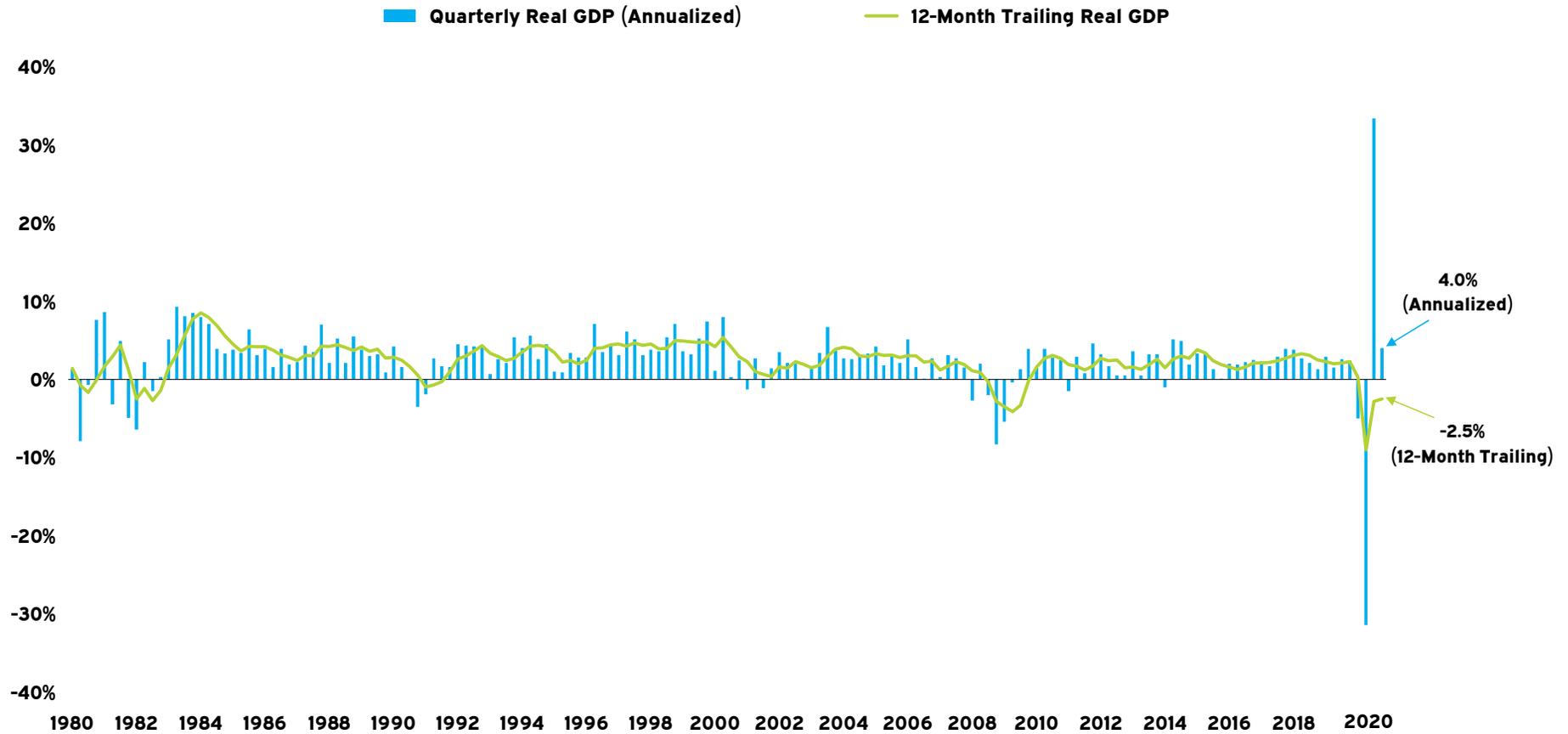
Credit Spreads vs. US Treasury Bonds^{1,2}



¹ Source: Barclays Live. Data represents the OAS.

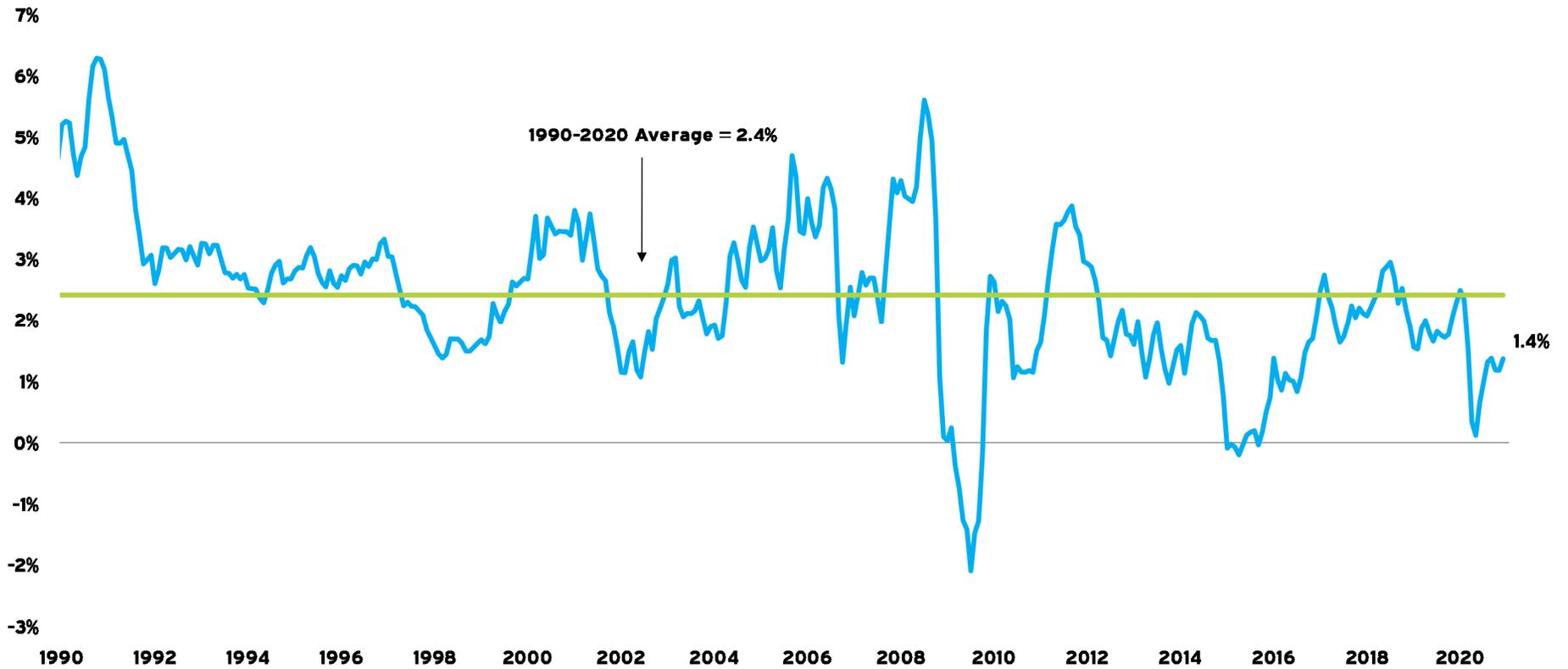
² The median high yield spread was 4.8% from 1997-2020.

US Real Gross Domestic Product (GDP) Growth¹



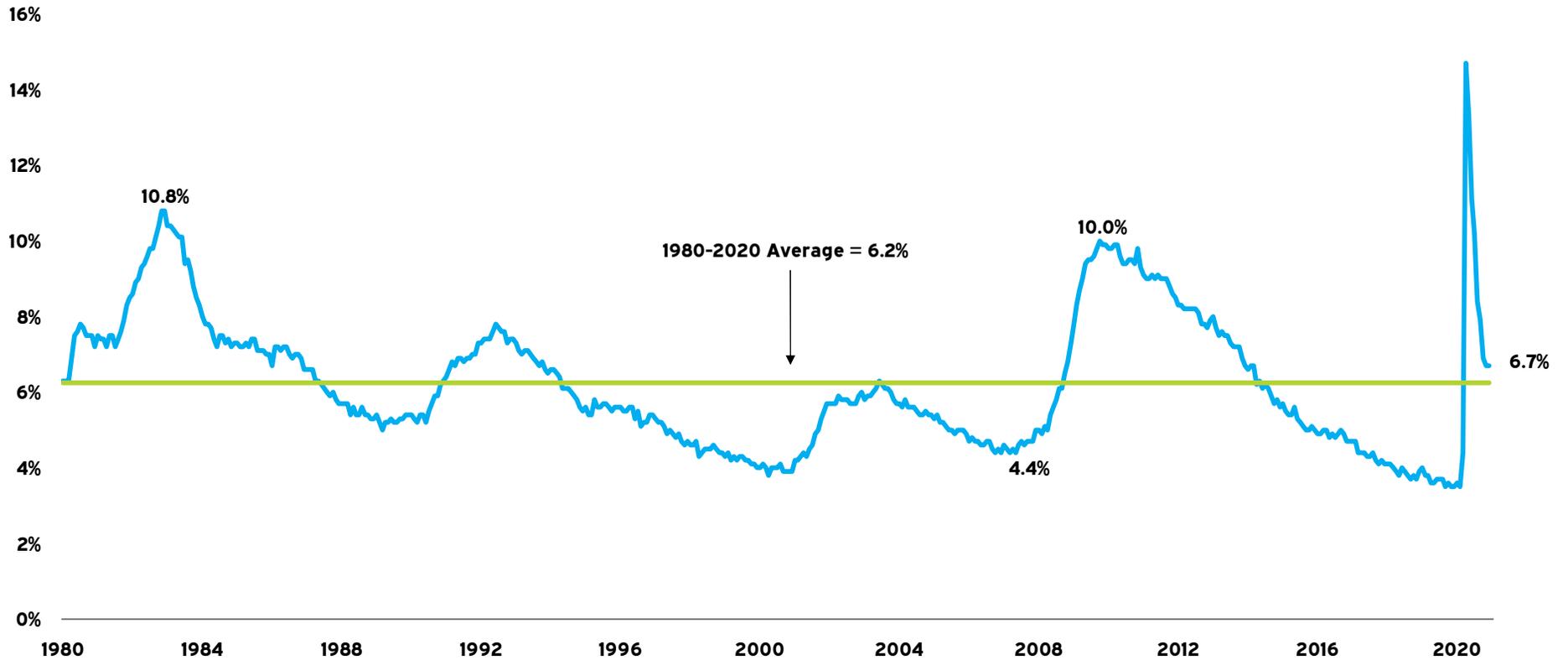
¹ Source: Bureau of Economic Analysis. Data is as of Q4 2020 and represents the first estimate.

US Inflation (CPI)
Trailing Twelve Months¹



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

US Unemployment¹



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

Capital Markets Outlook & Risk Metrics
As of December 31, 2020

Capital Markets Outlook

Takeaways

- December capped off one of the most unusual periods in modern history. Despite a global pandemic and widespread economic shutdowns, 2020 proved to be rewarding for nearly all risk-seeking investors. With monthly gains of roughly 3-9% for most equity markets, the full calendar year saw equity returns generally in the 10-40% range (with considerable variation based on market cap, style, and region).
- With unprecedented monetary stimulus, traditional safe haven assets (e.g., US Treasury bonds) also produced strong returns during 2020, although their performance during December and Q4 were generally flat to marginally negative.
- Despite some catch-up over the quarter, there continues to be a high degree of divergence among equity regions/styles/capitalizations, and this is exemplified at the extremes with US large cap growth stocks outperforming US small cap value stocks by over 33% in 2020.
- The US Treasury yield curve saw longer-term yields tick up over the month, with the 10-year yield approaching 1.0% for the first time since March 2020 (it has since increased above 1.10%). As a reminder, with yields at historically low levels, even marginal moves can cause noteworthy changes to bond prices.
- Real yields in the US declined during December. Shorter-term TIPS saw yields decline by roughly 20-30 basis points whereas longer-term yields (e.g., 10+ years) experienced more modest declines of approximately 2-15 basis points. The entire real yield curve continues to remain in negative territory.

Capital Markets Outlook

Takeaways

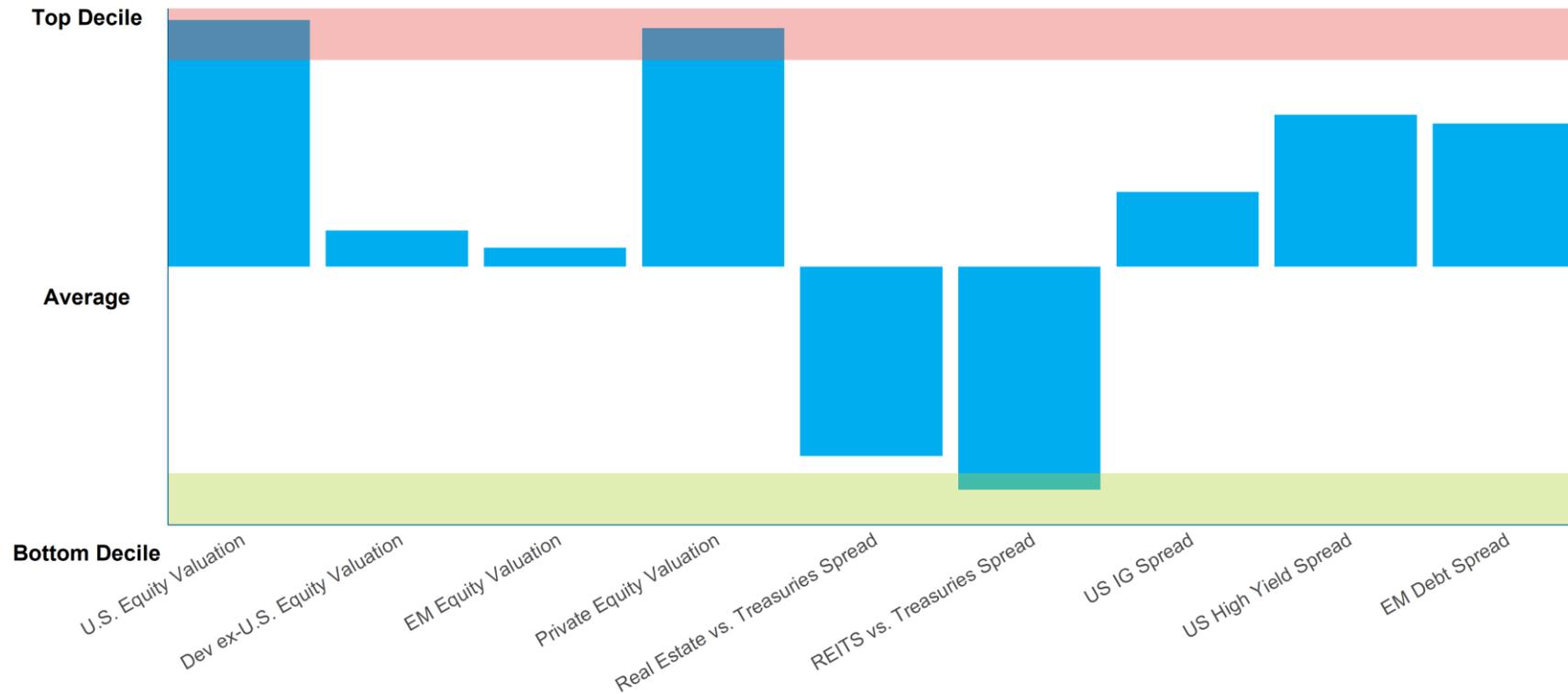
- Q3 GDP and other economic data indicated that an economic recovery was well underway. However, recent increases in COVID-related cases/deaths, recent payroll/unemployment data, and increased shutdowns across the globe represent headwinds to the recovery.
- While the markets do appear as though they are looking past COVID (largely due to successful vaccine development), the next several months are projected to be challenging from an economic standpoint as cases are expected to increase and the widespread distribution of the vaccine will not be immediate. Returning to pre-COVID levels of economic activity is not expected to occur until mid-2021 at the earliest.
- As the US government prepares to enter a new administration, investors will be examining guidance and action as it relates to monetary and fiscal policy, with a particular focus on individual stimulus, taxation, and broad infrastructure spending.
- Implied equity market volatility¹ was relatively stable throughout December as it hovered just above the long-term historical average (~20) for the entire month. While our Systemic Risk measure declined during the month, implied fixed income volatility² did increase.
- With strong price appreciation for nearly all risk-oriented asset classes in 2020, coupled with imperfect information regarding corporate earnings and solvencies, investors should remain cautious as they examine traditional valuation metrics across the global capital markets.
- The Market Sentiment Indicator³ remained **green** (i.e., positive) at month-end.

¹ As measured by VIX Index.

² As measured by MOVE Index.

³ See Appendix for the rationale for selection and calculation methodology used for the risk metrics.

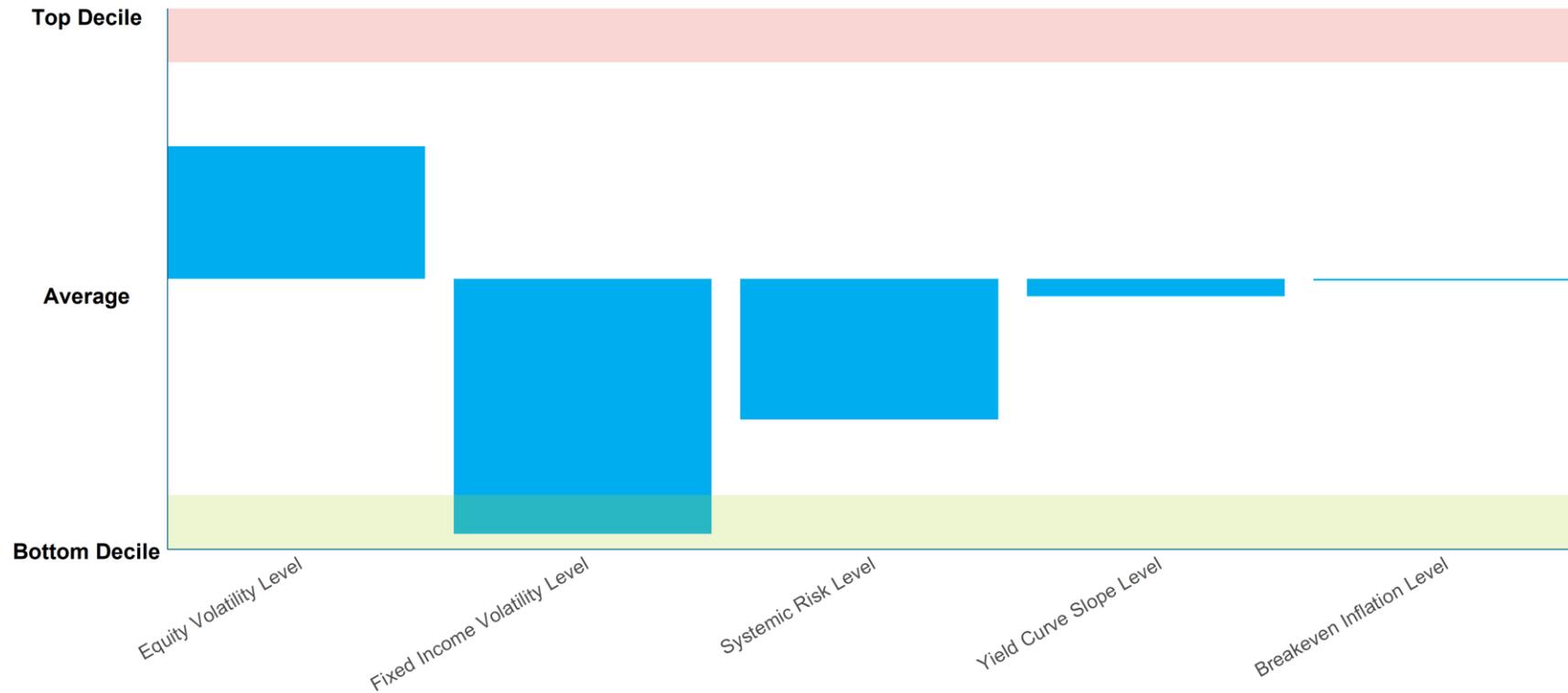
Risk Overview/Dashboard (1) (As of December 31, 2020)¹



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

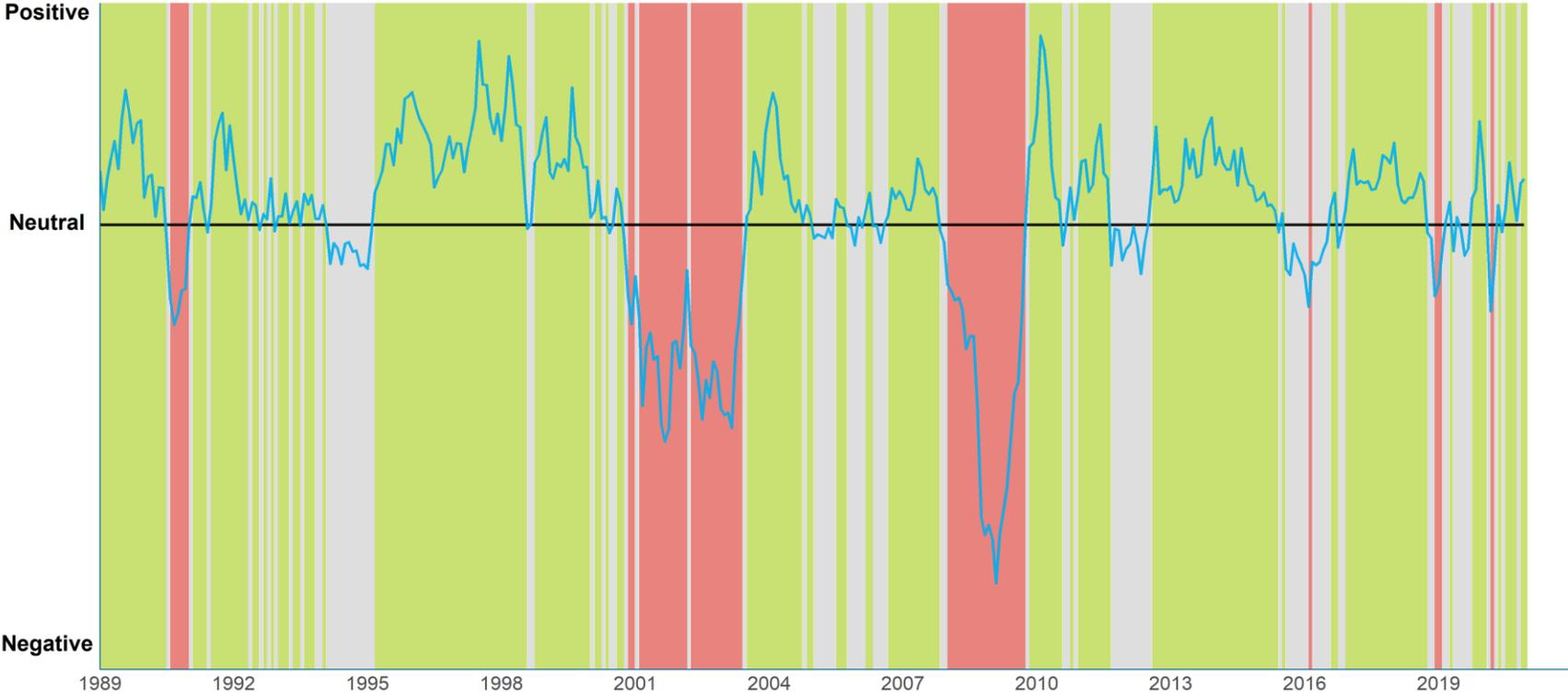
¹ With the exception of Private Equity Valuation, that is YTD as of December 31, 2019.

Risk Overview/Dashboard (2) (As of December 31, 2020)

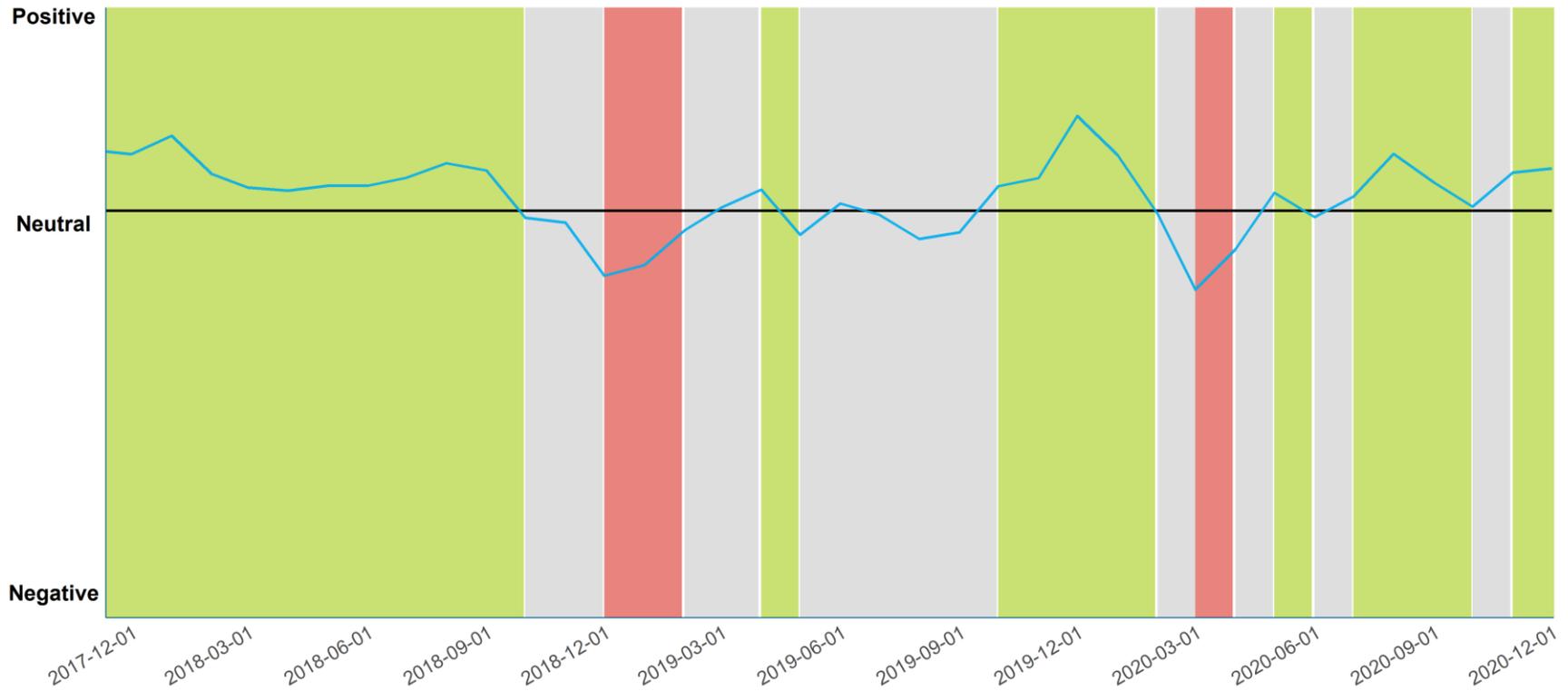


- Dashboard (2) shows how the current level of each indicator compares to its respective history.

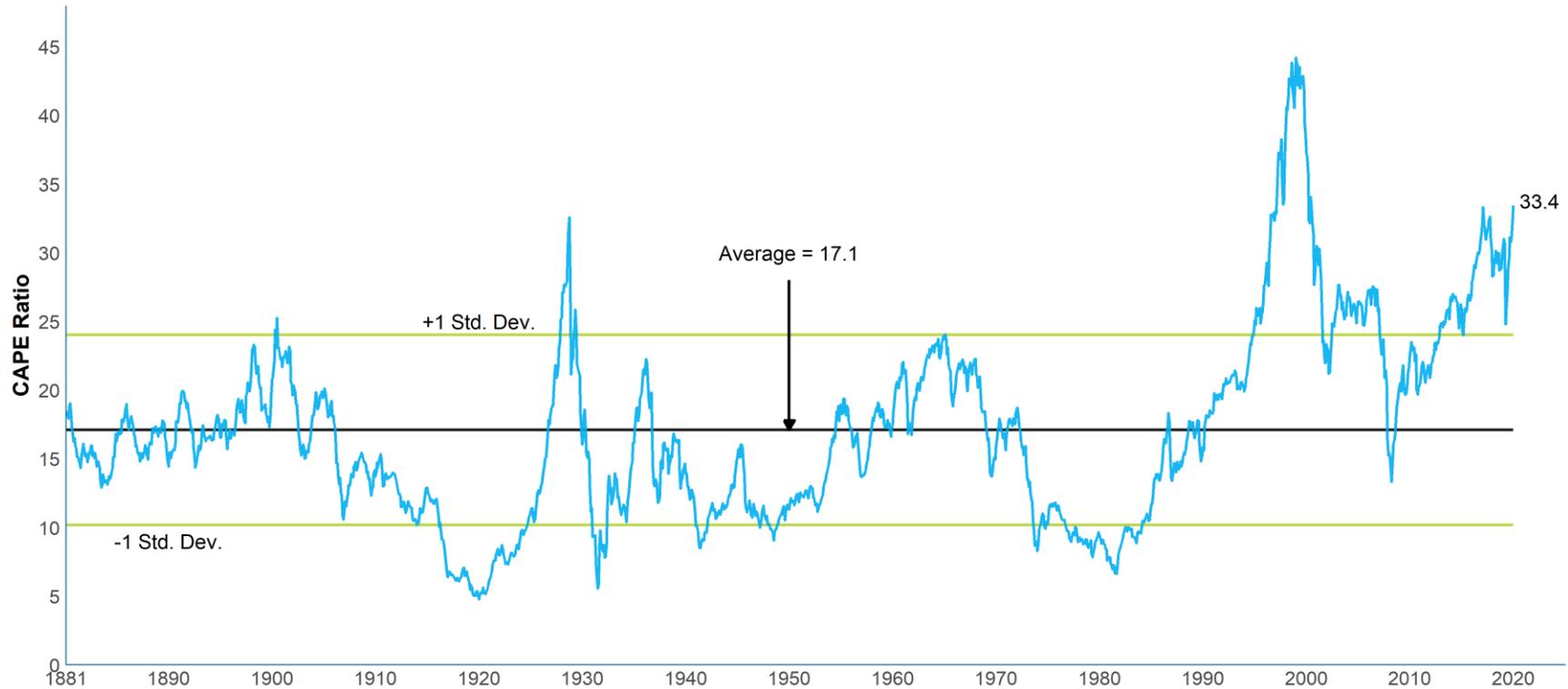
Market Sentiment Indicator (All History)
(As of December 31, 2020)



Market Sentiment Indicator (Last Three Years)
(As of December 31, 2020)



US Equity Cyclically Adjusted P/E¹ (As of December 31, 2020)



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

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

Small Cap P/E vs. Large Cap P/E¹ (As of December 31, 2020)



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

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

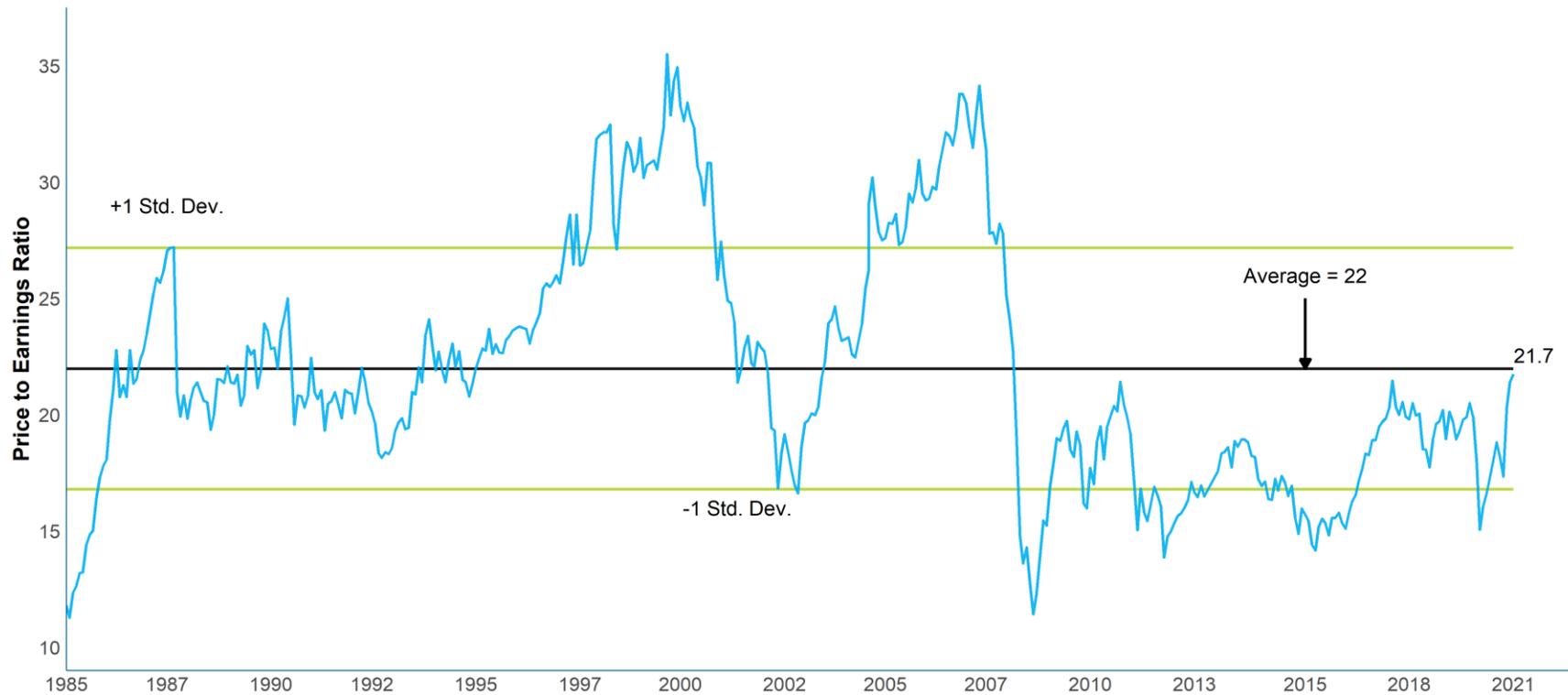
Growth P/E vs. Value P/E¹
(As of December 31, 2020)



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

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

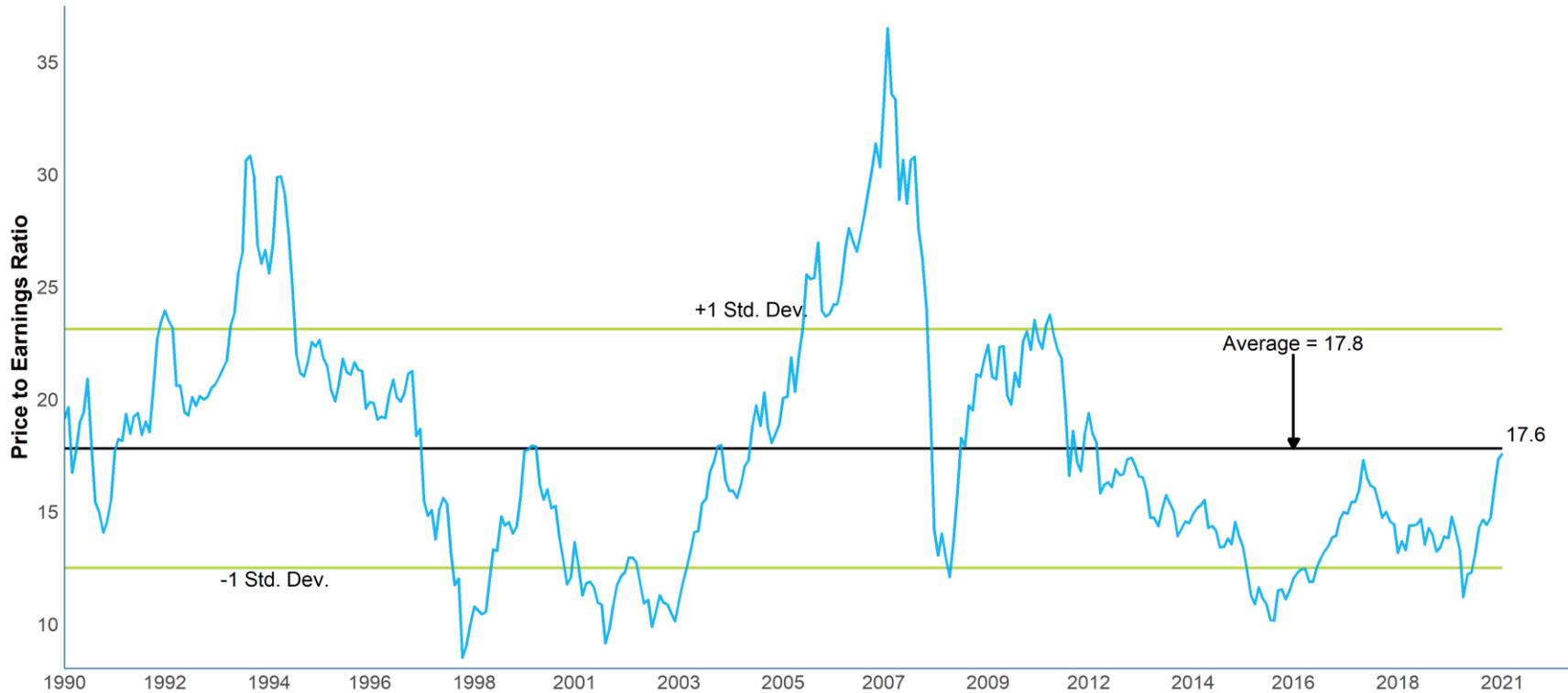
Developed International Equity Cyclically Adjusted P/E¹ (As of December 31, 2020)



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

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

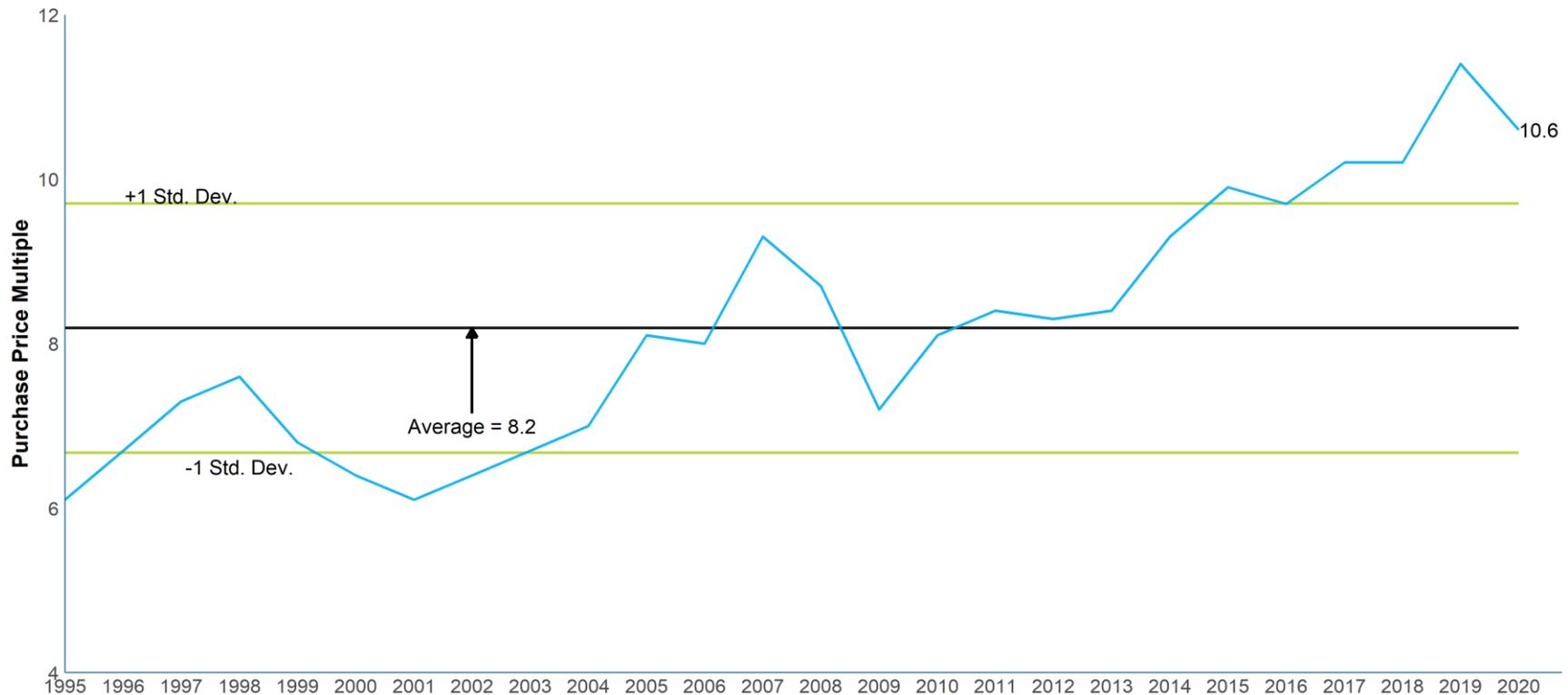
Emerging Market Equity Cyclically Adjusted P/E¹
(As of December 31, 2020)



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

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

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

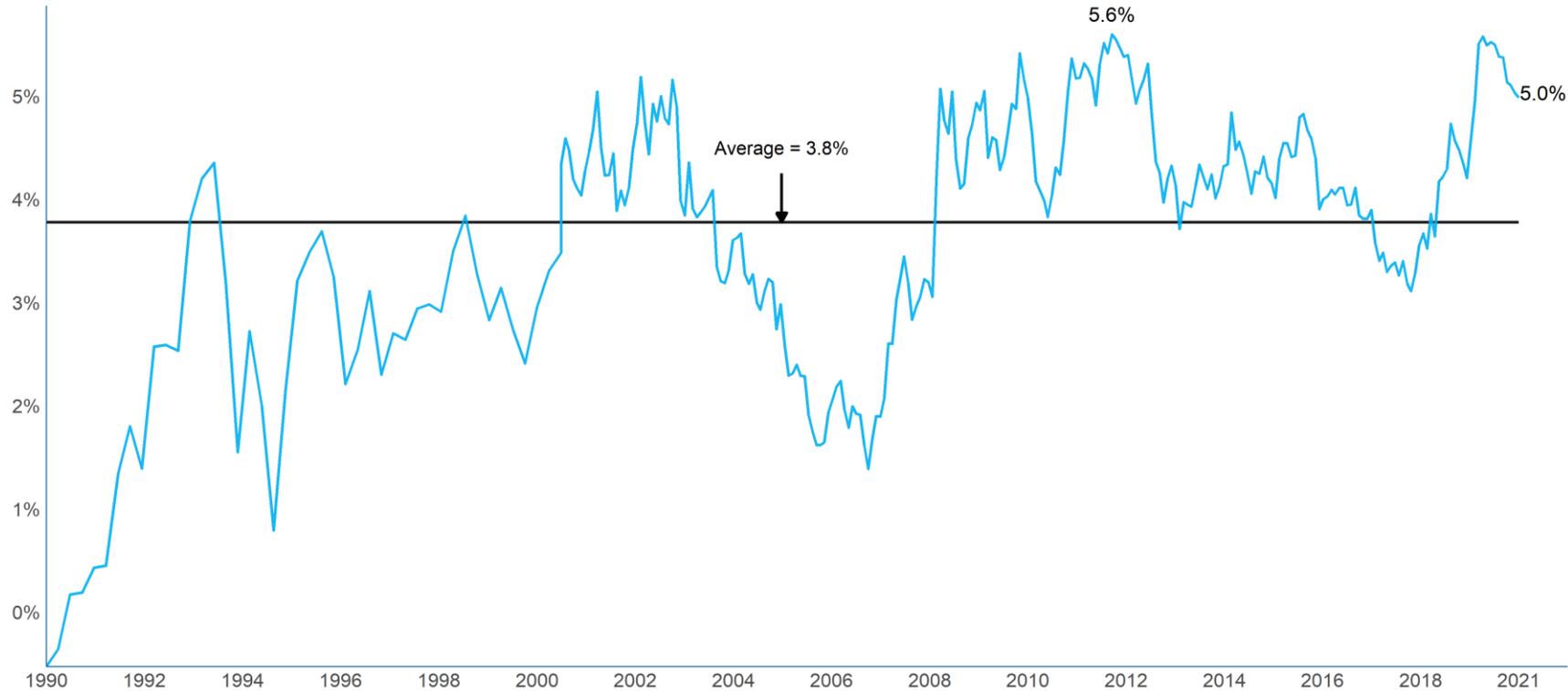


- This chart details one valuation metric for the private equity market. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

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

² Annual figures, except for 2020 (YTD).

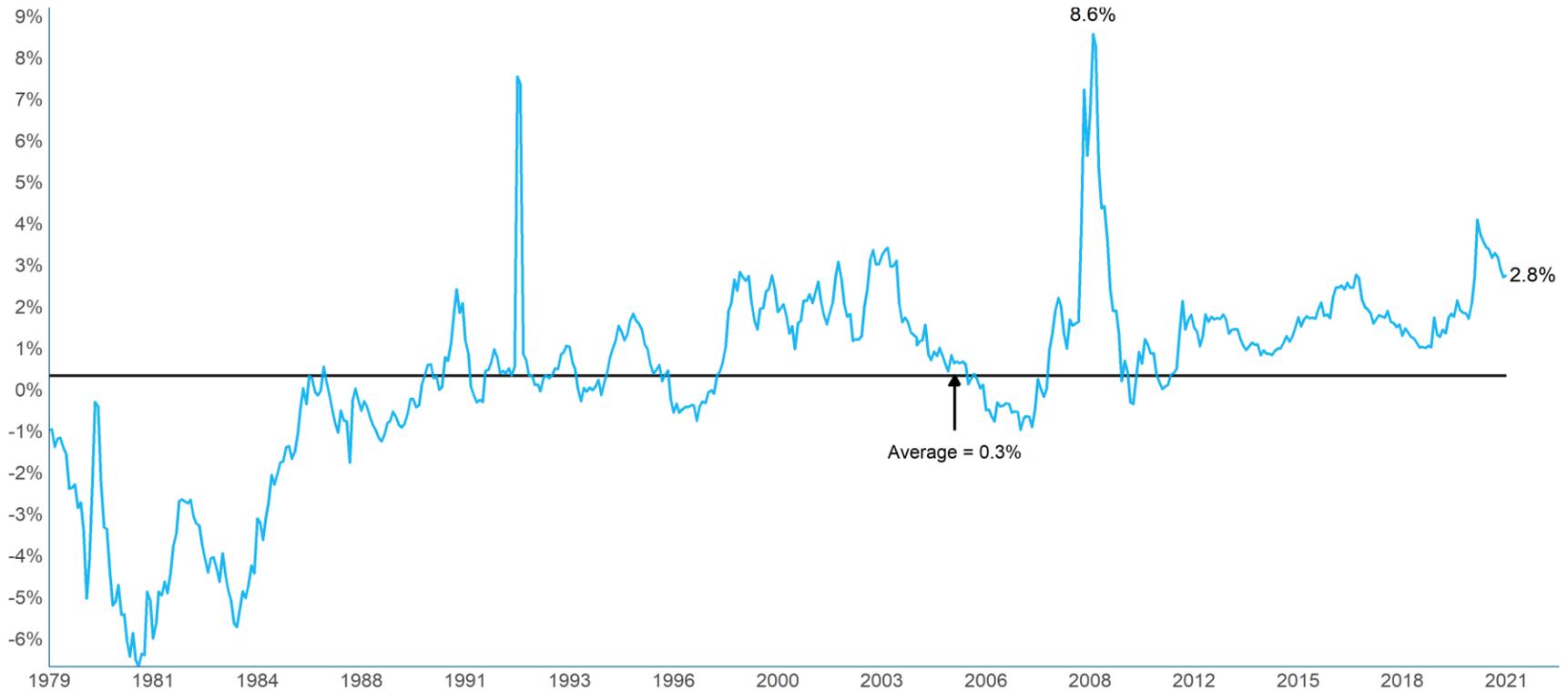
Core Real Estate Spread vs. Ten-Year Treasury¹
(As of December 31, 2020)



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

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

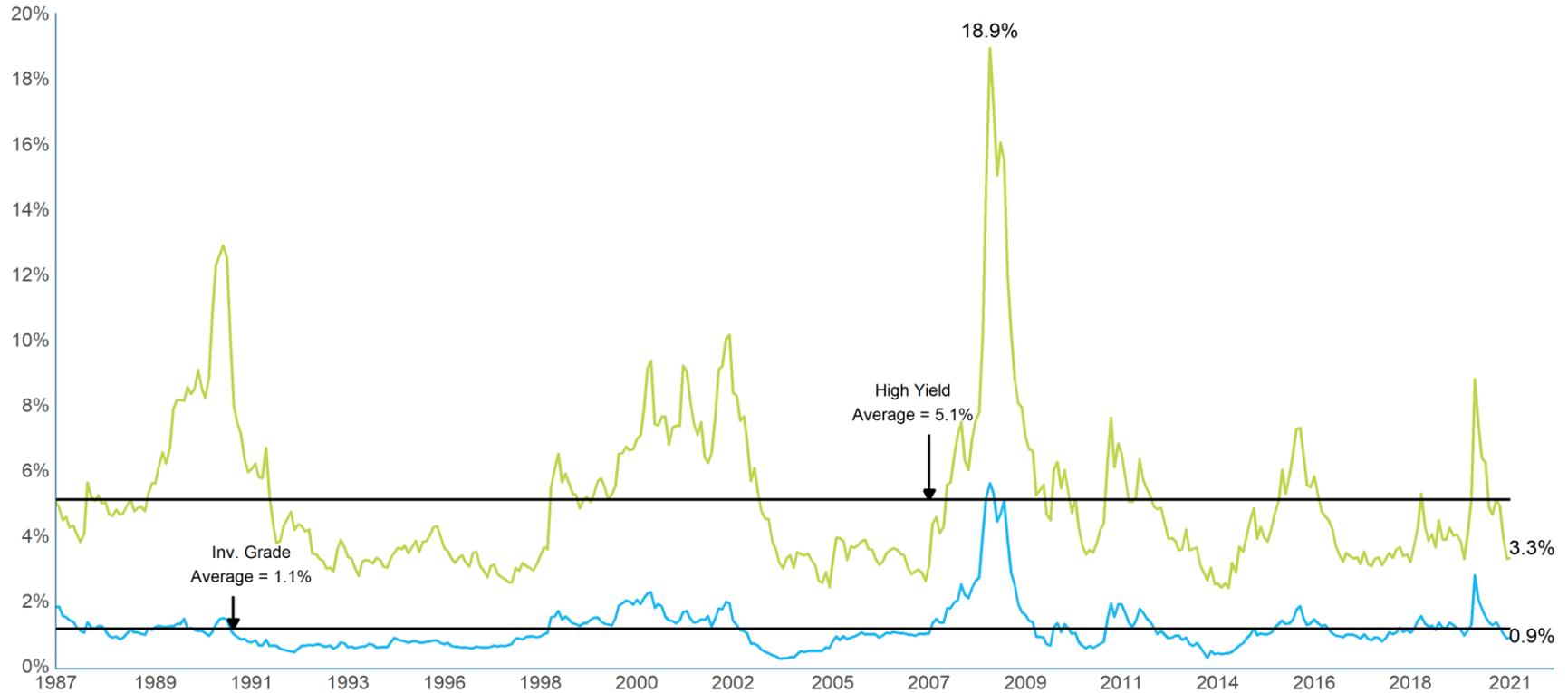
REITs Dividend Yield Spread vs. Ten-Year Treasury¹
 (As of December 31, 2020)



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

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

Credit Spreads¹
(As of December 31, 2020)



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

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

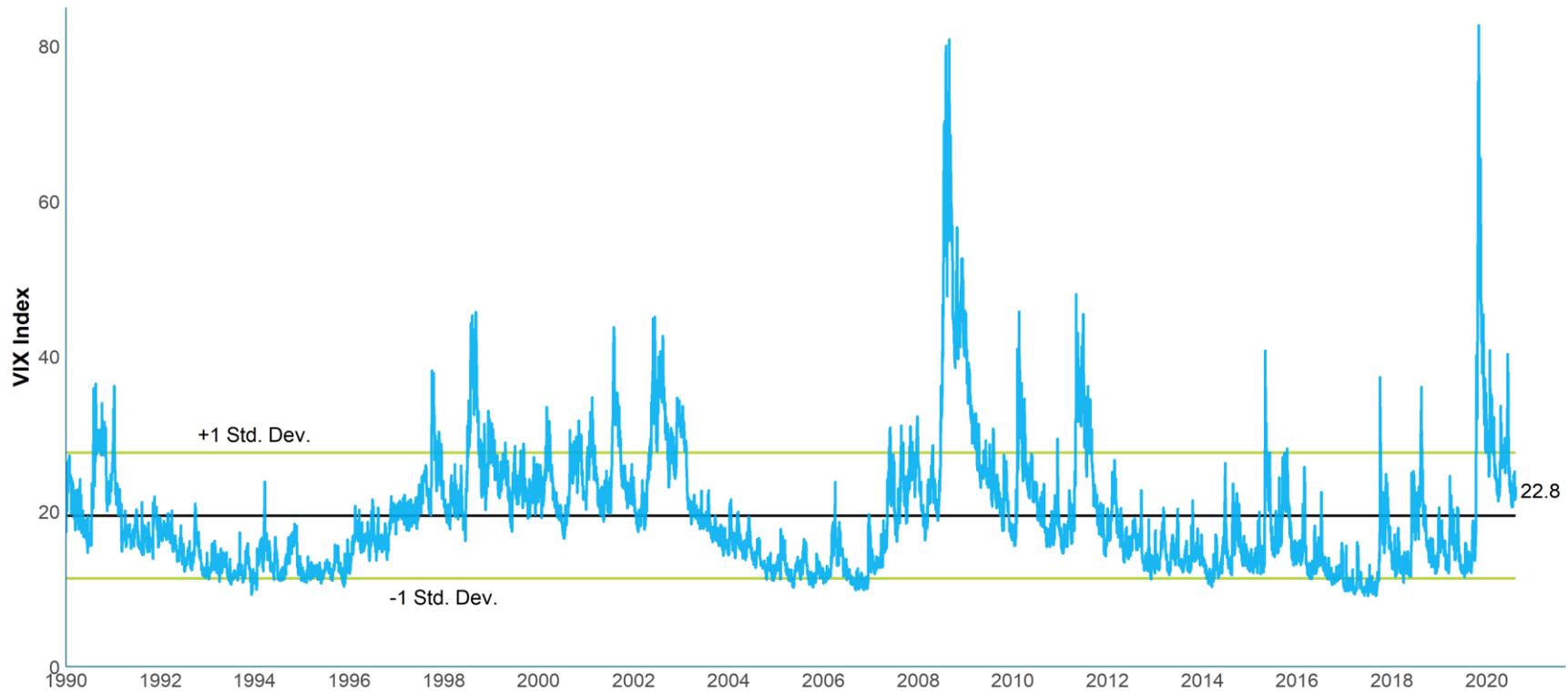
Emerging Market Debt Spreads¹
(As of December 31, 2020)



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

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

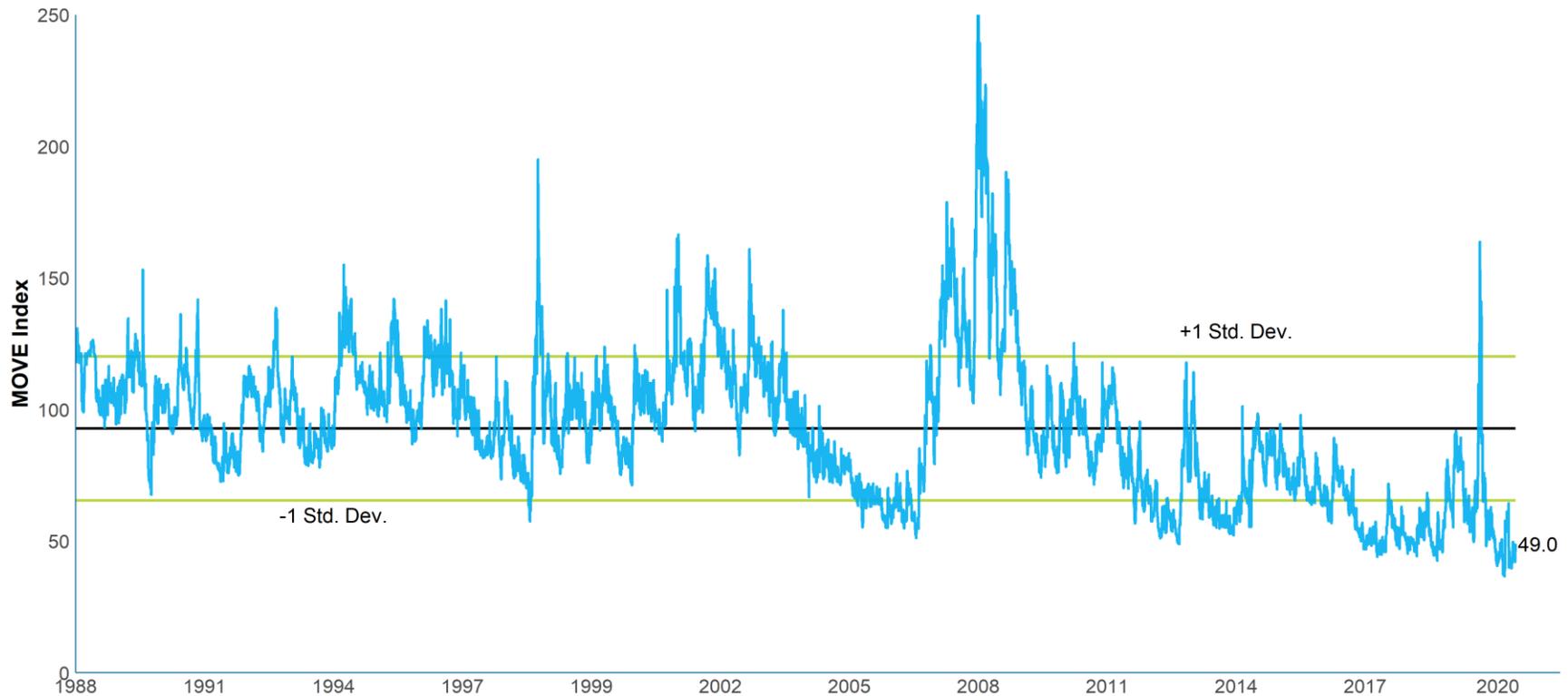
Equity Volatility¹
(As of December 31, 2020)



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

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

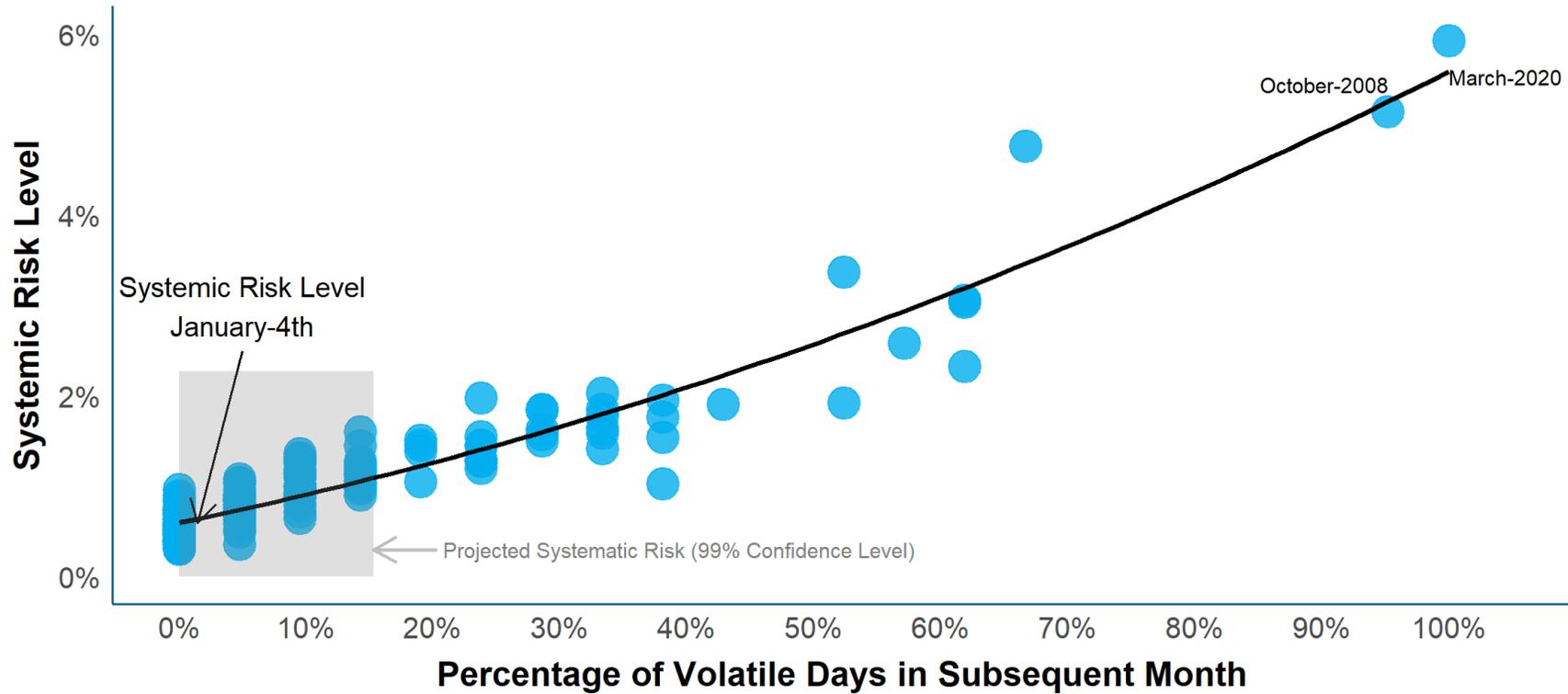
Fixed Income Volatility¹ (As of December 31, 2020)



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

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

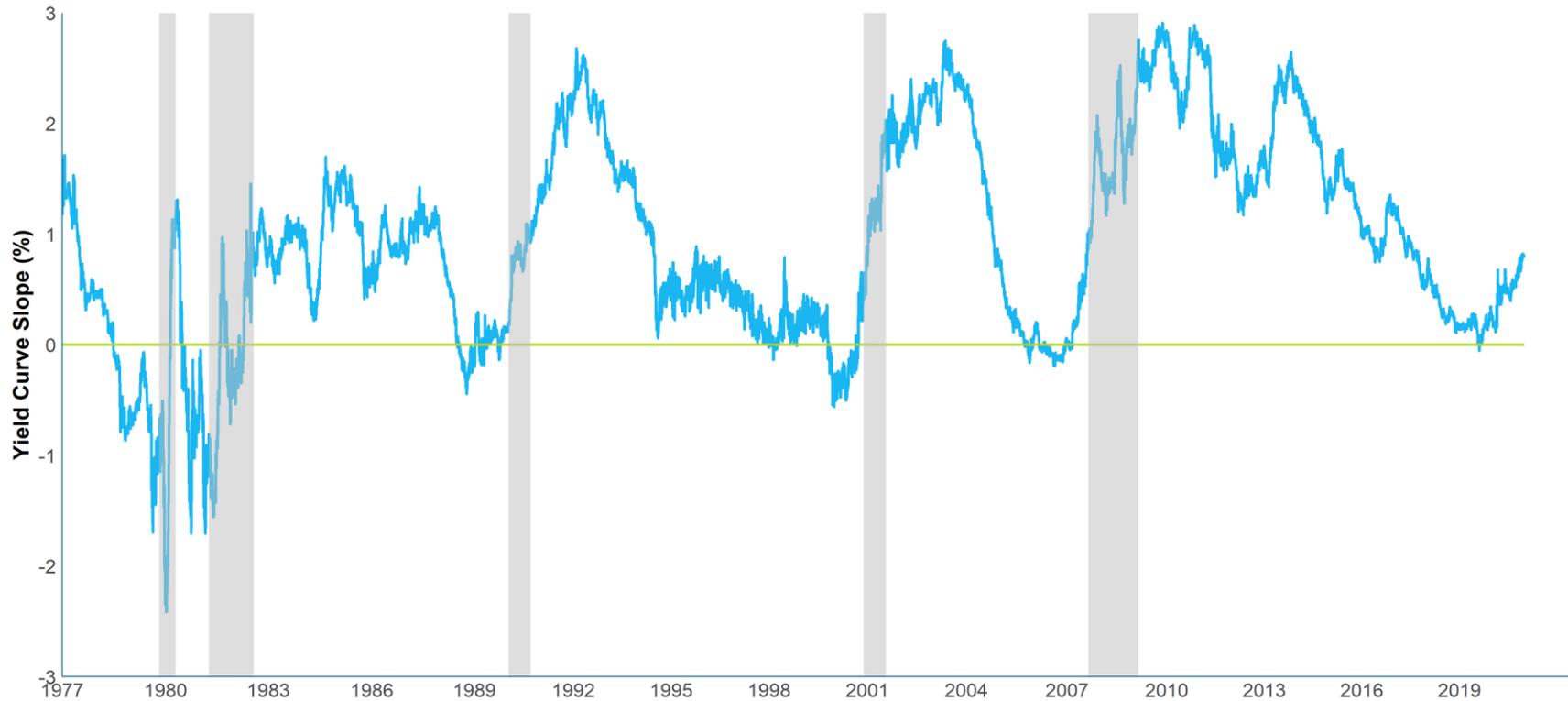
Systemic Risk and Volatile Market Days¹
 (As of December 31, 2020)



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

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

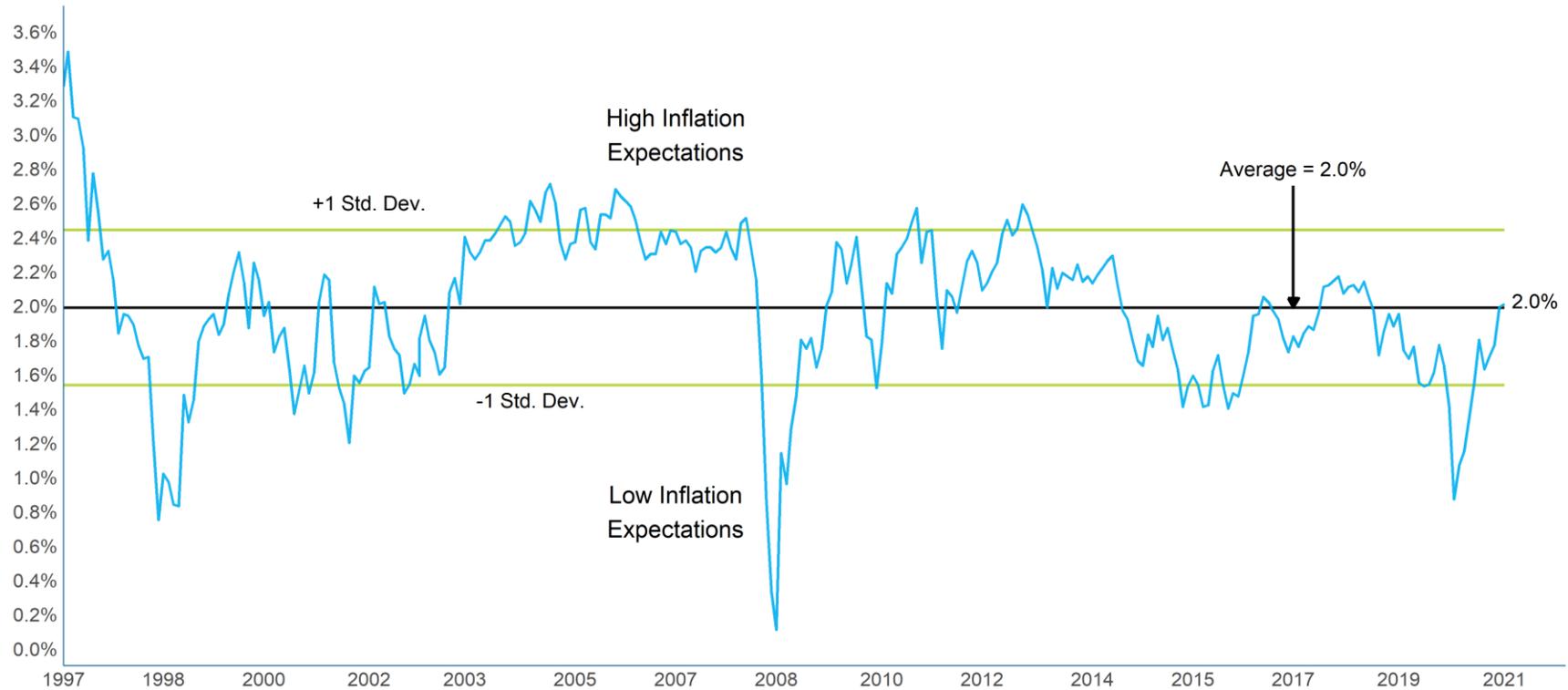
Yield Curve Slope (Ten Minus Two)¹
(As of December 31, 2020)



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

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

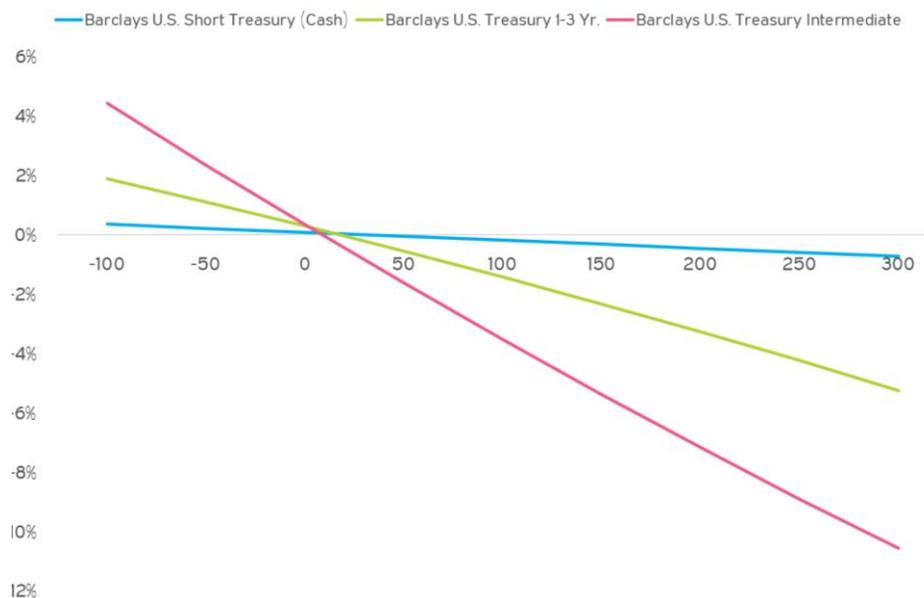
Ten-Year Breakeven Inflation¹
(As of December 31, 2020)



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

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

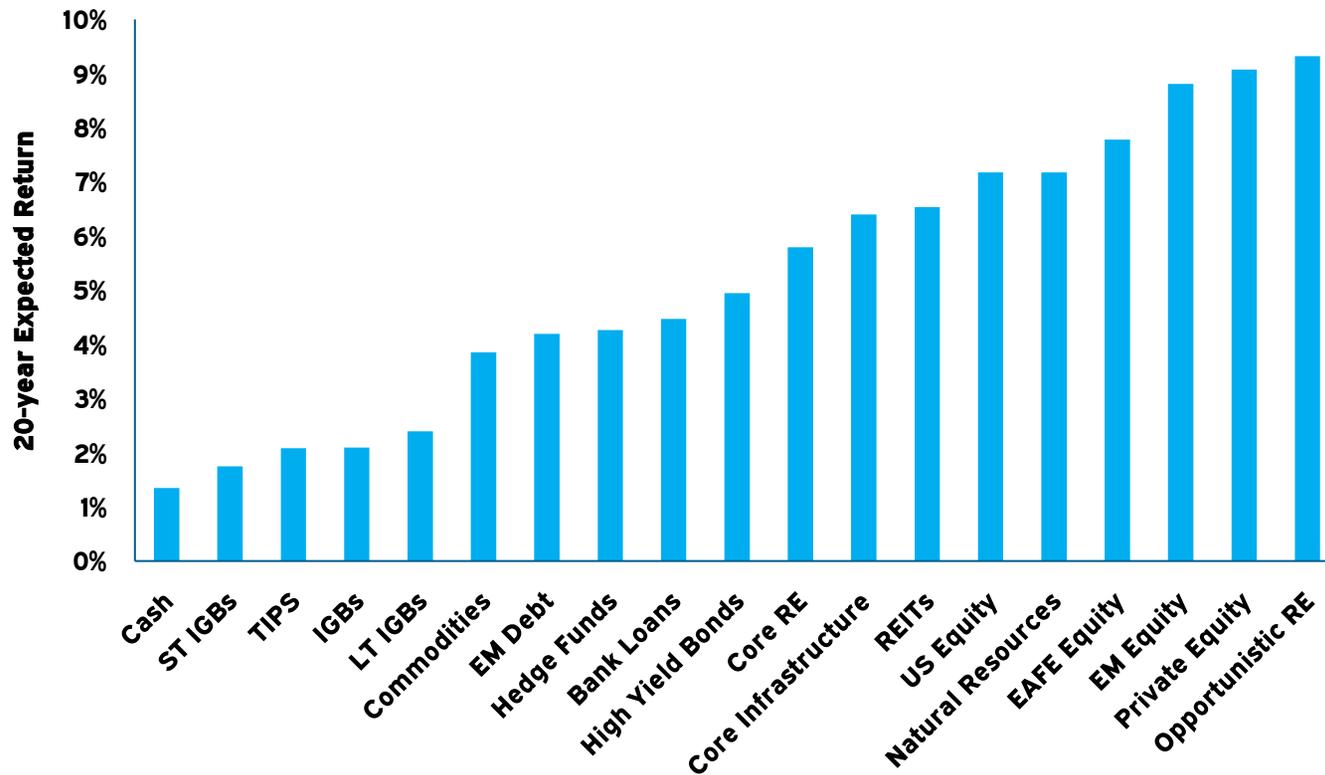
Total Return Given Changes in Interest Rates (bps)¹ (As of November 30, 2020)



	Total Return for Given Changes in Interest Rates (bps)									Statistics	
	-100	-50	0	50	100	150	200	250	300	Duration	YTW
Barclays US Short Treasury (Cash)	0.3%	0.2%	0.1%	-0.1%	-0.2%	-0.3%	-0.5%	-0.6%	-0.7%	0.27	0.07%
Barclays US Treasury 1-3 Yr.	1.9%	1.1%	0.3%	-0.6%	-1.4%	-2.3%	-3.3%	-4.3%	-5.3%	1.65	0.28%
Barclays US Treasury Intermediate	4.4%	2.3%	0.3%	-1.6%	-3.5%	-5.4%	-7.2%	-8.9%	-10.6%	3.98	0.32%
Barclays US Treasury Long	23.0%	11.7%	1.5%	-7.5%	-15.5%	-22.3%	-27.9%	-32.4%	-35.8%	19.24	1.51%

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

Long-Term Outlook – 20-Year Annualized Expected Returns¹



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

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

Appendix

Data Sources and Explanations¹

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

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

Appendix

Data Sources and Explanations¹

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

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

Appendix

Data Sources and Explanations¹

- Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.
- Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

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

Meketa Market Sentiment Indicator Explanation, Construction and Q&A

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

This appendix explores:

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

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

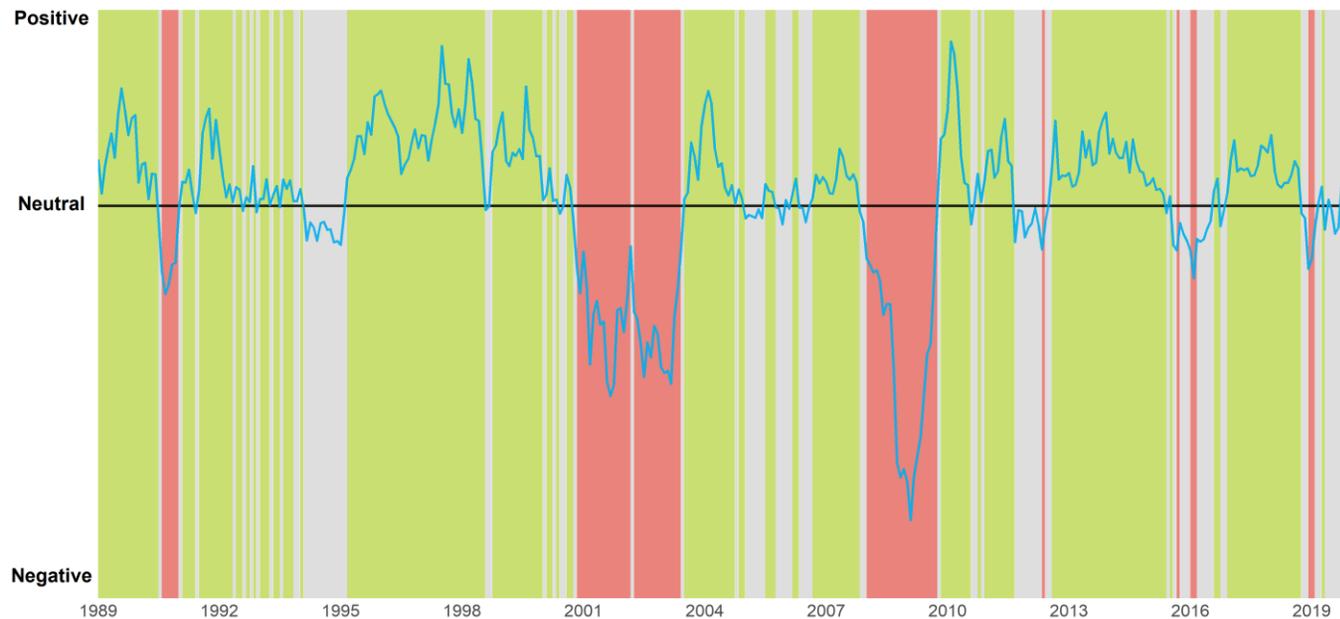
- Meketa’s Risk Metrics, which rely significantly on standard market measures of relative valuation, often provide valid early signals of increasing long-term risk levels in the global investment markets. However, as is the case with numerous valuation measures, the Risk Metrics may convey such risk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

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

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

How do I read the Meketa Market Sentiment Indicator graph?

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



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

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

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

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

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

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

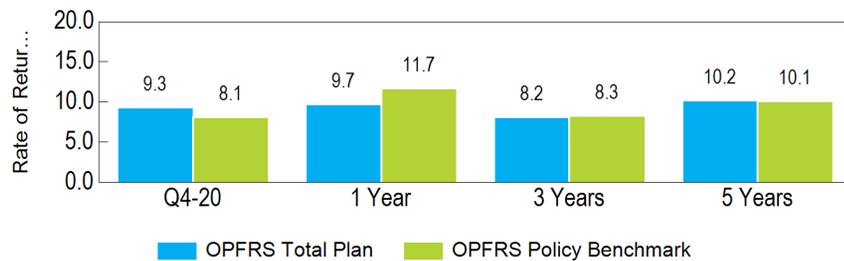
Total Portfolio Review

OPFRS Total Plan | As of December 31, 2020

3 Months Ending December 31, 2020		
	Anlzd Return	Standard Deviation
OPFRS Total Plan	9.25%	4.72%
OPFRS Policy Benchmark	8.11%	4.36%
InvMetrics Public DB \$250mm-\$1B Gross Median	10.66%	3.72%

1 Year Ending December 31, 2020		
	Anlzd Return	Standard Deviation
OPFRS Total Plan	9.47%	5.34%
OPFRS Policy Benchmark	11.74%	4.57%
InvMetrics Public DB \$250mm-\$1B Gross Median	13.12%	4.76%

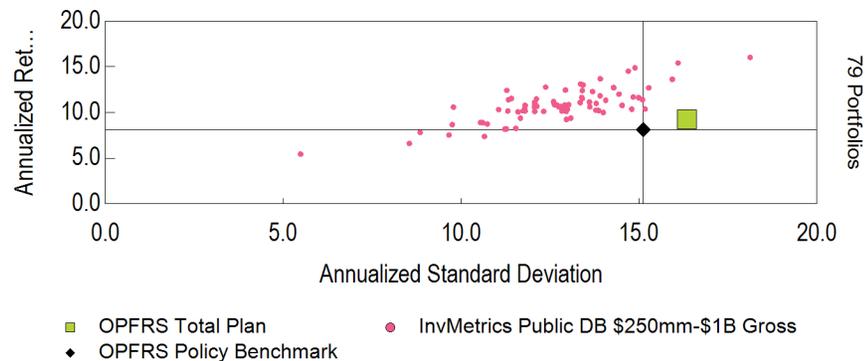
Return Summary Ending December 31, 2020



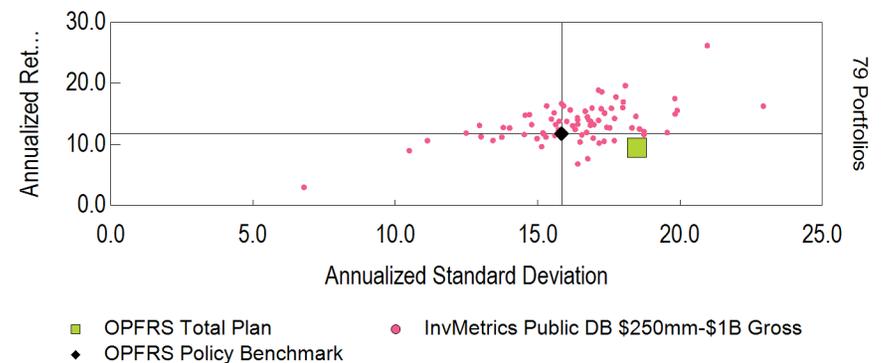
Summary of Cash Flows

	Quarter-To-Date	One Year
Beginning Market Value	\$400,067,242	\$408,226,525
Net Cash Flow	-\$3,341,422	-\$12,946,031
Capital Appreciation	\$37,392,649	\$38,837,976
Ending Market Value	\$434,118,470	\$434,118,470

Annualized Return vs. Annualized Standard Deviation 3 Months Ending December 31, 2020



Annualized Return vs. Annualized Standard Deviation 1 Year Ending December 31, 2020



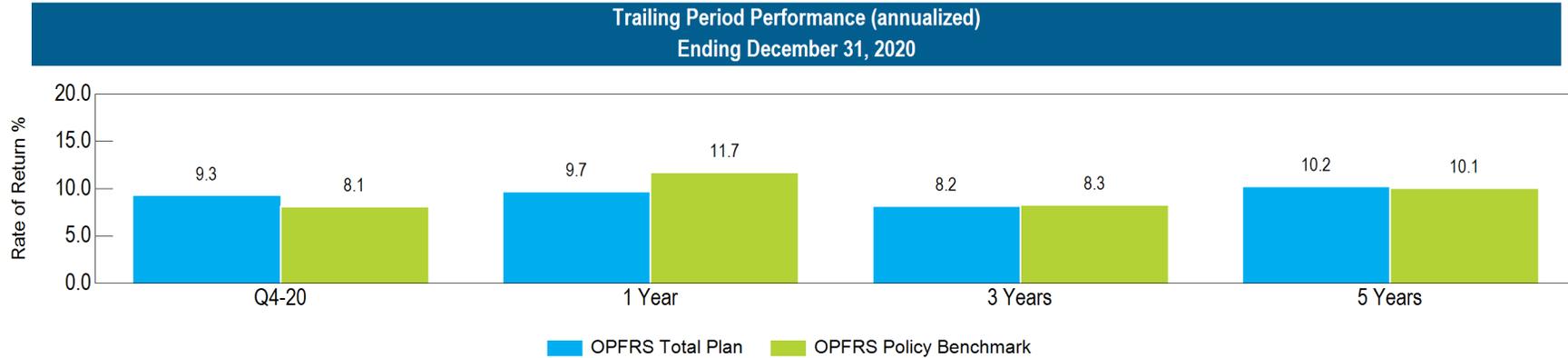
Evolving Policy Benchmark consists of 40% russell 3000, 12% MSCI ACWI ex U.S., 33% Bbg BC Universal, 5% CBOE BXM, 6.7% SG Multi Asset Risk Premia, 3.3% Bbg BC Long Treasury.

