



# Notice of Public Meeting

## The Board of Retirement of the San Mateo County Employees' Retirement Association will meet on **Tuesday, February 25, 2020, at 10:00 A.M.**

**PUBLIC SESSION** – The Board will meet in Public Session at 10:00 a.m.

- 1. Call to Order, Roll Call and Miscellaneous Business**
- 2. Oral Communications**
  - 2.1 Oral Communications from the Board
  - 2.2 Oral Communications from the Public
- 3. Approval of the Minutes**
  - 3.1 Approval of Regular Board Meeting Minutes from January 28, 2020
- 4. Approval of the Consent Agenda\***

<ol style="list-style-type: none"><li>4.1 Disability Retirements (2)<ul style="list-style-type: none"><li>• Neali Cordano</li><li>• Rosa Marcello</li></ul></li><li>4.2 Survivor Death Benefits</li><li>4.3 Service Retirements</li><li>4.4 Continuances</li><li>4.5 Deferred Retirements</li><li>4.6 Member Account Refunds</li><li>4.7 Member Account Rollovers</li><li>4.8 Member Account Redeposits</li></ol>	<ol style="list-style-type: none"><li>4.9 Acceptance of Trustees' Reports of Educational Activities Through Outside Provider</li><li>4.10 Approval of Reinstatement of Retired Member to Active Status</li><li>4.11 Acceptance of Semi-Annual Compliance Certification Statements for the Period Ended December 31, 2019</li><li>4.12 Acceptance of Preliminary Semi-Annual Financial Report for Period Ended December 31, 2019 Financials</li><li>4.13 Acceptance of Preliminary Semi-Annual Budget Report for Period Ended December 31, 2019</li></ol>
---	--
- 5. Benefit & Actuarial Services**
  - 5.1 Consideration of Agenda Items, if any, removed from the Consent Agenda
- 6. Investment Services**
  - 6.1 Report on Preliminary Monthly Portfolio Performance for the Period Ended January 31, 2020
  - 6.2 Report on Quarterly Investment Performance the Period Ended December 31, 2019
  - 6.3 Report on SamCERA's Risk Dashboard as of December 31, 2019
  - 6.4 Report on Core Fixed Income Manager Structure
  - 6.5 Approval of Proposed Alternative Investment (to be heard in Closed Session, Confidential Under Gov. Code §54956.81 and §6254.26, see item C2)
- 7. Board & Management Support**
  - 7.1 Report on March 24, 2020 Board-Staff Retreat Planning
  - 7.2 Approval of Change to Start Time of the March 24, 2020 Regular Board Meeting

# Notice of Public Meeting

## Page 2 of 2

---

### 8. Management Reports

- 8.1 Chief Executive Officer's Report
- 8.2 Assistant Executive Officer's Report
- 8.3 Chief Investment Officer's Report
- 8.4 Chief Legal Counsel's Report

- C1 Consideration of Disability Items, if any, Removed from the Consent Agenda
- C2 Approval of Proposed Alternative Investment (Confidential Under Gov. Code §54956.81 and §6254.26 – see also item 6.5)

### 9. Report on Actions Taken in Closed Session

### 10. Adjournment in Memory of the Following Deceased Members:

Rizzo, Richard	November 22, 2019	Food Services
Fox, James	January 9, 2020	District Attorney's Office
Stoia, Giordano	January 15, 2020	DPW
Shives, John	January 19, 2020	DPW
Liikane, Juhan	January 20, 2020	Mental Health
Timm, Elaine	January 23, 2020	Social Services
Buddress, Loren	January 24, 2020	Probation
Kaur, Seerada	January 24, 2020	HOS - Case Mgmt
Romano, Ethel	January 25, 2020	Sanatorium
Kramer, Mary	January 27, 2020	Controller's
Frstrup, Jean	February 6, 2020	Mental Health
Gomes-Baisden, Gladys	February 7, 2020	Child Health Services
Thomas, Nancy	February 13, 2020	Sheriff's Office

  
Scott Hood, Chief Executive Officer

Posted: February 19, 2020

(\* ALL ITEMS ON THE CONSENT AGENDA ARE APPROVED BY ONE ROLL CALL MOTION UNLESS A REQUEST IS MADE BY A BOARD MEMBER THAT AN ITEM BE WITHDRAWN OR TRANSFERRED TO THE REGULAR AGENDA. ANY ITEM ON THE REGULAR AGENDA MAY BE TRANSFERRED TO THE CONSENT AGENDA. ANY 4.1 ITEMS REMOVED FROM THE CONSENT AGENDA WILL BE TAKEN UP UNDER CLOSED SESSION; ALL OTHER ITEMS REMOVED FROM THE CONSENT AGENDA WILL BE TAKEN UP UNDER ITEM 5.1.)

**THE BOARD MEETS AT 100 MARINE PARKWAY, SUITE 160**, WHICH IS LOCATED ON THE SE CORNER OF TWIN DOLPHIN & MARINE PARKWAY IN REDWOOD CITY. Detailed directions are available on the "Contact Us" page of the website [www.samcera.org](http://www.samcera.org). Free Parking is available in all lots in the vicinity of the building. A copy of the Board of Retirement's open session agenda packet is available for review at the SamCERA offices and on our website unless the writings are privileged or otherwise exempt from disclosure under the provisions of the California Public Records Act. Office hours are Monday through Thursday 7 a.m. – 6 p.m.

IN COMPLIANCE WITH THE CALIFORNIA GOVERNMENT CODE AND THE AMERICANS WITH DISABILITIES ACT: SamCERA's facilities and board and committee meetings are accessible to individuals with disabilities. Contact SamCERA at (650) 599-1234 at least three business days prior to the meeting if (1) you need special assistance or a disability-related modification or accommodation, including auxiliary aids or services, in order to participate in this meeting; or (2) you have a disability and wish to receive the agenda, meeting notice, agenda packet or other writings that may be distributed at the meeting in an alternative format. Notification in advance of the meeting will enable SamCERA to make reasonable arrangements to ensure full accessibility to this meeting and the materials related to it.



**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

JANUARY 28, 2020 – REGULAR BOARD MEETING MINUTES

**2002.1 Call to Order, Roll Call and Miscellaneous Business**

**Call to Order:** Mr. Hoefer, Chair, called the Regular Meeting of the Board of Retirement to order at 10:03 a.m.

**Roll Call:**

Present: Al David, Paul Hackleman, Kurt Hoefer, Katherine O'Malley and Robert Raw.

Absent: Sandie Arnott, Mark Battey, Ben Bowler and Eric Tashman.

Alternates present: Susan Lee and Alma Salas.

Staff: Brenda Carlson, Michael Coultrip, Lili Dames, Scott Hood, Elizabeth LeNguyen, JulieAnne Nagal, Doris Ng, Gladys Smith and Anne Trujillo.

Consultants and speakers: Margaret Jadallah, Joe Abdou and John Nicolini (Verus).

**2002.2.1 Oral Communications from the Board:** None.

**2002.2.2 Oral Communications from the Public:** None.

**2002.3.1 Approval of Regular Board Meeting Minutes from December 3, 2019:** Mr. Hoefer asked if there were any changes or corrections, or objections, to the meeting minutes from the Board meeting held on December 3, 2019.

**Action:** Mr. Hackleman moved to approve the minutes from the Board meeting on December 3, 2019. The motion was seconded by Mr. David and carried with a vote of 5-0, with trustees David, Hackleman, Hoefer, O'Malley and Raw all in favor; none opposed.

**2002.4.0 Approval of the Consent Agenda:** Mr. Hoefer asked if there were any items to be removed for discussion from the Consent Agenda. No items were removed.

**Action:** Mr. Hackleman moved to approve the Consent Agenda, and the motion was seconded by Mr. Raw. The motion carried with a vote of 5-0, with trustees David, Hackleman, Hoefer, O'Malley and Raw all in favor; none opposed.

**2001.4.1 Disability Retirements:**

- a) The Board found that **Marco Campos** (1) is permanently incapacitated from the performance of his usual and customary duties as a Sheriff's Correctional Officer, (2) found that his disability was the result of an injury arising out of and in the course of his employment and (3) granted his application for a service-connected disability retirement.
- b) The Board (1) accepted the proposed findings and recommendations of the Hearing Officer, George Camerlengo, (2) found that **Samantha Fireman** is permanently disabled and unable to perform her job duties as a Deputy Probation Officer III, (3) found that her disability was the result of an injury arising out of and in the course of her employment and (4) granted her application for a service-connected disability retirement.
- c) c) The Board found that **Krystal Gates** (1) is permanently incapacitated from the performance of her usual and customary duties as a Revenue Officer II; (2) found that her disability was the result of an injury arising out of and in the course of her employment; (3) granted her application for a service-connected disability retirement; and 4) pursuant to Government Code

section 31724, found that the filing of Ms. Gates application was delayed by a combination of administrative oversight and the resulting inability to ascertain the permanency of her incapacity until after the date following the day Ms. Gates last received regular compensation, which is October 17, 2017 and that such date will be deemed to be the date the application was filed making the effective date of her benefits to be October 18, 2017.

- d) The Board found that **Anna Stock** (1) is not permanently incapacitated from the performance of her usual and customary duties as a Clinical Lab Scientist II and (2) denied her application for a service-connected disability retirement.

**2002.4.2 Survivor Death Benefits:**

- a) The Board found that **Gilbert Uban**, would have been entitled to a non-service-connected disability but has died, and Blesilda Uban, the surviving spouse, has elected to receive an optional death allowance pursuant to Government Code § 31781.1.
- b) The Board found that **Anand Ram**, would have been entitled to a non-service-connected disability but has died, and Rajeshni Ram, the surviving spouse, has elected to receive an optional death allowance pursuant to Government Code § 31781.1.
- c) The Board found that **Lynsey Craig-Miller**, would have been entitled to a non-service-connected disability but has died, and Dan Miller, the surviving spouse, has elected to receive an optional death allowance pursuant to Government Code § 31781.1.

**2002.4.3 Service Retirements:**

<b>Name</b>	<b>Effective Retirement Date</b>	<b>Department</b>
Adams, Nancy	October 26, 2019	Deferred from Superior Court
Anicete, Maria	October 4, 2019	Deferred from Superior Court
Belson, Janise	September 28, 2019	Library
Bemis-Albertson, Wendy	October 15, 2019	QDRO
Bishop, Dianne	October 20, 2019	San Mateo Medical Center
Bruins, Eileen	November 1, 2019	Human Services Agency
Cronin, Kelly	November 30, 2019	Sheriff's Office
Gibson, Kenneth	November 2, 2019	Sheriff's Office
Grygiel, Gloria	November 30, 2019	Public Health
Lane, Paul	October 15, 2019	Def'd from Assessor Recorder's Office
Lashkoff, Terry	December 1, 2019	Assessor Recorder's Office
Lynn, Rebecca	October 4, 2019	Deferred from Library
Maclaren, Peter	November 9, 2019	Superior Court
Monzon, Leonel	October 26, 2019	Dept. of Public Works
Moody, Stacey	October 18, 2019	Sheriff's Office
Mortenson, Ronald	October 26, 2019	Superior Court
Nakata, Joy	December 1, 2019	Deferred from Controller's
Naser, Norma	November 30, 2019	Mental Health
Pedersen, Brenda	November 26, 2019	Def'd from San Mateo Medical Cntr
Peralta, Noemi	October 19, 2019	Human Services Agency
Pettit, Stephen	November 25, 2019	Sheriff's Office
Provost, Mark	October 22, 2019	Deferred from Sheriff's Office
Purcell, Daniel	October 19, 2019	Assessor Recorder's Office
Ramos, Daniel	October 22, 2019	Child Support Services

Reich, Kelly	November 30, 2019	Public Safety Communications
Rogers, Kathryn	October 28, 2019	Def'd from San Mateo Medical Cntr
Ruiz, Gladys	October 8, 2019	Correctional Health
Sharma, Mohini	October 19, 2019	San Mateo Medical Center
Taylor, Annette	November 30, 2019	Deferred from Behavioral Health
Tica, Florencia	November 1, 2019	San Mateo Medical Center
Torres, Marty	December 1, 2019	Information Services Dept
Uribe, Thelma	December 3, 2019	Plan 3 Only
Valamanesh, Fereshteh	November 1, 2019	San Mateo Medical Center
Vides, Angel	November 16, 2019	San Mateo Medical Center
Wolff, Cecilia	October 31, 2019	Deferred from Sheriff's Office
Wolgast, Johanna	November 2, 2019	San Mateo Medical Center
Wright, Timothy	October 22, 2019	Deferred from Sheriff's Office
Yun, Han	October 1, 2019	Human Services Agency
Zago, Steven	October 31, 2019	Public Health

2002.4.4 **Continuances:**

**Survivor's Name**

Caverly, Judith  
Guillory, Celeste  
Kennedy, Sheila  
McClanahan, Dorothy

**Beneficiary of:**

Caverly, Charles  
Guillory, Anthony  
Kennedy, Timothy  
McClanahan, Donald

2002.4.5 **Deferred Retirements:**

The Board ratified the actions as listed below for the following members regarding deferred retirements:

**Name**

Aguilar, Maria  
Aquino, Alvin  
Bamberger, Nicole  
Bechler, Sofia  
Bergren, Jessica  
Blumenthal, Benjamin  
Flores, Juvenal  
Huang, Irene  
Hulten, Alicia  
Lam, Cathy  
Lind, Sarah  
Lycett, Blake  
Mangin, Olivia  
Martin, Barbara  
Montenero, John  
Panyalertrat, Ratchaneekorn  
Soletti, Virginia  
St. Peter, Christopher  
Torres, Irving  
Zhang, Bitian

**Retirement Plan Type**

G7, Non-vested - Reciprocity  
G4, Vested  
G7, Vested  
S7, Vested - Reciprocity  
G4, Vested - Auto Defer - Code 31700  
G7, Non-vested - Reciprocity  
G4, Vested - Reciprocity  
G7, Non-vested - Reciprocity  
G7, Non-vested - Reciprocity  
G7, Non-vested - Reciprocity  
G4, Vested - Reciprocity  
S5, Vested  
G7, Non-vested - Reciprocity  
G7, Vested  
G5, Vested  
G4, Vested - Auto Defer - Code 31700  
G2/G3, Vested - Reciprocity  
G4, Vested  
G5, Vested  
G7, Non-vested - Reciprocity

2002.4.6 **Member Account Refunds:**

The Board ratified the actions as listed below for the following members regarding refunds:

<b>Name</b>	<b>Retirement Plan Type</b>
Collins, Ronald	G7, Non-vested
Harrison, Tannis (QDRO)	G4, Non-vested
Pena, Donna	G7, Non-vested

2002.4.7 **Member Account Rollovers:** None.

2002.4.8 **Member Account Redeposits:** None.

2002.4.9 **Acceptance of Trustees' Reports of Educational Activities:** The Board accepted the submitted reports for educational activities attended by Ms. Arnott, Mr. David, Ms. Lee, Ms. O'Malley and Ms. Salas.

2002.4.10 **Approval of Resolution to Execute Second Amendment to Contract with Digital Deployment Inc.:** The Board approved the resolution to execute a Second Amendment to contract with Digital Deployment Inc.

2002.5.1 **Consideration of Agenda Items, if any, removed from the Consent Agenda:** None.

2002.5.2 **Approval of a Resolution Adopting Cost of Living Adjustments (COLAs) for 2020:** Mr. Hood discussed Milliman's recommendation for cost of living adjustments (COLAs) for 2020. COLAs were recommended for each retiree and beneficiary recipient, who retire on or before April 1, 2020, as follows: 3.5% for Plan 1 General and Safety members; 3% COLA for Plan 1 Probation and Plan 2 members; and 2% for Plan 4, 5, 6 and 7.

**Action:** Mr. Hackleman moved to approve the resolution adopting the COLA adjustments as recommended. The motion was seconded by Ms. O'Malley and carried with a vote of 5-0, with trustees David, Hackleman, Hoefer, O'Malley and Raw all in favor; none opposed.

2002.5.3 **Approval of Resolution to Execute Contract with Cheiron Inc. for Actuarial Audit Services:** Mr. Hood recommended to the Board that SamCERA enter into an agreement with Cheiron Inc. for its actuarial auditing services of Milliman's Triennial Experience Study and Actuarial Valuation Report.

**Action:** Mr. Raw moved to approve the resolution authorizing Chief Executive Officer to execute an agreement with Cheiron Inc. for actuarial services. The motion was seconded by Mr. David and carried with a vote of 5-0, with trustees David, Hackleman, Hoefer, O'Malley and Raw all in favor; none opposed.

2002.6.1 **Report on Preliminary Monthly Portfolio Performance Report for the Period Ended December 31, 2019:** Mr. Coultrip discussed the preliminary monthly performance report with the Board. He reported that SamCERA's net preliminary return for December was 2.0%, bringing the preliminary trailing twelve-month return ending December 2019 to 16.4% net. This item was informational and for discussion only, no action was taken.

2002.6.2 **Report on Investment Consultant Annual Review:** Ms. Ng went over the results of Verus' annual review with the Board. She also shared strategic and educational topics suggested by the Board and staff for this upcoming year. This item was informational and for discussion only, no action was taken.

2002.6.3 **Approval of Proposed Alternative Investments (to be heard in Closed Session, Confidential Under Gov. Code §54956.81 and §6254.26, see item C2):** The Board adjourned into Closed Session at 10:29 a.m. to hear item 6.3 then reconvened in Open Session at 11:55 a.m. See Closed Session report under C2.

2002.6.4 **Approval of Securitized Core Fixed Income Manager:** Mr. Coultrip and Ms. Jadallah presented the proposed recommendation for the DoubleLine Securitized Income Strategy and answered questions from the Board.

**Action:** Mr. David moved to approve an investment of 4% of plan assets in the DoubleLine Securitized Income Strategy to be placed in the Diversifying risk category within the Core Fixed Income portfolio. The motion was seconded by Mr. Hackleman and carried with a vote of 5-0, with trustees David, Hackleman, Hoefer, O'Malley and Raw all in favor; none opposed.

2002.7.1 **Report on March 24, 2020 Board-Staff Retreat Planning:** Mr. Hood reviewed the proposed agenda for the upcoming Board-Staff Retreat in March and opened the discussion up for the opportunity to recommend additional topics. This item was informational and for discussion only, no action was taken.

2002.8.1 **Chief Executive Officer's Report:** Mr. Hood announced to the Board of Dr. Brodtkin's plans to retire. Mr. Hood reported that he will be meeting with the San Mateo County Mosquito & Vector Control District in early February. He called to attention the SACRS Election Form found in the Trustees' Day of Folder. Mr. Hood informed the Board of the upcoming CALAPRS General Assembly taking place March 7<sup>th</sup>-10<sup>th</sup> and shared a list of speakers. Mr. Hood also reported that he will be attending the CALAPRS Administrators' Round Table in Costa Mesa on February 7<sup>th</sup>. Mr. Hood informed the Board that financial and budget update reports will be placed on the Consent Agenda in the future.

2002.8.2 **Assistant Executive Officer's Report:** Ms. Smith provided a tenant improvement update with SamCERA's offices. She informed the Board that she, Ms. LeNguyen and Ms. Nagal met to further discuss best practices to improve the current disability process based on their past visit with LACERA and SBCERS. Ms. Smith reported that 1099s have been sent out. She informed the Board that staff will hold their Annual Staff Retreat on February 26<sup>th</sup>. Ms. Trujillo informed Board members about upcoming educational events.

2002.8.3 **Chief Investment Officer's Report:** None.

2002.8.4 **Chief Legal Counsel's Report:** None.

C1 **Consideration of Disability Items, if any, removed from the Consent Agenda:** None.

C2 **Approval of Proposed Alternative Investments (to be heard in Closed Session, Confidential Under Gov. Code §54956.81 and §6254.26):** Ms. Carlson reported that the Board approved a motion to invest approximately \$75 million in the Graham Quantitative Global Macro fund. The motion passed a vote of 5-0, with trustees David, Hackleman, Hoefer, O'Malley and Raw all in favor; none opposed.

The Board also approved a motion to invest approximately \$75 million in the PIMCO Multi Asset Alternative Risk Premia fund. The motion passed a vote of 5-0, with trustees David, Hackleman, Hoefer, O'Malley and Raw all in favor; none opposed.

No other reportable action was taken.

C3 **Public Employee Performance Evaluation, in accordance with Gov. Code § 54957, Title: Chief Executive Officer (to be heard in Closed Session Confidential Under Gov. Code §54957):** The Board

adjourned into Closed Session at 1:28 p.m. to hear item C3 then reconvened in Open Session at 1:56 p.m. No reportable action was taken.

2002.10 **Adjournment:** Mr. Hoefer adjourned the meeting at 1:57 p.m. in memory of the deceased members listed below.

Sumner, Robert	November 25, 2019	Assessor's
Jackson Sr, Lester	December 8, 2019	General Services
Anderson, Pamela	December 17, 2019	Probation
Hartman, Maureen	December 9, 2019	Courts
Koenig, Paul	December 10, 2019	Environmental Services
Lyman, Louise	December 19, 2019	Public Health
Golinsky, Nathalie	December 22, 2019	Courts
Derheim, Leroy	December 25, 2019	Sheriff's
Wilson, Pauline	December 29, 2019	Public Health
Young, Dale	January 1, 2020	County Manager's Office
Uban, Gilbert	November 26, 2019	Health Finance
Ram, Anand	November 25, 2019	Public Works
Craig-Miller, Lynsey	January 1, 2020	Probation

---

Kurt Hoefer  
Board Chair

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
**Board of Retirement**

February 25, 2020

Agenda Items 4.1- 4.10

**TO:** Board of Retirement

**FROM:** Elizabeth LeNguyen, Retirement Benefits Manager



**SUBJECT:** Approval of Consent Agenda Items 4.1 – 4.10

**4.1 Disability Retirements**

- a) The Board find that **Neali Cordano** (1) is permanently incapacitated from the performance of her usual and customary duties as a Sheriff's Correctional Officer, (2) find that her disability was the result of an injury arising out of and in the course of her employment and (3) grant her application for a service-connected disability retirement.
  
- b) The Board find that **Rosa Marcello** (1) is permanently incapacitated from the performance of her usual and customary duties as a Child Support Supervisor, (2) find that her disability was not a result of an injury/illness arising out of and in the course of her employment, (3) deny her application for a service-connected disability and (4) grant her a non-service-connected disability retirement.

**4.2 Survivor Death Benefits**

None.

**4.3 Service Retirements**

The Board ratifies the service retirement for the individuals listed below as follows:

<b>Name</b>	<b>Effective Retirement Date</b>	<b>Department</b>
Aleman, Norman	December 21, 2019	Def'd from Human Services Agency
Arceo, Nuria	December 28, 2019	Sheriff's Office
Atkins, Kelly	December 31, 2019	Def'd from San Mateo Medical Cntr
Barringer, Danielle	December 28, 2019	Probation Dept
Etcheto, Victoria	January 1, 2020	Def'd from Human Services Agency
Florendo, Ana Lourdes	December 24, 2019	San Mateo Medical Center
Leonard, Kim	December 9, 2019	Def'd from County Manager's Office
Maninger, Gary	December 21, 2019	Department of Public Works
Misener, Brian	December 18, 2019	Sheriff's Office
Neri, Stephen	December 17, 2019	Def'd from Sheriff's Office



Ramirez, Mary	December 6, 2019	San Mateo Medical Center
Rangel, Humberto	December 30, 2019	Sheriff's Office
Sakumoto, Jinny	December 27, 2019	Family Health Services
Scott, Janice	December 28, 2019	Superior Court
Scott, Willie	December 28, 2019	Department of Public Works
Sherman, Chonne	January 1, 2020	Def'd from Human Services Agency
Soletti, Virginia	December 28, 2019	Deferred from Library
Sutherland, Lynda	December 29, 2019	San Mateo Medical Center
Taiby, Hussain	December 29, 2019	San Mateo Medical Center
Zaru, Donna	December 12, 2019	Def'd from Human Services Agency

#### 4.4 Continuances

The Board ratifies the granting of a continuance to the following individuals:

Survivor's Name	Beneficiary of:
Anderson, Bobby Joe	Anderson, Pamela

#### 4.5 Deferred Retirements

The Board ratifies the deferred retirements as listed below for the following individuals:

Name	Retirement Plan Type
Aparicio-Mercado, Anapatricia	G4, Vested - Auto Defer - Code 31700
Arechiga, Theresa	G7, Vested - Auto Defer - Code 31700
Carlisle, Siwen	G7, Vested - Reciprocity
Degodoy, Rebecca	G7, Non-vested - Reciprocity
Escobar, Tanya	G4, Vested - Reciprocity
Gonzalez, Nidia	G4, Vested
Ko, Grace	G7, Non-vested - Reciprocity
Landa Zamora, Fernando	G7, Non-vested - Reciprocity
Macedo, Brenda	G4, Vested
Olshaskie, Robert	S4, Non-vested - Reciprocity
Pita, Sosefina	G4, Vested - Auto Defer - Code 31700
Salazar, Lissete	G4, Vested - Auto Defer - Code 31700
Williams, Danielle	G4, Vested - Reciprocity

Williams, Jacklyn	S4, Vested - Auto Defer - Code 31700
-------------------	--------------------------------------

**4.6 Member Account Refunds**

The Board ratifies the refunds as listed below for the following individuals:

Name	Retirement Plan Type
Cortes, Jose	S7, Non-vested
Du, Nang (FBO: Du, Phuong)	G4, Vested
Du, Nang (FBO: Vo, Nguyet)	G4, Vested
Ganapathy, Bhuvanewari	G7, Non-vested
Gottuso, Nicholas	G7, Non-vested
Hale, Nathan	G7, Non-vested
Heyer, Patrick	G7, Non-vested
Long, Brandi	G7, Non-vested
Seymour, Jeffrey	S4, Vested

**4.7 Member Account Rollovers**

The Board ratifies the rollovers as listed below for the following individuals:

Name	Retirement Plan Type
Kemberling, Paul (FBO: Willey, Vicky)	G2, Vested
Rozycki, Rhoda	G7, Non-vested
Seymour, Jeffrey	S4, Vested
Tan, Arnold	G4, Non-vested
Wong, Lauren	G7, Non-vested

**4.8 Member Account Redeposits**

None.

**4.9 Acceptance of Trustees Reports of Education Activities Through Outside Provider**

Name	Provider/Course
Raw, Robert	IFEBP New Trustee Institute

**4.10 Approval of Reinstatement of Retired Member to Active Status**

Name	Department
Halpern, Kent	Behavioral Health and Recovery Services

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
**Board of Retirement**

February 25, 2020

Agenda Item 4.9

**TO:** Board of Retirement  
**FROM:** Anne Trujillo, Retirement Executive Secretary  
**SUBJECT:** Trustee's Reports of Educational Activities



**Recommendation**

Accept the following reports from Board of Retirement trustees who have recently attended educational events.

**Background**

SamCERA's Education Policy Section 1D states "Prior to the next regularly scheduled meeting of the Board following the Board member's participation in an educational activity, the Board member shall submit for inclusion on the Consent Agenda, a summary written report on the content of educational activities. The report shall substantially reflect the information contained in the attached sample report."

**Discussion**

SamCERA Trustees attended the following educational events, and their reports are attached:

IFEBP Trustee Institute Level I - Orlando, Florida  
Robert Raw

**Attachments**

Trustee's Education Proof of Participation Certificates and Summaries

SamCERA Board of Retirement Trustee Education  
Proof of Participation Certificate and Summary



<b>Trustee Name</b> Robert Raw		<b>Date(s) of Event</b> 2/10/20-2/12/20
<b>Education Event Name</b> New Trustees Institute - Level I: Core Concepts		
<b>Event Provider</b> IFEBP		
<b>Type of Participation:</b> Attended Event <input checked="" type="checkbox"/> Listened to Audio/Watched Video <input type="checkbox"/>		<b>Eligible Credit:</b> Total hours for sessions you participated in: <u>20</u> (Staff may adjust hours if the provider issues an education certificate that reflects different hours.)

This event satisfies the following requirements of the Board of Retirement's Education Policy and Government Code section 31522.8:

**Topic:** (Check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Fiduciary responsibilities                                 | <input type="checkbox"/> Disability evaluation              |
| <input type="checkbox"/> Ethics  | <input type="checkbox"/> Fair hearings                      |
| <input type="checkbox"/> Benefits administration   | <input checked="" type="checkbox"/> Pension fund governance |
| <input type="checkbox"/> Actuarial matters   | <input type="checkbox"/> New board member orientation       |
| <input checked="" type="checkbox"/> Pension funding  | <input type="checkbox"/> Other: _____                       |
| <input checked="" type="checkbox"/> Pension fund investments and investment program management |   |

**Summary Report**

What concepts or information did you learn about?

TRUSTEE RESPONSIBILITY AND LEGAL ENVIRONMENT, OVERVIEW OF HEALTH AND WELFARE PLANS, OVERVIEW OF RETIREMENT PLANS, INVESTING HEALTH AND WELFARE PENSION ASSETS, AND GOVERNANCE.

Would you recommend this event to other trustees?

- Yes       No       Maybe

You may provide additional comments to SamCERA's CEO.

By signing below, I certify that I participated in the activities described above and am entitled to claim the indicated amount of education credit hour(s).

<b>Trustee Signature</b> (print this form and sign) 	<b>Date</b> 2/13/20
---	------------------------


**NOTE:** Please return this completed form to SamCERA's Executive Secretary prior to the mailing of the Board packet, so it can be included in that month's Consent Agenda.

San Mateo County Employees' Retirement Association  
**Board of Retirement**

February 25, 2020

Agenda Item 4.10

**TO:** Board of Retirement

**FROM:** Elizabeth LeNguyen, Retirement Benefits Manager 

**SUBJECT:** Approval of Reinstatement of Retired Member to Active Status

**Recommendation**

Staff recommends that the Board reinstate Kent Halpern as an active member under the provisions of Government code sections 31680.4 and 31680.5

**Background**

Government code section 31680.4 provides that a member retired for service and reemployed in a county or district shall become again an active member of the retirement association upon (a) his or her application to the board for reinstatement, (b) the determination of the board, based upon medical examination, that he or she is not incapacitated for the duties assigned to him or her; and (c) meeting the conditions of membership in Article 4 (commencing with Section 31550) are met.

Upon reinstatement, Mr. Halpern's pension will be suspended during the time period that he is an active employee.

**Discussion**

Mr. Halpern retired for service from his position as a Marriage and Family Therapist II on September 9, 2017. The County has reemployed him as a Marriage and Family Therapist II in a full-time capacity effective January 13, 2020. Mr. Halpern has submitted a statement from his doctor dated January 8, 2020, stating that, based upon a medical examination, Mr. Halpern is able to perform his job duties. All other conditions of membership have been met.

**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**  
**Board of Retirement**

February 25, 2020

Consent Agenda Item 4.11

**TO:** Board of Retirement

**FROM:** Doris Ng, Retirement Investment Analyst 

**SUBJECT:** Semi-Annual Compliance Certification Statement for Period Ended December 31, 2019

**Recommendation**

Accept the semi-annual Compliance Certification Statement for SamCERA's non-alternative investment managers and investment consultant, as of December 31, 2019.

**Background**

As part of SamCERA's ongoing due diligence process, the Compliance Certification Statement is completed by each of the association's public equity, fixed income, real estate, real asset and cash overlay investment managers and investment consultant on a semi-annual basis.

These statements are used to update SamCERA on any firm-wide compliance issues and to provide strategic-level information regarding such things as derivatives and portfolio positioning. For investment managers whose investments are considered "alternative investment vehicles" per the California Government Section Code §6254.26, the Compliance Certification Statements are not provided in the public board packet and will be sent separately to the Board.

**Discussion**

The attached Compliance Certification Statements report that SamCERA's investment managers and investment consultants are in compliance with SamCERA's Investment Policy as of December 31, 2019. There were no reported significant developments in portfolio construction, investment approach, firm ownership or organizational structure of concern relating to the association's public investments. There were no notable issues regarding industry or regulatory actions that impact SamCERA. The managers were also requested to provide data regarding the characteristics and composition of their portfolios.

No prominent issues were identified during the review. Any items that raise concern will be brought to the manager's or investment consultant's attention and will be thoroughly vetted by staff.

**Attachments**

- Compliance Certification Statement Matrix 12-2019
- Compliance Certification Statements (18)
- A. Domestic Equity: Acadian, BlackRock, PanAgora, QMA

**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**  
**Board of Retirement**

- B. International Equity - Developed: Baillie Gifford, Blackrock, Mondrian
- C. Emerging Markets: Parametric
- D. Fixed Income: Blackrock, Fidelity Institutional Asset Management, Franklin Templeton, PIMCO, Western Asset Management
- E. Real Estate: INVESCO
- F. Real Assets: Cushing Asset Management, State Street Global Advisors (SSGA)
- G. Overlay: Parametric
- H. Investment Consultant: Verus Advisory



## Compliance Certification Statement Matrix – December 31, 2019

Investment Manager	Mandate	General Compliance Issues	Derivative Instruments	Investment Manager Guidelines	Mandate Specific
<b>Domestic Equity</b>					
<b>Acadian</b>		<ul style="list-style-type: none"> <li>Integrate Client Solutions &amp; Product Strategy team under Global Client Group. No changes to investment ldrshp team or portfolio.</li> </ul>	No Concerns	No Concerns	<ul style="list-style-type: none"> <li>Largest single security Zoetis Inc Cls A 1.3%</li> <li>Largest single industry Utilities 12.9% vs bmk 3.2%</li> <li>5.6% Small Cap</li> </ul>
<b>BlackRock Russell 1000</b>		<ul style="list-style-type: none"> <li>Q4-19, Manish Mehta promoted to Glb Hd of HR. Samara Cohen &amp; Alan Mason become Co-Hds of EII Mkts &amp; Invmnts, report to Salim Ramji, Glb Hd of EII. Alan oversee indexing &amp; Samara oversee ETF.</li> <li>Jan 2020, add'tl ldrshp to oversee portfolio engineers, under Alan Mason.</li> </ul>	No Concerns	No Concerns	<p>Largest single security Apple 4.4%</p> <p>Largest single industry Information Technology 22.57% vs bmk 22.58%</p>

## Compliance Certification Statement Matrix – December 31, 2019

Investment Manager	Mandate	General Compliance Issues	Derivative Instruments	Investment Manager Guidelines	Mandate Specific
DE Shaw	<i>Confidential under California Gov. Section Code §6254.26</i>				
PanAgora (Low Volatility strategy)		No Concerns	No Concerns	No Concerns	<ul style="list-style-type: none"> <li>• Largest single security by risk weight is Chevron Corp 2.5%</li> <li>• Largest sector risk weight is Information Technology 11.8% v. R1000 bmk 12.1%</li> </ul>
QMA		No Concerns	Largest exposure to single-counterparty: JP Morgan (serves as FCM) 1.8% of the fund	No Concerns	<ul style="list-style-type: none"> <li>• Largest holding, EMCOR Group Inc. 0.93%</li> <li>• Largest industry: Banks 9.19% vs. Russell 2000 bmk 9.83%</li> </ul>
<b>International Equity - Developed</b>					
Baillie Gifford		<ul style="list-style-type: none"> <li>• New Shanghai office/rsrch hub commenced operations Sept 2019</li> <li>• Strategy &amp; sub-strategy name change to International All Cap/ACWI ex US All Cap</li> </ul>	No Concern	No Concern	<ul style="list-style-type: none"> <li>• 7.42% ADR</li> <li>• 0.64% GDR</li> <li>• 21.20% Emerging Market</li> </ul>

## Compliance Certification Statement Matrix – December 31, 2019

Investment Manager	Mandate	General Compliance Issues	Derivative Instruments	Investment Manager Guidelines	Mandate Specific
<b>BlackRock EAFE</b>		<ul style="list-style-type: none"> <li>Q4-19, Manish Mehta promoted to Glb Hd of HR. Samara Cohen &amp; Alan Mason become Co-Hds of EII Mkts &amp; Invmnts, report to Salim Ramji, Glb Hd of EII. Alan oversee indexing &amp; Samara oversee ETF.</li> <li>Jan 2020, add'tl ldrship to oversee portfolio engineers, under Alan Mason.</li> </ul>	No Concerns	No Concerns	<ul style="list-style-type: none"> <li>0.15% ADRs</li> </ul>
<b>Mondrian</b>		<ul style="list-style-type: none"> <li>No Concern</li> </ul>	No Concern	No Concern	<ul style="list-style-type: none"> <li>25.67% Emerging Market MIP LP</li> </ul>
<b>Emerging Market Equity</b>					
<b>Eaton Vance Parametric</b>		<ul style="list-style-type: none"> <li>Jodi Wong, Director of Glb Mkts Portfolio Mgmt retired 12/31/19, succeeded by</li> </ul>	<ul style="list-style-type: none"> <li>Largest cntrparty expo 4.91% HSBC Bank</li> </ul>	No Concerns	<ul style="list-style-type: none"> <li>8.63% ADRs</li> <li>1.18% GDRs</li> <li>6.35% Derivatives</li> <li>3.11% in Frontier Markets</li> </ul>

## Compliance Certification Statement Matrix – December 31, 2019

Investment Manager	Mandate	General Compliance Issues	Derivative Instruments	Investment Manager Guidelines	Mandate Specific
		Geoff Longmeier, team ldr of Centralized Portfolio Mgmt Team			<ul style="list-style-type: none"> <li>Non-benchmark 33.28%</li> </ul>

### Fixed Income

<b>Beach Point</b>	<i>Confidential under California Gov. Section Code §6254.26</i>				
<b>BlackRock Intermediate Government Bond Index</b>		<ul style="list-style-type: none"> <li>Q4-19, Manish Mehta promoted to Glb Hd of HR. Samara Cohen &amp; Alan Mason become Co-Hds of EII Mkts &amp; Invmnts, report to Salim Ramji, Glb Hd of EII. Alan oversee indexing &amp; Samara oversee ETF.</li> <li>Jan 2020, add'tl ldrship to oversee portfolio engineers, under Alan Mason.</li> </ul>	Not Applicable	No Concerns	No Concerns

## Compliance Certification Statement Matrix – December 31, 2019

Investment Manager	Mandate	General Compliance Issues	Derivative Instruments	Investment Manager Guidelines	Mandate Specific
<b>Brigade</b>	<i>Confidential under California Gov. Section Code §6254.26</i>				
<b>Fidelity Institutional Asset Management (FIAM) BMD Bond</b>		<ul style="list-style-type: none"> <li>• Mar 2020, Presid of Asset Mgmt retired, succeeded by Bart Grenier.</li> <li>• 2020 -Nancy Prior, Presid of Fixed Income to retire.</li> </ul>	No Concerns	No Concerns	<ul style="list-style-type: none"> <li>• 0.6% below inv grade (inv grade at purchase)</li> <li>• 8.9% in Rule 144A securities</li> </ul>
<b>Franklin Templeton</b>		<ul style="list-style-type: none"> <li>• Dec 2019-Hd of Inv Risk Mgmt Kelsey Biggers announced retirement, succeeded by Suzanne Akers and Tilak Lal.</li> <li>• Dec 2019-Shlomi Kramer rsrch analyst left firm</li> <li>• Jan 2020-Added quantitative rsrch analyst Adam Drutel</li> </ul>	No Concerns	No Concerns	<ul style="list-style-type: none"> <li>• 23.36% Cash &amp; Equiv.</li> <li>• 2.76% Rule 144A</li> </ul>
<b>PIMCO</b>		<ul style="list-style-type: none"> <li>• Dec 2019-Mike Gomez, Hd of EM to retire, to be succeeded by Pramol Dhawan</li> </ul>	No Concerns	No Concerns	No Concerns

## Compliance Certification Statement Matrix – December 31, 2019

Investment Manager	Mandate	General Compliance Issues	Derivative Instruments	Investment Manager Guidelines	Mandate Specific
		<ul style="list-style-type: none"> <li>• Oct 2019-Hired Annisa Lee as Hd of Asia Pacific Credit Rsrch</li> <li>• Sept 2019-Hired Nick Granger, MD and PM of Quantitative Analytics</li> </ul>			
<b>Blackrock (f.k.a. Tennenbaum Capital Partners)</b>	<i>Confidential under California Gov. Section Code §6254.26</i>				
<b>Western</b>		No Concerns	<ul style="list-style-type: none"> <li>• Largest cntrprty exposure to Barclays 0.38%</li> </ul>	No Concerns	<ul style="list-style-type: none"> <li>• 22.66% Rule 144A securities</li> </ul>
<b>White Oak</b>	<i>Confidential under California Gov. Section Code §6254.26</i>				
<b>Real Estate</b>					
<b>Invesco (U.S. Core Real Estate Fund)</b>		No Concerns	Not Applicable	No Concerns	No Concerns
<b>Invesco (U.S. Value-Add Fund IV)</b>	<i>Confidential under California Gov. Section Code §6254.26</i>				
<b>Invesco (U.S. Value-Add Fund V)</b>	<i>Confidential under California Gov. Section Code §6254.26</i>				

## Compliance Certification Statement Matrix – December 31, 2019

Investment Manager	Mandate	General Compliance Issues	Derivative Instruments	Investment Manager Guidelines	Mandate Specific
<b>PGIM</b> <b>(US Real Estate Debt)</b>		<i>Confidential under California Gov. Section Code §6254.26</i>			
<b>Real Assets</b>					
<b>State Street Global Advisors</b> <b>(Custom Real Asset Account)</b>		<ul style="list-style-type: none"> <li>• Q3-2019 Stan Wasilauski, Chief Technology Officer internal transition, to be succeeded by Susan Lasota</li> <li>• Q4-2019 James Ross, Chairman of Glb SPDR &amp; Hd of Glb Fnds Mgmt retire Mar 2020</li> </ul>	<ul style="list-style-type: none"> <li>• Largest single counterparty: Scotiabank 21. 8%</li> </ul>	No Concerns	<ul style="list-style-type: none"> <li>• 2.76% ADRs</li> <li>• 33.28% Derivatives</li> <li>• 1.89% Rule 144A</li> <li>• 1.76% largest single security Enbridge Inc.</li> </ul>
<b>Cushing Asset Management</b> <b>(MLP Alpha Total Return)</b>		No Concerns	Not Applicable	No Concerns	<ul style="list-style-type: none"> <li>• Largest single security: 6.84% Enterprise Product Partners</li> <li>• 3.03% foreign ordinary shares (Pembina Pipeline Corp, also listed on Toronto Stock Exchg)</li> </ul>
<b>Cash Overlay</b>					



## Compliance Certification Statement Matrix – December 31, 2019

Investment Manager	Mandate	General Compliance Issues	Derivative Instruments	Investment Manager Guidelines	Mandate Specific
<b>Parametric Portfolio Associates</b>		No Concerns	No Concerns	No Concerns	No Concerns
<b>Investment Consultant</b>					
<b>Verus Advisory</b>		No Concerns	Not Applicable	Not Applicable	Not Applicable

**26 Total | 18 Completed | 0 Pending Information | 8 Confidential**

*Compliance Certification Statement*  
*San Mateo County*  
*Employees' Retirement Association*

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

**General Compliance Issues**

1. Has the firm acted as a fiduciary and invested its assets for the sole benefit of *SamCERA*?  
 **Yes** /  **No: Please explain.**
  
2. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?  
 **Yes: Please explain.** /  **No**  
As a result of a strategic review of our business, we have made some organizational changes to create a more efficient and integrated Client Solutions and Product Strategy team, bringing these support functions under the Global Client Group, led by Chief Marketing Officer Kelly Young. As a result, the head of Client Solutions and Product Strategy role, formerly held by Laurent De Greef, has been eliminated. Laurent was a member of Acadian's Executive Committee and a Senior Vice President.  
  
The restructuring had no impact to the investment leadership team or your portfolio
  
3. Have there been any changes in the firm's investment approach?  
 **Yes: Please explain.** /  **No**
  
4. Do *SamCERA's* guidelines require your firm to manage the portfolio significantly differently than other similar portfolios?  
 **Yes: Please explain.** /  **No**
  
5. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 **Yes: Please explain.** /  **No**
  
6. Have proxy ballots been voted in accordance with the best economic interest of *SamCERA* and in a manner consistent with the Board's proxy policies?  
 **Yes** /  **No: Please explain.**
  
7. Have there been any investment guideline breaches during the prior 6 months?  
 **Yes: Please explain.** /  **No**
  
8. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**

## Investment Management Fees

1. Is *SamCERA's* investment management fee schedule higher than those charged other institutional clients who hold an account investment substantially similar to ours?  
 **Yes: Please explain.** /  **No**

## Derivative Investments

1. Are derivatives used in the management of the investment strategy?  
 **Yes: Please ANSWER the remaining questions in this section.**  
 **No: Please SKIP the remaining questions in this section.**
2. Are derivative investments in compliance with *SamCERA's* investment policies?  
 **Yes** /  **No: Please explain.**
3. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 **Yes** /  **No: Please explain.**
4. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 **Yes** /  **No**

If **Yes**:

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**
  - b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  **Yes**/  **No: Please explain.**
5. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 **Yes** /  **No**

If **Yes**:

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**
  - b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 **Yes**/  **No: Please explain.**
6. Is individual counter-party exposure well diversified?  **Yes**/  **No: Please explain.**
    - a) What is the largest exposure to a single counter-party within the portfolio?
    - b) Please specify the name of the counter-party and the amount of exposure.
    - c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months?

7. Are the investment purposes for a derivative investment consistent with the four purposes stated *SamCERA's* policies?  **Yes** /  **No: Please explain.**
- a) Has the firm developed any new purposes for derivative investments?  **Yes: Please explain.** /  **No**
8. List all limited allocation derivative investments individually and the percentage of the portfolio's assets represented by each investment.
- a) State if the firm has evaluated the exposure to market value losses that can occur from each of these derivatives.  **Yes** /  **No: Please explain.**
- b) State if these derivative investments in total represent more than 5% of the portfolio's market value. If more than 5%, please explain.
9. State if any restricted derivative investments are held in *SamCERA's* portfolios.  
 **Yes** /  **No**
- a) If any are held, state the percentage of the portfolio's assets held in such derivatives and why the firm is not in compliance with the investment policies.
10. For derivative investments with allocation limits, has the firm tested and measured these investments' sensitivities to changes in key risk factors?  **Yes** /  **No: Please explain.**
11. Have all derivative investments been made in a manner consistent with the derivative investment process specified in the policy statement?  **Yes** /  **No: Please explain.**
12. Specify the security pricing sources used when developing portfolio market value exposures for limited allocation derivatives.
13. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.
14. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  **Yes: Please explain.** /  **No**

### **Investment Manager Guidelines**

1. Are portfolio holdings well-diversified, and made in liquid securities?  
 **Yes** /  **No: Please explain.**

2. Has the firm engaged in short selling, use of leverage or margin and/or investments in commodities?  **Yes: Please explain.** /  **No**

### Cash & Equivalents

1. Does the firm directly invest in short term fixed income investments?  **Yes** /  **No**
- a) If **Yes**, do the investments comply with the policies?  **Yes** /  **No: Please explain.**

### Domestic Equity Portfolio (Large, Mid & Small)

1. Specify the percentage of the portfolio held in each of the following types of securities:

<i>Common Stock</i>	<i>99.4%</i>
<i>Preferred Stock</i>	<i>0%</i>
<i>Convertible Securities</i>	<i>0%</i>
<i>ADRs</i>	
<i>Cash &amp; Equivalents</i>	<i>0.6%</i>

2. Specify the large, mid and small capitalization exposure of the portfolios.

<i>Large-Cap (&gt;50 bil)</i>	<i>43.2%</i>
<i>Mid-Cap (between 3-50 bil)</i>	<i>50.6%</i>
<i>Small-Cap (&lt;3 bil)</i>	<i>5.6%</i>

3. Specify the percentage of the portfolio that is invested in American Depository Receipts (ADR's). Also, specify the percentage of the portfolio invested in ADR securities that are 144A securities. If greater than 10%, explain why.

<i>ADRs</i>	<i>0%</i>
-------------	-----------

4. What is the largest percentage of the portfolio represented by a single security? Please specify the security and percentage amount. If any securities were above 1.5% at the time of purchase, please list and explain why.

<i>Security</i>	<i>Cusip</i>	<i>Portfolio Weight</i>
<i>ZOETIS INC CL A</i>	<i>98978V10</i>	<i>1.3%</i>

5. What is the largest percentage of the portfolio represented by a single industry? Specify the name of the industry, percentage amount and size relative to benchmark. Please specify all industries above 15%.

<i>Industry</i>	<i>Portfolio Weight</i>	<i>Benchmark Weight</i>
<i>Utilities</i>	<i>12.9%</i>	<i>3.2%</i>

6. What proportion of total AUM do the assets in this product make-up of the firm? What size does SamCERA's account comprise of total product assets?

	<i>SamCERA* %</i>
<i>Firm AUM</i>	<i>0.15%</i>
<i>U.S Managed Volatility Strategy</i>	<i>36.14%</i>

\*AUM as of November 30, 2019 as December 31, 2019 is not yet available



Signed by:

Mary Bidgood

Compliance Officer

Dated: 1/6/2020

Acadian Asset Management LLC

## ***BlackRock Russell 1000 Index – December 31, 2019***

### *Compliance Certification Statement*

*San Mateo County*

*Employees' Retirement Association*

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

### **General Compliance Issues**

1. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?

**Yes: Please explain.** /  **No**

The below change was announced and became immediately effective in the **first week of Q4 2019.**

**Manish Mehta** became Global Head of Human Resources, reporting to BlackRock CEO, Larry Fink. Manish will join the firm's Global Executive Committee. Manish has a deep understanding of BlackRock, its business and our culture. Following this appointment, **Samara Cohen** and **Alan Mason** will succeed Manish as co-heads of EII Markets & Investments.

- Samara will oversee Global Markets, Product Engineering, ETF Servicing and Public Policy efforts and Research & Analytics.
- Alan will oversee Portfolio Engineering, Investment Process & Platform and the Institutional Indexing Business.
- Samara and Alan will report to Salim Ramji, Global Head of EII.

The following changes were **announced in mid-December 2019 and will be effective mid-January 2020.**

In support of our goal to deliver top quality, scaled portfolio engineering for all our clients, we are making some refinements in the leadership and structure of the ETF and Index Investments portfolio management team. All current portfolio engineers remain assigned to their respective funds, and we continue to organize our portfolio engineering teams specializing by region and vehicle.

The only change is that portfolio engineers will have new leaders at the top of their organization. Just as our portfolio engineering philosophy has always been that of a team-based approach, the new leadership structure follows a team-based approach. Four members of Alan Mason's previous leadership team (Rachel Aguirre, Amy Whitelaw, Jennifer Hsui and Karen Kraut) have



been elevated to collectively lead the Americas Portfolio Engineering business. This four-person leadership team is responsible for the strategic direction of the business, in addition to ensuring the day-to-day portfolios are running consistently and efficiently. Each leader has a specific focus detailed below, and together they will share management responsibilities.

**Jennifer Hsui** will become the Global Index Equity Chief Investment Officer, responsible for index equity investment policy, risk, and process decisions globally. Jennifer will also oversee the U.S. Index Asset Allocation and Developed Markets index equity teams, reporting to Alan Mason.

**Rachel Aguirre** and **Amy Whitelaw** will become Co-Heads of the Americas Portfolio Engineering team, reporting to Alan Mason. Rachel will lead the Global Index Plus and Emerging Markets teams, while Amy will lead the North American index equity teams as well as the Global Index Research Group. Rachel and Amy's combination of technical and leadership skills have prepared them to lead our largest regional portfolio engineering organization.

**Karen Kraut** will become the EII Markets & Investments Chief Operating Officer. She will oversee all business management functions for the Markets & Investments function. Karen will also be moving to Atlanta, and will be leading the EII function in that office.

2. Have there been any changes in the firm's investment approach?  
 **Yes: Please explain.** /  **No**

**BlackRock has followed the same investment philosophy of Total Performance Management for index strategies since 1971.**

3. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 **Yes: Please explain.** /  **No**
4. Have proxy ballots been voted in accordance with the best economic interest of *SamCERA*?  
 **Yes** /  **No: Please explain.**
5. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**

### **Investment Management Fees**

1. Is *SamCERA*'s investment management fee schedule less favorable than those charged other institutional clients who hold an account investment substantially similar to ours?  
 **Yes: Please explain.** /  **No**

### **Derivative Investments**

1. Are derivatives used in the management of the investment strategy?

- Yes: Please ANSWER the remaining questions in this section.**  
 **No: Please SKIP the remaining questions in this section.**

We typically use exchange traded equity index futures in our strategies for the purposes of efficient portfolio management. Futures are not used for speculative or leveraged positions in the portfolio and we keep cash to fully cover all outstanding futures positions.

Exchange traded futures are employed to equitize dividend accruals as well as to manage day-to-day cash flows generated from clients trades, dividends, interest received and other activity associated with securities in the portfolio. Specifically, futures contracts are purchased to provide immediate market exposure proportionate to cash accruals and investable cash within the portfolio. While we seek to remain fully invested, a small amount of spendable cash is retained to minimize trading and transactions costs. Skillful cash management and cash equitization are critical to minimizing the potential impact of cash drag and ensure tight tracking to the benchmark.

2. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 **Yes** /  **No: Please explain.**

N/A

3. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 **Yes** /  **No**

N/A

If **Yes**:

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**  
b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  **Yes**/  **No: Please explain.**

N/A

4. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 **Yes** /  **No**

N/A

If **Yes**:

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**  
b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 **Yes**/  **No: Please explain.**

N/A

5. Is individual counter-party exposure well diversified?  Yes/  No: **Please explain.**
- What is the largest exposure to a single counter-party within the portfolio? **Please see below**
  - Please specify the name of the counter-party and the amount of exposure. **Please see below**
  - Have there been any changes to the investment manager's list of approved counter-parties over the past six months? **Please see below**

**BlackRock does not provide individual counterparty details for the product under scope, but have provided details on our framework of managing counterparty risk below.**

## **Managing Counterparty Credit Risk**

As a fiduciary, BlackRock's philosophy is to manage counterparty credit risk conservatively. However, risk management cannot fully eliminate the risk of investment loss due to a counterparty related event. The firm has an established fiduciary counterparty risk management program led by the Counterparty & Concentration Risk Group ("The Group"), which was established in 2005. The program encompasses Counterparty Risk Governance, Counterparty Assessment and Monitoring, Counterparty Exposure Measurement and Monitoring, and Risk and Concentration Reporting. This framework covers counterparties utilized for both bilateral and centrally-cleared products such as derivatives, mortgage TBAs, foreign exchange, financing trades (repo and securities lending), equities, fixed income securities and other forward-settling transactions.