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

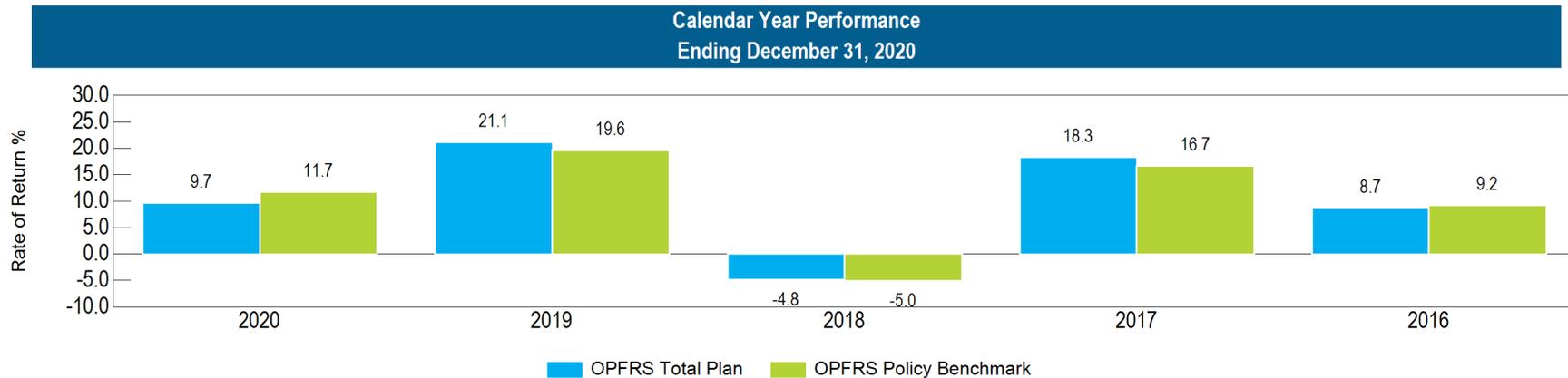
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
OPFRS Total Plan	9.3	9.7	8.2	10.2	8.2	8.4
<i>OPFRS Policy Benchmark</i>	<i>8.1</i>	<i>11.7</i>	<i>8.3</i>	<i>10.1</i>	<i>8.3</i>	<i>8.1</i>
Excess Return	1.2	-2.0	-0.1	0.1	-0.1	0.3
Domestic Equity	15.2	18.3	13.1	14.8	12.2	13.5
<i>Russell 3000 (Blend)</i>	<i>14.7</i>	<i>20.9</i>	<i>14.5</i>	<i>15.4</i>	<i>12.8</i>	<i>13.8</i>
Excess Return	0.5	-2.6	-1.4	-0.6	-0.6	-0.3
International Equity	14.8	7.2	5.0	9.2	5.8	5.9
<i>MSCI ACWI ex US (Blend)</i>	<i>17.1</i>	<i>11.1</i>	<i>5.4</i>	<i>9.4</i>	<i>5.3</i>	<i>5.4</i>
Excess Return	-2.3	-3.9	-0.4	-0.2	0.5	0.5
Fixed Income	1.4	8.0	5.8	5.4	4.7	4.4
<i>Bmbg BC Universal (Blend)</i>	<i>1.3</i>	<i>7.6</i>	<i>5.5</i>	<i>4.9</i>	<i>4.3</i>	<i>4.2</i>
Excess Return	0.1	0.4	0.3	0.5	0.4	0.2
Credit	7.4	7.9	4.5	8.2	--	--
<i>BBgBarc US High Yield TR</i>	<i>6.5</i>	<i>7.1</i>	<i>6.2</i>	<i>8.6</i>	--	--
Excess Return	0.9	0.8	-1.7	-0.4	--	--
Covered Calls	10.3	11.4	9.1	10.6	--	--
<i>CBOE S&P 500 BuyWrite USD</i>	<i>7.5</i>	<i>-2.8</i>	<i>2.6</i>	<i>5.5</i>	--	--
Excess Return	2.8	14.2	6.5	5.1	--	--
Crisis Risk Offset	-2.8	-23.4	-7.1	--	--	--
<i>SG Multi Alternative Risk Premia Index</i>	<i>-2.0</i>	<i>-14.8</i>	--	--	--	--
Excess Return	-0.8	-8.6	--	--	--	--
Cash	0.0	1.0	1.8	1.4	1.0	--
<i>FTSE T-Bill 3 Months TR</i>	<i>0.0</i>	<i>0.6</i>	<i>1.6</i>	<i>1.2</i>	<i>0.8</i>	--
Excess Return	0.0	0.4	0.2	0.2	0.2	--

1. Evolving Policy Benchmark consists of 40% Russell 3000, 12% MSCI Acwi ex U.S., 33% Bbg BC Universal, 5% CBOE BXM, 6.7% SG Multi Asset Risk Premia, 3.3% Bbg BC Long Treasury,
2. Domestic Equity Benchmark consists of S&P 500 thru 3/31/98 10% Russell 1000, 20% Russell 1000 Value, 5% RMC from 4/1/98 - 12/31/04 and Russell 3000 from 1/1/05 to present.
3. International Equity Benchmark consists of MSCI EAFE thru 12/31/04 and MSCI ACWI x US thereafter.
4. Fixed Income Benchmark consists of Bbg BC Aggregate prior to 4/1/06, and Bbg BC Universal thereafter.
5. Cash balances held in ETF accounts at the Custodian are reflected in the Cash account market value.

Portfolio Relative Performance Results | As of December 31, 2020



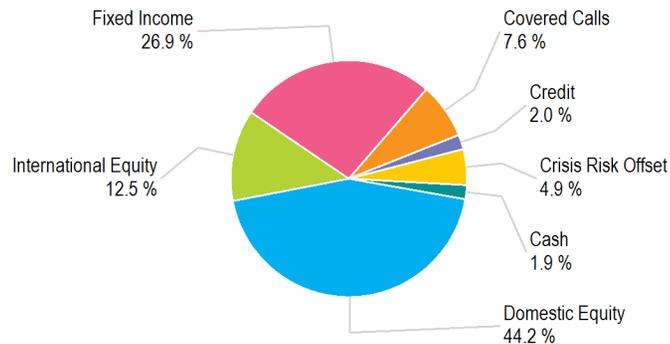
	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)	2020 (%)
OPFRS Total Plan	9.3	15.0	9.7	8.2	10.2	8.7	18.3	-4.8	21.1	9.7
<i>OPFRS Policy Benchmark</i>	<i>8.1</i>	<i>13.6</i>	<i>11.7</i>	<i>8.3</i>	<i>10.1</i>	<i>9.2</i>	<i>16.7</i>	<i>-5.0</i>	<i>19.6</i>	<i>11.7</i>
<i>InvMetrics Public DB \$250mm-\$1B Gross Median</i>	<i>10.7</i>	<i>16.7</i>	<i>13.1</i>	<i>8.9</i>	<i>10.1</i>	<i>7.8</i>	<i>15.8</i>	<i>-4.1</i>	<i>18.6</i>	<i>13.1</i>



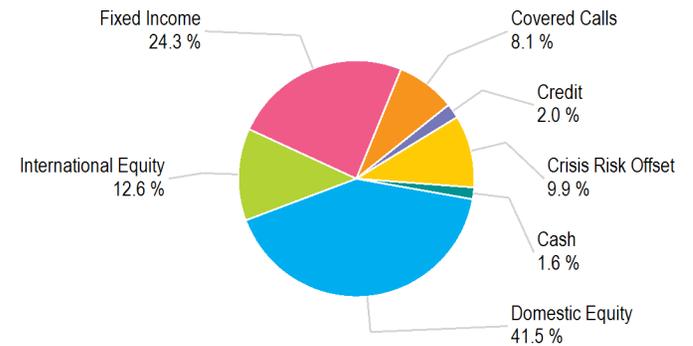
Asset Allocation vs. Target As Of December 31, 2020

	Current	%	Policy	Difference*
Domestic Equity	\$191,706,915	44.2%	40.0%	4.2%
International Equity	\$54,426,730	12.5%	12.0%	0.5%
Fixed Income	\$116,895,373	26.9%	31.0%	-4.1%
Covered Calls	\$32,961,805	7.6%	5.0%	2.6%
Credit	\$8,605,599	2.0%	2.0%	0.0%
Crisis Risk Offset	\$21,322,811	4.9%	10.0%	-5.1%
Cash	\$8,199,236	1.9%	0.0%	1.9%
Total	\$434,118,470	100.0%	100.0%	

December 31, 2020: \$434,118,470



December 31, 2019: \$408,226,525



Cash balances held in ETF accounts at the Custodian are reflected in the Cash account market value.
Target weightings reflect the Plan's evolving asset allocation (effective 5/31/2017.)

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

	Market Value	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
Domestic Equity	191,706,915	100.0	15.2	18.3	13.1	14.8	9.2	Jun-97
<i>Russell 3000 (Blend)</i>			<i>14.7</i>	<i>20.9</i>	<i>14.5</i>	<i>15.4</i>	<i>9.4</i>	<i>Jun-97</i>
Excess Return			0.5	-2.6	-1.4	-0.6	-0.2	
Northern Trust Russell 1000	107,771,639	56.2	13.7	20.8	14.8	15.5	14.9	Jun-10
<i>Russell 1000</i>			<i>13.7</i>	<i>21.0</i>	<i>14.8</i>	<i>15.6</i>	<i>14.9</i>	<i>Jun-10</i>
Excess Return			0.0	-0.2	0.0	-0.1	0.0	
<i>eV US Large Cap Core Equity Gross Rank</i>			<i>26</i>	<i>27</i>	<i>28</i>	<i>27</i>	<i>36</i>	<i>Jun-10</i>
EARNEST Partners	40,963,567	21.4	18.2	21.2	14.9	17.3	10.9	Apr-06
<i>Russell MidCap</i>			<i>19.9</i>	<i>17.1</i>	<i>11.6</i>	<i>13.4</i>	<i>9.4</i>	<i>Apr-06</i>
Excess Return			-1.7	4.1	3.3	3.9	1.5	
<i>eV US Mid Cap Core Equity Gross Rank</i>			<i>61</i>	<i>23</i>	<i>19</i>	<i>10</i>	<i>26</i>	<i>Apr-06</i>
iShares Edge MSCI Min Vol	19,318,580	10.1	7.0	--	--	--	27.5	Apr-20
<i>MSCI USA Minimum Volatility GR USD</i>			<i>6.9</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>27.6</i>	<i>Apr-20</i>
Excess Return			0.1				-0.1	
<i>eV US Low Volatility Equity Gross Rank</i>			<i>69</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>73</i>	<i>Apr-20</i>
Rice Hall James	15,003,227	7.8	21.0	24.7	11.5	--	13.6	Jul-17
<i>Russell 2000 Growth</i>			<i>29.6</i>	<i>34.6</i>	<i>16.2</i>	<i>--</i>	<i>17.2</i>	<i>Jul-17</i>
Excess Return			-8.6	-9.9	-4.7		-3.6	
<i>eV US Small Cap Growth Equity Gross Rank</i>			<i>92</i>	<i>87</i>	<i>92</i>	<i>--</i>	<i>92</i>	<i>Jul-17</i>
Vanguard Russell 2000 Value	8,649,902	4.5	33.4	5.0	--	--	9.3	Aug-19
<i>Russell 2000 Value</i>			<i>33.4</i>	<i>4.6</i>	<i>--</i>	<i>--</i>	<i>8.8</i>	<i>Aug-19</i>
Excess Return			0.0	0.4			0.5	
<i>eV US Small Cap Value Equity Gross Rank</i>			<i>29</i>	<i>52</i>	<i>--</i>	<i>--</i>	<i>47</i>	<i>Aug-19</i>

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

	Market Value	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
International Equity	54,426,730	100.0	14.8	7.2	5.0	9.2	5.7	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			<i>17.1</i>	<i>11.1</i>	<i>5.4</i>	<i>9.4</i>	<i>5.9</i>	<i>Jan-98</i>
Excess Return			-2.3	-3.9	-0.4	-0.2	-0.2	
SGA ACWI ex-U.S. Equity	38,257,641	70.3	14.1	7.6	--	--	7.6	Dec-19
<i>MSCI ACWI ex USA Gross</i>			<i>17.1</i>	<i>11.1</i>	--	--	<i>14.7</i>	<i>Dec-19</i>
Excess Return			-3.0	-3.5			-7.1	
<i>eV ACWI ex-US All Cap Core Eq Gross Rank</i>			<i>85</i>	<i>85</i>	--	--	<i>93</i>	<i>Dec-19</i>
Vanguard Developed Markets ETF	15,808,977	29.0	16.5	10.0	--	--	16.7	Sep-19
<i>FTSE Developed All Cap Ex US TR USD</i>			<i>17.1</i>	<i>10.3</i>	--	--	<i>17.1</i>	<i>Sep-19</i>
Excess Return			-0.6	-0.3			-0.4	
<i>eV ACWI ex-US All Cap Core Eq Gross Rank</i>			<i>52</i>	<i>71</i>	--	--	<i>83</i>	<i>Sep-19</i>

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

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

	Market Value	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
Fixed Income	116,895,373	100.0	1.4	8.0	5.8	5.4	5.6	Dec-93
<i>Blmbg BC Universal (Blend)</i>			<i>1.3</i>	<i>7.6</i>	<i>5.5</i>	<i>4.9</i>	<i>5.4</i>	<i>Dec-93</i>
Excess Return			0.1	0.4	0.3	0.5	0.2	
Ramirez	79,297,837	67.8	1.3	6.8	5.4	--	5.4	Jan-17
<i>BBgBarc US Aggregate TR</i>			<i>0.7</i>	<i>7.5</i>	<i>5.3</i>	--	<i>4.9</i>	<i>Jan-17</i>
Excess Return			0.6	-0.7	0.1		0.5	
<i>eV US Core Fixed Inc Net Rank</i>			<i>31</i>	<i>92</i>	<i>61</i>	--	<i>31</i>	<i>Jan-17</i>
Reams	29,931,453	25.6	1.8	20.2	9.7	7.2	6.2	Feb-98
<i>Blmbg BC Universal (Blend)</i>			<i>1.3</i>	<i>7.6</i>	<i>5.5</i>	<i>4.9</i>	<i>5.1</i>	<i>Feb-98</i>
Excess Return			0.5	12.6	4.2	2.3	1.1	
<i>eV US Core Plus Fixed Inc Gross Rank</i>			<i>68</i>	<i>1</i>	<i>1</i>	<i>4</i>	<i>35</i>	<i>Feb-98</i>
iShares Core US Aggregate Bond ETF	7,666,040	6.6	--	--	--	--	1.0	Nov-20
<i>BBgBarc US Aggregate TR</i>			--	--	--	--	<i>1.1</i>	<i>Nov-20</i>
Excess Return							-0.1	

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

	Market Value	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
Covered Calls	32,961,805	100.0	10.3	11.4	9.1	10.6	9.3	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>			<i>7.5</i>	<i>-2.8</i>	<i>2.6</i>	<i>5.5</i>	<i>5.3</i>	<i>Apr-14</i>
Excess Return			2.8	14.2	6.5	5.1	4.0	
Parametric DeltaShift	18,167,767	55.1	12.1	16.4	12.1	13.1	11.7	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>			<i>7.5</i>	<i>-2.8</i>	<i>2.6</i>	<i>5.5</i>	<i>5.3</i>	<i>Apr-14</i>
Excess Return			4.6	19.2	9.5	7.6	6.4	
<i>eV US Large Cap Core Equity Gross Rank</i>			<i>46</i>	<i>47</i>	<i>59</i>	<i>69</i>	<i>66</i>	<i>Apr-14</i>
Parametric BXM	14,794,038	44.9	8.0	6.0	5.9	7.9	7.2	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>			<i>7.5</i>	<i>-2.8</i>	<i>2.6</i>	<i>5.5</i>	<i>5.3</i>	<i>Apr-14</i>
Excess Return			0.5	8.8	3.3	2.4	1.9	
<i>eV US Large Cap Core Equity Gross Rank</i>			<i>92</i>	<i>93</i>	<i>97</i>	<i>97</i>	<i>97</i>	<i>Apr-14</i>

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

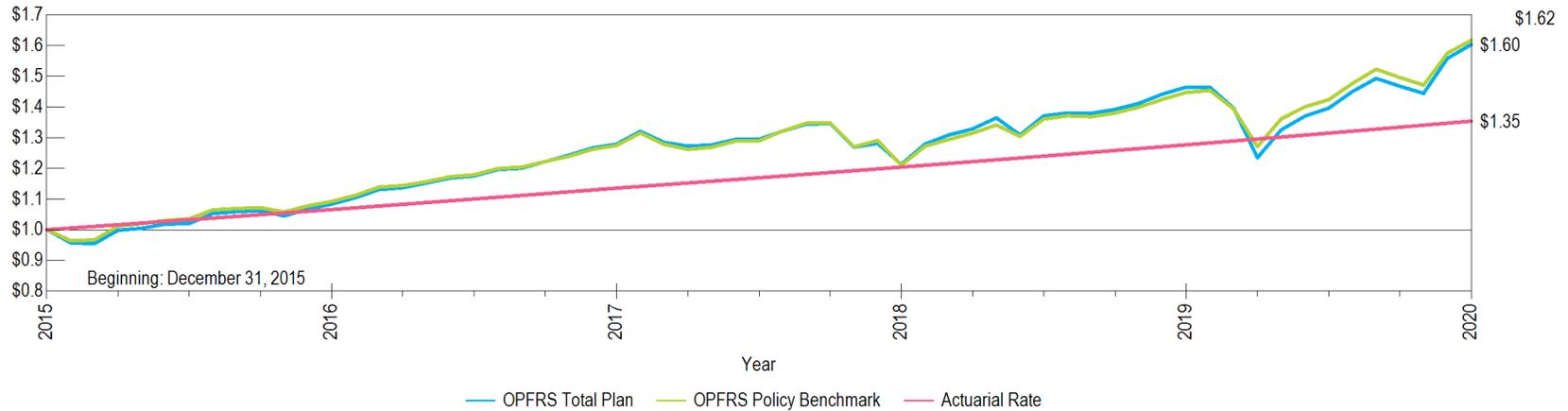
	Market Value	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
Credit	8,605,599	100.0	7.4	7.9	4.5	8.2	6.0	Feb-15
<i>BBgBarc US High Yield TR</i>			<i>6.5</i>	<i>7.1</i>	<i>6.2</i>	<i>8.6</i>	<i>6.3</i>	<i>Feb-15</i>
Excess Return			0.9	0.8	-1.7	-0.4	-0.3	
DDJ Capital	8,605,599	100.0	7.4	7.9	4.5	8.2	6.0	Feb-15
<i>ICE BofA High Yield Master TR</i>			<i>6.5</i>	<i>6.2</i>	<i>5.9</i>	<i>8.4</i>	<i>6.1</i>	<i>Feb-15</i>
Excess Return			0.9	1.7	-1.4	-0.2	-0.1	
<i>eV US High Yield Fixed Inc Gross Rank</i>			<i>15</i>	<i>26</i>	<i>95</i>	<i>46</i>	<i>54</i>	<i>Feb-15</i>

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

	Market Value	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
Crisis Risk Offset	21,322,811	100.0	-2.8	-23.4	-7.1	--	-8.7	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>			<i>-2.0</i>	<i>-14.8</i>	<i>--</i>	<i>--</i>	<i>-5.7</i>	<i>Aug-18</i>
Excess Return			-0.8	-8.6			-3.0	
Vanguard Long-Term Treasury ETF	21,322,811	100.0	-3.0	17.4	--	--	13.8	Jul-19
<i>BBgBarc US Govt Long TR</i>			<i>-3.0</i>	<i>17.6</i>	<i>--</i>	<i>--</i>	<i>13.9</i>	<i>Jul-19</i>
Excess Return			0.0	-0.2			-0.1	
<i>eV US Long Duration - Gov/Cred Fixed Inc Net Rank</i>			<i>99</i>	<i>45</i>	<i>--</i>	<i>--</i>	<i>87</i>	<i>Jul-19</i>

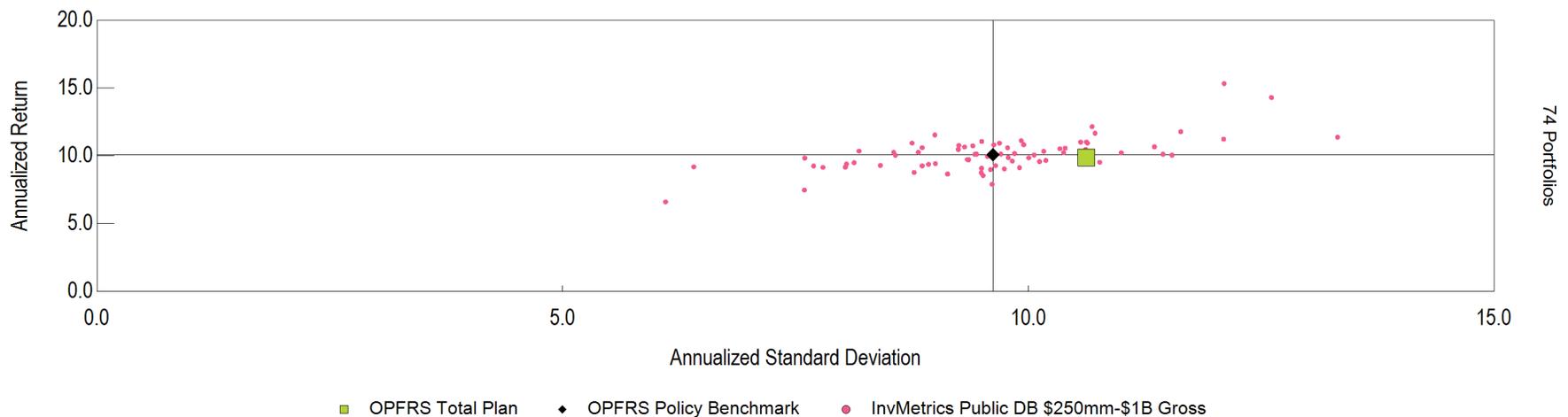
Total Portfolio 5-Year Performance | As of December 31, 2020

Growth of a Dollar

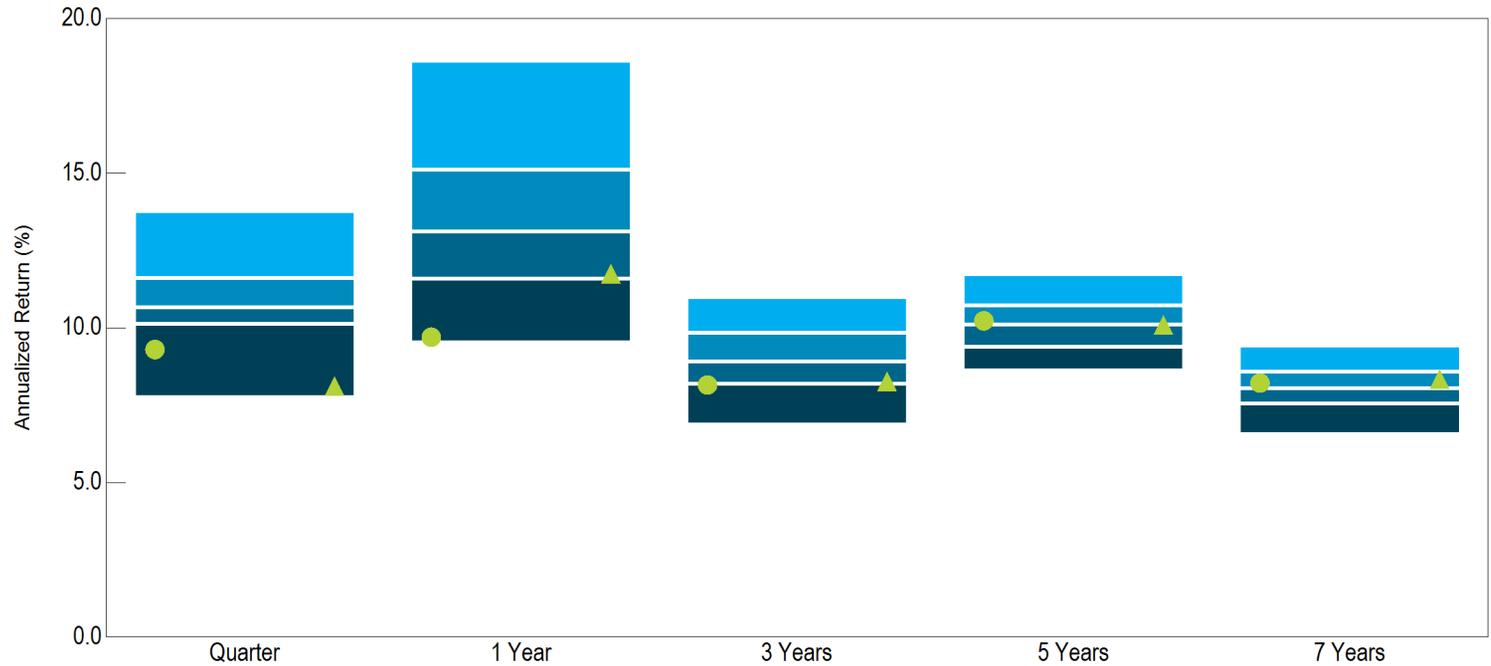


The actuarial expected rate of return was 8% through 6/30/2009, 7.5% through 6/30/2010, 7% through 6/30/2011, 6.75% through 6/30/2014, 6.5% through 2/31/2017 and 6.0% currently

Annualized Return vs. Annualized Standard Deviation 5 Years Ending December 31, 2020



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



	Quarter		1 Year		3 Years		5 Years		7 Years	
5th Percentile	7.8	10.1	9.5	11.6	6.9	8.2	8.6	9.4	6.6	7.6
25th Percentile	10.1	10.7	11.6	13.1	8.2	9.4	10.1	10.7	8.1	8.6
Median	10.7	11.6	13.1	15.1	8.9	10.1	10.7	11.6	8.1	8.6
75th Percentile	11.6	13.8	15.1	18.6	9.8	10.7	11.0	11.7	8.1	8.6
95th Percentile	13.8	18.6	18.6	18.6	11.0	11.7	11.7	11.7	9.4	9.4
# of Portfolios	79	79	79	79	76	74	74	74	73	73
OPFRS Total Plan	9.3	(85)	9.7	(95)	8.2	(78)	10.2	(45)	8.2	(46)
OPFRS Policy Benchmark	8.1	(94)	11.7	(74)	8.3	(71)	10.1	(52)	8.3	(37)

Manager Monitoring / Probation List

Manager Monitoring/Probation Status
Return vs. Benchmark since Corrective Action
As of December 31, 2020

Portfolio	Status	Concern	Months Since Corrective Action	Performance [^] Since Corrective Action (Gross)	Peer Group Percentile Ranking	Date of Corrective Action*
DDJ Capital	On Watch	Performance	19	4.9	15	5/29/2019
Ice BofAML US High Yield			---	8.0		
Rice Hall James	On Watch	Performance	19	22.1	92	5/29/2019
Russell 2000 Growth	---	---	---	31.8		
Parametric	On Watch	Org changes	2	12.6	NA	10/28/2020
CBOE S&P 500 BuyWrite USD				11.6		

[^]Annualized performance if over one year.

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

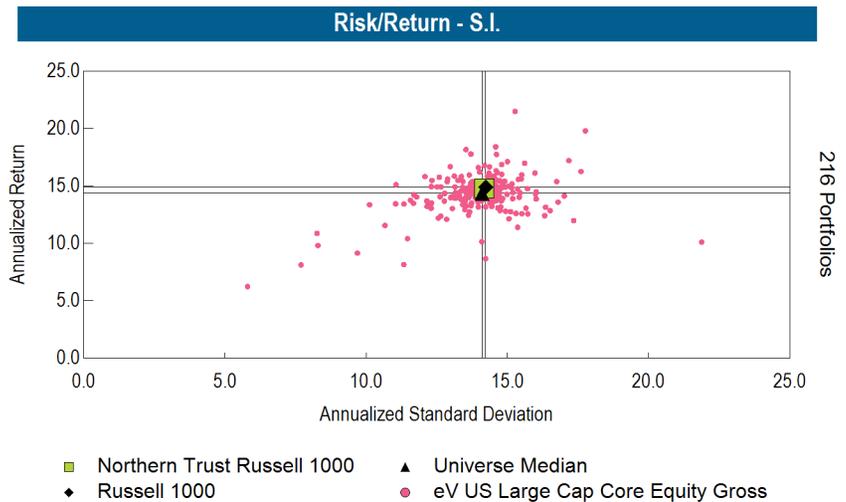
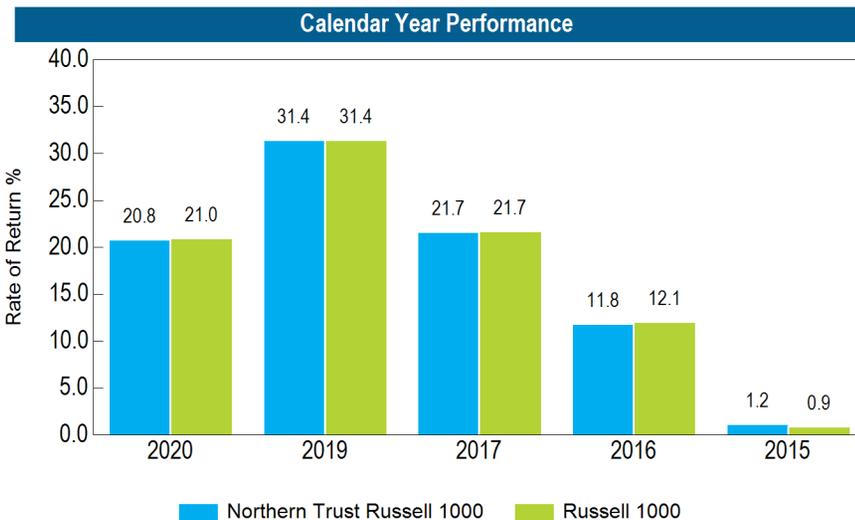
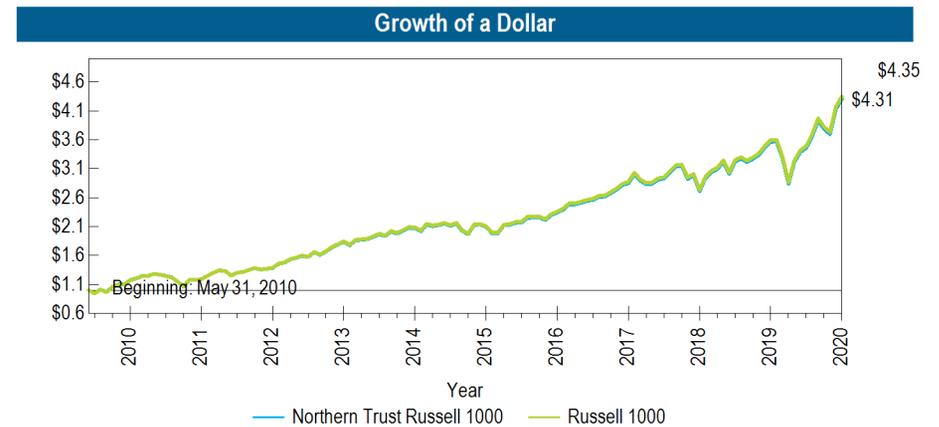
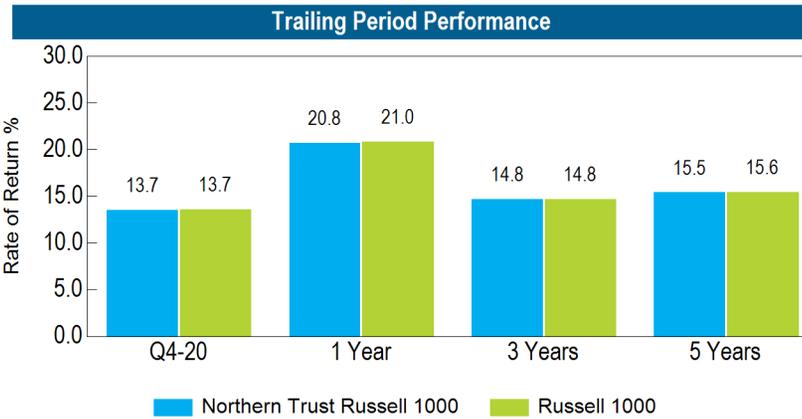
Investment Performance Criteria
For Manager Monitoring/Probation Status

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

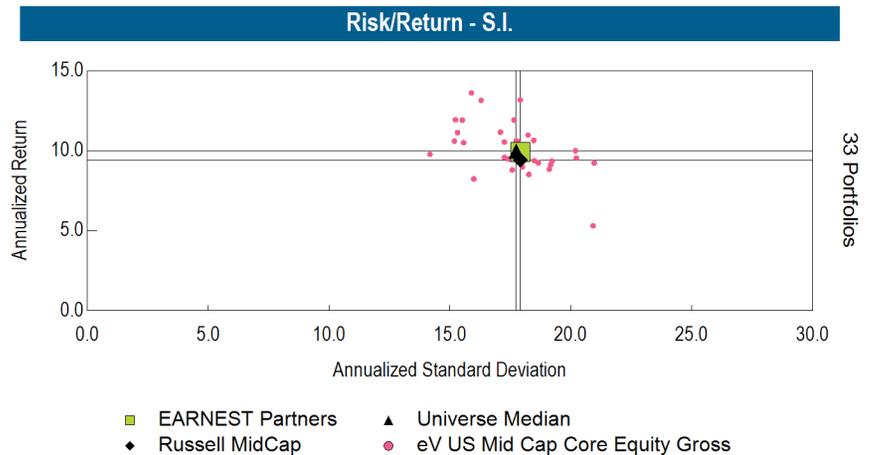
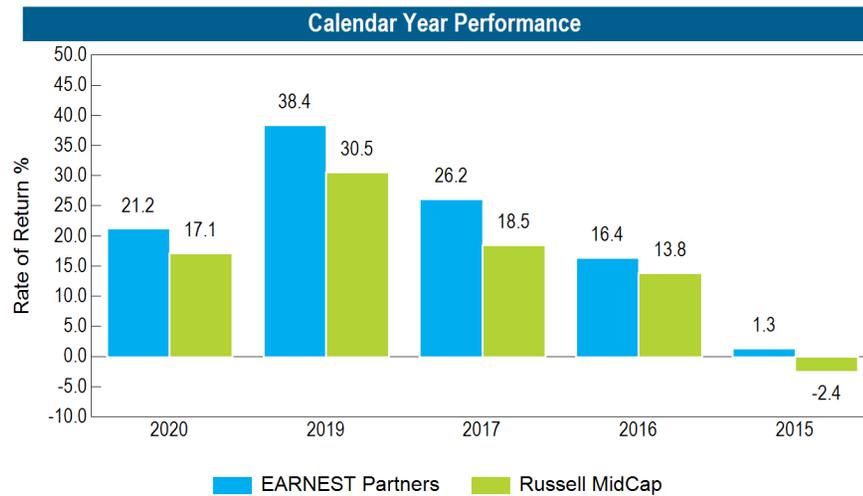
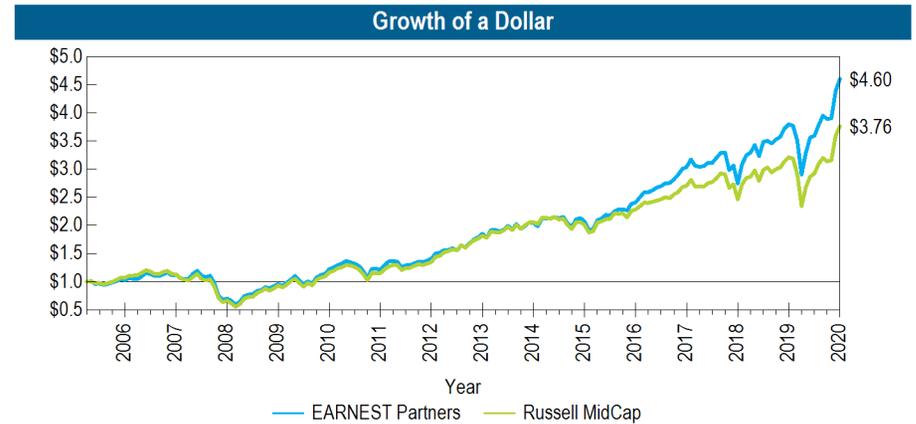
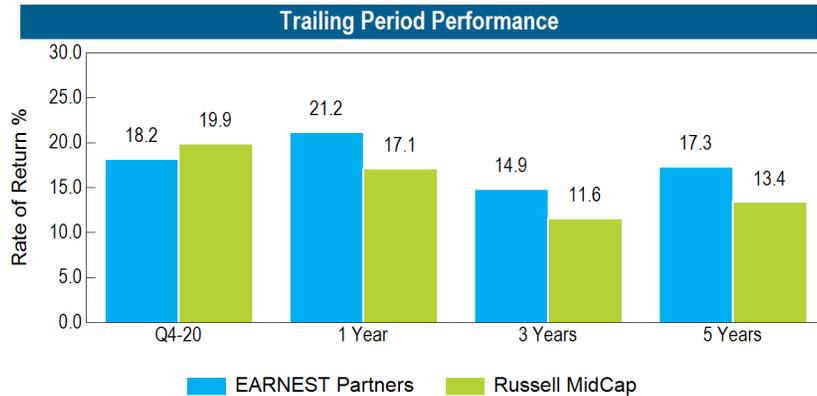
** VRR – Value Relative Ratio – is calculated as: manager cumulative return / benchmark cumulative return.

Individual Manager Performance

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Northern Trust Russell 1000	0.00%	1.00	-0.71	1.00	0.13%	1.00	98.36%	99.75%
Russell 1000	0.00%	1.00	--	1.01	0.00%	1.00	100.00%	100.00%

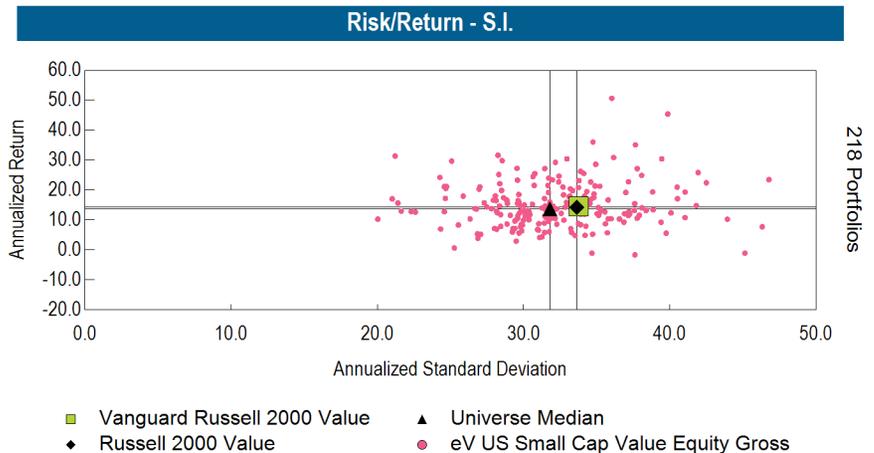
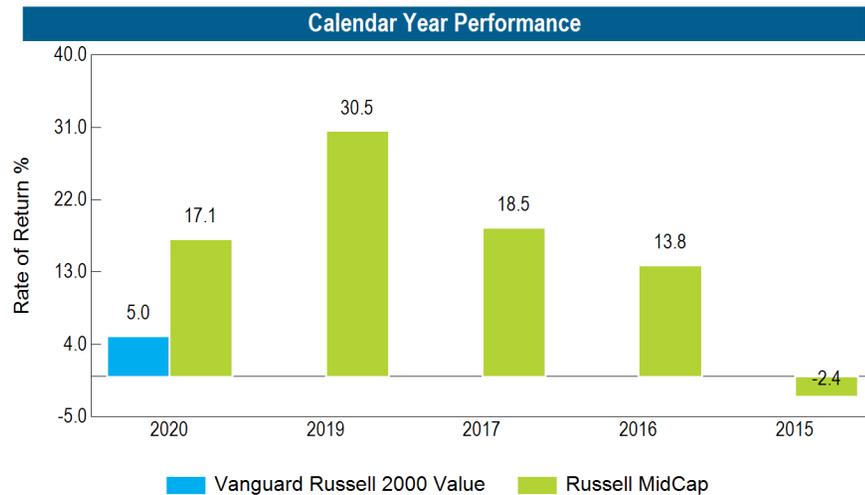
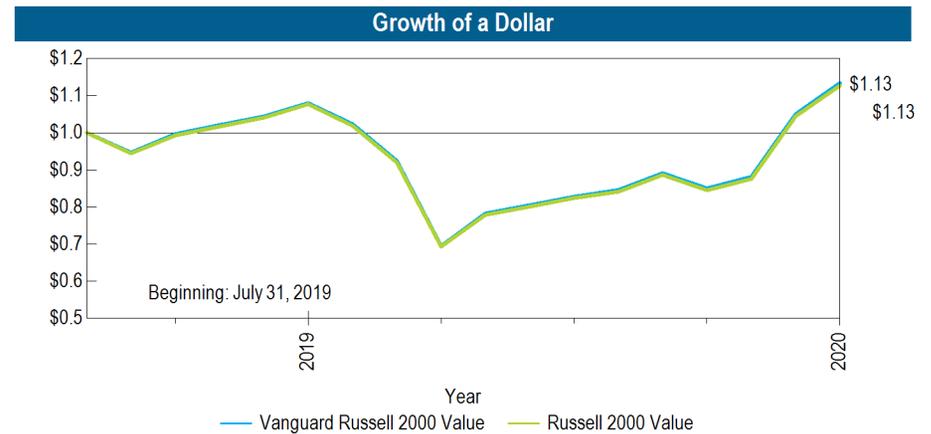
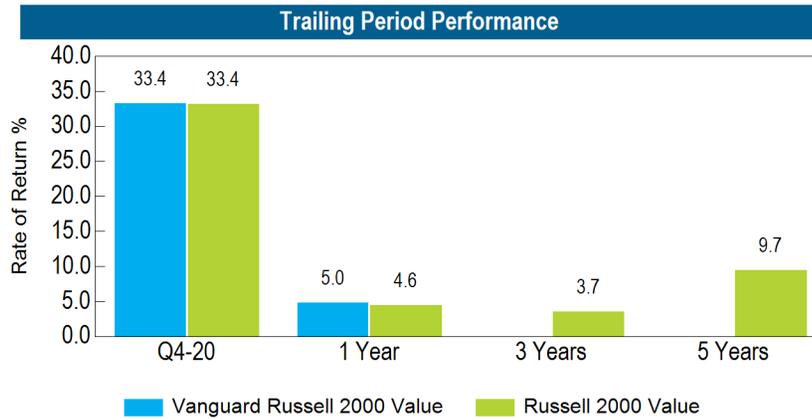


	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
EARNEST Partners	0.13%	0.98	0.45	0.55	3.32%	0.97	103.28%	98.69%
Russell MidCap	0.00%	1.00	--	0.47	0.00%	1.00	100.00%	100.00%

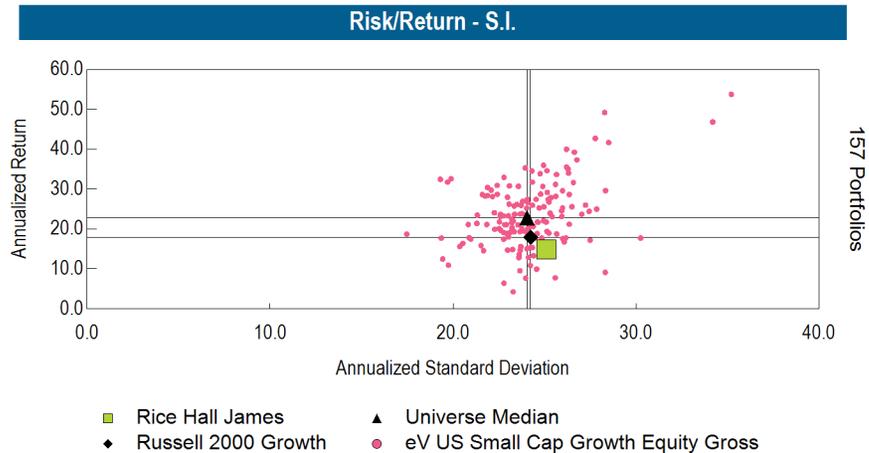
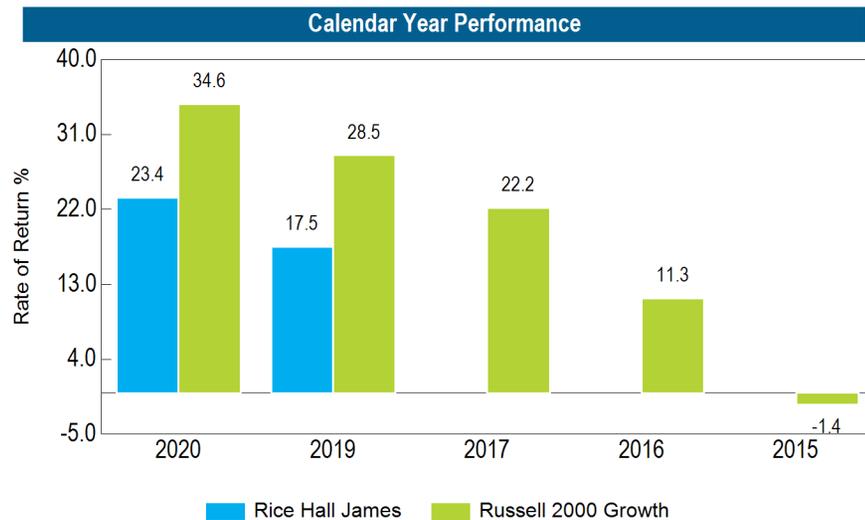
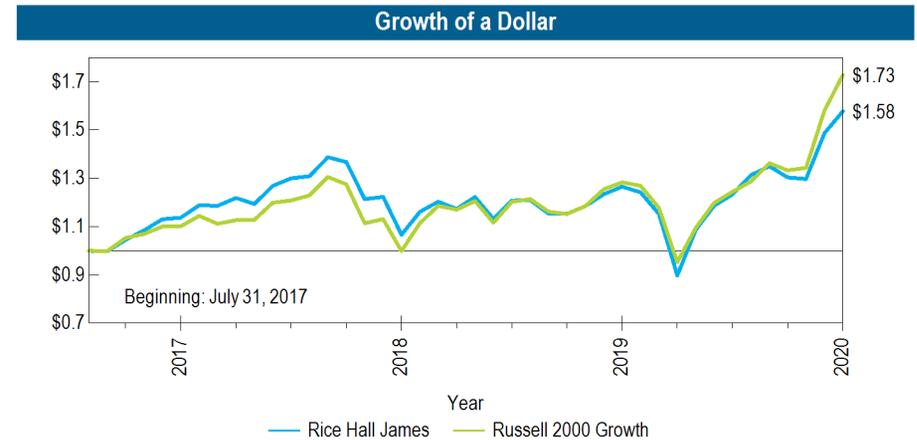
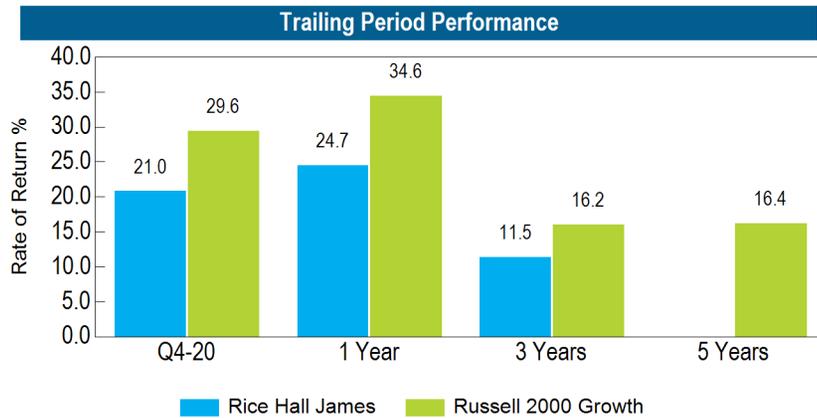


Vanguard Russell 2000 Value | As of December 31, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Vanguard Russell 2000 Value	0.04%	1.00	1.02	0.25	0.48%	1.00	100.81%	99.67%
Russell 2000 Value	0.00%	1.00	--	0.24	0.00%	1.00	100.00%	100.00%

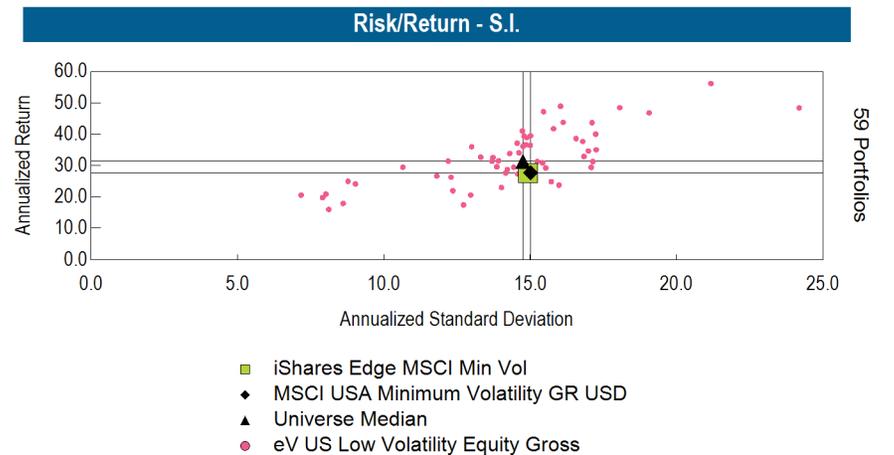
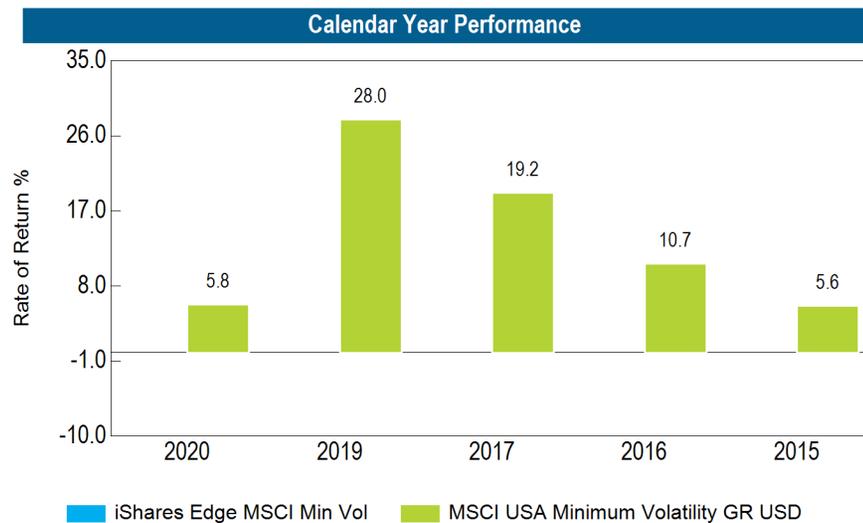
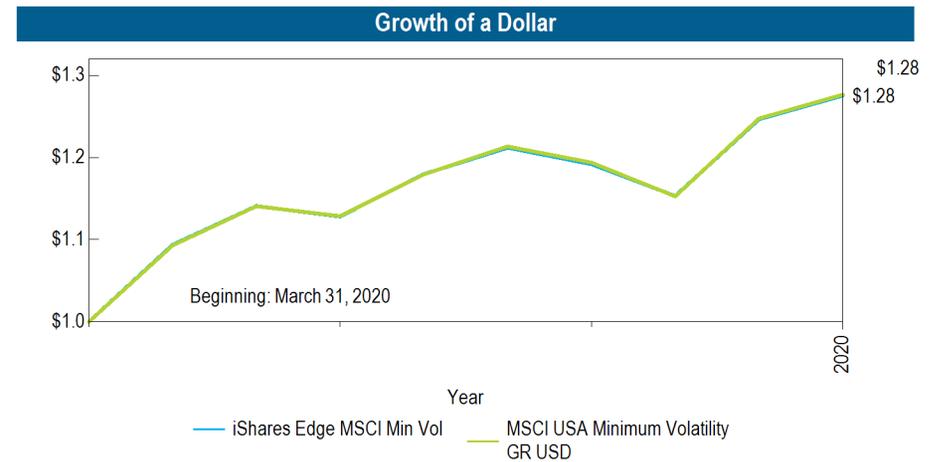
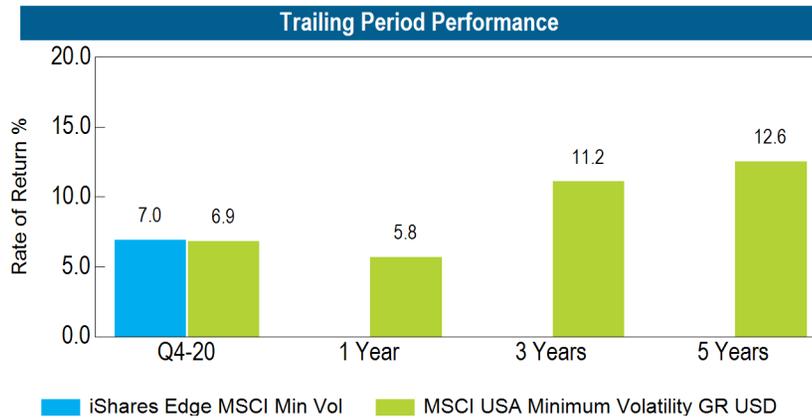


	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Rice Hall James	-0.21%	1.00	-0.48	0.52	6.47%	0.93	91.69%	102.37%
Russell 2000 Growth	0.00%	1.00	--	0.66	0.00%	1.00	100.00%	100.00%



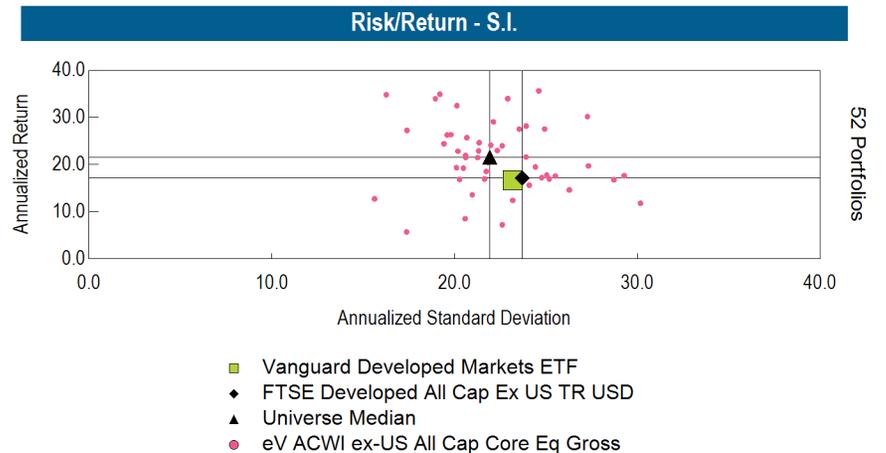
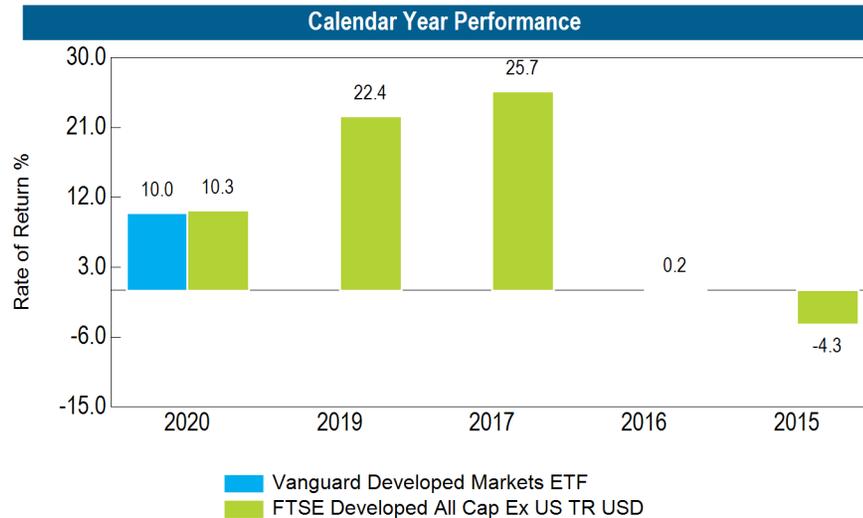
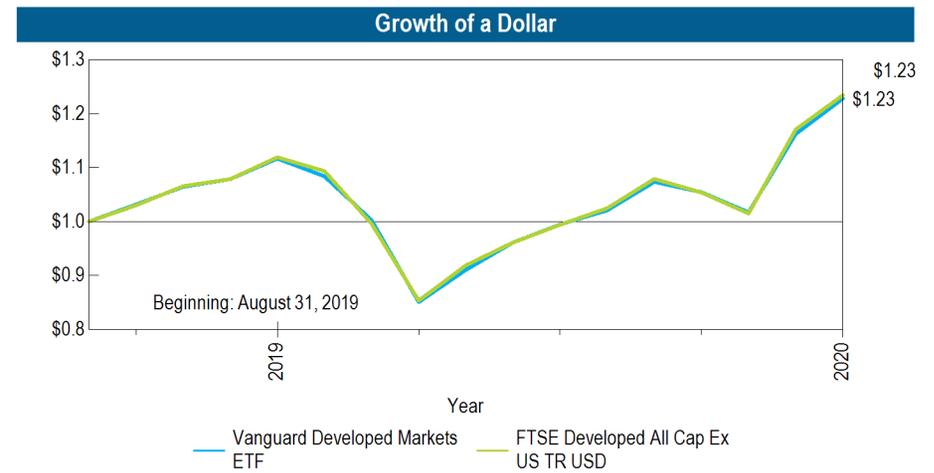
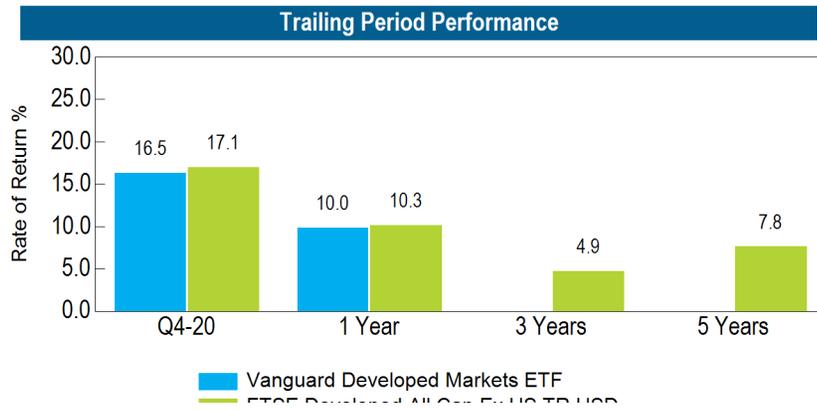
iShares Edge MSCI Min Vol | As of December 31, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
iShares Edge MSCI Min Vol	0.01%	0.99	-0.33	1.84	0.36%	1.00	99.29%	98.49%
MSCI USA Minimum Volatility GR USD	0.00%	1.00	--	1.84	0.00%	1.00	100.00%	100.00%

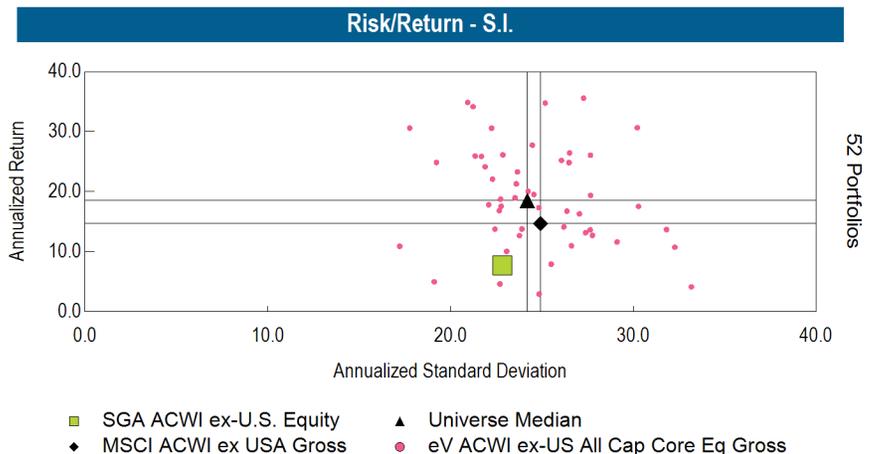
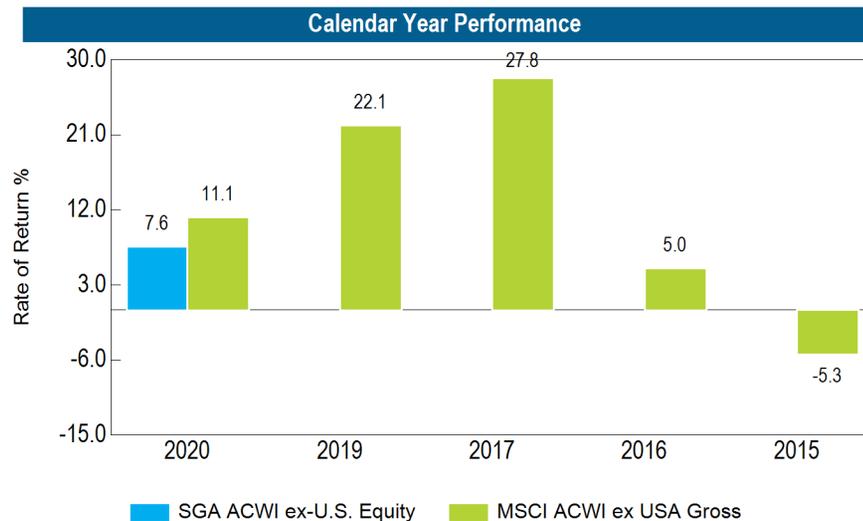
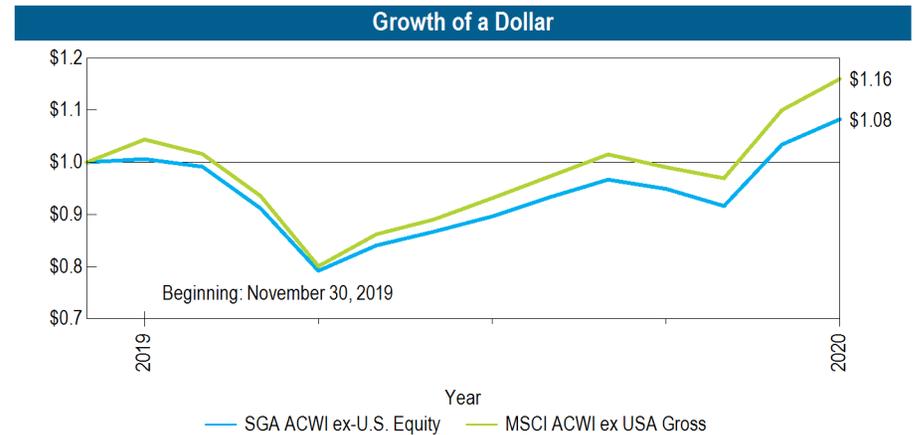
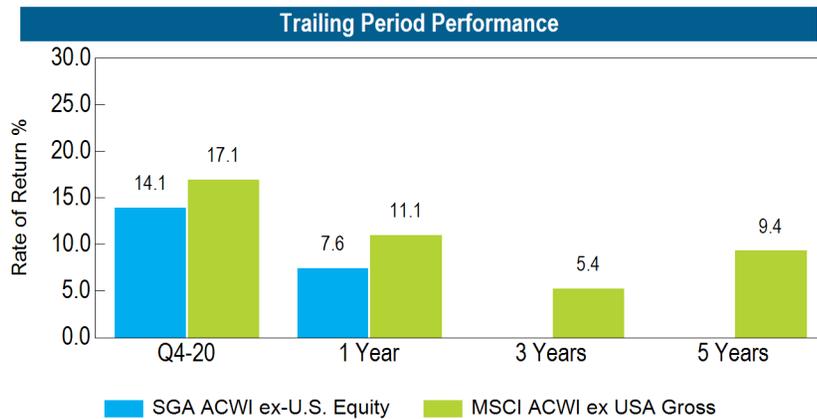


Vanguard Developed Markets ETF | As of December 31, 2020

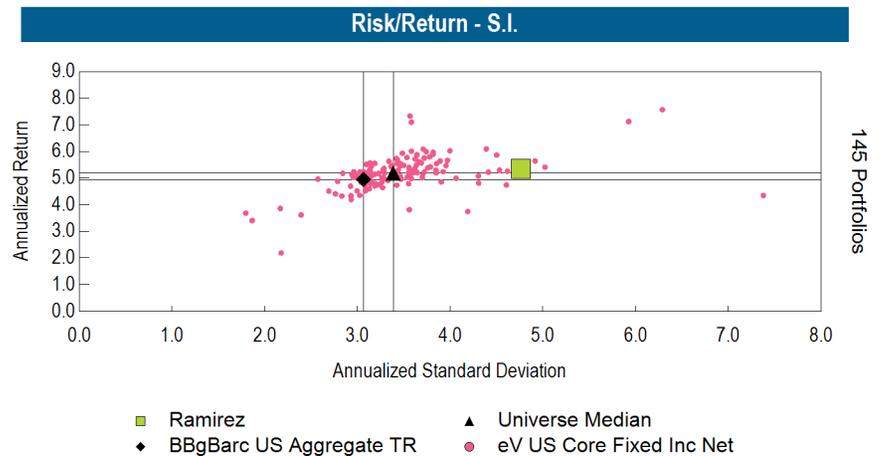
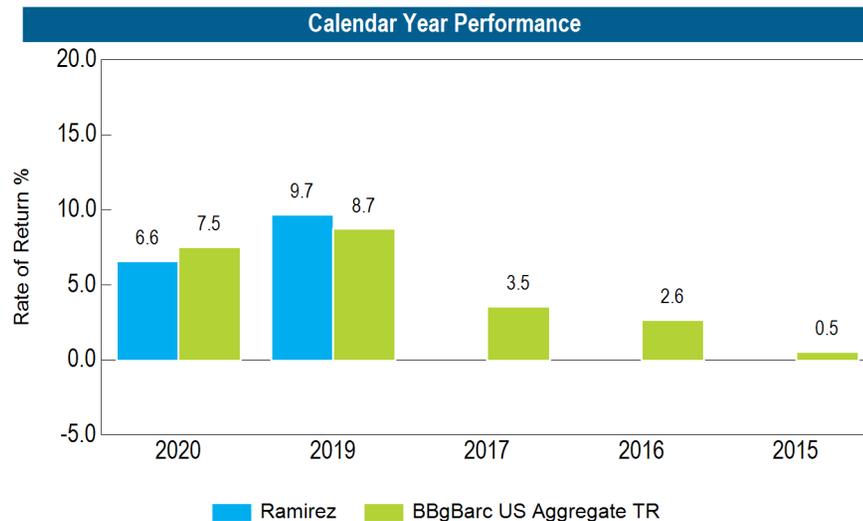
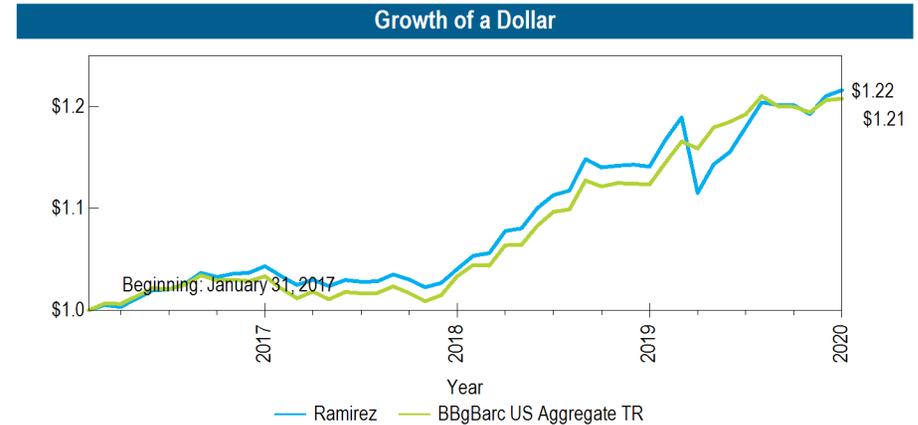
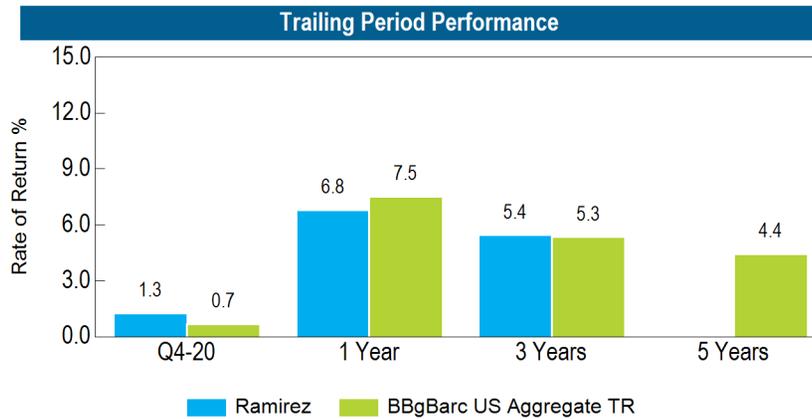
	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Vanguard Developed Markets ETF	0.00%	0.97	-0.20	0.69	2.25%	0.99	97.35%	98.45%
FTSE Developed All Cap Ex US TR USD	0.00%	1.00	--	0.69	0.00%	1.00	100.00%	100.00%



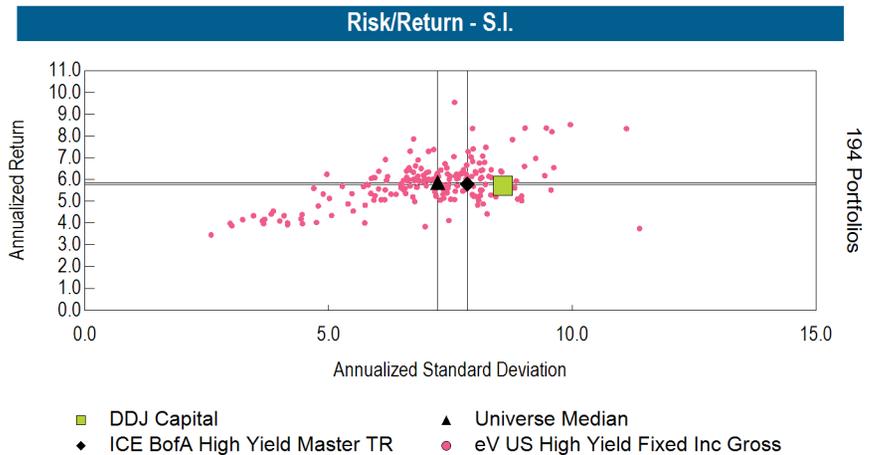
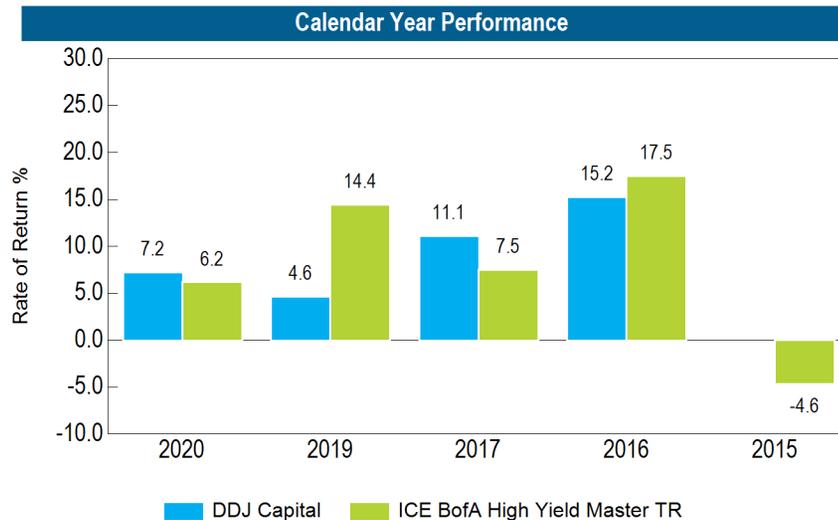
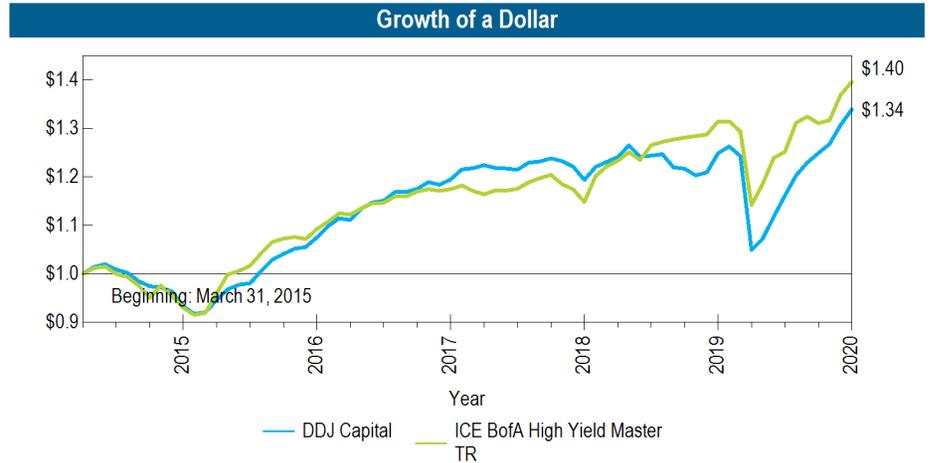
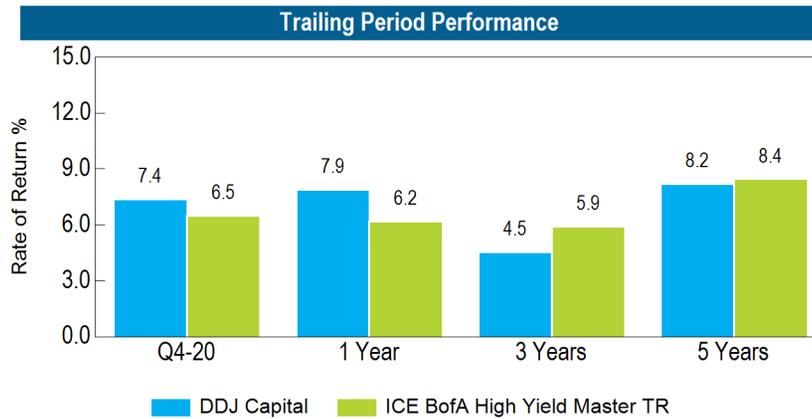
	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
SGA ACWI ex-U.S. Equity	-0.44%	0.90	-1.57	0.31	4.50%	0.97	77.38%	95.02%
MSCI ACWI ex USA Gross	0.00%	1.00	--	0.57	0.00%	1.00	100.00%	100.00%



	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Ramirez	-0.04%	1.19	0.12	0.83	3.12%	0.59	124.28%	149.36%
BBgBarc US Aggregate TR	0.00%	1.00	--	1.17	0.00%	1.00	100.00%	100.00%

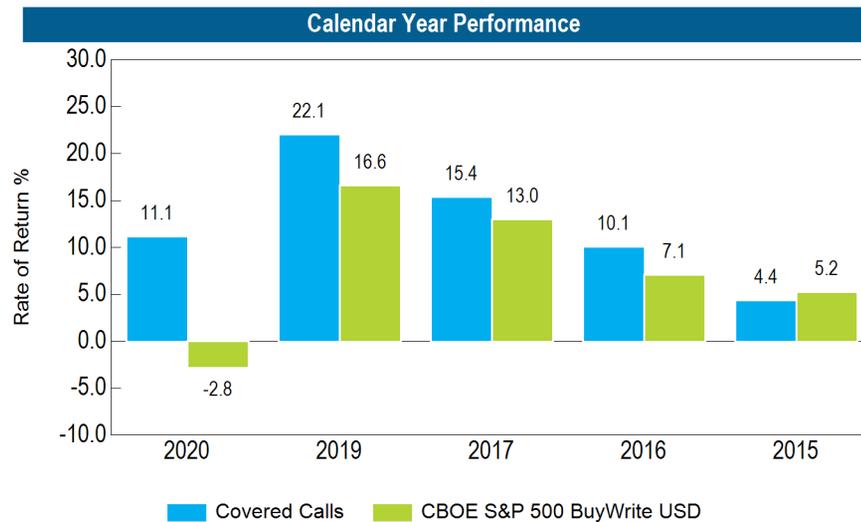
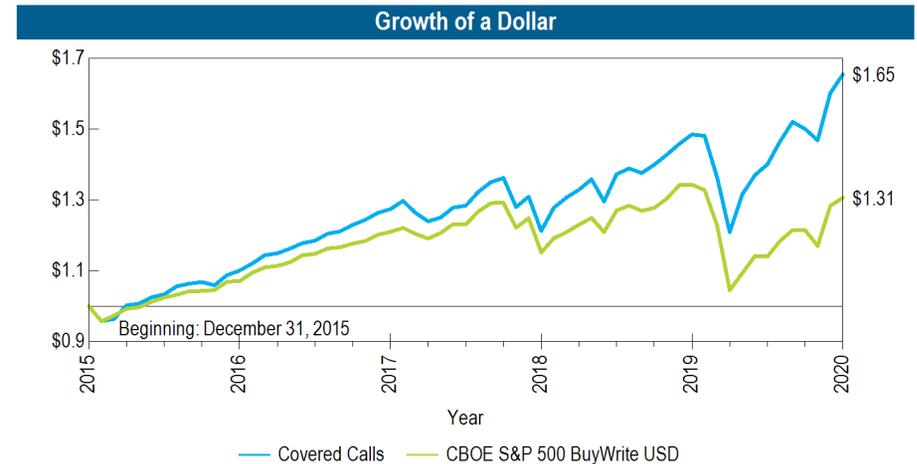
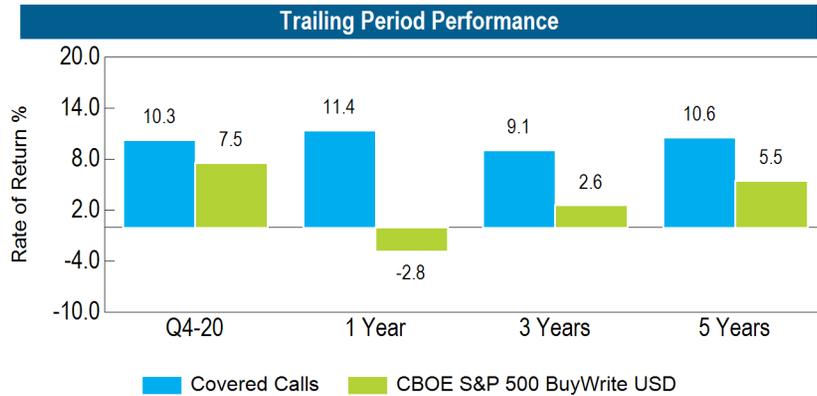


	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
DDJ Capital	0.02%	0.97	-0.02	0.55	4.01%	0.78	89.16%	88.13%
ICE BofA High Yield Master TR	0.00%	1.00	--	0.61	0.00%	1.00	100.00%	100.00%



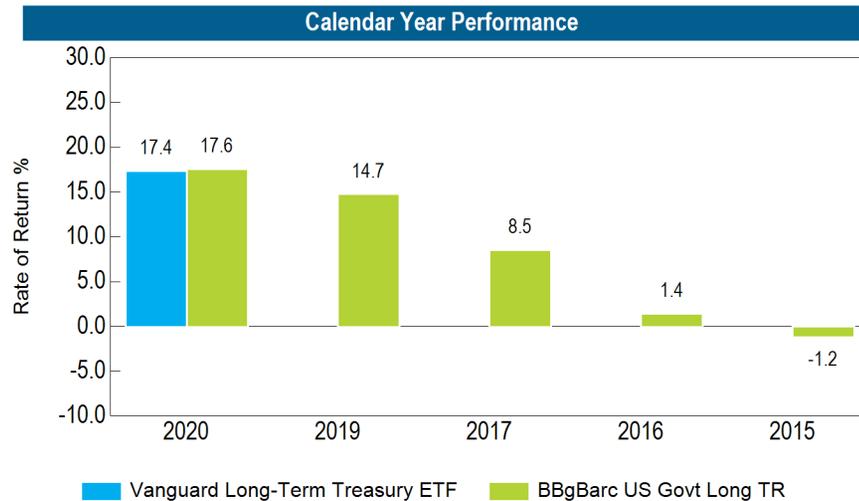
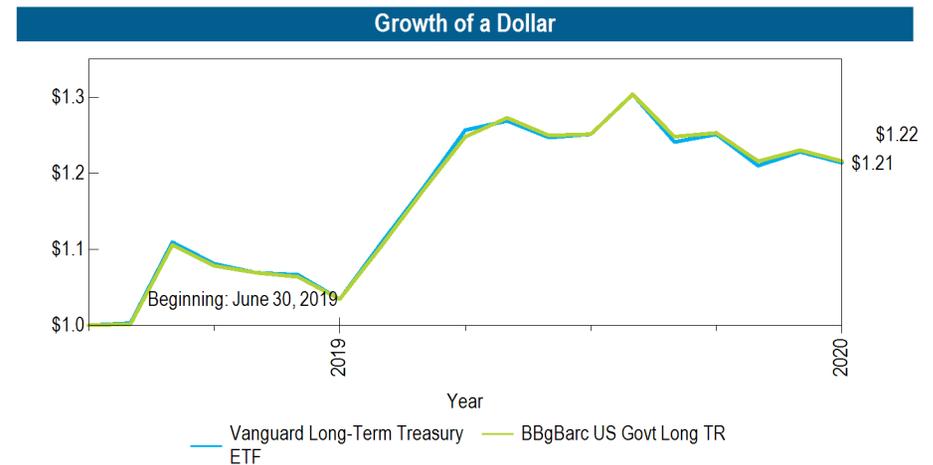
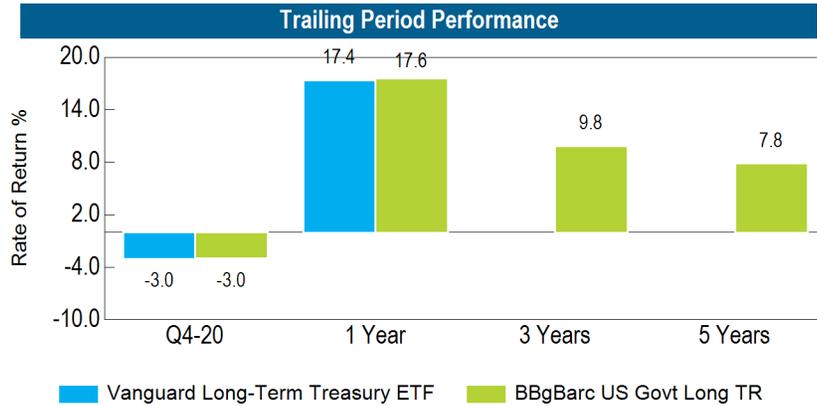
Covered Calls | As of December 31, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Covered Calls	0.33%	0.98	1.21	0.76	3.32%	0.91	137.49%	95.84%
CBOE S&P 500 BuyWrite USD	0.00%	1.00	--	0.41	0.00%	1.00	100.00%	100.00%