### **Counterparty Risk Governance**

The Group, operating under the umbrella of BlackRock's independent risk management function, is structurally separate from the trading and investment functional groups. Credit authority primarily resides with BlackRock's Chief Counterparty Credit Officer who reports into BlackRock's Chief Risk Officer (CRO). Should it be required, the ultimate point of escalation for counterparty risk decisions is the CRO, who also chairs BlackRock's Enterprise Risk Management Committee (ERMC). The ERMC reports on risk matters to the BlackRock Risk Committee of the Board of Directors.

The Group is responsible for writing, implementing, updating and enforcing the firm-wide Counterparty Credit Policies and Procedures (latest as at October 2019). These policies are ratified annually by the ERMC and are subject to periodic review by internal and external auditors as well as regulators.

To effectively implement the Counterparty Credit Policies and Procedures, the Group carries out key risk management practices in coordination with many other BlackRock functions, including global trading, research, investment teams, legal, compliance, operations, and data integrity. The Group works closely with BlackRock's Legal Department, providing guidance and supervision for credit terms contained in respective BlackRock agency transaction documentation governing trading relationships, such as ISDA Master Agreements, Derivatives

Clearing Agreements, Global Master Repurchase Agreements, Master Securities Lending Agreements, etc.

Key risk and operating oversight committees, which include Group membership, provide coverage of counterparty risks.

## **Counterparty Assessment and Monitoring**

### **Procedures**

Prospective counterparties identified by the global trading and investment teams are submitted to the Group for an independent credit assessment. These detailed reviews, which are undertaken at the legal entity level, focus on both counterparty credit risk and counterparty reputation risk. The framework for initial and ongoing counterparty credit assessment is based upon several criteria outlined under “Assessment Framework” below.

If approved, trading counterparties are added to an approved list maintained on BlackRock’s Aladdin platform. Approved trading counterparties are monitored on an ongoing basis through the receipt of financial statements and via alert portfolios with market data service providers. Formal renewal assessments are performed on a cyclical basis for existing counterparties, within 12 to 18-months by policy.

In the course of conducting ongoing monitoring of approved trading counterparty credit profiles, the Group may remove a counterparty from the approved list due to inactivity and/or a deterioration in its credit profile. In the case of a counterparty related “credit event”, the firm maintains Credit Alert Procedures which serve as a guideline for the action and interaction of key BlackRock constituencies. These procedures specifically contemplate the coordination among the Group, investment teams, global trading leadership, legal and operations to facilitate BlackRock’s ability to make timely and informed decisions following the recognition of credit concerns. The major aspects addressed include fact finding, communication, liquidation and close-out, and key roles and responsibilities.

### **Assessment Framework**

The Group has an established assessment framework for trading counterparties that considers the intrinsic credit quality of the counterparty, together with the expected transaction activities. For example, purchases or sales of equity securities are considered a lower risk trading activity relative to bilateral derivatives transactions, such as interest rate swaps or foreign exchange forward contracts. The expectations for the credit quality of a counterparty are heightened for higher risk trading activities. Accordingly, counterparties with the highest relative credit quality will generally be eligible for transactions across a broad array of products. However, all

counterparties, irrespective of trading activity, are reviewed by the Group with a high level of scrutiny.

The Group evaluates the credit quality of a counterparty using both quantitative and qualitative factors. Factors considered include:

*Financial:*

A counterparty's credit strength is highly dependent upon its financial condition. Loss absorbing capital, which is usually reported as equity on a counterparty's balance sheet, is a key barometer of the financial strength. Additional financial elements considered include leverage, asset quality, liquidity, and profitability.

*Business:*

The propensity for a counterparty to need loss absorbing capital is highly dependent on its business risk factors. Therefore, key items considered to complement the financial review include ownership structure, management conduct, regulatory status, and the stability of its operating environment.

6. Specify the security pricing sources used when developing portfolio market value exposures for non-exchange traded derivative positions. **N/A**
7. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.

As stated above, we typically use equity index futures in our strategies for the purpose of efficient portfolio management. Futures are not used for speculative or leveraged positions in the portfolio and we keep cash to fully cover all outstanding futures positions.

Exchange traded futures are employed to equitize dividend accruals as well as to manage day-to-day cash flows generated from clients trades, dividends, interest received and other activity associated with securities in the portfolio. Specifically, futures contracts are purchased to provide immediate market exposure proportionate to cash accruals and investable cash within the portfolio. While we seek to remain fully invested, a small amount of spendable cash is retained to minimize trading and transactions costs. Skillful cash management and cash equitization are critical to minimizing the potential impact of cash drag and ensure tight tracking to the benchmark.

8. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  **Yes: Please explain.** /  **No**

## Domestic Equity Portfolios (Large, Mid & Small)

1. Please state the percentage of the portfolio held in each of the following types of securities

<i>Common Stock</i>	<i>99.35%</i>
<i>Preferred Stock</i>	<i>0.0%</i>
<i>Convertible Securities</i>	<i>0.0%</i>
<i>Cash &amp; Equivalents</i>	<i>0.65%</i>

2. Specify the large, mid and small capitalization exposure of the portfolios? Please specify percentages.

<i>Large-Cap</i>	<i>87.1%</i>
<i>Mid-Cap</i>	<i>12.9%</i>
<i>Small-Cap</i>	<i>0.0%</i>

3. Specify the percentage of the portfolio that is invested in American Depository Receipts (ADR's). Also, specify the percentage of the portfolio invested in ADR securities that are 144A securities. If greater than 10%, explain why.

0%

4. Does the portfolio invest in emerging and/or frontier markets?  Yes /  No

a) If Yes, please specify the percentage(s) of the portfolio invested in emerging and/or frontier markets.

5. What is the largest percentage of the portfolio represented by a single security? Please specify the security and percentage amount. If any securities were above 5% at the time of purchase, please list and explain why.

Apple: 4.4%

6. What is the largest percentage of the portfolio represented by a single industry? Specify the name of the industry, percentage amount and size relative to benchmark. Please specify all industries above 15%.

Information technology; 22.57% of fund vs. 22.58% of index.

Signed by:



Dated: 1/17/20

Name of Firm: BlackRock

***PanAgora Asset Management Defensive Equity U.S. Low Volatility –***

***December 31, 2019***

***Compliance Certification Statement***

***San Mateo County***

***Employees' Retirement Association***

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

**General Compliance Issues**

1. Has the firm acted as a fiduciary and invested its assets for the sole benefit of *SamCERA*?  
 **Yes** /  **No: Please explain.**
2. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?  
 **Yes: Please explain.** /  **No**
3. Have there been any changes in the firm's investment approach?  
 **Yes: Please explain.** /  **No**
4. Do *SamCERA's* guidelines require your firm to manage the portfolio significantly differently than other similar portfolios?  
 **Yes: Please explain.** /  **No**
5. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 **Yes: Please explain.** /  **No**
6. Have proxy ballots been voted in accordance with the best economic interest of *SamCERA* and in a manner consistent with the Board's proxy policies?  
 **Yes** /  **No: Please explain.**
7. Have there been any investment guideline breaches during the prior 6 months?  
 **Yes: Please explain.** /  **No**
8. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**

**Investment Management Fees**



1. Is *SamCERA's* investment management fee schedule higher than those charged other institutional clients who hold an account investment substantially similar to ours?  
 **Yes: Please explain.** /  **No: The investment management fee schedule applicable to SamCERA's investment in Defensive U.S. Large Cap Low Volatility represents the most beneficial (lowest) fee schedule offered to other institutional clients who hold a substantially similar account investment in such investment strategy.**

### Derivative Investments

1. Are derivatives used in the management of the investment strategy?  
 **Yes: Please ANSWER the remaining questions in this section.**  
 **No: Please SKIP the remaining questions in this section.**
2. Are derivative investments in compliance with *SamCERA's* investment policies?  
 **Yes** /  **No: Please explain.**
3. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 **Yes** /  **No: Please explain.**
4. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 **Yes** /  **No**

**If Yes:**

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**  
b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  **Yes**/  **No: Please explain.**
5. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 **Yes** /  **No**

**If Yes:**

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**  
b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 **Yes**/  **No: Please explain.**
6. Is individual counter-party exposure well diversified?  **Yes**/  **No: Please explain.**  
a) What is the largest exposure to a single counter-party within the portfolio?  
b) Please specify the name of the counter-party and the amount of exposure.  
c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months?

7. Are the investment purposes for a derivative investment consistent with the four purposes stated *SamCERA's* policies?  **Yes** /  **No: Please explain.**
- a) Has the firm developed any new purposes for derivative investments?  **Yes: Please explain.** /  **No**
8. List all limited allocation derivative investments individually and the percentage of the portfolio's assets represented by each investment.
- a) State if the firm has evaluated the exposure to market value losses that can occur from each of these derivatives.  **Yes** /  **No: Please explain.**
- b) State if these derivative investments in total represent more than 5% of the portfolio's market value. If more than 5%, please explain.
9. State if any restricted derivative investments are held in *SamCERA's* portfolios.  
 **Yes** /  **No**
- a) If any are held, state the percentage of the portfolio's assets held in such derivatives and why the firm is not in compliance with the investment policies.
10. For derivative investments with allocation limits, has the firm tested and measured these investments' sensitivities to changes in key risk factors?  **Yes** /  **No: Please explain.**
11. Have all derivative investments been made in a manner consistent with the derivative investment process specified in the policy statement?  **Yes** /  **No: Please explain.**
12. Specify the security pricing sources used when developing portfolio market value exposures for limited allocation derivatives.
13. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.
14. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  **Yes: Please explain.** /  **No**

### **Investment Manager Guidelines**

1. Are portfolio holdings well-diversified, and made in liquid securities?  
 **Yes** /  **No: Please explain.**
2. Has the firm engaged in short selling, use of leverage or margin and/or investments in commodities?  **Yes: Please explain.** /  **No**

## Cash & Equivalents

1. Does the firm directly invest in short term fixed income investments?  Yes /  No
- a) If Yes, do the investments comply with the policies?  Yes /  No: Please explain.

## Domestic Equity Portfolio (Large, Mid & Small)

1. Specify the percentage of the portfolio held in each of the following types of securities:

<i>Common Stock</i>	<i>99.8%</i>
<i>Preferred Stock</i>	<i>0%</i>
<i>Convertible Securities</i>	<i>0%</i>
<i>ADRs</i>	<i>0%</i>
<i>Cash &amp; Equivalents</i>	<i>0.2%</i>

2. Specify the large, mid and small capitalization exposure of the portfolios.

<i>Large-Cap</i>	<i>71.8%</i>
<i>Mid-Cap</i>	<i>28.2%</i>
<i>Small-Cap</i>	<i>0%</i>

3. Specify the percentage of the portfolio that is invested in American Depository Receipts (ADR's). Also, specify the percentage of the portfolio invested in ADR securities that are 144A securities. If greater than 10%, explain why. **The account holds 0% in ADR's and ADR securities that are 144A's.**
4. What is the largest percentage of the portfolio represented by a single security? Please specify the security and percentage amount. If any securities were above 4% at the time of purchase, please list and explain why. **The largest security risk weight percentage held in the account is Chevron Corp (CVX US) 2.5%.**
5. What is the largest percentage of the portfolio represented by a single industry? Specify the name of the industry, percentage amount and size relative to benchmark. Please specify all industries above 15%. **The largest sector risk weight percentage held in the account is Information Technology 11.8%. The benchmark's risk weight percentage for Information Technology is 12.1%.**
6. What proportion of total AUM do the assets in this product make-up of the firm? What size does SamCERA's account comprise of total product assets? **PanAgora's Defensive U.S. Low Volatility products make up 0.4% of the total AUM of the firm. SamCERA's account comprises 98.3% of the total product assets.**

Signed by: Chris Tsapatsaris, Sr. Investment Compliance Analyst

Dated: January 15<sup>th</sup>, 2020

Name of Firm: PanAgora Asset Management, Inc.

## ***Quantitative Management Associates U.S. Small Cap Core – December 31, 2019***

### ***Compliance Certification Statement***

***San Mateo County***

***Employees' Retirement Association***

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

#### **General Compliance Issues**

1. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?  
 **Yes: Please explain.** /  **No**
2. Have there been any changes in the firm's investment approach?  
 **Yes: Please explain.** /  **No**
3. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 **Yes: Please explain.** /  **No**
4. Have proxy ballots been voted in accordance with the best economic interest of *SamCERA*?  
 **Yes** /  **No: Please explain.**
5. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**

#### **Investment Management Fees**

1. Is *SamCERA's* investment management fee schedule higher than those charged other institutional clients who hold an account investment substantially similar to ours?  
 **Yes: Please explain.** /  **No**

#### **Derivative Investments**

1. Are derivatives used in the management of the investment strategy?  
 **Yes: Please ANSWER the remaining questions in this section.**  
 **No: Please SKIP the remaining questions in this section.**

**The only derivatives that are used in this strategy are futures for the purpose of equitizing cash.**

2. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 Yes /  No: **Please explain.**

**(N/A) Futures are the only derivative instrument used in this strategy.**

3. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 Yes /  No

**(N/A) Futures are the only derivative instrument used in this strategy.**

**If Yes:**

- a) Do the counter-parties have investment grade debt?  Yes/  No  
b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  Yes/  No: **Please explain.**

4. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 Yes /  No

**(N/A) Futures are the only derivative instrument used in this strategy.**

**If Yes:**

- a) Do the counter-parties have investment grade debt?  Yes/  No  
b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 Yes/  No: **Please explain.**

5. Is individual counter-party exposure well diversified?  Yes/  No: **Please explain.**  
**JP Morgan serves as the FCM for the strategy.**

- a) What is the largest exposure to a single counter-party within the portfolio?  
**Futures are the only derivatives used in this strategy. JP Morgan is the FCM.**
- b) Please specify the name of the counter-party and the amount of exposure.

**JP Morgan is the FCM for this strategy and the current exposure is approximately 1.8%.**

- c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months?

**As it relates to derivatives, JP Morgan was and continues to be the FCM for this strategy.**

6. Specify the security pricing sources used when developing portfolio market value exposures for non-exchange traded derivative positions.

**(N/A) Futures are the only derivative instrument used in this strategy.**

7. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.

**The futures position held matches the benchmark for the portfolio (Russell 2000 Index). The position is held to manage small day to day cashflows on an inexpensive basis instead of having to generate a basket of equity trades to manage flows. Since daily margins are moved in/out on a daily basis, the fund is only at risk for the initial margins held at the FCM. We monitor the financial position of the FCM daily so if we feel there is a greater risk than we are willing bear in holding a position with an FCM, we can liquidate our position quickly and easily with little impact to the portfolio.**

8. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  **Yes: Please explain.** /  **No**

### **Domestic Equity Portfolios (Large, Mid & Small)**

1. Please state the percentage of the portfolio held in each of the following types of securities

<i>Common Stock</i>	<i>98.04%</i>
<i>Index Futures</i>	<i>1.83%</i>
<i>Preferred Stock</i>	<i>0%</i>
<i>Convertible Securities</i>	<i>0%</i>
<i>Cash &amp; Equivalents</i>	<i>0.13%</i>

2. Specify the large, mid and small capitalization exposure of the portfolios? Please specify percentages.

<i>Large-Cap</i>	<i>0%</i>
<i>Mid-Cap</i>	<i>0.54%</i>
<i>**Small-Cap</i>	<i>99.46%</i>

**\*\*Note that for this quarter we treated small-cap as any security with a market cap equal to or less than the largest market cap in the Russell 2000. We treated large-cap as a market cap equal to or greater than \$10b. Mid-cap would be the securities that fall in between both.**

3. Specify the percentage of the portfolio that is invested in American Depository Receipts (ADR's). Also, specify the percentage of the portfolio invested in ADR securities that are 144A securities. If greater than 10%, explain why.

**No Holdings**

4. What is the largest percentage of the portfolio represented by a single security? Specify the name of the security and percentage amount. If any securities were above 5% at the time of purchase, please list and explain why.

**EMCOR Group, Inc. represents 0.93% of the portfolio.**

5. What is the largest percentage of the portfolio represented by a single industry? Specify the industry, percentage amount and size relative to benchmark. Please specify all industries above 15%.

**Banks represent 9.19% of the portfolio, and 9.83% of the benchmark. We are underweight the industry by 0.64%.**

6. What proportion of total AUM do the assets in this product make-up of the firm? What size does SamCERA's account comprise of total product assets?

**QMA's Small Cap Core Equity strategy makes up approximately 1.8%\* of the firm's total AUM.**

**SamCERA's account makes up approximate 4.2%\* of total product assets.**

**\*Figures are as of 9/30/19. Final 12/31 assets are still pending.**

Signed by: Patrick McMEnamin

Dated: 1/15/20

Name of Firm: QMA, LLC

## ***Baillie Gifford Overseas International Growth – December 31, 2019***

### ***Compliance Certification Statement***

***San Mateo County***

***Employees' Retirement Association***

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

### **General Compliance Issues**

1. Has the firm acted as a fiduciary and invested its assets for the sole benefit of *SamCERA*?  
 **Yes** /  **No: Please explain.**
2. Are *SamCERA's* market benchmarks in the respective asset class areas acceptable to the firm?  
 **Yes** /  **No: Please explain.**
3. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?  
 **Yes: Please explain.** /  **No**

There were no ownership changes to the firm during the 4<sup>th</sup> quarter of 2019, however, the following change has been made at subsidiary level in the past six months from June 30 2019 to December 31, 2019 :

- Baillie Gifford Investment Management (Shanghai) Limited commenced business in September 2019, is wholly owned by Baillie Gifford Overseas Limited and allows us to get closer to the Chinese market. Having a presence in Shanghai will help us to identify the next generation of exciting companies and investment opportunities in China. Additionally, it will help us to better understand regional and cultural developments, while enabling us to deepen our longstanding relationships with our existing Chinese holdings.

At a portfolio level, the following changes have been made in the past six months from June 30 2019 to December 31, 2019 :

- Change of strategy name from International Focus to International All Cap;
- Change of the sub strategy name from ACWI ex US Focus to ACWI ex US All Cap;

4. Have there been any changes in the firm's investment approach?  
 **Yes: Please explain.** /  **No**
5. Do *SamCERA's* guidelines require your firm to manage the portfolio significantly different from other similar portfolios?



**Yes: Please explain.** /  **No**

6. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 **Yes: Please explain.** /  **No**
7. Have proxy ballots been voted in accordance with the best economic interest of *SamCERA* and in a manner consistent with the Board's proxy policies?  
 **Yes** /  **No: Please explain.**
8. Have there been any investment guideline breaches during the prior 6 months?  
 **Yes: Please explain.** /  **No**
9. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**

### **Investment Management Fees**

1. Is *SamCERA's* investment management fee schedule higher than those charged other institutional clients who hold an account investment substantially similar to ours?  
 **Yes: Please explain.** /  **No**

### **Derivative Investments**

1. Are derivatives used in the management of the investment strategy?  
 **Yes: Please ANSWER the remaining questions in this section.**  
 **No: Please SKIP the remaining questions in this section.**
2. Are derivative investments in compliance with *SamCERA's* investment policies?  
 **Yes** /  **No: Please explain.**
3. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 **Yes** /  **No: Please explain.**
4. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 **Yes** /  **No**

**If Yes:**

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**
- b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  **Yes**/  **No: Please explain.**
5. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 **Yes** /  **No**

If **Yes**:

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**
  - b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 **Yes**/  **No: Please explain.**
6. Is individual counter-party exposure well diversified?  **Yes**/  **No: Please explain.**
- a) What is the largest exposure to a single counter-party within the portfolio?
  - b) Please specify the name of the counter-party and the amount of exposure.
  - c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months?
7. Are the investment purposes for a derivative investment consistent with the four purposes stated *SamCERA's* policies?  **Yes** /  **No: Please explain.**
- a) Has the firm developed any new purposes for derivative investments?  **Yes: Please explain.** /  **No**
8. List all limited allocation derivative investments individually and the percentage of the portfolio's assets represented by each investment.
- a) State if the firm has evaluated the exposure to market value losses that can occur from each of these derivatives.  **Yes** /  **No: Please explain.**
  - b) State if these derivative investments in total represent more than 5% of the portfolio's market value. If more than 5%, please explain.
9. State if any restricted derivative investments are held in *SamCERA's* portfolios.  
 **Yes** /  **No**
- a) If any are held, state the percentage of the portfolio's assets held in such derivatives and why the firm is not in compliance with the investment policies.
10. For derivative investments with allocation limits, has the firm tested and measured these investments' sensitivities to changes in key risk factors?  **Yes** /  **No: Please explain.**
11. Have all derivative investments been made in a manner consistent with the derivative investment process specified in the policy statement?  **Yes** /  **No: Please explain.**
12. Specify the security pricing sources used when developing portfolio market value exposures for limited allocation derivatives.

13. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.
14. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  **Yes: Please explain.** /  **No**

### Investment Manager Guidelines

1. Are portfolio holdings well-diversified, and made in liquid securities?  
 **Yes** /  **No: Please explain.**
2. Has the firm engaged in short selling, use of leverage or margin and/or investments in commodities?  **Yes: Please explain.** /  **No**

### Cash & Equivalents

1. Does the firm directly invest in short term fixed income investments?  **Yes** /  **No**
- a) If **Yes**, do the investments comply with the policies?  **Yes** /  **No: Please explain.**

### International Equity Portfolios - Developed

1. Specify the percentage of the portfolio held in each of the following types of securities:

<i>Foreign Ordinary Shares</i>	<i>91.14%</i>
<i>ADR's</i>	<i>7.42%</i>
<i>GDR's</i>	<i>0.64%</i>
<i>Cash &amp; Equivalents (Foreign)</i>	<i>0.00%</i>
<i>Cash &amp; Equivalents (Domestic)</i>	<i>0.80%</i>

*\*Please note that the Foreign Ordinary Shares figure includes Preference Shares for Sartorius in the amount of 1.49%*

2. Specify the large, mid and small capitalization exposure of the portfolios.

<i>Large-Cap</i> >\$10bn	<i>74.36%</i>
<i>Mid-Cap</i> \$2-\$10bn	<i>25.04%</i>
<i>Small-Cap</i> <\$2bn	<i>0.60%</i>

3. Is the firm monitoring the country, currency, sector and security selection risks associated with its portfolio?  **Yes** /  **No: Please explain**
4. Does the portfolio invest in emerging and/or frontier markets?  **Yes** /  **No**

a) If **Yes**, please specify the percentage(s) of the portfolio invested in emerging and/or frontier markets.

21.20% (Emerging Markets)

5. Does the portfolio currently employ a currency hedging strategy?  **Yes** /  **No**
6. What proportion of total AUM do the assets in this product make-up of the firm? What size does SamCERA's account comprise of total product assets?

As at 31 December 2019, firm-wise assets under management were \$289,645 million, whilst the ACWI ex-US All Cap Strategy held \$13,332 million.

On the same date, SamCERA's portfolio held \$275 million, comprising 2.1% of the strategy.

Signed by: Fraser Thomson  
Dated: 15 January 2020  
Name of Firm: Baillie Gifford Overseas Limited

## ***BlackRock EAFE Index – December 31, 2019***

### *Compliance Certification Statement*

*San Mateo County*

*Employees' Retirement Association*

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

### **General Compliance Issues**

1. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?

**Yes: Please explain.** /  **No**

The below change was announced and became immediately effective in the **first week of Q4 2019.**

**Manish Mehta** became Global Head of Human Resources, reporting to BlackRock CEO, Larry Fink. Manish will join the firm's Global Executive Committee. Manish has a deep understanding of BlackRock, its business and our culture. Following this appointment, **Samara Cohen** and **Alan Mason** will succeed Manish as co-heads of EII Markets & Investments.

- Samara will oversee Global Markets, Product Engineering, ETF Servicing and Public Policy efforts and Research & Analytics.
- Alan will oversee Portfolio Engineering, Investment Process & Platform and the Institutional Indexing Business.
- Samara and Alan will report to Salim Ramji, Global Head of EII.

The following changes were **announced in mid-December 2019 and will be effective mid-January 2020.**

In support of our goal to deliver top quality, scaled portfolio engineering for all our clients, we are making some refinements in the leadership and structure of the ETF and Index Investments portfolio management team. All current portfolio engineers remain assigned to their respective funds, and we continue to organize our portfolio engineering teams specializing by region and vehicle.

The only change is that portfolio engineers will have new leaders at the top of their organization. Just as our portfolio engineering philosophy has always been that of a team-based approach, the new leadership structure follows a team-based approach. Four members of Alan Mason's previous leadership team (Rachel Aguirre, Amy Whitelaw, Jennifer Hsui and Karen Kraut) have been elevated to collectively lead the Americas Portfolio Engineering business. This four-person

leadership team is responsible for the strategic direction of the business, in addition to ensuring the day-to-day portfolios are running consistently and efficiently. Each leader has a specific focus detailed below, and together they will share management responsibilities.

**Jennifer Hsui** will become the Global Index Equity Chief Investment Officer, responsible for index equity investment policy, risk, and process decisions globally. Jennifer will also oversee the U.S. Index Asset Allocation and Developed Markets index equity teams, reporting to Alan Mason.

**Rachel Aguirre** and **Amy Whitelaw** will become Co-Heads of the Americas Portfolio Engineering team, reporting to Alan Mason. Rachel will lead the Global Index Plus and Emerging Markets teams, while Amy will lead the North American index equity teams as well as the Global Index Research Group. Rachel and Amy's combination of technical and leadership skills have prepared them to lead our largest regional portfolio engineering organization.

**Karen Kraut** will become the EII Markets & Investments Chief Operating Officer. She will oversee all business management functions for the Markets & Investments function. Karen will also be moving to Atlanta, and will be leading the EII function in that office.

2. Have there been any changes in the firm's investment approach?  
 **Yes: Please explain.** /  **No**

**BlackRock has followed the same investment philosophy of Total Performance Management for index strategies since 1971.**

3. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 **Yes: Please explain.** /  **No**
4. Have proxy ballots been voted in accordance with the best economic interest of *SamCERA*?  
 **Yes** /  **No: Please explain.**
5. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**

### **Investment Management Fees**

1. Is *SamCERA*'s investment management fee schedule less favorable than those charged other institutional clients who hold an account investment substantially similar to ours?  
 **Yes: Please explain.** /  **No**

### **Derivative Investments**

1. Are derivatives used in the management of the investment strategy?

- Yes: Please ANSWER the remaining questions in this section.**  
 **No: Please SKIP the remaining questions in this section.**

We typically use exchange traded equity index futures in our strategies for the purposes of efficient portfolio management. Futures are not used for speculative or leveraged positions in the portfolio and we keep cash to fully cover all outstanding futures positions.

Exchange traded futures are employed to equitize dividend accruals as well as to manage day-to-day cash flows generated from clients trades, dividends, interest received and other activity associated with securities in the portfolio. Specifically, futures contracts are purchased to provide immediate market exposure proportionate to cash accruals and investable cash within the portfolio. While we seek to remain fully invested, a small amount of spendable cash is retained to minimize trading and transactions costs. Skillful cash management and cash equitization are critical to minimizing the potential impact of cash drag and ensure tight tracking to the benchmark.

2. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 **Yes /**  **No: Please explain.**

N/A

3. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 **Yes /**  **No**

N/A

If **Yes:**

- a) Do the counter-parties have investment grade debt?  **Yes/**  **No**  
b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  **Yes/**  **No: Please explain.**

4. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 **Yes /**  **No**

N/A

If **Yes:**

- a) Do the counter-parties have investment grade debt?  **Yes/**  **No**  
b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 **Yes/**  **No: Please explain.**

5. Is individual counter-party exposure well diversified?  **Yes/**  **No: Please explain.**

- a) What is the largest exposure to a single counter-party within the portfolio? **Please see below**
- b) Please specify the name of the counter-party and the amount of exposure. **Please see below**
- c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months? **Please see below**

**BlackRock does not provide individual counterparty details for the product under scope, but have provided details on our framework of managing counterparty risk below.**

## **Managing Counterparty Credit Risk**

As a fiduciary, BlackRock's philosophy is to manage counterparty credit risk conservatively. However, risk management cannot fully eliminate the risk of investment loss due to a counterparty related event. The firm has an established fiduciary counterparty risk management program led by the Counterparty & Concentration Risk Group ("The Group"), which was established in 2005. The program encompasses Counterparty Risk Governance, Counterparty Assessment and Monitoring, Counterparty Exposure Measurement and Monitoring, and Risk and Concentration Reporting. This framework covers counterparties utilized for both bilateral and centrally-cleared products such as derivatives, mortgage TBAs, foreign exchange, financing trades (repo and securities lending), equities, fixed income securities and other forward-settling transactions.

### **Counterparty Risk Governance**

The Group, operating under the umbrella of BlackRock's independent risk management function, is structurally separate from the trading and investment functional groups. Credit authority primarily resides with BlackRock's Chief Counterparty Credit Officer who reports into BlackRock's Chief Risk Officer (CRO). Should it be required, the ultimate point of escalation for counterparty risk decisions is the CRO, who also chairs BlackRock's Enterprise Risk Management Committee (ERMC). The ERMC reports on risk matters to the BlackRock Risk Committee of the Board of Directors.

The Group is responsible for writing, implementing, updating and enforcing the firm-wide Counterparty Credit Policies and Procedures (latest as at October 2019). These policies are ratified annually by the ERMC and are subject to periodic review by internal and external auditors as well as regulators.

To effectively implement the Counterparty Credit Policies and Procedures, the Group carries out key risk management practices in coordination with many other BlackRock functions, including global trading, research, investment teams, legal, compliance, operations, and data integrity. The Group works closely with BlackRock's Legal Department, providing guidance and supervision for credit terms contained in respective BlackRock agency transaction documentation governing trading relationships, such as ISDA Master Agreements, Derivatives Clearing Agreements, Global Master Repurchase Agreements, Master Securities Lending Agreements, etc.



Key risk and operating oversight committees, which include Group membership, provide coverage of counterparty risks.

## **Counterparty Assessment and Monitoring**

### **Procedures**

Prospective counterparties identified by the global trading and investment teams are submitted to the Group for an independent credit assessment. These detailed reviews, which are undertaken at the legal entity level, focus on both counterparty credit risk and counterparty reputation risk. The framework for initial and ongoing counterparty credit assessment is based upon several criteria outlined under “Assessment Framework” below.

If approved, trading counterparties are added to an approved list maintained on BlackRock’s Aladdin platform. Approved trading counterparties are monitored on an ongoing basis through the receipt of financial statements and via alert portfolios with market data service providers. Formal renewal assessments are performed on a cyclical basis for existing counterparties, within 12 to 18-months by policy.

In the course of conducting ongoing monitoring of approved trading counterparty credit profiles, the Group may remove a counterparty from the approved list due to inactivity and/or a deterioration in its credit profile. In the case of a counterparty related “credit event”, the firm maintains Credit Alert Procedures which serve as a guideline for the action and interaction of key BlackRock constituencies. These procedures specifically contemplate the coordination among the Group, investment teams, global trading leadership, legal and operations to facilitate BlackRock’s ability to make timely and informed decisions following the recognition of credit concerns. The major aspects addressed include fact finding, communication, liquidation and close-out, and key roles and responsibilities.

### **Assessment Framework**

The Group has an established assessment framework for trading counterparties that considers the intrinsic credit quality of the counterparty, together with the expected transaction activities. For example, purchases or sales of equity securities are considered a lower risk trading activity relative to bilateral derivatives transactions, such as interest rate swaps or foreign exchange forward contracts. The expectations for the credit quality of a counterparty are heightened for higher risk trading activities. Accordingly, counterparties with the highest relative credit quality will generally be eligible for transactions across a broad array of products. However, all counterparties, irrespective of trading activity, are reviewed by the Group with a high level of scrutiny.

The Group evaluates the credit quality of a counterparty using both quantitative and qualitative factors. Factors considered include:

*Financial:*

A counterparty's credit strength is highly dependent upon its financial condition. Loss absorbing capital, which is usually reported as equity on a counterparty's balance sheet, is a key barometer of the financial strength. Additional financial elements considered include leverage, asset quality, liquidity, and profitability.

*Business:*

The propensity for a counterparty to need loss absorbing capital is highly dependent on its business risk factors. Therefore, key items considered to complement the financial review include ownership structure, management conduct, regulatory status, and the stability of its operating environment.

6. Specify the security pricing sources used when developing portfolio market value exposures for non-exchange traded derivative positions. **N/A**
7. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.

**As stated above, we typically use equity index futures in our strategies for the purpose of efficient portfolio management. Futures are not used for speculative or leveraged positions in the portfolio and we keep cash to fully cover all outstanding futures positions.**

**Exchange traded futures are employed to equitize dividend accruals as well as to manage day-to-day cash flows generated from clients trades, dividends, interest received and other activity associated with securities in the portfolio. Specifically, futures contracts are purchased to provide immediate market exposure proportionate to cash accruals and investable cash within the portfolio. While we seek to remain fully invested, a small amount of spendable cash is retained to minimize trading and transactions costs. Skillful cash management and cash equitization are critical to minimizing the potential impact of cash drag and ensure tight tracking to the benchmark.**

8. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  **Yes: Please explain.** /  **No**

## International Equity Portfolios - Developed

1. Specify the percentage of the portfolio held in each of the following types of securities:

<i>Foreign Ordinary Shares</i>	<i>98.75%</i>
<i>ADR's</i>	<i>0.15%</i>
<i>Cash &amp; Equivalents (Foreign)</i>	<i>0%</i>
<i>Cash &amp; Equivalents (Domestic)</i>	<i>1.1%</i>

2. Specify the large, mid and small capitalization exposure of the portfolios.

<i>Large-Cap</i>	<i>88%</i>
<i>Mid-Cap</i>	<i>12%</i>
<i>Small-Cap</i>	<i>0%</i>

3. Is the firm monitoring the country, currency, sector and security selection risks associated with its portfolio?  **Yes** /  **No: Please explain.**

The importance of risk control at BlackRock is one of our greatest competitive advantages. All of BlackRock's index strategies utilize risk control at every stage of the investment process, from the creation of expected return forecasts through the portfolio construction and trade execution processes. We pursue the risk control objective by minimizing all investment (and operational) risks that are not associated with producing reliable returns. Aladdin, our proprietary investment and risk analytics platform, incorporates client cash flows, securities positions, futures and currency positions, pending corporate actions, and risk tools. It also receives daily index data direct from benchmark providers. Aladdin allows portfolio engineers to efficiently manage portfolios with a high degree of risk control, providing a seamless platform whereby every step of the investment process is handled electronically from the time a client order is placed to the time any required trades go out to market.

The portfolio engineers review exception-based reports for compliance with internal and client guidelines on a daily basis. We use an automated screen, whereby portfolio engineers' final trade lists are cross-checked against a database containing portfolio guidelines and client restrictions on separate accounts prior to being released to the trading room. Duties are segregated and supervision is appropriate to each type of activity. Through these efforts, BlackRock ensures that the portfolio remains risk-controlled, fully invested and positioned at all times to achieve optimal performance.

In addition, all Index portfolios are monitored monthly by an Investment Review Committee ("IRC"). This committee formally reviews portfolio performance and its attribution. The IRC is an internal committee composed of senior management, portfolio engineers, performance analysts and risk specialists, who meet monthly to discuss investment policy and other operational issues that relate to the management of our portfolios. The IRC is responsible for

reviewing all BlackRock portfolios to ensure that they are operating according to their portfolio mandates. All portfolio exceptions are reported to the IRC.

A team of Risk and Quantitative Analysis “RQA” professionals has specialized knowledge of index equity strategies and works side-by-side with portfolio engineers to ensure that all portfolio risks are well-understood and appropriately managed. RQA works with portfolio engineers on both day-to-day activities and special projects designed to improve our models and practices.

4. Does the portfolio invest in emerging and/or frontier markets?  Yes /  No

a) If Yes, please specify the percentage(s) of the portfolio invested in emerging and/or frontier markets.

Signed by:

A handwritten signature consisting of a large, stylized 'S' followed by a horizontal line.

SCOTT DEHMANN

Dated: 1/17/20

Name of Firm: BlackRock

***Mondrian Investment Partners International Value – December 31, 2019***

***Compliance Certification Statement***

***San Mateo County***

***Employees' Retirement Association***

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

**General Compliance Issues**

1. Has the firm acted as a fiduciary and invested its assets for the sole benefit of *SamCERA*?  
 **Yes** /  **No: Please explain.**
2. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?  
 **Yes: Please explain.** /  **No**
3. Have there been any changes in the firm's investment approach?  
 **Yes: Please explain.** /  **No**
4. Do *SamCERA's* guidelines require your firm to manage the portfolio significantly differently than other similar portfolios?  
 **Yes: Please explain.** /  **No**
5. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 **Yes: Please explain.** /  **No**
6. Have proxy ballots been voted in accordance with the best economic interest of *SamCERA* and in a manner consistent with the Board's proxy policies?  
 **Yes** /  **No: Please explain.**
7. Have there been any investment guideline breaches during the prior 6 months?  
 **Yes: Please explain.** /  **No**
8. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**

**Investment Management Fees**

1. Is *SamCERA's* investment management fee schedule higher than those charged other institutional clients who hold an account investment substantially similar to ours?  
 **Yes: Please explain.** /  **No**

**In accordance with the terms of Clause 2.2 of the investment management agreement, during the term of the agreement, Mondrian has not agreed to charge any other institutional client an effective fee lower than the fees charged to SamCERA for an account substantially similar to the SamCERA assets in terms of size, investment objectives and guidelines and degree of services provided.**

### **Derivative Investments**

1. Are derivatives used in the management of the investment strategy?  
 **Yes: Please ANSWER the remaining questions in this section.**  
 **No: Please SKIP the remaining questions in this section.**
2. Are derivative investments in compliance with *SamCERA's* investment policies?  
 **Yes** /  **No: Please explain.**
3. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 **Yes** /  **No: Please explain.**
4. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 **Yes** /  **No**

**If Yes:**

- a) Do the counter-parties have investment grade debt?  **Yes** /  **No**  
b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  **Yes** /  **No: Please explain.**
5. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 **Yes** /  **No**

**If Yes:**

- a) Do the counter-parties have investment grade debt?  **Yes** /  **No**  
b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 **Yes** /  **No: Please explain.**
6. Is individual counter-party exposure well diversified?  **Yes** /  **No: Please explain.**  
a) What is the largest exposure to a single counter-party within the portfolio?  
b) Please specify the name of the counter-party and the amount of exposure.

- c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months?
7. Are the investment purposes for a derivative investment consistent with the four purposes stated *SamCERA's* policies?  Yes /  No: **Please explain.**
- a) Has the firm developed any new purposes for derivative investments?  Yes: **Please explain.** /  No
8. List all limited allocation derivative investments individually and the percentage of the portfolio's assets represented by each investment.
- a) State if the firm has evaluated the exposure to market value losses that can occur from each of these derivatives.  Yes /  No: **Please explain.**
- b) State if these derivative investments in total represent more than 5% of the portfolio's market value. If more than 5%, please explain.
9. State if any restricted derivative investments are held in *SamCERA's* portfolios.  
 Yes /  No
- a) If any are held, state the percentage of the portfolio's assets held in such derivatives and why the firm is not in compliance with the investment policies.
10. For derivative investments with allocation limits, has the firm tested and measured these investments' sensitivities to changes in key risk factors?  Yes /  No: **Please explain.**
11. Have all derivative investments been made in a manner consistent with the derivative investment process specified in the policy statement?  Yes /  No: **Please explain.**
12. Specify the security pricing sources used when developing portfolio market value exposures for limited allocation derivatives.
13. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.
14. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  Yes: **Please explain.** /  No

### **Investment Manager Guidelines**

1. Are portfolio holdings well-diversified, and made in liquid securities?  
 Yes /  No: **Please explain.**



2. Has the firm engaged in short selling, use of leverage or margin and/or investments in commodities?  **Yes: Please explain.** /  **No**

### Cash & Equivalents

1. Does the firm directly invest in short term fixed income investments?  **Yes** /  **No**
- a) If **Yes**, do the investments comply with the policies?  **Yes** /  **No: Please explain.**

### International Equity Portfolios - Developed

1. Specify the percentage of the portfolio held in each of the following types of securities.

<i>Foreign Ordinary Shares</i>	<i>73.28%</i>
<i>ADR's</i>	<i>NIL%</i>
<i>MIP Limited Partnership</i>	<i>25.67%</i>
<i>Cash &amp; Equivalents (Foreign)</i>	<i>0.79%</i>
<i>Cash &amp; Equivalents (Domestic)</i>	<i>0.26%</i>

2. Specify the large, mid and small capitalization exposure of the portfolios.

<i>Large-Cap &gt;11bn</i>	<i>83.88%</i>
<i>Mid-Cap 3.5bn-11bn</i>	<i>14.00%</i>
<i>Small-Cap &lt;3.5bn</i>	<i>0.93%</i>

3. Is the firm monitoring the country, currency, sector and security selection risks associated with its portfolio?  **Yes** /  **No: Please explain**
4. Does the portfolio invest in emerging and/or frontier markets?  **Yes** /  **No**

- a) If **Yes**, please specify the percentage(s) of the portfolio invested in emerging and/or frontier markets

**The portfolio gains exposure to emerging markets through the Mondrian Emerging Markets Equity Fund L.P. As at 31<sup>st</sup> December the portfolio held 25.67% in this fund.**

5. Does the portfolio currently employ a currency hedging strategy?  **Yes** /  **No**

6. What proportion of total AUM do the assets in this product make-up of the firm? **8.18%**

What size does SamCERA's account comprise of total product assets? **4.55%**

Signed by: 

Dated: **10 January 2020**

Name of Firm: **Mondrian Investment Partners Limited**

*Eaton Vance Parametric Emerging Markets Core Fund – December 31, 2019*

*Compliance Certification Statement*

*San Mateo County*

*Employees' Retirement Association*

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

**General Compliance Issues**

1. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?  
 **Yes: Please explain.** /  **No**

**Jodi Wong, Managing Director of Global Markets Portfolio Management at Parametric, retired on December 31<sup>st</sup> and was replaced in that role by Geoff Longmeier. Geoff is a seasoned portfolio management team leader, having managed the Centralized Portfolio Management team for the past eight years. Prior to his promotion to that role, Geoff was Jodi's second-in-command on the Global Markets Portfolio Management team. Geoff was also instrumental in the development of our Systematic Equity Portfolio Management platform, Compass.**

2. Have there been any changes in the firm's investment approach?  
 **Yes: Please explain.** /  **No**
3. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 **Yes: Please explain.** /  **No**
4. Have proxy ballots been voted in accordance with the best economic interest of *SamCERA*?  
 **Yes** /  **No: Please explain.**

Please provide a copy of your firm's proxy policy to [Investments@samcera.org](mailto:Investments@samcera.org).

5. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**

**Investment Management Fees**

1. Is *SamCERA's* investment management fee schedule higher than those charged other institutional clients who hold an account investment substantially similar to ours?

Yes: Please explain. /  No

## Derivative Investments

1. Are derivatives used in the management of the investment strategy?  
 Yes: Please ANSWER the remaining questions in this section.  
 No: Please SKIP the remaining questions in this section.
2. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 Yes /  No: Please explain.
3. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 Yes /  No

If Yes:

- a) Do the counter-parties have investment grade debt?  Yes/  No
  - b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  Yes/  No: Please explain.
4. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 Yes /  No

If Yes:

- a) Do the counter-parties have investment grade debt?  Yes/  No
  - b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 Yes/  No: Please explain.
5. Is individual counter-party exposure well diversified?  Yes/  No: Please explain.
    - a) What is the largest exposure to a single counter-party within the portfolio?

*All exposures as follows:*

HSBC Bank PLC @ 4.91%

JP Morgan International Derivatives @ 1.42%

- b) Please specify the name of the counter-party and the amount of exposure.

*See all counterparty exposures above*

- c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months?

No

6. Specify the security pricing sources used when developing portfolio market value exposures for non-exchanged traded derivative positions.

*Broker-provided, checked against underlying equity price from Bloomberg @ 1:1 + FX Rate conversion (delta-one p-notes).*

7. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.

*Liquidity mirrors underlying equity exposure at 1:1 for p-notes (delta-one p-notes). These participatory notes, sometimes referred to as "low-exercise priced options" ("LEPO's"), are structured to mirror the underlying equity exposure as closely as possible, with additional risks primarily limited to counterparty risk and currency risk on the conversion to USD settlement (USD conversions are done by the broker at prevailing market rates to allow Euroclear settlement and these rates are verified by Parametric against market rates along with underlying prices for all executions). There is no leverage or collateral involved and positions are typically fully hedged by the brokers in the underlying shares.*

8. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  Yes: Please explain. /  No

### Investment Manager Guidelines

1. Are portfolio holdings well-diversified, and made in liquid securities?  
 Yes /  No: Please explain.
2. Has the fund engaged in short selling, use of leverage or margin and/or investments in commodities?  
 Yes: Please explain. /  No

### International Equity Portfolios - Emerging

1. Specify the percentage of the portfolio held in each of the following types of securities:

Foreign Ordinary Shares	83.66%
ADR's	8.63%
GDR's	1.18%
Derivatives	6.35%
Cash & Equivalents (Foreign)	0.21%
Cash & Equivalents (Domestic)	-0.03%

2. Specify the large, mid and small capitalization exposure of the portfolios.

<i>Large-Cap</i>	62.07%
<i>Mid-Cap</i>	24.71%
<i>Small-Cap</i>	13.40%

3. Specify the allocation to frontier markets and to non-benchmark holdings in the portfolio (list both by country).

FRONTIER 3.11%  
*Kuwait* 1.64%  
*Vietnam* 1.46%

NON-BENCHMARK 33.28% *\*Includes any positions not perfectly aligned with BM security (e.g. – ADRs, pnotes, etc.)*

*Russia* 5.50%  
*China* 2.38%  
*Vietnam* 1.46%  
*Kuwait* 1.64%  
*Greece* 0.65%  
*Brazil* 2.81%  
*South Africa* 1.24%  
*Taiwan* 1.12%  
*Mexico* 2.90%  
*Poland* 0.77%  
*Thailand* 2.20%  
*Malaysia* 0.76%  
*Indonesia* 0.77%  
*Chile* 1.10%  
*Philippines* 0.66%  
*India* 1.63%  
*Saudi Arabia* 0.86%  
*Turkey* 0.65%  
*Colombia* 0.87%  
*Pakistan* 0.66%  
*Egypt* 0.28%  
*Qatar* 0.31%  
*United Kingdom* 0.34%  
*Korea* 0.33%  
*Peru* 0.29%  
*U.A.E.* 0.25%  
*Czech Republic* 0.15%

Hungary 0.05%  
Argentina 0.64%

4. Is the firm monitoring the country, currency, sector and security selection risks associated with its portfolio?  Yes /  No: **Please explain.**
5. Does the portfolio currently employ a currency hedging strategy?  Yes /  No
6. What proportion of total AUM do the assets in this product make-up of the firm? What size does SamCERA's account comprise of total product assets?

*AUM of this product on 12/31/2019 was \$366,179,519.82 USD, while the firm AUM was \$279,495,403,138.11 which makes the proportion of this product 0.13%. Also as of 12/31/2019, SAMCERA consisted of 8,011,840.765 shares worth \$94,515,797.67 or 25.8% of this product.*



Signed by: Randall Hegarty, Chief Compliance Officer

Dated: January 14, 2020

Name of Firm: Parametric Portfolio Associates LLC





## ***BlackRock Intermediate Government Bond Index – December 31, 2019***

### *Compliance Certification Statement*

*San Mateo County*

*Employees' Retirement Association*

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

### **General Compliance Issues**

1. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?

**Yes: Please explain.** /  **No**

The below change was announced and became immediately effective in the **first week of Q4 2019.**

**Manish Mehta** became Global Head of Human Resources, reporting to BlackRock CEO, Larry Fink. Manish will join the firm's Global Executive Committee. Manish has a deep understanding of BlackRock, its business and our culture. Following this appointment, **Samara Cohen** and **Alan Mason** will succeed Manish as co-heads of EII Markets & Investments.

- Samara will oversee Global Markets, Product Engineering, ETF Servicing and Public Policy efforts and Research & Analytics.
- Alan will oversee Portfolio Engineering, Investment Process & Platform and the Institutional Indexing Business.
- Samara and Alan will report to Salim Ramji, Global Head of EII.

The following changes were **announced in mid-December 2019 and will be effective mid-January 2020.**

In support of our goal to deliver top quality, scaled portfolio engineering for all our clients, we are making some refinements in the leadership and structure of the ETF and Index Investments portfolio management team. All current portfolio engineers remain assigned to their respective funds, and we continue to organize our portfolio engineering teams specializing by region and vehicle.

The only change is that portfolio engineers will have new leaders at the top of their organization. Just as our portfolio engineering philosophy has always been that of a team-based approach, the new leadership structure follows a team-based approach. Four members of Alan Mason's previous leadership team (Rachel Aguirre, Amy Whitelaw, Jennifer Hsui and Karen Kraut) have been elevated to collectively lead the Americas Portfolio Engineering business. This four-person

leadership team is responsible for the strategic direction of the business, in addition to ensuring the day-to-day portfolios are running consistently and efficiently. Each leader has a specific focus detailed below, and together they will share management responsibilities.

**Jennifer Hsui** will become the Global Index Equity Chief Investment Officer, responsible for index equity investment policy, risk, and process decisions globally. Jennifer will also oversee the U.S. Index Asset Allocation and Developed Markets index equity teams, reporting to Alan Mason.

**Rachel Aguirre** and **Amy Whitelaw** will become Co-Heads of the Americas Portfolio Engineering team, reporting to Alan Mason. Rachel will lead the Global Index Plus and Emerging Markets teams, while Amy will lead the North American index equity teams as well as the Global Index Research Group. Rachel and Amy's combination of technical and leadership skills have prepared them to lead our largest regional portfolio engineering organization.

**Karen Kraut** will become the EII Markets & Investments Chief Operating Officer. She will oversee all business management functions for the Markets & Investments function. Karen will also be moving to Atlanta, and will be leading the EII function in that office.

2. Have there been any changes in the firm's investment approach?  
 **Yes: Please explain.** /  **No**

**BlackRock has followed the same investment philosophy of Total Performance Management for index strategies since 1971.**

3. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 **Yes: Please explain.** /  **No**
4. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**

### **Investment Management Fees**

1. Is *SamCERA*'s investment management fee schedule less favorable than those charged other institutional clients who hold an account investment substantially similar to ours?  
 **Yes: Please explain.** /  **No**

### **Derivative Investments**

1. Are derivatives used in the management of the investment strategy?  
 **Yes: Please ANSWER the remaining questions in this section.**  
 **No: Please SKIP the remaining questions in this section.**

Futures are only used, where permitted by clients' guidelines, to ensure efficient portfolio management, not for speculative or leveraged positions in the portfolio.

2. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 Yes /  No: **Please explain.**

N/A

3. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 Yes /  No

N/A

If Yes:

- a) Do the counter-parties have investment grade debt?  Yes/  No  
b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  Yes/  No: **Please explain.**

4. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 Yes /  No

N/A

If Yes:

- a) Do the counter-parties have investment grade debt?  Yes/  No  
b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 Yes/  No: **Please explain.**

5. Is individual counter-party exposure well diversified?  Yes/  No: **Please explain.**  
a) What is the largest exposure to a single counter-party within the portfolio? **Please see below**  
b) Please specify the name of the counter-party and the amount of exposure. **Please see below**  
c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months? **Please see below**

BlackRock does not provide individual counterparty details for the product under scope, but have provided details on our framework of managing counterparty risk below.

## **Managing Counterparty Credit Risk**

As a fiduciary, BlackRock's philosophy is to manage counterparty credit risk conservatively. However, risk management cannot fully eliminate the risk of investment loss due to a counterparty related event. The firm has an established fiduciary counterparty risk management program led by the Counterparty & Concentration Risk Group ("The Group"), which was established in 2005. The program encompasses Counterparty Risk Governance, Counterparty Assessment and Monitoring, Counterparty Exposure Measurement and Monitoring, and Risk and Concentration Reporting. This framework covers counterparties utilized for both bilateral and centrally-cleared products such as derivatives, mortgage TBAs, foreign exchange, financing trades (repo and securities lending), equities, fixed income securities and other forward-settling transactions.

### **Counterparty Risk Governance**

The Group, operating under the umbrella of BlackRock's independent risk management function, is structurally separate from the trading and investment functional groups. Credit authority primarily resides with BlackRock's Chief Counterparty Credit Officer who reports into BlackRock's Chief Risk Officer (CRO). Should it be required, the ultimate point of escalation for counterparty risk decisions is the CRO, who also chairs BlackRock's Enterprise Risk Management Committee (ERMC). The ERMC reports on risk matters to the BlackRock Risk Committee of the Board of Directors.

The Group is responsible for writing, implementing, updating and enforcing the firm-wide Counterparty Credit Policies and Procedures (latest as at October 2019). These policies are ratified annually by the ERMC and are subject to periodic review by internal and external auditors as well as regulators.

To effectively implement the Counterparty Credit Policies and Procedures, the Group carries out key risk management practices in coordination with many other BlackRock functions, including global trading, research, investment teams, legal, compliance, operations, and data integrity. The Group works closely with BlackRock's Legal Department, providing guidance and supervision for credit terms contained in respective BlackRock agency transaction documentation governing trading relationships, such as ISDA Master Agreements, Derivatives Clearing Agreements, Global Master Repurchase Agreements, Master Securities Lending Agreements, etc.

Key risk and operating oversight committees, which include Group membership, provide coverage of counterparty risks.

### **Counterparty Assessment and Monitoring**

#### **Procedures**

Prospective counterparties identified by the global trading and investment teams are submitted to the Group for an independent credit assessment. These detailed reviews, which are undertaken at the legal entity level, focus on both counterparty credit risk and counterparty reputation risk. The framework for initial and ongoing counterparty credit assessment is based upon several criteria outlined under “Assessment Framework” below.

If approved, trading counterparties are added to an approved list maintained on BlackRock’s Aladdin platform. Approved trading counterparties are monitored on an ongoing basis through the receipt of financial statements and via alert portfolios with market data service providers. Formal renewal assessments are performed on a cyclical basis for existing counterparties, within 12 to 18-months by policy.

In the course of conducting ongoing monitoring of approved trading counterparty credit profiles, the Group may remove a counterparty from the approved list due to inactivity and/or a deterioration in its credit profile. In the case of a counterparty related “credit event”, the firm maintains Credit Alert Procedures which serve as a guideline for the action and interaction of key BlackRock constituencies. These procedures specifically contemplate the coordination among the Group, investment teams, global trading leadership, legal and operations to facilitate BlackRock’s ability to make timely and informed decisions following the recognition of credit concerns. The major aspects addressed include fact finding, communication, liquidation and close-out, and key roles and responsibilities.