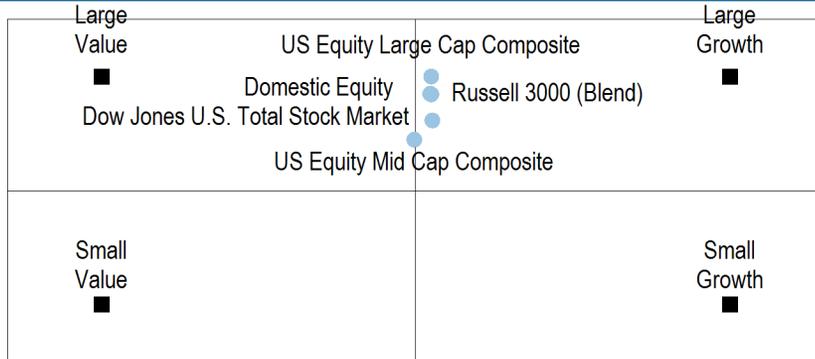
Vanguard Long-Term Treasury ETF | As of December 31, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Vanguard Long-Term Treasury ETF	-0.04%	1.04	-0.10	0.89	1.32%	0.99	103.15%	106.09%
BBgBarc US Govt Long TR	0.00%	1.00	--	0.93	0.00%	1.00	100.00%	100.00%

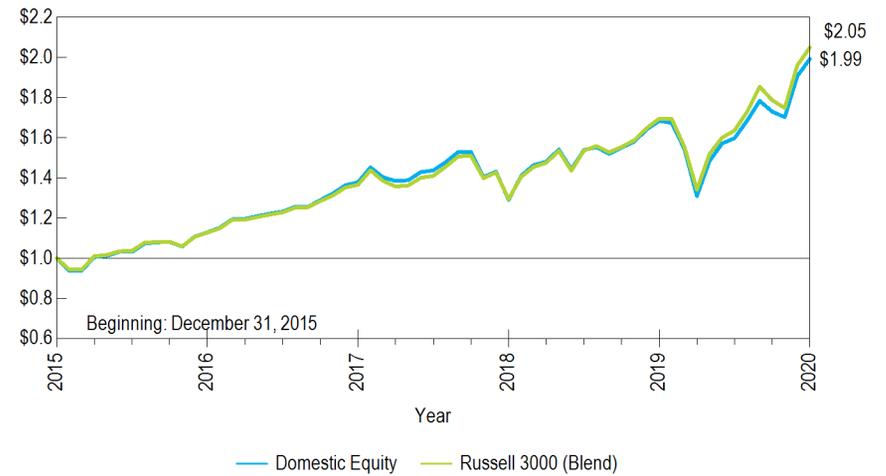


Domestic Equity | As of December 31, 2020

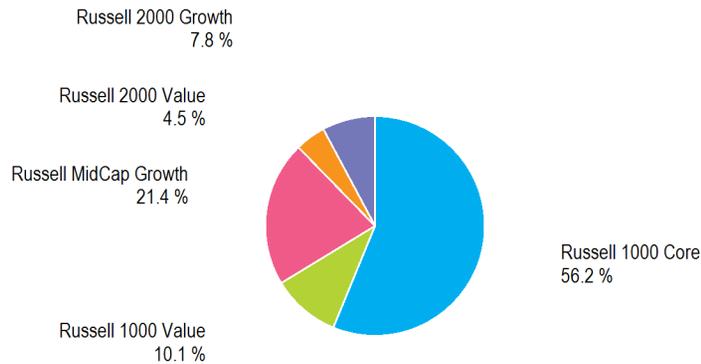
Style Map (5-Year)



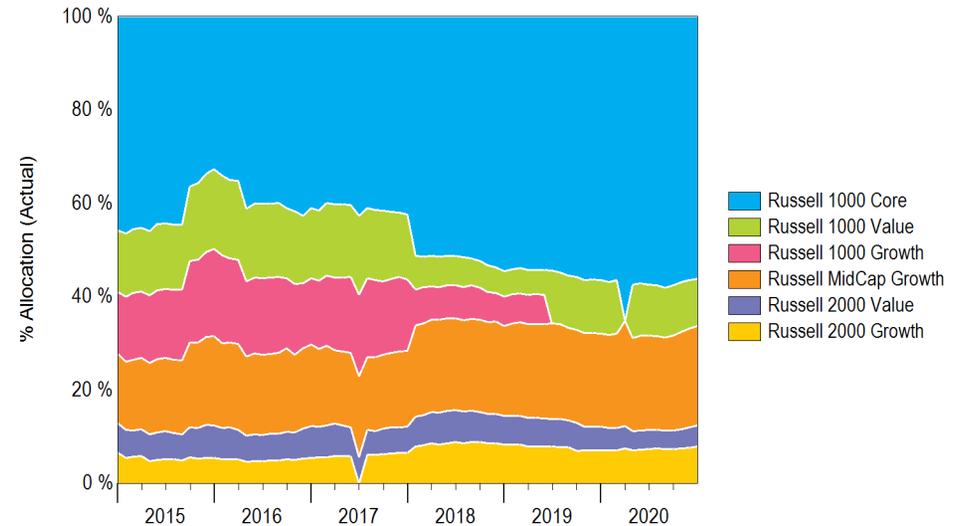
Growth of a Dollar



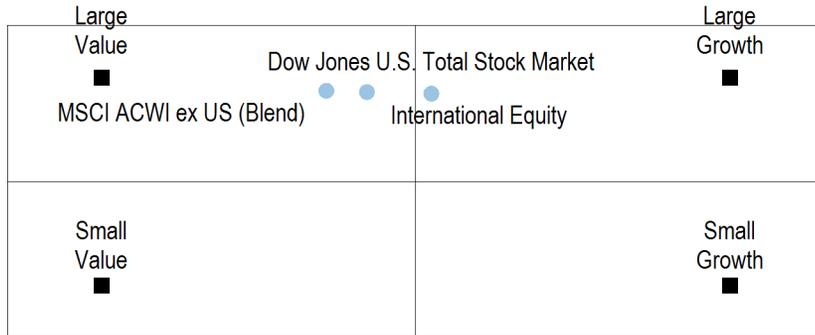
Style Exposure



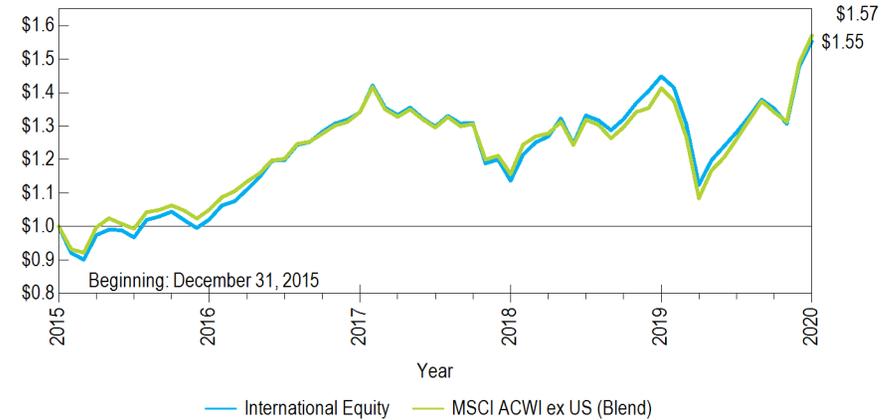
Style History (5-Year)



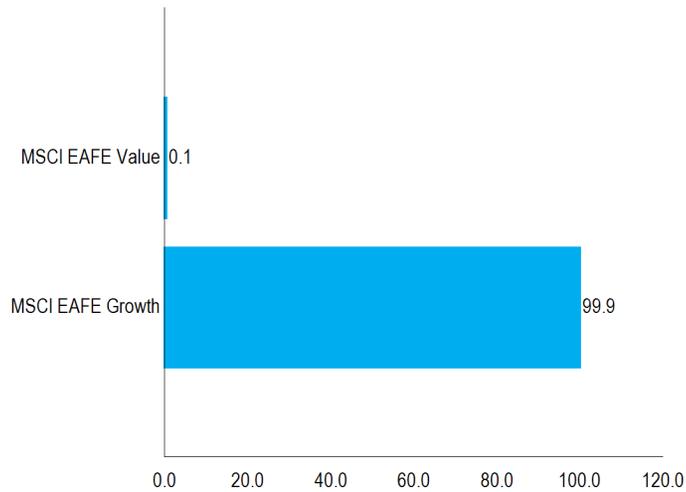
U.S. Effective Style Map 5 Years Ending December 31, 2020



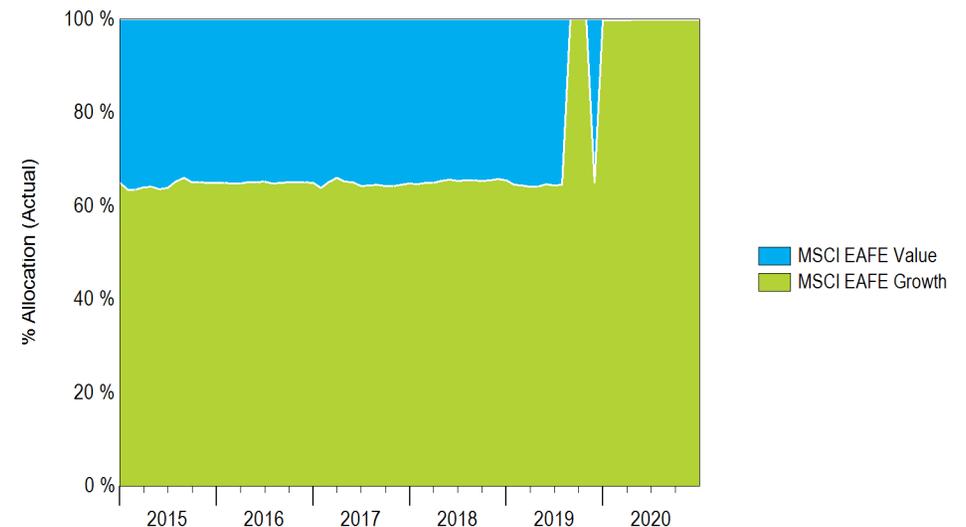
Growth of a Dollar 5 Years Ending December 31, 2020

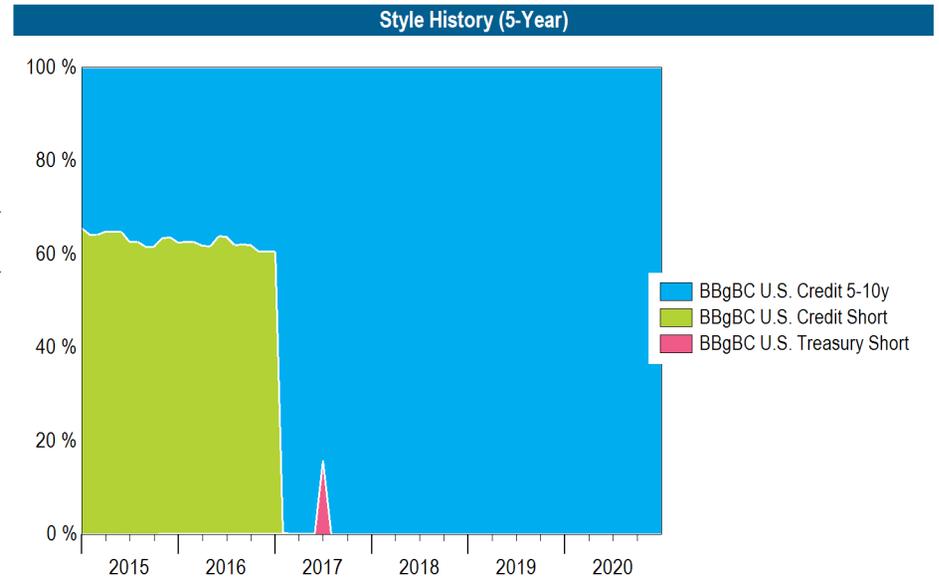
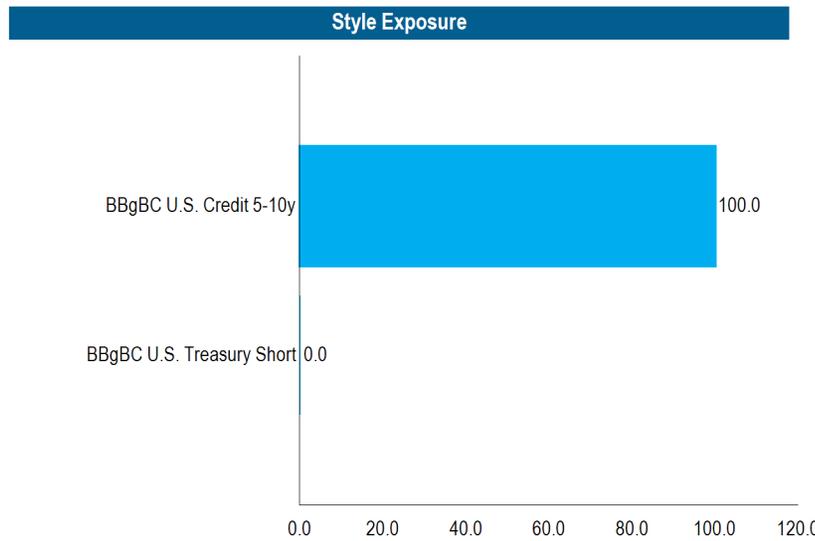
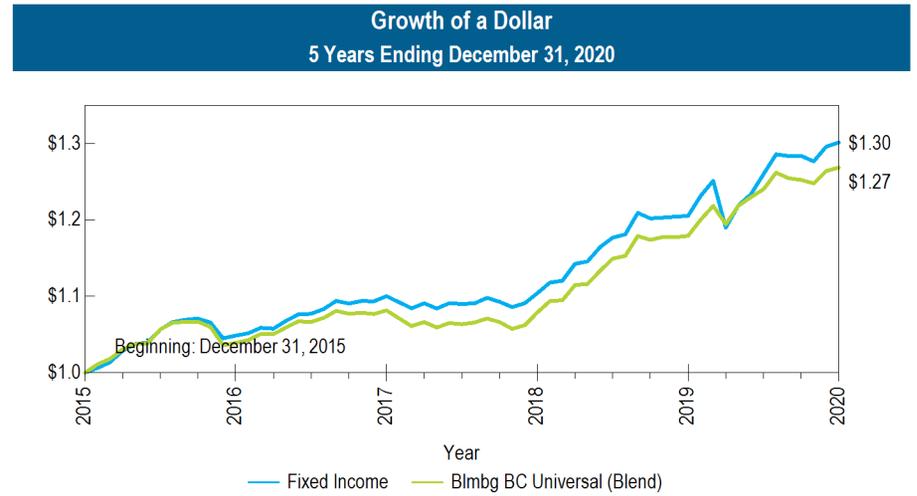


Style Exposure



Style History (5-Year)





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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

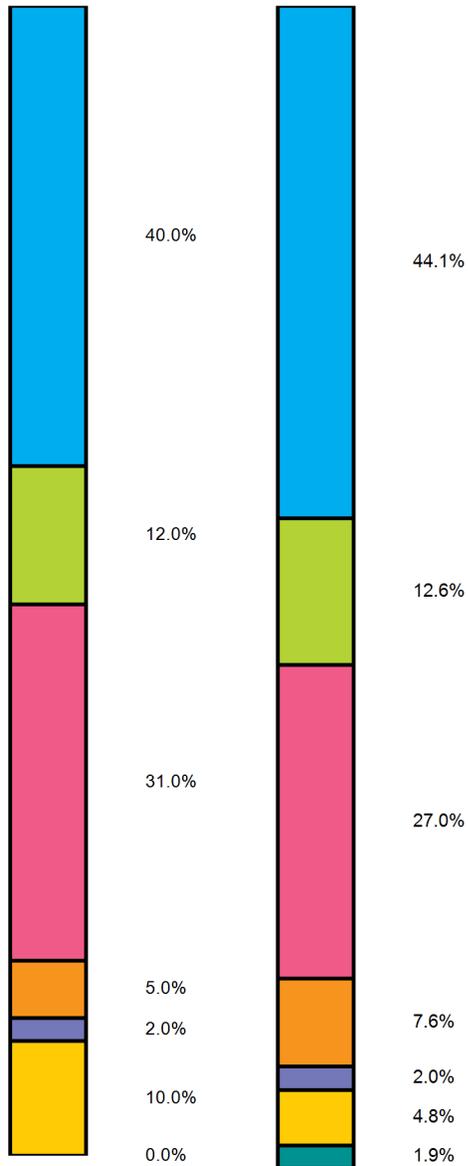
Values shown are in millions of dollars, unless noted otherwise.

Oakland Police and Fire Retirement System

February 24, 2021

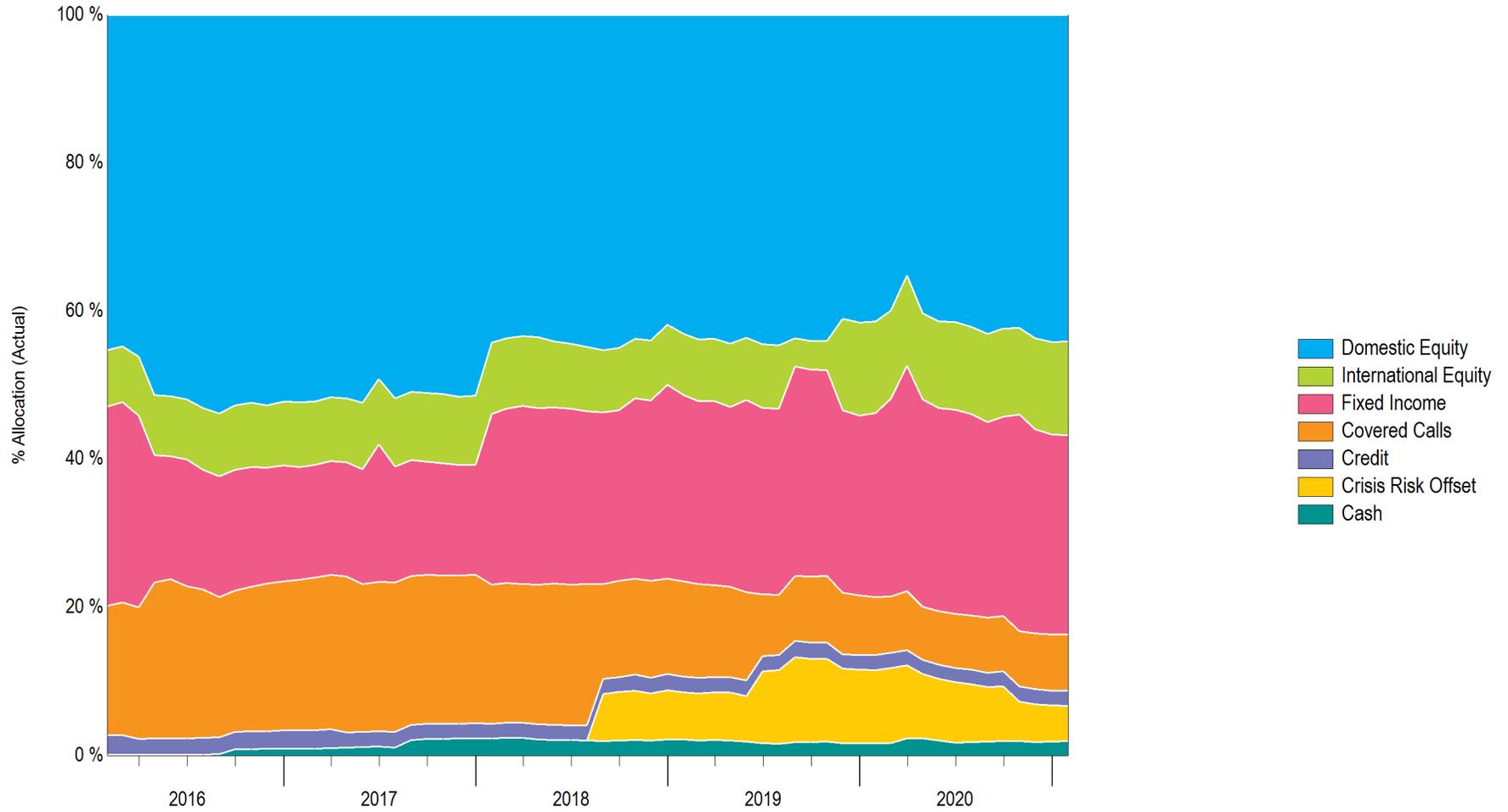
January Flash Report

OPFRS Total Plan As of January 31, 2021



Allocation vs. Targets and Policy						
	Current Balance	Current Allocation	Policy	Difference	Within IPS Range?	
Domestic Equity	\$190,163,130	44.1%	40.0%	4.1%	Yes	
International Equity	\$54,480,284	12.6%	12.0%	0.6%	Yes	
Fixed Income	\$116,298,319	27.0%	31.0%	-4.0%	Yes	
Covered Calls	\$32,810,880	7.6%	5.0%	2.6%	Yes	
Credit	\$8,724,648	2.0%	2.0%	0.0%	Yes	
Crisis Risk Offset	\$20,573,198	4.8%	10.0%	-5.2%	No	
Cash	\$8,336,116	1.9%	0.0%	1.9%	Yes	
Total	\$431,386,575	100.0%	100.0%			

Asset Allocation History
5 Years Ending January 31, 2021



Asset Class Performance Summary

	Market Value (\$)	% of Portfolio	1 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
OPFRS Total Plan	431,386,575	100.0	-0.4	14.5	9.3	6.8	11.1	8.2	6.9	Dec-88
<i>OPFRS Policy Benchmark</i>			<i>-0.4</i>	<i>13.1</i>	<i>10.8</i>	<i>7.0</i>	<i>10.8</i>	<i>7.9</i>	<i>8.3</i>	<i>Dec-88</i>
Domestic Equity	190,163,130	44.1	-0.3	24.4	18.7	11.0	16.2	13.2	9.1	Jun-97
<i>Russell 3000 (Blend)</i>			<i>-0.4</i>	<i>24.7</i>	<i>20.5</i>	<i>12.4</i>	<i>16.7</i>	<i>13.5</i>	<i>9.3</i>	<i>Jun-97</i>
International Equity	54,480,284	12.6	0.1	21.3	9.8	3.0	11.0	5.8	5.7	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			<i>0.2</i>	<i>24.8</i>	<i>14.4</i>	<i>3.6</i>	<i>11.0</i>	<i>5.3</i>	<i>5.9</i>	<i>Jan-98</i>
Fixed Income	116,298,319	27.0	-0.5	2.8	5.1	5.8	5.2	4.4	5.6	Dec-93
<i>Blmbg BC Universal (Blend)</i>			<i>-0.6</i>	<i>1.6</i>	<i>5.0</i>	<i>5.6</i>	<i>4.5</i>	<i>4.1</i>	<i>5.4</i>	<i>Dec-93</i>
Credit	8,724,648	2.0	1.4	17.2	8.1	4.4	8.8	--	6.2	Feb-15
<i>BBgBarc US High Yield TR</i>			<i>0.3</i>	<i>11.7</i>	<i>7.4</i>	<i>6.1</i>	<i>9.0</i>	<i>6.6</i>	<i>6.2</i>	<i>Feb-15</i>
Covered Calls	32,810,880	7.6	-0.5	17.6	11.2	8.3	11.5	--	9.1	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>			<i>0.1</i>	<i>14.7</i>	<i>-1.5</i>	<i>2.3</i>	<i>6.4</i>	<i>6.1</i>	<i>5.3</i>	<i>Apr-14</i>
Crisis Risk Offset	20,573,198	4.8	-3.5	-7.3	-25.7	-8.2	--	--	-9.8	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>			<i>0.9</i>	<i>-1.8</i>	<i>-14.5</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.2</i>	<i>Aug-18</i>
Cash	8,336,116	1.9	0.0	0.0	0.9	1.8	1.4	--	0.7	Mar-11
<i>FTSE T-Bill 3 Months TR</i>			<i>0.0</i>	<i>0.1</i>	<i>0.5</i>	<i>1.5</i>	<i>1.2</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>

Cash balances held in ETF accounts at the Custodian are reflected in the Cash account market value.

OPFRS Total Plan As of January 31, 2021

Trailing Net Performance											
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
OPFRS Total Plan	431,386,575	100.0	--	-0.4	14.5	9.3	6.8	11.1	8.2	6.9	Dec-88
<i>OPFRS Policy Benchmark</i>				<i>-0.4</i>	<i>13.1</i>	<i>10.8</i>	<i>7.0</i>	<i>10.8</i>	<i>7.9</i>	<i>8.3</i>	<i>Dec-88</i>
Domestic Equity	190,163,130	44.1	44.1	-0.3	24.4	18.7	11.0	16.2	13.2	9.1	Jun-97
<i>Russell 3000 (Blend)</i>				<i>-0.4</i>	<i>24.7</i>	<i>20.5</i>	<i>12.4</i>	<i>16.7</i>	<i>13.5</i>	<i>9.3</i>	<i>Jun-97</i>
Northern Trust Russell 1000	105,905,966	24.6	55.7	-0.8	23.4	19.7	12.5	16.6	13.6	14.7	Jun-10
<i>Russell 1000</i>				<i>-0.8</i>	<i>23.4</i>	<i>19.8</i>	<i>12.5</i>	<i>16.7</i>	<i>13.6</i>	<i>14.7</i>	<i>Jun-10</i>
EARNEST Partners	40,785,434	9.5	21.4	-0.4	27.6	21.6	13.1	19.1	13.9	10.8	Apr-06
<i>Russell MidCap</i>				<i>-0.3</i>	<i>28.5</i>	<i>17.7</i>	<i>10.1</i>	<i>14.9</i>	<i>12.1</i>	<i>9.3</i>	<i>Apr-06</i>
Vanguard Russell 2000 Value	9,079,627	2.1	4.8	5.0	42.3	15.5	--	--	--	11.8	Aug-19
<i>Russell 2000 Value</i>				<i>5.3</i>	<i>44.0</i>	<i>16.4</i>	<i>5.1</i>	<i>12.3</i>	<i>9.2</i>	<i>12.1</i>	<i>Aug-19</i>
Rice Hall James	15,600,031	3.6	8.2	4.0	33.0	32.1	11.3	--	--	14.5	Jul-17
<i>Russell 2000 Growth</i>				<i>4.8</i>	<i>45.6</i>	<i>42.7</i>	<i>16.5</i>	<i>20.2</i>	<i>14.1</i>	<i>18.3</i>	<i>Jul-17</i>
iShares Edge MSCI Min Vol	18,792,072	4.4	9.9	-2.7	10.0	--	--	--	--	24.1	Apr-20
<i>MSCI USA Minimum Volatility GR USD</i>				<i>-2.7</i>	<i>10.1</i>	<i>0.6</i>	<i>8.9</i>	<i>12.3</i>	<i>13.1</i>	<i>24.2</i>	<i>Apr-20</i>
International Equity	54,480,284	12.6	12.6	0.1	21.3	9.8	3.0	11.0	5.8	5.7	Jan-98
<i>MSCI ACWI ex US (Blend)</i>				<i>0.2</i>	<i>24.8</i>	<i>14.4</i>	<i>3.6</i>	<i>11.0</i>	<i>5.3</i>	<i>5.9</i>	<i>Jan-98</i>
Vanguard Developed Markets ETF	15,695,123	3.6	28.8	-0.7	20.8	10.7	--	--	--	13.8	Sep-19
<i>FTSE Developed All Cap Ex US TR USD</i>				<i>-0.9</i>	<i>23.1</i>	<i>11.9</i>	<i>3.0</i>	<i>9.2</i>	<i>3.6</i>	<i>15.3</i>	<i>Sep-19</i>
SGA ACWI ex-U.S. Equity	38,483,146	8.9	70.6	0.6	21.5	9.8	--	--	--	7.6	Dec-19
<i>MSCI ACWI ex USA Gross</i>				<i>0.2</i>	<i>24.8</i>	<i>14.4</i>	<i>3.6</i>	<i>11.0</i>	<i>5.3</i>	<i>13.8</i>	<i>Dec-19</i>

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

OPFRS Total Plan As of January 31, 2021

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Fixed Income	116,298,319	27.0	27.0	-0.5	2.8	5.1	5.8	5.2	4.4	5.6	Dec-93
<i>Blmbg BC Universal (Blend)</i>				<i>-0.6</i>	<i>1.6</i>	<i>5.0</i>	<i>5.6</i>	<i>4.5</i>	<i>4.1</i>	<i>5.4</i>	<i>Dec-93</i>
Ramirez	79,025,062	18.3	68.0	-0.3	2.8	4.0	5.6	--	--	5.2	Jan-17
<i>BBgBarc US Aggregate TR</i>				<i>-0.7</i>	<i>0.6</i>	<i>4.7</i>	<i>5.5</i>	<i>4.0</i>	<i>3.8</i>	<i>4.6</i>	<i>Jan-17</i>
Reams	29,664,252	6.9	25.5	-0.9	2.9	16.9	9.8	6.9	5.5	6.1	Feb-98
<i>Blmbg BC Universal (Blend)</i>				<i>-0.6</i>	<i>1.6</i>	<i>5.0</i>	<i>5.6</i>	<i>4.5</i>	<i>4.1</i>	<i>5.1</i>	<i>Feb-98</i>
iShares Core US Aggregate Bond ETF	7,608,961	1.8	6.5	-0.7	--	--	--	--	--	0.3	Nov-20
<i>BBgBarc US Aggregate TR</i>				<i>-0.7</i>	<i>0.6</i>	<i>4.7</i>	<i>5.5</i>	<i>4.0</i>	<i>3.8</i>	<i>0.4</i>	<i>Nov-20</i>
Credit	8,724,648	2.0	2.0	1.4	17.2	8.1	4.4	8.8	--	6.2	Feb-15
<i>BBgBarc US High Yield TR</i>				<i>0.3</i>	<i>11.7</i>	<i>7.4</i>	<i>6.1</i>	<i>9.0</i>	<i>6.6</i>	<i>6.2</i>	<i>Feb-15</i>
DDJ Capital	8,724,648	2.0	100.0	1.4	17.2	8.1	4.4	8.8	--	6.2	Feb-15
<i>ICE BofA High Yield Master TR</i>				<i>0.4</i>	<i>11.9</i>	<i>6.6</i>	<i>5.8</i>	<i>8.9</i>	<i>6.4</i>	<i>6.1</i>	<i>Feb-15</i>
Covered Calls	32,810,880	7.6	7.6	-0.5	17.6	11.2	8.3	11.5	--	9.1	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>0.1</i>	<i>14.7</i>	<i>-1.5</i>	<i>2.3</i>	<i>6.4</i>	<i>6.1</i>	<i>5.3</i>	<i>Apr-14</i>
Parametric BXM	14,750,852	3.4	45.0	-0.3	14.5	5.9	5.4	8.7	--	7.1	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>0.1</i>	<i>14.7</i>	<i>-1.5</i>	<i>2.3</i>	<i>6.4</i>	<i>6.1</i>	<i>5.3</i>	<i>Apr-14</i>
Parametric DeltaShift	18,060,028	4.2	55.0	-0.6	20.2	16.1	10.9	14.1	--	11.4	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>0.1</i>	<i>14.7</i>	<i>-1.5</i>	<i>2.3</i>	<i>6.4</i>	<i>6.1</i>	<i>5.3</i>	<i>Apr-14</i>
Crisis Risk Offset	20,573,198	4.8	4.8	-3.5	-7.3	-25.7	-8.2	--	--	-9.8	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>				<i>0.9</i>	<i>-1.8</i>	<i>-14.5</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.2</i>	<i>Aug-18</i>
Vanguard Long-Term Treasury ETF	20,573,198	4.8	100.0	-3.5	-5.9	6.0	--	--	--	10.7	Jul-19
<i>BBgBarc US Govt Long TR</i>				<i>-3.6</i>	<i>-6.3</i>	<i>6.2</i>	<i>9.7</i>	<i>6.0</i>	<i>7.6</i>	<i>10.6</i>	<i>Jul-19</i>
Cash	8,336,116	1.9	1.9	0.0	0.0	0.9	1.8	1.4	--	0.7	Mar-11
<i>FTSE T-Bill 3 Months TR</i>				<i>0.0</i>	<i>0.1</i>	<i>0.5</i>	<i>1.5</i>	<i>1.2</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>
Cash	2,060,116	0.5	24.7	0.0	0.4	1.4	1.9	1.5	--	0.8	Mar-11
<i>FTSE T-Bill 3 Months TR</i>				<i>0.0</i>	<i>0.1</i>	<i>0.5</i>	<i>1.5</i>	<i>1.2</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>
Cash - Treasury	6,276,000	1.5	75.3								

Cash balances held in ETF account at the Custodian are reflected in the Cash account market value.

OPFRS Total Plan As of January 31, 2021
Cash Flow Summary
Month to Date

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Cash	\$2,037,236	\$22,748	\$131	\$2,060,116
Cash - Treasury	\$6,162,000	\$114,000	\$0	\$6,276,000
DDJ Capital	\$8,605,599	\$0	\$119,049	\$8,724,648
EARNEST Partners	\$40,963,567	\$0	-\$178,132	\$40,785,434
Fisher Transition	\$70,178	\$0	-\$474	\$69,704
Hansberger Transition	\$289,935	\$0	-\$57,624	\$232,311
iShares Core US Aggregate Bond ETF	\$7,666,040	\$0	-\$57,079	\$7,608,961
iShares Edge MSCI Min Vol	\$19,318,580	\$0	-\$526,508	\$18,792,072
Northern Trust Russell 1000	\$107,771,639	-\$1,000,000	-\$865,673	\$105,905,966
Parametric BXM	\$14,794,038	\$0	-\$43,186	\$14,750,852
Parametric DeltaShift	\$18,167,767	\$0	-\$107,739	\$18,060,028
Ramirez	\$79,297,837	\$0	-\$272,775	\$79,025,062
Reams	\$29,931,453	\$0	-\$267,201	\$29,664,252
Reams Low Duration	\$44	\$0	\$0	\$44
Rice Hall James	\$15,003,227	\$0	\$596,803	\$15,600,031
Securities Lending Northern Trust	\$0	-\$22,748	\$22,748	\$0
SGA ACWI ex-U.S. Equity	\$38,257,641	\$0	\$225,506	\$38,483,146
Vanguard Developed Markets ETF	\$15,808,977	\$0	-\$113,854	\$15,695,123
Vanguard Long-Term Treasury ETF	\$21,322,811	\$0	-\$749,613	\$20,573,198
Vanguard Russell 2000 Value	\$8,649,902	\$0	\$429,725	\$9,079,627
Total	\$434,118,470	-\$886,000	-\$1,845,895	\$431,386,575

Benchmark History
As of January 31, 2021

Total Plan x Securities Lending x Reams LD Exception Comp

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

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Oakland Police and Fire Retirement System

Alternative Risk Premia (ARP)

Agenda

1. Economic Intuition & Basic Concepts
2. Evolution of Risk Premia
3. Appendix

Economic Intuition & Basic Concepts

What is Risk Premium?

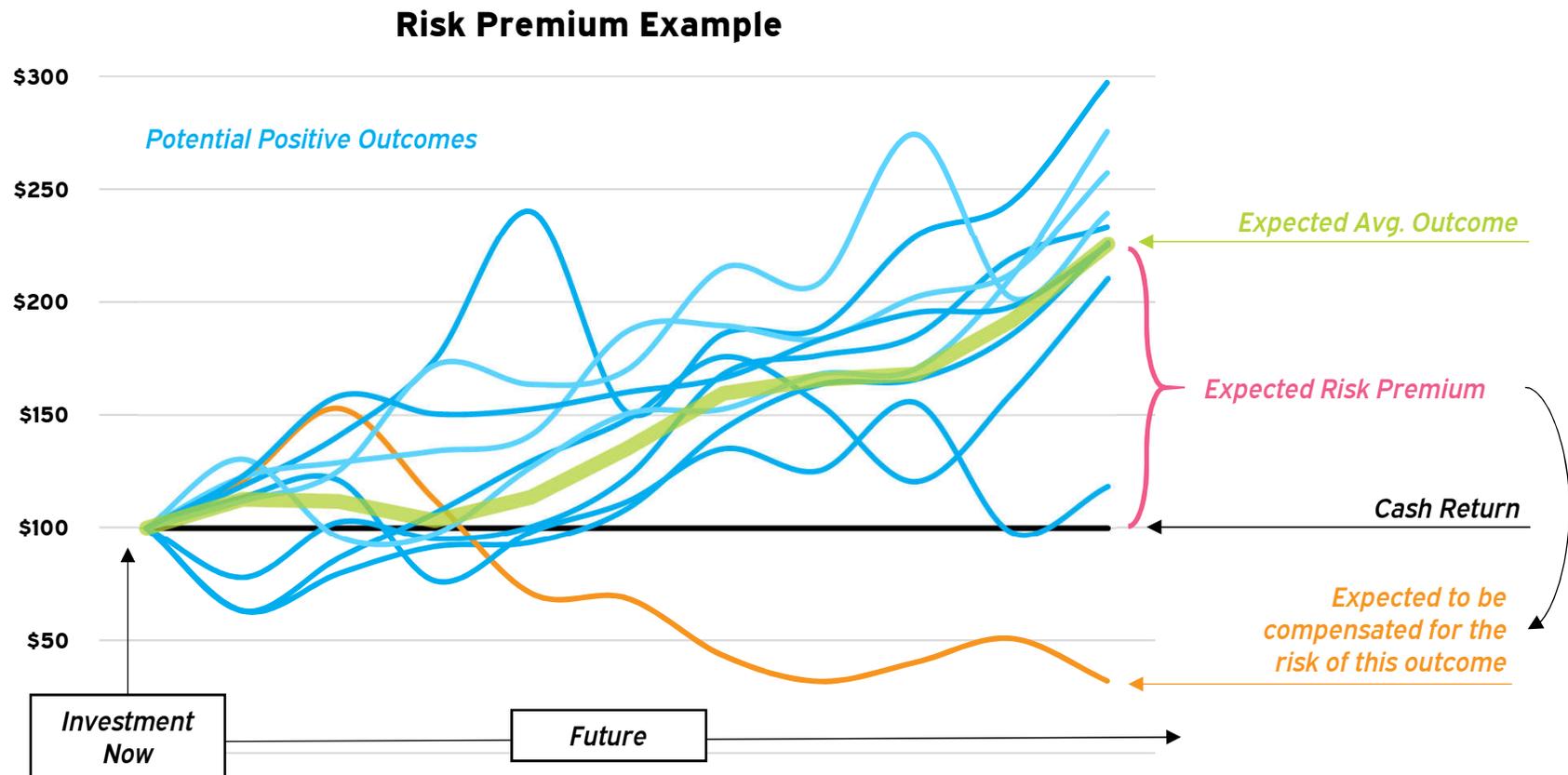
- Risk and return are inherently related
- Economic investments generate positive returns because of risk premiums
- Risk premium = a positive payment for being exposed to a risk
 - Analogy => insurance
 - Monthly premiums in exchange for downside coverage
 - Insurance company generates a profit/return because the premiums cover the payouts (over-time / on average)
- Arbitrage pricing theory / multifactor models best represent the capital market landscape
 - Multiple risk premiums exist that can reward investors

Risk Premiums and “Bad Times”

- The two most important words in investing are “bad times” – Ang, 2014
- All risk premiums exist because of “bad times”
 - Equity Risk = positive returns, on average, to equity investors because they are negatively impacted when companies suffer
 - Interest Rate Risk = positive returns, on average, to bond investors because they are negatively impacted when interest rates rise
- The key to designing a strategic allocation is to obtain exposure to as many economic, unrelated risk premiums as possible
 - i.e., diversify

Risk Premium Investment Example

- To receive a positive return (i.e., a premium), one must bear risk
 - Risk = potential for a “bad time”



How Are Risk Premiums Measured?

- Risk premiums are measured by comparing one investment return versus another (foregone) investment return
 - Foregoing one investment is mathematically identical to short selling
 - i.e., opportunity cost
- For example, the Equity Risk Premium is the difference between the return that equities generate in comparison to the return that cash generates
 - Ex. S&P 500 = 7% return
Cash = 1% return
Equity Risk Premium = 6% return ($7\% - 1\% = 6\%$)
- In the above example, 6% represents the return that the investor earned for bearing equity risk (as opposed to investing solely in cash)
 - i.e., the “premium” relative to cash

Traditional Risk Premiums

- Four traditional risk premiums dominate most portfolios:

Interest Rate Risk/Duration Risk Premium

- Example: 10-year government bond return – cash return = Duration RP

Credit Risk Premium

- Example: Sears 10-year bond return – 10-year government bond return = Credit RP

Equity Risk Premium

- Example: S&P 500 return – cash return = Equity RP

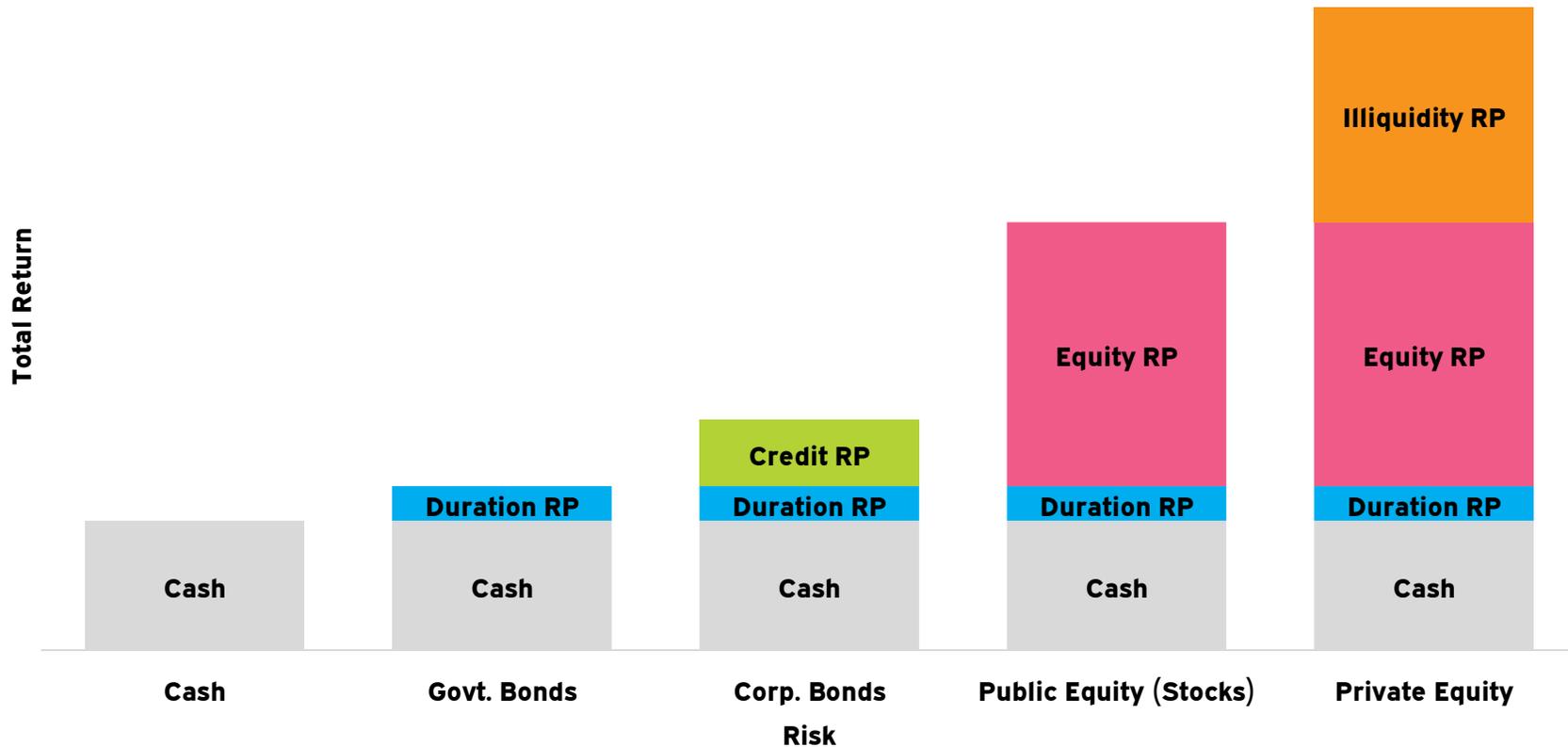
Illiquidity Risk Premium

- Example: Private Equity return – S&P 500 Return = Illiquidity RP

- These are also called “traditional” because they are pervasive, utilized heavily, and generally obtained/measured via long-only investing

Mapping Traditional Risk Premiums

Mapping Traditional Risk Premiums¹



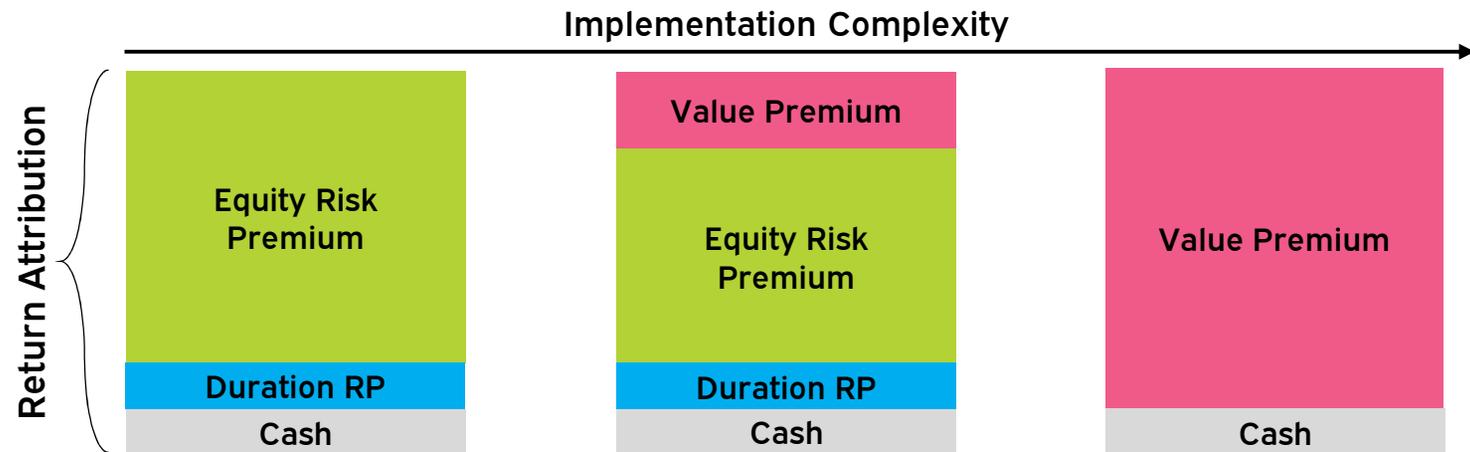
- Risk premia/premiums may also be referred to as “factors”

¹ Adapted from Unigestion Research Paper: Alternative risk premia investing: from theory to practice, Exhibit 1
<https://www.unigestion.com/app/uploads/2017/02/VF-Alternative-risk-premia-investing-from-theory-to-practice.pdf>

What is an Alternative Risk Premium?

- Alternative Risk Premiums = not Traditional Risk Premiums!
 - Ex. Value Risk Premium = the risk premium that investors receive by buying value stocks/assets instead of growth stocks/assets
- Most Alternative Risk Premiums are obtained via tilting a long-only portfolio or using long-short portfolio constructs
 - Tilting example = in an equity portfolio, buying only value stocks
 - Long-short example = buying value stocks and selling short growth stocks
 - **Recommendation: utilize long-short implementations**
- Alternative Risk Premiums are commonly present across the four major asset classes (equities, bonds, currencies, and commodities)

Traditional → Alternative Risk Premia



Strategy:	Core Market Index	Value Investing (Tilting)	Value Risk Premium
Implementation:	<div style="background-color: #92d050; padding: 2px;">Long Value Stocks</div> <div style="background-color: #92d050; padding: 2px;">Long Growth Stocks</div>	<div style="background-color: #92d050; padding: 2px;">Long Value Stocks</div>	<div style="background-color: #92d050; padding: 2px;">Long Value Stocks</div> <div style="background-color: #f4a460; padding: 2px;">Short Growth Stocks</div>
Index Example:	MSCI ACWI	MSCI ACWI Value	N/A
Description:	Buying the total global stock market index (passive investing)	Buying only "cheap" (value) stocks OR buying more "cheap" stocks than "expensive" stocks	Buying "cheap" stocks and selling (shorting) "expensive" stocks, in equal amounts
Other Terms:	Passive, market cap, core, etc.	Value mandate, fundamental indexing, smart beta, etc.	Style premia, alternative risk premia, etc.
Return Attribution	Mostly driven by Equity Risk Premium	Slight contribution from Value Premium but still mostly driven by the Equity Risk Premium	Mostly driven by Value Risk Premium

Risk Premia Exposure: Tilting versus Long-Short

- Tilting a portfolio to a risk premium is effective but has its limitations
 - Pros:
 - Marginally increases the expected return of the investment versus non-tilting
 - Cons:
 - Maintains exposure to the Traditional Risk Premium
 - Limits the impact of the Alternative Risk Premium due to long-only restraint
- Capturing Alternative Risk Premiums in a long-short construct is a more robust approach
 - Example: \$100 investment into a 2X levered long-short value equity portfolio

UP
MARKET

- *Russell 1000 Value = 10% return*
- *Russell 1000 Growth = 7% return*
- *Cash = 2% return*

} Harvests the difference between value/growth

- Portfolio = $(\$100 * \text{Cash}) + (\$200 * \text{R1000 Value} - \$200 * \text{R1000 Growth})$
- Portfolio = $2\% + (2 * 10\%) - (2 * 7\%) = 2\% + 20\% - 14\% = 8\%$ return
- Portfolio = $\$102 + \$220 - \$214$
- Portfolio = $\$108$ (8% return)

Risk Premia Exposure: Tilting versus Long-Short

- Example: \$100 investment into a 2X levered long-short value equity portfolio

- *Russell 1000 Value = -5% return*

- *Russell 1000 Growth = -9% return*

- *Cash = 2% return*

} Harvests the difference between value/growth

**DOWN
MARKET**

- Portfolio = $(\$100 * \text{Cash}) + (\$200 * R_{1000 \text{ Value}} - \$200 * R_{1000 \text{ Growth}})$

- Portfolio = $2\% + (2 * -5\%) - (2 * -9\%) = 2\% - 10\% + 18\% = 10\%$ return

- Portfolio = $\$102 + \$190 - \$182$

- Portfolio = $\$110$ (10% return)

- Because of the offsetting (i.e., market-neutral) equity positions, there is no exposure to the drawdown in the broad equity markets
- The long-short (market-neutral) construct allows for an element of leverage to enhance the overall return of the strategy

Risk Premia Exposure: Tilting versus Long-Short

Additional Examples (negative strategy returns)

UP
MARKET

- *Russell 1000 Value = 10% return*
 - *Russell 1000 Growth = 13% return*
 - *Cash = 2% return*
- } Harvests the difference between value/growth
- Portfolio = \$96 (-4% return)

- Strategy can generate a negative return even when broad markets produce a positive return over a given period

DOWN
MARKET

- *Russell 1000 Value = -8% return*
 - *Russell 1000 Growth = -4% return*
 - *Cash = 2% return*
- } Harvests the difference between value/growth
- Portfolio = \$94 (-6% return)

- Strategy can generate a negative return at the same time as broad markets

Sustainability of Risk Premiums

- Constant debate amongst academics/practitioners as to whether premiums are risk-based or behavioral-based
 - i.e., does the market reward investors because the activity is risky or because the market makes a mistake?
- The more important idea is whether this will continue
 - Risk premiums are more likely to continue but certain behavioral biases may also persist
- As such, the “bad times” may be when the risk is evident or when the behavioral issue is uncorrected
 - Example: Value Stocks
 - Value = distress risk; value companies are inherently more risky (risk-based)
 - Value = investors overpay for growth, thus value stocks are undervalued (behavioral-based)

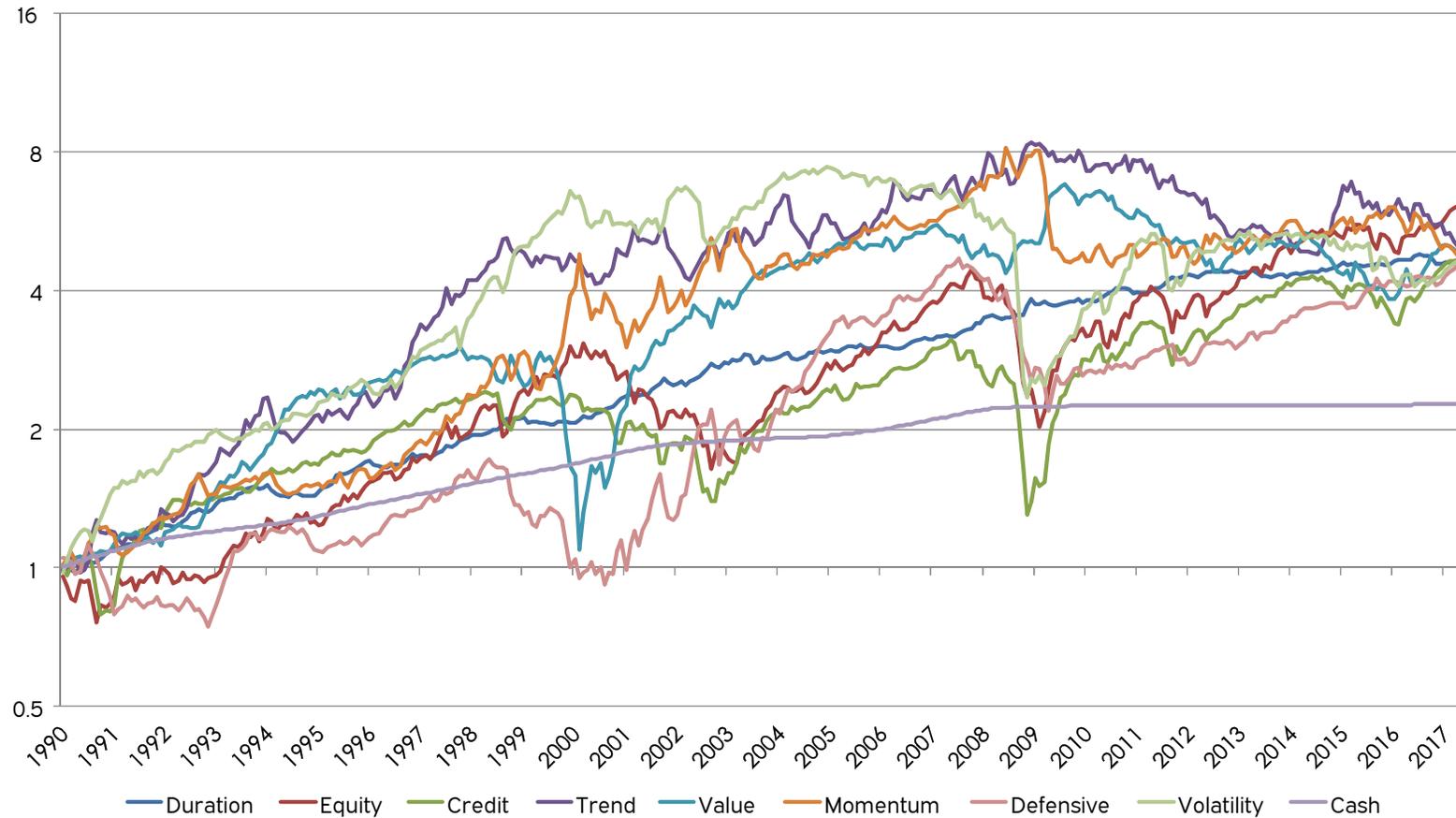
Sustainability of Risk Premiums

Traditional Risk Premiums	Alternative Risk Premiums	
<p><u>Equity</u></p> <ul style="list-style-type: none"> Ownership in a company <p><u>Duration / Interest Rate Risk</u></p> <ul style="list-style-type: none"> Exposure to interest rate movements <p><u>Credit</u></p> <ul style="list-style-type: none"> Lending money with the potential for default <p><u>Illiquidity</u></p> <ul style="list-style-type: none"> Giving up liquidity in an investment 	<p><u>Value</u></p> <ul style="list-style-type: none"> Long “cheap” assets and short “expensive” assets <p><u>Momentum</u></p> <ul style="list-style-type: none"> Buying recent “winners” and selling recent “losers” <p><u>Trend</u></p> <ul style="list-style-type: none"> Similar to momentum, but “winning” and “losing” is relative to each asset’s own history 	<p><u>Carry</u></p> <ul style="list-style-type: none"> Long high-yielding assets and short low-yielding assets <p><u>Defensive</u></p> <ul style="list-style-type: none"> Long lower risk assets and short higher risk assets <p><u>Volatility</u></p> <ul style="list-style-type: none"> Selling volatility (i.e., losing when volatility rises)

Each of these premiums should be measured in a simplistic way

Performance of Common Risk Premiums

Growth of \$1 - Various Risk Premium Portfolios*



Source: PCA, Bloomberg, Barclays, S&P, AQR, Merrill Lynch, Credit Suisse, MPI Stylus

* See Appendix for specific factor descriptions. Factor portfolios include cash returns.

Duration and Equity represent the actual histories of the BB Government and MSCI ACWI GD indices.

The histories of the Alternative Risk Premiums have been altered to reflect more conservative returns. Additionally, their respective volatilities have been modified to roughly match Global Equity over this time period ($\approx 15\%$).

Correlations Amongst Common Risk Premiums

Long-term Monthly Correlations

	Duration	Equity	Credit	Trend	Value	Momentum	Defensive
Equity	-0.09						
Credit	-0.43	0.61					
Trend	0.30	-0.12	-0.27				
Value	-0.11	0.02	0.13	-0.17			
Momentum	0.19	-0.22	-0.30	0.41	-0.68		
Defensive	0.14	-0.22	-0.09	0.17	0.06	0.26	
Volatility	-0.14	0.56	0.56	-0.07	-0.05	-0.02	-0.08

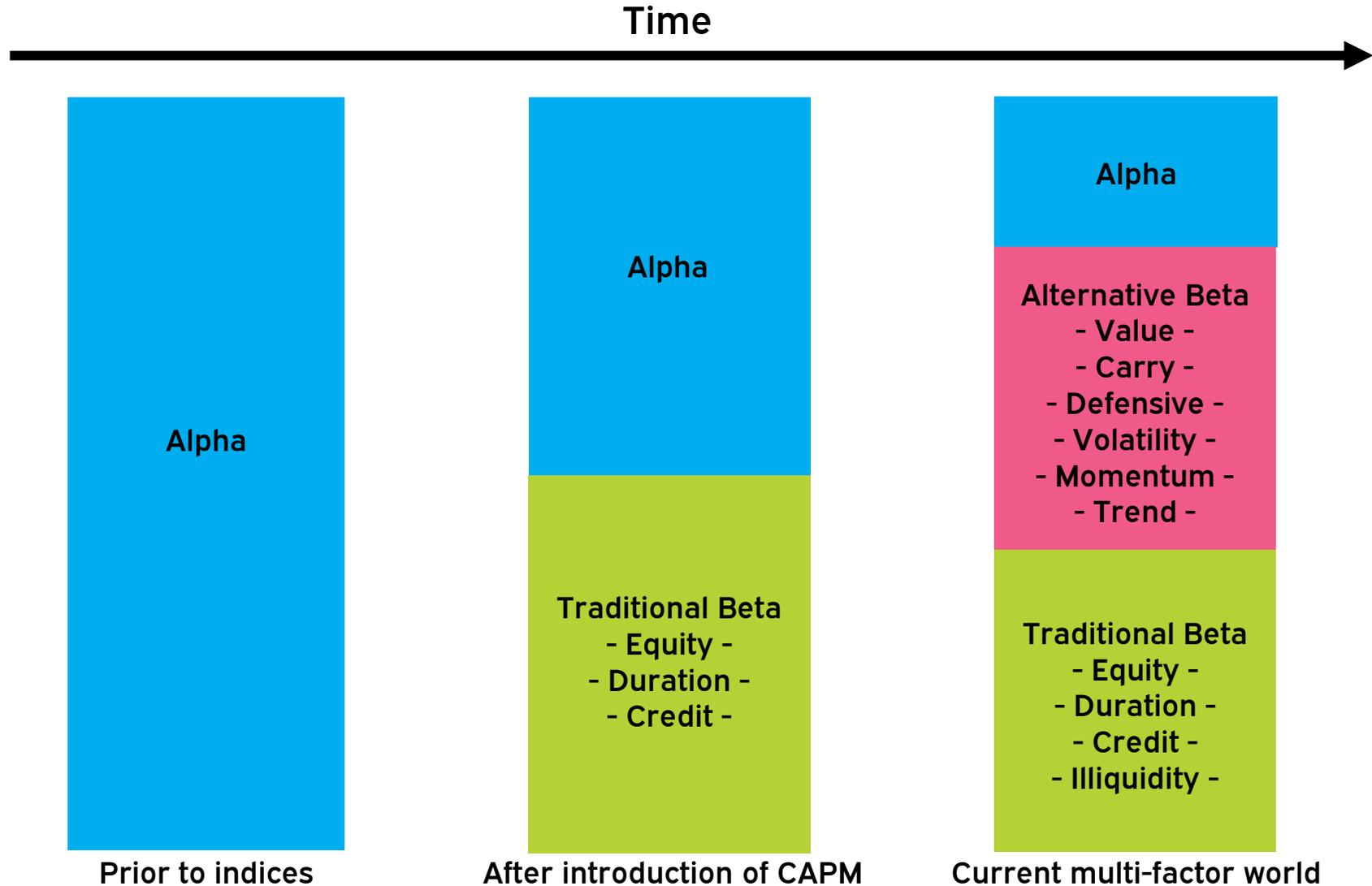
- The majority of the risk premiums are complementary to one another
- Equity, Credit, and Volatility move similarly with one another (as expected)
- Trend and Momentum move similarly with one another (as expected)

Evolution of Risk Premia

Evolution of Alpha into Beta (aka Risk Premia)

- Overtime, “alpha” has continued to morph into “beta”
 - Alpha = risk-adjusted excess return
- This concept indicates that active manager “skill” may be merely due to exposure to other risk premiums
 - e.g., much of Warren Buffett’s success is due to *Value & Defensive* risk premia
- 1st portfolio consideration = exposure to risk premiums
2nd portfolio consideration = pursuit of alpha
- The key to designing a strategic allocation is to obtain exposure to as many economic, unrelated risk premiums as possible
 - i.e., diversify

Evolution of Alpha into Beta (aka Risk Premia)



Alternative Risk Premia Strategies

- Alternative Risk Premia strategies now exist as standalone products
 - First product entrants were in 2012/2013, with material growth in 2016-2018
 - Formerly, they were hidden in expensive hedge funds or masked as “alpha” in traditional long-only strategies
- These strategies provide robust/pure exposures to risk premiums that many institutional investors do not currently have
- These strategies typically combine three to six alternative risk premia across a global universe of investors
 - Ex. Harvest *Value*, *Momentum*, and *Carry* across global equity, global bonds, currencies, and commodities
- An aggregate fee near 60-90 basis points is standard (this has continually decreased over the last few years)

Appendix

Additional Risk Premia Investment Examples

- All long-short risk premia investments have a similar construct
 - Receives the cash return
 - Additionally, harvests the difference in returns of the long-short portion
- “Defensive” risk premia example:
 - Hypothetical ex: \$100 investment into a long-short defensive equity portfolio
 - Using some metric of “defensive” (e.g., trailing volatility, beta, debt level, etc.), an investor goes long the safe/defensive stock and short the risky/aggressive stock
 - In this example, Johnson & Johnson is viewed as more defensive than Gilead
 - *Johnson & Johnson = 10% return*
Gilead Sciences (Biotech) = 7% return
Cash = 2% return
} Harvests the difference between defensive/risky
 - Portfolio = $(\$100 * \text{Cash}) + (\$200 * \text{Johnson \& Johnson} - \$200 * \text{Gilead})$
 Portfolio = $2\% + (2 * 10\%) - (2 * 7\%) = 2\% + 20\% - 14\% = 8\%$ return
 Portfolio = $\$102 + \$220 - \$214$
 Portfolio = $\$108$ (8% return)

Additional Risk Premia Investment Examples

- Hypothetical ex: \$100 investment into a long-short defensive equity portfolio

- Johnson & Johnson = -5% return*
 - Gilead Sciences (Biotech) = -9% return*
 - Cash = 2% return*

} Harvests the difference between defensive/risky

- Portfolio = (\$100*Cash) + (\$200*Johnson & Johnson - \$200*Gilead)

Portfolio = 2% + (2 * -5%) - (2 * -9%) = 2% - 10% + 18% = 10% return

Portfolio = \$102 + \$190 - \$182

Portfolio = \$110 (10% return)

- Because of the offsetting (i.e., market-neutral) equity positions, there is no exposure to the drawdown in the broad equity markets

Additional Risk Premia Investment Examples

- “Carry” risk premia example:
 - Hypothetical ex: \$100 investment into a long-short carry currency portfolio
 - *Carry ≈ yield of an investment*
 - *Iceland Krona = 3% return (cash interest rate)*
U.S. Dollar = 1% return (cash interest rate)
Cash = 1% return
 - $\left. \begin{array}{l} \text{Iceland Krona} \\ \text{U.S. Dollar} \\ \text{Cash} \end{array} \right\} \text{Harvests the difference in high vs. low interest rates}^*$
 - $\text{Portfolio} = (\$100 * \text{Cash}) + (\$200 * \text{Iceland Krona} - \$200 * \text{USD})$
 $\text{Portfolio} = 1\% + (2 * 3\%) - (2 * 1\%) = 1\% + 6\% - 2\% = 5\% \text{ return}$
 $\text{Portfolio} = \$101 + \$206 - \$202$
 $\text{Portfolio} = \$105 \text{ (5\% return)}$
- For currencies, the notion of selling/shorting ≈ borrowing
 - i.e., instead of owing the return, the borrower owes the interest rate

Additional Risk Premia Investment Examples

- Hypothetical ex: \$100 investment into a long-short carry currency portfolio
 - Japanese Yen = -0.1% return (cash interest rate)
 - Swiss Franc = -0.75% return (cash interest rate)
 - Cash = 1% return

} Harvests the difference in high vs. low interest rates*

 - Portfolio = (\$100*Cash) + (\$200*Yen - \$200*Franc)
 - Portfolio = 1% + (2 * -0.1%) - (2 * -0.75%) = 1% - 0.2% + 1.5% = 2.3% return
 - Portfolio = \$101 + \$199.8 - \$198.5
 - Portfolio = \$102.3 (2.3% return)
- For currencies, the notion of selling/shorting ≈ borrowing
 - i.e., instead of owing the return, the borrower owes the interest rate

Additional Risk Premia Investment Examples

- “Momentum” risk premia example:
 - Hypothetical ex: \$100 investment into a long-short *momentum* equity portfolio
 - Using some metric of momentum (e.g., trailing 1-year return), an investor goes long the stock with the best momentum and short the stock with the worst momentum
 - In this example, Google is assumed to have a better trailing 1-year return than Equifax
 - $\left. \begin{array}{l} \text{Google} = 10\% \text{ return} \\ \text{Equifax} = 7\% \text{ return} \\ \text{Cash} = 2\% \text{ return} \end{array} \right\}$ Harvests the difference in best momentum/worst momentum stocks
 - Portfolio = $(\$100 * \text{Cash}) + (\$200 * \text{Google} - \$200 * \text{Equifax})$
 Portfolio = $2\% + (2 * 10\%) - (2 * 7\%) = 2\% + 20\% - 14\% = 8\% \text{ return}$
 Portfolio = $\$102 + \$220 - \$214$
 Portfolio = $\$108 \text{ (8\% return)}$

Additional Risk Premia Investment Examples

- Hypothetical ex: \$100 investment into a long-short *momentum* equity portfolio
 - *Google = -5% return*
 - *Equifax = -9% return*
 - *Cash = 2% return*

} Harvests the difference in best momentum/worst momentum stocks

 - Portfolio = $(\$100 * \text{Cash}) + (\$200 * \text{Google} - \$200 * \text{Equifax})$
 - Portfolio = $2\% + (2 * -5\%) - (2 * -9\%) = 2\% - 10\% + 18\% = 10\%$ return
 - Portfolio = $\$102 + \$190 - \$182$
 - Portfolio = $\$110$ (10% return)
- Because of the offsetting (i.e., market-neutral) equity positions, there is no exposure to the drawdown in the broad equity markets

Risk Premia Data

- Factors/premia utilized on slides 16 & 17 were selected due to their available histories (back to 1990) and generally accepted persistence
- **Date Source/Factor Construct (Portfolios):**
 - *Duration* = BB Government Index
 - No adjustment to historical return and volatility
 - *Equity* = MSCI ACWI GD Index
 - No adjustment to historical return and volatility
 - *Credit* = BB High Yield Index less BB Government Index
 - Volatility was adjusted to $\approx 15\%$
 - Cash return was added
 - Factor portfolio return was adjusted to 7% (i.e., cash + 4%)

Risk Premia Data

- *Trend* = AQR Simple Trend Data (1990-1997) & Credit Suisse Managed Futures Index (1998/2017)
 - Volatility was adjusted to $\approx 15\%$
 - Factor portfolio return was adjusted to 7% (i.e., cash + 4%)
- *Value* = AQR Value Everywhere Data
 - Volatility was adjusted to $\approx 15\%$
 - Cash return was added
 - Factor portfolio return was adjusted to 7% (i.e., cash + 4%)
- *Momentum* = AQR Momentum Everywhere Data
 - Volatility was adjusted to $\approx 15\%$
 - Cash return was added
 - Factor portfolio return was adjusted to 7% (i.e., cash + 4%)

Risk Premia Data

- *Defensive* = AQR Betting Against Beta Global Equity Data
 - Volatility was adjusted to $\approx 15\%$
 - Cash return was added
 - Factor portfolio return was adjusted to 7% (i.e., cash + 4%)
- *Volatility* = 1-month S&P 500 implied volatility less 1-month realized volatility
 - Volatility was adjusted to $\approx 15\%$
 - Cash return was added
 - Factor portfolio return was adjusted to 7% (i.e., cash + 4%)
- *Cash* = Merrill Lynch 3-month Treasury Bills
- For the correlation analysis, the cash return was removed from each factor/premia portfolio

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MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: David Sancewich, Paola Nealon, Sidney Kawanguzi – Meketa Inv. Group
DATE: February 11, 2021
RE: 2021 Ongoing Strategic Investment Agenda

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

2021 Preliminary Investment Project Agenda

Expected Completion Date	Task
March 2021	<ul style="list-style-type: none">Flash Performance- FebruaryCash Flow Report (2Q 2021)Defensive Equity Search UpdateRisk Premia Search update
April 2021	<ul style="list-style-type: none">Flash Performance (1Q2021)Risk Premia Search InterviewsWatch Update Memo: DDJManager Update: DDJ
May 2021	<ul style="list-style-type: none">Quarterly Performance Report (1Q 2021)Defensive Equity Search InterviewsManager Update: SGA
June 2021	<ul style="list-style-type: none">Cash Flow Report (3Q 2021)Educational Item: SPACs2021 Asset Liability Review:

Expected Completion Date	Task
July 2021	<ul style="list-style-type: none"> Flash Performance (2Q2021) Watch Update Memo: Rice Hall & James Manager Update: Rice Hall & James Manager Update: BlackRock
August 2021	<ul style="list-style-type: none"> Quarterly Performance Report (2Q 2021) Manager Update: Northern Trust R1000 Contract Renewal: Northern Trust Educational Item: Cryptocurrency
September 2021	<ul style="list-style-type: none"> Cash Flow Report (4Q 2021) Educational Item: Transition from fossil fuels Thermal Coal List Update: 2021
October 2021	<ul style="list-style-type: none"> Flash Performance (3Q2021) Manager Update: Ramirez Contract Renewal: Ramirez
November 2021	<ul style="list-style-type: none"> Quarterly Performance Report (3Q 2021) Educational Item: Developments in ESG
December 2021	<ul style="list-style-type: none"> Cash Flow Report (1Q 2022) Flash performance- November

Bold are priority strategic items.

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

DS, PN, SK, pq

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

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



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

AGENDA

RETIREMENT BOARD MEMBERS

Walter L. Johnson, Sr.
President

Jaime T. Godfrey
Vice President

Robert W. Nichelini
Member

Kevin R. Traylor
Member

John C. Speakman
Member

R. Steven Wilkinson
Member

Margaret O'Brien
Member

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

Wednesday, February 24, 2021

12:00 PM

**Tele-Conference Board Meeting
via Zoom Webinar**

OBSERVE

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

PUBLIC COMMENTS

There are three ways to submit public comments.

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

**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR BOARD MEETING
FEBRUARY 24, 2021**

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

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

--- ORDER OF BUSINESS ---

- A. Subject: Police and Fire Retirement System (“PFRS”) Board Meeting Minutes**
From: Staff of the PFRS Board

Recommendation: **APPROVE** January 27, 2021 PFRS Board Meeting Minutes.
- B. AUDIT & OPERATIONS COMMITTEE AGENDA – FEBRUARY 24, 2021**
- B1. Subject: Administrative Expenses Report**
From: Staff of the PFRS Board

Recommendation: **APPROVE** the informational report regarding PFRS administrative expenses as of December 31, 2021.
- B2. Subject: Report of Findings Regarding PFRS Actuarial Funding Date of July 1, 2026**
From: PFRS Ad Hoc Committee for July 1, 2026 Actuarial Funding Date

Recommendation: **ACCEPT** Informational Report regarding PFRS Actuarial Funding Date of July 1, 2026.
- B3. Subject: PFRS 2-Year Administrative Budget for Fiscal Years 2021/2022 and 2022/2023**
From: Staff of the PFRS Board

Recommendation: **APPROVE** the PFRS 2-Year Administrative Budget for Fiscal Years 2021/2022 and 2022/2023.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR BOARD MEETING
FEBRUARY 24, 2021

C. INVESTMENT & FINANCIAL MATTERS COMMITTEE AGENDA – FEBRUARY 24, 2021

- C1. **Subject:** Investment Manager Performance Review – Earnest Partners, LLC a PFRS Mid-Cap Core Domestic Equity Asset Class Investment Manager
From: Earnest Partners, LLC
Recommendation: **ACCEPT** informational report regarding managerial assessment and investment portfolio performance of Earnest Partners, LLC, a PFRS Mid-Cap Core Domestic Equity Asset Class Investment Manager.
- C2. **Subject:** Investment Manager Performance Review – Earnest Partners, LLC a PFRS Mid-Cap Core Domestic Equity Asset Class Investment Manager
From: Meketa Investment Group
Recommendation: **ACCEPT** evaluation and review of Earnest Partners, LLC a PFRS Mid-Cap Core Domestic Equity Asset Class Investment Manager.
- C3. **Subject:** Resolution No. 8011 - Resolution Authorizing a One-Year Extension of Professional Services Agreement with Earnest Partners, LLC a PFRS Mid-Cap Core Domestic Equity Asset Class Investment Manager
From: Earnest Partners, LLC
Recommendation: **APPROVE** Resolution No. 8011 - Resolution Authorizing a One-Year Extension of Professional Services Agreement with Earnest Partners, LLC for Mid-Cap Core Domestic Equity Asset Class Investment Manager.
- C4. **Subject:** Investment Manager Performance Review – Reams Asset Management a PFRS Core Plus Fixed Income Asset Class Investment Manager
From: Reams Asset Management
Recommendation: **ACCEPT** informational report regarding managerial assessment, investment portfolio performance, and Diversity and Inclusion Policy of Reams Asset Management, a PFRS Core Plus Fixed Income Asset Class Investment Manager.

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
REGULAR BOARD MEETING
FEBRUARY 24, 2021

- C5. **Subject:** Investment Manager Performance Review – Reams Asset Management a PFRS Core Plus Fixed Income Asset Class Investment Manager
From: Meketa Investment Group
Recommendation: **ACCEPT** evaluation and review of Reams Asset Management a PFRS Core Plus Fixed Income Asset Class Investment Manager.
- C6. **Subject:** Draft Emergency Procedures for Terminating or Limiting Trading Discretion of PFRS Investment Managers to Protect PFRS Fund Assets
From: Staff of the PFRS Board
Recommendation: **RECEIVE REPORT AND RECOMMENDATIONS** regarding second draft proposed Emergency Procedures for terminating or limiting trading discretion of PFRS Investment Managers to protect PFRS Fund Assets and **APPROVE** Emergency Procedures or other recommended course of action with regard to said procedures.
- C7. **Subject:** Investment Fund Quarterly Performance Update as of December 31, 2020
From: Meketa Investment Group
Recommendation: **ACCEPT** the Investment Fund Quarterly Performance update as of December 31, 2020.
- C8. **Subject:** Preliminary Investment Fund Performance Update as of January 31, 2021
From: Meketa Investment Group
Recommendation: **ACCEPT** the Preliminary Investment Fund Performance update as of January 31, 2021.
- C9. **Subject:** Informational Report on Alternative Risk Premia Investment Strategy
From: Meketa Investment Group
Recommendation: **ACCEPT** an informational report on the Alternative Risk Premia Investment Strategy

D. NEW BUSINESS

E. OPEN FORUM

F. FUTURE SCHEDULING

G. ADJOURNMENT

A REGULAR BOARD MEETING of the Oakland Police and Fire Retirement System (“PFRS”) was held on Wednesday, January 27, 2021 via Zoom Tele-Conference.

Board Members:

- Walter L. Johnson President
- Jaime T. Godfrey Vice President
- Margaret O’Brien Member
- Robert W. Nichelini Member
- John C. Speakman Member
- Kevin R. Traylor Member
- R. Steven Wilkinson Member

Additional Attendees:

- David F. Jones PFRS Plan Administrator
- Jennifer Logue PFRS Legal Counsel
- Teir Jenkins PFRS Staff Member
- Maxine Visaya PFRS Staff Member
- David Sancewich Meketa Investment Group
- Timothy Doyle Cheiron, Inc. (PFRS Plan Actuary)
- Graham Schmidt Cheiron, Inc. (PFRS Plan Actuary)

The meeting was called to order at 12:04 p.m. PST

- A. PFRS Board Meeting Minutes** – Member Nichelini made a motion to approve the December 10, 2020 Regular Board Minutes, second by Vice-President Godfrey. The motion passed.

[JOHNSON – Y/ GODFREY – Y/ O’BRIEN – ABSTAIN/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – Y]
(AYES: 6/ NOES: 0/ ABSTAIN: 1)

- B. PFRS Actuary Valuation Report as of July 1, 2020** – Graham Schmidt and Tim Doyle of Cheiron presented the results of the Actuary Valuation report as of July 1, 2020. T. Doyle highlighted the Key Findings, Historical Trends, Projected Funded Ratio, Identification and Assessment of Risks, and Headcount and Benefit Payment Projections.

MOTION: Member Nichelini made a motion to approve the report as presented, second by Member Speakman. Motion passed.

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

C. AUDIT AND OPERATIONS COMMITTEE AGENDA – JANUARY 27, 2021

- C1. Administrative Expenses Report** – PFRS Staff Member Jenkins presented the informational report of the PFRS administrative expenditures as of December 31, 2020.

MOTION: Member Speakman made a motion to accept the administrative expenses report as of December 31, 2020, second by Member Traylor. Motion passed.

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

- C2. Annual Report for Fiscal Year Ending June 30, 2020** – PFRS Staff Member Jenkins presented the Annual Report for Fiscal Year Ending June 30, 2020. Member Speakman made mention of the cover photograph depicting the WWII Monument “Necklace of Lights” around the Lake was restored through efforts of the Lake Merritt Breakfast Club. Mr. Jenkins thanked retirement staff, consultants, and members for their hard work putting the report together. Board President Johnson, on behalf of the Board, wanted to commend and thank staff for a job well done. Following printing and publication, Mr. Jones welcomed feedback from the membership for suggested enhancements or improvements to next year’s report.

MOTION: Member Nichelini made a motion to approve printing and publication of the Annual Report of the Oakland Police and Fire Retirement System for the Fiscal Year Ending June 30, 2020, second by Member Speakman. Motion Passed.

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

D. INVESTMENT & FINANCIAL MATTERS COMMITTEE AGENDA – JANUARY 27, 2021

- D1. Investment Manager Performance Review – Parametric Portfolio Associates, LLC, a PFRS Covered Calls Asset Class Investment Manager** – Vice-President Godfrey provided a summary of the updated informational report regarding the Diversity Policy of Parametric Portfolio Associates, LLC, a covered Calls Asset Class Investment Manager presented by staff of Parametric and Eaton Vance, as requested by the Board at the December 10, 2020 meeting.

MOTION: Vice-President Godfrey made a motion to accept the updated informational report regarding the Diversity Policy of Parametric Portfolio Associates, LLC, a covered Calls Asset Class Investment Manager, second by Member Speakman. Motion Passed.

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

- D2. Consent Form Regarding Merger of Parametric Portfolio Associates, LLC Parent Company, Eaton Vance Corp., and Morgan Stanley** – David Sancewich of Meketa Investment Group provided a summary of the report presented to the Investment Committee by Parametric Portfolio Associates, LLC regarding the acquisition of Parametric Portfolio Associates, LLC parent company, Eaton Vance Corp., by Morgan Stanley Investment Management. Meketa recommends Board Approval of consent to assign

MOTION: Vice-President Godfrey made a motion to accept the informational report regarding merger of Parametric Portfolio Associates, LLC parent company, Eaton Vance Corp., and Morgan Stanley and approve consent of assignment of PFRS investment advisory agreement and allow the merger to move forward, second by Member O’Brien. Motion Passed.

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

- D3. Resolution No. 8006 - Resolution Authorizing a One-Year Extension of Professional Services Agreement with Parametric Portfolio Associates, LLC for Covered Calls Asset Class Investment Manager** – This item was continued from previous meetings pending further information regarding the company’s Diversity and Inclusion Policy. The Investment Committee received requested information at this morning’s meeting and the Committee was pleased with the information presented. Vice-President Godfrey recommends the Board approve and move forward with the resolution to extend the contract for an additional year.

MOTION: Member Nichelini made a motion approve Resolution No. 8006, a resolution authorizing a one-year extension of the Professional Services Agreement with Parametric Portfolio Associates, LLC for Covered Calls Asset Class Investment Manager, second by Vice-President Godfrey. Motion passed.

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

- D4. Investment Market Overview** – Paola Nealon of Meketa Investment Group provided a summary of the informational report on the global economic factors affecting the PFRS Fund as of December 31, 2020. P. Nealon highlighted strong market performance in the fourth quarter with Equities leading the way, driven by positive vaccine news and the end of the November elections fueling investor optimism in the reopening of the economy.