### **Assessment Framework**

The Group has an established assessment framework for trading counterparties that considers the intrinsic credit quality of the counterparty, together with the expected transaction activities. For example, purchases or sales of equity securities are considered a lower risk trading activity relative to bilateral derivatives transactions, such as interest rate swaps or foreign exchange forward contracts. The expectations for the credit quality of a counterparty are heightened for higher risk trading activities. Accordingly, counterparties with the highest relative credit quality will generally be eligible for transactions across a broad array of products. However, all counterparties, irrespective of trading activity, are reviewed by the Group with a high level of scrutiny.

The Group evaluates the credit quality of a counterparty using both quantitative and qualitative factors. Factors considered include:

#### *Financial:*

A counterparty’s credit strength is highly dependent upon its financial condition. Loss absorbing capital, which is usually reported as equity on a counterparty’s balance sheet, is a key barometer of the financial strength. Additional financial elements considered include leverage, asset quality, liquidity, and profitability.

*Business:*

The propensity for a counterparty to need loss absorbing capital is highly dependent on its business risk factors. Therefore, key items considered to complement the financial review include ownership structure, management conduct, regulatory status, and the stability of its operating environment.

6. Specify the security pricing sources used when developing portfolio market value exposures for non-exchange traded derivative positions. **N/A**
7. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.

**As stated above, we typically use futures where permitted in our strategies for the purpose of efficient portfolio management. Futures are not used for speculative or leveraged positions in the portfolio.**

8. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  **Yes: Please explain.** /  **No**

**Investment Manager Guidelines**

1. Are portfolio holdings well-diversified, and made in liquid securities?  
**X Yes** /  **No: Please explain.**
2. Has the firm engaged in short selling, use of leverage or margin and/or investments in commodities?  **Yes: Please explain.** / **X No**

**Domestic Fixed Income Portfolios**

1. State the percentage of the portfolio held in each of the following types of securities

<i>Certificates of Deposit</i>	<i>%</i>
<i>Commercial Paper</i>	<i>%</i>
<i>Other high grade short-term securities</i>	<i>0.73%</i>
<i>U.S. Government &amp; Agency securities</i>	<i>99.27%</i>
<i>Corporate Bonds</i>	<i>%</i>
<i>Mortgage and asset-backed securities</i>	<i>%</i>

<i>Yankee bond securities</i>	<i>%</i>
<i>Other (please specify)</i>	<i>%</i>

2. Is the firm monitoring the country, currency, sector and security selection risks associated with its portfolio?  **Yes** /  **No: Please explain**

Signed by:

A handwritten signature in black ink, appearing to be 'Mark A. ...', written over a horizontal line.

Dated: 1/17/20

Name of Firm: BlackRock



**SamCERA I Compliance Certification Questionnaire****Compliance Certification Statement**

FIAM U.S. Core Bonds – December 31, 2019

**FIAM Broad Market Duration****December 31, 2019**

<b>Firm Name</b>	Fidelity Institutional Asset Management Trust Company (FIAMTC)
<b>Product Name</b>	FIAM Broad Market Duration
<b>Asset Class</b>	Investment Grade Fixed Income
<b>Respondent/Contact</b>	Art Greenwood, Senior Vice President, Sales Relationship Manager
<b>Address</b>	900 Salem Street, Smithfield, RI 02917
<b>Telephone</b>	401-292-4729
<b>Email Address</b>	<a href="mailto:Art.Greenwood@fmr.com">Art.Greenwood@fmr.com</a>

*Information provided in this document is for informational and educational purposes only. To the extent any investment information in this material is deemed to be a recommendation, it is not meant to be impartial investment advice or advice in a fiduciary capacity and is not intended to be used as a primary basis for you or your client's investment decisions. Fidelity and its representatives may have a conflict of interest in the products or services mentioned in this material because they have a financial interest in them, and receive compensation, directly or indirectly, in connection with the management, distribution, and/or servicing of these products or services, including Fidelity funds, certain third-party funds and products, and certain investment services.*

**General Compliance Issues****1. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?** **Yes: Please explain.** /  **No**

Since the last Compliance Certification statement, the following material senior leadership changes have taken place at FIAM and Fidelity:

- Effective March 2020, Steve Neff, President of Asset Management will retire. Upon his retirement Bart Grenier, who currently serves as the global head of Asset Management at Fidelity International Limited (FIL), will succeed him.
- Effective in 2020, Nancy Prior, President, Fixed Income will retire. A successor will be named in the coming months.

**2. Have there been any changes in the firm's investment approach?** **Yes: Please explain.** /  **No****3. Have there have been any industry or regulatory disciplinary actions taken against the firm?** **Yes: Please explain.** /  **No**

From time to time, in the normal course of its business, the Firm may receive inquiries (including subpoenas and voluntary requests for information) from regulatory authorities or law enforcement. A regulator may conduct an onsite examination or may commence an investigation. The Firm generally

## SamCERA I Compliance Certification Questionnaire

does not make public comment about such inquiries, examinations or investigations unless and until enforcement proceedings are initiated. Moreover, certain regulators prohibit disclosure of any examination results.

To the extent the Firm's securities affiliates have been sanctioned, fined, or cited by the Securities and Exchange Commission (SEC), Financial Industry Regulatory Authority (FINRA), or any other regulatory body, any such sanction, fine or citation has been disclosed in its affiliates' Forms BD and/or Forms ADV in accordance with the requirements of such forms.

### 4. Has the firm's insurance coverage been sustained?

Yes /  No: Please explain.

## Investment Management Fees

### 1. Is SamCERA's investment management fee schedule higher than those charged other institutional clients who hold an account investment substantially similar to ours?

Yes: Please explain. /  No

## Derivative Investments

### 1. Are derivatives used in the management of the investment strategy?

Yes: Please ANSWER the remaining questions in this section.

No: Please SKIP the remaining questions in this section.

### 2. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?

Yes /  No: Please explain.

### 3. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?

Yes /  No

If Yes:

a) Do the counter-parties have investment grade debt?  Yes /  No

b) Are the counter-parties registered with the SEC and do they have net capital to protect against the potential adverse market circumstances?  Yes/  No: Please explain.

### 4. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?

Yes /  No

If Yes:

a) Do the counter-parties have investment grade debt?  Yes /  No

b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  Yes/  No: Please explain.

**SamCERA I Compliance Certification Questionnaire**

5. Is individual counter-party exposure well diversified?  Yes/  No: Please explain.

- a) What is the largest exposure to a single counter-party within the portfolio?  
 b) Please specify the name of the counter-party and the amount of exposure.  
 c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months?

We consider this information to be proprietary and are therefore unable to disclose.

6. Specify the security pricing sources used when developing portfolio market value exposures for non-exchanged traded derivative positions.

Fidelity Fund & Investment Operations (FFIO) utilizes a combination of sources for derivatives pricing. 3rd party pricing vendors, such as Markit and Pricing Direct, are primary sources for different swap types. Refinitiv (Reuters) is the primary pricing source for futures.

7. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.

All derivative instruments used in the portfolio are liquid. Given the minimum role they play in the portfolio and the extensive research conducted by the Counterparty Risk Team and the large team of in-house and external lawyers that support these efforts, we feel the legal and regulatory risks are minimal.

8. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  Yes: Please explain. /  No

### Investment Manager Guidelines

1. Are portfolio holdings well-diversified, and made in liquid securities?

Yes/  No: Please explain.

2. Has the firm engaged in short selling, use of leverage or margin and/or investments in commodities?  Yes: Please explain. /  No

### Domestic Fixed Income Portfolios

1. State the percentage of the portfolio held in each of the following types of securities:

<i>Certificates of Deposit</i>	%
<i>Commercial Paper</i>	%
<i>Other High Grade Short-term securities</i>	0.8%
<i>U.S. Government &amp; Agency securities</i>	40.5%
<i>Corporate Bonds</i>	27.4%
<i>Mortgage- and asset-backed securities</i>	25.2%

**SamCERA I Compliance Certification Questionnaire**

<i>Yankee bond securities</i>	<i>6.1%</i>
-------------------------------	-------------

**2. Does the firm conduct horizon analysis testing?  Yes/  No: Please explain.**

Scenario Analysis is performed at both the security and portfolio level. We perform scenario analysis on a daily basis for most fixed-income securities in our universe. There are 13 interest-rate scenarios consisting of unchanged, shift, and twist yield curve movements. We also allow for interactive analysis, incorporating spread changes into the estimated scenarios.

**3. Are any holdings below investment grade?  Yes /  No****a) If Yes, why are they held in the portfolio?**

As of December 31, 2019, 0.6% of holdings in the portfolio were below investment grade. Purchased as investment grade, these holdings have been downgraded due to increased leverage or other fundamental credit criteria. We still feel they hold relative value, although we are monitoring these securities closely.

**4. Excluding U. S. Government and Agency bond holdings, did any individual bond issue represent more than 5% of the market value of the portfolio?  Yes /  No****a) If Yes, please specify the bond issue and percentage amount.****5. What percentage of the portfolio is held in Rule 144A securities?**

8.9%

**6. At the time of purchase, was there any single industry which represented more than 15% of the market value of the account.  Yes /  No****a) If Yes, please specify the name of the industry, percentage amount and size relative to benchmark.****7. What proportion of total AUM do the assets in this product make-up of the firm? What size does SamCERA's account comprise of total product assets?**

As of December 31, 2019, the SamCERA Broad Market Duration account represents <1% of the assets in the Broad Market Duration strategy and less than 1% of total FIAM assets

**Signed by:** Jeff Goretti

DocuSigned by:  
  
 BFF527A7670B467...  
**Dated:** 1/10/2020

**Name of Firm:** FIAMTC



**FRANKLIN  
TEMPLETON**

January 15, 2020

**RESPONSE TO COMPLIANCE CERTIFICATION STATEMENT FROM  
San Mateo County Employees' Retirement Association**

Franklin Templeton Global Multisector Plus (Master) Fund, Ltd. (3c7)  
*Review Period: July 1, 2019 – December 31, 2019*

**Bill Deakyne, CFA**

SVP, Head of US Institutional Relationship Management  
Franklin Templeton Institutional, LLC

tel: (650) 312- 2270

email: [bill.deakyne@franklintempleton.com](mailto:bill.deakyne@franklintempleton.com)

**TABLE OF CONTENTS**

GENERAL COMPLIANCE ISSUES ..... 3  
INVESTMENT MANAGEMENT FEES..... 6  
DERIVATIVE INVESTMENTS ..... 7  
INVESTMENT MANAGER GUIDELINES ..... 10  
GLOBAL FIXED INCOME PORTFOLIOS..... 11  
IMPORTANT NOTES ..... 14

**APPENDIX 1**

FRANKLIN ADVISERS, INC. REGULATORY HISTORY

Please note that the San Mateo Employees' Retirement account is in a 3c7 fund and is no longer managed in a separately managed account within the guidelines of an investment management agreement (IMA).

As such, any references to the terms, guideline(s) and policy statement(s) within this questionnaire refer to the Franklin Templeton Global Multisector Plus (Master) Fund, Ltd.'s offering documents and/or private placement memorandum.

## GENERAL COMPLIANCE ISSUES

1. **Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?**

Yes       No

**If yes, please explain.**

### Portfolio Developments

There have been no significant developments to the Franklin Templeton Global Multisector Plus (Master) Fund, Ltd. over the last six months ended December 31, 2019.

### Firm Ownership

There have been no material changes to the ownership structure of Franklin Resources, Inc. (Parent Company) during the past six months ended December 31, 2019.

### Organizational Structure and Personnel Changes

Please refer to the below changes within the Franklin Templeton business organization during the past six months ended December 31, 2019.

- As the firm continued to evolve its alternatives capabilities in response to client interest, in July Franklin Real Asset Advisors (FRAA) announced its dedicated focus on private real assets markets—including commingled funds and separate accounts with private real assets—while transitioning the retail real estate securities funds it manages to the Franklin Equity Group (FEG), effective September 3, 2019. These changes align FRAA fully with the firm's alternatives group, and the retail strategies with the sector funds managed by FEG. In addition, combining the dedicated real estate investments trusts (REITs) and real estate securities sector coverage within FEG allows for new efficiencies in the overall research process, in our view.
- The Franklin Templeton Fixed Income Group announced changes in support of its enhanced structure and investment process.
  - Effective August 1, Roger Bayston, formerly Executive Vice President and Director of Investment Grade Fixed Income, assumed the leadership of a restructured quantitative and data science team as Executive Vice President, Director of Quantitative and Fintech Strategies with a focus on enhancing the investment process by embedding quantitative insights and data science capabilities. While as of October 15 Mr. Bayston no longer had day-to-day management responsibilities for investment portfolios, he continues to oversee the investment professionals responsible for managing a variety of fixed income strategies including government related and multi-sector strategies.
  - Reporting to Mr. Bayston, David Yuen leads the quantitative and multi-sector investment teams as Senior Vice President, Multi-Sector and Quantitative Strategies, while Tony Pecore leads the data science investment professionals as Senior Vice President, Data Science and Digital Lending Strategies. Reporting to Mr. Yuen, Patrick Klein, Senior Vice President and Portfolio Manager, was promoted to lead the Multi-Sector Strategies team.
  - Betsy Hofman, Vice President and Portfolio Manager, retired from the firm on October 15. Michael Materasso, SVP, Head of Insurance Portfolio Management and Co-Chair of the Fixed Income Policy

Committee, retired on December 2. Both Ms. Hoffman and Mr. Materasso had approximately 30 years of tenure with the firm.

- Under the leadership of Chairman Dr. Sandy Nairn, the Templeton Global Equity Group announced several additions which are expected to bring a range of knowledge and skills that complement existing capabilities within the group, particularly with regard to portfolio structure/risk and process oversight, the Asia region and the small/mid cap space.
  - Alan Bartlett joined as CIO, effective October 1, assuming responsibility for the day-to-day management of TGEG, including oversight of portfolio structure and risk, as well as the research process, and partners closely with Dr. Nairn on the group's strategic direction.
  - Peter Sartori joined as EVP, Portfolio Manager, effective October 1. Based in Singapore—and with 29 years of investment management experience focused on Asian equities—Mr. Sartori focuses on running TGEG's Asia Pacific business to drive efforts both in terms of Asian regional mandates and as a key member of the TGEG leadership team.
  - Norm Boersma, CIO, TGEG and Heather Arnold, Director of Research, TGEG, retired from the firm effective December 31, 2019, following approximately 28 and 14 years with the firm, respectively. Their early notice allowed for a seamless transition of their leadership and fund responsibilities over the course of 2019.

Additionally, the following planned changes have been announced for 2020:

- On November 21, the company announced the appointment of Jennifer M. Johnson as President and chief executive officer. Current CEO Gregory E. Johnson will become executive chairman of Franklin Resources, Inc. and continue in his role as chairman of the Company's board of directors. The CEO appointment was approved by the Company's board of directors, and both appointments will become effective at the Company's 2020 Annual Meeting of Stockholders on February 11, 2020.
- In December, Kelsey Biggers, Senior Vice President and Head of Investment Risk Management, announced plans to retire. Effective March 2, 2020, Suzanne Akers and Tilak Lal, currently direct reports of Mr. Biggers, will succeed him and become Co-Heads of the Investment Risk Management Group.

The investment team responsible for managing the Franklin Templeton Global Multisector Plus (Master) Fund, Ltd., the Templeton Global Macro group, has experienced limited turnover during the past six months ending December 31, 2019. In December 2019, Shlomi Kramer, research analyst departed from the team.

Additionally, Templeton Global Macro (TGM) added a quantitative research analyst, Adam Drutel, on January 1, 2020. Adam comes from Franklin Templeton's Investment Risk Management Group, where he was a risk analyst on the TGM strategies since 2015. Adam's addition to TGM increases the number of quantitative research analysts on the team to four, and increases the number of investment professionals to 21. TGM continues to be well-resourced and has full capacity to add resources as needed. The team currently has five Ph.D. economists.



**2. Have there been any changes in the firm's investment approach?**

Yes  No

**If yes, please explain.**

**3. Have there have been any industry or regulatory disciplinary actions taken against the firm?**

Yes  No

**If yes, please explain.**

No. During the six months ended December 31, 2019, Franklin Advisers, Inc. (FAV) was not the subject of any *investment-related proceedings, findings or orders* brought or issued by any U.S. federal or state regulatory agency, *foreign financial regulatory authority or self-regulatory organization*.

For a summary of *investment-related proceedings, findings or orders* brought or issued by any such regulatory entity against FAV and/or certain of its *advisory affiliates* in the past 10 years ended September 30, 2019, as well as certain other regulatory matters, please see Appendix 1: Franklin Advisers, Inc. Regulatory History. In addition, from time to time, FAV and its *advisory affiliates* receive subpoenas and inquiries including requests for documents or information, from governmental authorities or regulatory bodies and also are the subject of governmental or regulatory examinations or investigations. *Investment-related proceedings, findings or orders* resulting from such subpoenas, inquiries, examinations or investigations if any, will be reported, to the extent required and permitted by law, on FAVs Form ADV filed with the U.S. Securities and Exchange Commission. (Italicized terms are as defined on Form ADV.)

**4. Has the firm's insurance coverage been sustained?**

Yes  No

**If no, please explain.**

## INVESTMENT MANAGEMENT FEES

1. Is *SamCERA's* investment management fee schedule higher than those charged other institutional clients who hold an account investment substantially similar to ours?

Yes       No

If yes, please explain.

## DERIVATIVE INVESTMENTS

1. Are derivatives used in the management of the investment strategy?

Yes  No

If Yes, please answer the remaining questions in this section. If No, please skip the remaining questions in this section.

2. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?

Yes  No

If no, please explain.

3. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?

Yes  No

If yes:

a) Do the counter-parties have investment grade debt?

Yes  No

b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?

Yes  No

If no, please explain.

4. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?

Yes  No

If yes:

a) Do the counter-parties have investment grade debt?

Yes  No

b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?

Yes  No

If no, please explain.

**5. Is individual counter-party exposure well diversified?**

Yes       No

The risk exposure to a single counterparty in an OTC derivative transaction may not exceed 10%.

Counterparty credit risk is managed at the firm-wide level. All potential counterparties are subject to initial approval and ongoing review by Franklin Templeton's Counterparty Credit Committee (CCC). This process evaluates a variety of different metrics for assessing creditworthiness, including each counterparty's credit rating, credit default swap spread, and stock price, as well as Franklin Templeton's money market and trading desk input.

The CCC and Franklin Templeton's Investment Risk Management Group are responsible for ongoing monitoring of counterparties' creditworthiness and firm-wide exposure to counterparties. The Investment Risk Management Group calculates exposure to each counterparty across Franklin Templeton mandates daily, and on an as-needed basis, based on market conditions. Total exposure is compared to monetary limits that may vary due to the size and creditworthiness of the counterparty.

The majority of our counterparty relationships are collateralized daily. Collateral is ring-fenced and protected from the balance sheet of either firm. Therefore, should one of our counterparties go out of business overnight, it would have minimal impact on value of the trade, as the trade's cash value would be in the collateral account and protected from creditors.

If No, please explain.

- a) What is the largest exposure to a single counter-party within the portfolio?
- b) Please specify the name of the counter-party and the amount of exposure.
- c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months?

Counter-party exposure cannot be released under fair disclosure rules.

Changes to our approved list of counter-parties routinely occur nearly every month.

**6. Specify the security pricing sources used when developing portfolio market value exposures for non-exchange traded derivatives.**

Typically, there are readily available market quotations for certain kinds of derivative instruments, like those traded on recognized exchanges, and those instruments are valued accordingly. Over-the-counter (OTC) derivatives are valued using quotations from independent third-party vendors and sources that may apply fair value techniques. OTC derivatives contracts may not trade frequently. Our vendors may use valuation techniques including fair value pricing models to determine Net Present Value (NPV). The vendors' evaluated prices (NPV) are derived using the attributes described in the instrument terms and conditions, relevant credit or interest rate curves derived from contributed data from a network of market participants and current broker-dealer quotations. If a current market quotation cannot be established or a market event occurs that calls into question the reliability of current market quotations, the pricing department will initiate fair value procedures. Fair valuation might include an internal fair valuation by management appraisal. All fair value management appraisals are documented and the Valuation Committee reviews and approves them.

**7. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.**

Derivatives will only be used when client guidelines permit and Franklin Templeton's risk management systems enable us to properly model derivative instruments and fully understand portfolio risk. Derivative instruments are used for hedging purposes and for efficient portfolio management when we determine that it is more cost or tax efficient to use a derivative instrument rather than investing directly in the underlying bond or currency market. Compared with cash bonds, derivatives can be more flexible and more liquid, and may have lower transaction costs. In those strategies that employ derivative instruments, or when clients request the use of derivatives to achieve certain investment objectives, we may also seek to gain exposure through the use of exchange-traded and/or over-the-counter derivatives.

As an opportunistic strategy, the Templeton Global Multisector Plus Strategy (the investment strategy of the Franklin Templeton Global Multisector Plus (Master) Fund, Ltd.) utilizes a wide variety of instruments to gain exposure to various fixed income sectors and achieve strategy objectives. For example, foreign exchange forward contracts are frequently used in the implementation of its overall strategy, either for hedging purposes and/or to express positive and negative currency views. We may also engage in cross hedging as an efficient method of implementing the portfolio's optimal currency structure. Interest rate swaps may also be used to implement views on interest rates, quickly adjust portfolio duration, or efficiently handle cash flows.

**8. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.**

Yes       No

**If yes, please explain.**

## INVESTMENT MANAGER GUIDELINES

### 1. Are portfolio holdings well-diversified, and made in liquid securities?

Yes       No

No limits are placed on the minimum or maximum number of positions in the portfolio and the number of positions or views the team will take in the portfolio will vary throughout market cycles. The fund typically allocates risk across 25 to 35 diversified global macro views. Each position (or view) is expressed using one or more securities to target the specific desired exposure(s) within a country with respect to duration, yield curve, currency, and credit exposure, and may use a combination of bonds and derivatives.

The size of each position is determined by our view of fundamental attractiveness and valuation, conviction level, and risk assessment, including market size and liquidity. We also consider the correlation to other positions in the portfolio and the impact on the strategy's overall risk profile. The average position size typically ranges from 5% to 10% of total country or currency exposure. Individual positions in which we have the highest conviction may constitute up to 20% of total country or currency exposure. To help manage portfolio risk, we aim to balance large positions with a number of smaller positions and offset less liquid securities with highly liquid securities.

As an essential part of the investment process, liquidity risk is researched in the security selection stage. Our research analysts and traders partner to ensure that any required liquidity provisions can be met given the risk parameters of the underlying mandate. In the event that, within the confines of the account structure, we invest in securities that have limited liquidity, we seek to ensure that investors are being adequately compensated for any liquidity risk. On an ongoing basis, analysts are required to ensure that current market prices reflect attractive valuations. Liquidity risk is further controlled by monitoring aggregate ownership levels to help ensure that they remain prudent.

The global government bond and foreign currency markets in which the fund invests are among the largest and most liquid markets in the world. We generally seek to avoid holding assets in which we believe forced selling could occur at stressed levels due to liquidity constraints. Historically, the fund has never experienced any significant issues with liquidity, and we do not believe that liquidity issues going forward are likely to be of great concern, regardless of the economic environment.

It is also important to note that at a firm level, we have our Global Credit Facility, an unsecured, senior committed line of credit, if required as a source of funds for temporary and emergency purposes to meet unanticipated or unusually large redemption requests by shareholders. In the case that this facility would be needed, this would provide the portfolio managers with added flexibility in managing redemptions without disrupting our ability to meet our investment objectives and serve the long-term interests of our shareholders. Currently, it is undrawn.

**If no, please explain.**

### 2. Has the firm engaged in short selling, use of leverage or margin and/or investments in commodities?

Yes       No

The Templeton Global Multisector Plus Strategy does not engage in short selling, employ leverage, margins or investments in commodities.

**If yes, please explain.**

## GLOBAL FIXED INCOME PORTFOLIOS

**1. State the percentage of the portfolio held in each of the following types of securities (please sub-total each by region):**

The following table represents the sector and region breakdown for the Franklin Templeton Global Multisector Plus (Master) Fund, Ltd. (3c7) as of December 31, 2019.

Sector	Region	MV%
Certificates of Deposit (by region)		0.00
Cash & Cash Equivalents		23.36
Preferred Stock		0.00
Commercial Paper (by region)		0.00
Other high grade short-term securities (by region)		0.00
Government securities (by region)	US	0.00
	Non-US	71.17
Agency Securities (by region)	US	0.00
	Non-US	6.95
Investment Grade Corporate Bonds (by region)	US	0.00
	Non-US	0.00
High Yield Corporate Bonds (by region)	US	0.00
	Non-US	0.00
Mortgage and asset-backed securities (by region)		0.00
Supranational		0.06
Derivatives		-2.10
Bank Loans		0.00
Other		0.56
<b>Total</b>		<b>100.00</b>

Region	Percentage (%)
Americas	28.89
Asia	40.14
Europe	5.23
Middle-East/Africa	2.52
Supranational	0.06
Cash & Cash Equivalents	23.36
Other	-0.20
<b>Total</b>	<b>100.00</b>

**2. Please list any holdings that are below investment grade or not-rated**

The table below represents the quality allocation breakdown for the Franklin Templeton Global Multisector Plus (Master) Fund, Ltd. (3c7) as of December 31, 2019. During the quarter 39.21% of the portfolio consisted of holdings that were below investment grade or not rated.

Range	IG/Non-IG	Percentage
AAA	IG	5.29
AA	IG	11.01
A+	IG	5.32
A-	IG	13.45
BBB+	IG	5.16
BBB	IG	11.11
BBB-	IG	9.44
BB-	Non-IG	12.72
B	Non-IG	2.52
B-	Non-IG	0.00
CC	Non-IG	2.71
NR	Non-IG	0.01
N/A	Non-IG	-3.50
Cash & Cash Equivalents	Non-IG	24.76

3. Excluding U. S. Government and Agency bond holdings, did any individual bond issue represent more than 5% of the market value of the portfolio?

Yes  No

a) If yes, please specify the bond issue and percentage amount.

4. What percentage of the portfolio is held in Rule 144A securities?

Yes, we have 144A securities held in this account. 2.76% is the total exposure of 144A type securities as of December 31, 2019.

5. At the time of purchase, was there any single industry which represented more than 15% of the market value of the account.

Yes  No

a) If yes, please specify the name of the industry, percentage amount and size relative to benchmark.


No industry has 15% or more allocation. Note: government sector represents more than 15%.

6. What proportion of total AUM do the assets in this product make-up of the firm? What size does the SamCERA's account comprise of total product assets?

Franklin Templeton Global Multisector Plus (Master) Fund Ltd. total AUM as of November 30, 2019 was US\$1,460.68 million, this makes up 0.21% of total firm AUM.

SamCERA's account assets makes up 2.78% of Franklin Templeton Global Multisector Plus (Master) Fund Ltd's total assets as of November 30, 2019.



**Signed By:**   
**Name:** Breda Beckerle  
**Title:** Chief Compliance Officer  
**Dated:** January 15, 2020  
**Name of Firm:** Franklin Advisers, Inc. (FAV)

### IMPORTANT NOTES

This response (the Response) is based on the information provided in the Due Diligence Questionnaire (the Questionnaire). To the extent any such information in the Questionnaire is incomplete or inaccurate, Franklin Templeton reserves the right to alter, amend or delete any information it has provided in the Response. Franklin Templeton has prepared the Response in good faith and, to the best of its knowledge, all information provided in the Response is accurate as of the date submitted. Information, including all data, provided in the Response is unaudited, unless otherwise indicated. Additionally, any information relating to assets under management (AUM) is being provided in response to the particular request contained in the Questionnaire and the figures provided may, therefore, be categorized differently than those reported for regulatory or other disclosure purposes. AUM includes assets for which the firm provides various investment management services as described in Franklin Resources, Inc.'s current Form 10K (See Item I, "Business". A copy of the current Form 10K as well as the most recent Annual Report can be located at [www.franklintempleton.com](http://www.franklintempleton.com)). The way we calculate our AUM may change from time to time based on such factors as changes in industry standards, regulatory requirements or specific requests. Any information from third-party sources is believed to be reliable, but Franklin Templeton cannot guarantee its accuracy or completeness. Information set forth in the Response is subject to change and Franklin Templeton does not undertake any duty to update the Response after its issuance nor does it accept responsibility for any modifications made to the Response after its date of issue. Responses may include a general description of the types of services Franklin Templeton may provide to its clients and may not be applicable or tailored to the Questionnaire. Data shown for currency exposure, country exposure, maturity, duration, coupon allocation, sector allocation and asset allocation may reflect certain derivatives held in the portfolio (or their underlying reference assets). Breakdowns may not total 100% or may be negative due to rounding, use of derivatives, unsettled trades or other factors. When performance for either the portfolio or its benchmark has been converted into another currency, different foreign exchange (FX) closing rates may be used for the conversion of the portfolio and benchmark performance.

The information contained in the Response is solely for the purpose of responding to the Questionnaire, shall be treated as confidential, and shall be distributed internally on an as-needed basis only. Subject to applicable regulatory requirements, it shall not be distributed or otherwise communicated to third parties (other than any consultant engaged by the issuer of the Questionnaire to assist in connection therewith) without the prior written consent of Franklin Templeton. Any such consultant shall likewise be obligated to treat the Response as confidential.

Investing may involve a high degree of risk. The issuer of the Questionnaire is deemed to be an experienced institutional investor or consultant and is expected to make its own independent assessment of the appropriateness and the associated risks of investing. Franklin Templeton shall not be held liable for any losses or damages arising out of any person's reliance upon the information contained in the Response. Except as expressly provided in the Response, no person, firm, or corporation has been authorized to give any information or to make any representation other than those contained in the Response.

All investors should inform themselves as to the legal and other requirements applicable to them with respect to any investments, holdings, and/or disposition of any investments. Franklin Templeton takes no responsibility for informing or advising investors of any applicable laws or regulations.

Views or opinions expressed in the Response do not constitute investment, legal, tax, financial or other advice. The Response is neither an offer for a particular security nor a recommendation to purchase any investments. The way Franklin Templeton implements its investment strategies and the resulting portfolio holdings may change depending on a variety of factors such as market and economic conditions, as well as client account guidelines and restrictions, if applicable. The information provided in the Response is not a complete analysis of every aspect of any market, country, industry, security, strategy or portfolio. Past performance does not guarantee future results and results may differ over future time periods.

By accepting these materials, you confirm your acceptance of the above terms.

***PIMCO Diversified Income Fund – December 31, 2019***

*Compliance Certification Statement*

*San Mateo County*

*Employees' Retirement Association*

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

**General Compliance Issues**

*The Fund you are invested in is an investment company registered under the Investment Company Act of 1940 ("1940 Act"), which prohibits selective disclosure of information to some investors and not to others. Therefore, we cannot respond directly to your inquiry. For additional information please reference the attached compliance letter, Fund Prospectus and Statement of Additional Information.*

1. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?  
 **Yes: Please explain.** /  **No**

*Please refer to the attached Quarterly Firm Report.*

2. Have there been any changes in the firm's investment approach?  
 **Yes: Please explain.** /  **No**

*Please refer to the attached Fund Prospectus and/or Statement of Additional Information.*

3. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 **Yes: Please explain.** /  **No**

*Please reference the attached compliance letter.*

4. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**

*Please reference the attached compliance letter.*

**Investment Management Fees**

1. Is *SamCERA's* investment management fee schedule higher than those charged other institutional clients who hold an account investment substantially similar to ours?

**Yes: Please explain.** /  **No**

*Please refer to the attached Fund Prospectus and/or Statement of Additional Information.*

### **Derivative Investments**

1. Are derivatives used in the management of the investment strategy?  
 **Yes: Please ANSWER the remaining questions in this section.**  
 **No: Please SKIP the remaining questions in this section.**

*Please refer to the attached Fund Prospectus and/or Statement of Additional Information.*

2. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 **Yes** /  **No: Please explain.**

*Please refer to the attached Diversified Income Fund Annual Report.*

3. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 **Yes** /  **No**

**If Yes:**

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**  
b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  **Yes**/  **No: Please explain.**

*Please refer to the attached Diversified Income Fund Annual Report.*

4. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 **Yes** /  **No**

**If Yes:**

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**  
b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 **Yes**/  **No: Please explain.**

*Please refer to the attached Diversified Income Fund Annual Report.*

5. Is individual counter-party exposure well diversified?  **Yes**/  **No: Please explain.**  
a) What is the largest exposure to a single counter-party within the portfolio?  
b) Please specify the name of the counter-party and the amount of exposure.  
c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months?

*Please refer to the attached Diversified Income Fund Annual Report.*

6. Specify the security pricing sources used when developing portfolio market value exposures for limited allocation derivatives.

*Please refer to the attached PIMCO Pricing Policy.*

7. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.

*Please refer to the attached PIMCO's Use of Derivatives.*

8. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  **Yes: Please explain.** /  **No**

### **Investment Manager Guidelines**

1. Are portfolio holdings well-diversified, and made in liquid securities?  
 **Yes** /  **No: Please explain.**
2. Has the firm engaged in short selling, use of leverage or margin and/or investments in commodities?  **Yes: Please explain.** /  **No**

*The Fund is permitted to engage in short sales as allowed by the Fund's Prospectus and Statement of Additional Information, which are attached for reference.*

### **Domestic Fixed Income Portfolios**

1. State the percentage of the portfolio held in each of the following types of securities

<i>Treasury</i>	<i>%</i>
<i>Agency</i>	<i>%</i>
<i>Inflation-Linked</i>	<i>%</i>
<i>Mortgage-Backed</i>	<i>%</i>
<i>Asset-Backed</i>	<i>%</i>
<i>Investment-Grade Credit</i>	<i>%</i>
<i>High-Yield Credit</i>	<i>%</i>
<i>Bank Loan</i>	<i>%</i>
<i>Non-US</i>	<i>%</i>
<i>EM Government</i>	<i>%</i>
<i>EM Local Currency</i>	<i>%</i>
<i>EM Corporate</i>	<i>%</i>
<i>Cash &amp; Equivalents</i>	<i>%</i>
<i>Total</i>	<i>%</i>

*Please refer to the attached Bond Statistics Report.*

2. Excluding U. S. Government and Agency bond holdings, did any individual bond issue represent more than 5% of the market value of the portfolio?  Yes /  No

*Please refer to the attached Holdings Report.*

a) If **Yes**, please specify the bond issue and percentage amount.

3. What percentage of the portfolio is held in Rule 144A securities?

*Please reference the attached compliance letter.*

4. At the time of purchase, was there any single industry which represented more than 15% of the market value of the account.  Yes /  No

*Please refer to the attached Holdings Report.*

a) If **Yes**, please specify the name of the industry, percentage amount and size relative to benchmark.

5. What proportion of total AUM do the assets in this product make-up of the firm? What size does SamCERA's account comprise of total product assets?

*As of 9/30/2019, the Fund represented 0.21% of the Firm's AUM.*

*As of 9/30/2019, SamCERA's account represented 2.24% of Fund assets.*

Signed by:



Dated:

01/14/2020

Name of Firm: PIMCO

## ***Western Asset Management Total Return Unconstrained – December 31, 2019***

### ***Compliance Certification Statement***

***San Mateo County***

***Employees' Retirement Association***

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

#### **General Compliance Issues**

1. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?  
 **Yes: Please explain.** /  **No**
2. Have there been any changes in the firm's investment approach?  
 **Yes: Please explain.** /  **No**
3. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 **Yes: Please explain.** /  **No**
4. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**

#### **Investment Management Fees**

1. Is *SamCERA's* investment management fee schedule higher than those charged other institutional clients who hold an account investment substantially similar to ours?  
 **Yes: Please explain.** /  **No**

#### **Derivative Investments**

1. Are derivatives used in the management of the investment strategy?  
 **Yes: Please ANSWER the remaining questions in this section.**  
 **No: Please SKIP the remaining questions in this section.**
2. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 **Yes** /  **No: Please explain.**

3. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 **Yes** /  **No**

If **Yes**:

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**  
b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  **Yes**/  **No: Please explain.**

4. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 **Yes** /  **No**

If **Yes**:

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**  
b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 **Yes**/  **No: Please explain.**

5. Is individual counter-party exposure well diversified?  **Yes**/  **No: Please explain.**

- a) What is the largest exposure to a single counter-party within the portfolio?  
0.38% of The Fund is exposed to BARC.
- b) Please specify the name of the counter-party and the amount of exposure.  
Barclays for \$6,598,376
- c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months?  
No material changes within derivative counterparties.

6. Specify the security pricing sources used when developing portfolio market value exposures for limited allocation derivatives.

The pricing sources used for derivatives will vary depending on the derivative instrument and clearing method. For example, for exchange traded instruments such as futures, Bloomberg is used to receive the settlement price from the exchange the derivative contract is traded on. For OTC derivatives which are cleared, Western Asset will receive the valuations from the exchange the derivative is cleared. For non-cleared OTC derivatives, Western Asset's primary pricing vendor is Markit. The Firm will consider secondary sources such as Bloomberg swap models, mark-to-market counter party statements or internal model methodology if Markit does not cover an OTC derivative instrument.

Western Asset's Pricing Group is responsible for obtaining prices from independent pricing vendors and brokers and assigning values to securities in accordance with the approved pricing hierarchies. Western Asset's primary pricing vendor is FTID (aka IDC) for fixed-income cash



bonds, and Markit for derivatives. Western Asset's Pricing Policies and Valuation Process is provided in Appendix A.

7. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.

Western Asset's management style focuses on adding incremental value without taking on excessive risk. To ensure that the Firm's use of derivative instruments is consistent with this investment philosophy, the Firm developed the following guidelines—listed below along with a brief description of their rationale—which form the basis of every decision to employ derivatives in the Firm's investment portfolios:

- The duration contribution of derivatives will not bring the portfolio's duration outside the portfolio's specific duration band.
- Where a portfolio enters into forward foreign exchange contracts the aggregate underlying exposure of the portfolio attained through such contracts shall not exceed 100% of the portfolio's market value.
- A portfolio's gross exposure to forward foreign exchange contracts shall not exceed 50% with any single counterparty and net exposure shall not exceed 25% with any single counterparty. Net exposure is defined as the value (in account base currency terms) of open forward foreign exchange purchase contracts less forward foreign exchange sale contracts. Gross exposure is defined as the value (in account base currency terms) of open forward foreign exchange purchase contracts plus forward foreign exchange sale contracts.
- The net notional exposure to index and credit default swaps will count at their full notional value as exposure to the underlying asset. Concentration limits for a particular name or asset class will apply based on the net sum of its cash and derivative security holdings.
- Short (written) options positions will always be covered, either with current security holdings, other options or futures positions. Mortgage derivatives with significant short option characteristics will not exceed 5% of the portfolio, and will generally be a) offset by positions in other mortgage derivatives (e.g., floaters and inverse floaters), or b) offset by other portfolio positions (e.g., IOs and long duration bonds).
- Futures and options contracts will be limited to liquid instruments actively traded on major exchanges or, if over-the-counter, executed with major dealers.
- Swap contracts are considered over-the-counter contracts between two parties and have counterparty credit risk different from exchange-traded derivatives. Western Asset tries to limit its counterparty risk by executing swaps with the strongest financial counterparties. The vast majority of these counterparties are rated is A- or better. In addition, collateral agreements will be in place to trigger margin movement whenever the current mark-to-market amount to be paid or received by either counterparty exceeds a threshold amount.
- Finally, under no circumstances will the derivative positions change the characteristics of the portfolio so that it violates any guideline set forth in the Investment Management Agreement.

8. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  **Yes: Please explain.** /  **No**

## Investment Manager Guidelines

1. Are portfolio holdings well-diversified, and made in liquid securities?  
 Yes /  No: Please explain.
2. Has the firm engaged in short selling, use of leverage or margin and/or investments in commodities?  Yes: Please explain. /  No

## Domestic Fixed Income Portfolios

1. State the percentage of the portfolio held in each of the following types of securities

<i>Treasury</i>	<i>3.16%</i>
<i>Agency</i>	<i>0.85%</i>
<i>Inflation-Linked</i>	<i>4.44%</i>
<i>Mortgage-Backed</i>	<i>15.36%</i>
<i>Asset-Backed</i>	<i>4.32%</i>
<i>Investment-Grade Credit</i>	<i>9.21%</i>
<i>High-Yield Credit</i>	<i>7.00%</i>
<i>Bank Loan</i>	<i>4.79%</i>
<i>Non-US</i>	<i>16.15%</i>
<i>EM Government</i>	<i>3.85%</i>
<i>EM Local Currency</i>	<i>15.88%</i>
<i>EM Corporate</i>	<i>7.09%</i>
<i>Cash &amp; Equivalents</i>	<i>7.90%</i>
<i>Total</i>	<i>100.00%</i>

2. Does the firm conduct horizon analysis testing?  Yes /  No: Please explain.

Western Asset's investment management team estimates horizon excess returns under various market scenarios, including best, worst and likely cases. Particular attention is paid to diversifying strategies under each scenario. The horizon for risk management is the same as that for investment management, as the risk effort is closely integrated into the investment process. The firm's tracking error model calculates predicted tracking errors based on 18 months of historical data. Western Asset also generates scenario analysis results daily for representative accounts. These results estimate horizon durations given various interest rate shocks. The horizon is generally instantaneous as Western Asset evaluates one day extreme movements in rates for duration hedging purposes. The Firm's systems allow for any time horizon and can output a wide array of horizon performance or analytics related statistics.

3. Excluding U. S. Government and Agency bond holdings, did any individual bond issue represent more than 5% of the market value of the portfolio?  Yes /  No

a) If **Yes**, please specify the bond issue and percentage amount.

4. What percentage of the portfolio is held in Rule 144A securities?

22.66%

5. At the time of purchase, was there any single industry which represented more than 15% of the market value of the account.  Yes /  No

a) If **Yes**, please specify the name of the industry, percentage amount and size relative to benchmark.

6. What proportion of total AUM do the assets in this product make-up of the firm? What size does SamCERA's account comprise of total product assets?

As of December 31, 2019, Western Asset's Total Return Unconstrained (TRU) Bond product makes up 1.1% of Firmwide AUM, and SamCERA's account comprises 2.9% of total TRU Bond product assets.



Signed by: Jeremy Henningsen, Compliance Officer

Dated: 1/15/2020

Name of Firm: Western Asset Management Company, LLC

*INVESCO Core Real Estate – December 31, 2019*

*Compliance Certification Statement*

*San Mateo County*

*Employees' Retirement Association*

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of SamCERA's investment managers on a semi-annual basis. These statements must be e-mailed to SamCERA's office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

**General Compliance Issues**

1. Are SamCERA's market benchmarks in the respective asset class areas acceptable to the firm?  
 Yes /  No: Please explain.
2. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?  
 Yes: Please explain. /  No
3. Have there been any changes in the firm's investment approach?  
 Yes: Please explain. /  No
4. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 Yes: Please explain. /  No - **We note that this response solely pertains to Invesco Core Real Estate – U.S.A., L.P. and those managing such entity**
5. Has the firm's insurance coverage been sustained?  
 Yes /  No: Please explain.

**Investment Management Fees**

1. Is SamCERA's investment management fee schedule higher than those charged other institutional clients who hold an account investment substantially similar to ours?  
 Yes: Please explain. /  No

**Investment Manager Guidelines**

1. Are portfolio holdings well-diversified?  Yes /  No: Please explain.
  2. Has the firm used leverage?  Yes: Please explain. /  No - **The maximum leverage for the Fund is 35%. As of September 30, 2019, the Fund's leverage was 24.8%.**
-

## Cash & Equivalents

1. Does the firm directly invest in short term fixed income investments?  Yes /  No
  - a) If Yes, do the investments comply with the policies?  Yes /  No: Please explain.

## Real Estate Portfolios

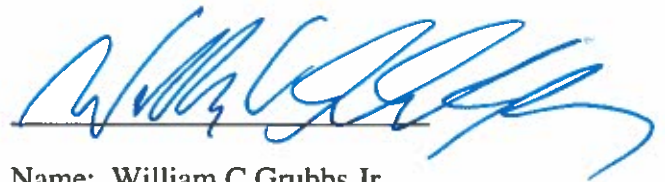
1. Is the portfolio diversified as to region, property type, industry, and economic base?  
 Yes /  No
  - a) If No, do the investments comply with the policies?
2. Is the portfolio achieving a total time-weighted rate of return, net of fees, which equals or exceeds, the NFI ODCE index?  Yes /  No: Please explain. **As of September 30, 2019, the Fund's since inception net return of 7.43% exceeds the NFI ODCE index of 6.88%.**
3. Does the core fund concentration exceed 40% (by value) in any single property type or 35% in any single metropolitan statistical area, determined as of the date of the acquisition of the property?  Yes: Please explain. /  No
4. Is the portfolio leverage within the 35% of overall loan to value guideline?  
 Yes /  No: Please explain.
5. What proportion of total AUM do the assets in this product make-up of the firm? – **17.1% (as of September 30, 2019)** What size does SamCERA's account comprise of total product assets? – **2.60% (as of September 30, 2019)**

### General Partner:

IRI Core I, L.P.

By: IRI Core-GP, LLC, its general partner

By: Invesco Realty, Inc., its sole member



Name: \_William C Grubbs Jr  
Title: \_Vice President

## ***Cushing Asset Management MLP Alpha Total Return – December 31, 2019***

### ***Compliance Certification Statement***

***San Mateo County***

***Employees' Retirement Association***

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

### **General Compliance Issues**

1. Has the firm acted as a fiduciary and invested its assets for the sole benefit of *SamCERA*?  
 **Yes** /  **No: Please explain.**
2. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?  
 **Yes: Please explain.** /  **No**
3. Have there been any changes in the firm's investment approach?  
 **Yes: Please explain.** /  **No**
4. Do *SamCERA's* guidelines require your firm to manage the portfolio significantly differently than other similar portfolios?  
 **Yes: Please explain.** /  **No**
5. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 **Yes: Please explain.** /  **No**
6. Have proxy ballots been voted in accordance with the best economic interest of *SamCERA* and in a manner consistent with the Board's proxy policies?  
 **Yes** /  **No: Please explain.**
7. Have there been any investment guideline breaches during the prior 6 months?  
 **Yes: Please explain.** /  **No**
8. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**

### **Investment Management Fees**

1. Is *SamCERA's* investment management fee schedule higher than those charged other institutional clients who hold an account investment substantially similar to ours?  
 **Yes: Please explain.** /  **No**

### **Derivative Investments**

1. Are derivatives used in the management of the investment strategy?  
 **Yes: Please ANSWER the remaining questions in this section.**  
 **No: Please SKIP the remaining questions in this section.**
2. Are derivative investments in compliance with *SamCERA's* investment policies?  
 **Yes** /  **No: Please explain.**
3. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 **Yes** /  **No: Please explain.**
4. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 **Yes** /  **No**

**If Yes:**

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**  
b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  **Yes**/  **No: Please explain.**
5. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 **Yes** /  **No**

**If Yes:**

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**  
b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 **Yes**/  **No: Please explain.**
6. Is individual counter-party exposure well diversified?  **Yes**/  **No: Please explain.**  
a) What is the largest exposure to a single counter-party within the portfolio?  
b) Please specify the name of the counter-party and the amount of exposure.  
c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months?
7. Are the investment purposes for a derivative investment consistent with the four purposes stated *SamCERA's* policies?  **Yes** /  **No: Please explain.**

- a) Has the firm developed any new purposes for derivative investments?  **Yes: Please explain.** /  **No**
8. List all limited allocation derivative investments individually and the percentage of the portfolio's assets represented by each investment.
- a) State if the firm has evaluated the exposure to market value losses that can occur from each of these derivatives.  **Yes** /  **No: Please explain.**
- b) State if these derivative investments in total represent more than 5% of the portfolio's market value. If more than 5%, please explain.
9. State if any restricted derivative investments are held in *SamCERA's* portfolios.  
 **Yes** /  **No**
- a) If any are held, state the percentage of the portfolio's assets held in such derivatives and why the firm is not in compliance with the investment policies.
10. For derivative investments with allocation limits, has the firm tested and measured these investments' sensitivities to changes in key risk factors?  **Yes** /  **No: Please explain.**
11. Have all derivative investments been made in a manner consistent with the derivative investment process specified in the policy statement?  **Yes** /  **No: Please explain.**
12. Specify the security pricing sources used when developing portfolio market value exposures for limited allocation derivatives.
13. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.
14. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  **Yes: Please explain.** /  **No**

### **Investment Manager Guidelines**

1. Has the firm engaged in short selling, use of leverage or margin and/or investments in commodities?  **Yes: Please explain.** /  **No**

### **Cash & Equivalents**

1. Does the firm directly invest in short term fixed income investments?  **Yes** /  **No**
- a) If **Yes**, do the investments comply with the policies?  **Yes** /  **No: Please explain.**



## Domestic Equity Portfolios

1. Specify the percentage of the portfolio held in each of the following types of securities.

<i>Foreign Ordinary Shares*</i>	<i>3.03%</i>
<i>ADR's</i>	<i>0.00%</i>
<i>Master Limited Partnership**</i>	<i>96.56%</i>
<i>Other (please specify)</i>	
<i>Cash &amp; Equivalents (Domestic)</i>	<i>0.41%</i>

*\*The portfolio owns the NYSE listed shares of Pembina Pipeline Corporation (NYSE: PBA). Shares are also listed on the Toronto Stock Exchange.*

*\*\*Includes midstream companies and their affiliates organized either as qualified publicly traded partnerships (MLPs) or as traditional c-corporations for tax purposes.*

2. Specify the large, mid and small capitalization exposure of the portfolios.

<i>Large-Cap</i>	<i>41.69%</i>
<i>Mid-Cap</i>	<i>40.21%</i>
<i>Small-Cap</i>	<i>17.69%</i>

3. What percentage of the portfolio is held in Rule 144A securities?

0%

4. What is the largest percentage of the portfolio represented by a single security? Please specify the security and percentage amount. If any securities were above 7% at the time of purchase, please list and explain why.

Enterprise Product Partners (NYSE: EPD): 6.84%

5. What is the largest percentage of the portfolio represented by a single issuer? Please specify the security and percentage amount. If any exposure to a single issuer was above 15% at time of purchase, please list and explain why.

Enterprise Product Partners (NYSE: EPD): 6.84%

6. What proportion of total AUM do the assets in this product make-up of the firm? What size does SamCERA's account comprise of total product assets?

Product assets as a % of firm AUM: 10.80%

SAMCERA's account as % of total product assets: 36.45%

Signed by: Hannah Beethe

Dated: January 14, 2020

Name of Firm: Cushing Asset Management, LP

***State Street Global Advisors Custom Real Asset Account – December 31, 2019***

***Compliance Certification Statement***

***San Mateo County***

***Employees' Retirement Association***

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

**General Compliance Issues**

1. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?

**Yes: Please explain.** /  **No**

*Please see attached Q3 and Q4 Organizational Changes Memos*

2. Have there been any changes in the firm's investment approach?

**Yes: Please explain.** /  **No**

3. Have there have been any industry or regulatory disciplinary actions taken against the firm?

**Yes: Please explain.** /  **No**

*Please see attached SSGA Regulatory and Litigation Memo. As with any similarly regulated financial institution, State Street Global Advisors is likely to be responding to multiple inquiries, both formal and informal, from various regulators at any given time. In the normal course, various regulators also conduct periodic reviews, exams and audits of State Street Global Advisors. Our policy is that such communications are confidential.*

4. Have there been any investment guideline breaches during the prior 6 months?

**Yes: Please explain.** /  **No**

5. Have proxy ballots been voted in accordance with the best economic interest of *SamCERA*?

**Yes** /  **No: Please explain.**

*Members of the Stewardship team evaluate the proxy solicitation to determine how to vote based on facts and circumstances, and consistent with SSGA's Proxy Voting Guidelines, that seeks to maximize the value of our client accounts.*

6. Has the firm's insurance coverage been sustained?

**Yes** /  **No: Please explain.**

**Investment Management Fees**

1. Is *SamCERA's* investment management fee schedule higher than those charged other institutional clients who hold an account investment substantially similar to ours?  
 **Yes: Please explain.** /  **No**

## Derivative Investments

1. Are derivatives used in the management of the investment strategy?  
 **Yes: Please ANSWER the remaining questions in this section.**  
 **No: Please SKIP the remaining questions in this section.**
2. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 **Yes** /  **No: Please explain.**
3. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 **Yes** /  **No**

### If Yes:

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**  
b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  **Yes**/  **No: Please explain.**  
*Firms are registered by the applicable regulatory authorities. Counterparties are banks as opposed to broker dealers. Net Capital is a broker dealer related term.*

4. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 **Yes** /  **No**

### If Yes:

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**  
b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 **Yes**/  **No: Please explain.**

5. Is individual counter-party exposure well diversified?  **Yes**/  **No: Please explain.**
- a) What is the largest exposure to a single counter-party within the portfolio?  
*approximately 21.8% as of 12/31*
- b) Please specify the name of the counter-party and the amount of exposure.  
*Scotiabank, approximately \$73 million*
- c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months?  
*No*

6. Specify the security pricing sources used when developing portfolio market value exposures for non-exchange traded derivative positions.

*The swap positions are based on a commodity index (Bloomberg Commodity Roll Select TR Index). The Index levels are quoted on Bloomberg*

7. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.