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

[JOHNSON – Y/ GODFREY – Y/ O'BRIEN – Y/ NICHELINI – Y/ SPEAKMAN – Y/ TRAYLOR – Y/ WILKINSON – NO RESPONSE]
(AYES: 6/ NOES: 0/ ABSTAIN: 0)

- D5. Preliminary Investment Fund Performance Update as of December 31, 2020** – David Sancewich of Meketa Investment Group reported on the details of the Preliminary Investment Fund Performance Update as of December 31, 2020. D. Sancewich noted the portfolio is within range and highlighted the details of the Asset Class Performance Summary.

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

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

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

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

- D6. Plan and Process for Selecting New PFRS Investment Manager to Implement the Crisis Risk Offset Investment Strategy**– David Sancewich of Meketa Investment Group provided an informational report detailing options to consider for selecting possible candidates to serve as the new PFRS Investment Manager to implement the PFRS Crisis Risk Offset Investment Strategy. Meketa recommends PFRS split Alternative Risk Premia and Systematic Trend Following mandates into two separate portfolios with two separate managers and allow Meketa to update a recent search of Request for Proposals conducted in 2019 via an updated questionnaire to the respondents and come back to the Board with candidates to consider for interviews at a future Board Meeting.

MOTION: Vice President Godfrey made a motion to accept and move forward with Meketa's recommendation regarding this particular investment strategy, second by Member Nichelini. Motion passed.

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

- D7. Annual Diversity Report of Current PFRS Investment Managers** – Vice-President Godfrey presented the informational report regarding the diversity representation of current PFRS Investment Managers as of December 31, 2020 as presented to the Investment Committee by David Sancewich of Meketa Investment Group. Committee Members discussed the findings and requested Meketa reach out to Investment Managers Reams Asset Management and DDJ Capital Management, LLC for additional information. The receipt of requested information will allow the Committee to determine next steps.

MOTION: Vice President Godfrey made a motion to accept the informational report from Meketa, second by Member Traylor. Motion Passed.

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

- D8. Draft Emergency Procedures for Terminating or Limiting Trading Discretion of PFRS Investment Managers to Protect PFRS Fund Assets** – Plan Administrator David Jones presented an overview of the first draft of the Emergency Procedures for Terminating or Limiting Trading Discretion of PFRS Investment Managers to Protect PFRS Fund Assets, emphasizing this would only be enacted if PFRS is unable to convene a Special Meeting of the Board. Plan Administrator Jones drew attention to highlighted items and turned to PFRS Legal Counsel Logue to lead the discussion. Legal Counsel Logue noted the Investment Committee discussed the highlighted items, provided clarification to points in question and suggested modifications be made to the draft as a result. Legal Counsel Logue read into the record the Investment Committee recommended modifications to the first draft. Further discussion by the Board concerning the constitution of the Emergency Action Team resulted in additional recommended modifications.

MOTION: Vice President Godfrey continued this item to the February 2021 Board Meeting and directed Legal Counsel Logue to return with a second draft incorporating modifications discussed for review and disposition. No action was taken on this item.

E. Member Resolutions No. 8009 - 8010

- E1. Resolution No. 8009** - Resolution Approving Death Benefit Payments and Directing Warrants Thereunder in the Total Sum of \$1,000.00 Payable to the Beneficiary of Deceased Members Richard Cademartori and Robert L. Froines.

MOTION: Member Traylor made a motion to approve Resolution No. 8009, second by Vice-President Godfrey. Motion passed.

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

- E2. Resolution No. 8010** - Resolution Fixing the Monthly Allowance of Pauline J. Downum, Surviving Spouse of Dennis E. Downum, in the amount of \$3,884.38; Retired Member of the Police and Fire Retirement System.

MOTION: Member Traylor made a motion to approve Resolution No. 8010, second by Vice-President Godfrey. Motion passed.

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

- F. New Business** – No Report.

- G. Open Forum** – No Report.

- H. Future Scheduling** – The next Regular Board Meeting is scheduled for Wednesday, February 24, 2021 with a tentative start time of 12:00 p.m. PST.

- I. Adjournment** – Member Speakman made a motion to adjourn, second by Member Wilkinson. Motion passed.

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

The meeting adjourned at 1:36 p.m. PST

WALTER L. JOHNSON, SR., BOARD PRESIDENT

DATE

Table 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Administrative Budget Spent to Date (Preliminary)

As of December 31, 2020

	Approved Budget		December 2020		FYTD		Remaining		Percent Remaining	
Internal Administrative Costs										
PFRS Staff Salaries	\$	1,200,000	\$	84,665	\$	559,186	\$	640,814		53.4%
Board Travel Expenditures		52,500		-		-		52,500		100.0%
Staff Training		20,000		-		110		19,890		99.5%
Staff Training - Tuition Reimbursement		7,500		-		-		7,500		100.0%
Annual Report & Duplicating Services		4,000		-		-		4,000		100.0%
Board Hospitality		3,600		-		-		3,600		100.0%
Payroll Processing Fees		40,000		-		-		40,000		100.0%
Miscellaneous Expenditures		40,000		1,404		6,748		33,252		83.1%
Internal Service Fees (ISF)		88,000		-		52,005		35,995		40.9%
Contract Services Contingency		50,000		-		1,200		48,800		97.6%
Internal Administrative Costs Subtotal :	\$	1,505,600	\$	86,069	\$	619,249	\$	886,351		58.9%
Actuary and Accounting Services										
Audit	\$	45,000	\$	2,731	\$	45,000	\$	-		0.0%
Actuary		46,500		6,165		6,165		40,335		86.7%
Actuary and Accounting Subtotal:	\$	91,500	\$	8,896	\$	51,165	\$	40,335		44.1%
Legal Services										
City Attorney Salaries	\$	188,000	\$	14,847	\$	90,945	\$	97,055		51.6%
Legal Contingency		150,000		-		-		150,000		100.0%
Legal Services Subtotal:	\$	338,000	\$	14,847	\$	90,945	\$	247,055		73.1%
Investment Services										
Money Manager Fees	\$	1,353,000	\$	-	\$	246,079	\$	1,106,921		81.8%
Custodial Fee		124,000		29,125		58,250		65,750		53.0%
Investment Consultant		100,000		25,000		50,000		50,000		50.0%
Investment Subtotal:	\$	1,577,000	\$	54,125	\$	354,329	\$	1,222,671		77.5%
Total Operating Budget	\$	3,512,100	\$	163,936	\$	1,115,689	\$	2,396,411		68.23%

Table 2

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Cash in Treasury (Fund 7100) - Preliminary

As of December 31, 2020

	December 2020
Beginning Cash as of 11/30/2020	\$ 6,136,562
Additions:	
City Pension Contribution - December	\$ 3,637,333
Investment Draw	\$ 1,000,000
Misc. Receipts	125
Total Additions:	\$ 4,637,459
Deductions:	
Pension Payment (November Pension Paid on 12/1/2020)	(4,407,505)
Expenditures Paid	(219,018)
Total Deductions	\$ (4,626,523)
 Ending Cash Balance as of 12/31/2020*	 \$ 6,147,498

* On 1/1/2021, December pension payment of appx \$4,400,000 will be made leaving a cash balance of \$1,747,000

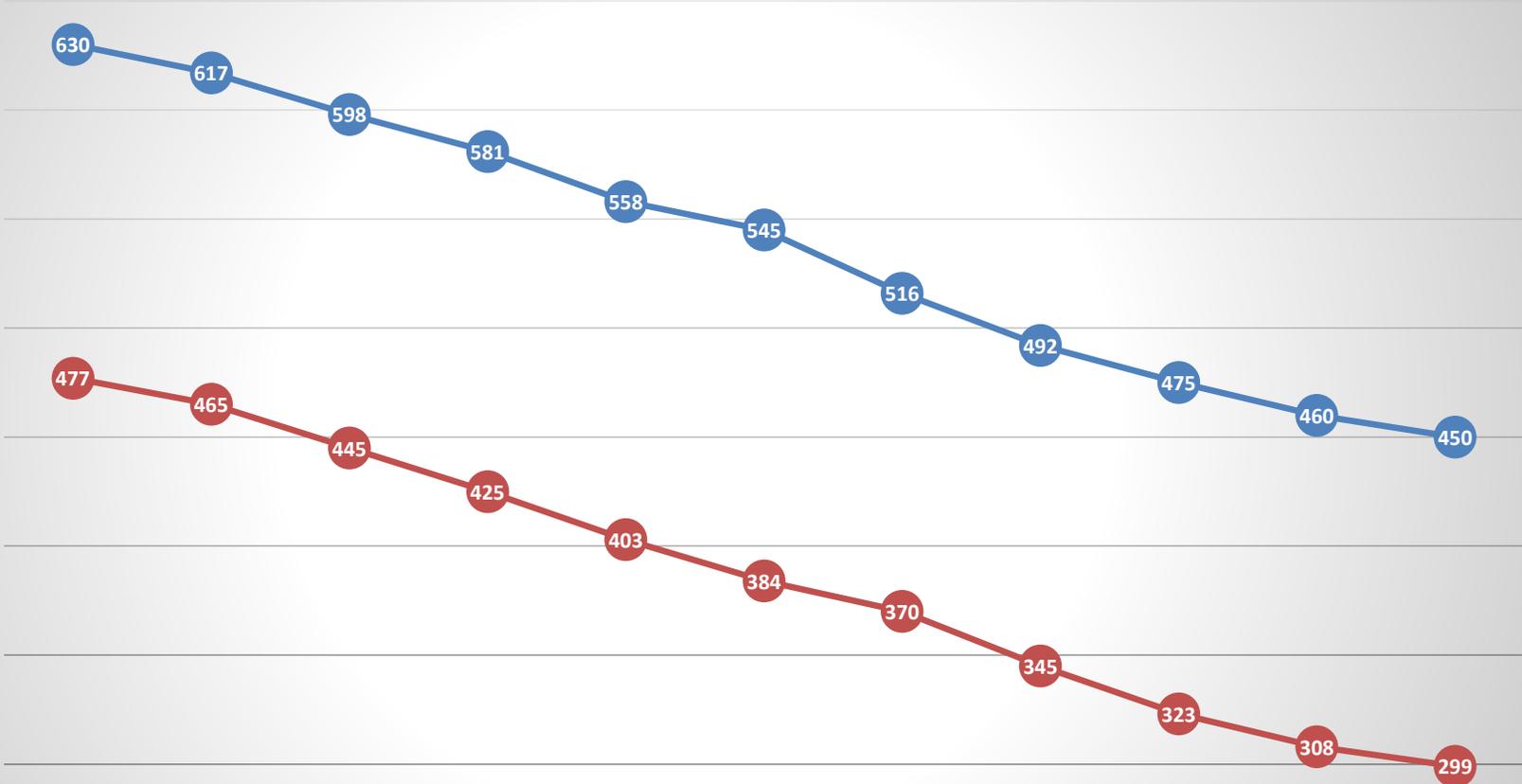
Table 3
CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Census
As of December 31, 2020

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Retiree	323	189	512
Beneficiary	127	110	237
<i>Total Retired Members</i>	450	299	749
<i>Total Membership:</i>	450	299	749

COMPOSITION	POLICE	FIRE	TOTAL
Retired Member:			
Service Retirement	301	152	453
Disability Retirement	137	134	271
Death Allowance	12	13	25
<i>Total Retired Members:</i>	450	299	749
<i>Total Membership as of December 31, 2020:</i>	450	299	749
<i>Total Membership as of June 30, 2020:</i>	460	308	768
<i>Annual Difference:</i>	-10	-9	-19

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

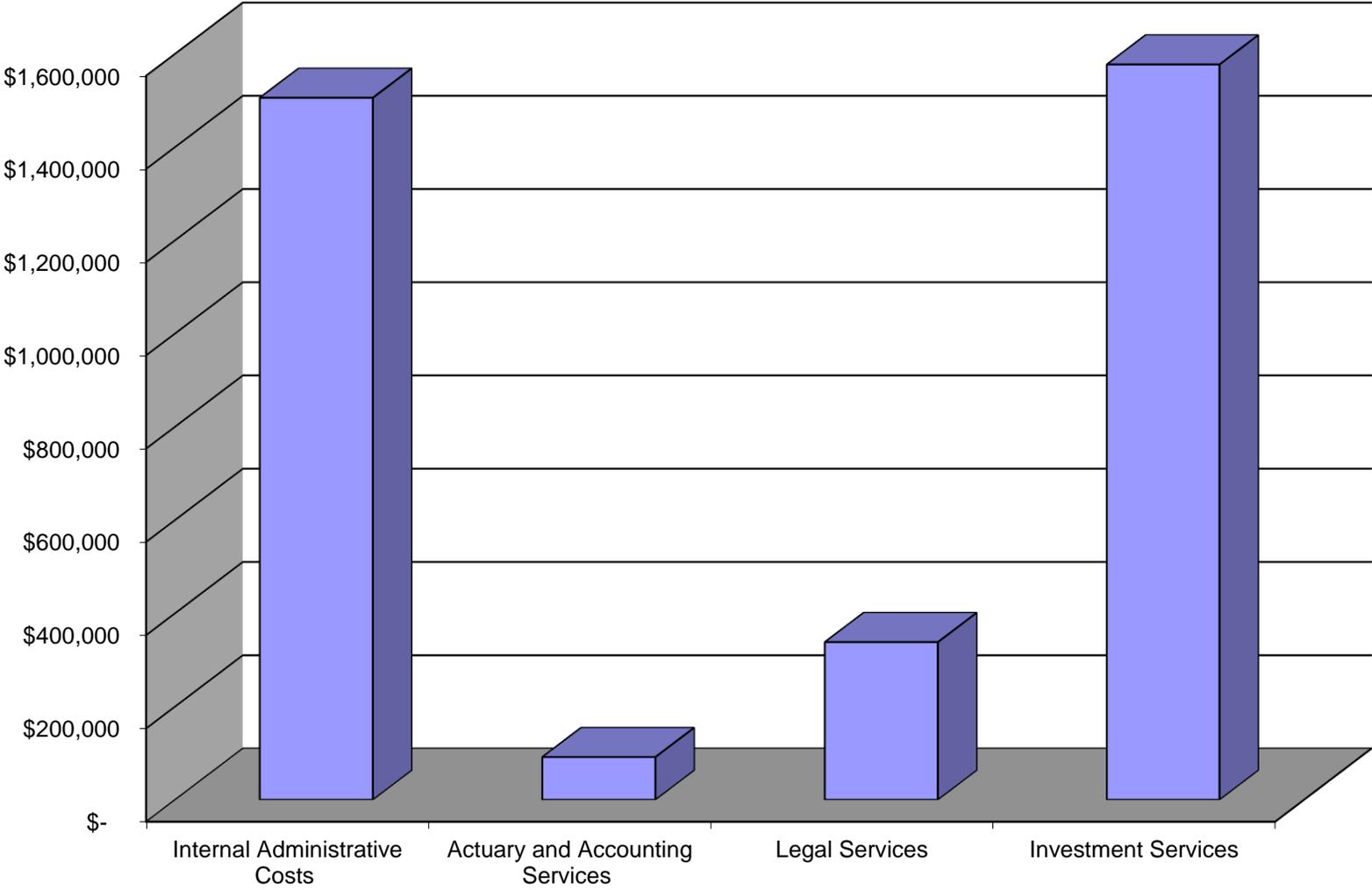


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021 FYTD
Police	630	617	598	581	558	545	516	492	475	460	450
Fire	477	465	445	425	403	384	370	345	323	308	299
Total	1107	1082	1043	1006	961	929	886	837	798	768	749

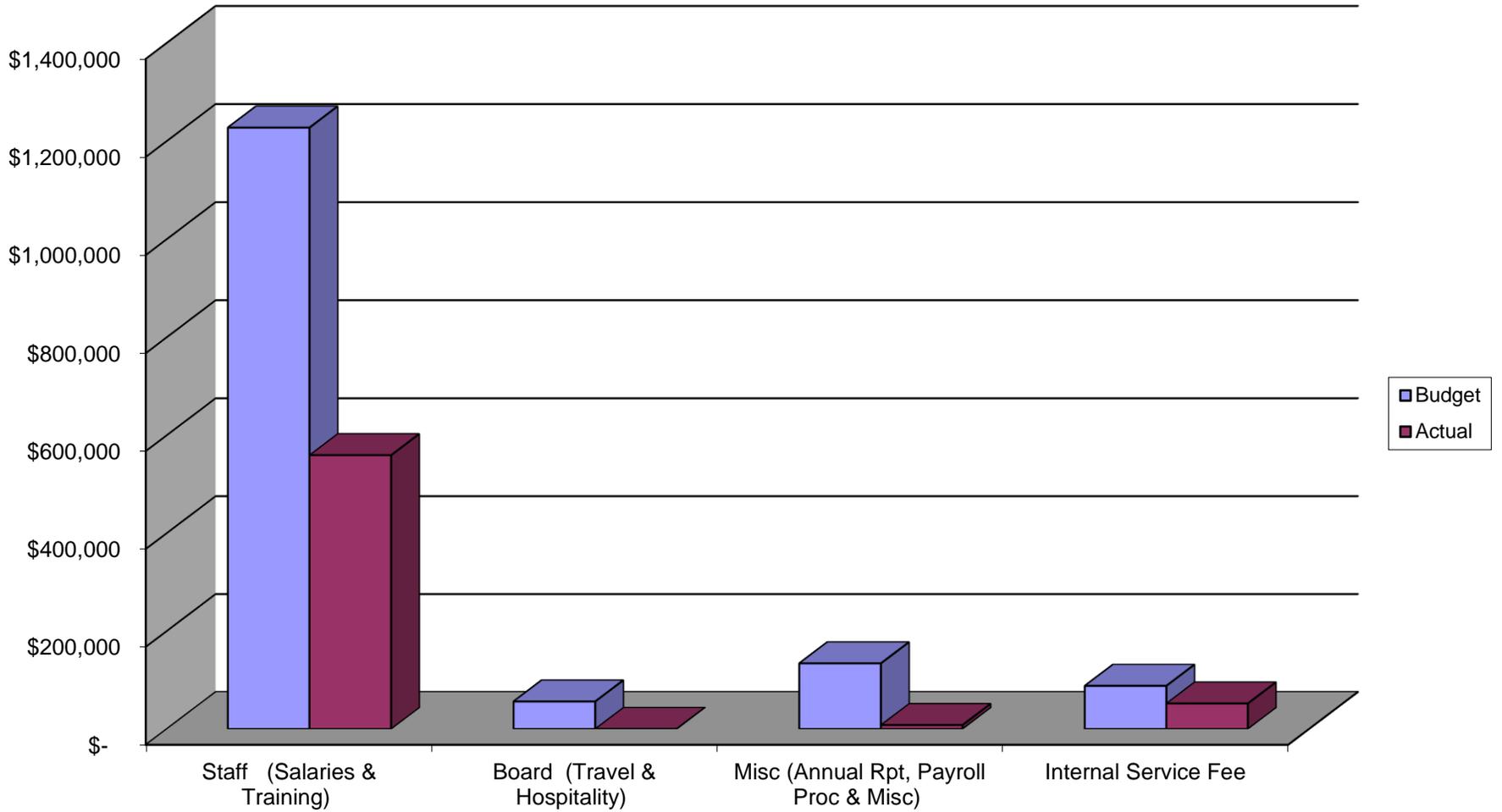
OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

Approved Budget

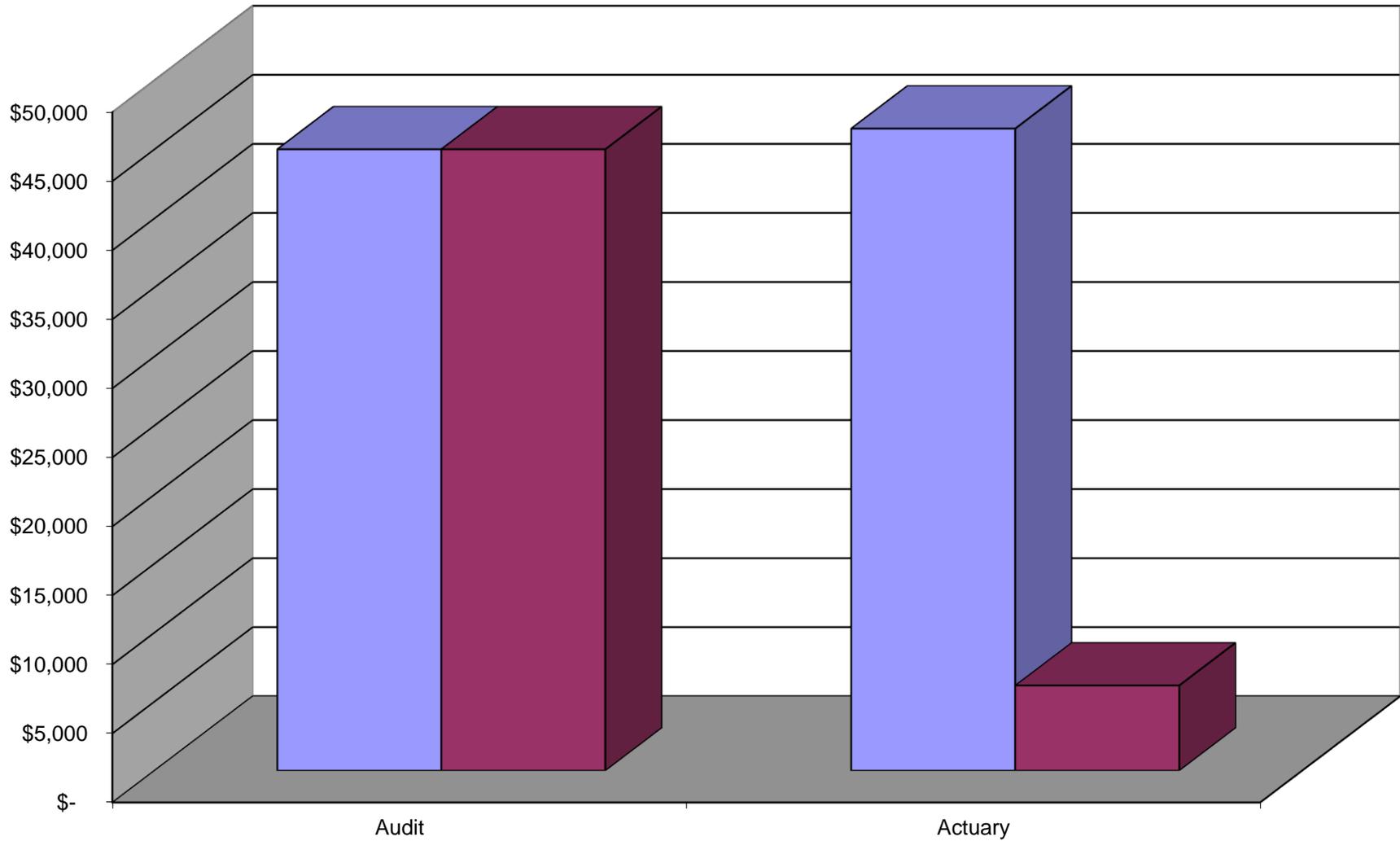
FY 2020-2021



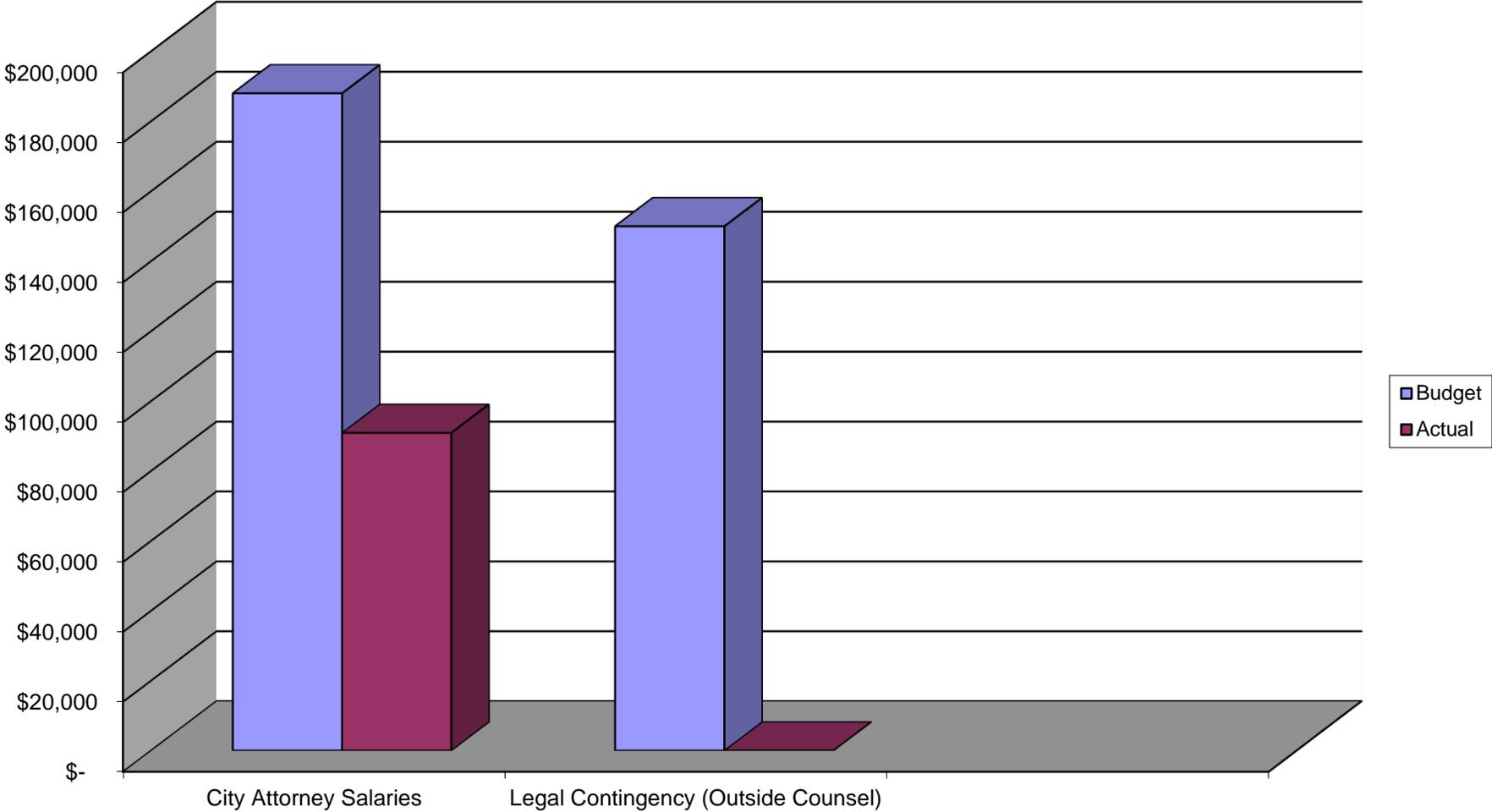
OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Budget vs Actual as of December 31, 2020
Internal Administrative Costs



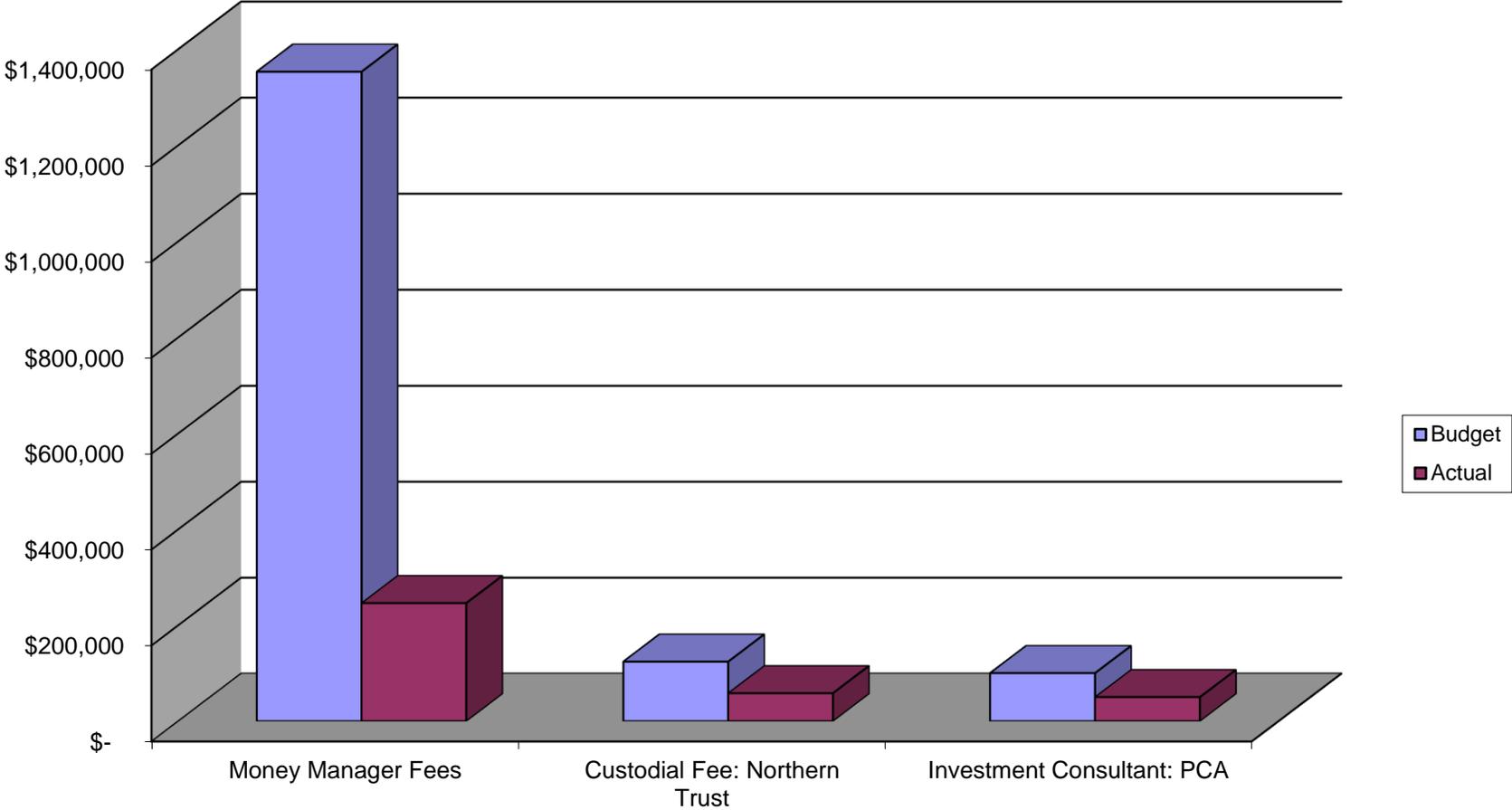
OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Budget vs. Actual as of December 31, 2020
Actuary and Accounting Services



OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Budget vs. Actual as of December 31, 2020
Legal Services



OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Budget vs. Actual as of December 31, 2020
Investment Services





AGENDA REPORT

TO: Oakland Police and Fire Retirement (PFRS) Board **FROM:** PFRS Ad Hoc Committee for July 1, 2026 Actuarial Funding Date
SUBJECT: PFRS July 1, 2026 Actuarial Funding Date **DATE:** February 24, 2021

SUMMARY

Oakland Charter section 2619 requires, among other things, that the City of Oakland contribute to the Police and Fire Retirement System (PFRS) amounts as may be necessary to provide the member benefits payable under the Charter and that the City's contributions be in amounts sufficient to **actuarially fund all liabilities for all members prior to July 1, 1976, by July 1, 2026**. In April 2018, an Ad Hoc Committee of the Police and Fire Retirement System Board ("Committee") was created to determine if the Oakland Charter needed to be amended to ensure that this actuarial funding requirement is met.

The Committee, through its work with the City Attorney's Office (including outside counsel retained by the City Attorney's Office) and City Finance staff, has determined that no Charter amendment is necessary at this time because under the terms of the Charter, the City of Oakland has an obligation to fund PFRS, *even after* actuarial funding is achieved by July 1, 2026. In addition, the Committee has learned that although the City has a mandatory duty to meet its PFRS actuarial funding obligation, the City alone may decide how to meet this obligation. As such, PFRS Board action will become necessary only if the City fails to meet its funding obligations.

RECOMMENDATION

The Committee will monitor City Council agendas for any proposed action to be taken in relation to the July 1, 2026 actuarial funding deadline. Upon learning of any proposed Council action related to the to the July 1, 2026 actuarial funding deadline, the Committee will reconvene to discuss what, if any, action the PFRS Board should take and report back to the Board.

Respectfully submitted,

Margaret L. O'Brien

Margaret O' Brien
Ad Hoc Committee Chair
Oakland Police and Fire Retirement System

Agenda Item B2
PFRS Board Meeting
February 24, 2021



AGENDA REPORT

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

SUBJECT: Proposed 2-year PFRS Administrative Budget for FY 2021/2022 and FY 2022/2023 **DATE:** February 17, 2021

RECOMENDATION

Staff recommends that the Board of the Oakland Police and Fire Retirement System (“PFRS Board”) approve the new two-year PFRS administrative budget for FY 2021/2022 and FY 2022/2023 as shown in Table 1.

SUMMARY

In order to be consistent with the City of Oakland budget process, PFRS staff is presenting a two-year administrative budget that reflects proposed PFRS expenditures for FY 2021/2022 and FY 2022/2023. Staff will work to incorporate the PFRS Board approved budget into the City of Oakland overall budget.

The overall PFRS budget is projected to be \$3,524,100 in FY 2021/2022 and \$3,584,600 in FY 2022/2023. The proposed budget changes reflect expected costs within the specified line items. The total proposed annual budget is approximately 0.80% of the Plan's current investment portfolio. The total PFRS Operating Budget is projected to increase 0.34% in FY 2021/2022 and an additional 1.72% in FY 2022/2023.

KEY CHANGES

Internal Administrative Costs

Staff costs are projected to increase by \$12,000 in FY 2021/2022 and an additional \$49,000 in FY 2022/2023. These increases are due to projected increases in the City of Oakland staff fringe benefits costs and projected step increases.

Internal Service Fees (“ISF”) are required costs for all City of Oakland funds. These costs are associated with city-wide services such as special setup, facilities general support, city accounting services, city contract services, phone and IT support and printing. The PFRS’ share of the ISF costs are projected to be \$88,000 in FY 2021/2022 and FY 2022/2023. The budget for the Annual Report and Duplicating Services is proposed to be eliminated because printing costs

OAKLAND POLICE & FIRE RETIREMENT SYSTEM

AGENDA REPORT – Proposed 2-year PFRS Administrative Staff Budget for FY 2021/2022 and FY 2022/2023

FEBRUARY 17, 2021

PAGE 2

are now included in the Internal Services Fees. Overall, Internal Administrative costs are projected to increase \$8,000 in FY 2021/2022 and \$54,000 in FY 2022/2023.

Actuary and Accounting Services

Actuary services are projected to be flat based on a recent contract extension the Board approved at the August 2018 Board meeting (Resolution No. 8003). The expenses for Audit Services is expected to increase \$ 4,000 in FY 2021/2022 and \$1,500 in FY 2022/2023 due to annual increases in the current contract.

Investment Services

The Money Manager budget is based on the fees charged by each PFRS money manager and the amount of funds they manage on behalf of the PFRS's investment portfolio. The Custodial Fee budget and the Investment Consultant's fees are fixed annual amounts based on the current contracts.

Respectfully submitted,



David Jones, Plan Administrator
Oakland Police and Fire Retirement System

Attachments (1):

- ***Table 1: Oakland Police and Fire Retirement System – Two-year Proposed Administrative Budgets***

ATTACHMENT 1

Table 1

**Oakland Police and Fire Retirement System
Two-year Proposed Administrative Budgets**

Table 1

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
Two Year Proposed Administrative Budgets
FY 2021-2022 and FY 2022-2023

	FY 2020-2021	Proposed Budget		Budget Changes	
	Approved Budget	FY 2021-2022	FY 2022-2023	FY 2021-2022	FY 2022-2023
Internal Administrative Costs					
PFRS Staff Salaries	\$ 1,200,000	\$ 1,212,000	\$ 1,261,000	\$ 12,000	\$ 49,000
Board Travel Expenditures	52,500	52,500	52,500	-	-
Staff Training	20,000	20,000	20,000	-	-
Staff Training - Tuition Reimbursement	7,500	7,500	7,500	-	-
Annual Report & Duplicating Services	4,000	-	-	(4,000)	-
Board Hospitality	3,600	3,600	3,600	-	-
Payroll Processing Fees	40,000	40,000	40,000	-	-
Miscellaneous Expenditures	40,000	40,000	45,000	-	5,000
Internal Service Fees (ISF)	88,000	88,000	88,000	-	-
Contract Services Contingency	50,000	50,000	50,000	-	-
Internal Administrative Costs Subtotal :	\$ 1,505,600	\$ 1,513,600	\$ 1,567,600	\$ 8,000	\$ 54,000
Actuary and Accounting Services					
Audit	\$ 45,000	\$ 49,000	\$ 50,500	\$ 4,000	\$ 1,500
Actuary	46,500	46,500	46,500	-	-
Actuary and Accounting Subtotal:	\$ 91,500	\$ 95,500	\$ 97,000	\$ 4,000	\$ 1,500
Legal Services					
City Attorney Salaries	\$ 188,000	\$ 188,000	\$ 193,000	\$ -	\$ 5,000
Legal Contingency	150,000	150,000	150,000	-	-
Legal Services Subtotal:	\$ 338,000	\$ 338,000	\$ 343,000	\$ -	\$ 5,000
Investment Services					
Money Manager Fees	\$ 1,353,000	\$ 1,353,000	\$ 1,353,000	\$ -	\$ -
Custodial Fee	124,000	124,000	124,000	-	-
Investment Consultant (Meketa)	100,000	100,000	100,000	-	-
Investment Subtotal:	\$ 1,577,000	\$ 1,577,000	\$ 1,577,000	\$ -	\$ -
Total Operating Budget	\$ 3,512,100	\$ 3,524,100	\$ 3,584,600	\$ 12,000	\$ 60,500

0.34%

1.72%



EARNEST
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WWW.EARNESTPARTNERS.COM

***Oakland Police and Fire Retirement Board
December 31, 2020***

Patmon Malcom, CFA
Partner

Mr. Malcom is responsible for product management at EARNEST Partners. Prior to joining EARNEST Partners, he worked for JPMorgan Chase in New York. He was a member of the Global Investment Bank providing corporate finance coverage to natural resource companies. He is a graduate of the United States Military Academy at West Point and holds an MBA from Emory University, where he was a Donald Keough Scholar. Mr. Malcom led the Varsity Football team at West Point in scoring for three consecutive years. In his senior year, he was named the "Chevrolet Player of the Game" in the annual Army-Navy game. He also served as a helicopter pilot in the United States Army for more than seven years, an experience that included commanding a Blackhawk Helicopter Company along the demilitarized zone between North and South Korea. Mr. Malcom is a member of the CFA Institute and the CFA Society Atlanta.

Jeffrey Jackson
Product Management

Mr. Jackson is a member of the product management team at EARNEST Partners. Prior to joining EARNEST Partners, he worked for the global investment bank, Evercore, in New York where he helped lead their Real Estate advisory practice as a Managing Director. His extensive background also includes experience in acquisitions, development and debt restructuring within Real Estate. He is a graduate of the Tuck School of Business at Dartmouth where he holds an MBA and was a Consortium Fellow and he holds a BS in Finance from Hampton University where he was a Presidential Scholar. Mr. Jackson was a member of the SEO Career Program and later served as a member of the SEO Junior Leadership Board. Mr. Jackson is a former collegiate basketball player and maintains an active lifestyle with his passion for cycling.



Guidelines and Investment Policy Audit

	Yes	No
• Benchmark: Exceed Russell Midcap® Index over a full market cycle	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Cash position is less than 10% of total portfolio value*	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• No industry sector weight greater than 25% of total portfolio	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• No security held is greater than 5% of total portfolio value* or 8% at market	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Proxies voted in accordance with guidelines	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• No prohibited securities held	<input checked="" type="checkbox"/>	<input type="checkbox"/>

EARNEST Partners believes that the attached information, along with other submissions, represents all the required reporting information. Please notify us immediately if any required information is missing.

**Threshold may be temporarily exceeded due to market conditions.*

Global equity markets continued their ascent in the fourth quarter of 2020 as investors gained confidence in the global economy's ability to adapt to the ongoing coronavirus pandemic. The S&P 500® rose 11.4% and finished the year up 17.6% to close near a record high. The U.S. large cap market, as represented by the Russell 1000® Index, gained 13.7% and finished the year up 20.9%. The U.S. midcap market, as represented by the Russell Midcap® index, gained 19.9% and finished the year up 17.1%. Small cap equities had a record quarter as the Russell 2000 rose 31.4% and finished the year up 20.0%. International equity markets, as represented by the MSCI ACWI ex-U.S.® Index, rose 17.1% and finished the year up 11.1%. Emerging markets continued to outperform developed markets as the MSCI Emerging Markets Index rose 19.8%, finishing up 18.7% on the year and the MSCI EAFE rose 16.1% in the quarter and finished up 8.3% on the year.

Equity markets rose to record levels as investors began to look beyond the near-term effects of the coronavirus pandemic and incorporated the progress of vaccines, the support of central governments, and the adaptability of businesses into future earnings growth. Despite ongoing concerns driven by growing case numbers and renewed restrictions on gatherings in many areas, consumer sentiment remained nearly unchanged from the end of the third quarter and retail sales increased versus 4Q 2019. Significant progress was made on vaccines, several of which were approved by the U.S. FDA. Many areas of the economy saw a continued recovery in activity as the government's stimulus measures supported renewed purchases of durable goods and record low mortgage rates buoyed the housing market. The U.S. Presidential election saw Democrat Joe Biden elected to become the nation's 46th president, and his path toward enacting legislation now depends on the results of the January Senate run-off elections of Georgia. If the Republicans retain control of the Senate, he will likely face greater obstacles to enacting policy changes despite a Democrat-controlled House of Representatives.

Once the economic impact of the crisis became apparent in the first quarter, the U.S. Federal Reserve (Fed) enacted an array of stimulative measures that included short-term rate reductions to near-zero and repurchases of Treasuries, mortgages and corporate debt, including high-yield notes. The Fed stated that it would "maintain an accommodative stance" until its goals of 2% long-term inflation and maximum employment are achieved. In its statement, the Fed specified that it will continue to hold rates near zero and provide stimulus via monthly repurchases of \$80 billion in Treasury securities and \$40 billion in agency mortgage-backed securities. These moves gave continued confidence to equity and fixed income investors who understood that the Fed will continue to act as a lender-of-last resort and that stimulus measures would be ongoing. Additionally, the central bank revised up its GDP forecast to a 2.4% contraction for 2020 versus its September projection of 3.7% and forecast a 4.2% gain in 2021 followed by a 3.2% increase in 2022. After hitting a record high of 14.7% in April, unemployment fell to 6.7% in November. The Fed also revised down its unemployment projections to 6.7% at the end of 2020 versus its earlier estimate of 7.6% and is forecasting unemployment to fall below 5% by the end of 2022. Previously in June, the Fed projected unemployment at 9.3% at the end of 2020.

In March, Congress' immediate reaction to the economic threat was to approve a \$2 trillion stimulus bill that included small business loans, direct payments to households and expanded unemployment benefits for workers displaced by the pandemic. After lengthy negotiations, Congress approved a second \$900 billion stimulus bill in late December that included \$325 billion in forgivable small business loans, extended supplemental unemployment benefits through March, and provided additional direct payments to households. After chaotic trading that saw crude oil futures briefly fall into negative territory and trade below \$20 per barrel for six weeks in the spring, the price of crude oil sharply recovered and stabilized as travel resumed following the relaxation of shelter-in-place orders. The commodity settled at about \$48 per barrel, 20% higher than the \$40 per barrel price at the end of the second quarter, but still substantially lower than the \$61 per barrel it commanded at the beginning of the year.

After formally leaving the European Union on January 31st, the U.K. and the EU finally reached a trade deal near year end that provided for the tax-free transfer of goods between the U.K. and EU nations, although there are new rules regarding customs declarations and regulatory compliance. The European Central Bank (ECB) maintained the interest rate on deposits at -0.5% and increased its QE program to EU1,850 billion from EU1,350 billion and extended its duration to run through March of 2022 from June of 2021.



EARNEST Partners Mid Cap Core Portfolio Review

Oakland Police and Fire Retirement
Board
December 31, 2020

The U.S. mid cap equity market, as represented by the Russell Midcap® Index, saw a strong end to the 2020 year and gained over 19% in the fourth quarter. The EARNEST Partners Mid Cap Core strategy also posted a strong gain in the quarter, but underperformed the Index for the period. Extending to the past 1-year period, the strategy remains ahead of the Index, net of fees, through the end of the year. The underperformance in the quarter is attributable to being underweight some of the stronger rebounding sectors such as Energy. All sectors in the Index were positive for the quarter as the COVID-19 vaccine roll out produced an optimistic outlook. Strategy performance in the year was driven by strong stock selection, most notably in the Real Estate, Financials, and Communication Services sectors.

Contributing to performance, Eastman Chemical Company is a specialty chemical company that produces a variety of advanced materials and specialty additives found in every-day items ranging from tires to crop protection to animal nutrition. Eastman maintains four business segments: Additives & Functional Products, Advanced Materials, Chemical Intermediaries, and Fibers. The stock outperformed the Index in the period as the company reported earnings and revenue that topped the market expectations. Demand picked back up in the back half of 2020 as the world reverts back to the “physical” world from the “virtual” world. Eastman exhibits strong valuation measures compared to industry peers and has the means to continue to generate profits while controlling costs. The company’s focus on productivity measures and its ability to increase product prices moving forward to expand margins are likely to help it offset the impact of recent COVID-19 headwinds to drive earnings growth.

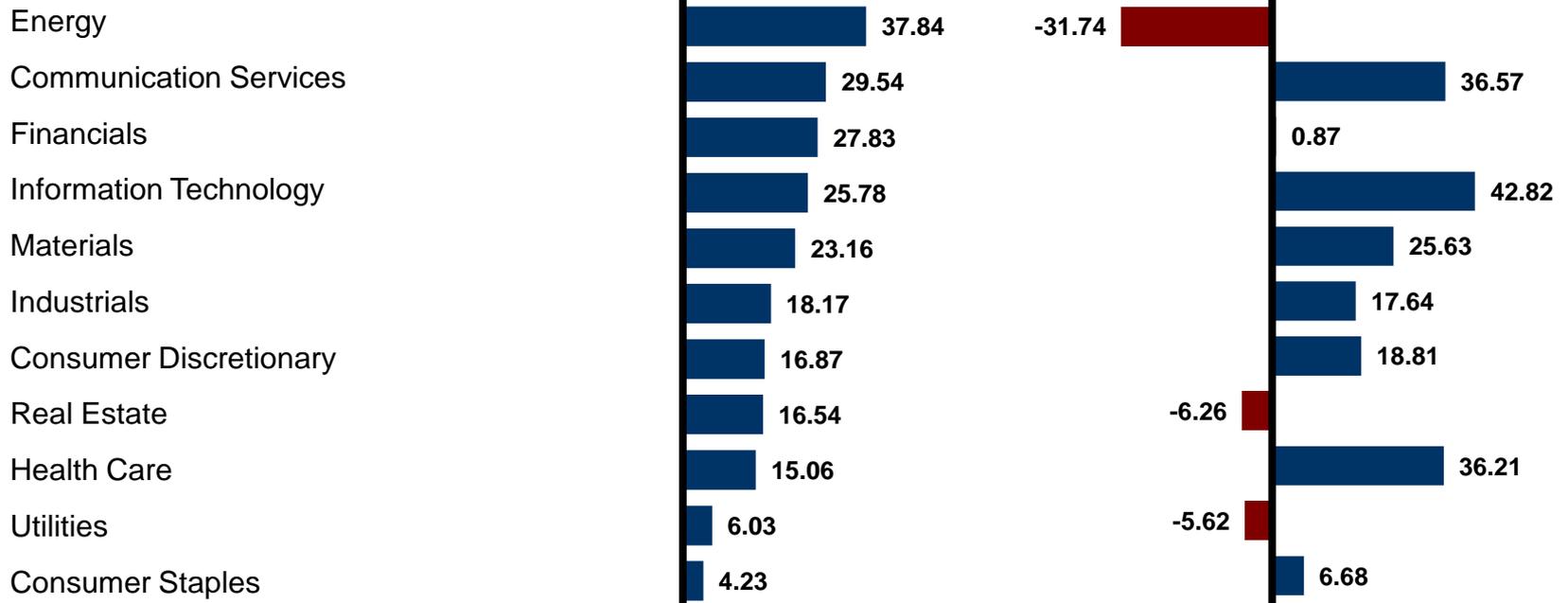
Albemarle Corporation is a fine chemical manufacturing company based in Charlotte, North Carolina and with operations in Chile, Australia, China and the US. It operates 3 divisions: lithium, bromine specialties and catalysts. Albemarle is the world’s largest provider of lithium used in electric vehicle batteries. During the period, Albemarle reported strong performance relative to market expectations across the board. In particular, earnings were driven by improving volumes as bromine sales proved to be resilient due to the segment’s electronics exposure. The stock was outperformed in the quarter. The market is underappreciating the complexity, time and cost of adding capacity to extract and refine lithium ore into high-purity compounds fit for use in battery applications which should constrain supply. On the demand side, we expect the next wave of growth to be characterized by larger vehicles possessing increased driving range requiring larger batteries resulting in increased lithium content per automobile. These factors should lead to strong earnings growth over the next market cycle.

Detracting from performance, Progressive is one of the largest providers of automobile insurance and other specialty property-casualty (P&C) insurance in the United States, with over 13 million auto policies in force alone. Although the company reported strong earnings growth during the quarter, greater than 30% higher than the same period one year ago, the stock lagged the benchmark during the period as sentiment around the financial sector as a whole was damped by the uncertainty of COVID-19. Relying on the unique use of telematics data and proactive risk management, Progressive has shown an ability to outperform the industry in its underwriting of personal auto insurance. Additionally, its focus in insuring trucks, cars, and vans of small and middle-sized enterprises, whose risk profiles are closer to personal auto rather than commercial auto, sets the company apart from peers which should continue to be a strong driver of growth over the next market cycle.

Equity Market Performance By Sector

Russell Midcap® Index
4th Quarter 2020 Returns
Percent

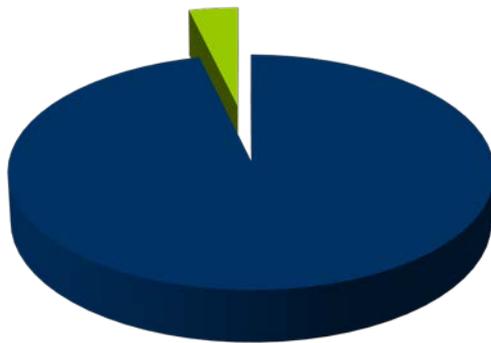
Russell Midcap® Index
YTD Returns
Percent



Fund Totals

Ending Portfolio Value	\$40,963,482
Estimated Annual Income	\$430,190
Yield on Equities	1.1%

Asset Distribution



	<u>Portfolio %</u>
Equities	96.3%
Short-term Investments	3.7%

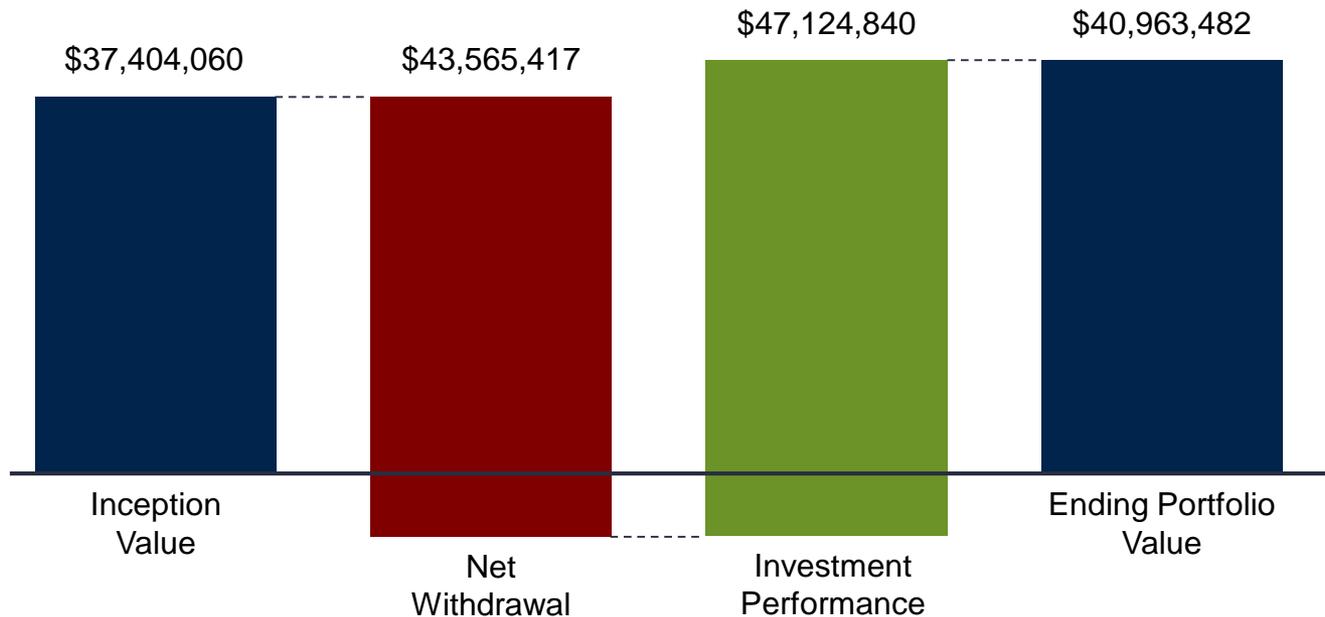
Performance

	<u>Total Portfolio</u>	<u>Equities</u>	<u>Russell Midcap® Index</u>	<u>Excess Return (Basis Points)</u>
1 Year	21.19	21.22	17.10	409
3 Years*	14.84	15.00	11.60	324
5 Years*	17.36	17.61	13.38	398
7 Years*	13.93	14.17	10.95	298

*Annualized.
Performance Inception is 3/28/2006.



Asset Growth Since Inception



Eastman Chemical Company



- Eastman Chemical Company is a specialty chemical company that produces a variety of advanced materials and specialty additives found in every-day items ranging from tires to crop protection to animal nutrition. Eastman maintains four business segments: Additives & Functional Products, Advanced Materials, Chemical Intermediaries, and Fibers.
- The stock outperformed the Index in the period as the company reported earnings and revenue that topped the market expectations. Demand picked back up in the back half of 2020 as the world reverts back to the “physical” world from the “virtual” world.
- Eastman exhibits strong valuation measures compared to industry peers and has the means to continue to generate profits while controlling costs. The company’s focus on productivity measures and its ability to increase product prices moving forward to expand margins are likely to help it offset the impact of recent COVID-19 headwinds to drive earnings growth.

Albemarle Corporation



ALBEMARLE

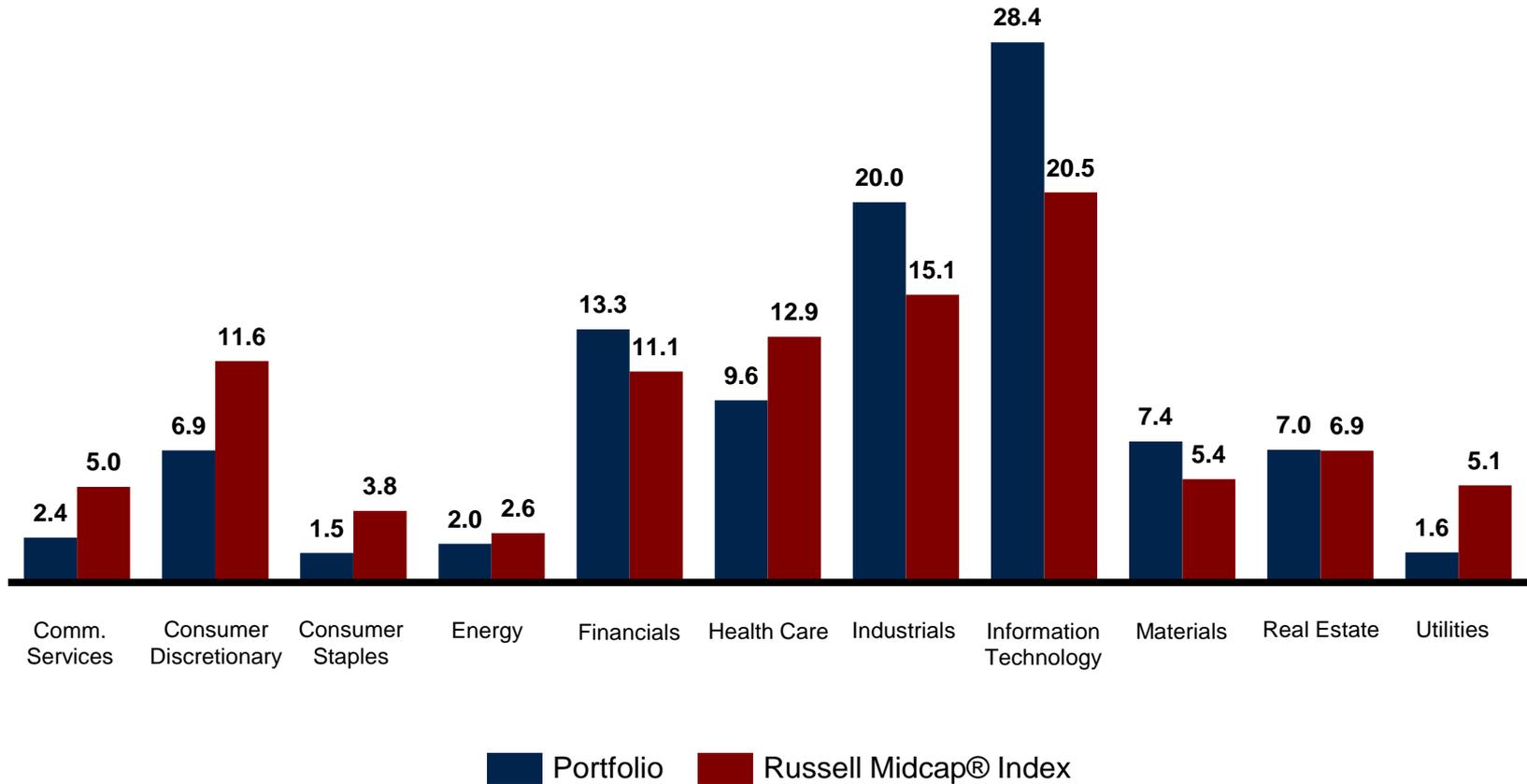
- Albemarle Corporation is a fine chemical manufacturing company based in Charlotte, North Carolina and with operations in Chile, Australia, China and the US. It operates 3 divisions: lithium, bromine specialties and catalysts. Albemarle is the world’s largest provider of lithium used in electric vehicle batteries.
- During the period, Albemarle reported strong performance relative to market expectations across the board. In particular, earnings were driven by improving volumes as bromine sales proved to be resilient due to the segment’s electronics exposure. The stock was outperformed in the quarter.
- The market is underappreciating the complexity, time and cost of adding capacity to extract and refine lithium ore into high-purity compounds fit for use in battery applications which should constrain supply. On the demand side, we expect the next wave of growth to be characterized by larger vehicles possessing increased driving range requiring larger batteries resulting in increased lithium content per automobile. These factors should lead to strong earnings growth over the next market cycle.

Progressive Corporation



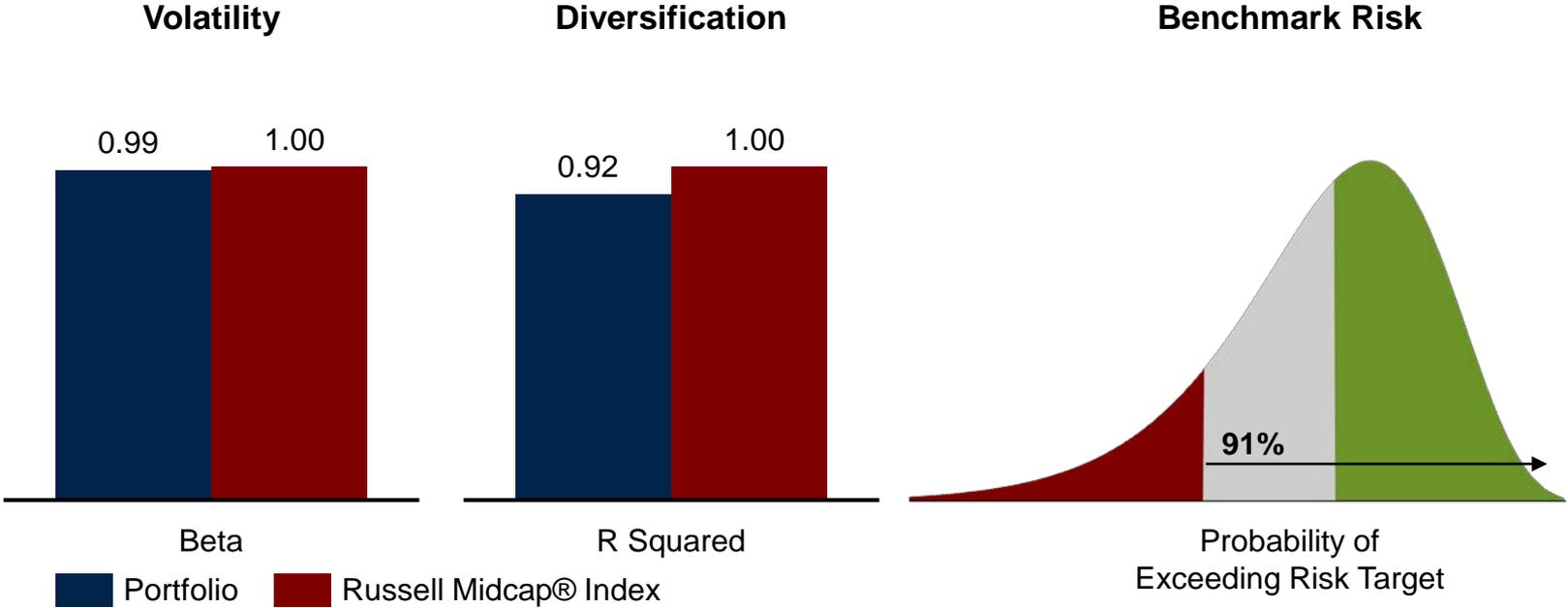
- Progressive is one of the largest providers of automobile insurance and other specialty property-casualty (P&C) insurance in the United States, with over 13 million auto policies in force alone.
- Although the company reported strong earnings growth during the quarter, greater than 30% higher than the same period one year ago, the stock lagged the benchmark during the period as sentiment around the financial sector as a whole was damped by the uncertainty of COVID-19.
- Relying on the unique use of telematics data and proactive risk management, Progressive has shown an ability to outperform the industry in its underwriting of personal auto insurance. Additionally, its focus in insuring trucks, cars, and vans of small and middle-sized enterprises, whose risk profiles are closer to personal auto rather than commercial auto, sets the company apart from peers which should continue to be a strong driver of growth over the next market cycle.

Percentage Held





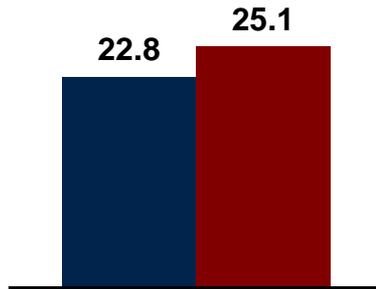
Risk Profile



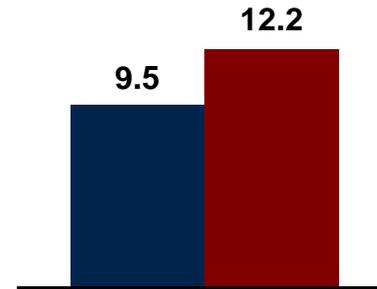


Equity Portfolio Characteristics

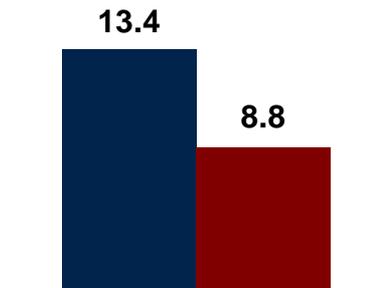
Price to Earnings



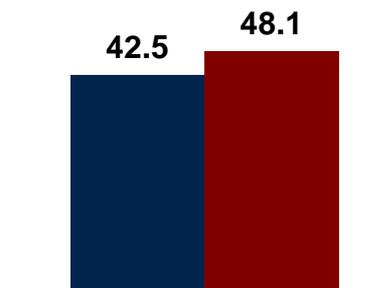
Earnings Growth



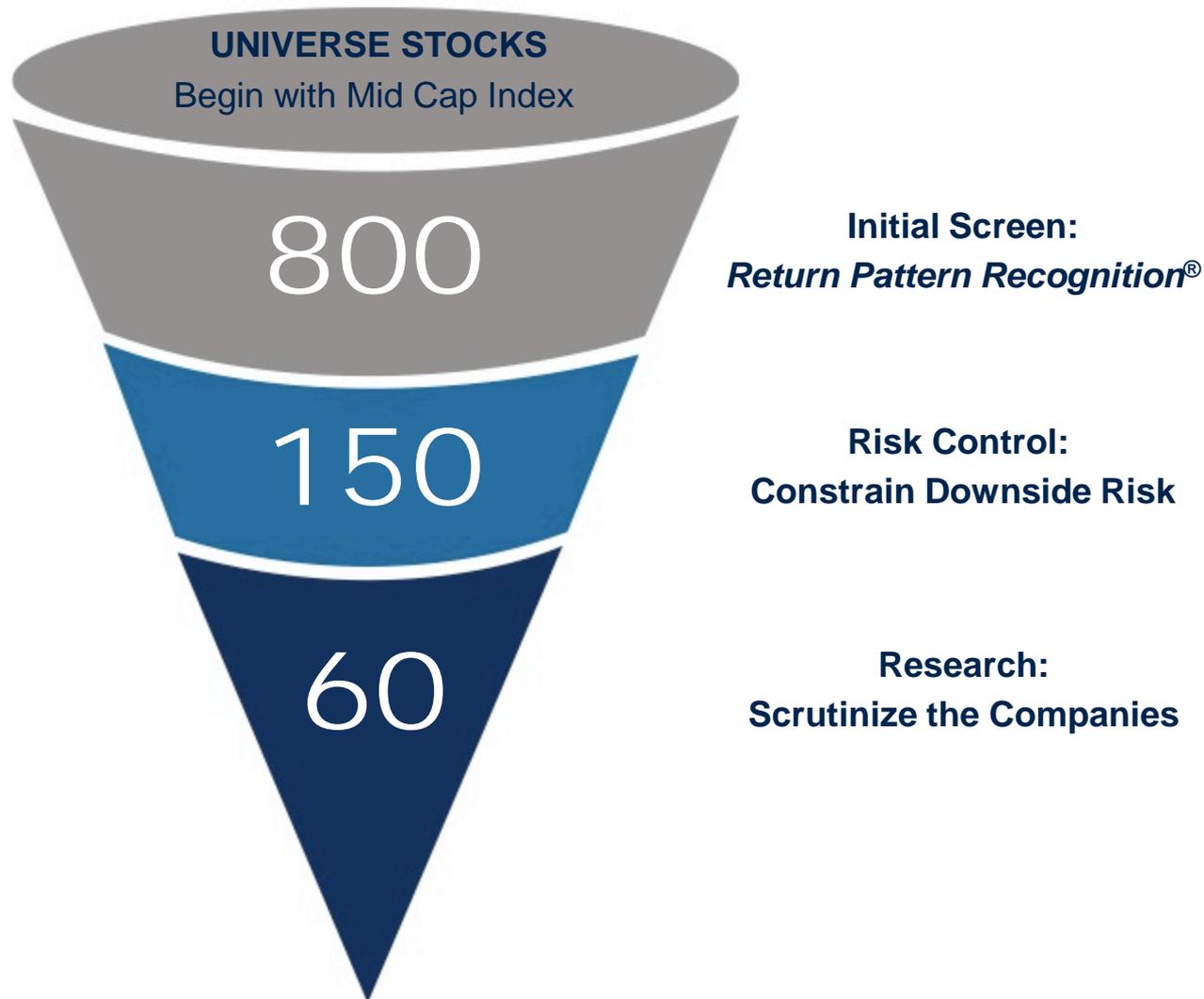
Return on Equity



Debt to Capitalization



■ Portfolio ■ Russell Midcap® Index



For those clients on whose behalf the Firm votes proxies, clients can elect to have the Firm utilize (a) the client's own proxy voting policies and procedures ("P&P") or (b) the Firm's P&P.

Proxy Policy-Overview

- As a general rule, the Firm will seek to vote the proxies received timely and in good order, in accordance with its then current proxy voting policies and procedures. A partial list of issues that may require special attention are as follows: classified boards, change of state of incorporation, poison pills, unequal voting rights plans, provisions requiring supermajority approval of a merger, executive severance agreements, and provisions limiting shareholder rights.
- In addition, the following will generally be adhered to:
 - The Firm will not (1) actively engage in conduct that involves an attempt to change or influence the control of a portfolio company, (2) announce its voting intentions or the reasons for a particular vote, (3) participate in a proxy solicitation or otherwise seek proxy voting authority from any other portfolio company shareholder, or (4) act in concert with any other portfolio company shareholders in connection with any proxy issue or other activity involving the control or management of a portfolio company.
 - All communications with portfolio companies or fellow shareholders will be for the sole purpose of expressing and discussing the Firm's concerns for its Clients' interests and not in an attempt to influence the control of management.

Proxy Procedures-Overview

The Firm has designated a Proxy Director. The Proxy Director, in consultation with the Firm's Investment Team, will consider each issue presented on each portfolio company proxy. The Proxy Director will also use available resources, including proxy evaluation services, to assist in the analysis of proxy issues. Absent any written direction from the Client, proxy issues presented to the Proxy Director will be voted in accordance with the judgment of the Proxy Director, taking into account the general policies outlined above and the Firm's Proxy Voting Guidelines. Therefore, it is possible that actual votes may differ from the general policies and the Firm's Proxy Voting Guidelines. In the case where the Firm believes it has a material conflict of interest with a Client, the Proxy Director will utilize the services of outside third party professionals (currently ISS) to assist in its analysis of voting issues and the actual voting of proxies to ensure that a decision to vote the proxies was based on the Client's best interest and was not the product of a conflict of interest. In the event the services of an outside third party professional are not available in connection with a conflict of interest, the Firm will seek the advice of the Client.

Statement of Assets

Quantity	Security	Price	Market Value	Pct. Asset	Annual Income	Yield
Common Stock						
Communication Services						
10,010.00	ACTIVISION BLIZZ	92.85	929,428.50	2.27	4,157.42	0.45
			929,428.50	2.27	4,157.42	0.45
Consumer Discretionary						
14,514.00	DR HORTON INC	68.92	1,000,304.88	2.44	12,361.65	1.24
7,886.00	DARDEN RESTAURAN	119.12	939,380.32	2.29	26,093.90	2.78
11,693.00	TJX COS INC	68.29	798,514.97	1.95	13,067.06	1.64
			2,738,200.17	6.68	51,522.62	1.88
Consumer Staples						
8,169.00	SYSCO CORP	74.26	606,629.94	1.48	12,780.50	2.11
			606,629.94	1.48	12,780.50	2.11
Energy						
20,722.00	CONTL RES INC/OK	16.30	337,768.60	0.82	0.00	
12,286.00	CIMAREX ENERGY C	37.51	460,847.86	1.13	2,922.54	0.63
			798,616.46	1.95	2,922.54	0.37
Financials						
8,420.00	HOULIHAN LOKEY I	67.23	566,076.60	1.38	11,887.28	2.10
9,320.00	INTERCONTINENTAL	115.29	1,074,502.80	2.62	13,969.70	1.30
28,403.00	KEYCORP	16.41	466,093.23	1.14	11,414.53	2.45
9,269.00	PROGRESSIVE CORP	98.88	916,518.72	2.24	17,315.78	1.89

Statement of Assets

Quantity	Security	Price	Market Value	Pct. Asset	Annual Income	Yield
4,440.00	REINSURANCE GROU	115.90	514,596.00	1.26	7,716.24	1.50
6,850.00	RAYMOND JAMES FINANCIAL INC	95.67	655,339.50	1.60	8,686.70	1.33
2,512.00	RENAISSANCERE HOLDINGS LTD	165.82	416,539.84	1.02	4,583.85	1.10
12,639.00	STIFEL FINANCIAL	50.46	637,763.94	1.56	5,790.18	0.91
			5,247,430.63	12.81	81,364.26	1.55
Health Care						
7,071.00	AGILENT TECH INC	118.49	837,842.79	2.05	8,147.40	0.97
4,245.00	AMERISOURCEBERGE	97.76	414,991.20	1.01	7,326.21	1.77
1,547.00	BIO-RAD LABS-A	582.94	901,808.18	2.20	0.00	
2,443.00	LABORATORY CP	203.55	497,272.65	1.21	0.00	
8,106.00	SYNEOS HEALTH INC	68.13	552,261.78	1.35	0.00	
10,901.00	DENTSPLY SIRONA	52.36	570,776.36	1.39	4,577.72	0.80
			3,774,952.96	9.22	20,051.33	0.53
Industrials						
16,343.00	AIR LEASE C	44.42	725,956.06	1.77	7,003.92	0.96
2,943.00	CUMMINS INC	227.10	668,355.30	1.63	21,669.88	3.24
7,350.00	CSX CORP	90.75	667,012.50	1.63	0.00	
4,408.00	DOVER CORP	126.25	556,510.00	1.36	14,377.34	2.58
5,652.00	GATX CORP	83.18	470,133.36	1.15	11,977.92	2.55
2,454.00	GENERAL DYNAMICS	148.82	365,204.28	0.89	7,247.97	1.98
13,595.00	MASCO CORP	54.93	746,773.35	1.82	8,444.93	1.13

Statement of Assets

Quantity	Security	Price	Market Value	Pct. Asset	Annual Income	Yield
10,130.00	REPUBLIC SVCS	96.30	975,519.00	2.38	19,552.89	2.00
3,350.00	SNAP-ON INC	171.14	573,319.00	1.40	11,607.94	2.02
10,283.00	STERICYCLE INC	69.33	712,920.39	1.74	0.00	0.00
13,107.00	SENSATA TECHNOLO	52.74	691,263.18	1.69	0.00	0.00
6,001.00	WOODWARD INC	121.53	729,301.53	1.78	5,479.13	0.75
			7,882,267.95	19.24	107,361.92	1.36
Information Technology						
4,175.00	AKAMAI TECHNOLOG	104.99	438,333.25	1.07	0.00	
12,874.00	APPLIED MATERIAL	86.30	1,111,026.20	2.71	19,625.10	1.77
3,257.00	ANSYS INC	363.80	1,184,896.60	2.89	0.00	
6,656.00	ARROW ELECTRONIC	97.30	647,628.80	1.58	0.00	
8,653.00	BLACK KNIGHT	88.35	764,492.55	1.87	0.00	
3,845.00	CMC MATERIALS INC	151.30	581,748.50	1.42	8,797.71	1.51
5,381.00	GLOBAL PAYMENTS	215.42	1,159,175.02	2.83	421.56	0.04
7,584.00	KEYSIGHT TEC	132.09	1,001,770.56	2.45	0.00	
8,982.00	REALPAGE INC	87.24	783,589.68	1.91	0.00	
5,314.00	SYNOPSIS INC	259.24	1,377,601.36	3.36	0.00	
7,325.00	SKYWORKS SOLUTIO	152.88	1,119,846.00	2.73	14,844.69	1.33
7,281.00	XILINX INC	141.77	1,032,227.37	2.52	22,822.17	2.21
			11,202,335.89	27.35	66,511.22	0.59
Materials						

Statement of Assets

Quantity	Security	Price	Market Value	Pct. Asset	Annual Income	Yield
4,652.00	ALBEMARLE CORP	147.52	686,263.04	1.68	9,820.51	1.43
5,141.00	EASTMAN CHEMICAL	100.28	515,539.48	1.26	11,582.83	2.25
3,978.00	PACKAGING CORP	137.91	548,605.98	1.34	15,467.48	2.82
9,641.00	SEALED AIR CORP	45.79	441,461.39	1.08	6,658.86	1.51
3,652.00	SCOTTS MIRACLE-A	199.14	727,259.28	1.78	18,704.23	2.57
			2,919,129.17	7.13	62,233.91	2.13
Real Estate						
13,851.00	CBRE GROUP INC	62.72	868,734.72	2.12	0.00	
			868,734.72	2.12	0.00	0.00
Utilities						
6,746.00	WEC ENERGY GROUP	92.03	620,834.38	1.52	21,285.20	3.43
			620,834.38	1.52	21,285.20	3.43
			37,588,560.77	91.76	430,190.92	1.14
Real Estate Investment Trust						
Real Estate						
6,383.00	BOSTON PROPERTIE	94.53	603,384.99	1.47	0.00	
17,903.00	AMERICOLD REALTY	37.33	668,318.99	1.63	0.00	
2,151.00	SBA COMM CORP	282.13	606,861.63	1.48	0.00	
			1,878,565.61	4.59	0.00	0.00
			1,878,565.61	4.59	0.00	0.00
Cash and Equivalents						

Statement of Assets

Quantity	Security	Price	Market Value	Pct. Asset	Annual Income	Yield
1,467,323.03	U.S. DOLLARS	1.00	1,467,323.03	3.58	0.00	
29,033.31	USD - DIVIDENDSRECEIVABLE	1.00	29,033.31	0.07	0.00	
			1,496,356.34	3.65	0.00	0.00
			1,496,356.34	3.65	0.00	0.00
Total Portfolio			40,963,482.72	100.00	430,190.92	1.05

Statement Of Transactions

From 10/1/2020 to 12/31/2020

<u>Quantity</u>	<u>Security</u>	<u>Sec Symbol</u>	<u>Unit Price</u>	<u>Total Amount</u>
PURCHASES				
2,201.00	ARROW ELECTRONIC	ARW	88.14	194,006.90
2,290.00	BOSTON PROPERTIE	BXP	96.17	220,226.89
6,609.00	AIR LEASE C	AL	38.67	255,583.63
8,982.00	REALPAGE INC	RP	66.59	598,106.78
				<u>1,267,924.20</u>
SALES				
10,248.00	EATON VANCE CORP	EV	65.75	673,767.00
1,033.00	INTUIT INC	INTU	354.85	366,558.55
4,003.00	AUTODESK INC	ADSK	256.09	1,025,148.14
				<u>2,065,473.69</u>

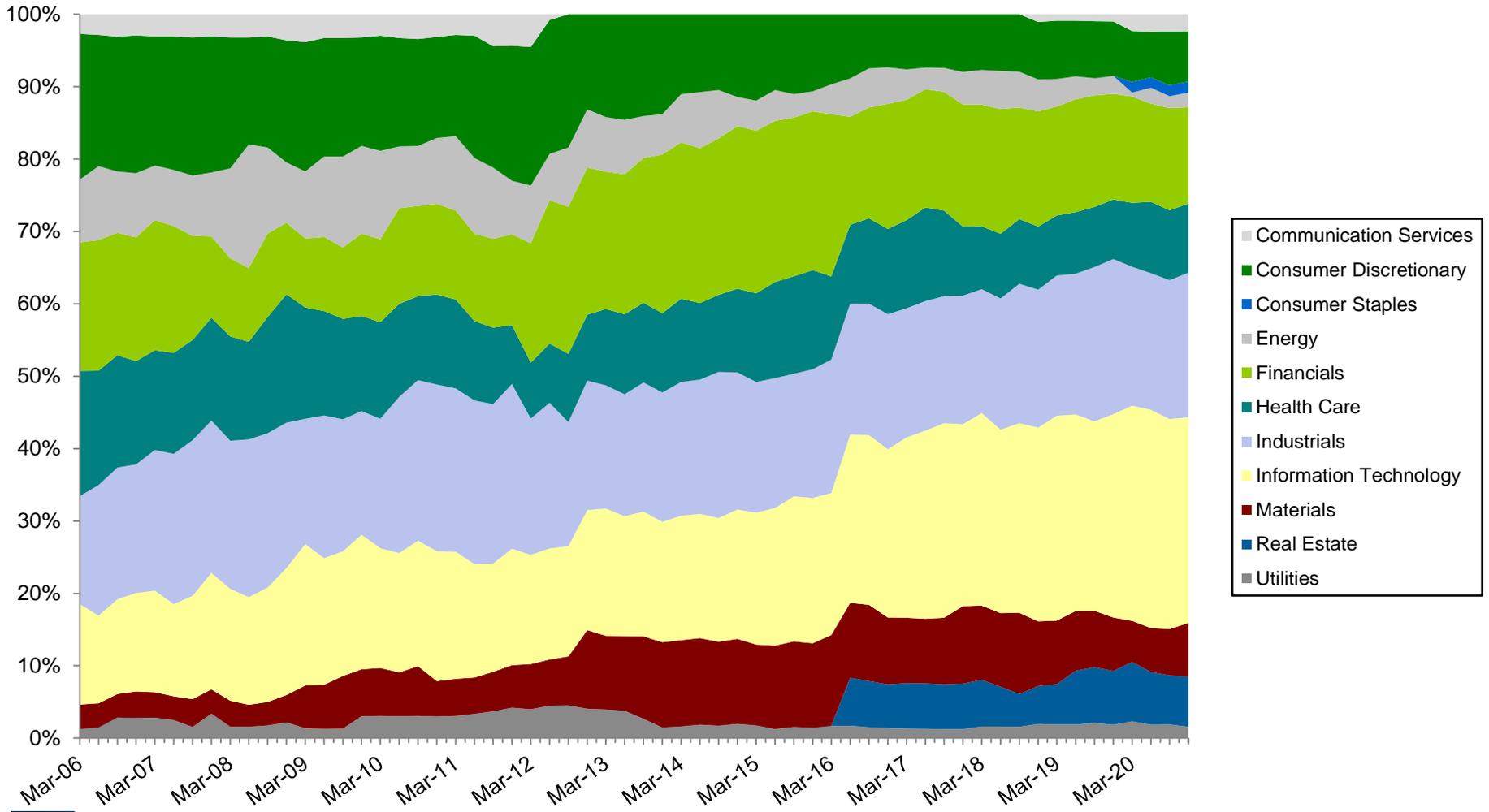
Performance

	<u>Total Portfolio</u>	<u>Equities</u>	<u>Russell Midcap® Index</u>
<i>Inception 3/28/2006</i>			
2006	3.56%	3.47%	7.92%
2007	8.78	8.99	5.60
2008	-37.51	-39.47	-41.46
2009	37.48	37.94	40.48
2010	27.22	28.53	25.47
2011	-0.79	-0.11	-1.56
2012	16.36	17.82	17.29
2013	31.25	32.42	34.78
2014	10.32	10.87	13.22
2015	1.40	1.33	-2.44
2016	16.55	16.85	13.80
2017	26.22	26.73	18.52
2018	-9.63	-9.94	-9.05

Performance

	<u>Total Portfolio</u>	<u>Equities</u>	<u>Russell Midcap® Index</u>
<i>2019</i>	38.36	39.38	30.54
<i>3/31/2020</i>	-23.63	-24.16	-27.07
<i>6/30/2020</i>	23.81	24.03	24.61
<i>9/30/2020</i>	8.46	8.59	7.46
<i>12/31/2020</i>	18.18	18.69	19.91
<i>Year-to-Date</i>	21.19	21.22	17.10
<i>Since Inception</i>			
<i>-Annualized</i>	10.96	11.16	9.43
<i>-Cumulative</i>	365.22	367.81	278.96

EARNEST Partners MARKET Model Portfolio



Asset Growth

Period Ending	Ending Portfolio Value	Withdrawals	Contributions	Investment Change	
				Period	Since Inception
3/28/2006	\$37,404,060				
2006	\$38,599,735	\$0	\$0	\$1,195,675	\$1,195,675
2007	51,982,630	3,500,000	14,238,849	2,644,046	3,839,721
2008	26,001,788	10,000,000	0	-15,980,842	-12,141,121
2009	32,406,299	3,000,000	0	9,404,511	-2,736,610
2010	31,053,473	8,500,000	0	7,147,174	4,410,564
2011	23,758,477	7,500,000	0	205,004	4,615,568
2012	27,646,027	0	0	3,887,550	8,503,118
2013	40,899,931	0	3,802,146	9,451,898	17,955,016
2014	31,527,407	13,001,627	0	3,629,103	21,584,119
2015	29,934,966	2,000,704	0	408,263	21,992,382

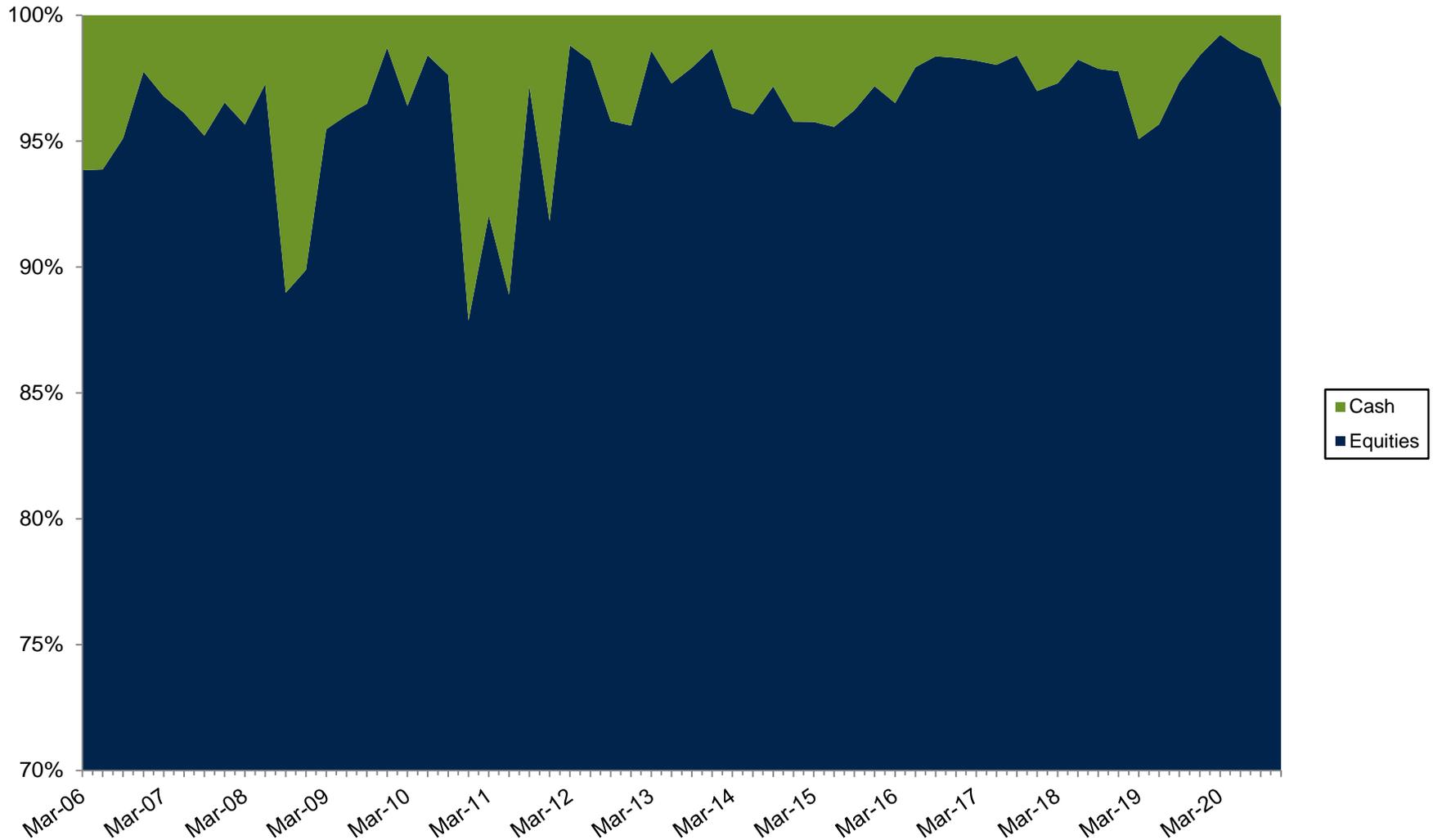
Asset Growth

Period Ending	Ending Portfolio Value	Withdrawals	Contributions	Investment Change	
				Period	Since Inception
2016	\$27,890,394	\$6,500,289	\$0	\$4,455,717	\$26,448,099
2017	29,426,736	5,000,733	0	6,537,075	32,985,174
2018	25,674,345	1,000,929	0	-2,751,462	30,233,712
2019	33,800,363	1,601,235	0	9,727,253	39,960,965
3/31/2020	25,813,594	0	0	-7,986,566	31,974,399
6/30/2020	31,958,974	0	0	6,145,518	38,119,917
9/30/2020	34,661,808	0	0	2,702,995	40,822,912
12/31/2020	40,963,482	0	0	6,301,928	47,124,840



Asset Allocation

Oakland Police and Fire Retirement Board
December 31, 2020





Russell Midcap® Index

The Russell Midcap® Index offers investors access to the mid-cap segment of the U.S. equity universe. It is constructed to provide a comprehensive and unbiased barometer for the mid-cap segment and is completely reconstituted annually to ensure larger stocks do not distort the performance and characteristics of the true mid-cap opportunity set. The Russell Midcap® Index includes the smallest 800 securities in the Russell 1000® Index. The index is unmanaged and it is not possible to invest directly in an index.



Oakland-Based Brokers Only

Oakland Police and Fire Retirement
Board
December 31, 2020

No trades through Oakland-based brokers in 4Q2020.

Nothing presented herein is intended to constitute investment advice and no investment decision should be made based on any information provided herein. Investments cited may not represent current or future holdings of EARNEST Partners, LLC (“EP”) investment products and nothing presented should be construed as a recommendation to purchase or sell a particular type of security or follow any investment technique or strategy. Information provided reflects EP’s views as of a particular time. Such views are subject to change at any point and EP shall not be obligated to provide any notice of such change. Any forward-looking statements or forecasts are based on assumptions and actual results are expected to vary from any such statements or forecasts. No reliance should be placed on any such statements or forecasts when making any investment decision. While EP has used reasonable efforts to obtain information from reliable sources, we make no representations or warranties as to the accuracy, reliability or completeness of third-party information presented herein. Performance assumes the reinvestment of dividends and capital gains. No guarantee of investment performance is being provided and no inference to the contrary should be made.

MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: David Sancewich, Paola Nealon, Sidney Kawanguzi
 Meketa Investment Group
DATE: February 24, 2021
RE: EARNEST Partners – Manager Update

Manager: EARNEST Partners

Inception Date: 04/2006 **OPFRS AUM (12/31/20):** \$40.96 Million (9.0%)

Management Fee: 79 bps (\$323,612)¹

Investment Strategy: Domestic Mid-Cap Equity

Benchmark: Russell Midcap Index **Firm-wide AUM (9/30/20):** \$22.0 billion²

Summary & Recommendation

EARNEST Partners has managed the Midcap Core portfolio since the first quarter of 2006. Since inception, EARNEST has outperformed its benchmark. *Meketa does not have any major concerns with Earnest Partners and does not recommend any action be taken at this time.*

Discussion

In reviewing EARNEST, Meketa considered investment performance and recent organizational / personnel issues.

Annualized Investment Performance (as of 12/31/2021)

Manager	MKT Value (\$000)	Quarter	1 YR	3 YR	5 YR	Since Inception	Inception Date ³
Earnest Partners (Gross of Fees)	40,963	18.2	21.2	14.9	17.3	10.9	3/2006
Earnest Partners (Net of Fees)	40,963	18.0	20.4	14.1	16.5	10.1	--
<i>Russell Midcap Index</i>	--	<i>19.9</i>	<i>17.1</i>	<i>11.6</i>	<i>13.4</i>	<i>9.4</i>	--
Excess Return (Net of Fees)	--	-1.9	+3.3	+2.5	+3.1	+0.7	--

EARNEST has outperformed the Russell Midcap Index by 70 basis points since inception in 2006. EARNEST has been a part of the portfolio for over a decade and continues to deliver outperformance, even in recent years.

¹ Estimate based on AUM as of 12/31/20.

² Source: eVestment. 12/31/20 data was not available at the time of production

³ Inception date reflects the first full month after portfolio received initial funding.



Organizational Issues

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

Investment Philosophy & Process, per manager

EARNEST Partners is a fundamental, bottom-up investment manager. The investment objective is to outperform the assigned benchmark while seeking to control volatility and risk. EARNEST implements this philosophy using an internally developed screen called Return Pattern Recognition® that seeks to identify the specific drivers of each stock rather than attempting to apply the same dogma to each stock. They believe that companies are unique and consider the specific characteristics of each company when selecting companies. They continue to search for mispriced and misunderstood opportunities within the market.

EARNEST Partners does not target sector or industry weights. Instead, the weightings are an outgrowth of the bottom-up, fundamental stock selection process. The process is designed to put the client in the individual securities that the firm believes have the most attractive expected returns; relative overweights and underweights are an outgrowth of where the team is finding those individual opportunities. The risk management process also influences the weights taken in any one sector. As a general rule, larger sectors will not represent more than 2x the benchmark weight. No individual holding generally exceeds 5.0% of the portfolio's value.

DS/PN/SK/pq



AGENDA REPORT

TO: Oakland Police and Fire Retirement System (PFRS) Board of Administration
FROM: David F. Jones
Plan Administrator
SUBJECT: Expiration Notice of PFRS Investment Manager Service Agreement and Action to Extend Service Agreements
DATE: February 24, 2021

SUMMARY

The Service Contract for the following Investment Manager for the Oakland Police & Fire Retirement Systems (PFRS) is set to expire March 24, 2021. The PFRS Board is asked to consider acting to extend the service agreement for this manager for one additional year pursuant to their service agreements.

BACKGROUND

The Service Agreement for the following Investment Manager who provides services for the PFRS Board will expire shortly. The following table describes the investment manager contract:

Investment Manager	Investment Class	Hire Date	Contract/Extension Expiration Date
Earnest Partners, LLC	Mid-Cap Core Domestic Equity	March 16, 2006	March 24, 2021

RECOMMENDATION

Staff recommends that the PFRS Board approve the implementation of the relevant service agreement provision for the manager to extend the service agreement between the above mentioned PFRS Investment Manager and PFRS.

Respectfully submitted,

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

Attachments:
Resolution # 8011

Agenda Item C3
PFRS Board Meeting
February 24, 2021

ATTACHMENT 1

**Resolution No.
8011**

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

*Approved to Form
and Legality*



RESOLUTION NO. 8011

ON MOTION OF MEMBER _____ SECONDED BY MEMBER _____

RESOLUTION AUTHORIZING ONE-YEAR EXTENSION OF PROFESSIONAL SERVICES AGREEMENT WITH EARNEST PARTNERS, LLC TO PROVIDE MID-CAP CORE DOMESTIC EQUITY ASSET CLASS INVESTMENT MANAGER SERVICES FOR THE CITY OF OAKLAND POLICE AND FIRE RETIREMENT SYSTEM

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

WHEREAS, Oakland City Charter section 2601(e) also states that the PFRS Board may secure from competent investment counsel such counsel and advice as to investing the funds of the Retirement System as it deems necessary and that discretionary powers granted such investment counsel will be at the option of the Board; and

WHEREAS, at the November 30, 2005 Board meeting, the PFRS Board awarded a professional service agreement (“the Agreement”) to Earnest Partners, LLC (“Investment Counsel”) to provide advice and counsel regarding investments of the assets of the Police and Fire Retirement Fund (“Fund”) for a five-year term commencing March 24, 2006 and ending March 24, 2011; and

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

WHEREAS, Section IV(B) of the Agreement gave the PFRS Board the option to extend the initial term of the Agreement for three addition one-year terms; and

WHEREAS, on January 26, 2011, the Agreement with Investment Counsel was extend by Board motion for an additional five-year term, commencing March 24, 2011, and

WHEREAS, on March 30, 2016, the Agreement with Investment Counsel was extended by Board motion for an addition one-year term, effective March 24, 2016, and

OAKLAND POLICE AND FIRE RETIREMENT BOARD
CITY OF OAKLAND, CALIFORNIA

RESOLUTION NO. 8011

WHEREAS, on March 29, 2017, the PFRS Board passed Resolution No. 6957 which authorized amendment of Section IV(B) of the Agreement to provide the PFRS Board with unlimited one-year extension options, and

WHEREAS, on January 31, 2018, the PFRS Board passed Resolution No. 6993 which authorized a one-year extension of the Agreement with Investment Counsel commencing March 24, 2018, and

WHEREAS, on January 30, 2019, the PFRS Board passed Resolution No. 7036 which authorized a one-year extension of the Agreement with Investment Counsel, commencing March 24, 2019, and

WHEREAS, on January 29, 2020, the PFRS Board passed Resolution No. 7080 which authorized a one-year extension of the Agreement with Investment Counsel, commencing March 24, 2020, and

WHEREAS, the Board now wishes to exercise its option to renew the Agreement with Investment Council for an additional one-year term, commencing March 24, 2021; now, therefore, be it

RESOLVED: That the Board hereby authorizes a one-year extension of the professional service agreement between the City of Oakland Police and Fire Retirement System and Earnest Partners, LLC for the Mid-Cap Core Domestic Equity Asset Class Investment Manager Services, commencing March 24, 2021 and ending March 24, 2022.

IN BOARD MEETING, VIA ZOOM TELE-CONFERENCE FEBRUARY 24, 2021

PASSED BY THE FOLLOWING VOTE:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST: _____
PRESIDENT

ATTEST: _____
SECRETARY



Presented to:

City of Oakland Police and Fire Retirement System

Conference Call:

February 24, 2021

Presented by:

Jason J. Hoyer, CFA
Portfolio Manager

Presenter Biography



Jason Hoyer, CFA
Portfolio Manager

Jason Hoyer is a portfolio manager at Reams Asset Management. Jason has 17 years of experience as a portfolio manager and a fixed income and equity analyst. Prior to joining Reams in 2015, Jason was a senior credit analyst at 40|86 Advisors and a director in the research department at Fiduciary Management Associates. Mr. Hoyer earned his bachelor's degree from the University of Michigan. He holds the Chartered Financial Analyst (CFA) designation and is a member of the CFA Institute.



Table of Contents

- 1 Organizational Updates
- 2 Current Views & Investment Themes
- 3 Client Relationship Overview
- 4 Performance Review
- 5 Portfolio Characteristics
- 6 Diversity at Reams
- 7 Disclosures



Firm Overview

Reams at a Glance

- Founded in 1981
- Headquartered in Columbus, Indiana
- \$22.5 billion in assets under management
- 8 fixed income strategies along with extensive custom separate account capabilities
- Affiliate of Carillon Tower Advisers, Inc., a subsidiary of Raymond James Financial, Inc., since November 2017

Firm Overview

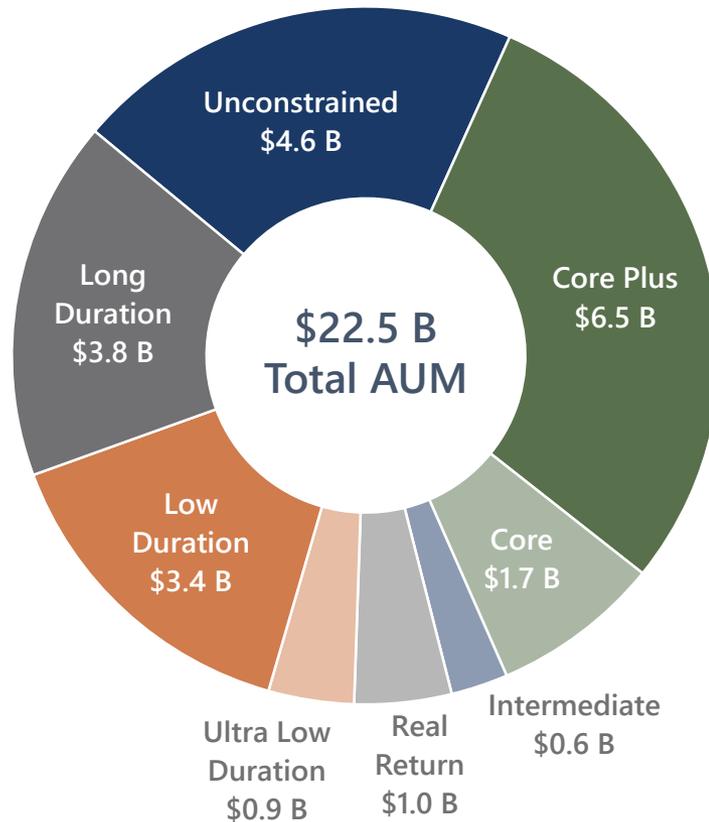
Differentiating Features

- Fixed income specialist with a focused product lineup
- Experienced and stable investment team
- Opportunistic investment style driven by long-term value and risk-adjusted total returns
- Flexible, benchmark-agnostic portfolio construction
- Distinct risk management framework
- High-touch client service model



Firm Overview

Strategy Lineup



Available Investment Vehicles

Separate Accounts

- All Strategies

U.S. Institutional Commingled Funds:

- Columbus Core Plus Bond Fund
- Columbus Unconstrained Bond Fund
- Columbus Ultra Low Duration Bond Fund

U.S. Institutional Mutual Funds (sub-advised):

- Carillon Reams Core Bond Fund (SCCIX)
- Carillon Reams Core Plus Bond Fund (SCPZX)
- Carillon Reams Unconstrained Bond Fund (SUBFX)

Non-U.S. Commingled Fund (sub-advised):

- Raymond James Funds Reams Unconstrained Bond SICAV (Class A USD | SCUCBDA LX)

Data as of
December 31, 2020

For Institutional Use Only

SR21-0075 | Exp. 04/15/2021

Firm Overview

Investment Team

Investment Committee

Mark Egan, CFA

Chief Investment Officer
Managing Director
(34 years / 30 years)

Todd Thompson, CFA

Portfolio Manager
Corporate Team Leader
Managing Director
(26 years / 19 years)

Bob Crider, CFA

Co-Founder
Managing Director
(43 years / 39 years)

Corporate Team

Todd Thompson, CFA

Jason Hoyer, CFA

Portfolio Manager
(17 years / 5 years)

Clark Holland, CFA

Portfolio Manager
Client Relations
(26 years / 18 years)

Scott Rosener, CFA

Senior Analyst
(23 years / 15 years)

Trey Harrison, CFA, ASA

Senior Analyst / Actuary
(26 years / 10 years)

Bobby Flynn, CFA

Fixed Income Analyst
(8 years / 8 years)

Securitized Team

Steve Vincent, CFA

Portfolio Manager
Securitized Team Leader
(29 years / 26 years)

Kevin Salsbery, CFA

Senior Analyst
(19 years / 15 years)

Patrick Laughlin

Senior Analyst
(25 years / 16 years)

Taylor Harris, CFA

Fixed Income Analyst
(3 years / 3 years)

(Years of Industry Experience / Reams Tenure)

Please see Investment Professional Biographies section for detailed biographies

Firm Overview

Representative Client List

Corporate

American Honda Motor Company
Cummins Inc.
Emerson Electric Company
NCR Corporation
Omaha Public Power District
Southern California Rock Products

Health Care

University of Colorado Health
Johns Hopkins Health System
NorthShore University HealthSystem
Northwestern Memorial HealthCare
OhioHealth Corporation
Shirley Ryan AbilityLab

Non-Profit

American Heart Association
Archdiocese of Miami
Board of Pensions/Presbyterian Church, USA
Chicago Symphony Orchestra
Cleveland Museum of Art
Veterans of Foreign Wars of the U.S.

Sub-Advisory

Prudential Retirement Insurance & Annuity Co.
Russell Investment Management Company

Public

Arkansas Teacher Retirement System
Employees' Retirement System of Baltimore County
Indiana State Police Pension Trust
Los Angeles Fire & Police Pensions
City of Milwaukee Employees' Retirement System
Montana Board of Investments
City of Oakland Police & Fire Retirement System
San Francisco Bay Area Rapid Transit District
Sonoma County Employees' Retirement Association
Spokane Firefighters' Pension Fund
Ventura County Employees' Retirement Association

Taft-Hartley

Carpenters District Council of Kansas City Pension Fund
Carpenters Pension Fund of Illinois
Gulf Coast Carpenters and Millwrights Health Trust
IBEW 8th District Electrical Pension Trust
Inter-Local Pension Fund, GCC/IBT

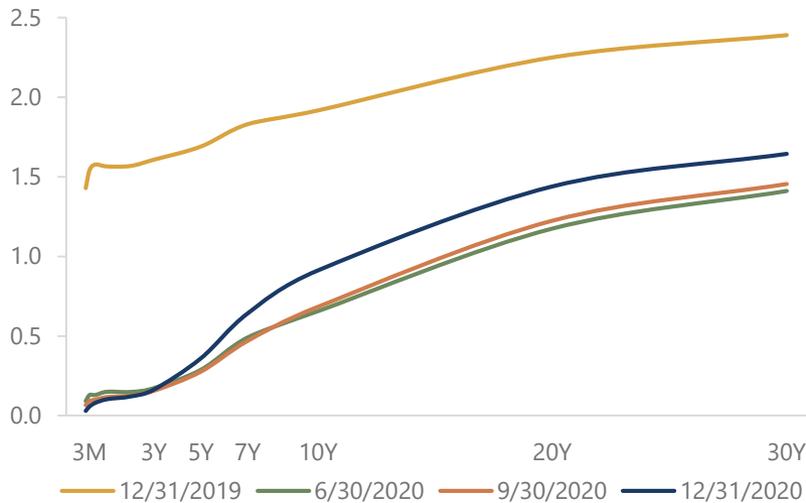
University/Endowment/Foundation

Trustees of Indiana University
University of Kentucky
Purdue University
Regents of the University of Minnesota

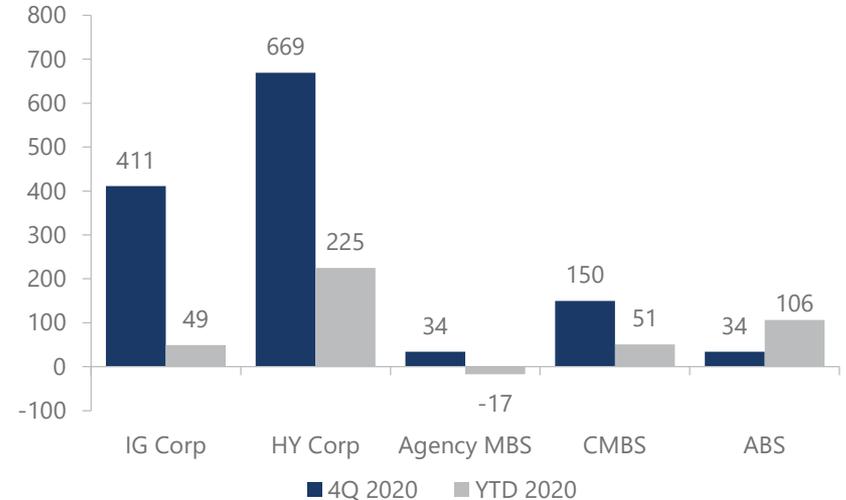
This Representative Client List includes institutional clients whose permission has been received for inclusion. No specific selection criteria were used. It is not known whether or not the listed clients approve of the advisory services provided by Reams Asset Management or Scout Investments.

Fixed Income Dashboard

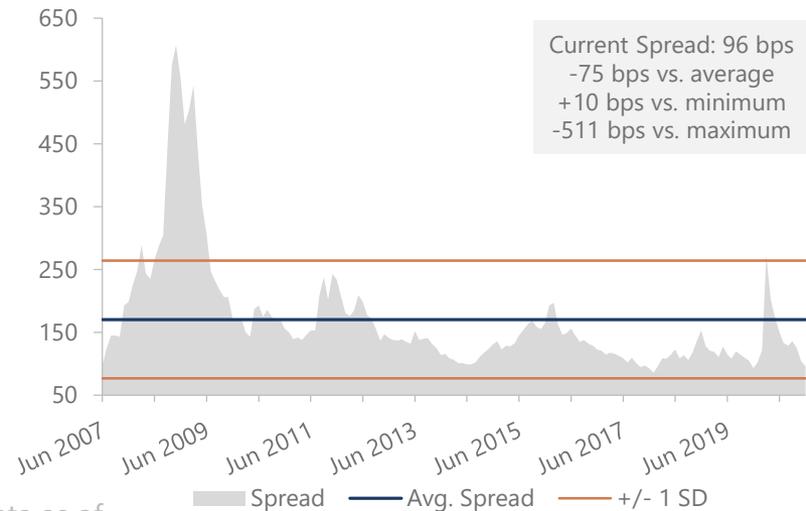
U.S. Treasury Yield Curves, Percent



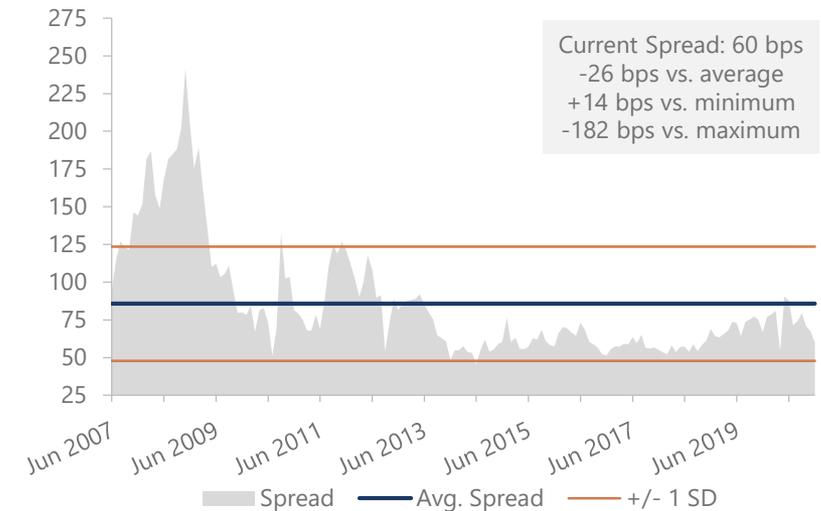
Sector Excess Returns vs. U.S. Treasuries, Basis Points



Investment Grade Corporate OAS, Basis Points



Agency MBS Zero-Volatility Spread, Basis Points

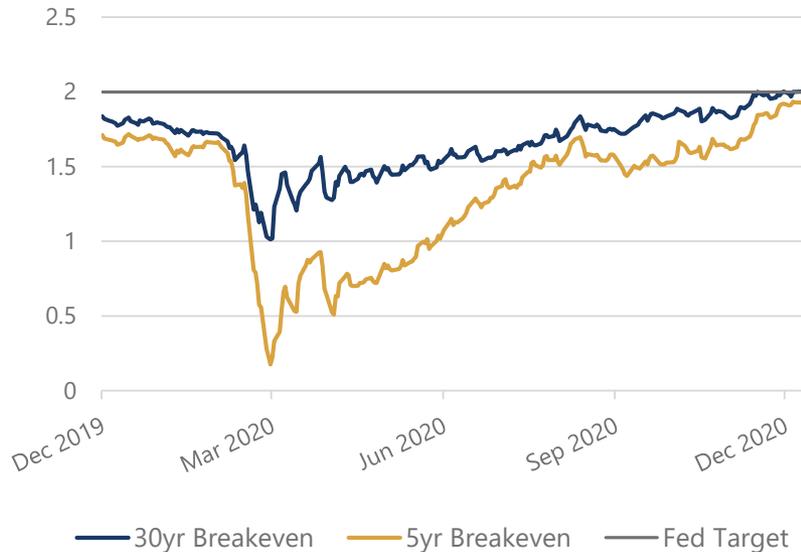


Data as of
December 31, 2020

Source: Bloomberg Index Services Limited; Bloomberg L.P.

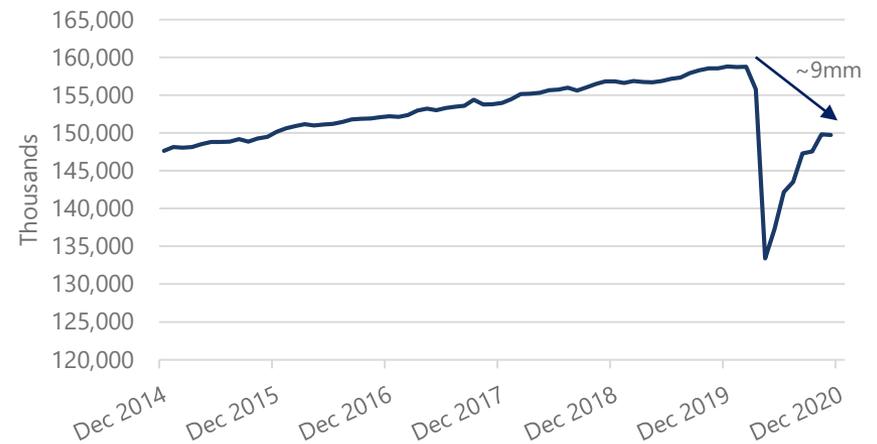
Market Insights

Inflation Breakevens vs. Fed Inflation Target



In response to fiscal stimulus, the Fed's quantitative easing purchases, and vaccination production, intermediate and long-term inflation expectations are nearing the Fed's target.

Total U.S. Household Employment



U.S. employment has recovered steadily following the precipitous drop in April related to COVID-19; however, employment has recently stalled out at approximately 9 million fewer than the pre-virus peak of early 2020.

Investment Themes

Risk markets moved significantly higher on election and vaccine news

- Election clarity, coupled with vaccine approval, dominated headlines and drove risk asset performance.
- COVID-19 cases surged during the quarter, and the economy faced new bouts of retrenchment and weakness.
- The second stimulus package finally came to fruition and will be critical to bolstering consumption spending since the first stimulus benefits have expired.
- The Fed committed to maintain asset purchases for the foreseeable future, but continued to defer to fiscal tools.

Outlook for economic recovery in 2021 is cloudy with myriad challenges

- The return of lost jobs is highly uncertain, which will shape the trajectory of consumption.
- The gap between risk valuations and fundamentals widened further and looms large into 2021.
- The prospect for elevated inflation has garnered attention, as fiscal and monetary stimulus finally work in tandem.

Reams moved to a more defensive stance on risk and duration

- Credit risk has been reduced to benchmark levels, with rotation into lower beta credits.
- In MBS, we continue to focus on less negatively convex structures as well as ABS subsectors such as auto finance.
- Duration exposure has been reduced as we see heightened risk factors for an upside to rates.



Investment Objective and Guidelines

Objective

- To exceed the Bloomberg Barclays Universal Index, net of fees, over a complete market cycle.

Investment Guidelines

- Maximum average portfolio duration is 10 years with a targeted average portfolio duration in the range of 3 to 8 years.
- Maximum remaining term to maturity (per single issue) is 31 years at purchase.
- No single issue shall exceed 10% of the portfolio, excluding government and agency issues.
- No single issue shall account for more than 10% of the outstanding issue, excluding government and agency issuers.
- The portfolio must have an overall weighted average quality of at least BBB-.
- All securities must have a rating of B- or higher (S&P, Moody's or Fitch), using the middle of three or lower of two ratings.
- Credit default swaps are limited to a notional value of 10% of the portfolio.
- Coal-Related Companies are restricted from purchase in the portfolio.

Source: OPFRS Investment Guidelines (Rev. 9/1/2016)



Relationship Summary

City of Oakland Police and Fire Retirement System

Relationship Inception	February 1, 1998
------------------------	------------------

Investment Style	Core Plus Fixed Income
------------------	------------------------

Performance Benchmark	Bloomberg Barclays Universal Index
-----------------------	------------------------------------

Financial Data as of December 31, 2020

Initial Investment	\$97.5 million
Contributions	\$146.0 million
(Withdrawals)	(\$338.2 million)
Portfolio Gains	\$124.6 million
Portfolio Value	\$29.9 million



Performance Review

For Periods Ending December 31, 2020

	Percent Gain or Loss					
	Quarter Ending	Last 12 Months	Two Years (annualized)	Three Years (annualized)	Five Years (annualized)	Since Inception* (annualized)
City of Oakland Police and Fire Retirement System (a)	1.83	20.18	14.09	9.73	7.26	6.20
City of Oakland Police and Fire Retirement System (b)	1.78	20.00	13.89	9.53	7.05	6.00
Benchmark**	1.29	7.58	8.42	5.45	4.87	5.15

* Inception Date: 2/1/1998

**The benchmark consists of the Bloomberg Barclays U.S. Aggregate Index from 2/1/1998 - 6/30/2006 and the Bloomberg Barclays Universal Index as of 7/1/2006.

(a) Gross of Investment Management Fees

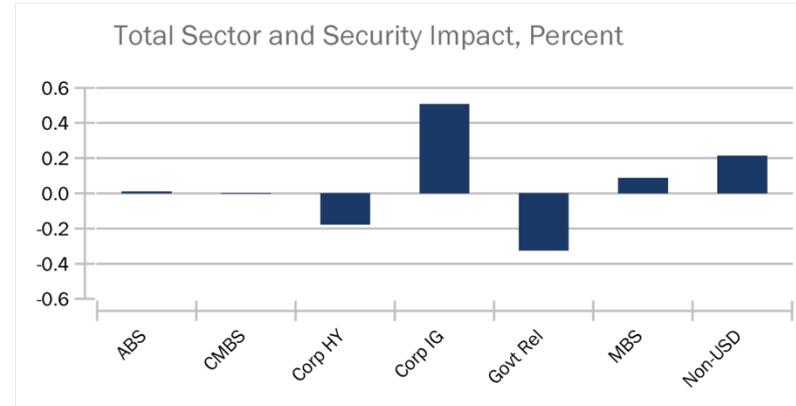
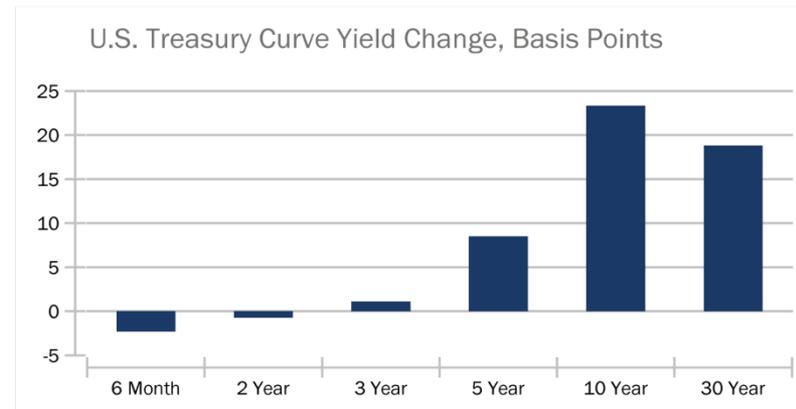
(b) Net of Investment Management Fees (recorded on cash basis)

Excess Return Detail

City of Oakland Police and Fire Retirement System: 10/1/2020 - 12/31/2020

	Portfolio (%)
Total Return	1.83
Index Return	1.29
Excess Return	<u>0.54</u>
Duration	0.16
Curve	0.06
Total Macro	<u>0.22</u>
Sector Selection	-0.12
Security Selection	0.44
Total Selection	<u>0.32</u>

Sector	Sector Impact	Security Impact	Total Impact
ABS	0.01	0.00	0.01
CMBS	0.00	0.00	0.00
Corp HY	-0.10	-0.07	-0.18
Corp IG	0.07	0.43	0.51
Govt Rel	-0.32	-0.01	-0.32
MBS	0.00	0.09	0.09
Non-USD	0.21	0.00	0.21
	-0.12	0.44	0.32

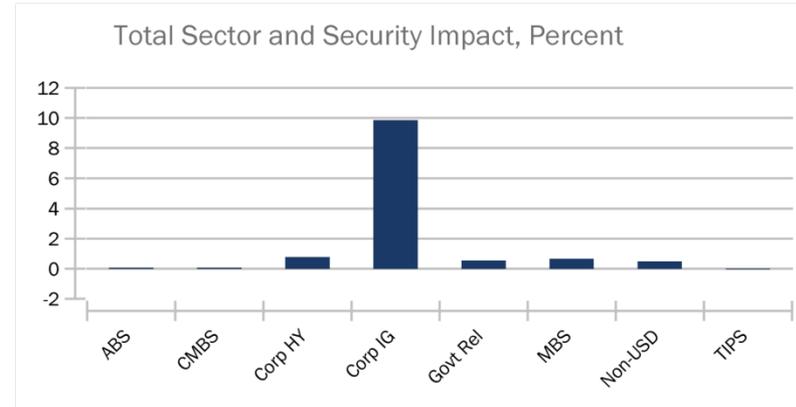
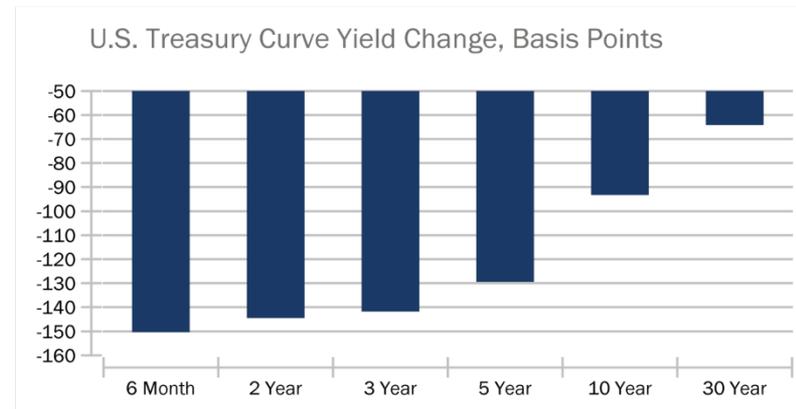


Excess Return Detail

City of Oakland Police and Fire Retirement System: 1/1/2020 - 12/31/2020

	Portfolio (%)
Total Return	20.18
Index Return	7.58
Excess Return	12.60
Duration	-0.34
Curve	0.58
Total Macro	0.23
Sector Selection	8.00
Security Selection	4.37
Total Selection	12.37

Sector	Sector Impact	Security Impact	Total Impact
ABS	0.07	-0.02	0.06
CMBS	0.06	-0.01	0.06
Corp HY	0.83	-0.07	0.76
Corp IG	6.28	3.57	9.85
Govt Rel	0.37	0.18	0.55
MBS	-0.05	0.70	0.65
Non-USD	0.48	0.00	0.48
TIPS	-0.04	0.00	-0.04
	8.00	4.37	12.37



Portfolio Characteristics

City of Oakland Police and Fire Retirement System: 12/31/2020

	Portfolio	Index
Total Market Value (\$)	29,933,609	30,416 billion
Avg. Duration (Years)	4.9	6.0
Avg. Convexity	0.26	0.37
Avg. Yield to Worst (%)	1.2	1.5
Avg. Maturity (Years)	6.0	8.2
Avg. Quality	Aa3	Aa3

Quality Structure (% of Portfolio)	Portfolio *	Index
AAA	54.5	58.3
AA	1.4	4.1
A	15.6	12.9
BBB	25.8	16.4
Other	2.7	8.2
Total	100.0	100.0

* The methodology used is consistent with client investment guidelines.

Sector Structure (% of Portfolio)	Portfolio	Index
Treasury	15.3	30.6
Govt Related	0.3	11.4
Mortgage-Backed	21.7	24.2
Asset-Backed	4.9	0.3
Corporate	42.6	33.6
Non-US Dollar	2.0	0.0
Cash and Equivalents	13.2	0.0
Total	100.0	100.0

Duration Distribution (Years)	Portfolio	Index
0 - 1 yr.	0.1	0.0
1 - 3	0.7	0.7
3 - 4	0.2	0.5
4 - 6	0.5	0.8
6 - 8	0.9	0.7
8 +	2.4	3.4
Total	4.9	6.0

Maturity Distribution (%)	Portfolio	Index
0 - 1 yr.	21.6	0.0
1 - 3	18.3	25.8
3 - 5	25.1	31.7
5 - 7	6.9	13.1
7 - 10	13.5	10.3
10 - 20	8.3	5.6
20 +	6.3	13.6
Total	100.0	100.0



Diversity at Reams

- As an affiliate of Carillon Tower Advisors, a division of Raymond James, Reams Asset Management is committed to fostering a diverse and inclusive workplace, welcoming to all cultures and backgrounds. This is consistent with our values-based culture upon which the firm was founded.

- For more information on the extensive inclusion efforts of our parent firm, including outreach, career development and recruitment, and community efforts, please visit:
 - <https://www.raymondjames.com/careers/diversity-and-inclusion>

- Reams Asset Management currently has 35 employees, of which 17 (48%) are female, including key leadership positions:
 - Head of Operations
 - Head of Client Service
 - Head of Portfolio Accounting

- Reams has several employees in various minority groups, and has taken concrete steps to address historical lack of diversity on its long-tenured investment team.



Diversity at Reams – Hiring Action Plan

- Significant New Hire for Investment Team:
 - Effective March 5, 2021, Reams Asset Management will publicly announce a new hire to the investment team for a Senior Portfolio Manager starting in office that day
 - This new position will be a major investment on the part of the firm to broaden skill set of existing team
 - Individual is a member of a minority group, mid-career, with extensive capital markets experience
 - Individual will initially focus on macroeconomic positioning and international trades for all Reams Portfolios

- Increased Development and Recruitment of Minorities via Summer Intern Program:
 - Formalized intern program has been expanded last five years, with increased participation (record 5 interns in 2019, COVID-pandemic impact limited 2020 participation to 2 interns)
 - Reams has cultivated both females and other minorities in the intern program, including Notre Dame MBA candidate Paul Adzokpa, a native of Ghana, last summer
 - Already, a female actuarial student has accepted a spot for Summer 2021, with further plans to build out Summer Intern capacity



Diversity at Reams – Office Location Action Plan

- Reams can announce a signed intent to relocate its primary office from Columbus, IN to Indianapolis, IN with an estimated timing of Q4 2021:
 - Office will be located directly downtown Indianapolis, the hub of business in the state of Indiana
 - New location provides easier access to clients, consultants, management teams, and other guests/visitors – just 20 minutes from Indianapolis International Airport (IND)
 - New location will also raise Reams profile and stature within the city and the investment community, by joining a growing and dynamic urban environment
 - Reams is committed to being a good neighbor and continuing a history of outreach, charity, and community engagement

- Most critically, the new office location will aid recruitment and retention of professionals for a first-class investment firm:
 - Reams has a 5 year staffing plan that intends to build out investment and support teams beyond current new hire, primarily via internship program and recruitment of young, entry-level candidates
 - Indianapolis location is projected to increase applicant pool in similar fashion as Purdue University's investment team move from West Lafayette to Indianapolis
 - Parent company is supportive of move and has resources to ensure a modern, urban office with proper amenities and desirable location for young professionals



Disclosures

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The bond quality ratings indicated are assigned by credit rating agencies Standard & Poor's, Moody's, and Fitch as an indication of an issuer's creditworthiness. Unless specified by client investment guidelines, the middle of three or highest of two credit quality ratings available from these rating agencies is used. Credit quality is subject to change. Ratings are measured on a scale that generally ranges from AAA (highest) to D (lowest). Ratings information from Standard & Poor's ("S&P") may not be reproduced. S&P credit ratings are statements of opinion and are not statements of fact or recommendations to purchase, hold, or sell securities, nor do they address the suitability of securities for investment purposes, and should not be relied on as investment advice. S&P does not guarantee the accuracy, completeness, timeliness or availability of any information, including ratings, and is not responsible for errors or omissions (negligent or otherwise). S&P gives no express or implied warranties, including but not limited to any warranties of merchantability or fitness for a particular purpose or use. S&P shall not be liable for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including lost income or profits and opportunity costs) in connection with any use of ratings.

NOT FDIC INSURED/NO BANK GUARANTEE/MAY LOSE VALUE



MEMORANDUM

TO: Oakland Police and Fire Retirement System (OPFRS)
FROM: David Sancewich, Paola Nealon, Sidney Kawanguzi
 Meketa Investment Group
DATE: February 24, 2021
RE: Reams – Manager Update

Manager: Reams Asset Management (Reams)

Inception Date: 02/1998

Management Fee: 20 bps (\$59,862)¹

Benchmark: BB Aggregate Index

OPFRS AUM (12/31/20): \$29.9 Million (7.0%)

Investment Strategy: Core Plus Fixed Income

Firm-wide AUM (12/31/20): \$22.5 billion

Summary & Recommendation

Reams has managed the Core Plus fixed income portfolio since the first quarter of 1998. Since inception, Reams has outperformed its benchmark. *Meketa does not have any major concerns with Reams and does not recommend any action be taken at this time.*

Discussion

In reviewing Reams, Meketa considered investment performance and recent organizational / personnel issues.

Annualized Investment Performance (as of 12/31/2020)

Manager	MKT Value (\$000)	Quarter	1 YR	3 YR	5 YR	Since Inception	Inception Date ²
Reams (Gross of Fees)	29,931	1.8	20.2	9.7	7.2	6.2	2/1998
Reams (Net of Fees)	29,931	1.8	20.0	9.5	7.0	6.0	--
<i>BB Universal Index</i>	--	<i>1.3</i>	<i>7.6</i>	<i>5.5</i>	<i>4.9</i>	<i>5.1</i>	--
Excess Return (Net of Fees)	--	+0.5	+12.4	+4.0	+2.2	+1.1	--

¹ Estimate based on AUM as of 12/31/20.

² Inception date reflects the first full month after portfolio received initial funding.



Reams has outperformed the Bloomberg Barclays Universal Index by 110 basis points since inception in 1998. Reams has been a part of the portfolio for over twenty years and continues to deliver outperformance, even in recent years.

Organizational Issues

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

Investment Philosophy & Process, per manager

Reams' investment philosophy is based on the premise that volatility is a key driver of performance in the fixed income market. Volatility is usually higher than commonly perceived and is often mispriced in the marketplace. This core belief leads the firm to focus on long-term value and "total return," employ macro and bottom-up strategies to uncover unique opportunities, and react opportunistically to valuation discrepancies and volatility in the bond market.

Reams manages portfolios using three basic steps, which are best described as a combination of top-down and bottom-up. The first step is to establish the portfolio's overall duration and yield curve characteristics, often referred to as the top-down or macro portfolio characteristics. Reams approaches the duration decision as a valuation problem, utilizing below-benchmark or short-duration portfolios when the market is unattractive or overvalued and above-benchmark or long-duration portfolios when the market is attractive or undervalued. The main tool used to establish value is the real or inflation-adjusted Treasury bond rate. Depending on Reams' assessment of relative values along the yield curve, portfolios may be barbelled, bulleted, or laddered.

The second step of the investment process is to consider sector exposures. Sector exposure decisions are made on both a top-down and bottom-up basis. For most sectors, the bottom-up issue selection process is the major determinant of sector exposure. As securities are analyzed on a risk/return or upside/downside basis, attention is paid to which sectors are producing the most attractive securities. When a number of the most attractive securities are coming from a certain sector, this area will be researched further to determine whether the sector should be consciously overweighted. Conversely, underweighting might result from a predominance of relatively unattractive issues within a sector. In this manner, security selection will tend to determine sector selection, with top-down objectives used mostly for risk control to avoid over-concentration. However, for some more generic parts of the portfolio, such as mortgage pass-throughs or agencies, top-down considerations will drive the sector allocation process as overall sector measures of value, such as spreads or price levels, will be used to make sector decisions. This is more generally the case when credit quality is not an issue.

The third step of the investment process is individual security selection. Reams approaches security selection on a total return basis assuming that the market will exhibit a considerable degree of both interest rate and credit volatility. Therefore, the firm's focus is generally on securities that will benefit from dynamic interest rate and credit environments. Pockets of the market that exhibit good dynamic and structural characteristics may be used intensively, allowing Reams to take advantage of its relatively moderate size.

Reams relies primarily on internal research in the bond selection process. A great deal of emphasis is placed on using scenario analysis as an analytical tool, allowing Reams to determine how each security will perform in a variety of potential interest rate and credit environments. Value is determined based on the distribution of potential returns. The firm's outlook for interest rates, fundamental credit analysis, and option-adjusted spread analysis are the primary tools used when constructing these scenarios. This process identifies which bonds should perform the best under the most likely scenarios. Importantly, this process will also point out those bonds that, while attractive on the surface, are most vulnerable to risks in the bond market and inappropriate for the portfolio. Ultimately, investment opportunities are compared, and the bonds with the highest risk-adjusted return are selected.

DS, PN, SK, pq



CITY OF OAKLAND

AGENDA REPORT

TO: Oakland Police and Fire Retirement System Board of Administration (PFRS) **FROM:** David F. Jones
Plan Administrator

SUBJECT: Emergency Procedure Policy to Terminate/Limit Trading Discretion of PFRS Investment Managers to Protect PFRS Fund Assets **DATE:** February 24, 2021

SUMMARY

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

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

At the October 28, 2020 PFRS Board Meeting, staff was directed to work with PFRS Legal Counsel to refine the language of the proposed Emergency Procedure Policy for the System and identify specific scenarios to further define what constitutes an emergency and put in place procedures to determine what actions can be taken to remedy a financial emergency. Staff was directed to bring a final version to present as an actionable item at a subsequent meeting.

At the January 24, 2021 PFRS Board Meeting, Plan Administrator David Jones introduced and presented an overview of the First Draft of the Emergency Procedure Policy. Board Members and Legal Counsel discussed the First Draft of the of the Emergency Procedure Policy. Board Members clarified points in question and suggested modifications to the first draft. The Board directed Legal Counsel to incorporate modifications and bring a final version to present as an actionable item at a subsequent meeting. **ATTACHMENT 1** shows the Second Draft of the Emergency Procedure Policy for the System.

Attachment (1):

· *Emergency Procedure Policy to Terminate/Limit Investment Managers - Second Draft*

Agenda Item C6
PFRS Board Meeting
February 24, 2021

RECOMMENDATION

Staff recommends that the Board review the attached Second Draft of the Emergency Procedures and approve for further action. Upon approval, staff recommends that these procedures be added to the existing PFRS Investment Policy.

Respectfully submitted,



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

Attachment (1):

· *Emergency Procedure Policy to Terminate/Limit Investment Managers - Second Draft*

ATTACHMENT 1

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

OAKLAND POLICE AND FIRE RETIREMENT SYSTEM POLICIES AND PROCEDURES FOR EMERGENCY TERMINATION OR LIMITATION OF INVESTMENT MANAGER POWERS AND AUTHORITY

The Police and Fire Retirement System (“PFRS”) was established in 1951 by Article XXVI of the Charter of the City of Oakland (“Charter”) and is a closed City of Oakland-operated retirement system for retirees of the Oakland Police and Fire Departments. Section 2601 of the Charter creates the Police and Fire Retirement System Board (“Board”), authorizes the Board to make all necessary rules and regulations for its guidance, and provides that the Board shall have exclusive control of the administration and investment of the PFRS fund. The PFRS Board has determined that it is necessary to establish a policy and procedures for the emergency termination or limitation of the powers and authority of PFRS investment managers in situations where immediate action is necessary to protect PFRS assets and the Board is unable to convene an emergency meeting. Accordingly, the PFRS Board has promulgated these Policies and Procedures for emergency termination or limitation of investment manager powers and authority pursuant to its authority under Section 2601 of the Charter.

1. EMERGENCY DEFINED

The emergency procedures for terminating or limiting the powers and authority of a PFRS investment manager set forth below shall be utilized *only* in the following emergency situations:

- a. War, terrorist attack or natural disaster that disrupts a PFRS investment manager’s ability manage PFRS assets;
- b. Verified reports of misconduct or fraud by **or threatened litigation against** a PFRS investment management firm, its officers or employees;
- c. Mass departure of critical investment personnel from a PFRS investment management firm;
- d. Sudden closure of a fund in which PFRS assets are invested;
- e. Sudden shutdown or closure of an PFRS investment management firm; and

2. EMERGENCY ACTION TEAM

The Emergency Action Team shall include:

- a. The PFRS Plan Administrator *or* the PFRS Investment Operations Manager, **who shall serve in an advisory non-voting capacity only.**
- b. At least two of the following PFRS Board members: 1) PFRS Board President; 2) Chair of the PFRS Investment Committee; or 3) Chair of the PFRS Audit Committee. **At least one the two PFRS Board members on the Emergency Action Team shall be an elected, as opposed to an appointed, member of the Board.**
- c. PFRS Investment Consultant who is currently under contract with PFRS to provide investment advice to the PFRS Board. **PFRS Investment Consultant shall serve in an advisory non-voting capacity only.**

Any action taken pursuant to these emergency policies and procedures shall only be taken **by unanimous vote of the Board members serving on the Emergency Action Team.**

The Emergency Action Team shall have the authority to consult PFRS counsel as necessary prior to taking any action to terminate or limit the power or authority of a PFRS investment manager pursuant to these emergency policies and procedures.

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**OAKLAND POLICE AND FIRE RETIREMENT SYSTEM
POLICIES AND PROCEDURES FOR EMERGENCY TERMINATION OR LIMITATION
OF INVESTMENT MANAGER POWERS AND AUTHORITY**

3. EMERGENCY ACTION TEAM AUTHORITY

The Emergency Action Team shall be authorized to take the following actions in the above-defined emergency situations:

- a. Terminate a PFRS investment managers trading and investment authority indefinitely; or
- b. Terminate a PFRS Investment manager, hold the asset(s), or liquidate the fund and hold the funds in cash or purchase an Exchange Traded Fund (ETF). This action shall be taken *only as a last resort* and in circumstances where the Emergency Action Team has determined that the temporary termination of an investment managers trading and investment authority will not be sufficient to protect PFRS assets until an emergency meeting of the PFRS Board can be convened.

4. EMERGENCY ACTION PROCEDURES

Prior to taking the emergency actions authorized in subsection 3 above, the Emergency Action Team shall take the following steps:

- a. Meet to discuss the triggering event and the action that should be taken to protect PFRS assets. The Emergency Action Team shall not be required to meet in person to satisfy this step; a telephone conference or other virtual meeting will suffice as long as four (4) members of the Emergency Action Team, *including two of the designated Board members and PFRS Investment Consultant*, are present during the meeting.
- b. Vote on the action to be taken to protect PFRS assets.
- c. Report the action taken and any action not taken, the basis for the Emergency Action Team's decision and the names of the Emergency Action Team members that participated in the decision making process to the PFRS Board at a meeting **to be held within 7 days of the action being taken.**

The Oakland Police and Fire Retirement System Policies and Procedures for Emergency Termination or Limitation of Investment Manager Powers and Authority have been approved by vote of the Oakland Police and Fire Retirement Board, effective _____.

Walter L. Johnson, Sr., President
Oakland Police & Fire Retirement System Board

David Jones, Pan Administrator and Secretary
Oakland Police & Fire Retirement System Board

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Oakland Police and Fire Retirement System

February 24, 2021

Q4 2020 Performance Report

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

Total Portfolio Summary

Total Portfolio Summary

As of December 31, 2020, the City of Oakland Police and Fire Retirement System (OPFRS) portfolio had an aggregate value of \$434.1 million. This represents a \$37.3 million increase in investment value and (\$3.0) million in benefit payments funded from investments over the quarter. For the calendar year, the OPFRS Total Portfolio value is higher by \$38.8 million, after withdrawals totaling (\$12.0) million for benefit payments.

Asset Allocation Trends

- The asset allocation targets throughout this report reflect those as of December 31, 2020. Target weightings reflect the interim phase (CRO = 10%) of the Plan’s previously approved asset allocation (effective 5/31/2017).
- Relative to policy targets, the portfolio ended the latest quarter overweight Equities, Covered Calls and Cash, while underweight Crisis Risk Offset and Fixed Income. All asset classes were, however, within acceptable ranges from their policy targets.

Recent Investment Performance

- During the most recent quarter, the OPFRS portfolio generated an absolute return of 9.3%, gross of fees, outperforming its policy benchmark by 1.2%. The portfolio, however, underperformed its benchmark by (2.0%) and (0.1%) over the 1- and 3-year periods respectively, but outperformed by 10 basis points over the 5-year period.
- The OPFRS portfolio underperformed the Median fund’s return over the fourth quarter by (1.4%), and by (3.1%) and (0.7%) over the one and three-year periods respectively, while outperforming the median fund by 0.1% over the 5-year period. Performance differences with respect to the Median Fund are attributed largely to differences in asset allocation.

	Quarter	Fiscal YTD	1 Year	3 Year	5 Year
Total Portfolio ¹	9.3	15.0	9.7	8.2	10.2
Policy Benchmark ²	8.1	13.6	11.7	8.3	10.1
Excess Return	1.2	1.4	-2.0	-0.1	0.1
Reference: Median Fund ³	10.7	16.7	13.1	8.9	10.1
Reference: Total Net of Fees ⁴	9.3	14.9	9.5	7.8	9.9

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

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

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

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

Domestic Equity

Over the quarter ending December 31, 2020, both active managers in the Domestic Equity portfolio underperformed their respective benchmark. Passive managers performed in line with their respective benchmarks.

Northern Trust Russell 1000, the Plan's passive large cap core account matched its benchmark over the quarter and longer trailing periods. The account's tracking error is within expectations for a passive mandate.

Vanguard Russell 2000 Value, the Plan's passive small cap value manager, kept pace with its benchmark over the most recent quarter, and outperformed by +0.4% year-to-date. This portfolio has posted +0.5% outperformance since inception (August 2019).

Earnest Partners, the Plan's active mid cap core manager, trailed its Russell Midcap benchmark by (1.7%), placing in the 61st percentile of its peer group for the quarter. The portfolio has, however, outperformed its benchmark over longer trailing periods with excess returns of +4.1%, +3.3% and +3.9% over the 1-year, 3-year and 5-year periods respectively, with top quartile performance in each period. Since inception (April 2006) benchmark-relative outperformance is +1.5%.

Rice Hall James, the Plan's active small cap value manager, trailed its benchmark over the recent quarter by (8.6%), placing in the 92nd percentile of its peer group. The portfolio has underperformed its benchmark over the 1-year and 3-year periods by (9.9%) and (1.4%) respectively. Since inception relative performance is (3.6%). The manager is on watch status for performance concerns.

iShares Edge MSCI Min Vol ETF, funded in March 2020 to temporarily fill the role of the Plan's active Defensive Equity manager, outpaced its benchmark by +0.1% over the quarter.

International Equity

For the quarter ended December 31, 2020, the both managers in the Plan's international equity portfolio posted strong positive returns.

iShares MSCI ACWI ex US ETF, the Plan's passive international equity manager, trailed its benchmark by (3.0%) and (3.5%) over the quarter and one-year periods respectively. Underperformance in the fourth quarter was driven by poor stock selection versus the index.

Vanguard Developed Markets, the Plan's passive international developed markets (ex US) fund, underperformed its benchmark by (0.6%) and (0.3%) over the quarter and one-year periods respectively based on market price returns. The fund's tracking error, based on net asset values was much lower -0.1% and +0.3% over the quarter and year-to-date periods.

Fixed Income

For the quarter ended December 31, 2020, the Fixed Income aggregate posted positive returns as both active managers in the Plan's Fixed Income portfolio outperformed their respective benchmarks.

Ramirez returned +5.8% compared to the benchmark return of 1.3% over the quarter, placing in the 31st percentile of its peer group. Ramirez, however, underperformed its benchmark by (0.7%) year-to-date, but outperformed the benchmark over longer trailing periods with +0.1% over the 3-year period, and +0.5% since inception.

Reams returned 1.8% for the quarter, beating its benchmark by +0.5% and placing in the 68th percentile of its peer group. Reams outperformed its benchmark by +12.6%, +4.2% and +2.3% over 1-, 3- and 5-year periods respectively, placing in the first quintile among peers in each period. Strong performance was due to defensive positioning going into 2020 and capitalizing on the market dislocations in March and April.

Covered Calls

Over the fourth quarter, the Covered Calls portfolio returned 10.5%, outperforming its benchmark by +2.8 %.

Parametric DeltaShift, the Plan's active covered calls allocation returned 12.1%, outperforming its benchmark, the CBOE BXM, index by +4.6% over the quarter. The portfolio has outperformed over the most recent 1-year, 3- and 5-year periods by +19.2%, +9.5% and +7.6% respectively. Since inception outperformance is +6.4%

Parametric BXM, the Plan's passive covered calls allocation returned 8.0%, outperforming its benchmark, the CBOE BXM index, by +0.5% over the quarter. The portfolio has outperformed over the most recent 1-year, 3- and 5-year periods by +8.8%, +3.3% and +2.4% respectively. Since inception outperformance is +1.9%.

Credit

DDJ, the Plan's High Yield & Bank Loan manager, returned 7.4% over the quarter, outpacing its benchmark, the Barclays US High Yield, by +0.9%. DDJ, outperformed the benchmark over the 1-year period by +1.7%, but trailed the benchmark by (1.4%) and (0.3%) over the 3 and 5-year periods respectively. Since inception underperformance is (0.1%).

Crisis Risk Offset

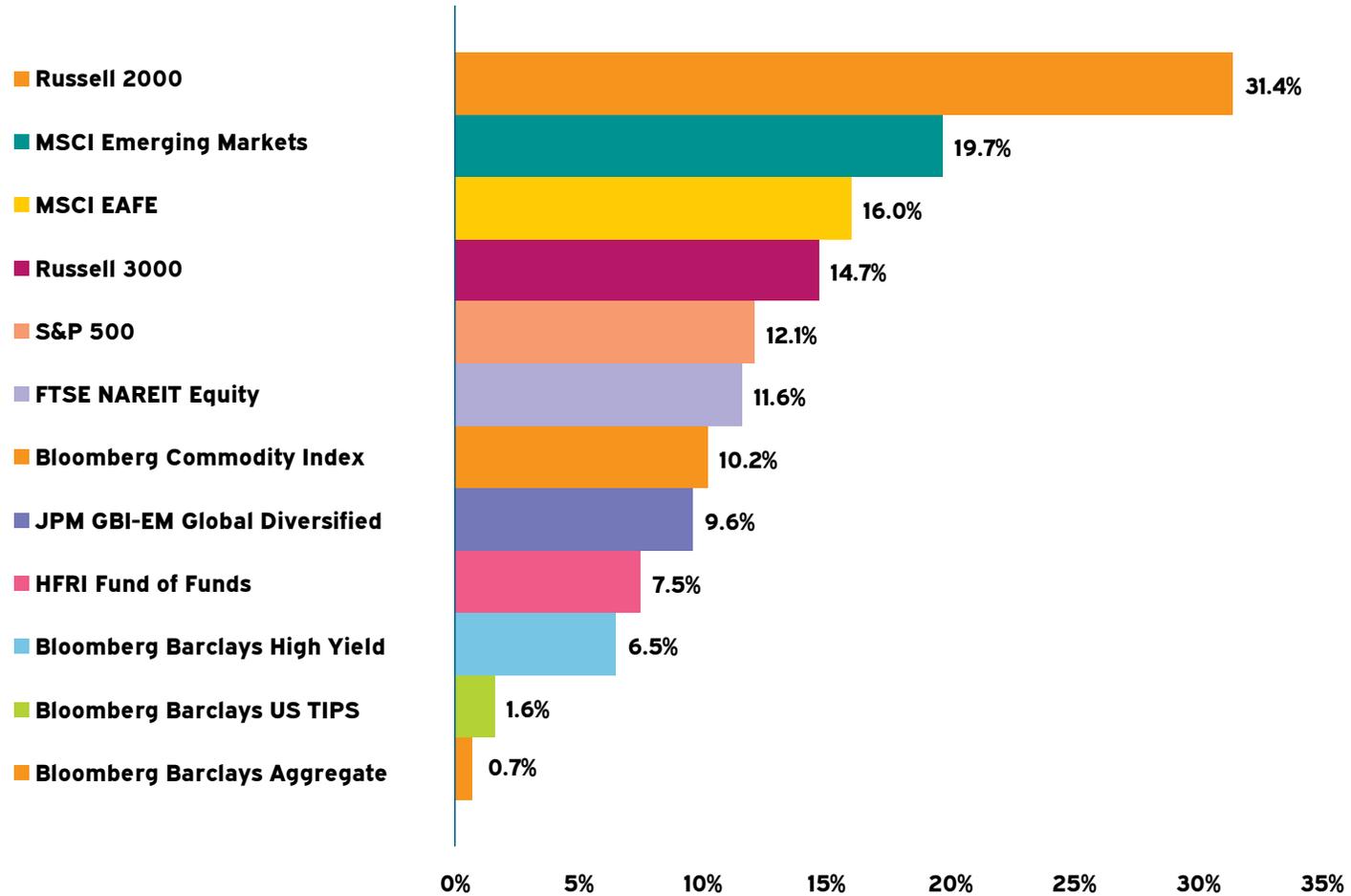
Over quarter ending December 31, 2020, the Crisis Risk Offset portfolio returned (2.8%), trailing its benchmark by (0.8%).

Vanguard Long Duration ETF, the Plan's Long Duration allocation returned (0.3%) on a market price basis, matching its benchmark. Over the 1-year and since inception returns were 17.4% and 13.8% respectively.

Parametric Systematic Alternative Risk Premia, the Plan's Risk Premia / Trend Following manager shuttered its fund at the end of October, as investors withdrew capital following a -38.2% return in the first quarter. Parametric's underperformance accounts for the Crisis Risk Offset aggregate's negative year-to-date return. A search is ongoing to replace Parametric.

The World Markets Fourth Quarter of 2020

The World Markets¹ Fourth Quarter of 2020



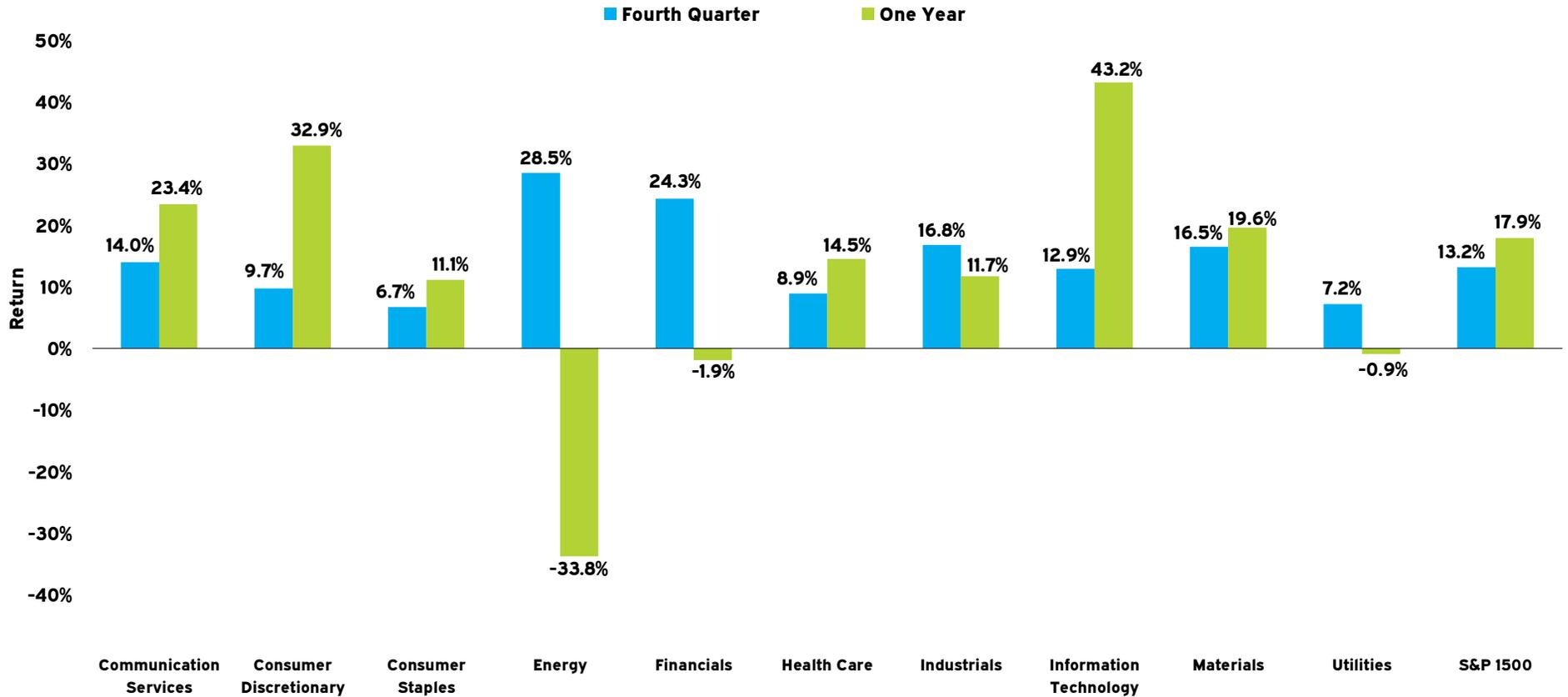
¹ Source: InvestorForce.

Index Returns¹

	4Q20 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Domestic Equity					
S&P 500	12.1	18.4	14.2	15.2	13.9
Russell 3000	14.7	20.9	14.5	15.4	13.8
Russell 1000	13.7	21.0	14.8	15.6	14.0
Russell 1000 Growth	11.4	38.5	23.0	21.0	17.2
Russell 1000 Value	16.3	2.8	6.1	9.7	10.5
Russell MidCap	19.9	17.1	11.6	13.4	12.4
Russell MidCap Growth	19.0	35.6	20.5	18.7	15.0
Russell MidCap Value	20.4	5.0	5.4	9.7	10.5
Russell 2000	31.4	20.0	10.2	13.3	11.2
Russell 2000 Growth	29.6	34.6	16.2	16.4	13.5
Russell 2000 Value	33.4	4.6	3.7	9.7	8.7
Foreign Equity					
MSCI ACWI (ex. US)	17.0	10.7	4.9	8.9	4.9
MSCI EAFE	16.0	7.8	4.3	7.4	5.5
MSCI EAFE (Local Currency)	11.4	0.8	3.0	5.8	6.8
MSCI EAFE Small Cap	17.3	12.3	4.9	9.4	7.8
MSCI Emerging Markets	19.7	18.3	6.2	12.8	3.6
MSCI Emerging Markets (Local Currency)	16.0	19.1	8.1	12.6	6.6
Fixed Income					
Bloomberg Barclays Universal	1.3	7.6	5.5	4.9	4.2
Bloomberg Barclays Aggregate	0.7	7.5	5.3	4.4	3.8
Bloomberg Barclays US TIPS	1.6	11.0	5.9	5.1	3.8
Bloomberg Barclays High Yield	6.5	7.1	6.2	8.6	6.8
JPM GBI-EM Global Diversified	9.6	2.7	3.0	6.7	1.5
Other					
FTSE NAREIT Equity	11.6	-8.0	3.4	4.8	8.3
Bloomberg Commodity Index	10.2	-3.1	-2.5	1.0	-6.5
HFRI Fund of Funds	7.5	10.3	4.7	4.4	3.3

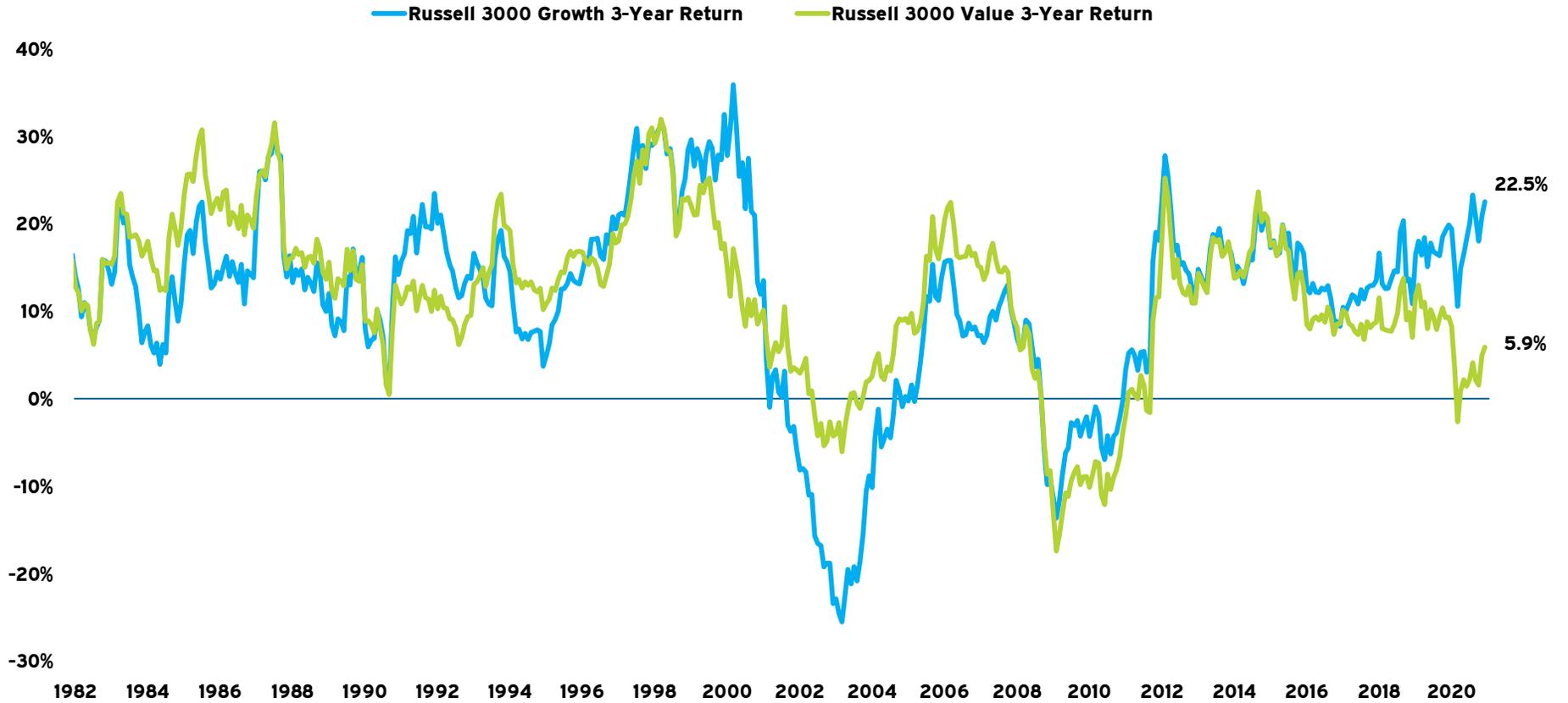
¹ Source: InvestorForce.

S&P Sector Returns¹



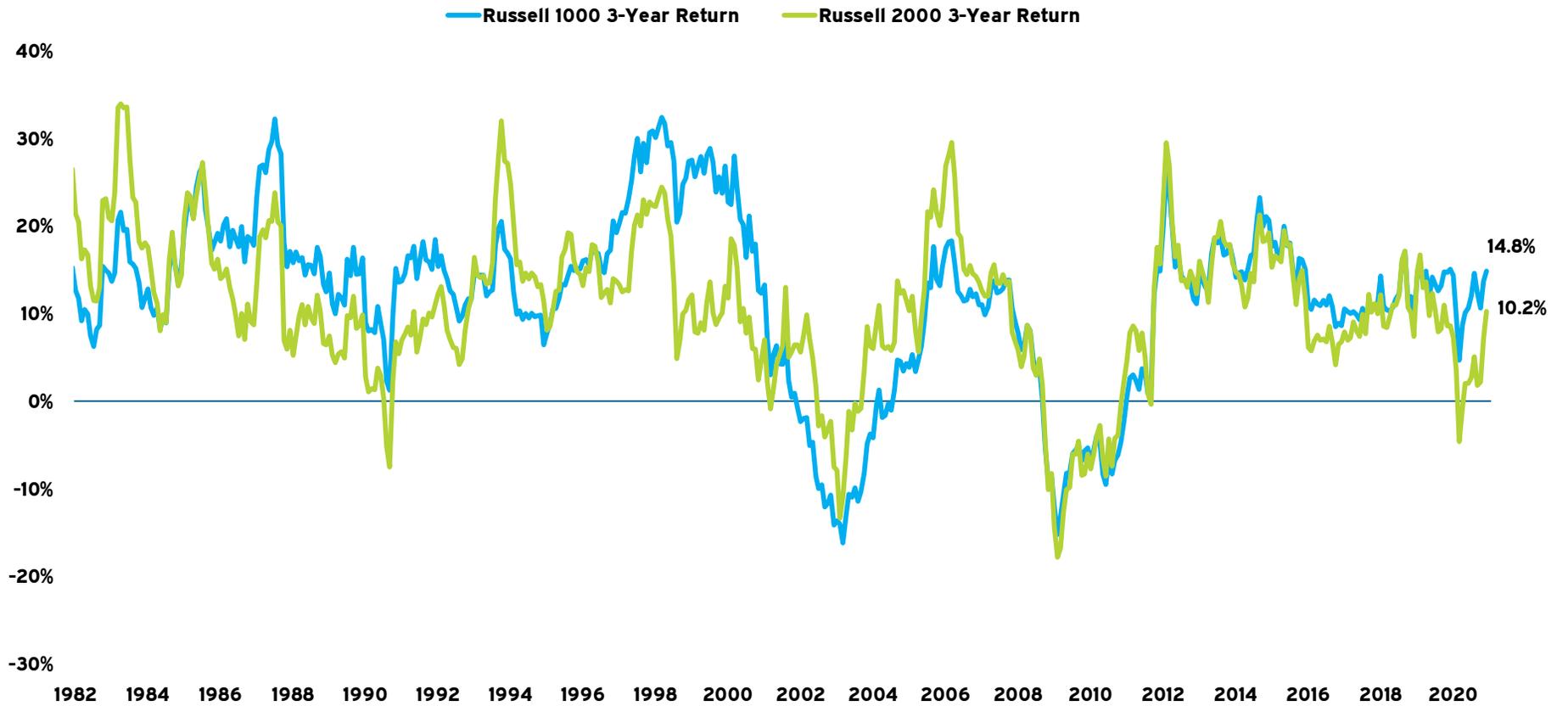
¹ Source: InvestorForce. Represents S&P 1500 (All Cap) data.

Growth and Value Rolling Three Year Returns¹



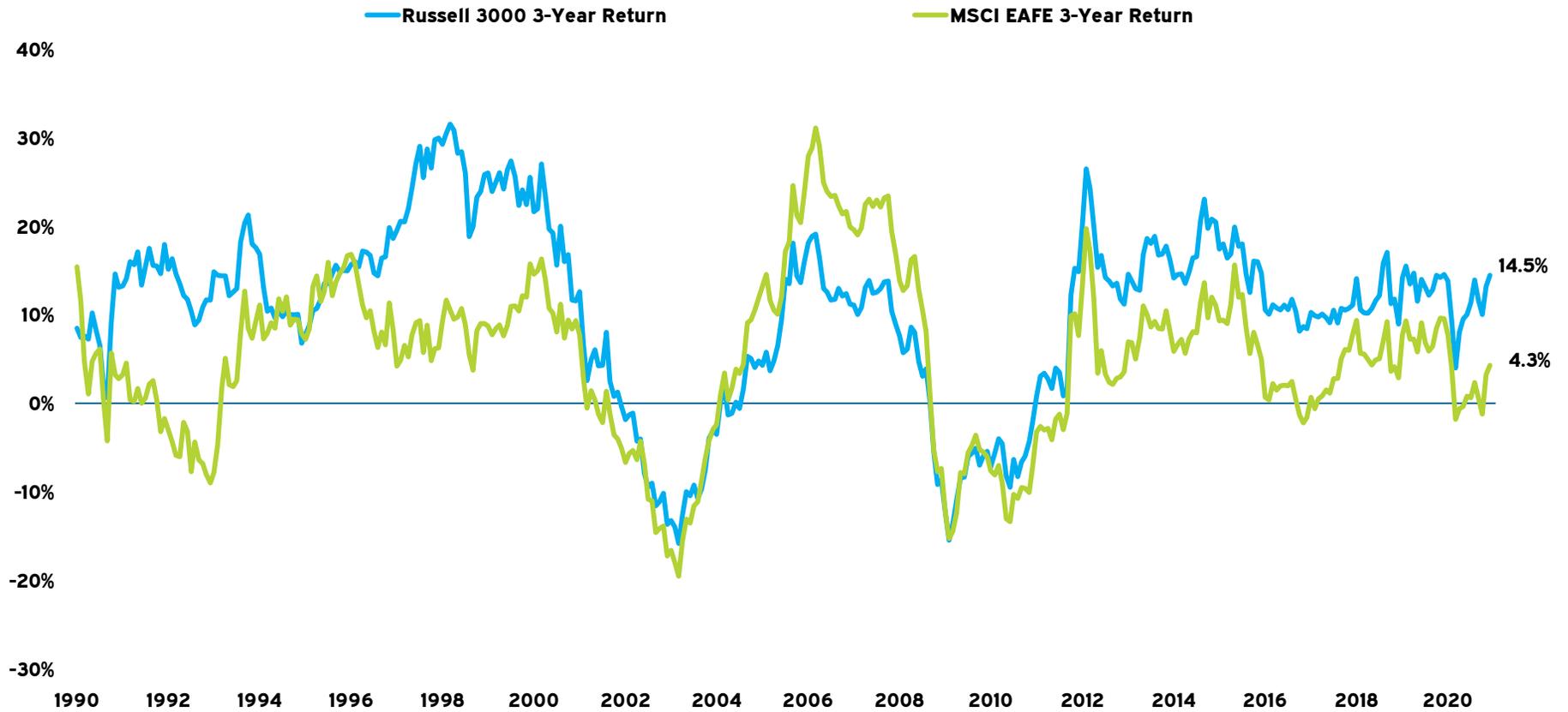
¹ Source: InvestorForce.