*The swap positions are based on a commodity index (Bloomberg Commodity Roll Select TR Index). The Index is comprised of a diversified basket of liquid (listed) commodity futures contracts. Please see attached Commodity Index SDD.*

8. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  **Yes: Please explain.** /  **No**

### **Real Asset Portfolio**

1. Specify the percentage of the portfolio held in each of the following types of securities.

<i>Foreign Ordinary Shares</i>	<i>0.11%</i>
<i>ADR's</i>	<i>2.76%</i>
<i>Common Stock</i>	<i>60.45%</i>
<i>MIP Limited Partnership</i>	<i>0.00%</i>
<i>Derivatives: Futures/ Options</i>	<i>33.25%</i>
<i>Cash &amp; Equivalents (Domestic)</i>	<i>0.09%</i>
<i>Cash &amp; Equivalents (Foreign)</i>	<i>0.45%</i>
<i>Other (please specify)</i>	<i>2.89%</i>

2. Specify the large, mid and small capitalization exposure of the portfolios.  
S&P Global LargeMidCap Natural Resources Index NL Fund (ZVB5)

<i>Large-Cap</i>	<i>73.56%</i>
<i>Mid-Cap</i>	<i>23.10%</i>
<i>Small-Cap</i>	<i>3.34%</i>

S&P Global Infrastructure Index NL CTF (ZVPY)

<i>Large-Cap</i>	<i>69.51%</i>
<i>Mid-Cap</i>	<i>26.40%</i>
<i>Small-Cap</i>	<i>4.09%</i>

Bloomberg Roll Select Commodity Indx SM NL FD (ZVME)

<i>Large-Cap</i>	<i>N/A-Swaps%</i>
<i>Mid-Cap</i>	<i>N/A-Swaps %</i>
<i>Small-Cap</i>	<i>N/A-Swaps %</i>

3. What percentage of the portfolio is held in Rule 144A securities?  
*CGN Power Co Ltd – 0.04%*  
*Aena SME SA – 1.67%*  
*Enav SpA – 0.18%*
4. What is the largest percentage of the portfolio represented by a single security? Please specify the security and percentage amount. If any securities were above 5% at the time of purchase, please list and explain why.  
*Enbridge, Inc. (2466149) – 1.76%*
5. What is the largest percentage of the portfolio represented by a single issuer? Please specify the security and percentage amount. If any exposure to a single issuer was above 15% at time of purchase, please list and explain why.  
*Enbridge, Inc. (2466149) – 1.76%*
6. What proportion of total AUM do the assets in this product make-up of the firm? What size does SamCERA's account comprise of total product assets?

*Part I*

*Real Asset Strategy AUM (12/31/2019) – 5,413,658,409 (0.17%)*

*Underlying Funds*

*S&P Global LargeMidCap Natural Resources Index NL Fund (ZVB5) – 1,102,736,542 (0.04%)*

*Bloomberg Roll Select Commodity Indx SM NL FD (ZVME) – 334,095,846 (0.01%)*

*S&P Global Infrastructure Index NL CTF (ZVPY) – 457,844,112 (0.01%)*

*SSGA Firm AUM (12/31/2019) - 3,116,421,441,397*

*Part II*

*SMCERA AUM (12/31/19) - \$ 259,144,313.36 (4.78%)*

*Real Asset Strategy AUM (12/31/2019) - \$ 5,413,658,409*



Signed by: Melissa Lo, Officer, SSGA Global Investment Oversight

Dated: January 17, 2020

Name of Firm: State Street Global Advisors

***The Parametric Portfolio Associates LLC Cash & Currency Hedge Overlay –  
December 31, 2019***

***Compliance Certification Statement  
San Mateo County  
Employees' Retirement Association***

In accordance with SamCERA's Investment Policy Statement, the following compliance worksheet will be completed by each of *SamCERA's* investment managers on a semi-annual basis. These statements must be e-mailed to *SamCERA's* office ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020.**

**General Compliance Issues**

1. Have there been any significant portfolio developments, major changes in firm ownership, organizational structure and personnel?  
 **Yes: Please explain.** /  **No**
2. Have there been any changes in the firm's investment approach?  
 **Yes: Please explain.** /  **No**
3. Have there have been any industry or regulatory disciplinary actions taken against the firm?  
 **Yes: Please explain.** /  **No**
4. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**
5. Have there been any investment guideline breaches during the past 6 months?  
 **Yes: Please explain.** /  **No**

**Investment Management Fees**

1. Is *SamCERA's* investment management fee schedule less favorable than those charged other institutional clients who hold an account investment substantially similar to ours?  
 **Yes: Please explain.** /  **No**

**Derivative Investments**

1. Are derivatives used in the management of the investment strategy?  
 **Yes: Please ANSWER the remaining questions in this section.**  
 **No: Please SKIP the remaining questions in this section.**

2. Are derivative investments in compliance with *SamCERA's* investment policies?  
 **Yes** /  **No: Please explain.**
3. If the firm entered into a non-exchange traded derivative, was the general nature and associated risks of the counter-party fully evaluated?  
 **Yes** /  **No: Please explain. NOT APPLICABLE**
4. For non-exchange traded derivative transactions, were the counter-parties broker/dealers?  
 **Yes** /  **No NOT APPLICABLE**

If **Yes**:

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**
- b) Are the counter-parties registered with the SEC and do they have net capital to protect against potential adverse market circumstances?  **Yes**/  **No: Please explain.**
5. For non-exchange traded derivative transactions, were the counter-parties financial institutions (banks)?  
 **Yes** /  **No NOT APPLICABLE**

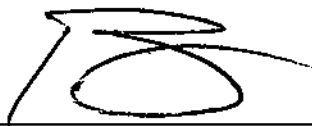
If **Yes**:

- a) Do the counter-parties have investment grade debt?  **Yes**/  **No**
- b) Do the counter-parties have total assets in excess of \$1 billion, and significant net capital to protect against potential adverse market circumstances?  
 **Yes**/  **No: Please explain.**
6. Is individual counter-party exposure well diversified?  **Yes**/  **No: Please explain.**
- a) What is the largest exposure to a single counter-party within the portfolio?
- b) Please specify the name of the counter-party and the amount of exposure.
- c) Have there been any changes to the investment manager's list of approved counter-parties over the past six months?
7. Are the investment purposes for a derivative investment consistent with the four purposes stated *SamCERA's* policies?  **Yes** /  **No: Please explain.**
- a) Has the firm developed any new purposes for derivative investments?  **Yes: Please explain.** /  **No**
8. List all limited allocation derivative investments individually and the percentage of the portfolio's assets represented by each investment. **NOT APPLICABLE**
- a) State if the firm has evaluated the exposure to market value losses that can occur from each of these derivatives.  **Yes** /  **No: Please explain.**
- b) State if these derivative investments in total represent more than 5% of the portfolio's market value. If more than 5%, please explain.



9. State if any restricted derivative investments are held in *SamCERA's* portfolios.  
 Yes /  No  
a) If any are held, state the percentage of the portfolio's assets held in such derivatives and why the firm is not in compliance with the investment policies.
10. For derivative investments with allocation limits, has the firm tested and measured these investments' sensitivities to changes in key risk factors?  Yes /  No: **Please explain.**
11. Have all derivative investments been made in a manner consistent with the derivative investment process specified in the policy statement?  Yes /  No: **Please explain.**
12. Specify the security pricing sources used when developing portfolio market value exposures for limited allocation derivatives.  
**There are no limited allocation derivatives held within portfolio.**
13. Provide a statement regarding the liquidity of the derivative investments. Provide a general statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.  
**Please see attached Exhibit A for #13.**
14. State if the legal and regulatory risk associated with portfolio derivative investments have changed over the past six months.  Yes: **Please explain.** /  No

Signed by:  
Name/Title:

  
\_\_\_\_\_  
Benjamin Hammes, Deputy Chief  
Compliance Officer Minneapolis and Westport

Dated: January 3, 2020  
Name of Firm: Parametric Portfolio Associates LLC

**EXHIBIT A**  
**RESPONSE FOR QUESTION #13**

Parametric seeks to only hold investment instruments that would be deemed liquid. Futures provide a transparent and relatively low risk investment exposure management vehicle to use in managing overlay strategies. There are currently numerous liquid global equity, fixed income, commodity, and currency exchange-traded index futures available for use in an overlay program. Before specific futures contracts to be included in a client's overlay portfolio are approved, the instrument is evaluated and screened to ensure adequate liquidity, focusing on open interest, average daily trading volume, bid/ask spread, and liquidity of the underlying index. As Parametric manages approximately over 180 overlay programs and has relationships with numerous counterparties trading in global markets, we have developed deep knowledge of liquidity levels of markets throughout the world. The primary gauges of liquidity are the average daily volume (ADV) and open interest metrics. Parametric carefully monitors liquidity and estimated costs internally and through external (i.e. broker) sources. As a general rule, the greater the amount ADV and open interest, the greater the liquidity and lower the transaction costs.

Parametric continuously monitors these metrics and will only use contracts which have sufficient liquidity to support the required positions. Parametric will also tailor the instruments employed in the overlay program based upon each client's unique needs and objectives.

Parametric's compliance program is designed to reasonably address all known conflicts of interests and other additional specific risks that have been identified through an annual risk assessment or a change in business or regulatory matters. These include legal and regulatory risks. Adherence to all legal and regulatory matters is considered to be an integral part of each employee's primary job functions. Every employee is required to share in maintaining and enforcing compliance with all applicable internal and external rules.

*Verus Advisory, Inc. – December 31, 2019*

*Compliance Certification Statement  
San Mateo County  
Employees' Retirement Association*


Please complete the following compliance certification statement and e-mail to *SamCERA* ([Investments@samcera.org](mailto:Investments@samcera.org)) by **Wednesday, January 15, 2020**.

**General Compliance Issues**

1. Have there been any significant changes in firm ownership, organizational structure and firm leadership team personnel?  
 **Yes: Please explain.** /  **No**
2. Have there been any changes to the general consulting, private markets consulting & research, public markets research, or risk advisory personnel?  
 **Yes: Please explain.** /  **No**
3. Have there have been any industry or regulatory non-routine investigations, examinations, complaints, disciplinary actions or other proceeding against the firm or any investment professionals employed by the firm?  **Yes: Please explain.** /  **No**
4. Has the firm maintained its status as a Registered Investment Advisory under the Investment Advisors Act of 1940?  
 **Yes** /  **No: Please explain.**
5. Has the firm's insurance coverage been sustained?  
 **Yes** /  **No: Please explain.**

**Fees**

1. Is *SamCERA*'s fee structure less favorable than other clients with the same level of service and access to investment opportunities?  
 **Yes: Please explain.** /  **No**

Signed by:   
Warren Spencer, Chief Compliance Officer

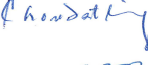


Dated: 21 January 2020

**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**  
**Board of Retirement**

February 25, 2020

Agenda Item 4.12

**TO:** Board of Retirement

**FROM:** Tat-Ling Chow, Finance Officer   
Chezelle Milan, Senior Accountant   
Lilibeth Dames, Investment Analyst 

**SUBJECT:** Preliminary Semi-Annual Financial Report for the Period Ended December 31, 2019

**Recommendation**

Accept the Preliminary Semi-Annual Financial Report for the Period Ended December 31, 2019.

**Background**

The preliminary semi-annual financial report provides financial information on SamCERA's financial position as of December 31, 2019, and its operating results for the period ended December 31, 2019.

The *Statement of Fiduciary Net Position* (balance sheet) provides a snapshot of the account balance as of December 31, 2019. This Statement indicates the amount of fiduciary net position (total assets minus total liabilities) available to pay future pension benefits. Over time, increases and decreases in net position may serve as a useful indicator of whether the financial health of SamCERA is improving or declining. Other factors, such as market conditions, should also be considered in measuring SamCERA's overall financial health.

The *Statement of Changes in Fiduciary Net Position* (income statement) reports additions to, and deductions from, SamCERA's fiduciary net position for the period ended December 31, 2019. "Additions" consist of contributions from plan sponsors and members, investment income net of investment expenses, securities lending income net of related expenses, and other additions. "Deductions" include retiree benefit payments, member refunds, administrative and other expenses.

**Summary**

SamCERA's financial position experienced a modest increase over the six-months ended December 31, 2019. Its net position increased \$227 million, or 5%, to approximately \$4.95 billion, mainly from market appreciation on investments fueled by strong performance in the public equity markets.

## Statement of Fiduciary Net Position

The table below shows SamCERA's preliminary Statement of Fiduciary Net Position as of December 31, 2019. Its assets and liabilities as of December 31, 2019, were compared to those on July 1, 2019, to reflect changes over the first six-months of the fiscal year. Significant changes are discussed below.

### Statement of Fiduciary Net Position

	Preliminary	Actual	Increase (Decrease)	
	12/31/19	7/1/19	Amount	Percentage
<b>ASSETS:</b>				
Cash and Cash Equivalents	\$ 98,992,837	\$ 33,102,412	\$ 65,890,425	199%
Cash Management Overlay	43,285,673	48,011,505	(4,725,832)	-10%
Securities Lending Cash Collateral	1,945,151	403,093	1,542,058	383%
Subtotal - Cash and Other Cash Related Activities	<u>144,223,661</u>	<u>81,517,010</u>	<u>62,706,651</u>	77%
Receivables				
Contributions	-	10,300,002	(10,300,002)	-100%
Due from Broker for Investments Sold	9,600,827	6,640,025	2,960,802	45%
Investment Income	6,176,846	6,292,641	(115,795)	-2%
Securities Lending Income	2,234	12,614	(10,380)	-82%
Other Receivable	94,811	95,566	(755)	-1%
Subtotal - Receivables	<u>15,874,718</u>	<u>23,340,848</u>	<u>(7,466,130)</u>	-32%
Prepaid Expense	7,669	11,669	(4,000)	-34%
Investments at Fair Value				
Fixed Income	1,037,956,628	999,477,347	38,479,281	4%
Equity	2,001,064,995	1,847,846,613	153,218,382	8%
Alternatives	550,331,186	579,774,460	(29,443,274)	-5%
Risk Parity	407,983,730	389,039,081	18,944,649	5%
Inflation Hedge	796,440,538	809,138,278	(12,697,740)	-2%
Subtotal - Investment at Fair Value	<u>4,793,777,077</u>	<u>4,625,275,779</u>	<u>168,501,298</u>	4%
Fixed Assets	6,044,238	5,979,197	65,041	1%
<b>TOTAL ASSETS</b>	<u><b>4,959,927,363</b></u>	<u><b>4,736,124,503</b></u>	<u><b>223,802,860</b></u>	<b>5%</b>
<b>LIABILITIES:</b>				
Payable - Investment Management Fees	2,553,804	2,213,009	340,795	15%
Due to Broker for Investments Purchased	4,486,953	9,060,929	(4,573,976)	-50%
Securities Lending Cash Collateral - Due to Borrowers	1,947,425	405,367	1,542,058	380%
Other	661,064	1,335,263	(674,199)	-50%
<b>TOTAL LIABILITIES</b>	<u><b>9,649,246</b></u>	<u><b>13,014,568</b></u>	<u><b>(3,365,322)</b></u>	-26%
<b>NET POSITION RESTRICTED FOR PENSIONS</b>	<u><b>\$ 4,950,278,117</b></u>	<u><b>\$ 4,723,109,935</b></u>	<u><b>\$ 227,168,182</b></u>	<b>5%</b>

**Assets.** SamCERA's total assets increased by \$224 million, or 5%, compared to six months ago. Significant changes of specific items include the following:

- Cash and Cash Equivalents increased by \$66 million. As part of the efforts to rebalance the investment portfolio, cash was maintained at a relatively high level at the end of December 2019 in anticipation of purchasing new investments in January 2020.
- Cash Management Overlay decreased by nearly \$5 million. The Board adopted a policy to maintain the cash position, without overlay, at one percent of the portfolio. To implement this policy, the balance in the cash overlay was adjusted downward.

- Securities Lending Cash Collateral increased by \$1.5 million. With expanded securities lending activity under the securities lending program, SamCERA received more cash collateral for securities on loan.
- Receivables overall decreased by about \$7.5 million. Most receivables from the prior year-end were fully paid in July 2019. The receivables at December 31, 2019, were mostly from unsettled investment transactions.
- Investments overall increased by \$169 million. The increase was twofold, with \$40 million from new investments and the remaining balance from market appreciation primarily due to improved performance in the equity funds.

**Liabilities.** SamCERA's total liabilities were reduced by \$3.4 million compared to six-months ago. Expanded securities lending activity caused a \$1.5 million increase in cash collateral. SamCERA is obligated to return the cash received when the agreed upon criteria are met. The increase was completely offset by the net decline in other liabilities, which arose due to the timing difference between when the liabilities were incurred and when they were settled.

#### **Statement of Changes in Fiduciary Net Position**

SamCERA's preliminary Statement of Changes in Fiduciary Net Position (income statement) for the six-months ended December 31, 2019, is presented on page 4. Additions to and deductions from the Retirement Fund for the first half year were compared to those of the same period last year. Significant changes are discussed below.

**Additions.** A total of \$350 million was added to the Retirement Fund during the first half year, substantially higher than the same period last year. Significant changes are discussed below.

- Employer Contributions (Regular) were \$83 million lower than the same period last year. County prepayments are usually received in July (1<sup>st</sup> installment) and in January (2<sup>nd</sup> installment). Last fiscal year the County remitted its 2<sup>nd</sup> installment of \$80 million in December 2018, a month earlier than expected. This fiscal year the 2<sup>nd</sup> installment was received in January 2020 instead and will be reflected in the Annual Financial Report for the Period Ending June 30, 2020.
- Investment Income overall was \$447 million higher than the same period last year. The return on investments through December 2019 was 5.5% compared to a negative 4.4% for the same period last year. The improvement, for the most part, was realized through strong performance in public equity.

**Deductions.** A total of \$123 million was taken out of the Retirement Fund during the first half year, which was 7% higher than the same period last year. The increase was primarily due to the following:

- The increase was mostly in benefit payments. The number of retirees increased from 5,149 in December 2018 to 5,318 in December 2019, and the final average compensations for some of these retirees were relatively higher than in the past.
- Expenses for Information Technology decreased by about \$0.6 million with the completion of the scheduled upgrade and specific enhancements to the pension administration system last fiscal year.

**Statement of Changes in Fiduciary Net Position**

	<u>Preliminary</u>	<u>Actual</u>	<u>Increase (Decrease)</u>	
	<u>7/1/19 - 12/31/19</u>	<u>7/1/18 - 12/31/18</u>	<u>Amount</u>	<u>Percentage</u>
<b>ADDITIONS:</b>				
Contributions				
Employee Contribution	\$ 31,226,186	\$ 30,212,755	\$ 1,013,431	3%
Employer Contributions - Regular	76,447,280	159,928,950	(83,481,670)	-52%
Employer Contributions - COLA	20,263,937	20,168,479	95,458	0%
Subtotal - Contributions	<u>127,937,403</u>	<u>210,310,184</u>	<u>(82,372,781)</u>	-39%
Investment Income				
Interest and Dividends	39,804,208	27,307,060	12,497,148	46%
Net Appreciation (Depreciation) in fair value of investments	204,127,483	(233,285,153)	437,412,636	188%
Less: Investment Expense	(21,810,339)	(18,416,472)	(3,393,867)	18%
Subtotal - Investment Income	<u>222,121,352</u>	<u>(224,394,565)</u>	<u>446,515,917</u>	199%
Securities Lending Income				
Earnings	19,604	36,643	(17,039)	-47%
Less: Securities Lending Expenses	(8,100)	(14,959)	6,859	46%
Subtotal - Securities Lending Income	<u>11,504</u>	<u>21,684</u>	<u>(10,180)</u>	-47%
Other Additions	13,893	25,139	(11,246)	-45%
<b>Total Additions</b>	<b><u>350,084,152</u></b>	<b><u>(14,037,558)</u></b>	<b><u>364,121,710</u></b>	2594%
<b>DEDUCTIONS:</b>				
Benefits				
Service Retirement Allowance	103,752,689	96,076,189	7,676,500	8%
Disability Retirement Allowance	13,828,973	12,302,577	1,526,396	12%
Survivor, Death and Other Benefits	464,442	674,352	(209,910)	-31%
Subtotal - Benefits	<u>118,046,104</u>	<u>109,053,118</u>	<u>8,992,986</u>	8%
Refund of Member Contributions	1,485,457	1,626,530	(141,073)	-9%
Administrative Expense	2,966,340	2,847,916	118,424	4%
Information Technology Expenses	344,667	950,438	(605,771)	-64%
Other Expense	73,402	-	73,402	not applicable
<b>Total Deductions</b>	<b><u>122,915,970</u></b>	<b><u>114,478,002</u></b>	<b><u>8,437,968</u></b>	7%
<b>Net Income</b>	<b><u>\$ 227,168,182</u></b>	<b><u>\$ (128,515,560)</u></b>	<b><u>\$ 355,683,742</u></b>	277%

**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**  
**Board of Retirement**

February 25, 2020

Agenda Item 4.13

**TO:** Board of Retirement

**FROM:** Tat-Ling Chow, Finance Officer *T. Chow*  
Tariq Ali, Chief Information Officer *T. Ali*  
Chezelle Milan, Senior Accountant *C. Milan*  
Lilibeth Dames, Investment Analyst *Lilibeth Dames*

**SUBJECT:** Preliminary Semi-Annual Budget-to-Actual Report for the Period Ended December 31, 2019

**Recommendation**

Accept the Preliminary Semi-Annual Budget-to-Actual Report for the Period Ended December 31, 2019.

**Background**

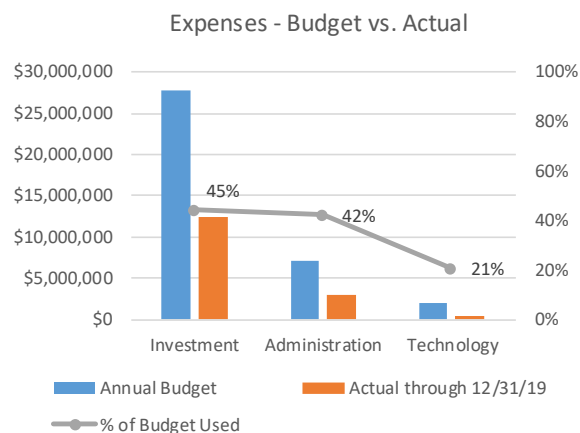
SamCERA's budget covers three different areas as follows:

1. Administrative Budget – covers personnel expenses (salaries and benefits) and administrative overhead (services and supplies), which cannot exceed the mandated limit of 0.21% of the accrued actuarial liability of the retirement fund (Government Code §31580.2(a)).
2. Technology Budget – covers expenses for computer software, computer hardware, and computer technology consulting services in support of these computer products and is not subject to the mandated limit of 0.21% discussed above (Government Code §31580.2(b)).
3. Professional Services Budget – covers costs for actuarial consulting services, custodial services, investment management, investment consulting services, and outside legal services for investment related matters (Government Code §31596.1).

**Discussion**

The mid-year budget and actual expense comparison indicated that SamCERA's actual spending during the first half of the fiscal year was well managed and controlled.





	Budget Through 6/30/2020	Actual Through 12/31/2019	Percentage of Budget Used
Investment	\$27,838,320	\$12,424,728	45%
Administration	7,016,017	2,966,340	42%
Technology	1,962,840	409,708	21%
<b>Total</b>	<b>\$36,817,177</b>	<b>\$15,800,776</b>	<b>43%</b>

**Professional Services Budget.** Actual professional service expenses were about \$12.4 million in total for the six-months ended December 31, 2019.

**Investment Management & Other Professional Services**

Service	Projected Fee Fiscal Year 19-20	Actual Fee Through 12/31/19	Actual Fee (bps)	Percentage of Projected Fee Used
Investment Management	\$ 26,878,320	\$ 11,907,839	49.2	44%
Other Professional Services	960,000	516,889	2.1	54%
<b>Total</b>	<b>\$ 27,838,320</b>	<b>\$ 12,424,728</b>	<b>50.2</b>	<b>45%</b>

- **Investment management fees** are either driven by contractual agreements or based on assets under management, the amount of capital committed, and/or investment performance. Below is a summary of budget and actual expenses comparison through December 31, 2019. The actual investment management fees were slightly below the mid-year projection for two major reasons: (1) overestimation of performance fees for certain hedge and private equity funds and (2) overestimation of management fees for equity funds.

**Investment Management Services**

Investment	Projected Fee Fiscal Year 19-20	Actual Fee Through 12/31/19	Actual Fee (bps)	Percentage of Projected Fee Used
Total Public Equity	\$ 5,209,089	\$ 2,043,404	20.4	39%
Total Fixed Income	4,526,646	2,915,996	56.2	64%
Total Risk Parity	1,436,836	750,605	36.8	52%
Total Alternative Assets	10,773,698	2,831,501	102.9	26%
Total Inflation Hedge	4,747,051	3,229,154	81.1	68%
Total Cash Overlay	185,000	137,179	N/A	74%
<b>Total</b>	<b>\$ 26,878,320</b>	<b>\$ 11,907,839</b>	<b>49.2</b>	<b>44%</b>

- **Other professional service charges** are primarily based on contractual agreements.

**Other Professional Services**

Contractor	Service	Projected Fee Fiscal Year 19-20	Actual Fee Through 12/31/19	Actual Fee (bps)	Percentage of Projected Fee Used
Milliman Inc.	Actuarial Consulting	\$ 100,000	\$ 91,903 *	0.4	92%
Verus Investments	Investment Consulting	510,000	244,986	1.0	48%
Northern Trust	Custodian	350,000	180,000	0.7	51%
	<b>Total</b>	<b>\$ 960,000</b>	<b>\$ 516,889</b>	<b>2.1</b>	<b>54%</b>

\* Most consulting fees were paid in the first half of the fiscal year upon the completion of the annual valuation in October 2019.

**Administrative Budget.** About 42% (or \$3 million) of the administrative budget were consumed during the first half of the fiscal year. The following table summarizes all administrative expenses with explanations as to why the actual results of certain items significantly differ from the projected outcomes.

	Budget Through 6/30/2020	Actual Through 12/31/2019	Percentage of Budget Used	Under Budget	Percentage of Budget Remaining
<b>Salaries and Benefits</b>					
Salaries	\$ 3,569,155	\$ 1,484,456	42%	\$ 2,084,699	58%
Benefits	1,702,351	729,158	43%	973,193	57%
<b>Total Salaries and Benefits</b>	<b>5,271,506</b>	<b>2,213,614</b>	<b>42%</b>	<b>3,057,892</b>	<b>58%</b>
<b>Services and Supplies</b>					
Board Expense	10,000	2,400	24%	7,600	76%
Insurance	80,000	43,636	55%	36,364	45%
Medical record and hearing service	75,000	17,240	23%	57,760	77%
Member Education	63,750	28,504	45%	35,246	55%
Education and Conference	148,320	40,270	27%	108,050	73%
Transportation and Lodging	117,350	20,679	18%	96,671	82%
Property and Equipment	33,000	9,062	27%	23,938	73%
General Office Supplies	34,000	12,810	38%	21,190	62%
Postage and Printing	28,000	13,572	48%	14,428	52%
Leased Facilities	583,728	289,368	50%	294,360	50%
County Services	393,363	221,637	56%	171,726	44%
Audit Services	58,000	38,832	67%	19,168	33%
Other Administration	120,000	14,716	12%	105,284	88%
<b>Total Services and Supplies</b>	<b>1,744,511</b>	<b>752,726</b>	<b>43%</b>	<b>991,785</b>	<b>57%</b>
<b>Total</b>	<b>\$ 7,016,017</b>	<b>\$ 2,966,340</b>	<b>42%</b>	<b>\$ 4,049,677</b>	<b>58%</b>

*Salaries and Benefits* – Actual expenses were modestly below the mid-year expectation. The two Retirement Support Specialist positions were filled in late-July and mid-August, resulting in a modest savings in salaries and benefits. In addition, the need for extra-help was lower than anticipated.

*Services and Supplies* – Actual expenses were moderately below mid-year expectation. Significant variances are explained in the following:

- Medical Record and Hearing Service expenses were markedly below estimation. The number of disability cases requiring independent medical evaluations, as well as formal hearings, did not reach the projected levels.
- “Education and Conference” and “Transportation and Lodging” expenses were substantially less than anticipated since Board members and Staff did not attend conferences as initially expected.
- Property and Equipment expenses are far below expectation. Requests for new office equipment were sparse. In addition, plans to replace outdated equipment are usually carried out in the second half of the fiscal year.
- General Office Supplies expenses were moderately below projection due to the actual demand being less than anticipated.
- The budget for audit services covered the final audit in the first half of the fiscal year and the interim audit in the second half. About two-thirds of this budget were used to defray expenses incurred for the final audit, which is always more costly than the interim audit.
- The budget for Other Administration was mostly for hiring a private counsel to handle disability cases, which turned out to be less than anticipated.