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



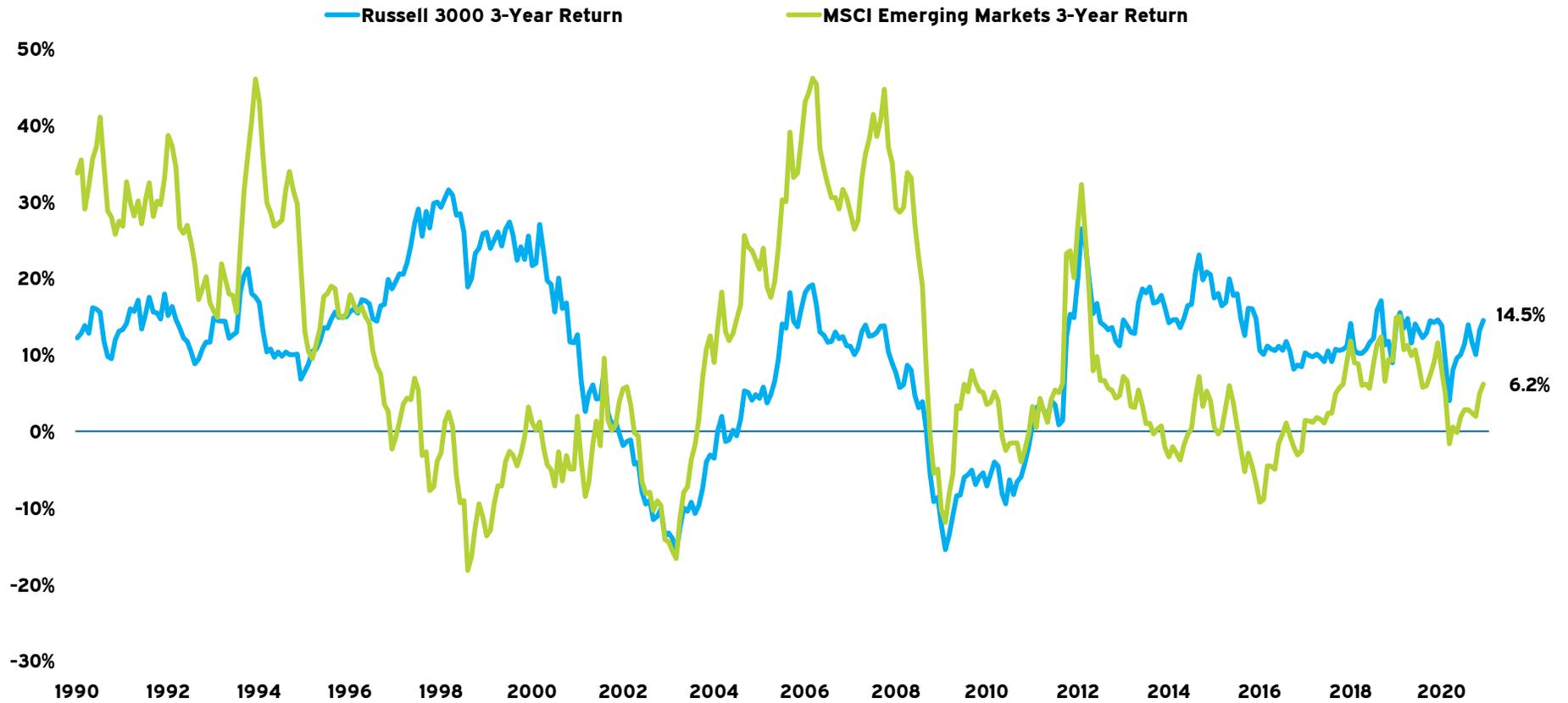
¹ Source: InvestorForce.

US and Developed Market Foreign Equity Rolling Three-Year Returns¹



¹ Source: InvestorForce.

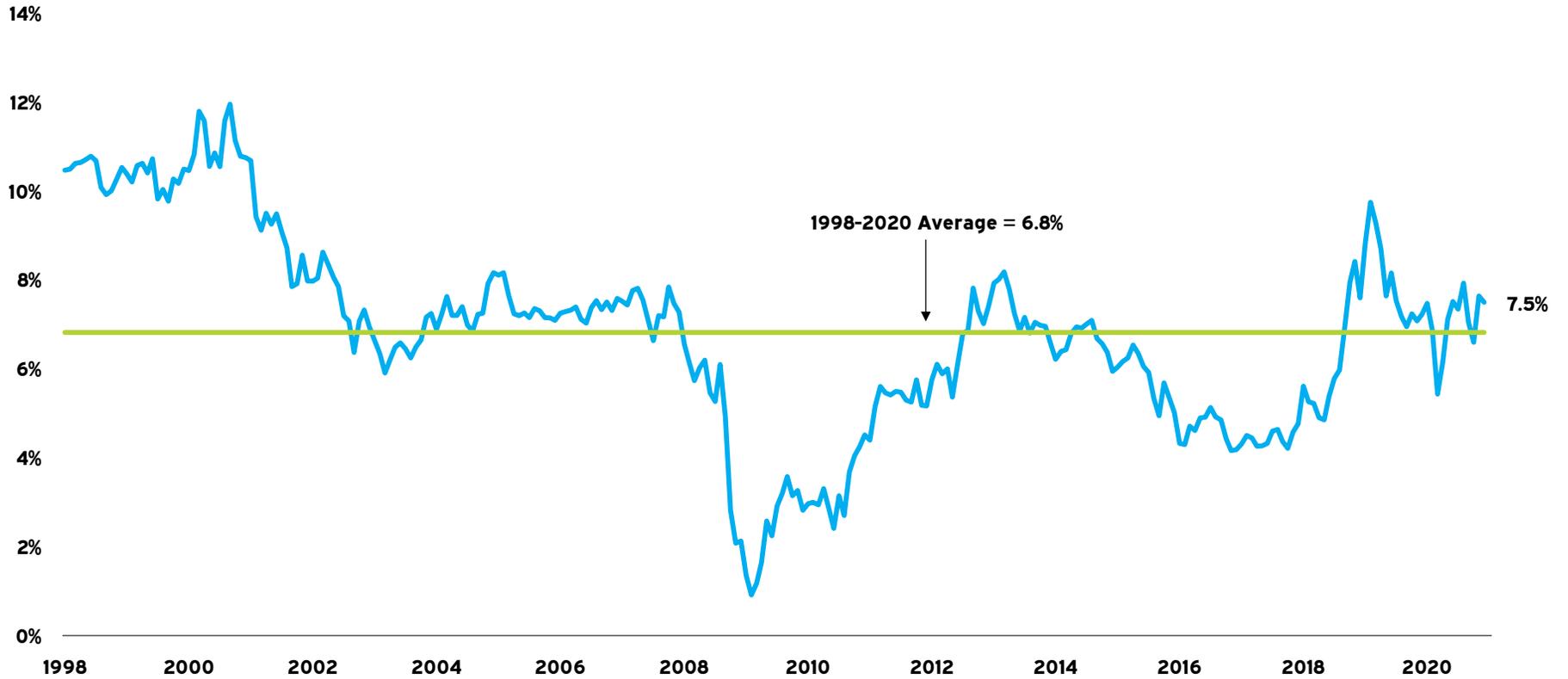
US and Emerging Market Equity Rolling Three-Year Returns¹



¹ Source: InvestorForce.

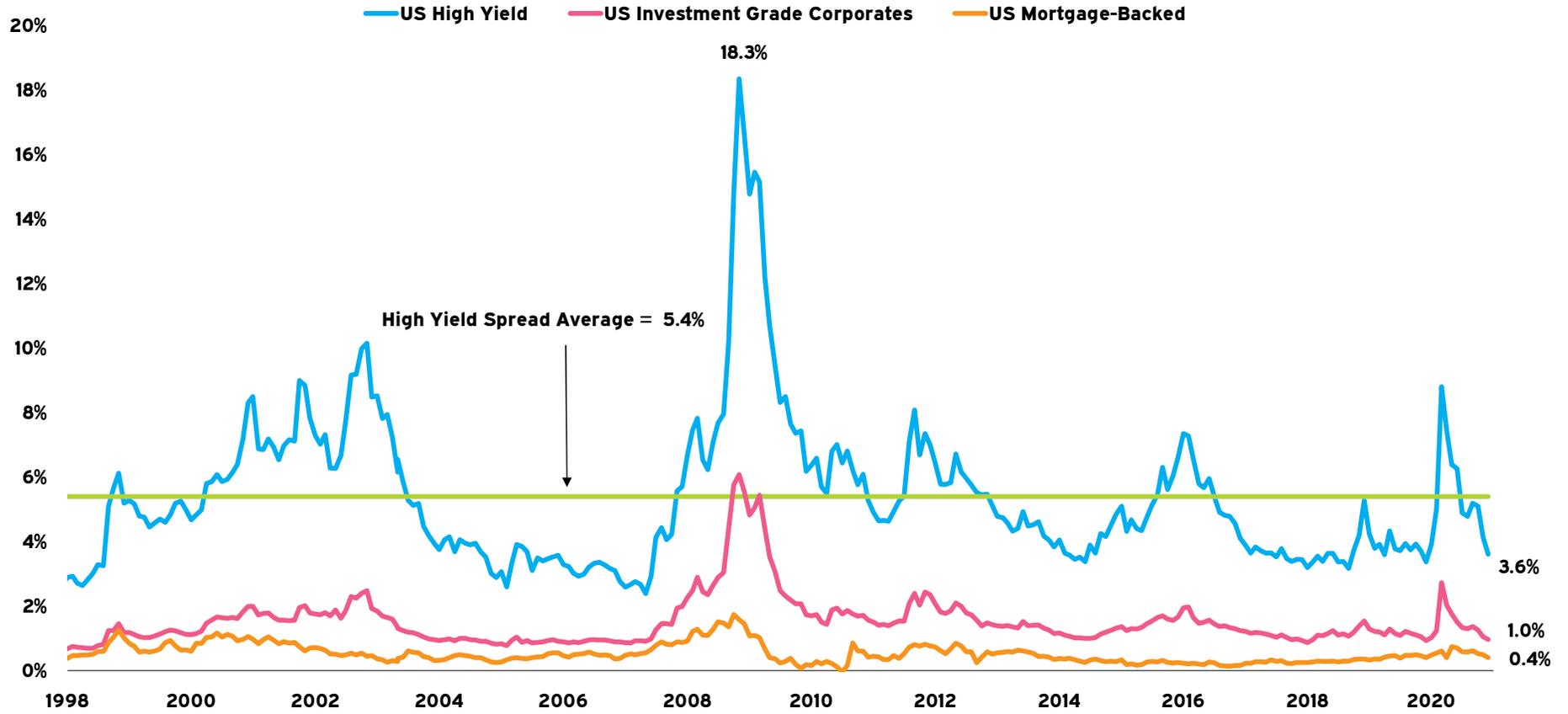
Rolling Ten-Year Returns: 65% Stocks and 35% Bonds¹

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



¹ Source: InvestorForce.

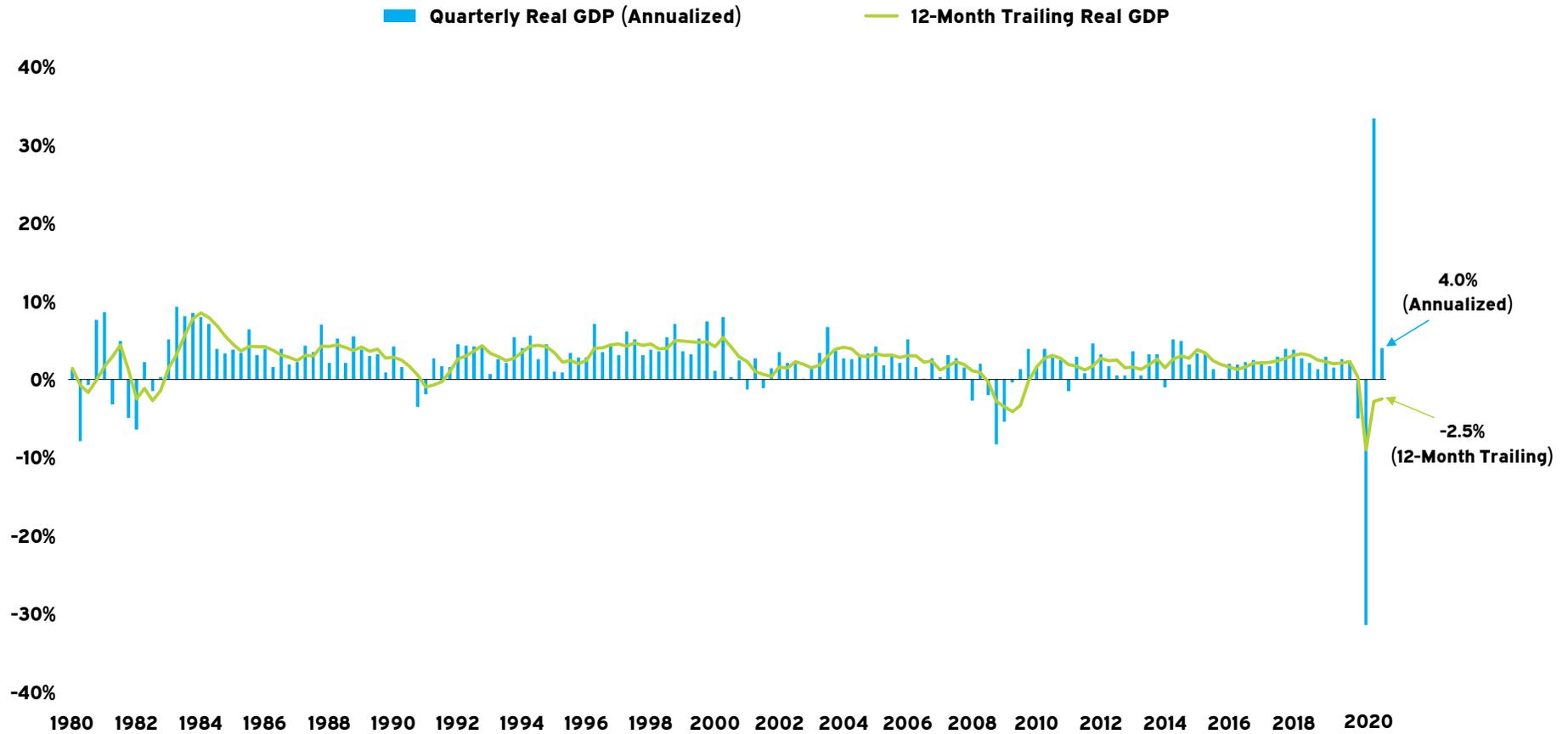
Credit Spreads vs. US Treasury Bonds^{1,2}



¹ Source: Barclays Live. Data represents the OAS.

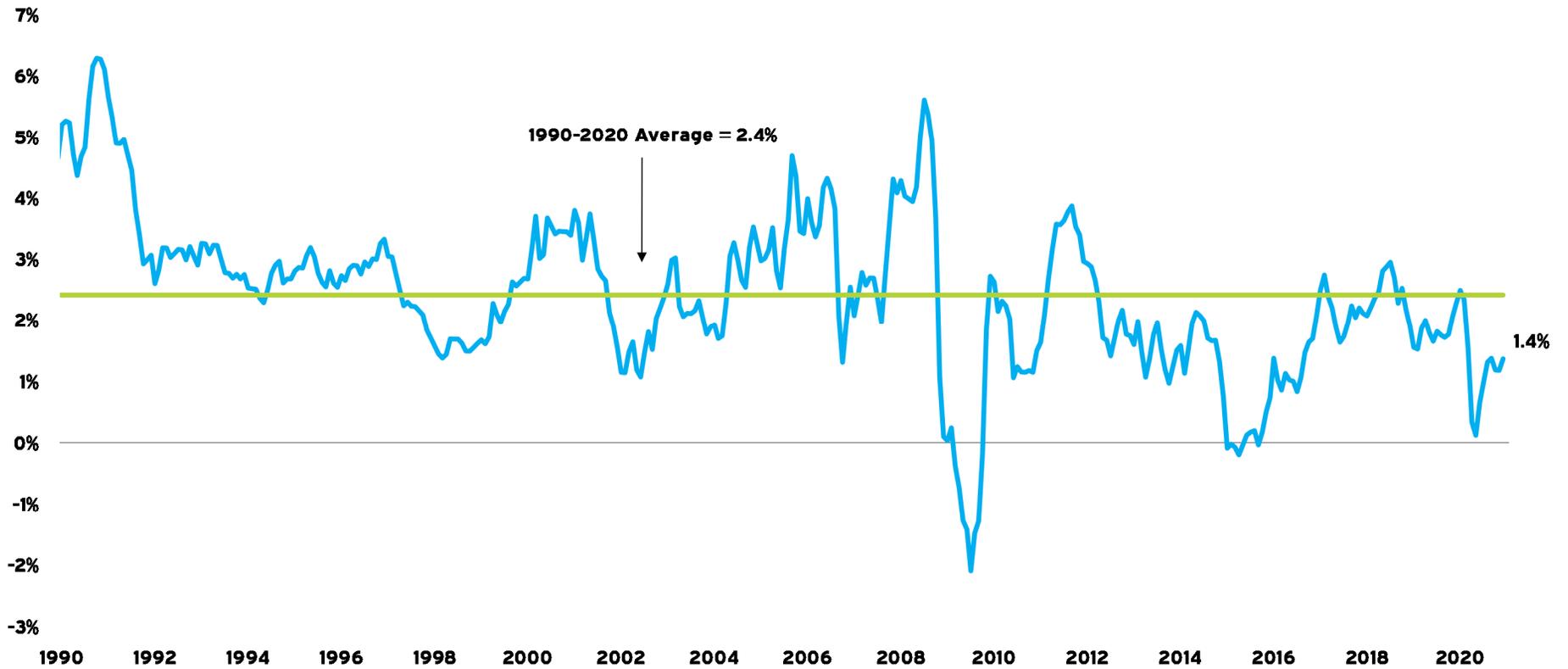
² The median high yield spread was 4.8% from 1997-2020.

US Real Gross Domestic Product (GDP) Growth¹



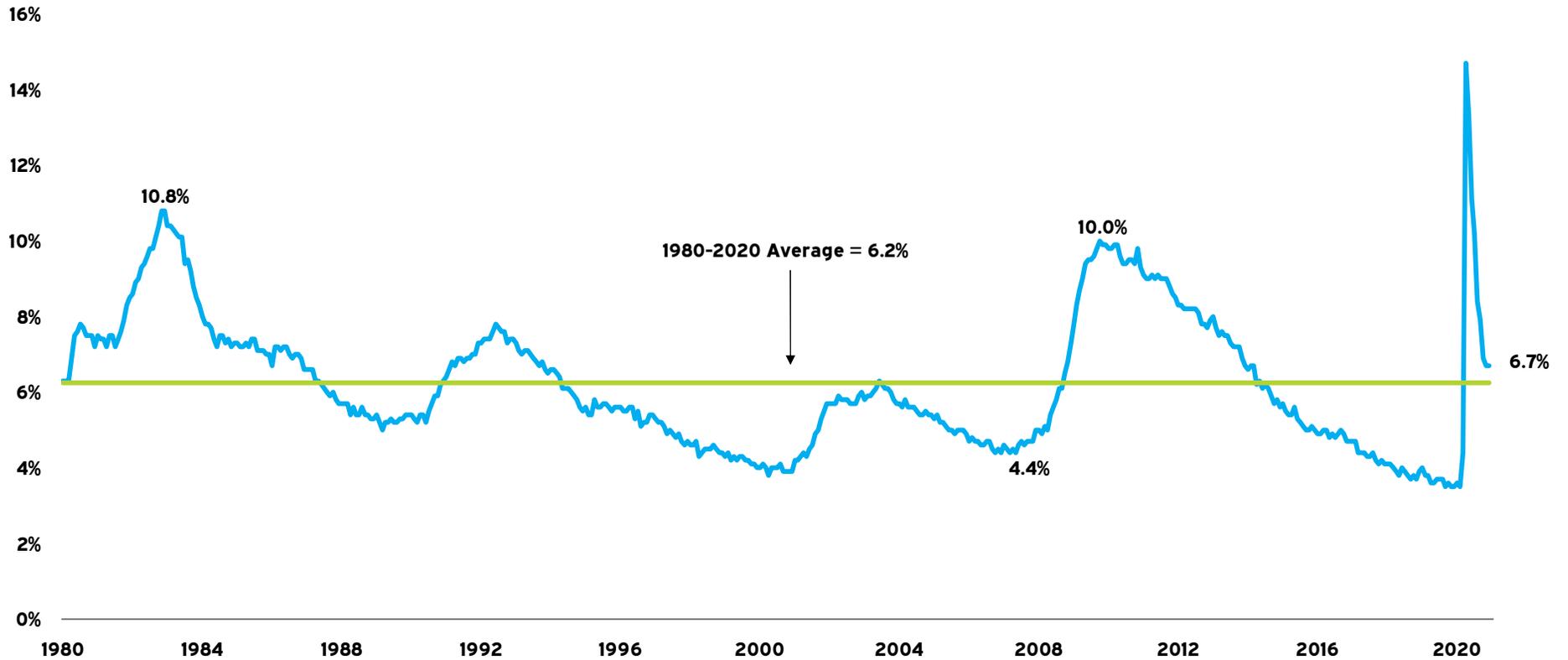
¹ Source: Bureau of Economic Analysis. Data is as of Q4 2020 and represents the first estimate.

US Inflation (CPI)
Trailing Twelve Months¹



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

US Unemployment¹



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

Capital Markets Outlook & Risk Metrics
As of December 31, 2020

Capital Markets Outlook

Takeaways

- December capped off one of the most unusual periods in modern history. Despite a global pandemic and widespread economic shutdowns, 2020 proved to be rewarding for nearly all risk-seeking investors. With monthly gains of roughly 3-9% for most equity markets, the full calendar year saw equity returns generally in the 10-40% range (with considerable variation based on market cap, style, and region).
- With unprecedented monetary stimulus, traditional safe haven assets (e.g., US Treasury bonds) also produced strong returns during 2020, although their performance during December and Q4 were generally flat to marginally negative.
- Despite some catch-up over the quarter, there continues to be a high degree of divergence among equity regions/styles/capitalizations, and this is exemplified at the extremes with US large cap growth stocks outperforming US small cap value stocks by over 33% in 2020.
- The US Treasury yield curve saw longer-term yields tick up over the month, with the 10-year yield approaching 1.0% for the first time since March 2020 (it has since increased above 1.10%). As a reminder, with yields at historically low levels, even marginal moves can cause noteworthy changes to bond prices.
- Real yields in the US declined during December. Shorter-term TIPS saw yields decline by roughly 20-30 basis points whereas longer-term yields (e.g., 10+ years) experienced more modest declines of approximately 2-15 basis points. The entire real yield curve continues to remain in negative territory.

Capital Markets Outlook

Takeaways

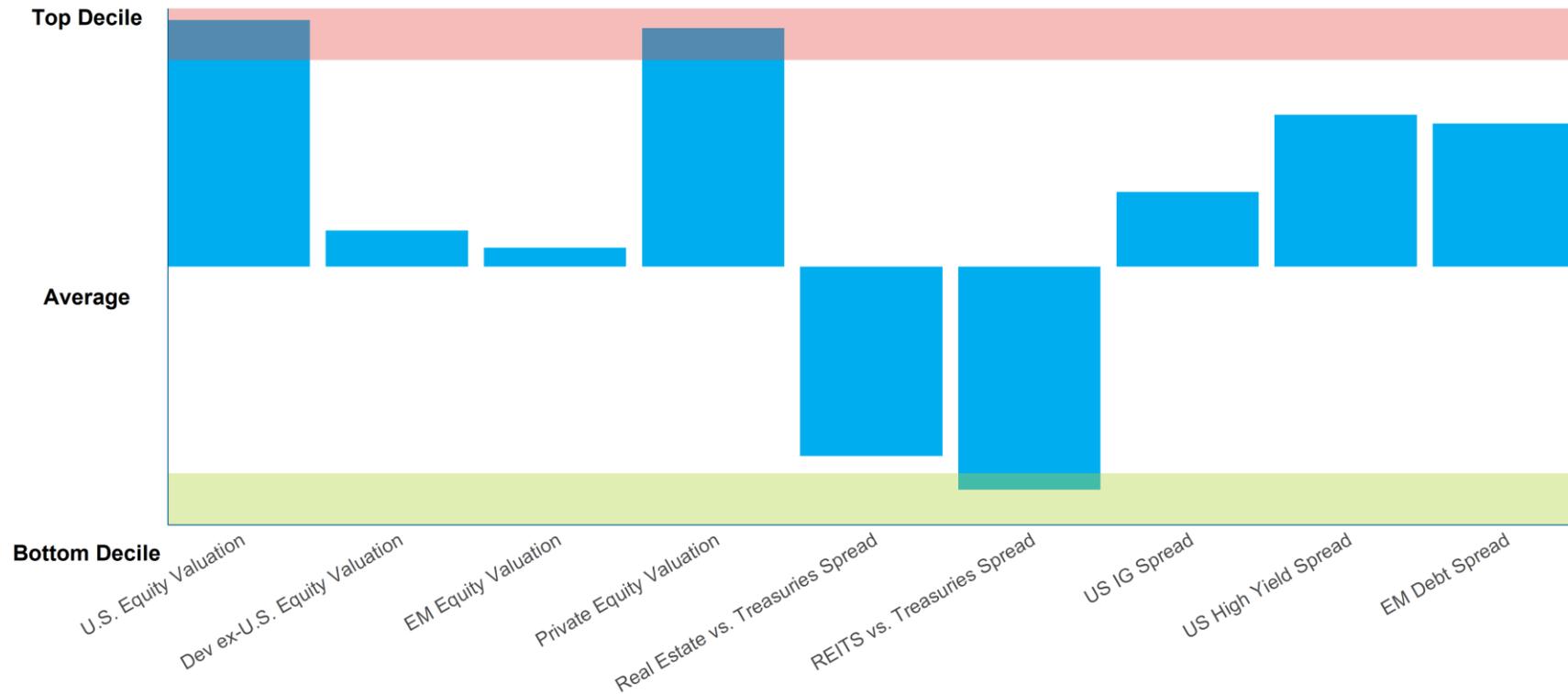
- Q3 GDP and other economic data indicated that an economic recovery was well underway. However, recent increases in COVID-related cases/deaths, recent payroll/unemployment data, and increased shutdowns across the globe represent headwinds to the recovery.
- While the markets do appear as though they are looking past COVID (largely due to successful vaccine development), the next several months are projected to be challenging from an economic standpoint as cases are expected to increase and the widespread distribution of the vaccine will not be immediate. Returning to pre-COVID levels of economic activity is not expected to occur until mid-2021 at the earliest.
- As the US government prepares to enter a new administration, investors will be examining guidance and action as it relates to monetary and fiscal policy, with a particular focus on individual stimulus, taxation, and broad infrastructure spending.
- Implied equity market volatility¹ was relatively stable throughout December as it hovered just above the long-term historical average (~20) for the entire month. While our Systemic Risk measure declined during the month, implied fixed income volatility² did increase.
- With strong price appreciation for nearly all risk-oriented asset classes in 2020, coupled with imperfect information regarding corporate earnings and solvencies, investors should remain cautious as they examine traditional valuation metrics across the global capital markets.
- The Market Sentiment Indicator³ remained **green** (i.e., positive) at month-end.

¹ As measured by VIX Index.

² As measured by MOVE Index.

³ See Appendix for the rationale for selection and calculation methodology used for the risk metrics.

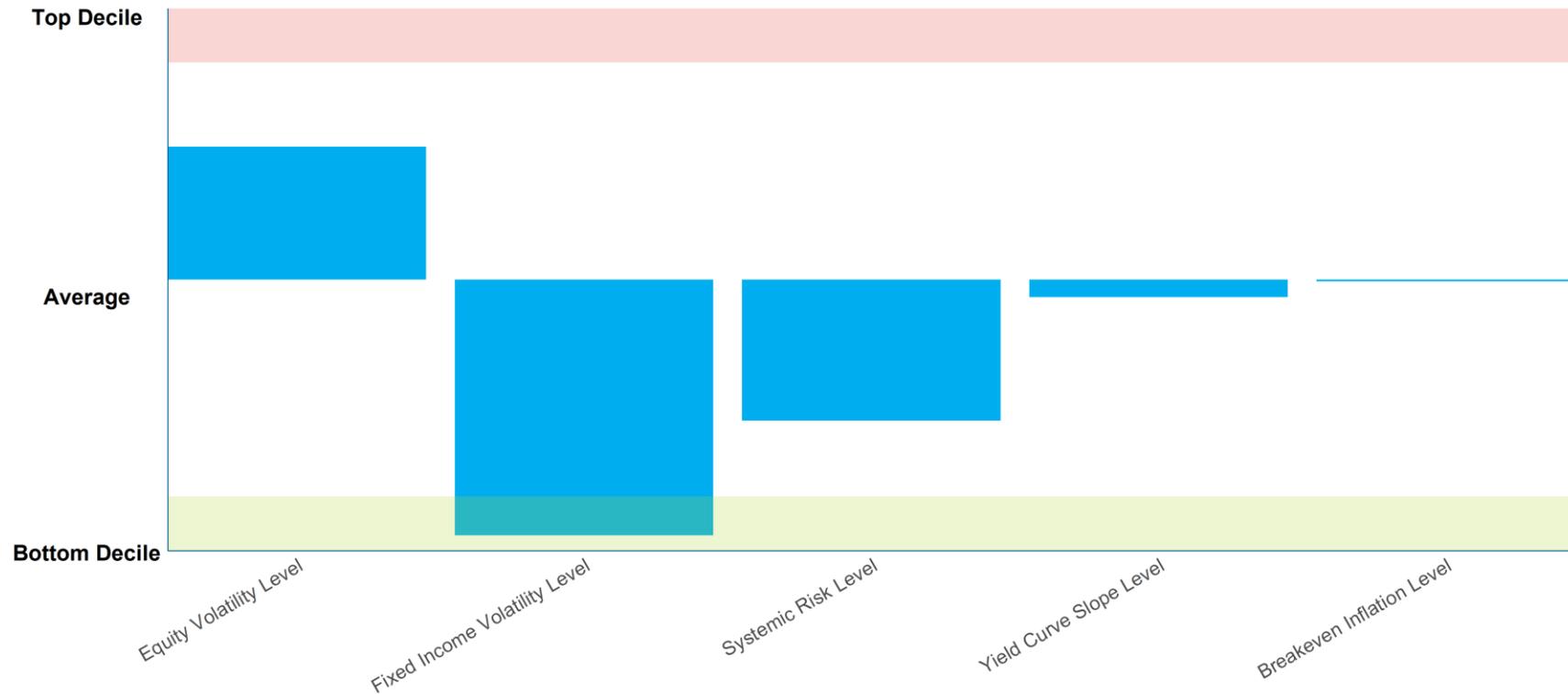
Risk Overview/Dashboard (1) (As of December 31, 2020)¹



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

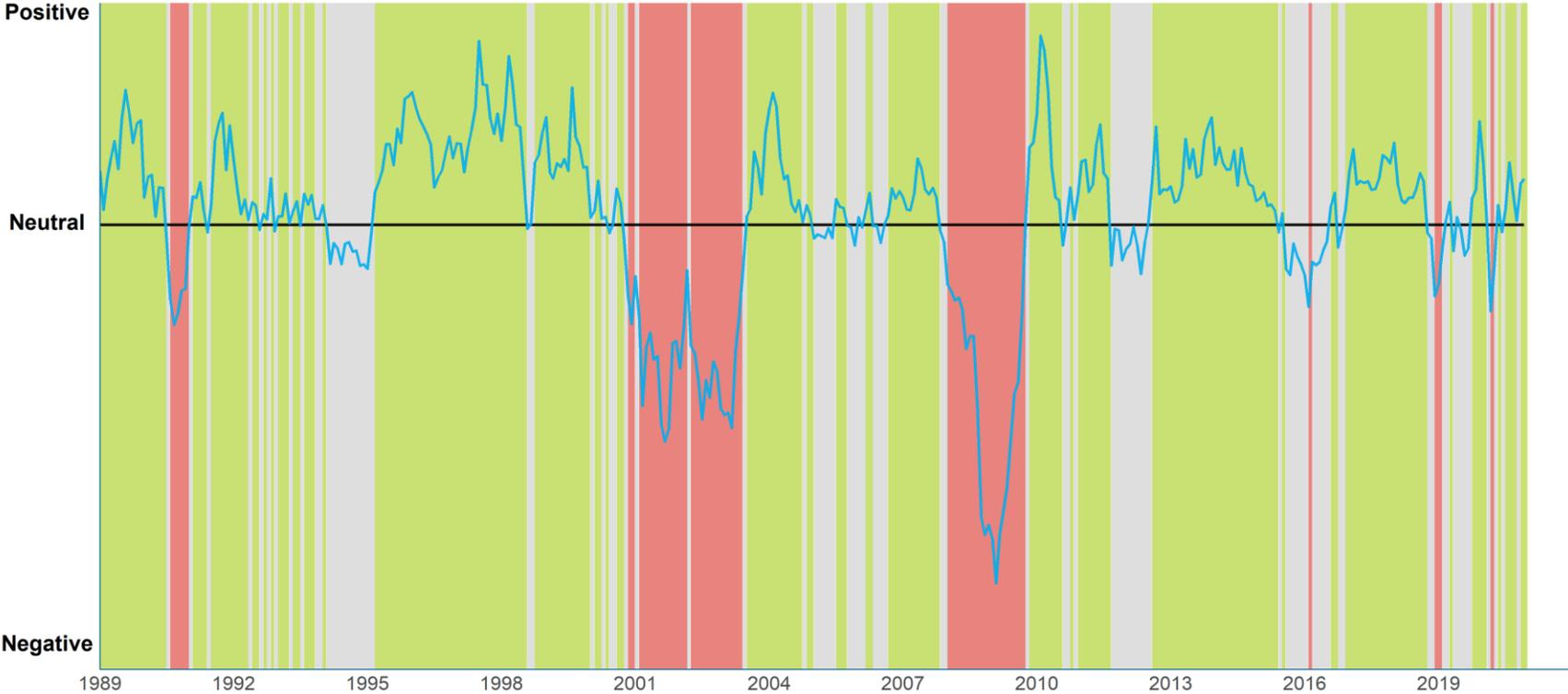
¹ With the exception of Private Equity Valuation, that is YTD as of December 31, 2019.

Risk Overview/Dashboard (2) (As of December 31, 2020)

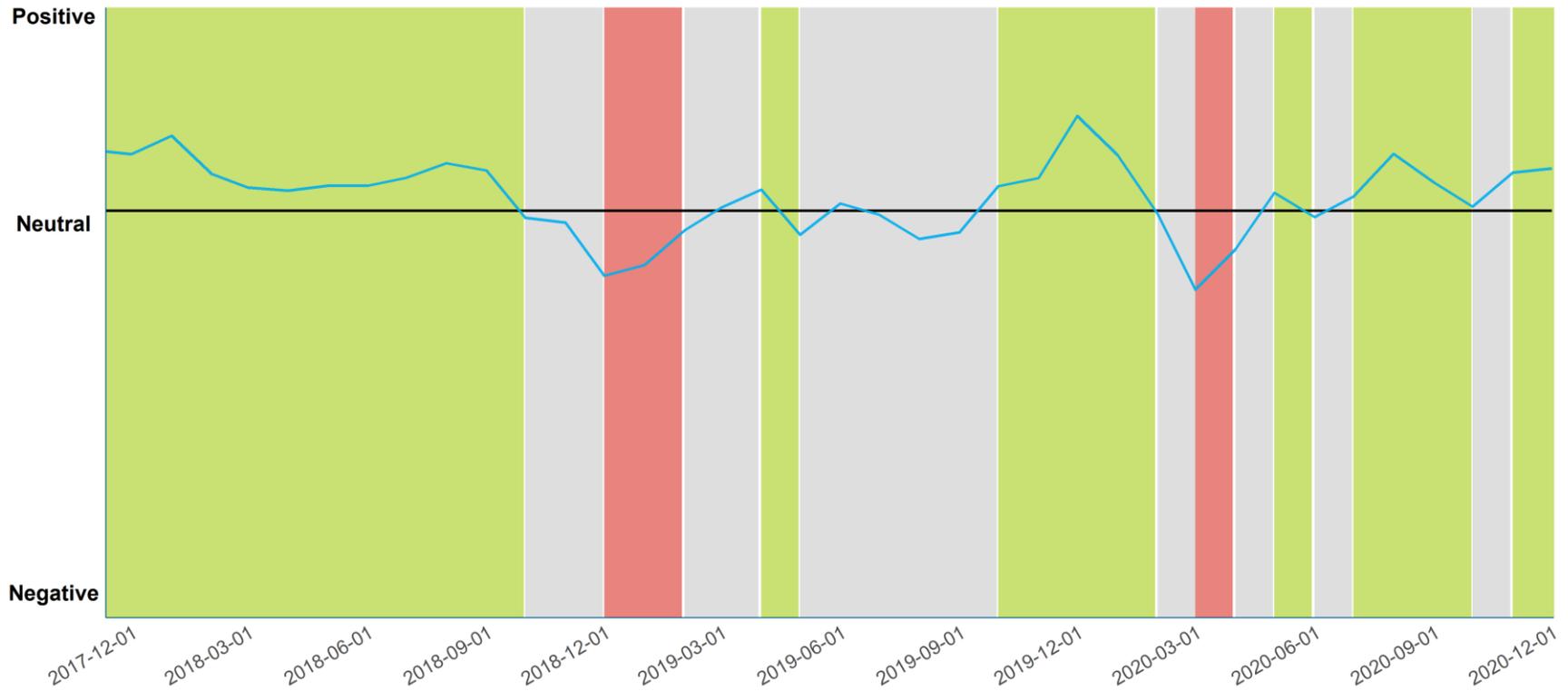


- Dashboard (2) shows how the current level of each indicator compares to its respective history.

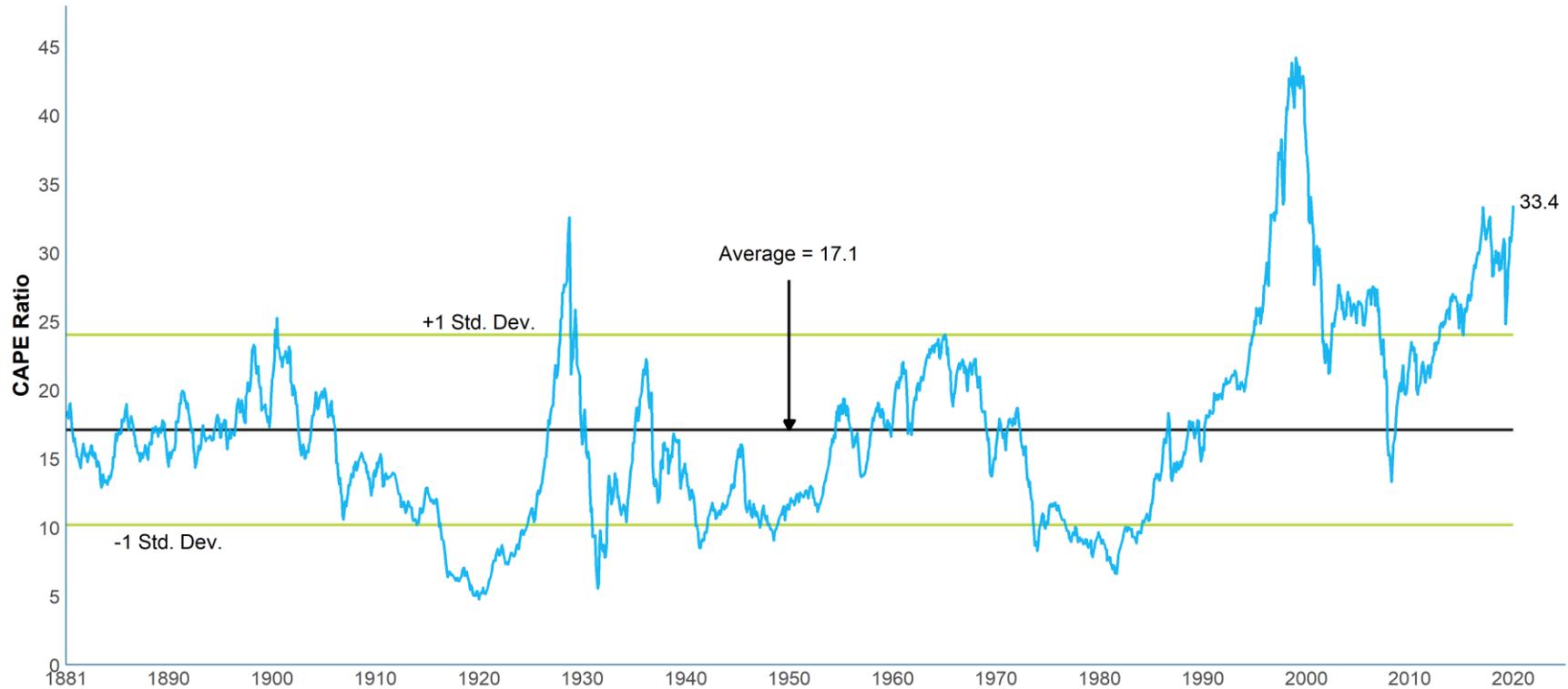
Market Sentiment Indicator (All History)
(As of December 31, 2020)



Market Sentiment Indicator (Last Three Years)
(As of December 31, 2020)



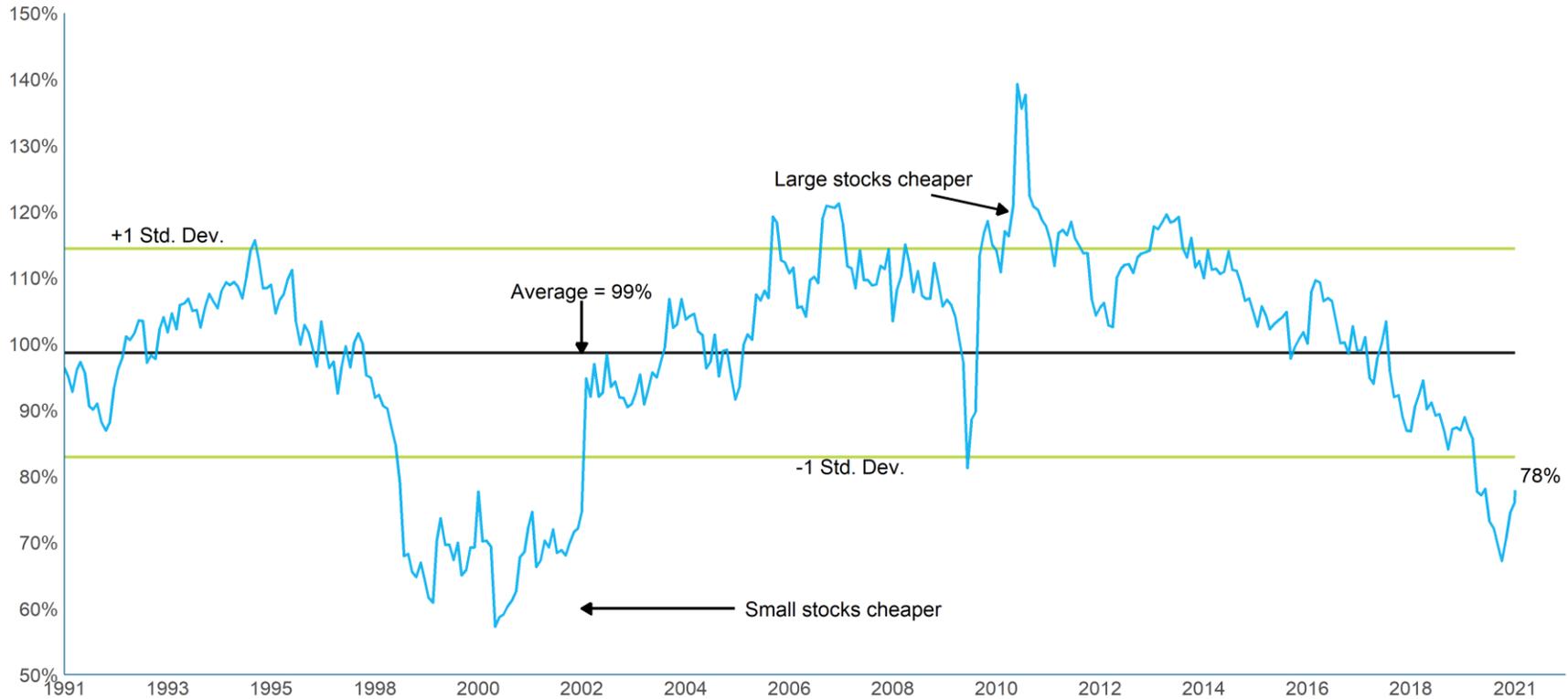
US Equity Cyclically Adjusted P/E¹
(As of December 31, 2020)



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

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

Small Cap P/E vs. Large Cap P/E¹ (As of December 31, 2020)



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

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

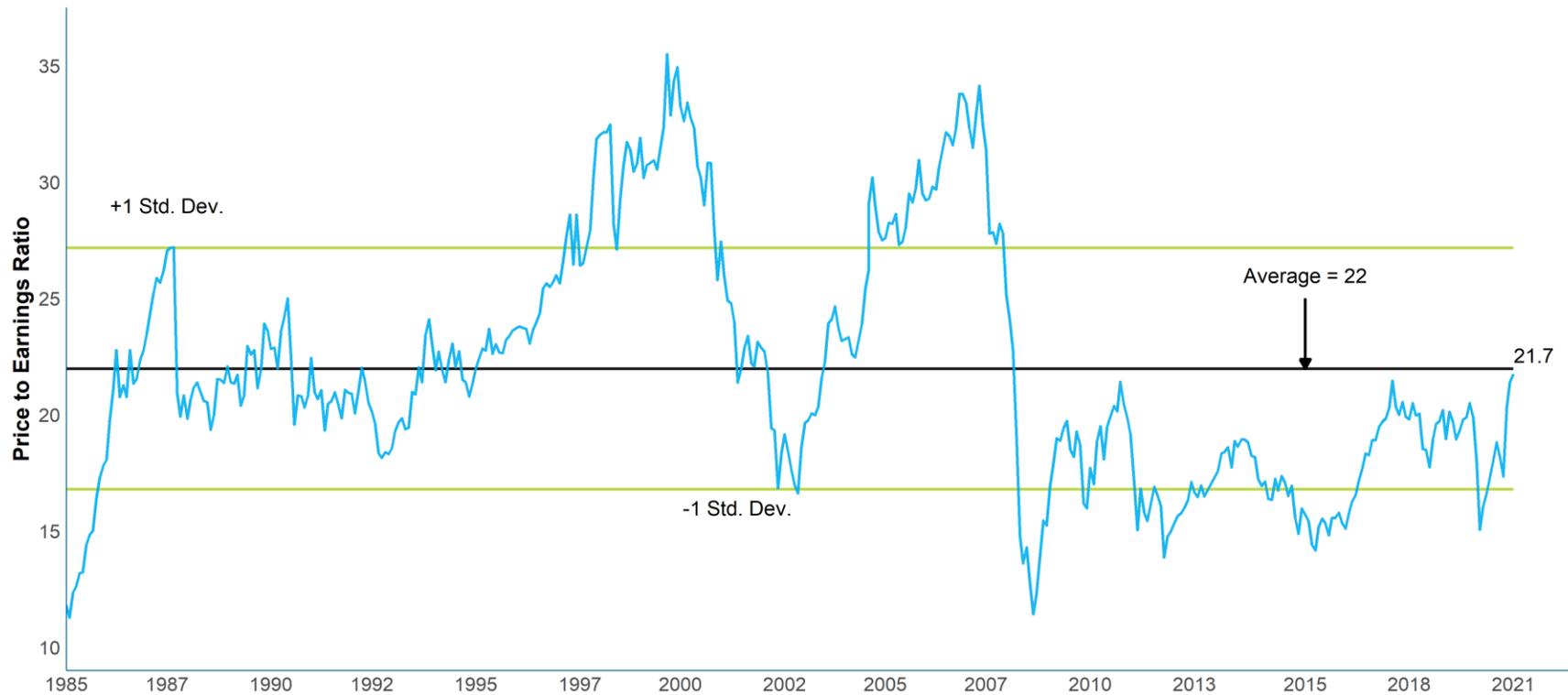
Growth P/E vs. Value P/E¹
(As of December 31, 2020)



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

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

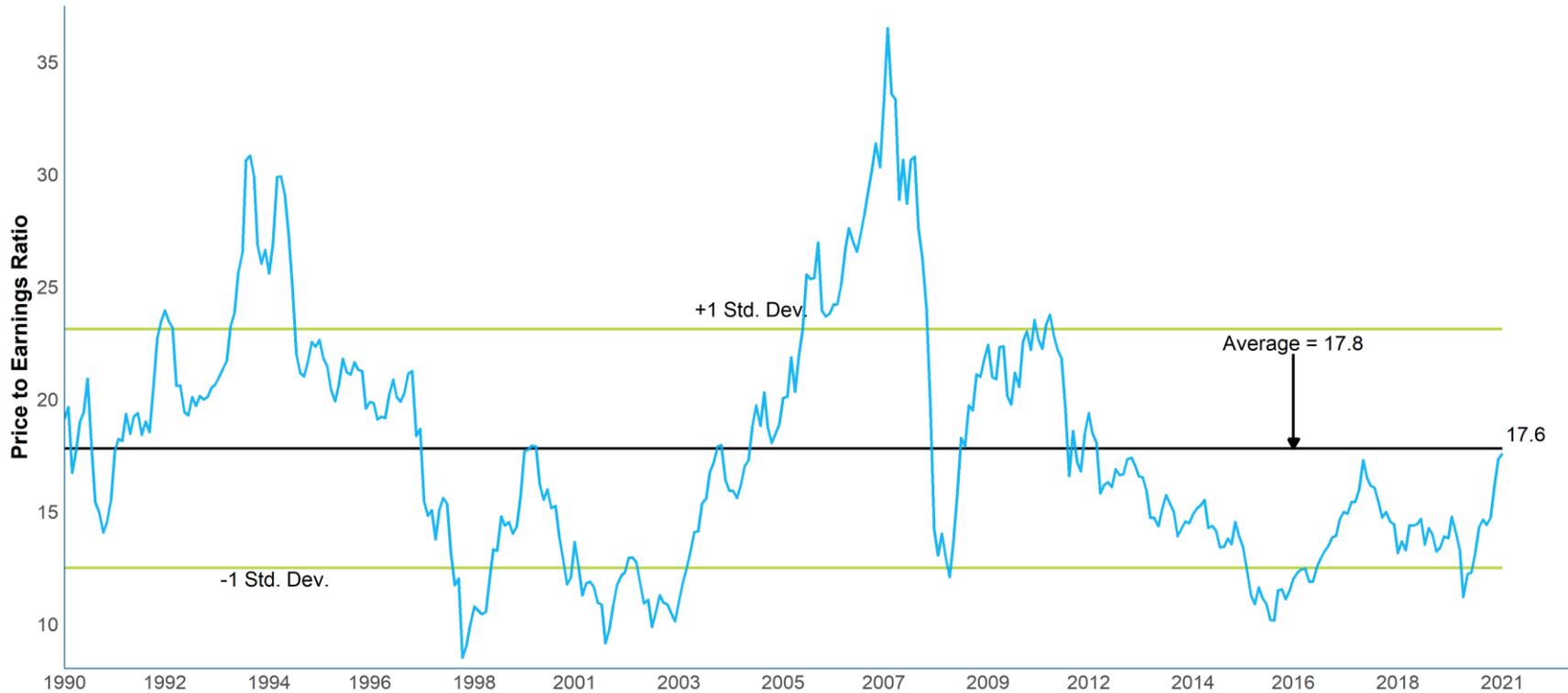
Developed International Equity Cyclically Adjusted P/E¹ (As of December 31, 2020)



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

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

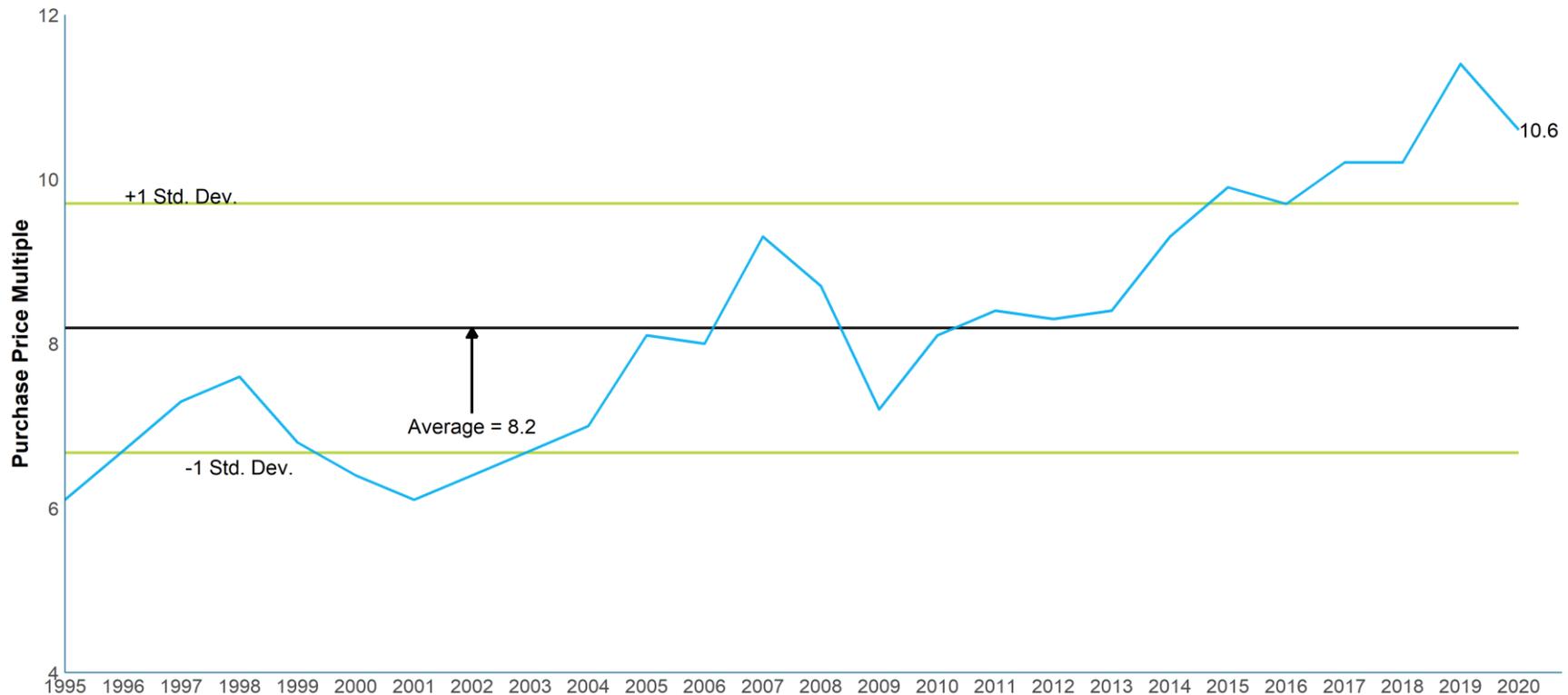
Emerging Market Equity Cyclically Adjusted P/E¹
 (As of December 31, 2020)



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

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

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

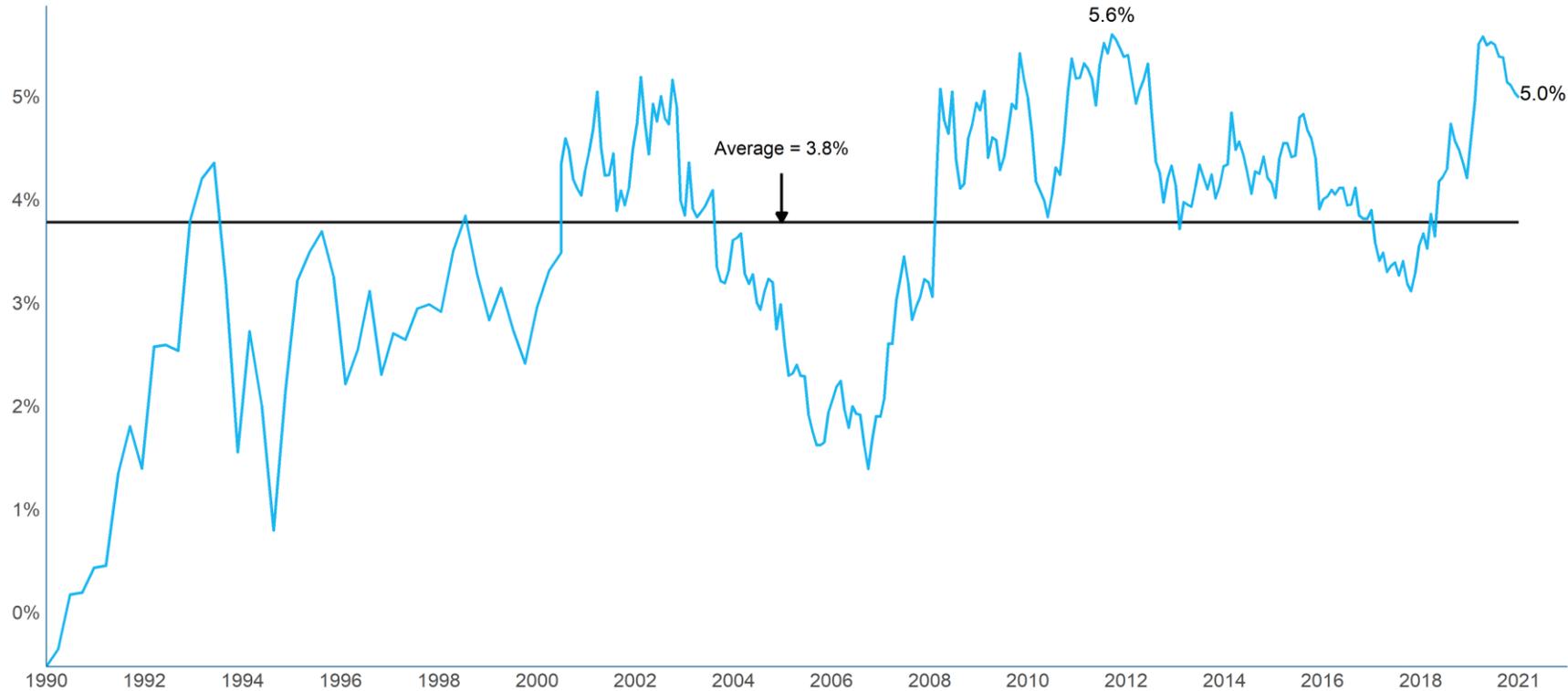


- This chart details one valuation metric for the private equity market. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

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

² Annual figures, except for 2020 (YTD).

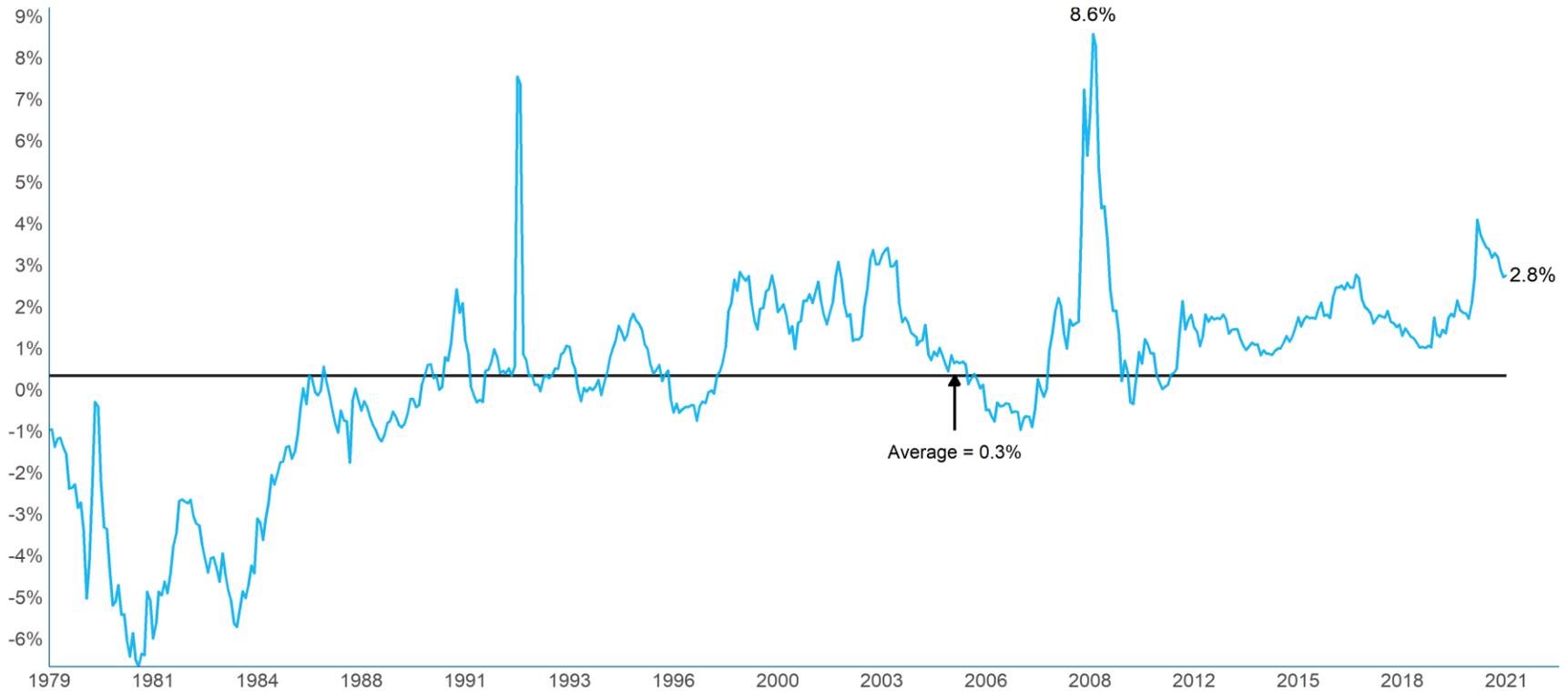
Core Real Estate Spread vs. Ten-Year Treasury¹ (As of December 31, 2020)



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

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

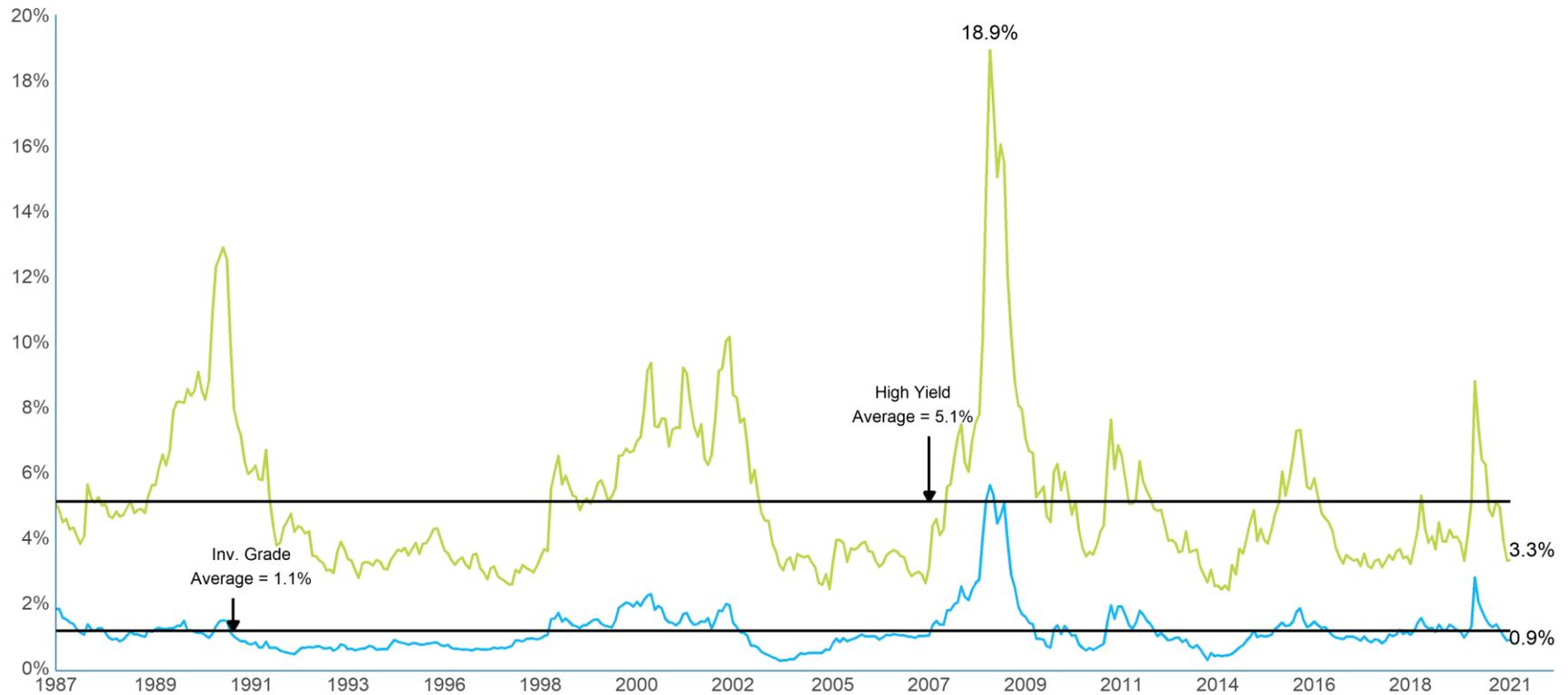
REITs Dividend Yield Spread vs. Ten-Year Treasury¹
 (As of December 31, 2020)



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

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

Credit Spreads¹
(As of December 31, 2020)



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

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

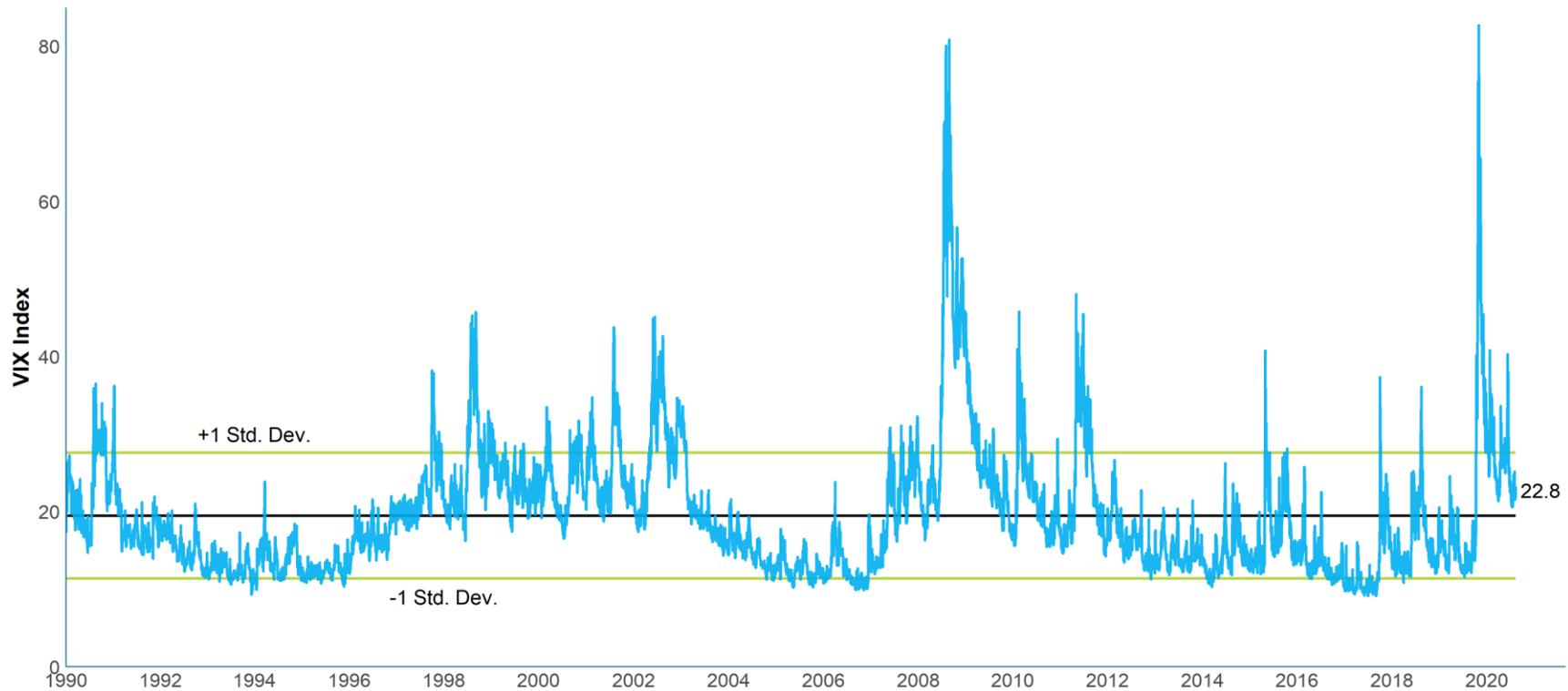
Emerging Market Debt Spreads¹
(As of December 31, 2020)



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

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

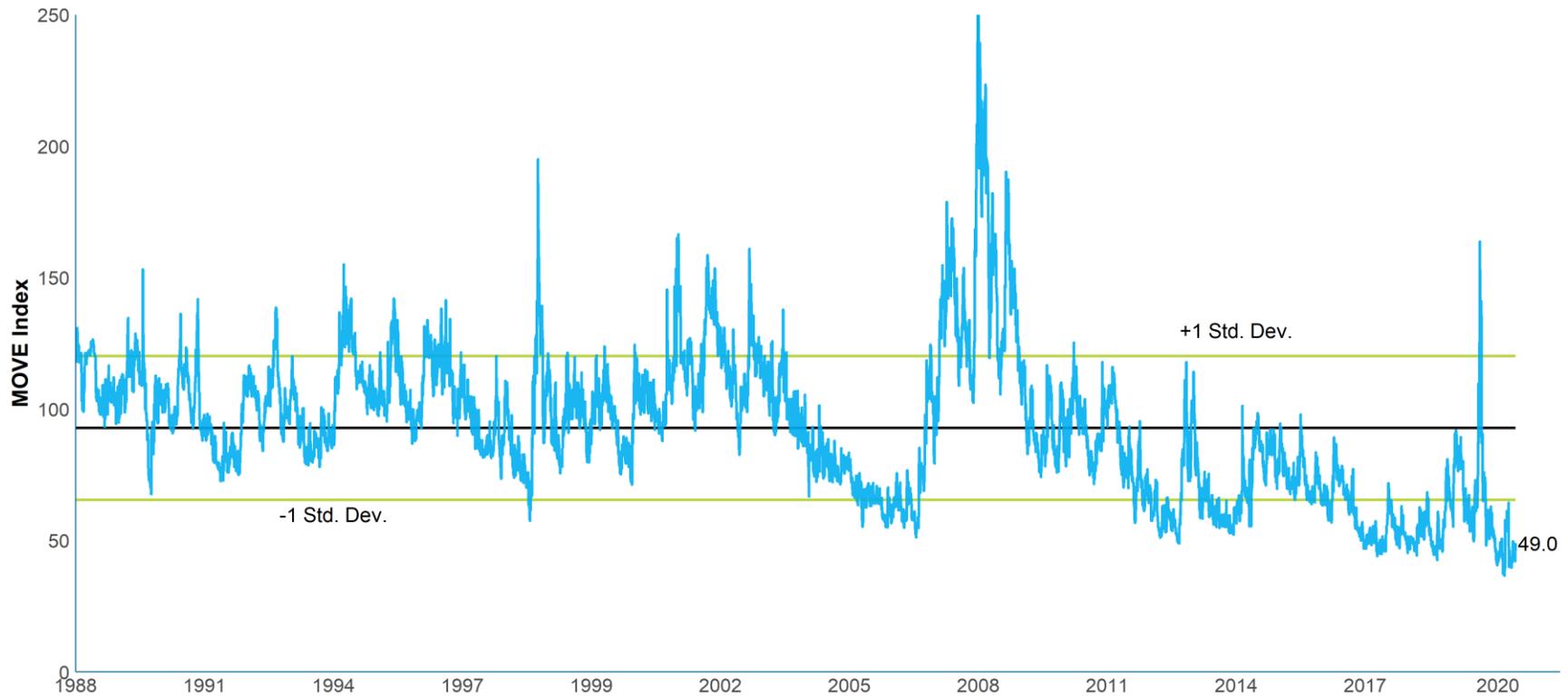
Equity Volatility¹
(As of December 31, 2020)



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

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

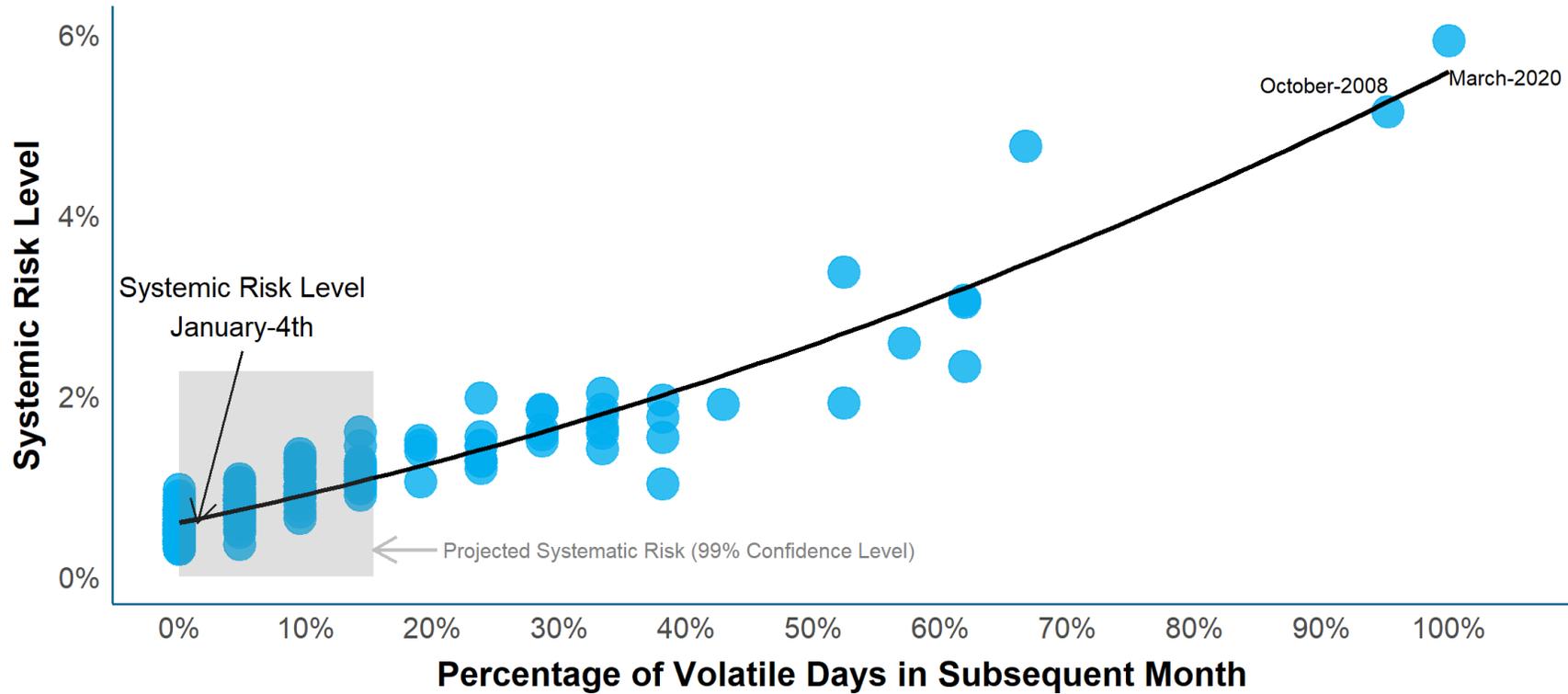
Fixed Income Volatility¹ (As of December 31, 2020)



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

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

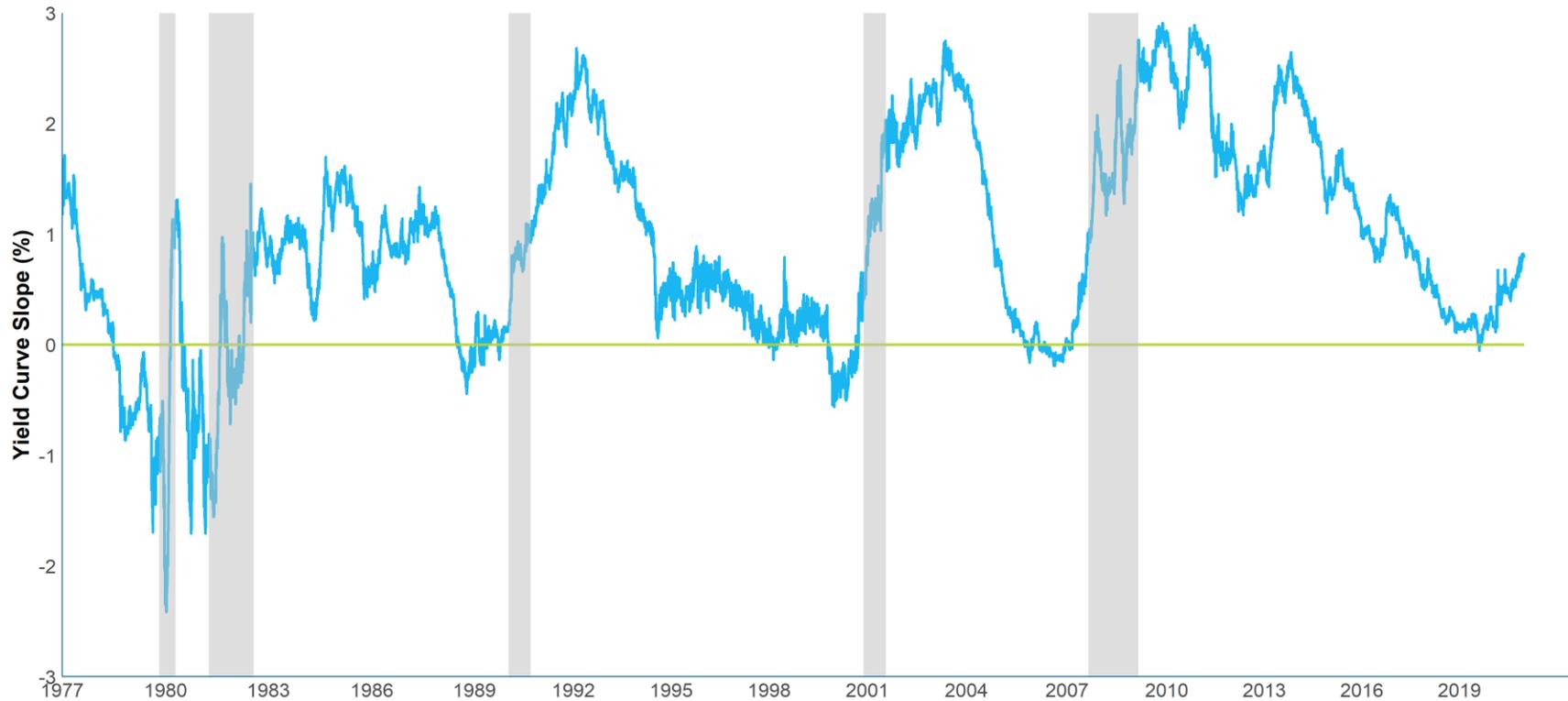
Systemic Risk and Volatile Market Days¹
(As of December 31, 2020)



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

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

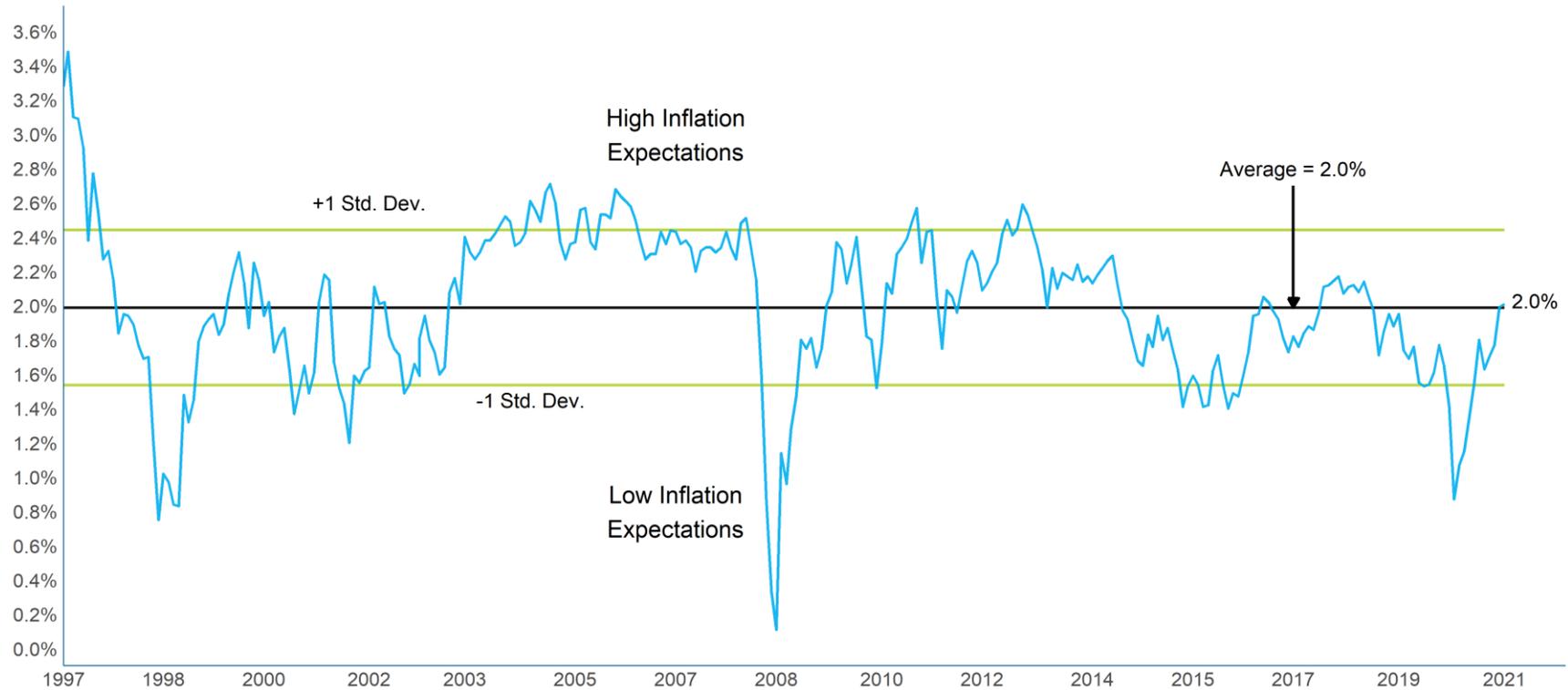
Yield Curve Slope (Ten Minus Two)¹
(As of December 31, 2020)



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

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

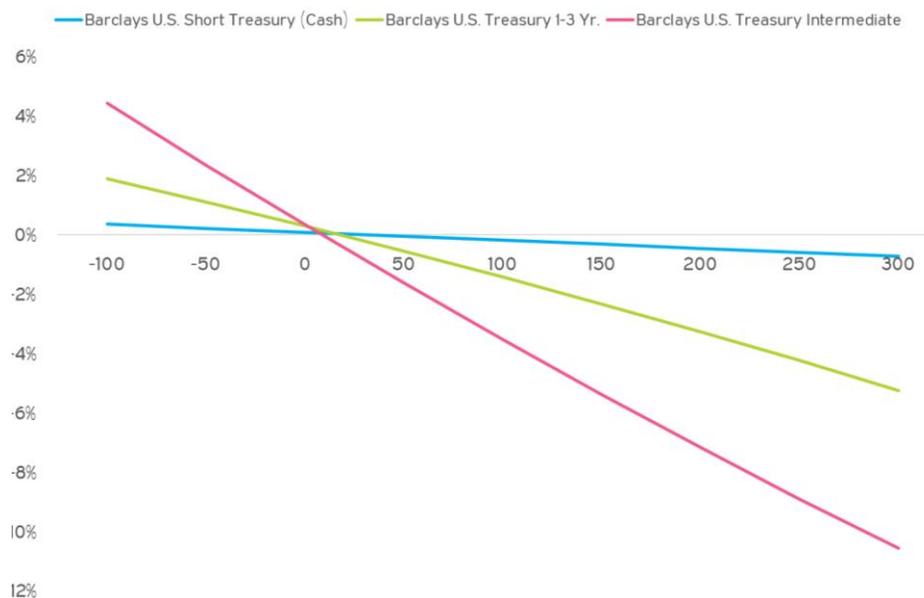
Ten-Year Breakeven Inflation¹
(As of December 31, 2020)



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

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

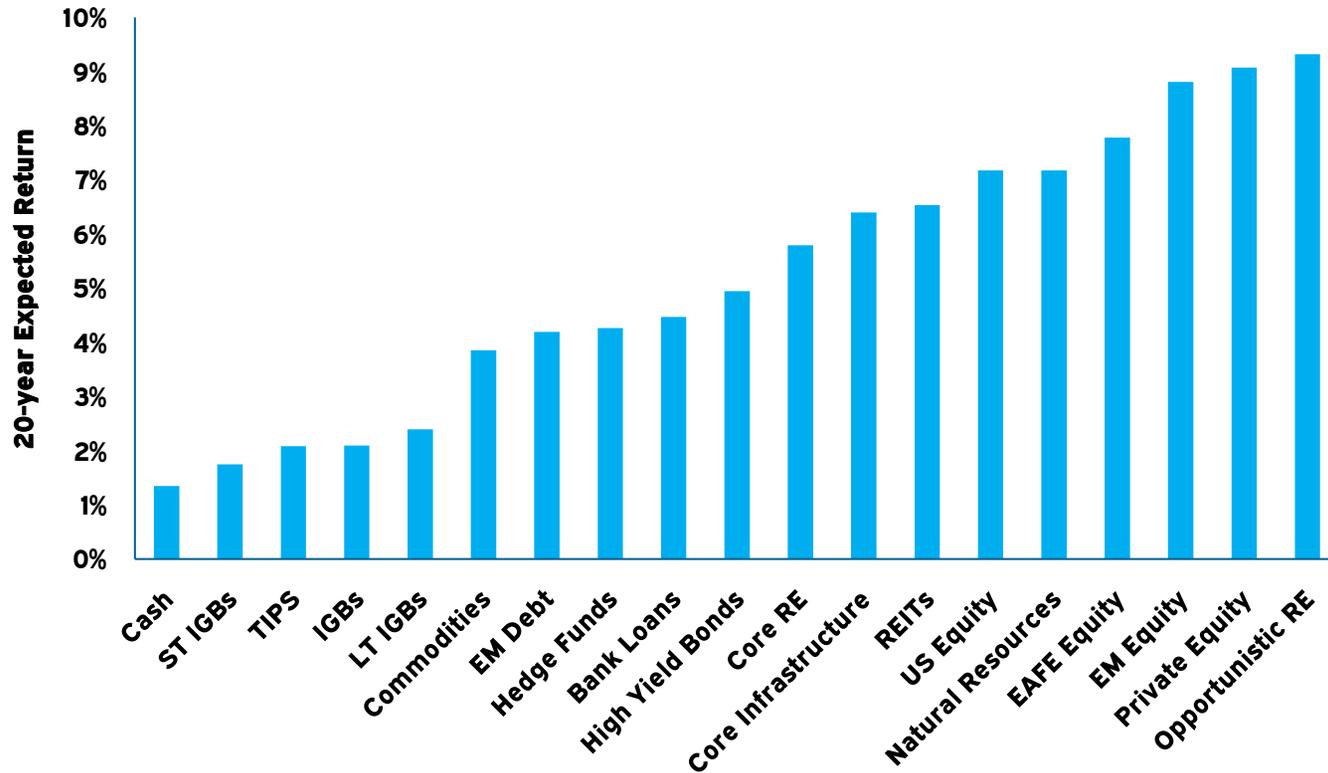
Total Return Given Changes in Interest Rates (bps)¹ (As of November 30, 2020)



	Total Return for Given Changes in Interest Rates (bps)									Statistics	
	-100	-50	0	50	100	150	200	250	300	Duration	YTW
Barclays US Short Treasury (Cash)	0.3%	0.2%	0.1%	-0.1%	-0.2%	-0.3%	-0.5%	-0.6%	-0.7%	0.27	0.07%
Barclays US Treasury 1-3 Yr.	1.9%	1.1%	0.3%	-0.6%	-1.4%	-2.3%	-3.3%	-4.3%	-5.3%	1.65	0.28%
Barclays US Treasury Intermediate	4.4%	2.3%	0.3%	-1.6%	-3.5%	-5.4%	-7.2%	-8.9%	-10.6%	3.98	0.32%
Barclays US Treasury Long	23.0%	11.7%	1.5%	-7.5%	-15.5%	-22.3%	-27.9%	-32.4%	-35.8%	19.24	1.51%

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

Long-Term Outlook – 20-Year Annualized Expected Returns¹



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

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

Appendix

Data Sources and Explanations¹

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

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

Appendix

Data Sources and Explanations¹

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

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

Appendix

Data Sources and Explanations¹

- Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.
- Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

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

Meketa Market Sentiment Indicator Explanation, Construction and Q&A

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

This appendix explores:

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

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

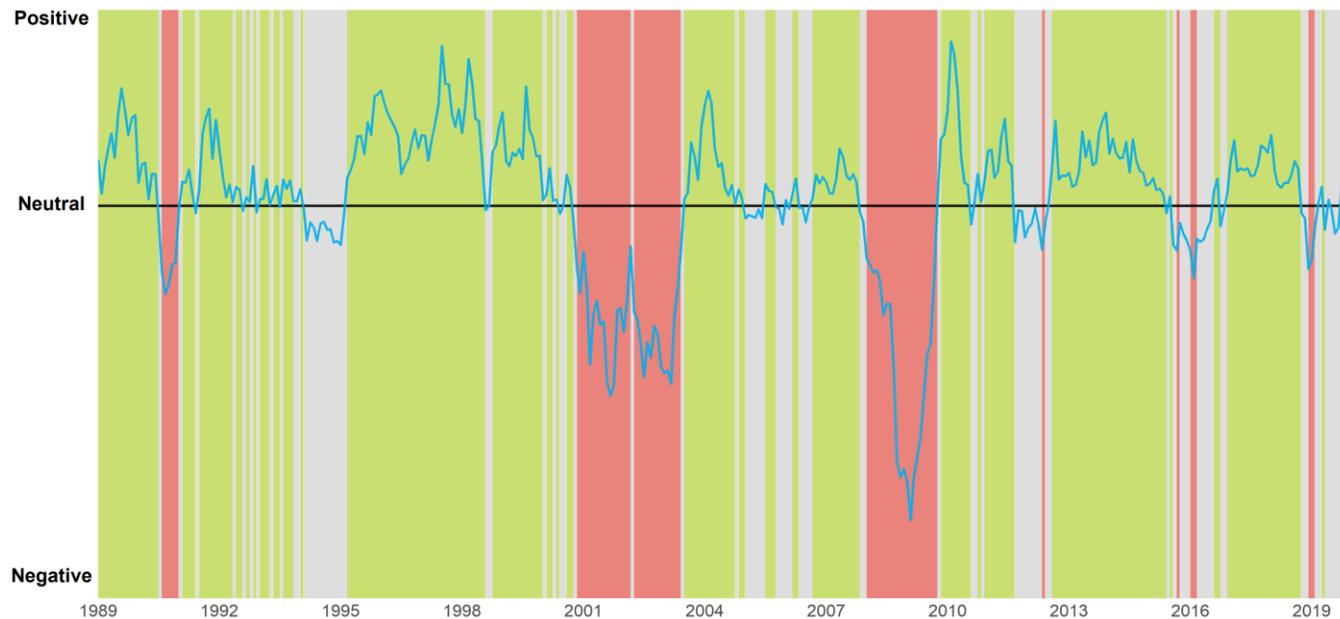
- Meketa’s Risk Metrics, which rely significantly on standard market measures of relative valuation, often provide valid early signals of increasing long-term risk levels in the global investment markets. However, as is the case with numerous valuation measures, the Risk Metrics may convey such risk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

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

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

How do I read the Meketa Market Sentiment Indicator graph?

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



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

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

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

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

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

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

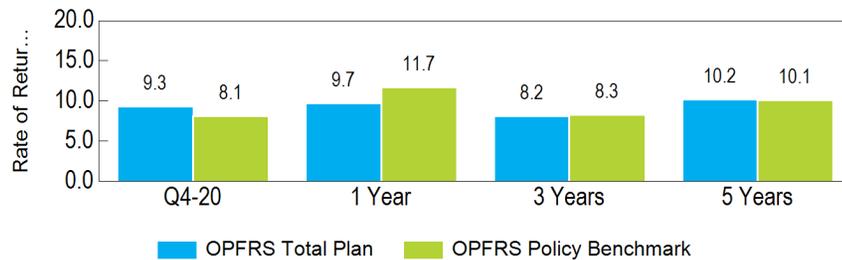
Total Portfolio Review

OPFRS Total Plan | As of December 31, 2020

3 Months Ending December 31, 2020		
	Anlzd Return	Standard Deviation
OPFRS Total Plan	9.25%	4.72%
OPFRS Policy Benchmark	8.11%	4.36%
InvMetrics Public DB \$250mm-\$1B Gross Median	10.66%	3.72%

1 Year Ending December 31, 2020		
	Anlzd Return	Standard Deviation
OPFRS Total Plan	9.47%	5.34%
OPFRS Policy Benchmark	11.74%	4.57%
InvMetrics Public DB \$250mm-\$1B Gross Median	13.12%	4.76%

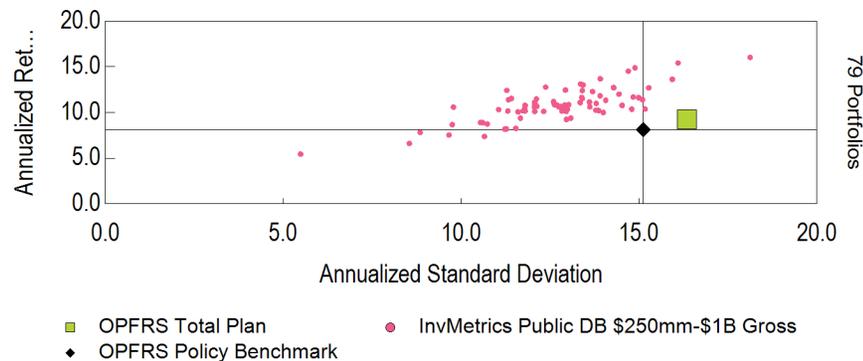
Return Summary Ending December 31, 2020



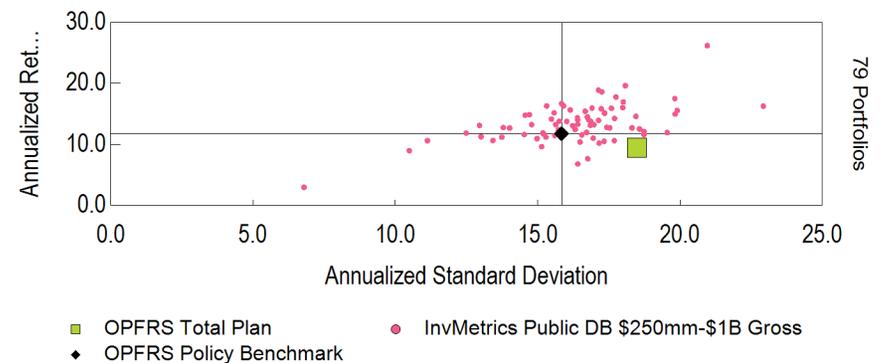
Summary of Cash Flows

	Quarter-To-Date	One Year
Beginning Market Value	\$400,067,242	\$408,226,525
Net Cash Flow	-\$3,341,422	-\$12,946,031
Capital Appreciation	\$37,392,649	\$38,837,976
Ending Market Value	\$434,118,470	\$434,118,470

Annualized Return vs. Annualized Standard Deviation 3 Months Ending December 31, 2020



Annualized Return vs. Annualized Standard Deviation 1 Year Ending December 31, 2020



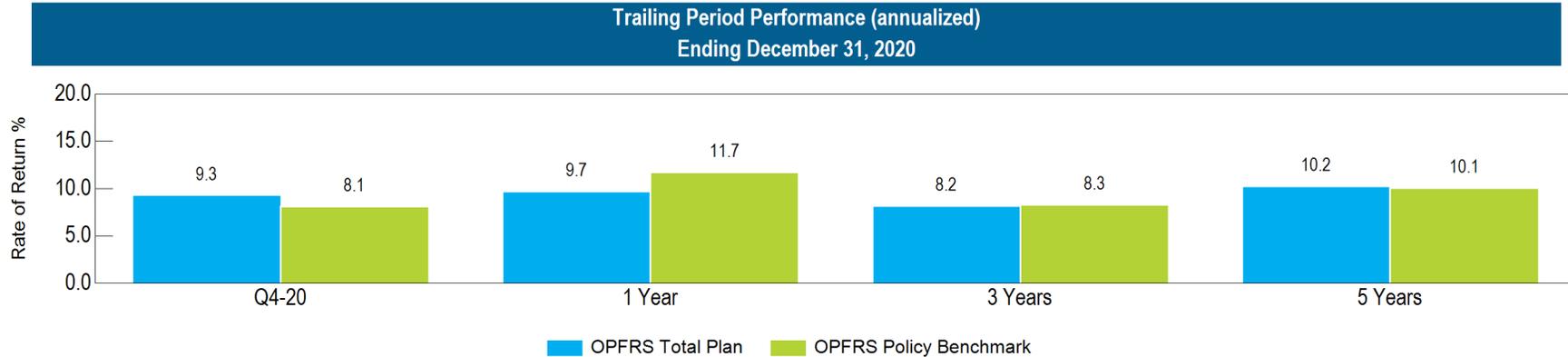
Evolving Policy Benchmark consists of 40% Russell 3000, 12% MSCI ACWI ex U.S., 33% Bbg BC Universal, 5% CBOE BXM, 6.7% SG Multi Asset Risk Premia, 3.3% Bbg BC Long Treasury.

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

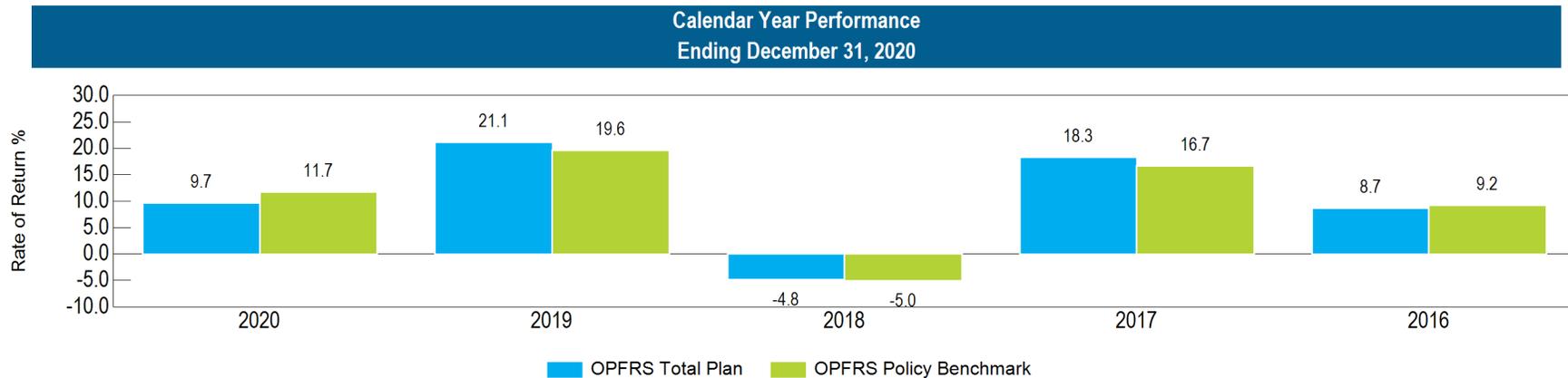
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
OPFRS Total Plan	9.3	9.7	8.2	10.2	8.2	8.4
<i>OPFRS Policy Benchmark</i>	<u>8.1</u>	<u>11.7</u>	<u>8.3</u>	<u>10.1</u>	<u>8.3</u>	<u>8.1</u>
Excess Return	1.2	-2.0	-0.1	0.1	-0.1	0.3
Domestic Equity	15.2	18.3	13.1	14.8	12.2	13.5
<i>Russell 3000 (Blend)</i>	<u>14.7</u>	<u>20.9</u>	<u>14.5</u>	<u>15.4</u>	<u>12.8</u>	<u>13.8</u>
Excess Return	0.5	-2.6	-1.4	-0.6	-0.6	-0.3
International Equity	14.8	7.2	5.0	9.2	5.8	5.9
<i>MSCI ACWI ex US (Blend)</i>	<u>17.1</u>	<u>11.1</u>	<u>5.4</u>	<u>9.4</u>	<u>5.3</u>	<u>5.4</u>
Excess Return	-2.3	-3.9	-0.4	-0.2	0.5	0.5
Fixed Income	1.4	8.0	5.8	5.4	4.7	4.4
<i>Bmbg BC Universal (Blend)</i>	<u>1.3</u>	<u>7.6</u>	<u>5.5</u>	<u>4.9</u>	<u>4.3</u>	<u>4.2</u>
Excess Return	0.1	0.4	0.3	0.5	0.4	0.2
Credit	7.4	7.9	4.5	8.2	--	--
<i>BBgBarc US High Yield TR</i>	<u>6.5</u>	<u>7.1</u>	<u>6.2</u>	<u>8.6</u>	--	--
Excess Return	0.9	0.8	-1.7	-0.4	--	--
Covered Calls	10.3	11.4	9.1	10.6	--	--
<i>CBOE S&P 500 BuyWrite USD</i>	<u>7.5</u>	<u>-2.8</u>	<u>2.6</u>	<u>5.5</u>	--	--
Excess Return	2.8	14.2	6.5	5.1	--	--
Crisis Risk Offset	-2.8	-23.4	-7.1	--	--	--
<i>SG Multi Alternative Risk Premia Index</i>	<u>-2.0</u>	<u>-14.8</u>	--	--	--	--
Excess Return	-0.8	-8.6	--	--	--	--
Cash	0.0	1.0	1.8	1.4	1.0	--
<i>FTSE T-Bill 3 Months TR</i>	<u>0.0</u>	<u>0.6</u>	<u>1.6</u>	<u>1.2</u>	<u>0.8</u>	--
Excess Return	0.0	0.4	0.2	0.2	0.2	--

1. Evolving Policy Benchmark consists of 40% Russell 3000, 12% MSCI Acwi ex U.S., 33% Bbg BC Universal, 5% CBOE BXM, 6.7% SG Multi Asset Risk Premia, 3.3% Bbg BC Long Treasury,
2. Domestic Equity Benchmark consists of S&P 500 thru 3/31/98 10% Russell 1000, 20% Russell 1000 Value, 5% RMC from 4/1/98 - 12/31/04 and Russell 3000 from 1/1/05 to present.
3. International Equity Benchmark consists of MSCI EAFE thru 12/31/04 and MSCI ACWI x US thereafter.
4. Fixed Income Benchmark consists of Bbg BC Aggregate prior to 4/1/06, and Bbg BC Universal thereafter.
5. Cash balances held in ETF accounts at the Custodian are reflected in the Cash account market value.

Portfolio Relative Performance Results | As of December 31, 2020



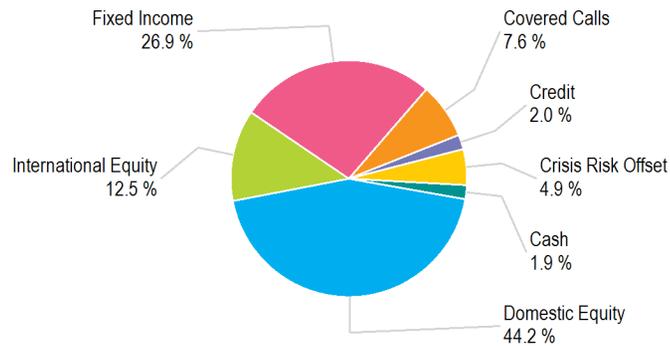
	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)	2020 (%)
OPFRS Total Plan	9.3	15.0	9.7	8.2	10.2	8.7	18.3	-4.8	21.1	9.7
<i>OPFRS Policy Benchmark</i>	<i>8.1</i>	<i>13.6</i>	<i>11.7</i>	<i>8.3</i>	<i>10.1</i>	<i>9.2</i>	<i>16.7</i>	<i>-5.0</i>	<i>19.6</i>	<i>11.7</i>
<i>InvMetrics Public DB \$250mm-\$1B Gross Median</i>	<i>10.7</i>	<i>16.7</i>	<i>13.1</i>	<i>8.9</i>	<i>10.1</i>	<i>7.8</i>	<i>15.8</i>	<i>-4.1</i>	<i>18.6</i>	<i>13.1</i>



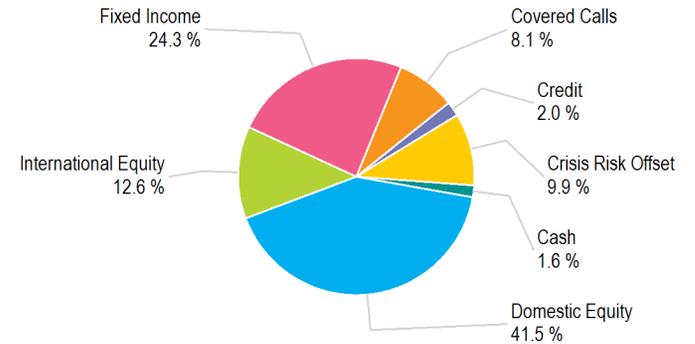
Asset Allocation vs. Target As Of December 31, 2020

	Current	%	Policy	Difference*
Domestic Equity	\$191,706,915	44.2%	40.0%	4.2%
International Equity	\$54,426,730	12.5%	12.0%	0.5%
Fixed Income	\$116,895,373	26.9%	31.0%	-4.1%
Covered Calls	\$32,961,805	7.6%	5.0%	2.6%
Credit	\$8,605,599	2.0%	2.0%	0.0%
Crisis Risk Offset	\$21,322,811	4.9%	10.0%	-5.1%
Cash	\$8,199,236	1.9%	0.0%	1.9%
Total	\$434,118,470	100.0%	100.0%	

December 31, 2020: \$434,118,470



December 31, 2019: \$408,226,525



Cash balances held in ETF accounts at the Custodian are reflected in the Cash account market value.
Target weightings reflect the Plan's evolving asset allocation (effective 5/31/2017.)

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

	Market Value	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
Domestic Equity	191,706,915	100.0	15.2	18.3	13.1	14.8	9.2	Jun-97
<i>Russell 3000 (Blend)</i>			<i>14.7</i>	<i>20.9</i>	<i>14.5</i>	<i>15.4</i>	<i>9.4</i>	<i>Jun-97</i>
Excess Return			0.5	-2.6	-1.4	-0.6	-0.2	
Northern Trust Russell 1000	107,771,639	56.2	13.7	20.8	14.8	15.5	14.9	Jun-10
<i>Russell 1000</i>			<i>13.7</i>	<i>21.0</i>	<i>14.8</i>	<i>15.6</i>	<i>14.9</i>	<i>Jun-10</i>
Excess Return			0.0	-0.2	0.0	-0.1	0.0	
<i>eV US Large Cap Core Equity Gross Rank</i>			<i>26</i>	<i>27</i>	<i>28</i>	<i>27</i>	<i>36</i>	<i>Jun-10</i>
EARNEST Partners	40,963,567	21.4	18.2	21.2	14.9	17.3	10.9	Apr-06
<i>Russell MidCap</i>			<i>19.9</i>	<i>17.1</i>	<i>11.6</i>	<i>13.4</i>	<i>9.4</i>	<i>Apr-06</i>
Excess Return			-1.7	4.1	3.3	3.9	1.5	
<i>eV US Mid Cap Core Equity Gross Rank</i>			<i>61</i>	<i>23</i>	<i>19</i>	<i>10</i>	<i>26</i>	<i>Apr-06</i>
iShares Edge MSCI Min Vol	19,318,580	10.1	7.0	--	--	--	27.5	Apr-20
<i>MSCI USA Minimum Volatility GR USD</i>			<i>6.9</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>27.6</i>	<i>Apr-20</i>
Excess Return			0.1				-0.1	
<i>eV US Low Volatility Equity Gross Rank</i>			<i>69</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>73</i>	<i>Apr-20</i>
Rice Hall James	15,003,227	7.8	21.0	24.7	11.5	--	13.6	Jul-17
<i>Russell 2000 Growth</i>			<i>29.6</i>	<i>34.6</i>	<i>16.2</i>	<i>--</i>	<i>17.2</i>	<i>Jul-17</i>
Excess Return			-8.6	-9.9	-4.7		-3.6	
<i>eV US Small Cap Growth Equity Gross Rank</i>			<i>92</i>	<i>87</i>	<i>92</i>	<i>--</i>	<i>92</i>	<i>Jul-17</i>
Vanguard Russell 2000 Value	8,649,902	4.5	33.4	5.0	--	--	9.3	Aug-19
<i>Russell 2000 Value</i>			<i>33.4</i>	<i>4.6</i>	<i>--</i>	<i>--</i>	<i>8.8</i>	<i>Aug-19</i>
Excess Return			0.0	0.4			0.5	
<i>eV US Small Cap Value Equity Gross Rank</i>			<i>29</i>	<i>52</i>	<i>--</i>	<i>--</i>	<i>47</i>	<i>Aug-19</i>

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

	Market Value	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
International Equity	54,426,730	100.0	14.8	7.2	5.0	9.2	5.7	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			<i>17.1</i>	<i>11.1</i>	<i>5.4</i>	<i>9.4</i>	<i>5.9</i>	<i>Jan-98</i>
Excess Return			-2.3	-3.9	-0.4	-0.2	-0.2	
SGA ACWI ex-U.S. Equity	38,257,641	70.3	14.1	7.6	--	--	7.6	Dec-19
<i>MSCI ACWI ex USA Gross</i>			<i>17.1</i>	<i>11.1</i>	--	--	<i>14.7</i>	<i>Dec-19</i>
Excess Return			-3.0	-3.5			-7.1	
<i>eV ACWI ex-US All Cap Core Eq Gross Rank</i>			<i>85</i>	<i>85</i>	--	--	<i>93</i>	<i>Dec-19</i>
Vanguard Developed Markets ETF	15,808,977	29.0	16.5	10.0	--	--	16.7	Sep-19
<i>FTSE Developed All Cap Ex US TR USD</i>			<i>17.1</i>	<i>10.3</i>	--	--	<i>17.1</i>	<i>Sep-19</i>
Excess Return			-0.6	-0.3			-0.4	
<i>eV ACWI ex-US All Cap Core Eq Gross Rank</i>			<i>52</i>	<i>71</i>	--	--	<i>83</i>	<i>Sep-19</i>

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

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

	Market Value	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
Fixed Income	116,895,373	100.0	1.4	8.0	5.8	5.4	5.6	Dec-93
<i>Blmbg BC Universal (Blend)</i>			<i>1.3</i>	<i>7.6</i>	<i>5.5</i>	<i>4.9</i>	<i>5.4</i>	<i>Dec-93</i>
Excess Return			0.1	0.4	0.3	0.5	0.2	
Ramirez	79,297,837	67.8	1.3	6.8	5.4	--	5.4	Jan-17
<i>BBgBarc US Aggregate TR</i>			<i>0.7</i>	<i>7.5</i>	<i>5.3</i>	--	<i>4.9</i>	<i>Jan-17</i>
Excess Return			0.6	-0.7	0.1		0.5	
<i>eV US Core Fixed Inc Net Rank</i>			<i>31</i>	<i>92</i>	<i>61</i>	--	<i>31</i>	<i>Jan-17</i>
Reams	29,931,453	25.6	1.8	20.2	9.7	7.2	6.2	Feb-98
<i>Blmbg BC Universal (Blend)</i>			<i>1.3</i>	<i>7.6</i>	<i>5.5</i>	<i>4.9</i>	<i>5.1</i>	<i>Feb-98</i>
Excess Return			0.5	12.6	4.2	2.3	1.1	
<i>eV US Core Plus Fixed Inc Gross Rank</i>			<i>68</i>	<i>1</i>	<i>1</i>	<i>4</i>	<i>35</i>	<i>Feb-98</i>
iShares Core US Aggregate Bond ETF	7,666,040	6.6	--	--	--	--	1.0	Nov-20
<i>BBgBarc US Aggregate TR</i>			--	--	--	--	<i>1.1</i>	<i>Nov-20</i>
Excess Return							-0.1	

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

	Market Value	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
Covered Calls	32,961,805	100.0	10.3	11.4	9.1	10.6	9.3	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>			<i>7.5</i>	<i>-2.8</i>	<i>2.6</i>	<i>5.5</i>	<i>5.3</i>	<i>Apr-14</i>
Excess Return			2.8	14.2	6.5	5.1	4.0	
Parametric DeltaShift	18,167,767	55.1	12.1	16.4	12.1	13.1	11.7	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>			<i>7.5</i>	<i>-2.8</i>	<i>2.6</i>	<i>5.5</i>	<i>5.3</i>	<i>Apr-14</i>
Excess Return			4.6	19.2	9.5	7.6	6.4	
<i>eV US Large Cap Core Equity Gross Rank</i>			<i>46</i>	<i>47</i>	<i>59</i>	<i>69</i>	<i>66</i>	<i>Apr-14</i>
Parametric BXM	14,794,038	44.9	8.0	6.0	5.9	7.9	7.2	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>			<i>7.5</i>	<i>-2.8</i>	<i>2.6</i>	<i>5.5</i>	<i>5.3</i>	<i>Apr-14</i>
Excess Return			0.5	8.8	3.3	2.4	1.9	
<i>eV US Large Cap Core Equity Gross Rank</i>			<i>92</i>	<i>93</i>	<i>97</i>	<i>97</i>	<i>97</i>	<i>Apr-14</i>

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

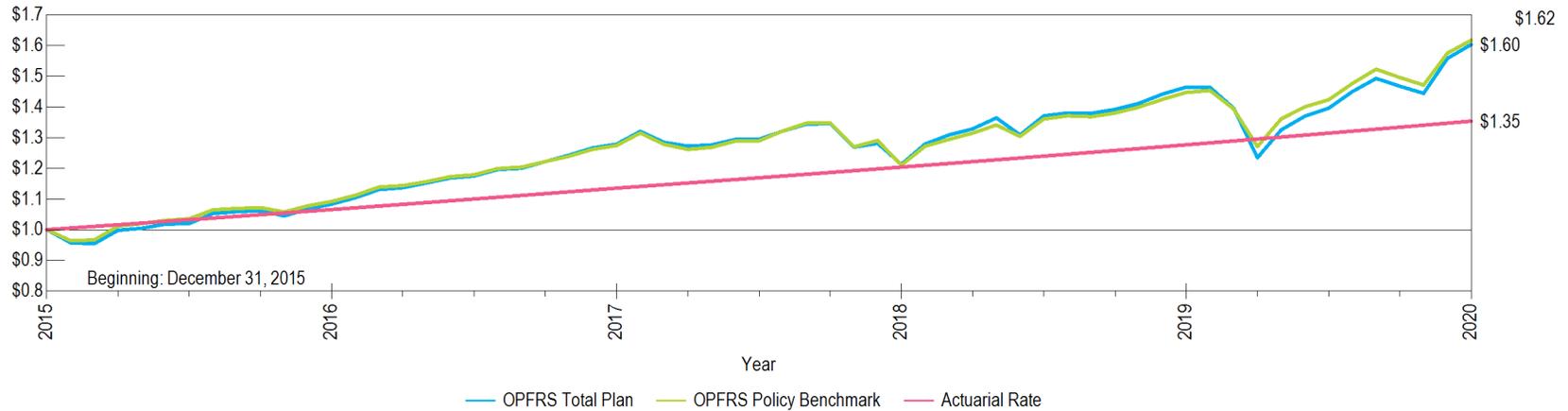
	Market Value	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
Credit	8,605,599	100.0	7.4	7.9	4.5	8.2	6.0	Feb-15
<i>BBgBarc US High Yield TR</i>			<u>6.5</u>	<u>7.1</u>	<u>6.2</u>	<u>8.6</u>	<u>6.3</u>	<u>Feb-15</u>
Excess Return			0.9	0.8	-1.7	-0.4	-0.3	
DDJ Capital	8,605,599	100.0	7.4	7.9	4.5	8.2	6.0	Feb-15
<i>ICE BofA High Yield Master TR</i>			<u>6.5</u>	<u>6.2</u>	<u>5.9</u>	<u>8.4</u>	<u>6.1</u>	<u>Feb-15</u>
Excess Return			0.9	1.7	-1.4	-0.2	-0.1	
<i>eV US High Yield Fixed Inc Gross Rank</i>			15	26	95	46	54	Feb-15

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

	Market Value	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	S.I.	S.I. Date
Crisis Risk Offset	21,322,811	100.0	-2.8	-23.4	-7.1	--	-8.7	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>			<i>-2.0</i>	<i>-14.8</i>	<i>--</i>	<i>--</i>	<i>-5.7</i>	<i>Aug-18</i>
Excess Return			-0.8	-8.6			-3.0	
Vanguard Long-Term Treasury ETF	21,322,811	100.0	-3.0	17.4	--	--	13.8	Jul-19
<i>BBgBarc US Govt Long TR</i>			<i>-3.0</i>	<i>17.6</i>	<i>--</i>	<i>--</i>	<i>13.9</i>	<i>Jul-19</i>
Excess Return			0.0	-0.2			-0.1	
<i>eV US Long Duration - Gov/Cred Fixed Inc Net Rank</i>			<i>99</i>	<i>45</i>	<i>--</i>	<i>--</i>	<i>87</i>	<i>Jul-19</i>

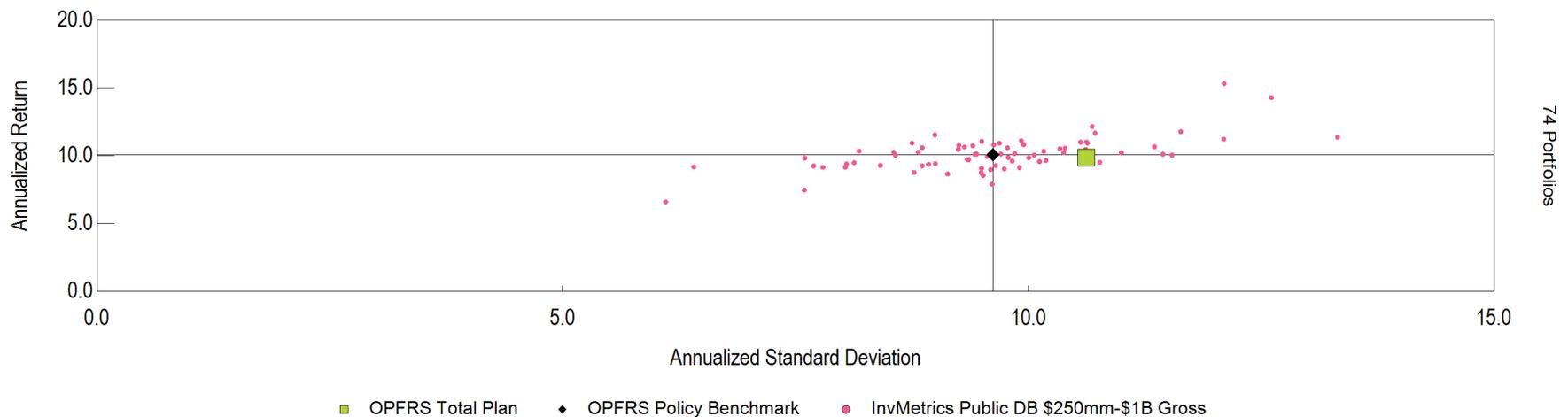
Total Portfolio 5-Year Performance | As of December 31, 2020

Growth of a Dollar

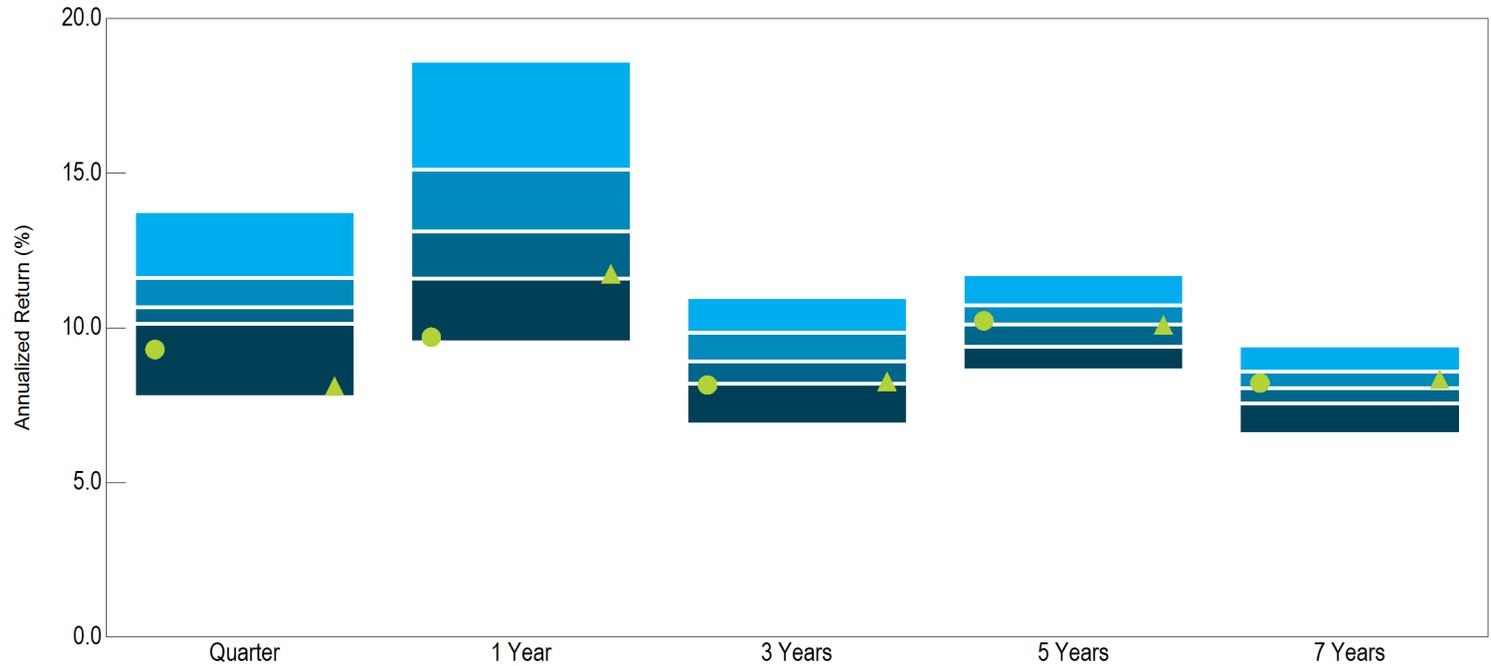


The actuarial expected rate of return was 8% through 6/30/2009, 7.5% through 6/30/2010, 7% through 6/30/2011, 6.75% through 6/30/2014, 6.5% through 2/31/2017 and 6.0% currently

Annualized Return vs. Annualized Standard Deviation 5 Years Ending December 31, 2020



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



Return (Rank)

5th Percentile	13.8	18.6	11.0	11.7	9.4
25th Percentile	11.6	15.1	9.8	10.7	8.6
Median	10.7	13.1	8.9	10.1	8.1
75th Percentile	10.1	11.6	8.2	9.4	7.6
95th Percentile	7.8	9.5	6.9	8.6	6.6
# of Portfolios	79	79	76	74	73
● OPFRS Total Plan	9.3 (85)	9.7 (95)	8.2 (78)	10.2 (45)	8.2 (46)
▲ OPFRS Policy Benchmark	8.1 (94)	11.7 (74)	8.3 (71)	10.1 (52)	8.3 (37)

Manager Monitoring / Probation List

Manager Monitoring/Probation Status

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

Portfolio	Status	Concern	Months Since Corrective Action	Performance [^] Since Corrective Action (Gross)	Peer Group Percentile Ranking	Date of Corrective Action*
DDJ Capital	On Watch	Performance	19	4.9	15	5/29/2019
Ice BofAML US High Yield			---	8.0		
Rice Hall James	On Watch	Performance	19	22.1	92	5/29/2019
Russell 2000 Growth	---	---	---	31.8		
Parametric	On Watch	Org changes	2	12.6	NA	10/28/2020
CBOE S&P 500 BuyWrite USD				11.6		

[^]Annualized performance if over one year.

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

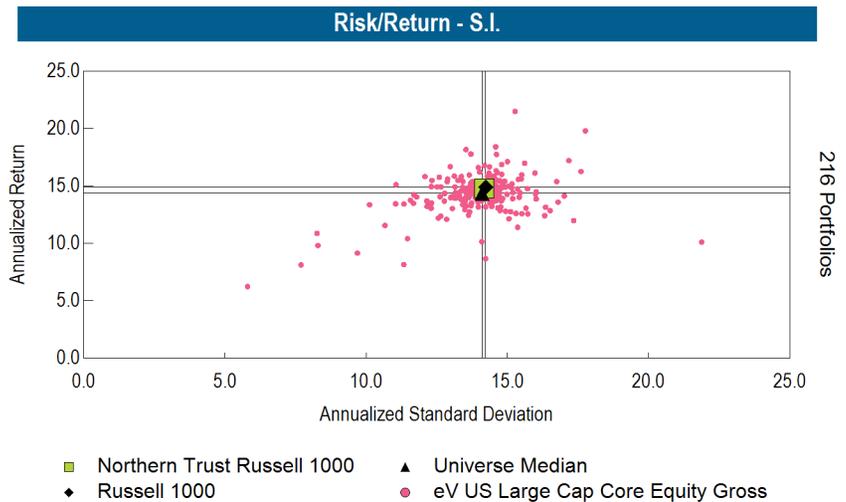
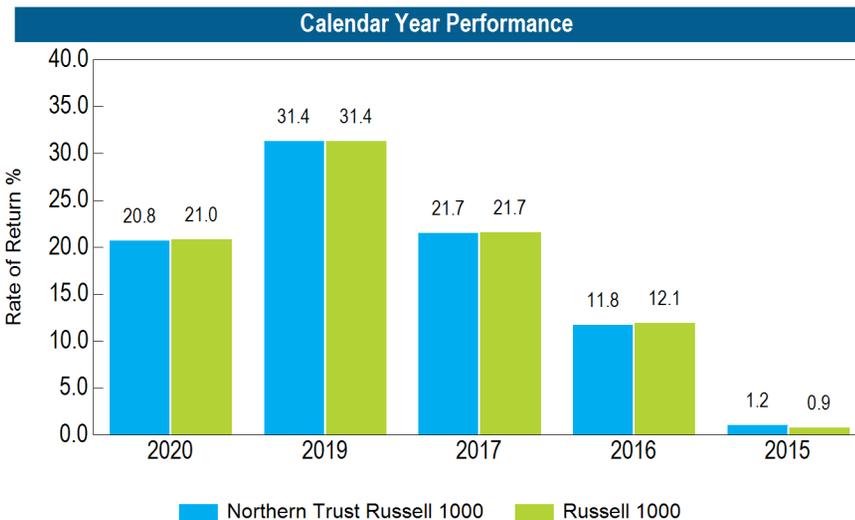
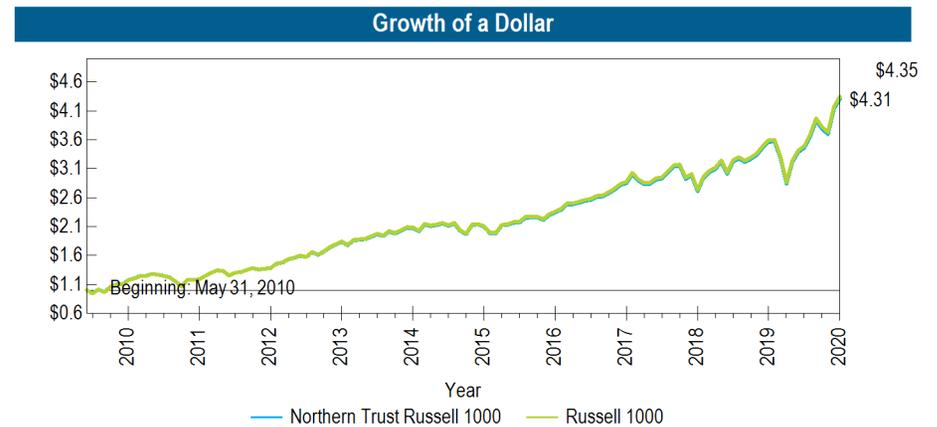
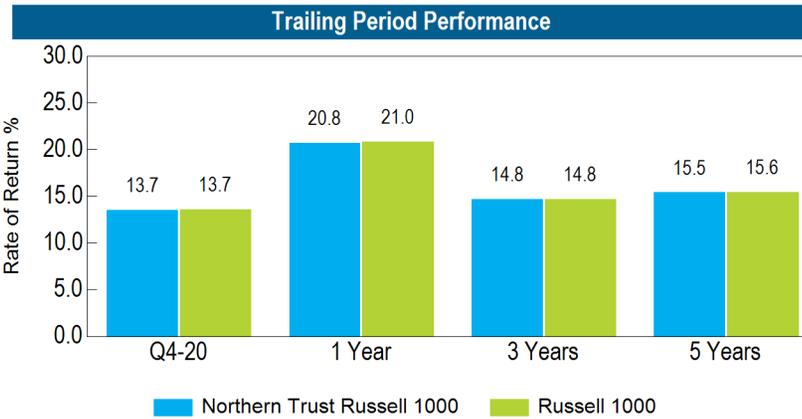
Investment Performance Criteria
For Manager Monitoring/Probation Status

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

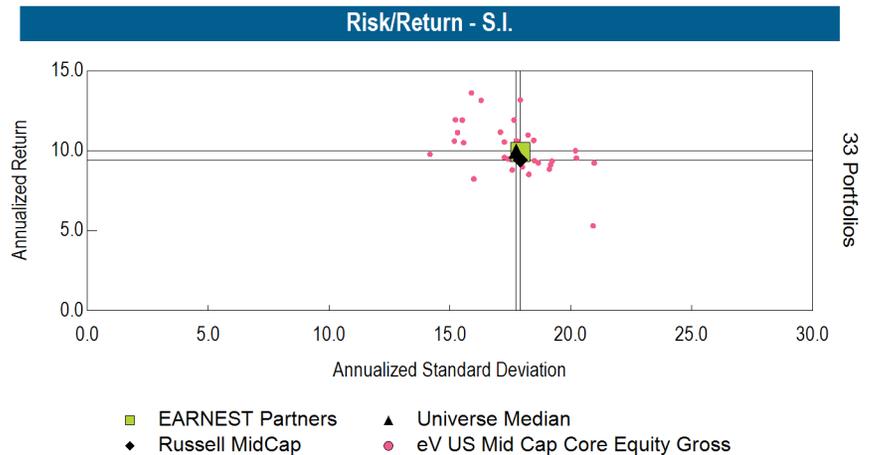
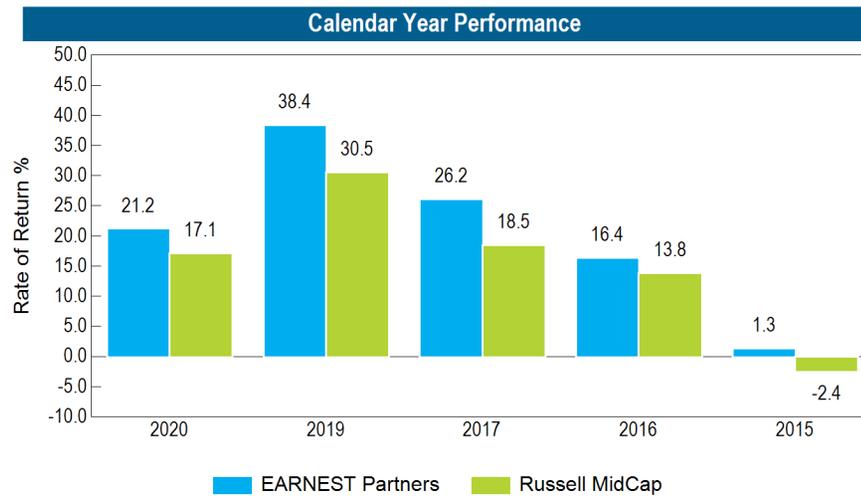
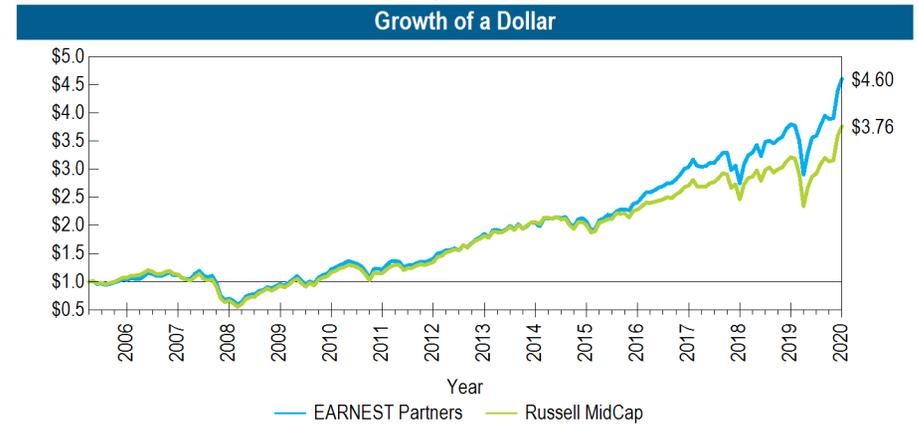
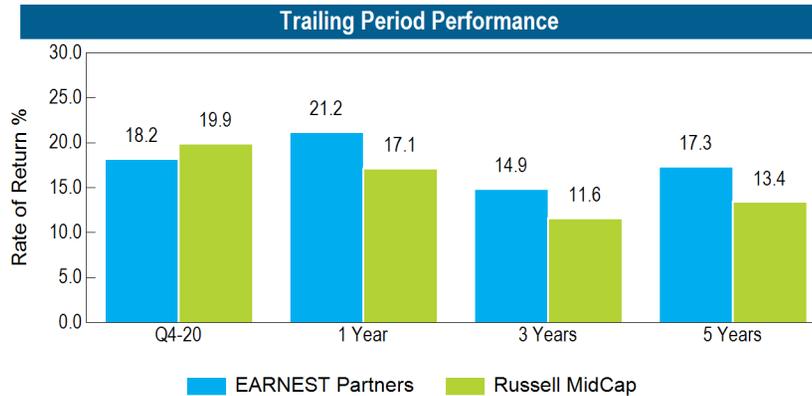
** VRR - Value Relative Ratio - is calculated as: manager cumulative return / benchmark cumulative return.

Individual Manager Performance

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Northern Trust Russell 1000	0.00%	1.00	-0.71	1.00	0.13%	1.00	98.36%	99.75%
Russell 1000	0.00%	1.00	--	1.01	0.00%	1.00	100.00%	100.00%

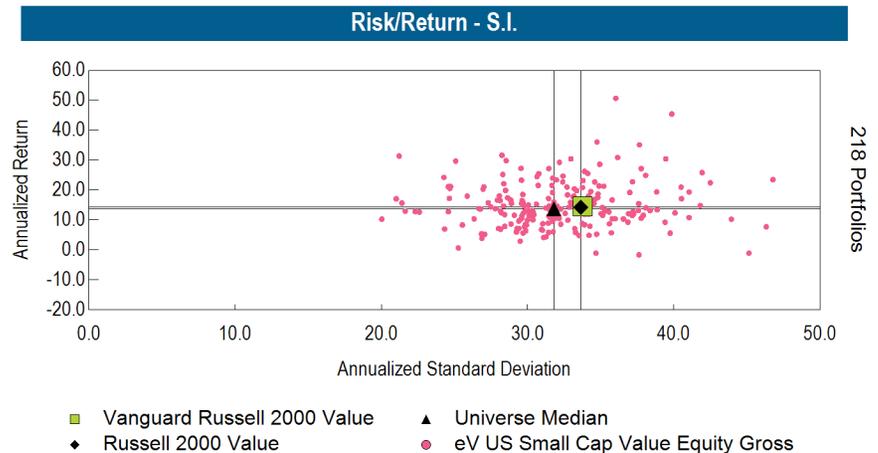
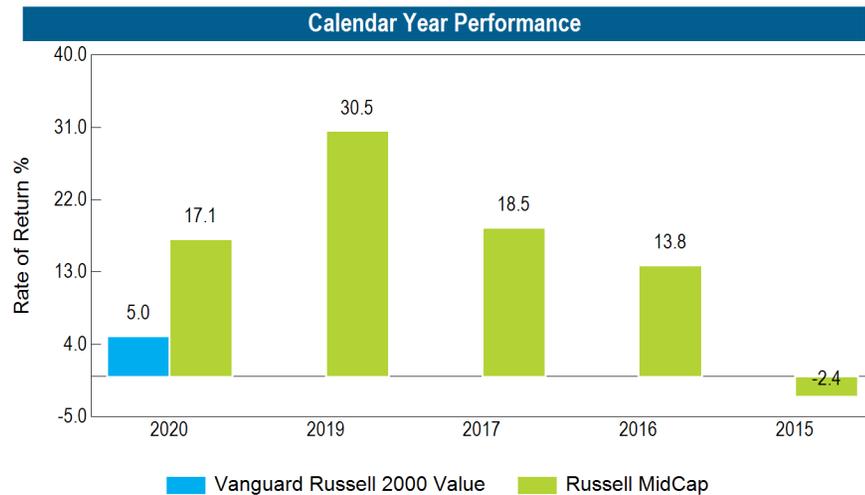
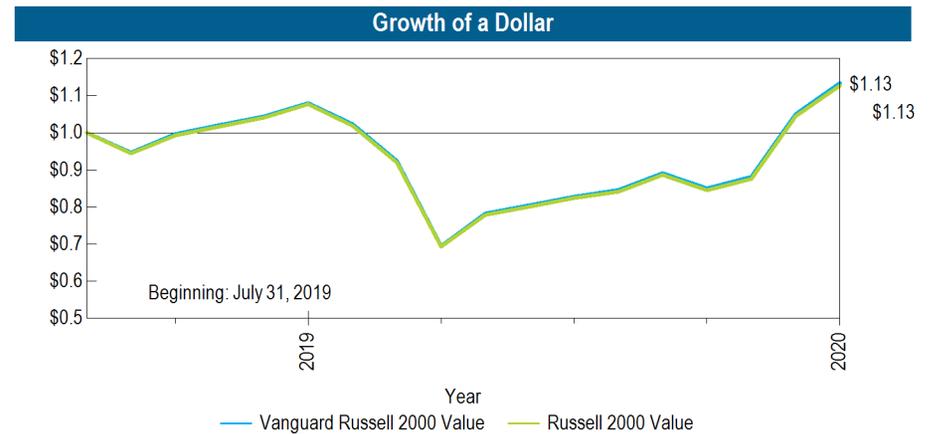
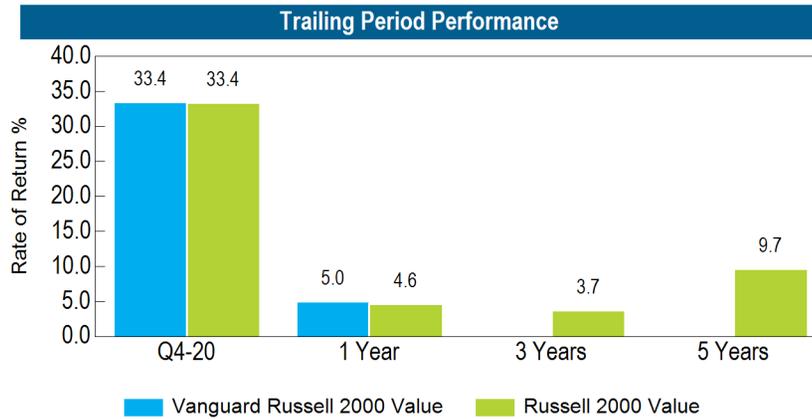


	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
EARNEST Partners	0.13%	0.98	0.45	0.55	3.32%	0.97	103.28%	98.69%
Russell MidCap	0.00%	1.00	--	0.47	0.00%	1.00	100.00%	100.00%

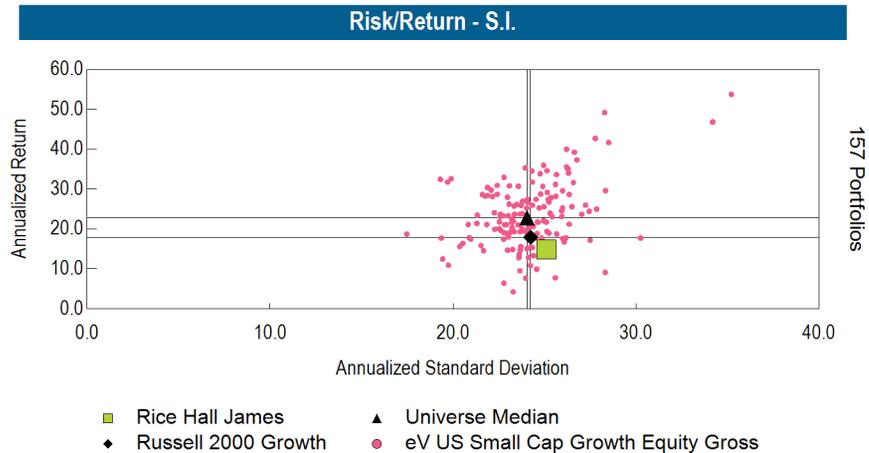
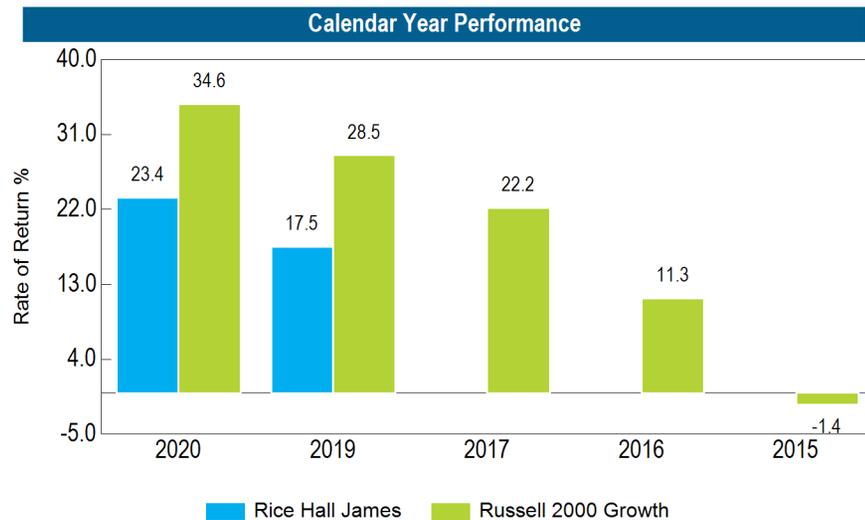
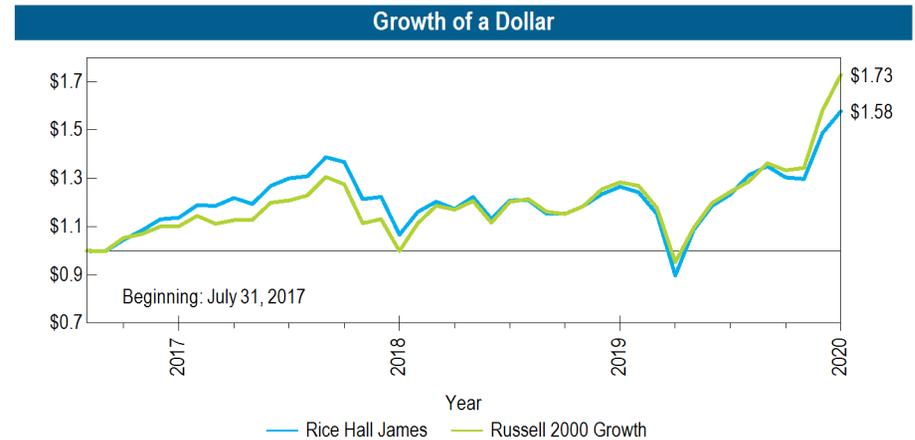
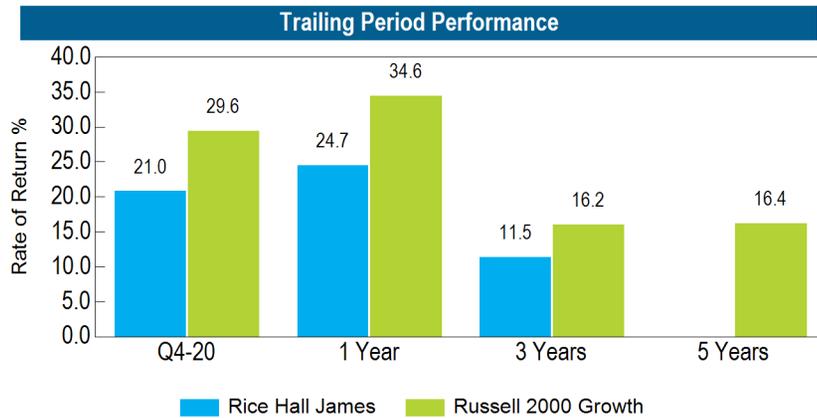


Vanguard Russell 2000 Value | As of December 31, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Vanguard Russell 2000 Value	0.04%	1.00	1.02	0.25	0.48%	1.00	100.81%	99.67%
Russell 2000 Value	0.00%	1.00	--	0.24	0.00%	1.00	100.00%	100.00%

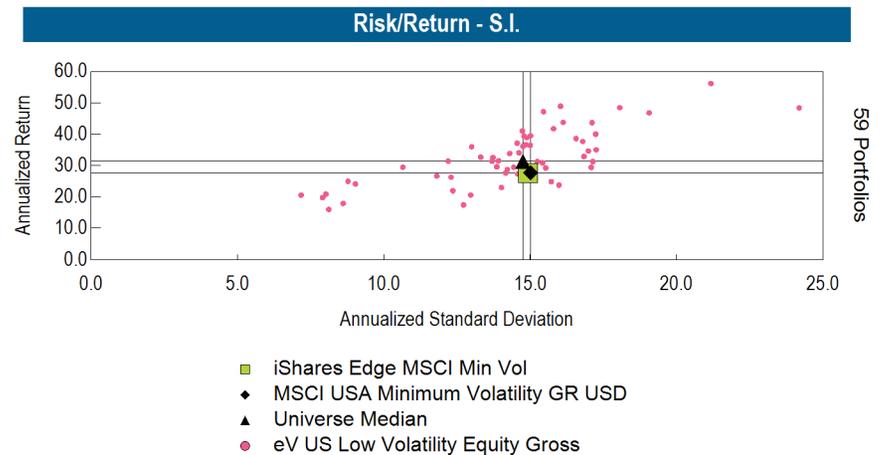
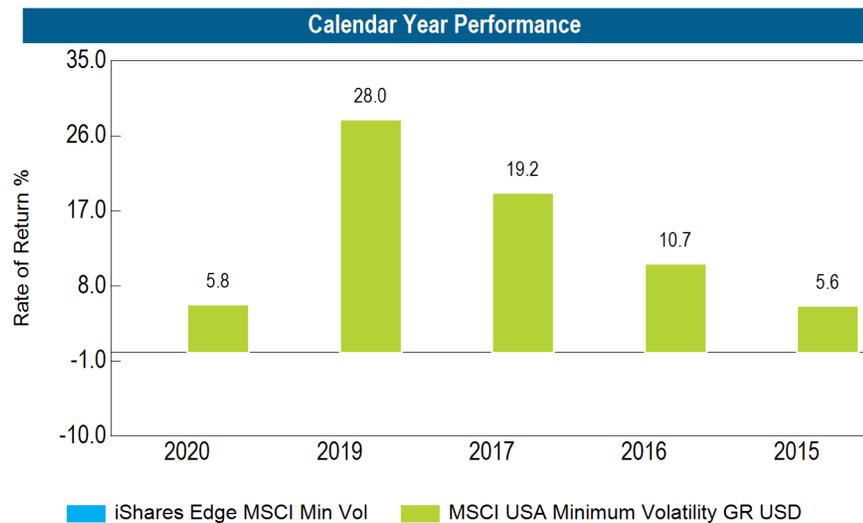
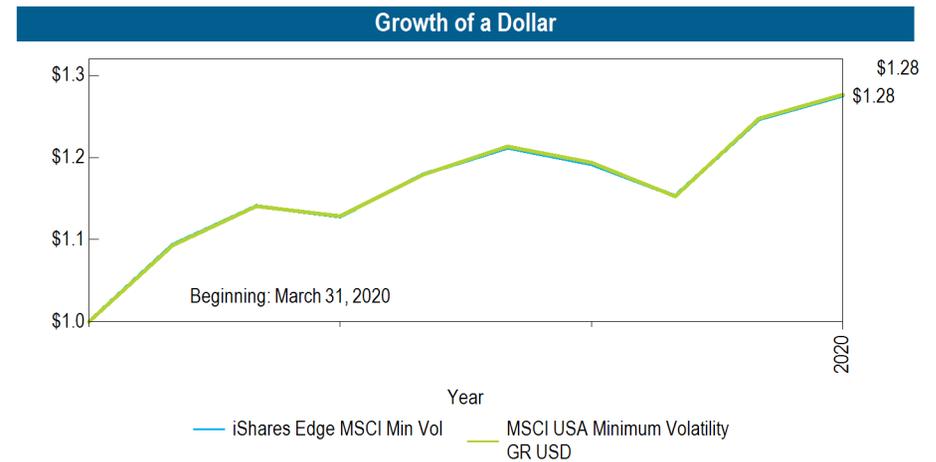
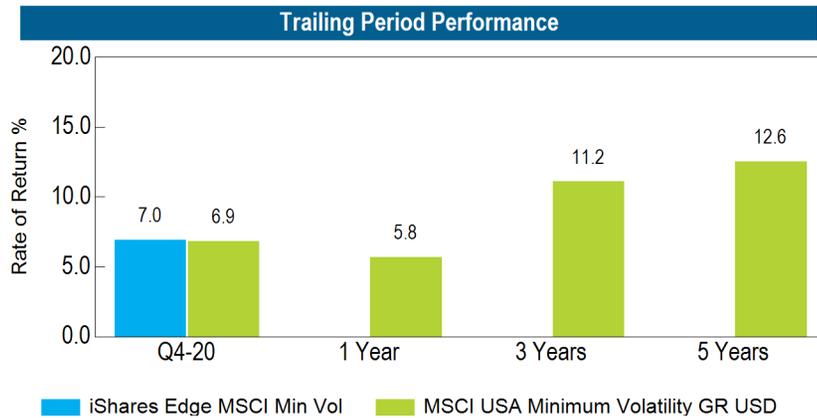


	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Rice Hall James	-0.21%	1.00	-0.48	0.52	6.47%	0.93	91.69%	102.37%
Russell 2000 Growth	0.00%	1.00	--	0.66	0.00%	1.00	100.00%	100.00%



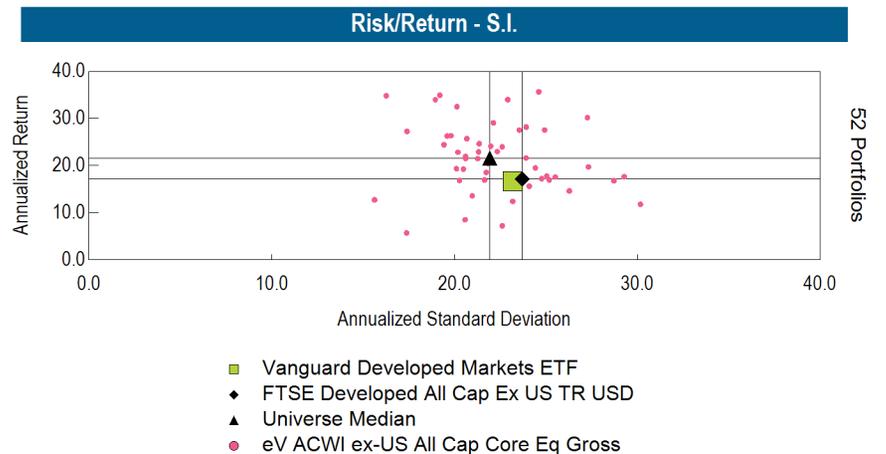
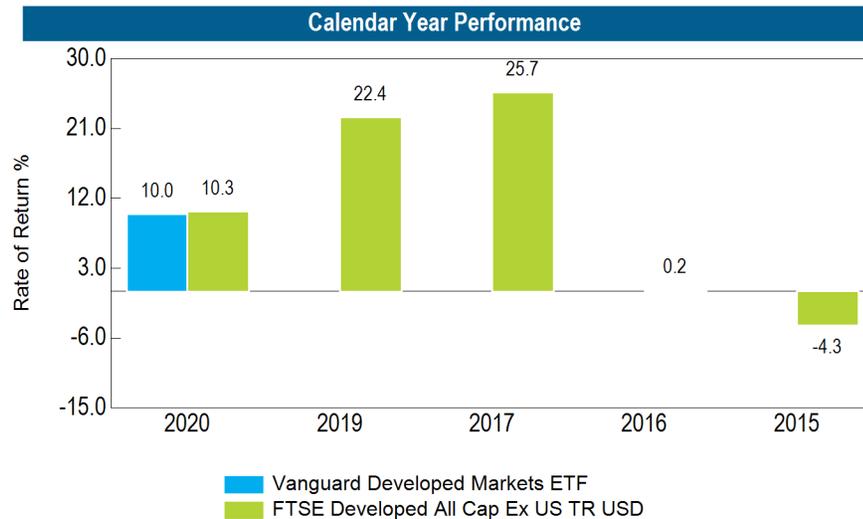
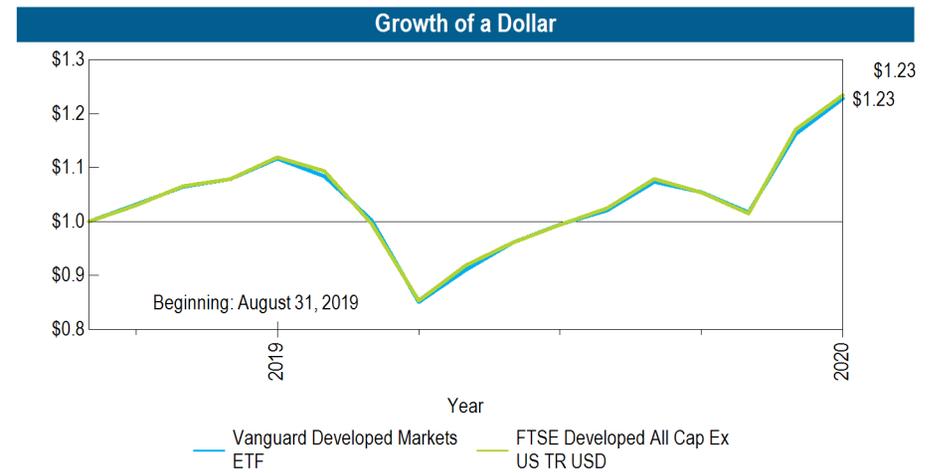
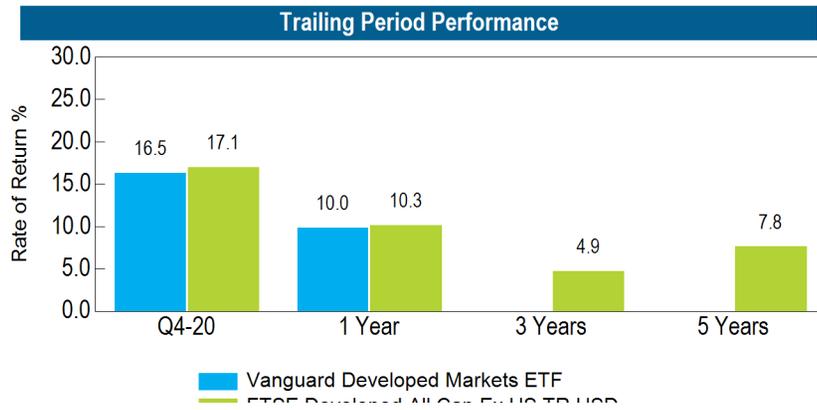
iShares Edge MSCI Min Vol | As of December 31, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
iShares Edge MSCI Min Vol	0.01%	0.99	-0.33	1.84	0.36%	1.00	99.29%	98.49%
MSCI USA Minimum Volatility GR USD	0.00%	1.00	--	1.84	0.00%	1.00	100.00%	100.00%

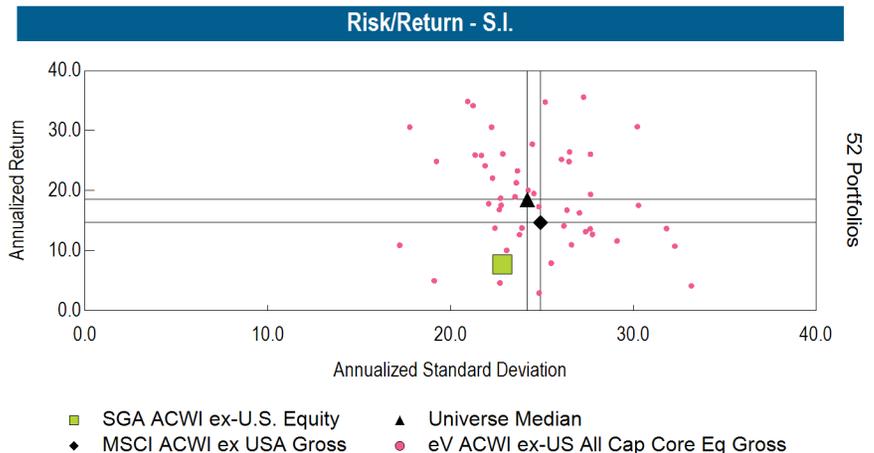
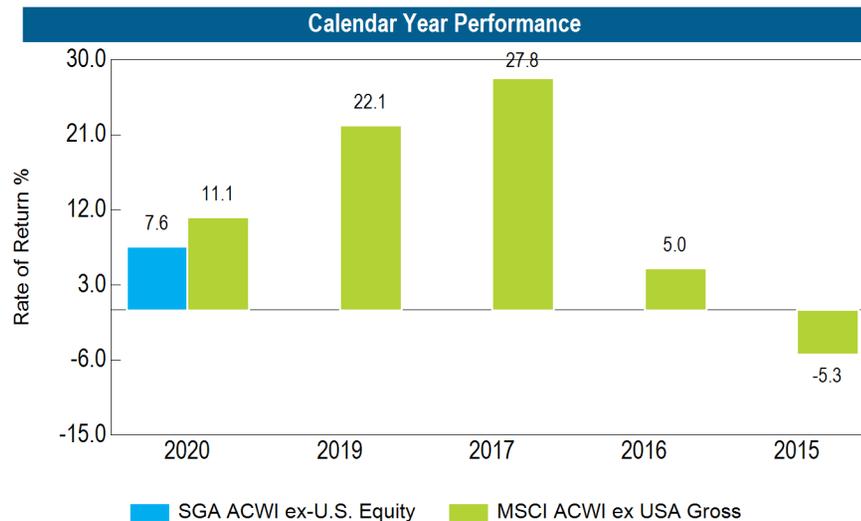
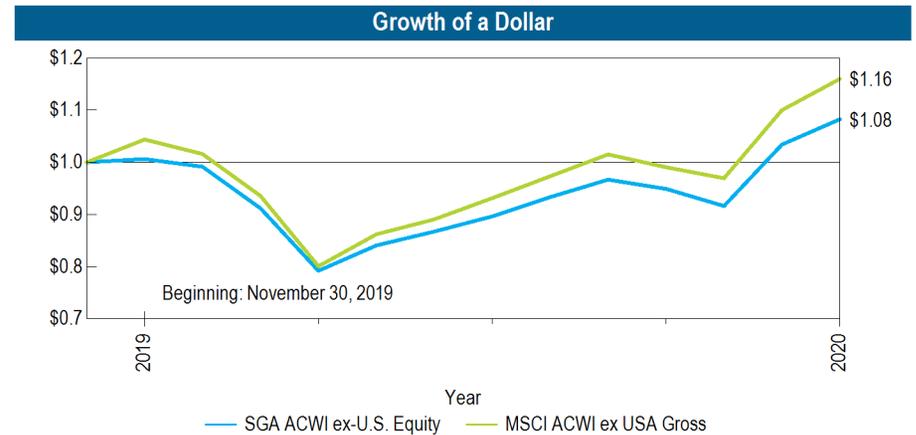
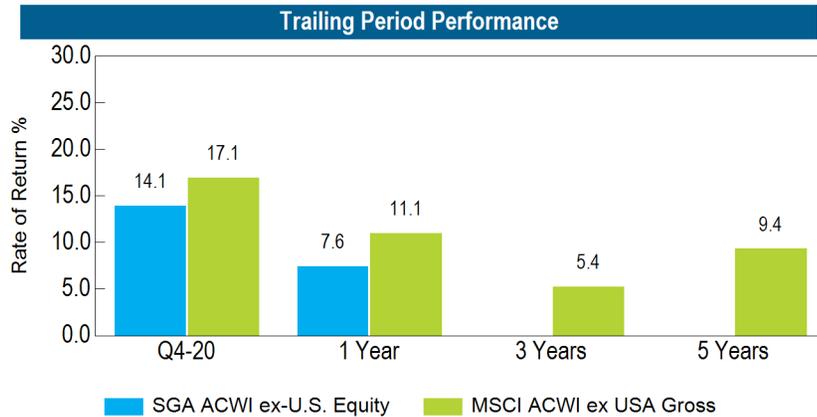


Vanguard Developed Markets ETF | As of December 31, 2020

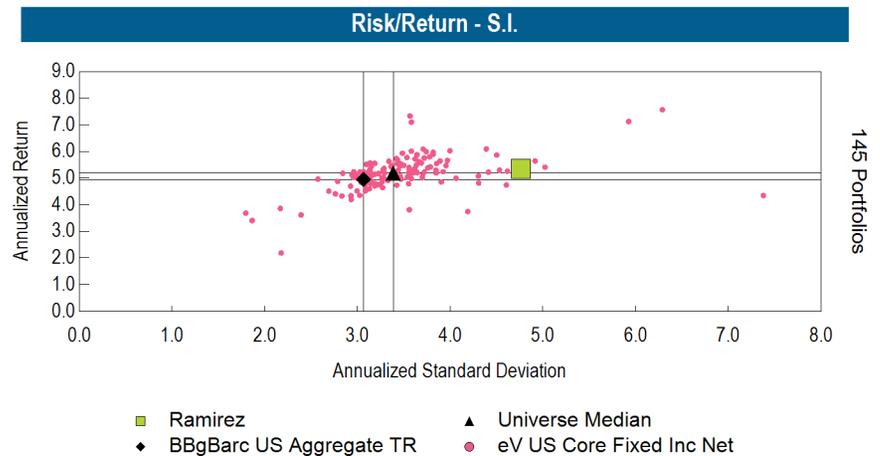
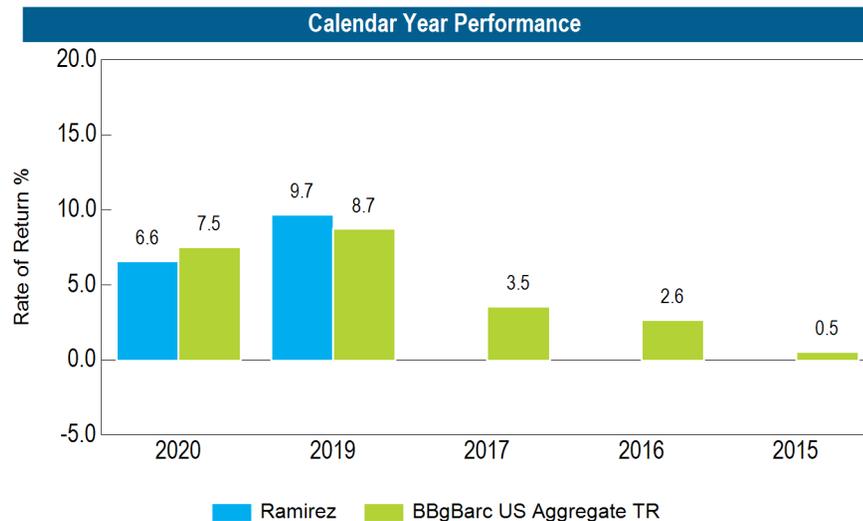
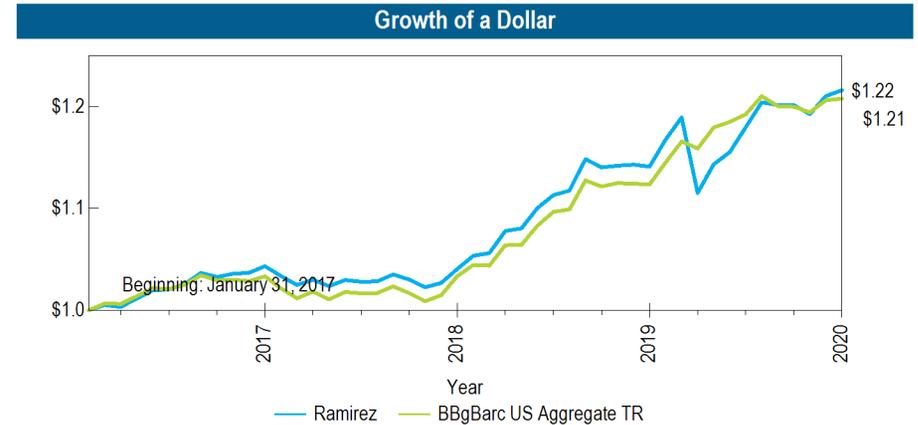
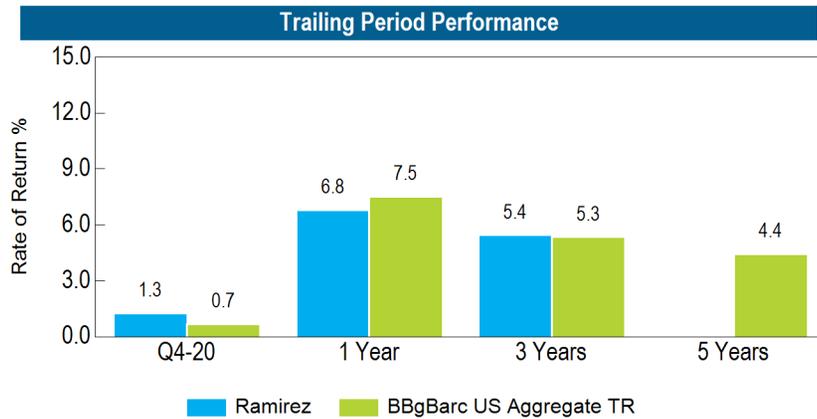
	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Vanguard Developed Markets ETF	0.00%	0.97	-0.20	0.69	2.25%	0.99	97.35%	98.45%
FTSE Developed All Cap Ex US TR USD	0.00%	1.00	--	0.69	0.00%	1.00	100.00%	100.00%



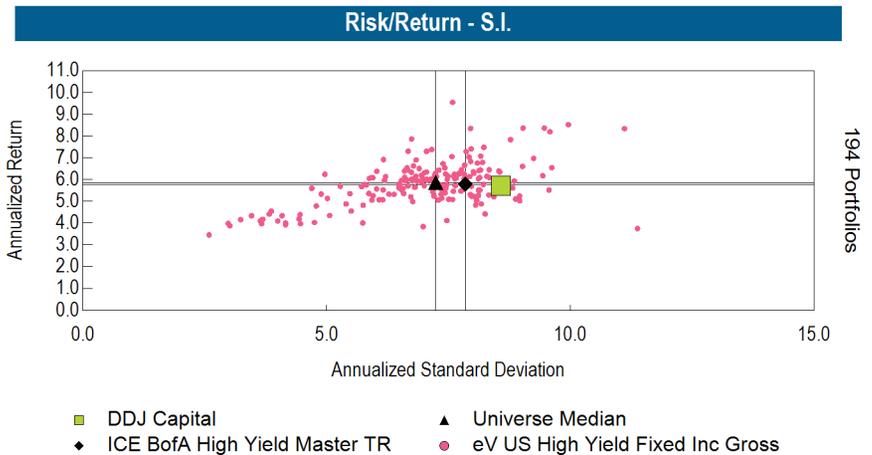
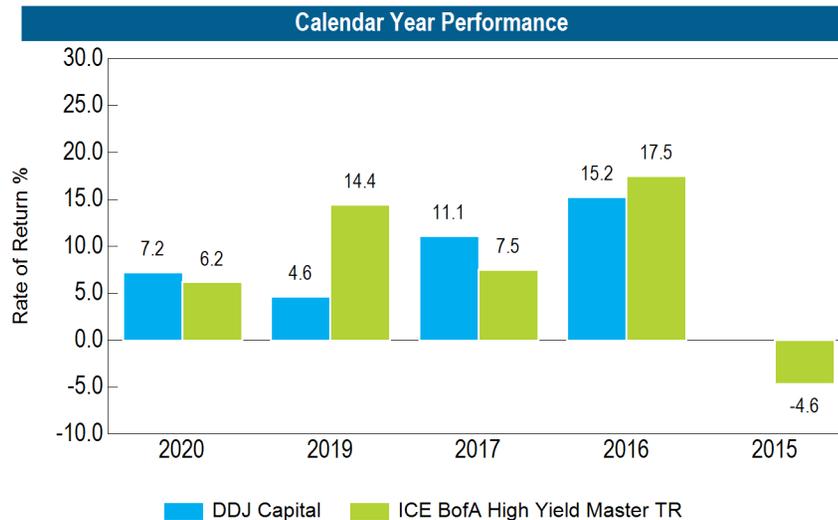
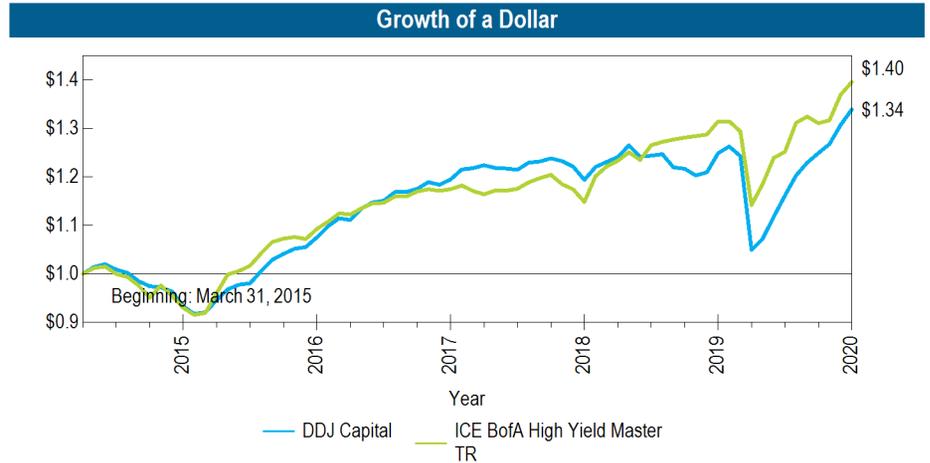
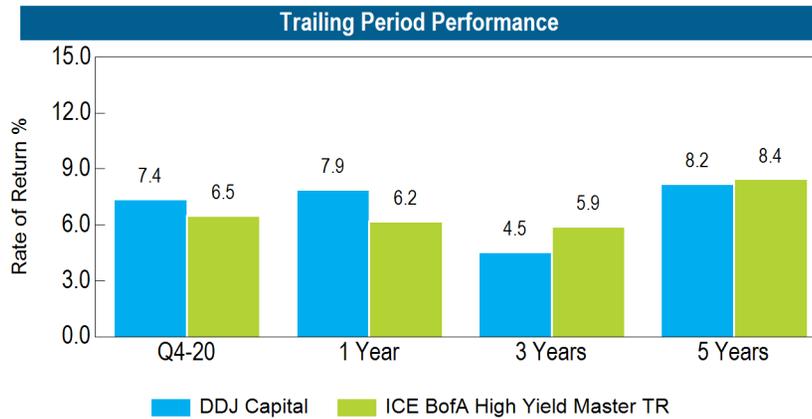
	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
SGA ACWI ex-U.S. Equity	-0.44%	0.90	-1.57	0.31	4.50%	0.97	77.38%	95.02%
MSCI ACWI ex USA Gross	0.00%	1.00	--	0.57	0.00%	1.00	100.00%	100.00%



	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Ramirez	-0.04%	1.19	0.12	0.83	3.12%	0.59	124.28%	149.36%
BBgBarc US Aggregate TR	0.00%	1.00	--	1.17	0.00%	1.00	100.00%	100.00%

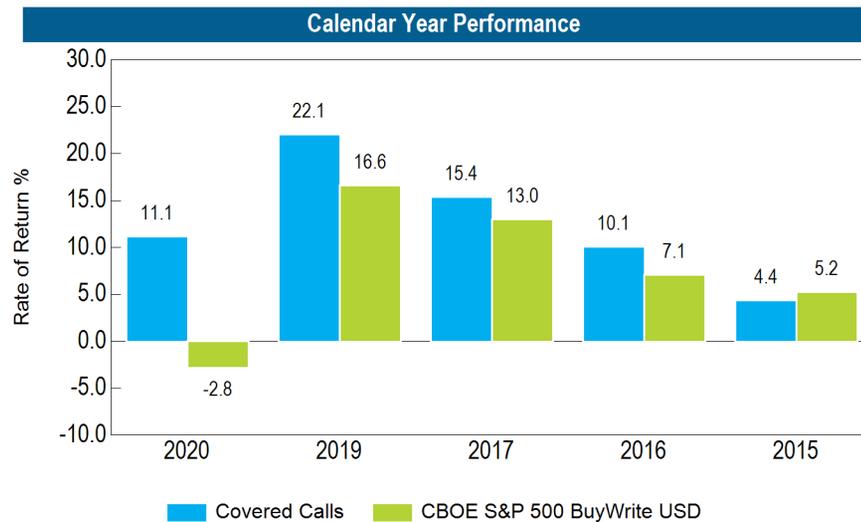
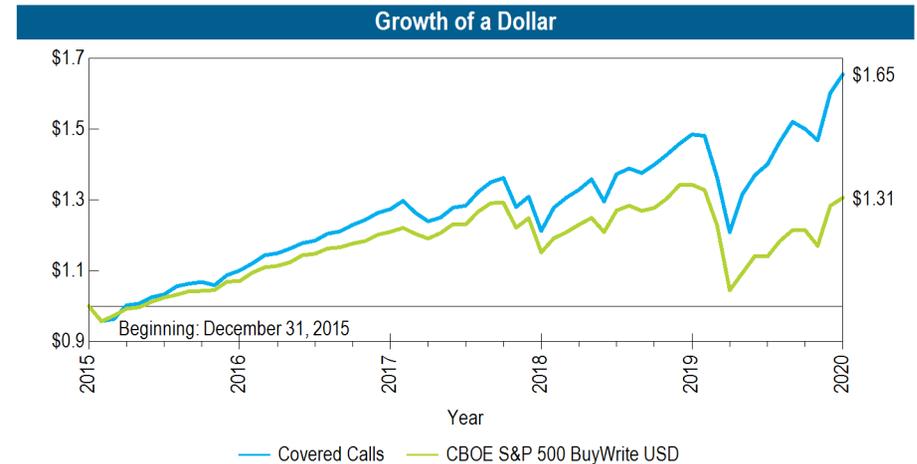
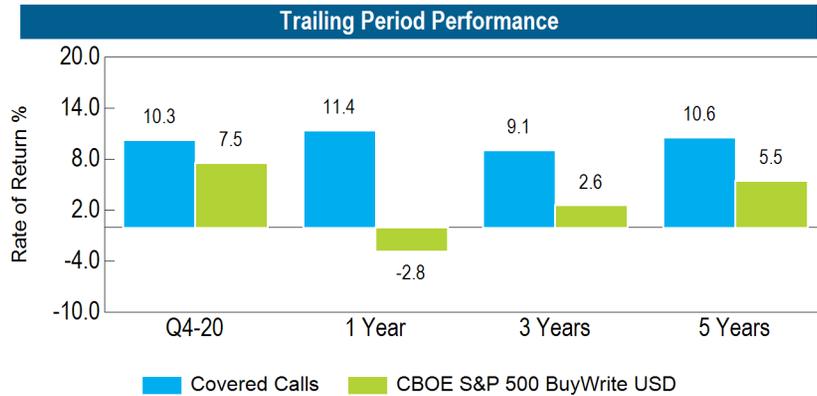


	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
DDJ Capital	0.02%	0.97	-0.02	0.55	4.01%	0.78	89.16%	88.13%
ICE BofA High Yield Master TR	0.00%	1.00	--	0.61	0.00%	1.00	100.00%	100.00%



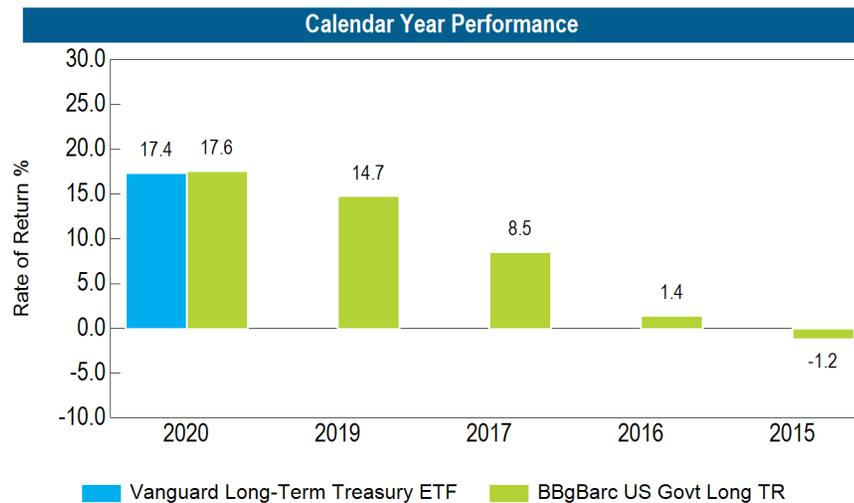
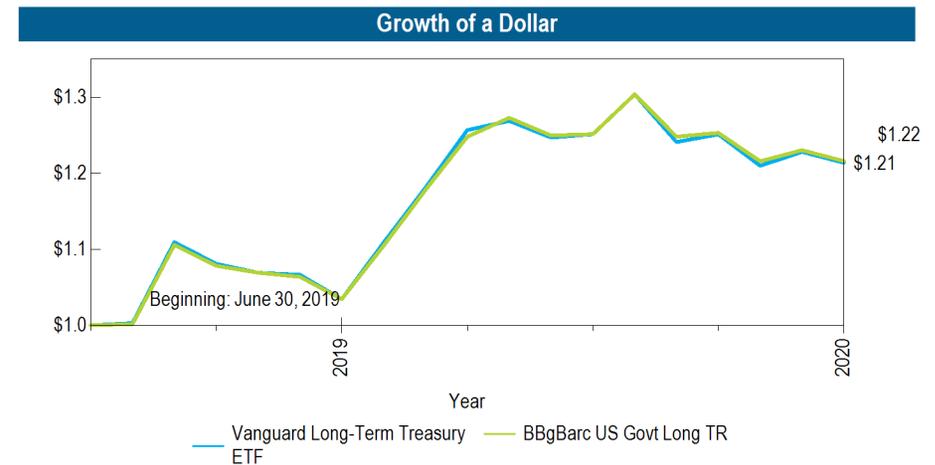
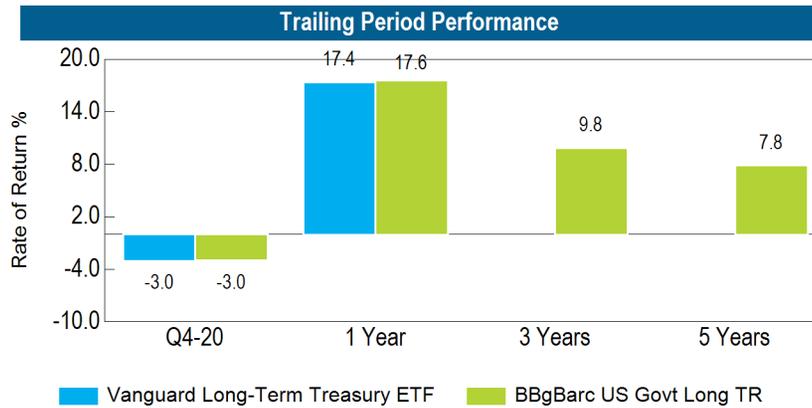
Covered Calls | As of December 31, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Covered Calls	0.33%	0.98	1.21	0.76	3.32%	0.91	137.49%	95.84%
CBOE S&P 500 BuyWrite USD	0.00%	1.00	--	0.41	0.00%	1.00	100.00%	100.00%



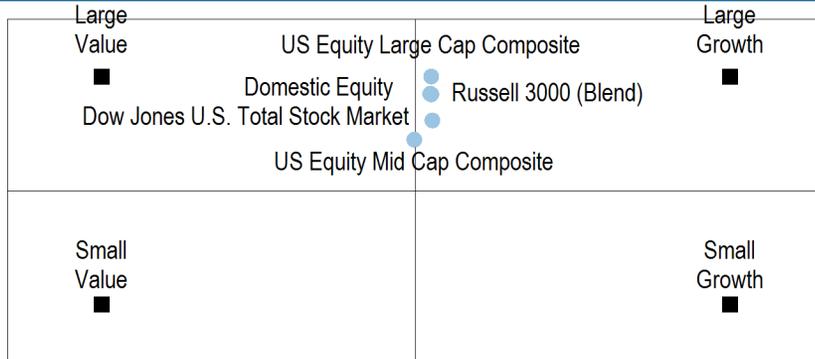
Vanguard Long-Term Treasury ETF | As of December 31, 2020

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Vanguard Long-Term Treasury ETF	-0.04%	1.04	-0.10	0.89	1.32%	0.99	103.15%	106.09%
BBgBarc US Govt Long TR	0.00%	1.00	--	0.93	0.00%	1.00	100.00%	100.00%

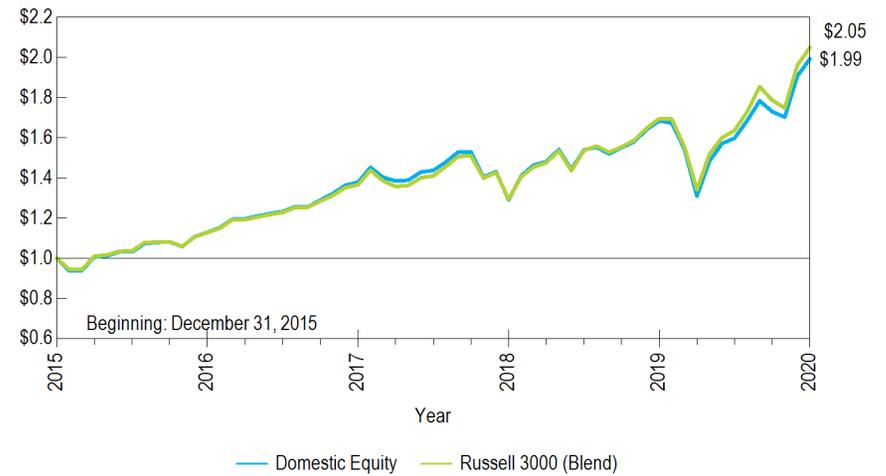


Domestic Equity | As of December 31, 2020

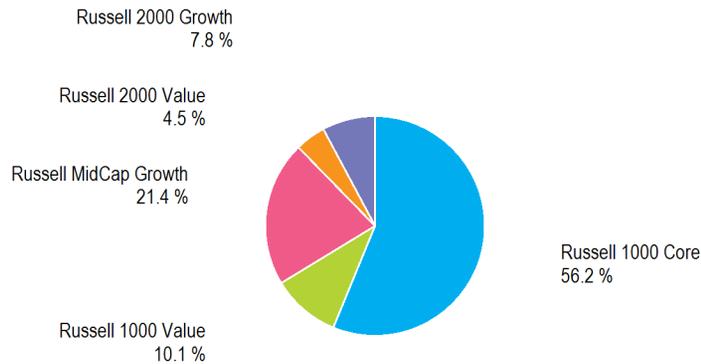
Style Map (5-Year)



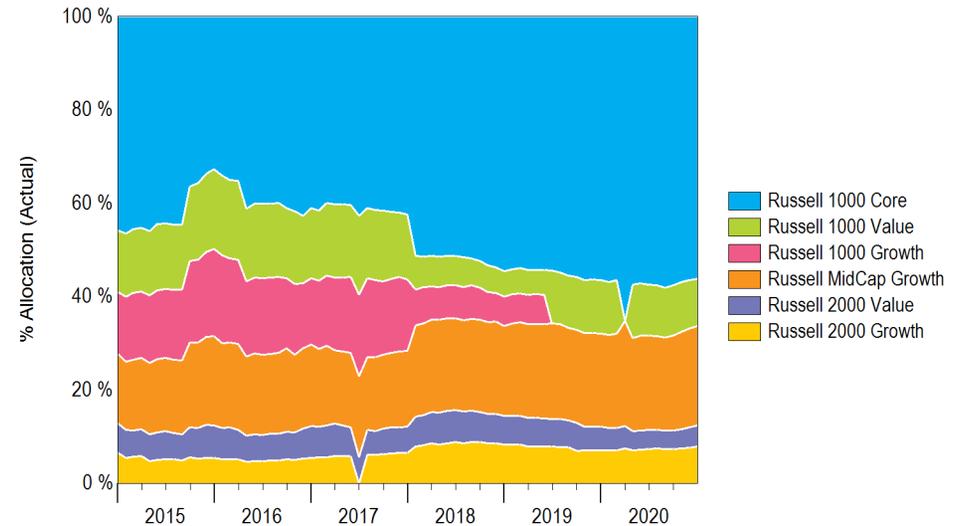
Growth of a Dollar



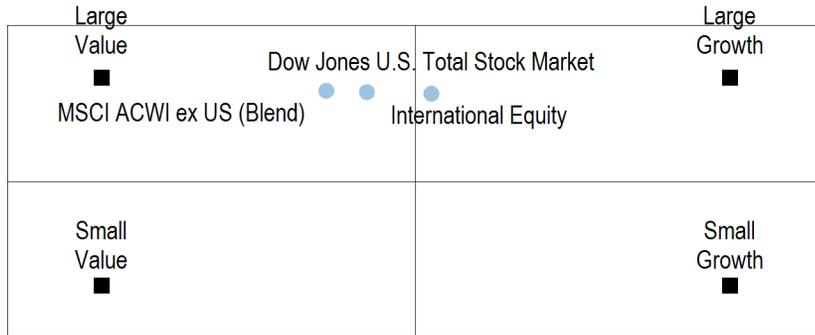
Style Exposure



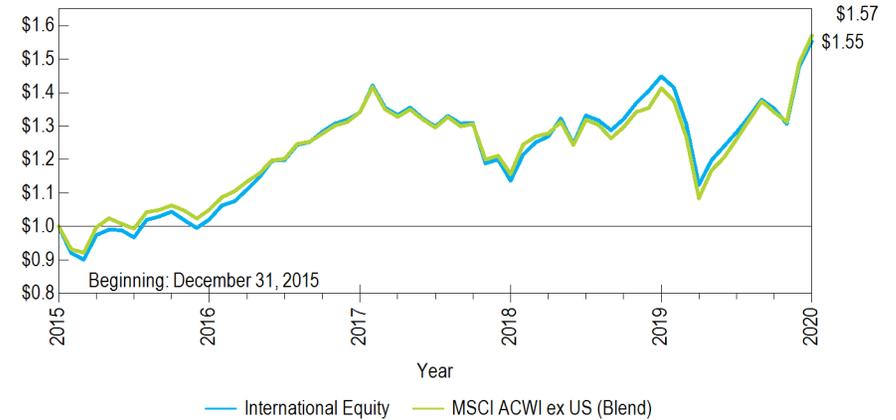
Style History (5-Year)



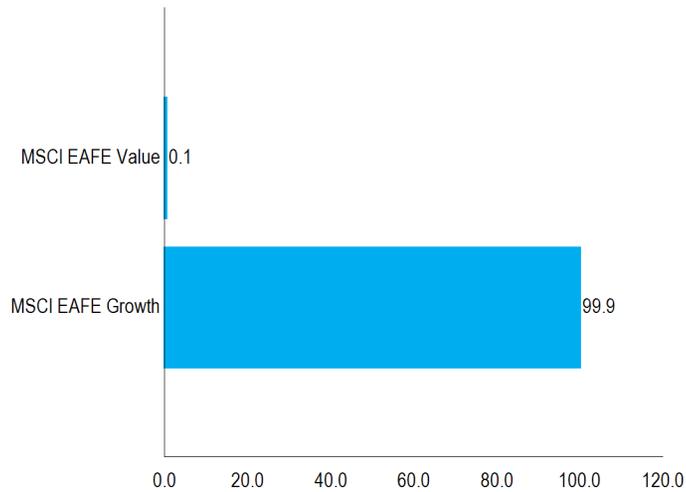
U.S. Effective Style Map 5 Years Ending December 31, 2020



Growth of a Dollar 5 Years Ending December 31, 2020

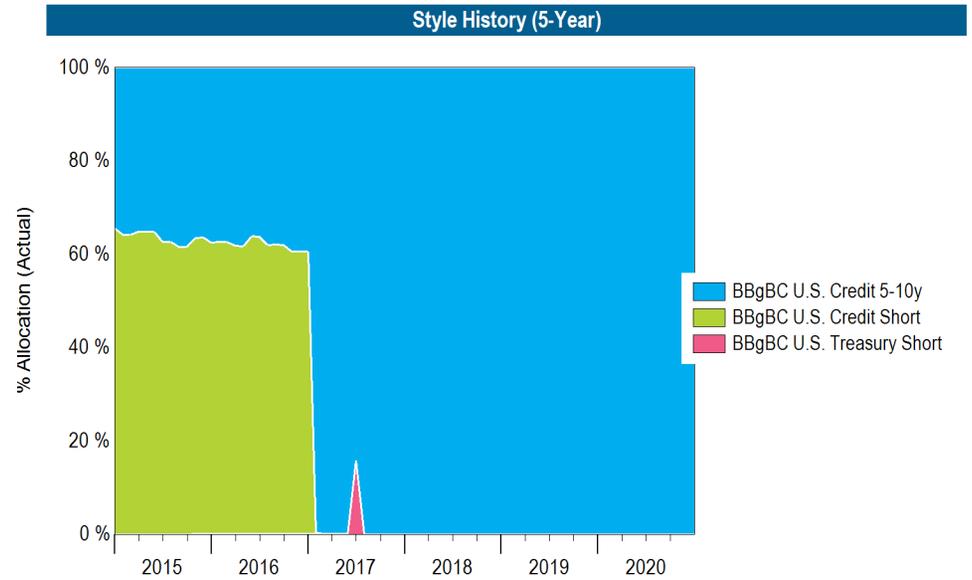
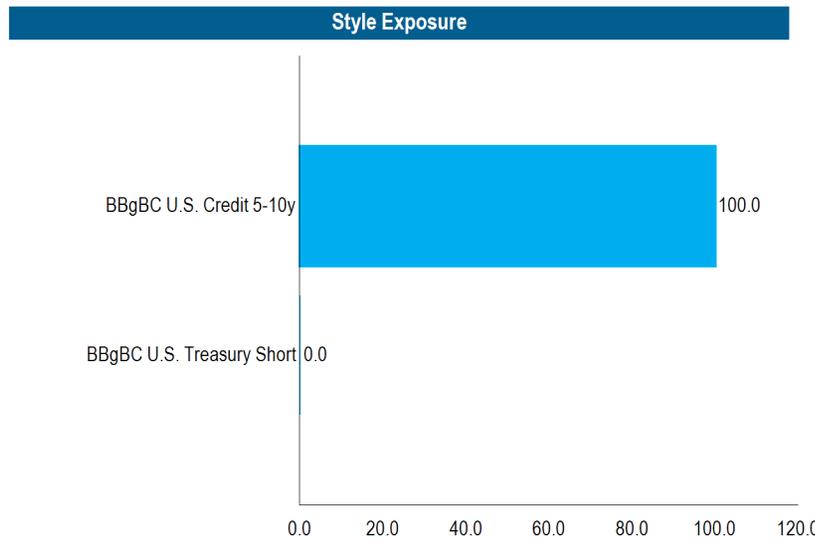
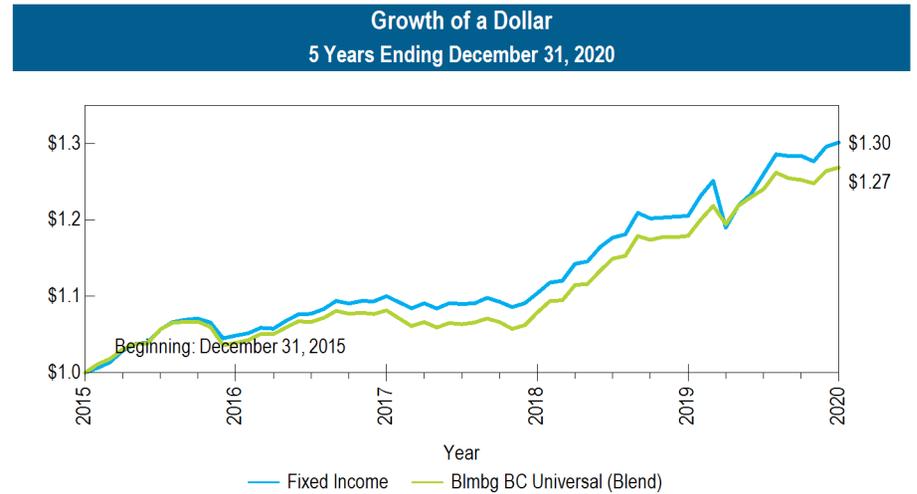
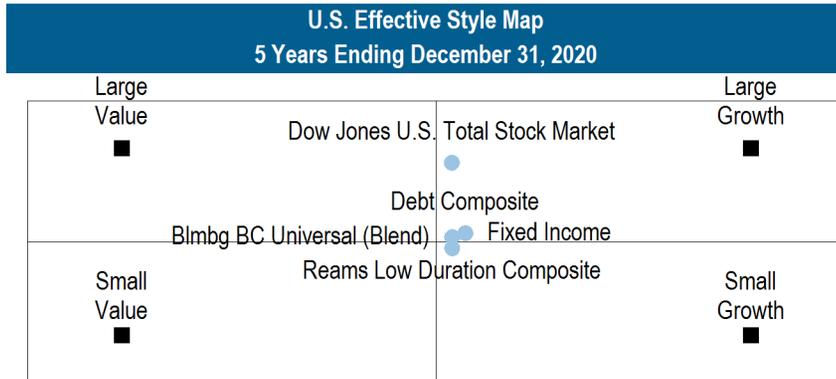


Style Exposure



Style History (5-Year)





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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.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

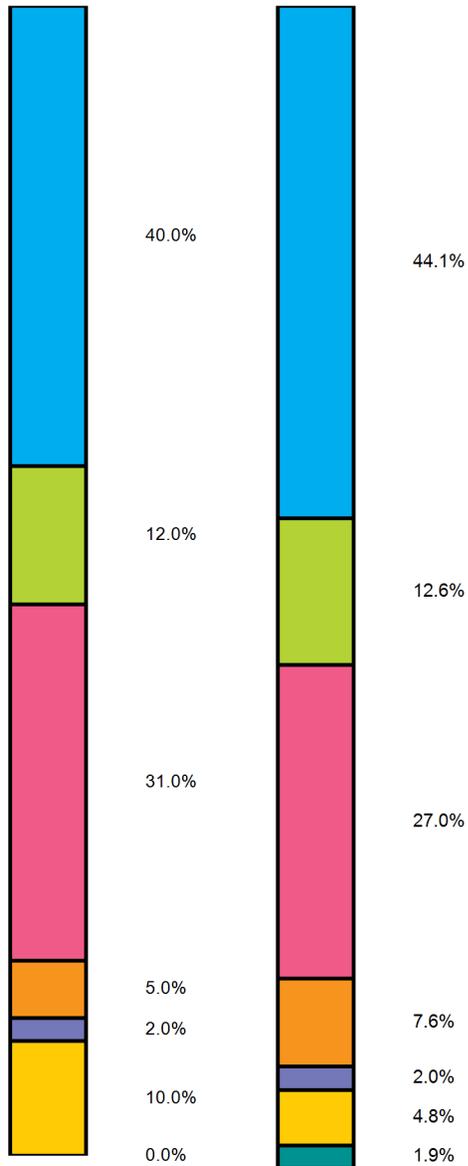
Values shown are in millions of dollars, unless noted otherwise.

Oakland Police and Fire Retirement System

February 24, 2021

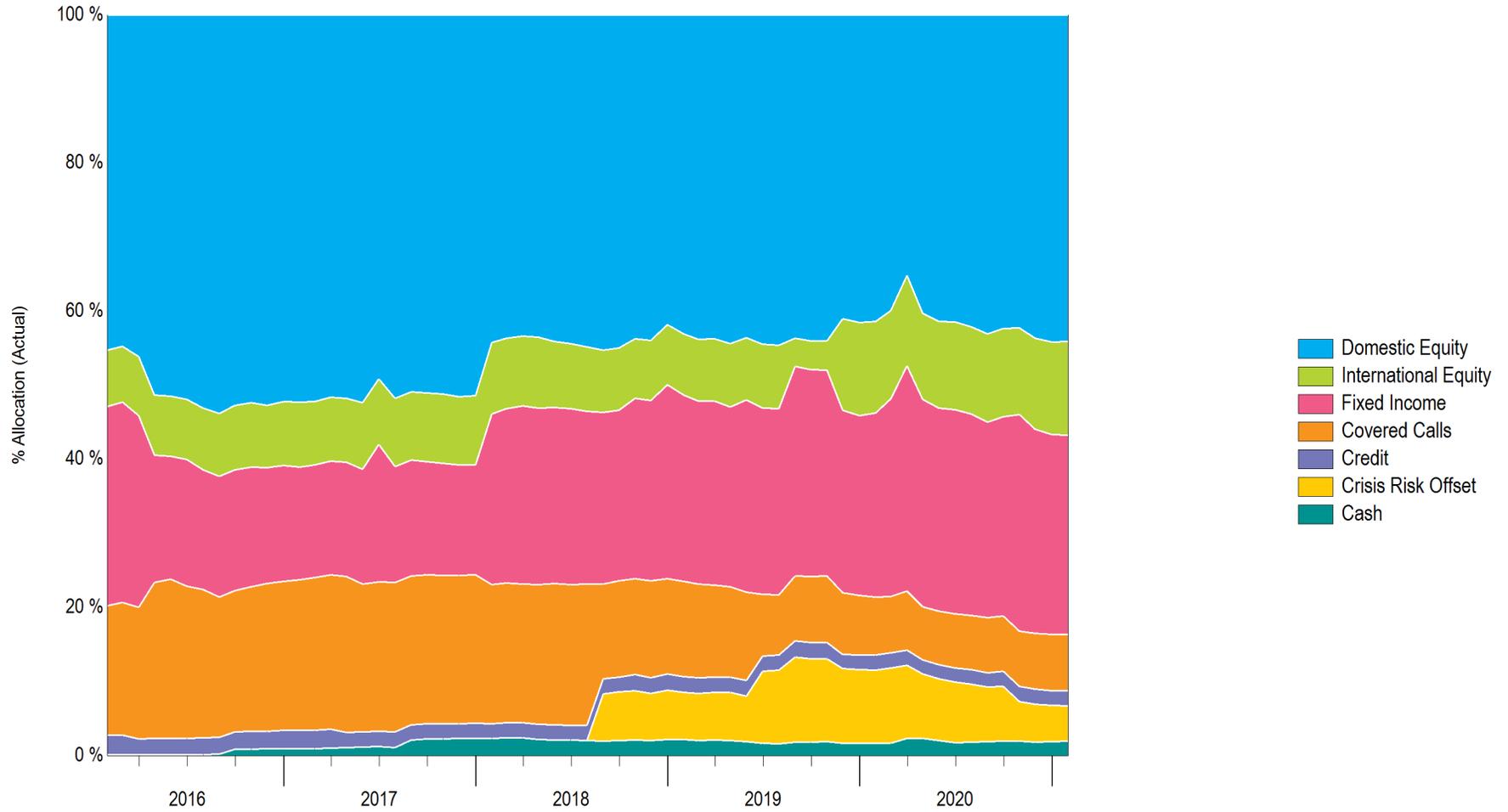
January Flash Report

OPFRS Total Plan As of January 31, 2021



Allocation vs. Targets and Policy						
	Current Balance	Current Allocation	Policy	Difference	Within IPS Range?	
Domestic Equity	\$190,163,130	44.1%	40.0%	4.1%	Yes	
International Equity	\$54,480,284	12.6%	12.0%	0.6%	Yes	
Fixed Income	\$116,298,319	27.0%	31.0%	-4.0%	Yes	
Covered Calls	\$32,810,880	7.6%	5.0%	2.6%	Yes	
Credit	\$8,724,648	2.0%	2.0%	0.0%	Yes	
Crisis Risk Offset	\$20,573,198	4.8%	10.0%	-5.2%	No	
Cash	\$8,336,116	1.9%	0.0%	1.9%	Yes	
Total	\$431,386,575	100.0%	100.0%			

Asset Allocation History
5 Years Ending January 31, 2021



Asset Class Performance Summary

	Market Value (\$)	% of Portfolio	1 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
OPFRS Total Plan	431,386,575	100.0	-0.4	14.5	9.3	6.8	11.1	8.2	6.9	Dec-88
<i>OPFRS Policy Benchmark</i>			<i>-0.4</i>	<i>13.1</i>	<i>10.8</i>	<i>7.0</i>	<i>10.8</i>	<i>7.9</i>	<i>8.3</i>	<i>Dec-88</i>
Domestic Equity	190,163,130	44.1	-0.3	24.4	18.7	11.0	16.2	13.2	9.1	Jun-97
<i>Russell 3000 (Blend)</i>			<i>-0.4</i>	<i>24.7</i>	<i>20.5</i>	<i>12.4</i>	<i>16.7</i>	<i>13.5</i>	<i>9.3</i>	<i>Jun-97</i>
International Equity	54,480,284	12.6	0.1	21.3	9.8	3.0	11.0	5.8	5.7	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			<i>0.2</i>	<i>24.8</i>	<i>14.4</i>	<i>3.6</i>	<i>11.0</i>	<i>5.3</i>	<i>5.9</i>	<i>Jan-98</i>
Fixed Income	116,298,319	27.0	-0.5	2.8	5.1	5.8	5.2	4.4	5.6	Dec-93
<i>Blmbg BC Universal (Blend)</i>			<i>-0.6</i>	<i>1.6</i>	<i>5.0</i>	<i>5.6</i>	<i>4.5</i>	<i>4.1</i>	<i>5.4</i>	<i>Dec-93</i>
Credit	8,724,648	2.0	1.4	17.2	8.1	4.4	8.8	--	6.2	Feb-15
<i>BBgBarc US High Yield TR</i>			<i>0.3</i>	<i>11.7</i>	<i>7.4</i>	<i>6.1</i>	<i>9.0</i>	<i>6.6</i>	<i>6.2</i>	<i>Feb-15</i>
Covered Calls	32,810,880	7.6	-0.5	17.6	11.2	8.3	11.5	--	9.1	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>			<i>0.1</i>	<i>14.7</i>	<i>-1.5</i>	<i>2.3</i>	<i>6.4</i>	<i>6.1</i>	<i>5.3</i>	<i>Apr-14</i>
Crisis Risk Offset	20,573,198	4.8	-3.5	-7.3	-25.7	-8.2	--	--	-9.8	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>			<i>0.9</i>	<i>-1.8</i>	<i>-14.5</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.2</i>	<i>Aug-18</i>
Cash	8,336,116	1.9	0.0	0.0	0.9	1.8	1.4	--	0.7	Mar-11
<i>FTSE T-Bill 3 Months TR</i>			<i>0.0</i>	<i>0.1</i>	<i>0.5</i>	<i>1.5</i>	<i>1.2</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>

Cash balances held in ETF accounts at the Custodian are reflected in the Cash account market value.

OPFRS Total Plan As of January 31, 2021

Trailing Net Performance											
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
OPFRS Total Plan	431,386,575	100.0	--	-0.4	14.5	9.3	6.8	11.1	8.2	6.9	Dec-88
<i>OPFRS Policy Benchmark</i>				<i>-0.4</i>	<i>13.1</i>	<i>10.8</i>	<i>7.0</i>	<i>10.8</i>	<i>7.9</i>	<i>8.3</i>	<i>Dec-88</i>
Domestic Equity	190,163,130	44.1	44.1	-0.3	24.4	18.7	11.0	16.2	13.2	9.1	Jun-97
<i>Russell 3000 (Blend)</i>				<i>-0.4</i>	<i>24.7</i>	<i>20.5</i>	<i>12.4</i>	<i>16.7</i>	<i>13.5</i>	<i>9.3</i>	<i>Jun-97</i>
Northern Trust Russell 1000	105,905,966	24.6	55.7	-0.8	23.4	19.7	12.5	16.6	13.6	14.7	Jun-10
<i>Russell 1000</i>				<i>-0.8</i>	<i>23.4</i>	<i>19.8</i>	<i>12.5</i>	<i>16.7</i>	<i>13.6</i>	<i>14.7</i>	<i>Jun-10</i>
EARNEST Partners	40,785,434	9.5	21.4	-0.4	27.6	21.6	13.1	19.1	13.9	10.8	Apr-06
<i>Russell MidCap</i>				<i>-0.3</i>	<i>28.5</i>	<i>17.7</i>	<i>10.1</i>	<i>14.9</i>	<i>12.1</i>	<i>9.3</i>	<i>Apr-06</i>
Vanguard Russell 2000 Value	9,079,627	2.1	4.8	5.0	42.3	15.5	--	--	--	11.8	Aug-19
<i>Russell 2000 Value</i>				<i>5.3</i>	<i>44.0</i>	<i>16.4</i>	<i>5.1</i>	<i>12.3</i>	<i>9.2</i>	<i>12.1</i>	<i>Aug-19</i>
Rice Hall James	15,600,031	3.6	8.2	4.0	33.0	32.1	11.3	--	--	14.5	Jul-17
<i>Russell 2000 Growth</i>				<i>4.8</i>	<i>45.6</i>	<i>42.7</i>	<i>16.5</i>	<i>20.2</i>	<i>14.1</i>	<i>18.3</i>	<i>Jul-17</i>
iShares Edge MSCI Min Vol	18,792,072	4.4	9.9	-2.7	10.0	--	--	--	--	24.1	Apr-20
<i>MSCI USA Minimum Volatility GR USD</i>				<i>-2.7</i>	<i>10.1</i>	<i>0.6</i>	<i>8.9</i>	<i>12.3</i>	<i>13.1</i>	<i>24.2</i>	<i>Apr-20</i>
International Equity	54,480,284	12.6	12.6	0.1	21.3	9.8	3.0	11.0	5.8	5.7	Jan-98
<i>MSCI ACWI ex US (Blend)</i>				<i>0.2</i>	<i>24.8</i>	<i>14.4</i>	<i>3.6</i>	<i>11.0</i>	<i>5.3</i>	<i>5.9</i>	<i>Jan-98</i>
Vanguard Developed Markets ETF	15,695,123	3.6	28.8	-0.7	20.8	10.7	--	--	--	13.8	Sep-19
<i>FTSE Developed All Cap Ex US TR USD</i>				<i>-0.9</i>	<i>23.1</i>	<i>11.9</i>	<i>3.0</i>	<i>9.2</i>	<i>3.6</i>	<i>15.3</i>	<i>Sep-19</i>
SGA ACWI ex-U.S. Equity	38,483,146	8.9	70.6	0.6	21.5	9.8	--	--	--	7.6	Dec-19
<i>MSCI ACWI ex USA Gross</i>				<i>0.2</i>	<i>24.8</i>	<i>14.4</i>	<i>3.6</i>	<i>11.0</i>	<i>5.3</i>	<i>13.8</i>	<i>Dec-19</i>

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

OPFRS Total Plan As of January 31, 2021

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Fixed Income	116,298,319	27.0	27.0	-0.5	2.8	5.1	5.8	5.2	4.4	5.6	Dec-93
<i>Blmbg BC Universal (Blend)</i>				<i>-0.6</i>	<i>1.6</i>	<i>5.0</i>	<i>5.6</i>	<i>4.5</i>	<i>4.1</i>	<i>5.4</i>	<i>Dec-93</i>
Ramirez	79,025,062	18.3	68.0	-0.3	2.8	4.0	5.6	--	--	5.2	Jan-17
<i>BBgBarc US Aggregate TR</i>				<i>-0.7</i>	<i>0.6</i>	<i>4.7</i>	<i>5.5</i>	<i>4.0</i>	<i>3.8</i>	<i>4.6</i>	<i>Jan-17</i>
Reams	29,664,252	6.9	25.5	-0.9	2.9	16.9	9.8	6.9	5.5	6.1	Feb-98
<i>Blmbg BC Universal (Blend)</i>				<i>-0.6</i>	<i>1.6</i>	<i>5.0</i>	<i>5.6</i>	<i>4.5</i>	<i>4.1</i>	<i>5.1</i>	<i>Feb-98</i>
iShares Core US Aggregate Bond ETF	7,608,961	1.8	6.5	-0.7	--	--	--	--	--	0.3	Nov-20
<i>BBgBarc US Aggregate TR</i>				<i>-0.7</i>	<i>0.6</i>	<i>4.7</i>	<i>5.5</i>	<i>4.0</i>	<i>3.8</i>	<i>0.4</i>	<i>Nov-20</i>
Credit	8,724,648	2.0	2.0	1.4	17.2	8.1	4.4	8.8	--	6.2	Feb-15
<i>BBgBarc US High Yield TR</i>				<i>0.3</i>	<i>11.7</i>	<i>7.4</i>	<i>6.1</i>	<i>9.0</i>	<i>6.6</i>	<i>6.2</i>	<i>Feb-15</i>
DDJ Capital	8,724,648	2.0	100.0	1.4	17.2	8.1	4.4	8.8	--	6.2	Feb-15
<i>ICE BofA High Yield Master TR</i>				<i>0.4</i>	<i>11.9</i>	<i>6.6</i>	<i>5.8</i>	<i>8.9</i>	<i>6.4</i>	<i>6.1</i>	<i>Feb-15</i>
Covered Calls	32,810,880	7.6	7.6	-0.5	17.6	11.2	8.3	11.5	--	9.1	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>0.1</i>	<i>14.7</i>	<i>-1.5</i>	<i>2.3</i>	<i>6.4</i>	<i>6.1</i>	<i>5.3</i>	<i>Apr-14</i>
Parametric BXM	14,750,852	3.4	45.0	-0.3	14.5	5.9	5.4	8.7	--	7.1	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>0.1</i>	<i>14.7</i>	<i>-1.5</i>	<i>2.3</i>	<i>6.4</i>	<i>6.1</i>	<i>5.3</i>	<i>Apr-14</i>
Parametric DeltaShift	18,060,028	4.2	55.0	-0.6	20.2	16.1	10.9	14.1	--	11.4	Apr-14
<i>CBOE S&P 500 BuyWrite USD</i>				<i>0.1</i>	<i>14.7</i>	<i>-1.5</i>	<i>2.3</i>	<i>6.4</i>	<i>6.1</i>	<i>5.3</i>	<i>Apr-14</i>
Crisis Risk Offset	20,573,198	4.8	4.8	-3.5	-7.3	-25.7	-8.2	--	--	-9.8	Aug-18
<i>SG Multi Alternative Risk Premia Index</i>				<i>0.9</i>	<i>-1.8</i>	<i>-14.5</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.2</i>	<i>Aug-18</i>
Vanguard Long-Term Treasury ETF	20,573,198	4.8	100.0	-3.5	-5.9	6.0	--	--	--	10.7	Jul-19
<i>BBgBarc US Govt Long TR</i>				<i>-3.6</i>	<i>-6.3</i>	<i>6.2</i>	<i>9.7</i>	<i>6.0</i>	<i>7.6</i>	<i>10.6</i>	<i>Jul-19</i>
Cash	8,336,116	1.9	1.9	0.0	0.0	0.9	1.8	1.4	--	0.7	Mar-11
<i>FTSE T-Bill 3 Months TR</i>				<i>0.0</i>	<i>0.1</i>	<i>0.5</i>	<i>1.5</i>	<i>1.2</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>
Cash	2,060,116	0.5	24.7	0.0	0.4	1.4	1.9	1.5	--	0.8	Mar-11
<i>FTSE T-Bill 3 Months TR</i>				<i>0.0</i>	<i>0.1</i>	<i>0.5</i>	<i>1.5</i>	<i>1.2</i>	<i>0.6</i>	<i>0.6</i>	<i>Mar-11</i>
Cash - Treasury	6,276,000	1.5	75.3								

Cash balances held in ETF account at the Custodian are reflected in the Cash account market value.

OPFRS Total Plan As of January 31, 2021
Cash Flow Summary
Month to Date

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Cash	\$2,037,236	\$22,748	\$131	\$2,060,116
Cash - Treasury	\$6,162,000	\$114,000	\$0	\$6,276,000
DDJ Capital	\$8,605,599	\$0	\$119,049	\$8,724,648
EARNEST Partners	\$40,963,567	\$0	-\$178,132	\$40,785,434
Fisher Transition	\$70,178	\$0	-\$474	\$69,704
Hansberger Transition	\$289,935	\$0	-\$57,624	\$232,311
iShares Core US Aggregate Bond ETF	\$7,666,040	\$0	-\$57,079	\$7,608,961
iShares Edge MSCI Min Vol	\$19,318,580	\$0	-\$526,508	\$18,792,072
Northern Trust Russell 1000	\$107,771,639	-\$1,000,000	-\$865,673	\$105,905,966
Parametric BXM	\$14,794,038	\$0	-\$43,186	\$14,750,852
Parametric DeltaShift	\$18,167,767	\$0	-\$107,739	\$18,060,028
Ramirez	\$79,297,837	\$0	-\$272,775	\$79,025,062
Reams	\$29,931,453	\$0	-\$267,201	\$29,664,252
Reams Low Duration	\$44	\$0	\$0	\$44
Rice Hall James	\$15,003,227	\$0	\$596,803	\$15,600,031
Securities Lending Northern Trust	\$0	-\$22,748	\$22,748	\$0
SGA ACWI ex-U.S. Equity	\$38,257,641	\$0	\$225,506	\$38,483,146
Vanguard Developed Markets ETF	\$15,808,977	\$0	-\$113,854	\$15,695,123
Vanguard Long-Term Treasury ETF	\$21,322,811	\$0	-\$749,613	\$20,573,198
Vanguard Russell 2000 Value	\$8,649,902	\$0	\$429,725	\$9,079,627
Total	\$434,118,470	-\$886,000	-\$1,845,895	\$431,386,575

Benchmark History
As of January 31, 2021

Total Plan x Securities Lending x Reams LD Exception Comp

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

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Oakland Police and Fire Retirement System

Alternative Risk Premia (ARP)

Agenda

1. Economic Intuition & Basic Concepts
2. Evolution of Risk Premia
3. Appendix

Economic Intuition & Basic Concepts

What is Risk Premium?

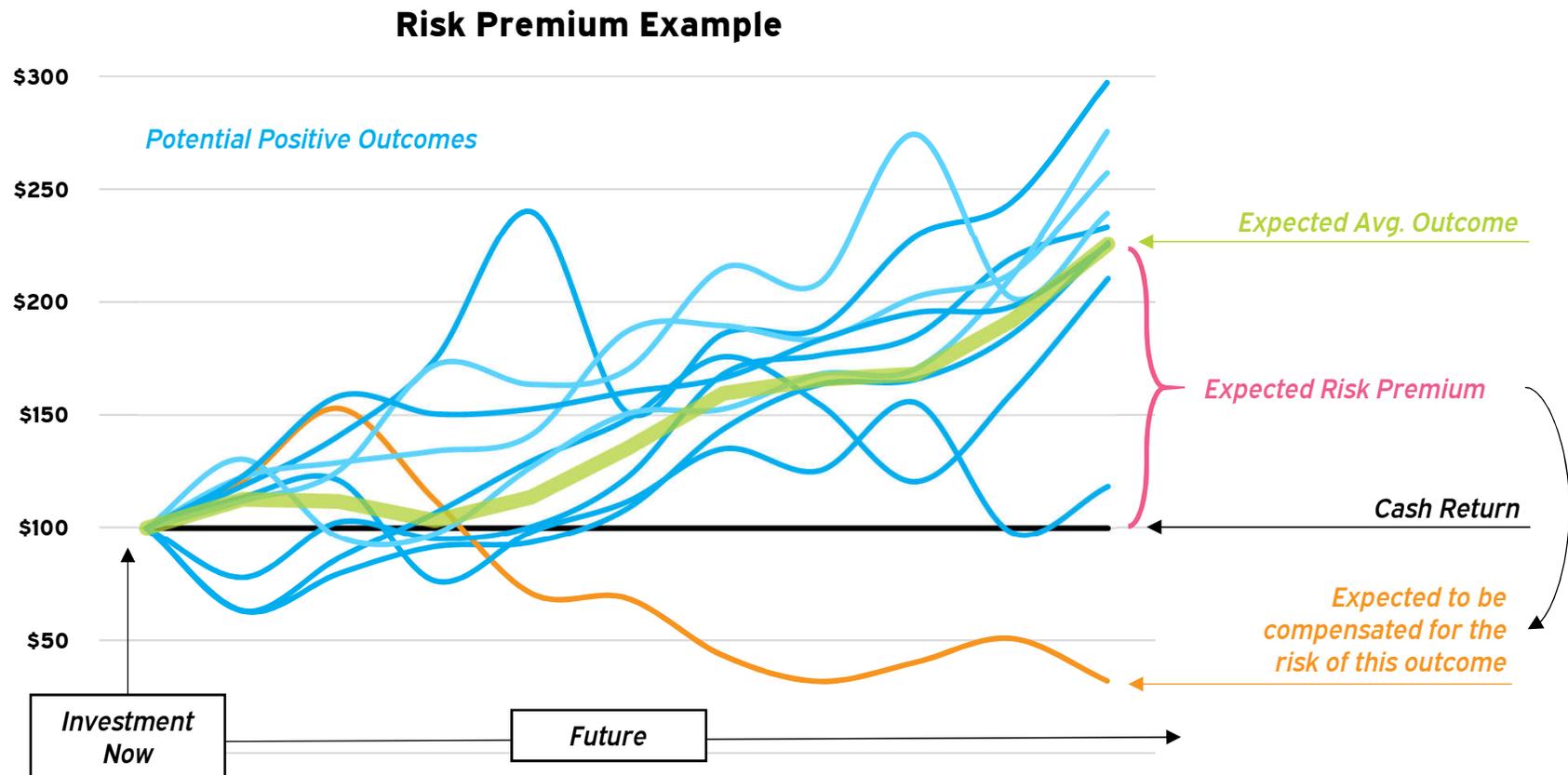
- Risk and return are inherently related
- Economic investments generate positive returns because of risk premiums
- Risk premium = a positive payment for being exposed to a risk
 - Analogy => insurance
 - Monthly premiums in exchange for downside coverage
 - Insurance company generates a profit/return because the premiums cover the payouts (over-time / on average)
- Arbitrage pricing theory / multifactor models best represent the capital market landscape
 - Multiple risk premiums exist that can reward investors

Risk Premiums and “Bad Times”

- The two most important words in investing are “bad times” – Ang, 2014
- All risk premiums exist because of “bad times”
 - Equity Risk = positive returns, on average, to equity investors because they are negatively impacted when companies suffer
 - Interest Rate Risk = positive returns, on average, to bond investors because they are negatively impacted when interest rates rise
- The key to designing a strategic allocation is to obtain exposure to as many economic, unrelated risk premiums as possible
 - i.e., diversify

Risk Premium Investment Example

- To receive a positive return (i.e., a premium), one must bear risk
 - Risk = potential for a “bad time”



How Are Risk Premiums Measured?

- Risk premiums are measured by comparing one investment return versus another (foregone) investment return
 - Foregoing one investment is mathematically identical to short selling
 - i.e., opportunity cost
- For example, the Equity Risk Premium is the difference between the return that equities generate in comparison to the return that cash generates
 - Ex. S&P 500 = 7% return
Cash = 1% return
Equity Risk Premium = 6% return ($7\% - 1\% = 6\%$)
- In the above example, 6% represents the return that the investor earned for bearing equity risk (as opposed to investing solely in cash)
 - i.e., the “premium” relative to cash

Traditional Risk Premiums

- Four traditional risk premiums dominate most portfolios:

Interest Rate Risk/Duration Risk Premium

- Example: 10-year government bond return – cash return = Duration RP

Credit Risk Premium

- Example: Sears 10-year bond return – 10-year government bond return = Credit RP

Equity Risk Premium

- Example: S&P 500 return – cash return = Equity RP

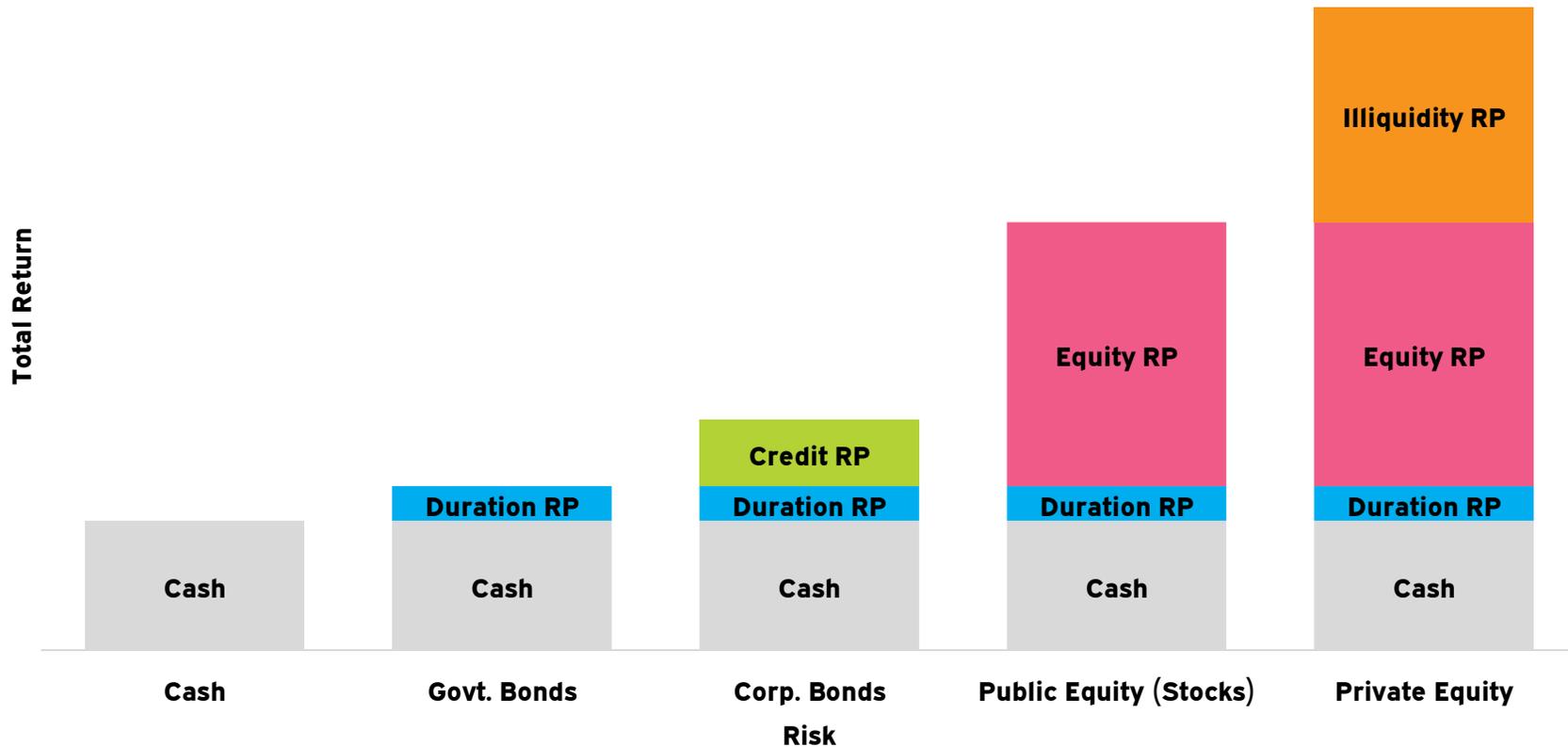
Illiquidity Risk Premium

- Example: Private Equity return – S&P 500 Return = Illiquidity RP

- These are also called “traditional” because they are pervasive, utilized heavily, and generally obtained/measured via long-only investing

Mapping Traditional Risk Premiums

Mapping Traditional Risk Premiums¹



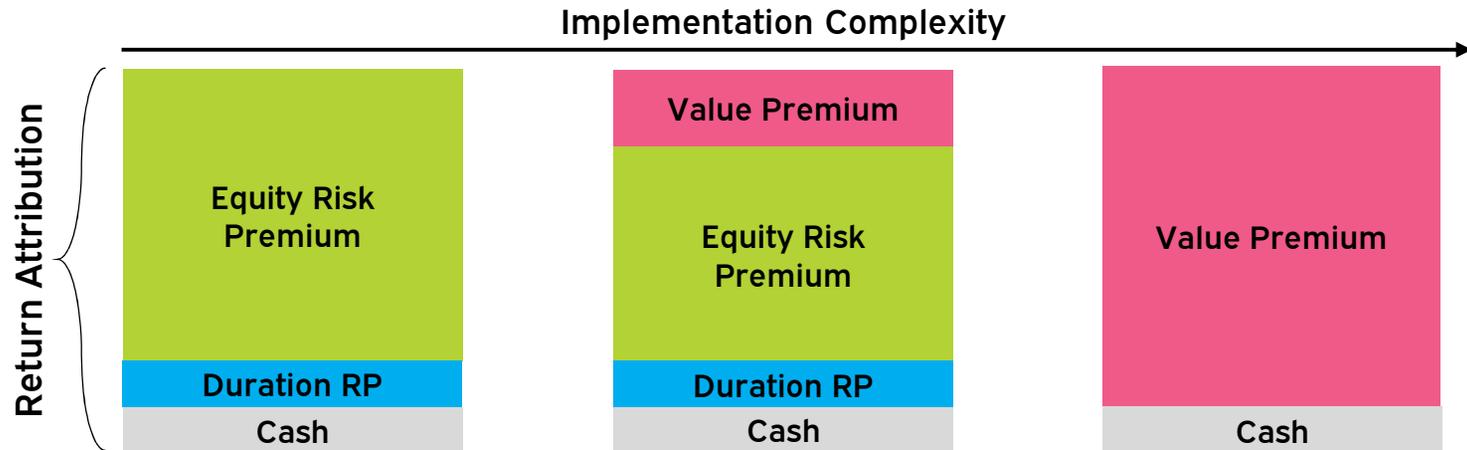
- Risk premia/premiums may also be referred to as “factors”

¹ Adapted from Unigestion Research Paper: Alternative risk premia investing: from theory to practice, Exhibit 1
<https://www.unigestion.com/app/uploads/2017/02/VF-Alternative-risk-premia-investing-from-theory-to-practice.pdf>

What is an Alternative Risk Premium?

- Alternative Risk Premiums = not Traditional Risk Premiums!
 - Ex. Value Risk Premium = the risk premium that investors receive by buying value stocks/assets instead of growth stocks/assets
- Most Alternative Risk Premiums are obtained via tilting a long-only portfolio or using long-short portfolio constructs
 - Tilting example = in an equity portfolio, buying only value stocks
 - Long-short example = buying value stocks and selling short growth stocks
 - **Recommendation: utilize long-short implementations**
- Alternative Risk Premiums are commonly present across the four major asset classes (equities, bonds, currencies, and commodities)

Traditional → Alternative Risk Premia



Strategy:	Core Market Index	Value Investing (Tilting)	Value Risk Premium
Implementation:	<div style="background-color: #92d050; padding: 2px;">Long Value Stocks</div> <div style="background-color: #92d050; padding: 2px;">Long Growth Stocks</div>	<div style="background-color: #92d050; padding: 2px;">Long Value Stocks</div>	<div style="background-color: #92d050; padding: 2px;">Long Value Stocks</div> <div style="background-color: #f4a460; padding: 2px;">Short Growth Stocks</div>
Index Example:	MSCI ACWI	MSCI ACWI Value	N/A
Description:	Buying the total global stock market index (passive investing)	Buying only "cheap" (value) stocks OR buying more "cheap" stocks than "expensive" stocks	Buying "cheap" stocks and selling (shorting) "expensive" stocks, in equal amounts
Other Terms:	Passive, market cap, core, etc.	Value mandate, fundamental indexing, smart beta, etc.	Style premia, alternative risk premia, etc.
Return Attribution	Mostly driven by Equity Risk Premium	Slight contribution from Value Premium but still mostly driven by the Equity Risk Premium	Mostly driven by Value Risk Premium

Risk Premia Exposure: Tilting versus Long-Short

- Tilting a portfolio to a risk premium is effective but has its limitations
 - Pros:
 - Marginally increases the expected return of the investment versus non-tilting
 - Cons:
 - Maintains exposure to the Traditional Risk Premium
 - Limits the impact of the Alternative Risk Premium due to long-only restraint
- Capturing Alternative Risk Premiums in a long-short construct is a more robust approach
 - Example: \$100 investment into a 2X levered long-short value equity portfolio

UP
MARKET

- *Russell 1000 Value = 10% return*
- *Russell 1000 Growth = 7% return*
- *Cash = 2% return*

} Harvests the difference between value/growth

- Portfolio = $(\$100 * \text{Cash}) + (\$200 * \text{R1000 Value} - \$200 * \text{R1000 Growth})$
 Portfolio = $2\% + (2 * 10\%) - (2 * 7\%) = 2\% + 20\% - 14\% = 8\%$ return
 Portfolio = $\$102 + \$220 - \$214$
 Portfolio = $\$108$ (8% return)

Risk Premia Exposure: Tilting versus Long-Short

- Example: \$100 investment into a 2X levered long-short value equity portfolio

- *Russell 1000 Value = -5% return*

- *Russell 1000 Growth = -9% return*

- *Cash = 2% return*

} Harvests the difference between value/growth

DOWN
MARKET

- Portfolio = $(\$100 * \text{Cash}) + (\$200 * R_{1000 \text{ Value}} - \$200 * R_{1000 \text{ Growth}})$

- Portfolio = $2\% + (2 * -5\%) - (2 * -9\%) = 2\% - 10\% + 18\% = 10\%$ return

- Portfolio = $\$102 + \$190 - \$182$

- Portfolio = $\$110$ (10% return)

- Because of the offsetting (i.e., market-neutral) equity positions, there is no exposure to the drawdown in the broad equity markets
- The long-short (market-neutral) construct allows for an element of leverage to enhance the overall return of the strategy

Risk Premia Exposure: Tilting versus Long-Short

Additional Examples (negative strategy returns)

UP
MARKET

- *Russell 1000 Value = 10% return*
 - *Russell 1000 Growth = 13% return*
 - *Cash = 2% return*
- } Harvests the difference between value/growth
- Portfolio = \$96 (-4% return)

- Strategy can generate a negative return even when broad markets produce a positive return over a given period

DOWN
MARKET

- *Russell 1000 Value = -8% return*
 - *Russell 1000 Growth = -4% return*
 - *Cash = 2% return*
- } Harvests the difference between value/growth
- Portfolio = \$94 (-6% return)

- Strategy can generate a negative return at the same time as broad markets

Sustainability of Risk Premiums

- Constant debate amongst academics/practitioners as to whether premiums are risk-based or behavioral-based
 - i.e., does the market reward investors because the activity is risky or because the market makes a mistake?
- The more important idea is whether this will continue
 - Risk premiums are more likely to continue but certain behavioral biases may also persist
- As such, the “bad times” may be when the risk is evident or when the behavioral issue is uncorrected
 - Example: Value Stocks
 - Value = distress risk; value companies are inherently more risky (risk-based)
 - Value = investors overpay for growth, thus value stocks are undervalued (behavioral-based)

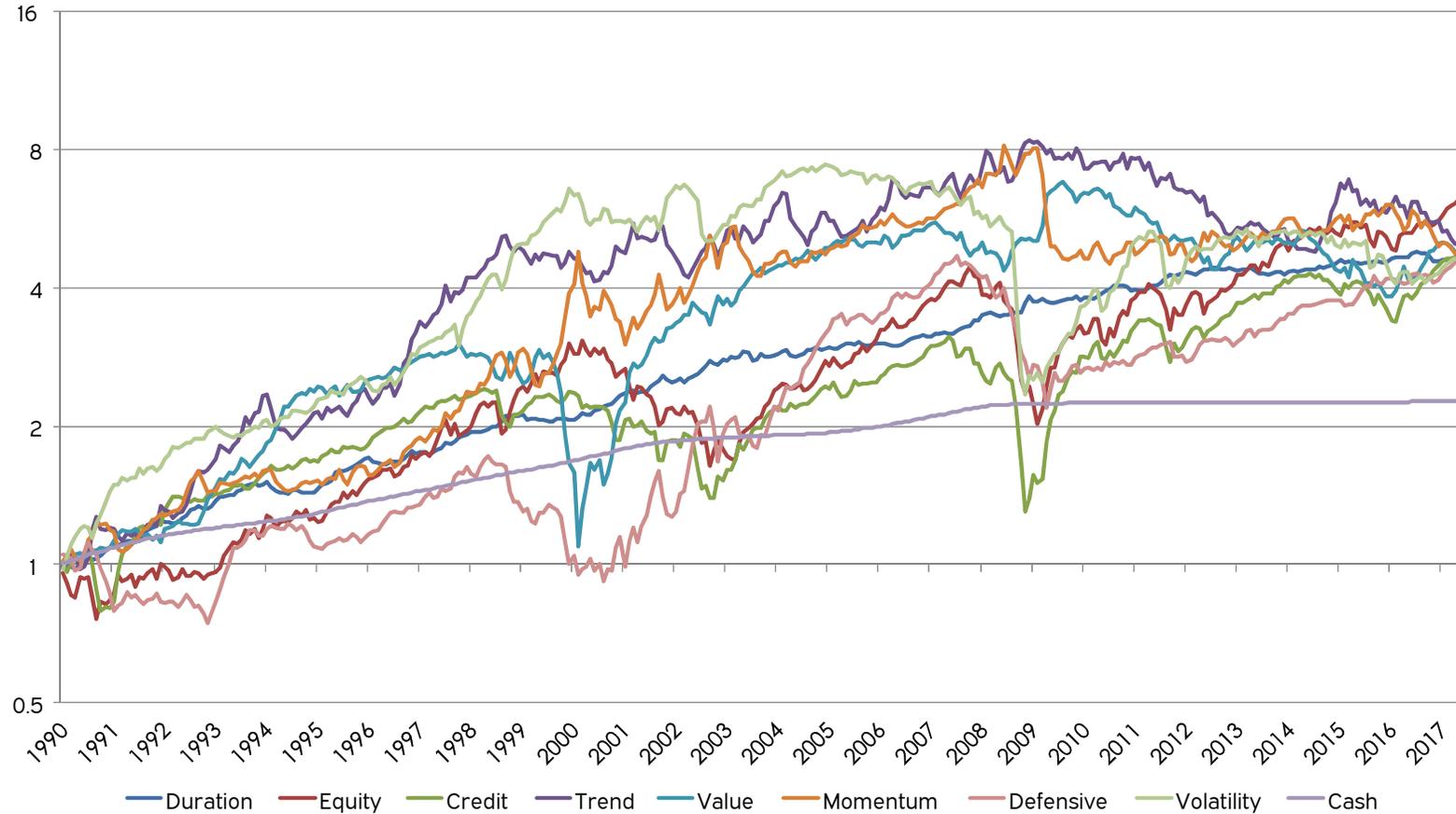
Sustainability of Risk Premiums

Traditional Risk Premiums	Alternative Risk Premiums	
<p><u>Equity</u></p> <ul style="list-style-type: none"> Ownership in a company <p><u>Duration / Interest Rate Risk</u></p> <ul style="list-style-type: none"> Exposure to interest rate movements <p><u>Credit</u></p> <ul style="list-style-type: none"> Lending money with the potential for default <p><u>Illiquidity</u></p> <ul style="list-style-type: none"> Giving up liquidity in an investment 	<p><u>Value</u></p> <ul style="list-style-type: none"> Long “cheap” assets and short “expensive” assets <p><u>Momentum</u></p> <ul style="list-style-type: none"> Buying recent “winners” and selling recent “losers” <p><u>Trend</u></p> <ul style="list-style-type: none"> Similar to momentum, but “winning” and “losing” is relative to each asset’s own history 	<p><u>Carry</u></p> <ul style="list-style-type: none"> Long high-yielding assets and short low-yielding assets <p><u>Defensive</u></p> <ul style="list-style-type: none"> Long lower risk assets and short higher risk assets <p><u>Volatility</u></p> <ul style="list-style-type: none"> Selling volatility (i.e., losing when volatility rises)

Each of these premiums should be measured in a simplistic way

Performance of Common Risk Premiums

Growth of \$1 - Various Risk Premium Portfolios*



Source: PCA, Bloomberg, Barclays, S&P, AQR, Merrill Lynch, Credit Suisse, MPI Stylus

* See Appendix for specific factor descriptions. Factor portfolios include cash returns.

Duration and Equity represent the actual histories of the BB Government and MSCI ACWI GD indices.

The histories of the Alternative Risk Premiums have been altered to reflect more conservative returns. Additionally, their respective volatilities have been modified to roughly match Global Equity over this time period ($\approx 15\%$).

Correlations Amongst Common Risk Premiums

Long-term Monthly Correlations

	Duration	Equity	Credit	Trend	Value	Momentum	Defensive
Equity	-0.09						
Credit	-0.43	0.61					
Trend	0.30	-0.12	-0.27				
Value	-0.11	0.02	0.13	-0.17			
Momentum	0.19	-0.22	-0.30	0.41	-0.68		
Defensive	0.14	-0.22	-0.09	0.17	0.06	0.26	
Volatility	-0.14	0.56	0.56	-0.07	-0.05	-0.02	-0.08

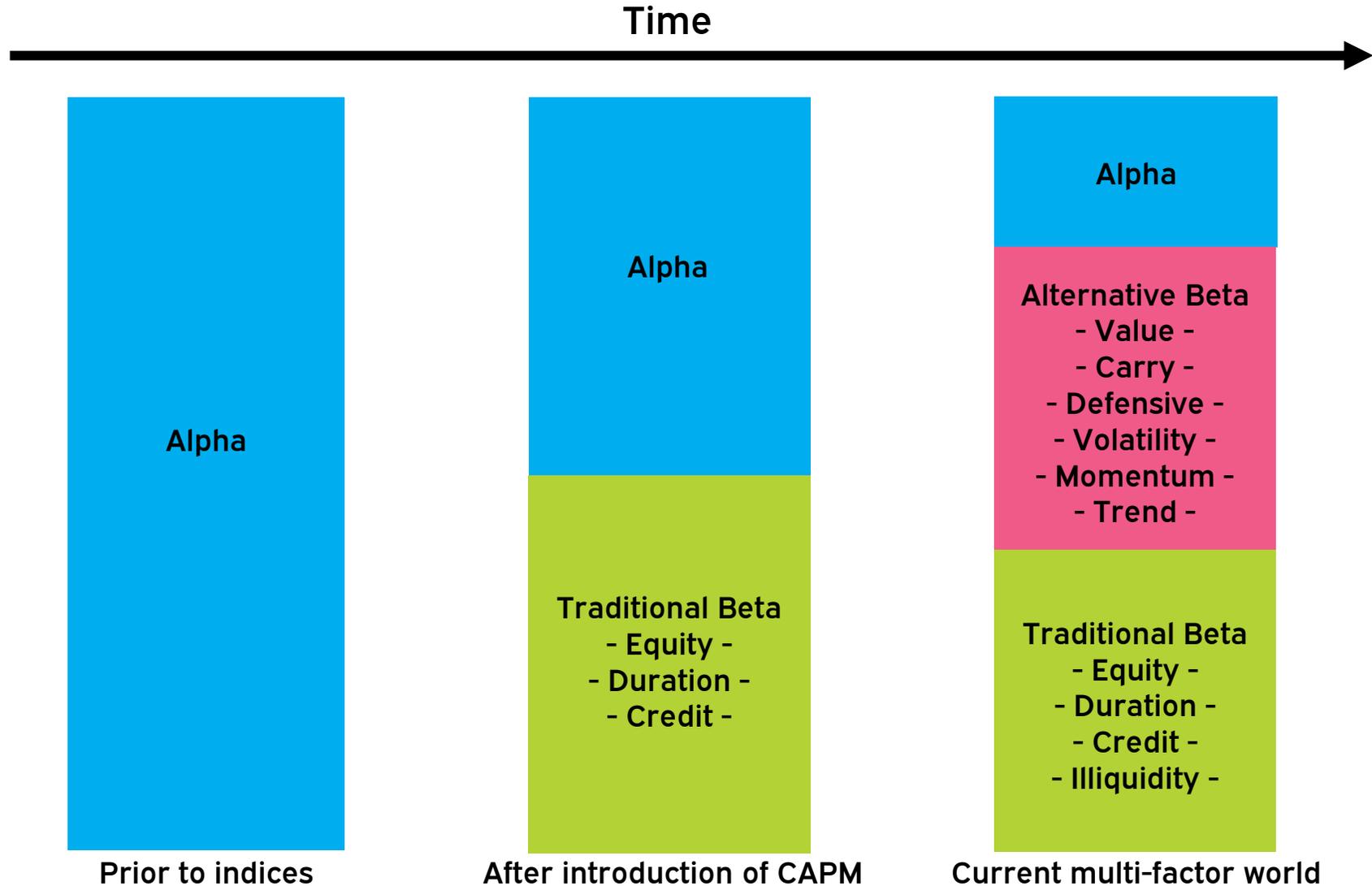
- The majority of the risk premiums are complementary to one another
- Equity, Credit, and Volatility move similarly with one another (as expected)
- Trend and Momentum move similarly with one another (as expected)

Evolution of Risk Premia

Evolution of Alpha into Beta (aka Risk Premia)

- Overtime, “alpha” has continued to morph into “beta”
 - Alpha = risk-adjusted excess return
- This concept indicates that active manager “skill” may be merely due to exposure to other risk premiums
 - e.g., much of Warren Buffett’s success is due to *Value & Defensive* risk premia
- 1st portfolio consideration = exposure to risk premiums
2nd portfolio consideration = pursuit of alpha
- The key to designing a strategic allocation is to obtain exposure to as many economic, unrelated risk premiums as possible
 - i.e., diversify

Evolution of Alpha into Beta (aka Risk Premia)



Alternative Risk Premia Strategies

- Alternative Risk Premia strategies now exist as standalone products
 - First product entrants were in 2012/2013, with material growth in 2016-2018
 - Formerly, they were hidden in expensive hedge funds or masked as “alpha” in traditional long-only strategies
- These strategies provide robust/pure exposures to risk premiums that many institutional investors do not currently have
- These strategies typically combine three to six alternative risk premia across a global universe of investors
 - Ex. Harvest *Value*, *Momentum*, and *Carry* across global equity, global bonds, currencies, and commodities
- An aggregate fee near 60-90 basis points is standard (this has continually decreased over the last few years)

Appendix

Additional Risk Premia Investment Examples

- All long-short risk premia investments have a similar construct
 - Receives the cash return
 - Additionally, harvests the difference in returns of the long-short portion
- “Defensive” risk premia example:
 - Hypothetical ex: \$100 investment into a long-short defensive equity portfolio
 - Using some metric of “defensive” (e.g., trailing volatility, beta, debt level, etc.), an investor goes long the safe/defensive stock and short the risky/aggressive stock
 - In this example, Johnson & Johnson is viewed as more defensive than Gilead
 - *Johnson & Johnson = 10% return*
Gilead Sciences (Biotech) = 7% return
Cash = 2% return
} Harvests the difference between defensive/risky
 - Portfolio = $(\$100 * \text{Cash}) + (\$200 * \text{Johnson \& Johnson} - \$200 * \text{Gilead})$
 Portfolio = $2\% + (2 * 10\%) - (2 * 7\%) = 2\% + 20\% - 14\% = 8\%$ return
 Portfolio = $\$102 + \$220 - \$214$
 Portfolio = $\$108$ (8% return)

Additional Risk Premia Investment Examples

- Hypothetical ex: \$100 investment into a long-short defensive equity portfolio
 - *Johnson & Johnson = -5% return*
 - *Gilead Sciences (Biotech) = -9% return*
 - *Cash = 2% return*

} Harvests the difference between defensive/risky

 - Portfolio = (\$100*Cash) + (\$200*Johnson & Johnson - \$200*Gilead)
 - Portfolio = 2% + (2 * -5%) - (2 * -9%) = 2% - 10% + 18% = 10% return
 - Portfolio = \$102 + \$190 - \$182
 - Portfolio = \$110 (10% return)
- Because of the offsetting (i.e., market-neutral) equity positions, there is no exposure to the drawdown in the broad equity markets

Additional Risk Premia Investment Examples

- “Carry” risk premia example:
 - Hypothetical ex: \$100 investment into a long-short carry currency portfolio
 - *Carry ≈ yield of an investment*
 - *Iceland Krona = 3% return (cash interest rate)*
U.S. Dollar = 1% return (cash interest rate)
Cash = 1% return
 - Portfolio = $(\$100 * \text{Cash}) + (\$200 * \text{Iceland Krona} - \$200 * \text{USD})$
 Portfolio = $1\% + (2 * 3\%) - (2 * 1\%) = 1\% + 6\% - 2\% = 5\%$ return
 Portfolio = $\$101 + \$206 - \$202$
 Portfolio = $\$105$ (5% return)
- } Harvests the difference in high vs. low interest rates*
- For currencies, the notion of selling/shorting ≈ borrowing
 - i.e., instead of owing the return, the borrower owes the interest rate

Additional Risk Premia Investment Examples

- Hypothetical ex: \$100 investment into a long-short carry currency portfolio
 - *Japanese Yen = -0.1% return (cash interest rate)*
 - *Swiss Franc = -0.75% return (cash interest rate)*
 - *Cash = 1% return*

} Harvests the difference in high vs. low interest rates*

 - Portfolio = $(\$100 * \text{Cash}) + (\$200 * \text{Yen} - \$200 * \text{Franc})$
 - Portfolio = $1\% + (2 * -0.1\%) - (2 * -0.75\%) = 1\% - 0.2\% + 1.5\% = 2.3\%$ return
 - Portfolio = $\$101 + \$199.8 - \$198.5$
 - Portfolio = $\$102.3$ (2.3% return)
- For currencies, the notion of selling/shorting \approx borrowing
 - i.e., instead of owing the return, the borrower owes the interest rate

Additional Risk Premia Investment Examples

- “Momentum” risk premia example:
 - Hypothetical ex: \$100 investment into a long-short *momentum* equity portfolio
 - Using some metric of momentum (e.g., trailing 1-year return), an investor goes long the stock with the best momentum and short the stock with the worst momentum
 - In this example, Google is assumed to have a better trailing 1-year return than Equifax
 - $\left. \begin{array}{l} \text{Google} = 10\% \text{ return} \\ \text{Equifax} = 7\% \text{ return} \\ \text{Cash} = 2\% \text{ return} \end{array} \right\}$ Harvests the difference in best momentum/worst momentum stocks
 - Portfolio = $(\$100 * \text{Cash}) + (\$200 * \text{Google} - \$200 * \text{Equifax})$
 Portfolio = $2\% + (2 * 10\%) - (2 * 7\%) = 2\% + 20\% - 14\% = 8\% \text{ return}$
 Portfolio = $\$102 + \$220 - \$214$
 Portfolio = $\$108 \text{ (8\% return)}$

Additional Risk Premia Investment Examples

- Hypothetical ex: \$100 investment into a long-short *momentum* equity portfolio
 - *Google = -5% return*
Equifax = -9% return
Cash = 2% return
 - Harvests the difference in best momentum/worst momentum stocks
 - Portfolio = $(\$100 * \text{Cash}) + (\$200 * \text{Google} - \$200 * \text{Equifax})$
 Portfolio = $2\% + (2 * -5\%) - (2 * -9\%) = 2\% - 10\% + 18\% = 10\%$ return
 Portfolio = $\$102 + \$190 - \$182$
 Portfolio = $\$110$ (10% return)
- Because of the offsetting (i.e., market-neutral) equity positions, there is no exposure to the drawdown in the broad equity markets

Risk Premia Data

- Factors/premia utilized on slides 16 & 17 were selected due to their available histories (back to 1990) and generally accepted persistence
- **Date Source/Factor Construct (Portfolios):**
 - *Duration* = BB Government Index
 - No adjustment to historical return and volatility
 - *Equity* = MSCI ACWI GD Index
 - No adjustment to historical return and volatility
 - *Credit* = BB High Yield Index less BB Government Index
 - Volatility was adjusted to $\approx 15\%$
 - Cash return was added
 - Factor portfolio return was adjusted to 7% (i.e., cash + 4%)

Risk Premia Data

- *Trend* = AQR Simple Trend Data (1990-1997) & Credit Suisse Managed Futures Index (1998/2017)
 - Volatility was adjusted to $\approx 15\%$
 - Factor portfolio return was adjusted to 7% (i.e., cash + 4%)
- *Value* = AQR Value Everywhere Data
 - Volatility was adjusted to $\approx 15\%$
 - Cash return was added
 - Factor portfolio return was adjusted to 7% (i.e., cash + 4%)
- *Momentum* = AQR Momentum Everywhere Data
 - Volatility was adjusted to $\approx 15\%$
 - Cash return was added
 - Factor portfolio return was adjusted to 7% (i.e., cash + 4%)

Risk Premia Data

- *Defensive* = AQR Betting Against Beta Global Equity Data
 - Volatility was adjusted to $\approx 15\%$
 - Cash return was added
 - Factor portfolio return was adjusted to 7% (i.e., cash + 4%)
- *Volatility* = 1-month S&P 500 implied volatility less 1-month realized volatility
 - Volatility was adjusted to $\approx 15\%$
 - Cash return was added
 - Factor portfolio return was adjusted to 7% (i.e., cash + 4%)
- *Cash* = Merrill Lynch 3-month Treasury Bills
- For the correlation analysis, the cash return was removed from each factor/premia portfolio

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