**Technology Budget.** Actual expenses were substantially below the mid-year expectation. The table below compares the actual and budgeted amounts with explanations for significant variances.

	<b>Budget Through 6/30/2020</b>	<b>Actual Through 12/31/2019</b>	<b>Percentage of Budget Used</b>	<b>Under Budget</b>	<b>Percentage of Budget Remaining</b>
Computer Equipment and Software	\$ 100,000	\$ 13,006	13%	\$ 86,994	87%
Software License Maintenance	1,307,340	301,639	23%	1,005,701	77%
Server - Infrastructure	100,000	69,667 *	70%	30,333	30%
Contract Services - IT Infrastructure	405,500	25,396	6%	380,104	94%
Technology Research and Development	50,000	-	0%	50,000	100%
<b>Total</b>	<b><u>\$ 1,962,840</u></b>	<b><u>\$ 409,708</u></b>	<b>21%</b>	<b><u>\$ 1,553,132</u></b>	<b>79%</b>

\* A server of \$65,041 was reclassified to and reported under fixed assets on the preliminary semi-annual financial report for the period ended December 31, 2019.

- Computer Equipment and Software – Requests for acquiring or replacing computer equipment and software fell short of expectations.
- Software License Maintenance – Maintenance fees for software licenses are due at different time intervals, and majority of these fees are payable in the second half of the fiscal year.
- Server – The demand for new servers was lower than anticipated. The expense reported was for a new server acquired as a backup system for the pension administration system, V3.

- Contract Services – The need for consulting services was less than estimated. The expenses reported were for an upgrade to the Jets financial report writer and an IT risk assessment audit.
- Technology Research and Development (R&D) – This budget item provided funding to capitalize on new technologies that may benefit SamCERA. Due to time constraints, staff has not explored any opportunities to date.

**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**  
**Board of Retirement**

February 25, 2020

Agenda Item 6.1

**TO:** Board of Retirement

**FROM:** Michael Coultrip, Chief Investment Officer *Michael R. Coultrip*

**SUBJECT:** Preliminary Monthly Portfolio Performance Report for the Period Ended  
January 31, 2020

**Recommendation**

Accept the preliminary performance report dated January 31, 2020.

**Background**

Due to accounting delays at Northern Trust, the January performance report will not be ready in time for the February Board mailing. The January performance report will be either emailed prior to the February Board meeting, or it will be distributed in the day-of folder.

**Discussion**

Equity markets ended the month flat-to-negative, as fears of the impact of the coronavirus on global growth outweighed earlier optimism regarding a trade agreement between the U.S. and China. The broad U.S. equity market (as measured by the Russell 3000 Index) was down 0.1% in January. International markets were negative on the month. Developed international equity (as measured by MSCI EAFE) was down 2.1%, while emerging markets were down 4.7%.

Economic data was positive in January. Manufacturing activity, the labor market, and consumer confidence all were stronger during the month. Core Inflation (as measured by CPI) was 2.3% in January on an annualized basis.

The general U.S. fixed income market was higher by 1.9% during the month, as interest rates were lower across the board. The 10-year U.S. Treasury yield decreased 42 basis points and ending at 1.50% by month-end.

**Attachment**

Verus Capital Market Update





**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

JANUARY 2020  
Capital Markets Update



# Market commentary

## U.S. ECONOMICS

- The Institute for Supply Management’s purchasing managers indices indicated stronger than expected activity in both the services and manufacturing sectors in January. The ISM Manufacturing PMI rose from 47.2 to 50.9 (exp. 48.5), marking its first month of expansion since July. The ISM Services PMI increased from 55.0 to 55.5.
- Economic indicators continued to signal strength in the labor market. In January, the unemployment rate ticked up 0.1% to 3.6% but remained near 50-year lows. At month-end, 61.2% of the total population was employed, the highest rate since November 2008.
- In a preliminary reading, U.S. gross domestic product expanded at an annualized quarterly rate of 2.1% in Q4 (exp. 2.0%), and 2.3% from the prior year. The U.S. consumer continued to drive growth, as consumption accounted for 57% of the quarterly GDP increase.

## U.S. EQUITIES

- The S&P 500 Price Index established new all-time highs of 3330 intra-month, but by month-end, delivered a 0.0% total return. The S&P 500 Equal-Weighted Index returned -1.8%, suggesting that after excluding the mega-cap tech stocks which have formed the market leadership, the broad U.S. equity experience was more negative than positive.
- With about half of the companies in the S&P 500 Index reporting fourth quarter results, revenue and earnings growth have exceeded expectations. Per FactSet, 69% of companies within the index have reported positive earnings-per-share surprise, and 65% have posted positive revenue surprise.
- Implied volatility on U.S. stocks picked up a bit from rather subdued levels. The VIX Index increased from 13.8 points to 18.8 points.

## U.S. FIXED INCOME

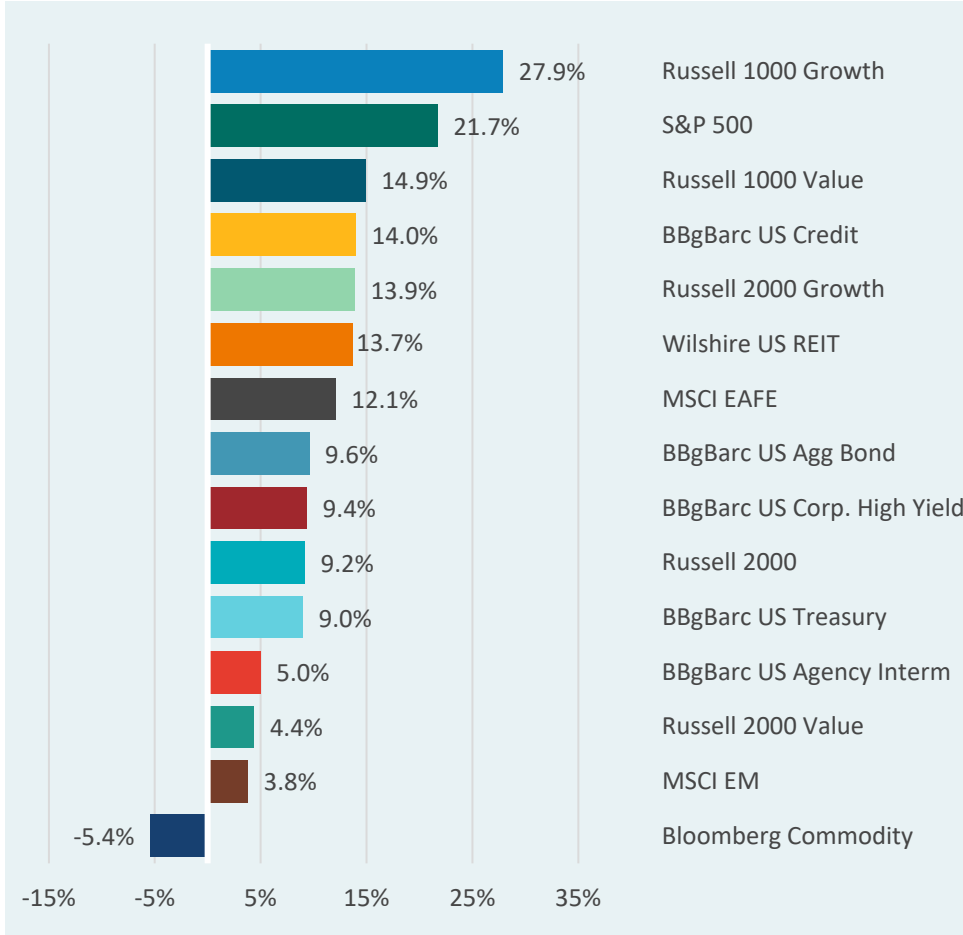
- The Federal Open Market Committee decided to hold the range for federal funds unchanged at 1.50 – 1.75% at its meeting in January. The FOMC tweaked the language in its post-meeting statement to reflect that policy is aimed at “inflation returning to the Committee’s symmetric 2% objective”, rather than simply maintaining inflation “near” the 2% level deemed healthy.
- The 10-year U.S. Treasury yield which rose 42 basis points over the final four months of the year reversed course in January and fell from 1.92% to 1.51%. The spread between the 10-year yield and the 3-month yield inverted briefly, and the yield curve flattened.
- High-yield credit spreads, which had been near cycle tights, expanded from 3.93% to 4.46%, and the Bloomberg Barclays Corporate High Yield Index delivered a total return of 0.0%.

## INTERNATIONAL MARKETS

- Emerging market equities (MSCI EM Index -4.7%) significantly underperformed U.S. (S&P 500 Index -0.0%) and international developed equities (MSCI EAFE Index -2.1%). Within the emerging market universe, the Latin American component (-5.6%) underperformed the Asian component (-4.5%) in U.S. dollar terms.
- Growth-sensitive commodities were hit hard by the spread of the coronavirus. The Energy (-14.8%) and Industrial Metals (-7.3%) components of the Bloomberg Commodity Index sold off on concerns over the virus’ impact on future levels of demand.
- The J.P. Morgan Global FX Volatility Index reached fresh all-time lows. Some analysts have attributed the calmer currency markets to concurrently easier global monetary policy from central banks.

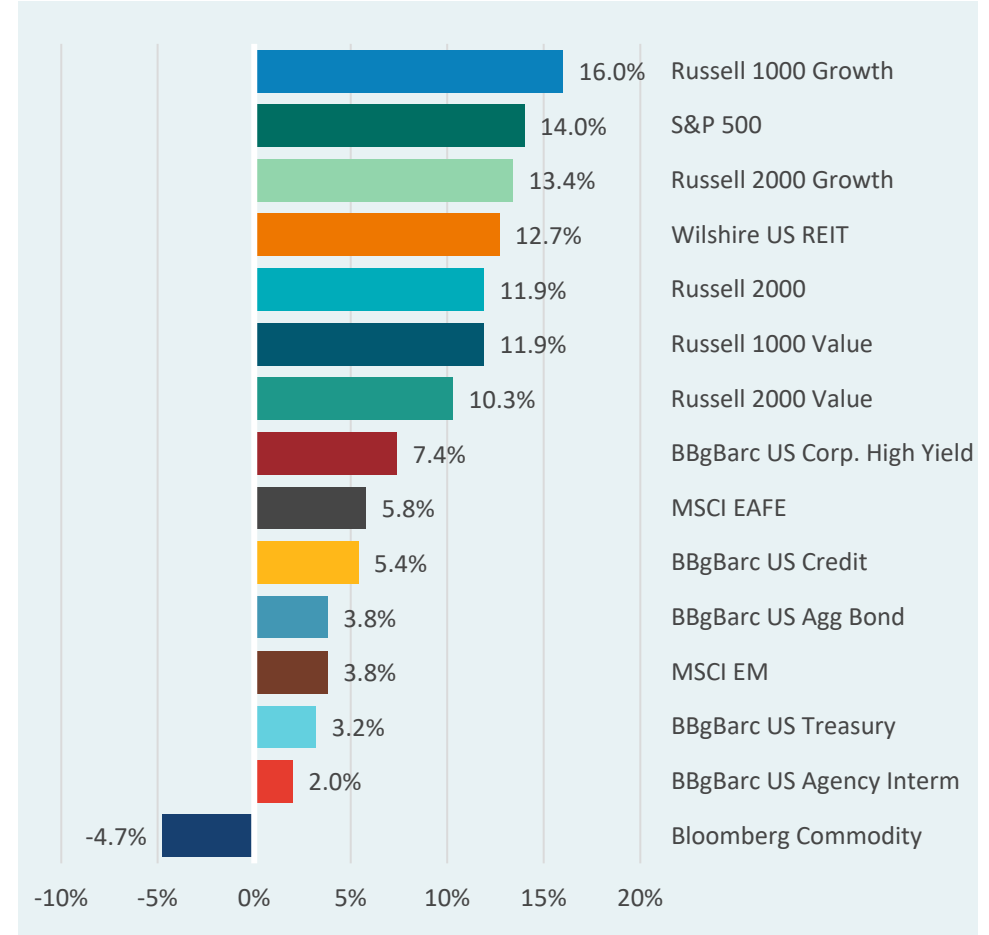
# Major asset class returns

ONE YEAR ENDING JANUARY



Source: Morningstar, as of 1/31/20

TEN YEARS ENDING JANUARY



Source: Morningstar, as of 1/31/20



# U.S. large cap equities

- The S&P 500 Index was little changed, falling just four basis points in the first month of the new year. The Energy (-11.1%) and Materials (-6.2%) sectors weighed on the performance of the overall index while the Utilities (+6.7%) and Information Technology (+4.0%) sectors provided support.
- The forward P/E ratio of the S&P 500 Index reached 18.8 intra-month, well above its 5- and 10- year averages of 16.8 and 15.2. By month-end, the forward P/E ratio fell to 18.1, which still ranked in the 97<sup>th</sup> percentile of month-end levels over the last ten years.
- The Utilities sector was the top-performing sector in January and gained 6.7%, perhaps reflecting a more defensive posture from investors as the S&P 500 Index remained near record highs. At a weight of 23%, the Information Technology sector (+4.0%) made the largest positive contribution to the overall index return.
- The Energy sector plunged 11.1% in January due in large part to concern that a further spread of the coronavirus could lead to a protracted slump in demand for growth-sensitive commodities.

**S&P 500 PRICE INDEX**



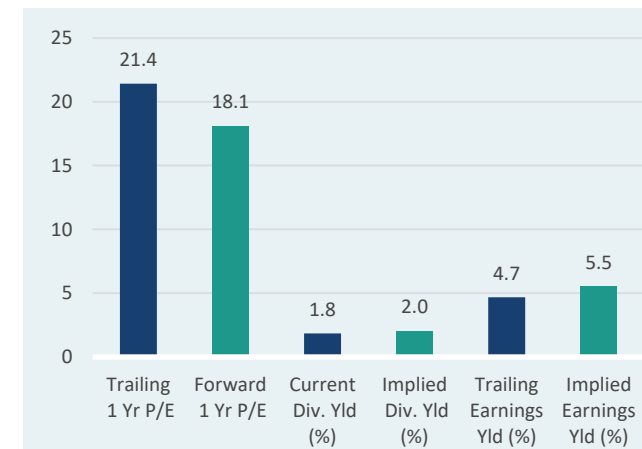
Source: Bloomberg, as of 1/31/20

**IMPLIED VOLATILITY (VIX INDEX)**



Source: CBOE, as of 1/31/20

**S&P 500 VALUATION SNAPSHOT**

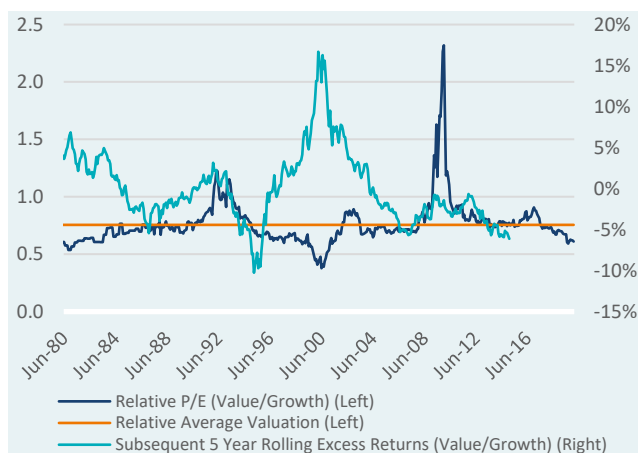


Source: Bloomberg, as of 1/31/20

# Domestic equity size and style

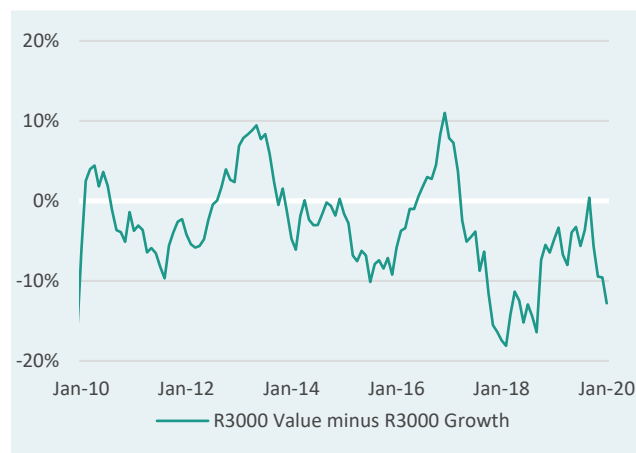
- In January, the Russell 3000 Growth Index pushed higher (+2.0%) while the Russell 3000 Value Index sold off (-2.4%). Over the last three years, the Russell 3000 Value Index has generated an annualized return of +7.0%, materially beneath the annualized return of the Russell 3000 Growth Index (+17.9%).
- Large-cap equities, represented by the Russell 1000 Index, rose slightly (+0.1%) while small-cap equities (Russell 2000 Index -3.2%) lagged. Within the large-cap universe, growth-orientated stocks outperformed value-orientated stocks by 4.4%.
- The MSCI USA Cyclical-Defensives Index delivered a total return of 3.2%, notching its highest monthly return since April of last year. Over the trailing year, cyclicals have outperformed defensives by 12.4% in total, and in eight out of twelve months.
- Some analysts have attributed the recent strength of the tech sector to its higher interest rate sensitivity. Tech stocks are priced more highly in part due to the expectation for higher growth over the longer-term. As interest rates fall, the discount rate applied to that expected growth falls, leading to steeper valuations.

**VALUE VS. GROWTH RELATIVE VALUATIONS**



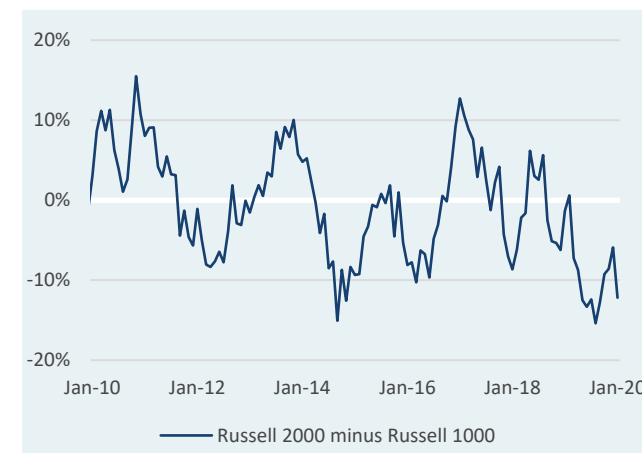
Source: Russell, Bloomberg, as of 1/31/20

**VALUE VS. GROWTH 1-YR ROLLING RELATIVE PERFORMANCE**



Source: FTSE, Bloomberg, as of 1/31/20

**SMALL VS. LARGE 1-YR ROLLING RELATIVE PERFORMANCE**

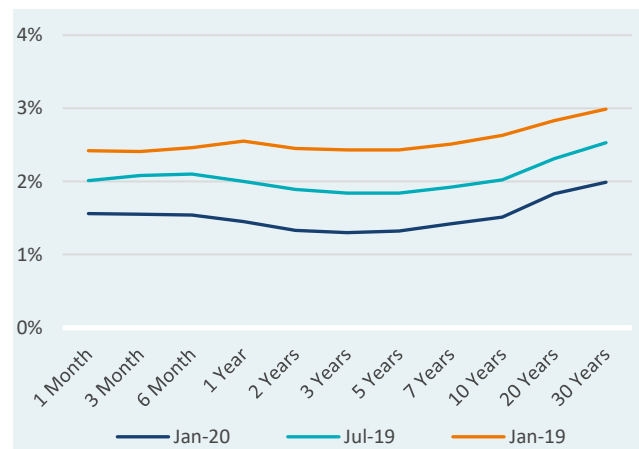


Source: FTSE, Bloomberg, as of 1/31/20

# Fixed income

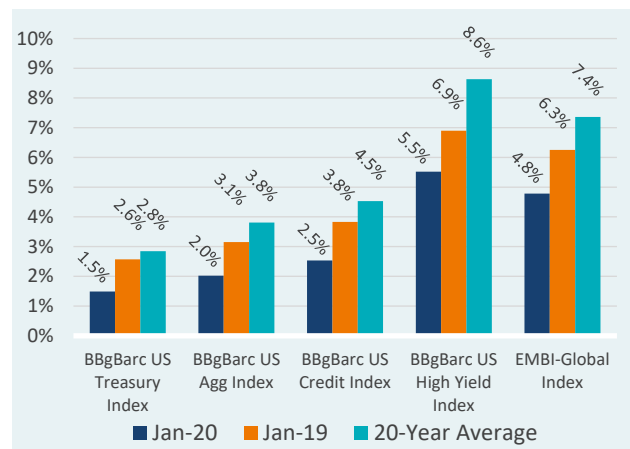
- Emerging market debt in U.S. dollar terms (J.P. Morgan EMBI +1.5%) outperformed riskier U.S. credit (U.S. high yield fixed income +0.0%). Local-currency denominated emerging market debt (J.P. Morgan GBI-EM -1.3%) underperformed and faced currency headwinds.
- Philip Lane, the Chief Economist at the ECB, called for a change to the central bank's inflation measurement calculation which would result in the inclusion of housing costs alongside the current CPI components, and likely narrow the gap between realized Eurozone inflation and the ECB's target of below, but close to 2%.
- A divergence grew between the Federal Open Market Committee and the market regarding the expectation for the future path of interest rate policy. The most recent FOMC dot plot indicated that 13 members expected rates to remain on hold and 4 members expected the fed funds range to move 25 basis points higher by the end of 2020. Conversely, at the end of January, the market had priced in 38 basis points of easing to the effective policy rate by year-end.
- Long-duration Treasuries outperformed within the U.S. fixed income universe and gained 6.8% over the period.

**U.S. TREASURY YIELD CURVE**



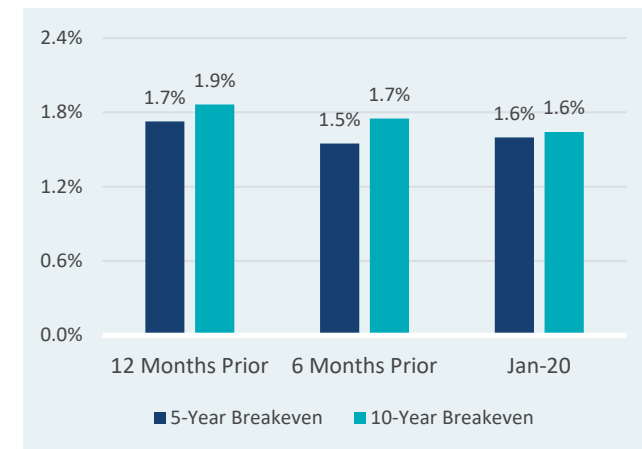
Source: Bloomberg, as of 1/31/20

**NOMINAL YIELDS**



Source: Morningstar, as of 1/31/20

**BREAKEVEN INFLATION RATES**

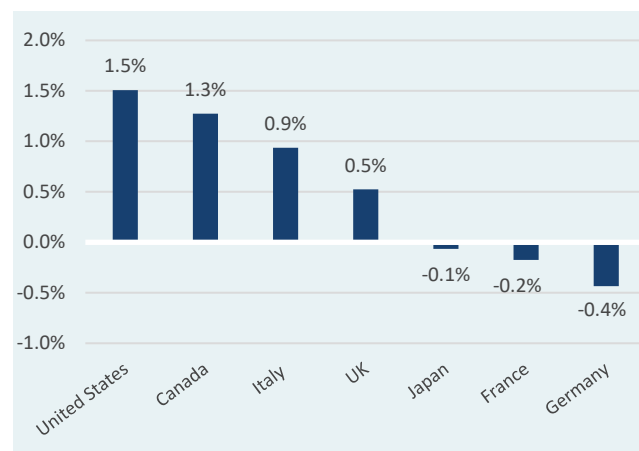


Source: Bloomberg, as of 1/31/20

# Global markets

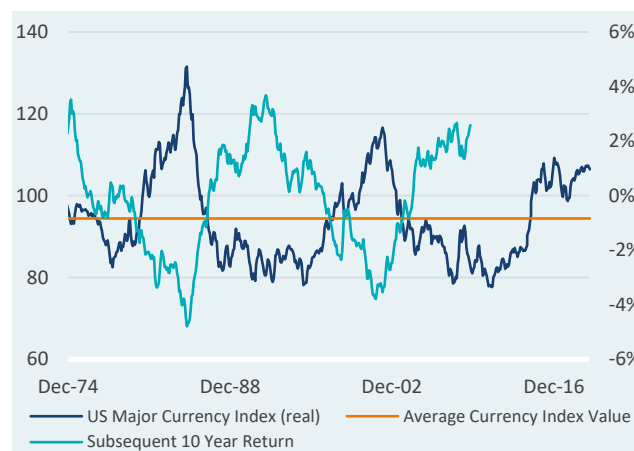
- The Japanese Yen appreciated 0.3% relative to the U.S. Dollar as investors sought shelter from an increasingly uncertain economic environment and exposure to the haven currency. Unhedged U.S. investors in the MSCI Japan Index experienced returns of -1.4%, while Japanese investors realized a local return of -1.6%.
- Global bond markets rallied, supported by risk-off flows which were spurred in part by the accelerating spread of the coronavirus. The value of outstanding negative-yielding debt in U.S. dollar terms rose from \$11.3 trillion to \$13.9 trillion, a three-month high.
- At long last, the United States and China, the two largest economies in the world, signed a “phase one” agreement on trade. Chinese officials agreed to purchase an additional \$200B in incremental U.S. goods (above 2017 levels) over the next two years. In exchange, the U.S. announced it would cut tariffs to a rate of 7.5% from 15.0% on \$160B in Chinese imports.
- U.S.-dollar hedged investors in the MSCI EAFE Index (-1.1%) outperformed unhedged U.S. investors (-2.1%) as the U.S. dollar strengthened 1.0% against the embedded currency portfolio of the MSCI EAFE Index.

## GLOBAL SOVEREIGN 10-YEAR YIELDS



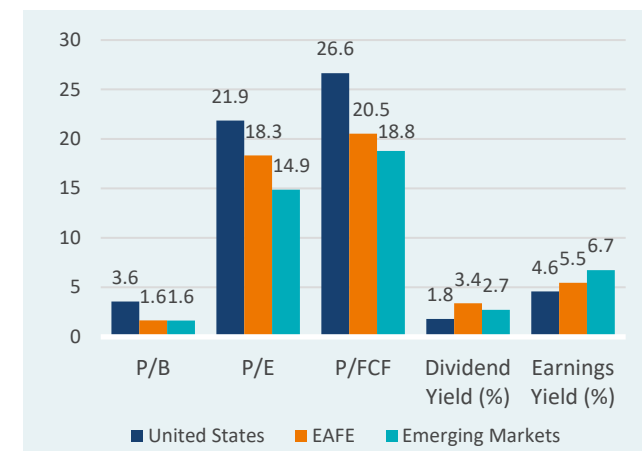
Source: Bloomberg, as of 1/31/20

## U.S. DOLLAR MAJOR CURRENCY INDEX



Source: Federal Reserve, as of 1/31/20

## MSCI VALUATION METRICS (3-MONTH AVG)



Source: Bloomberg, as of 1/31/20

# Commodities

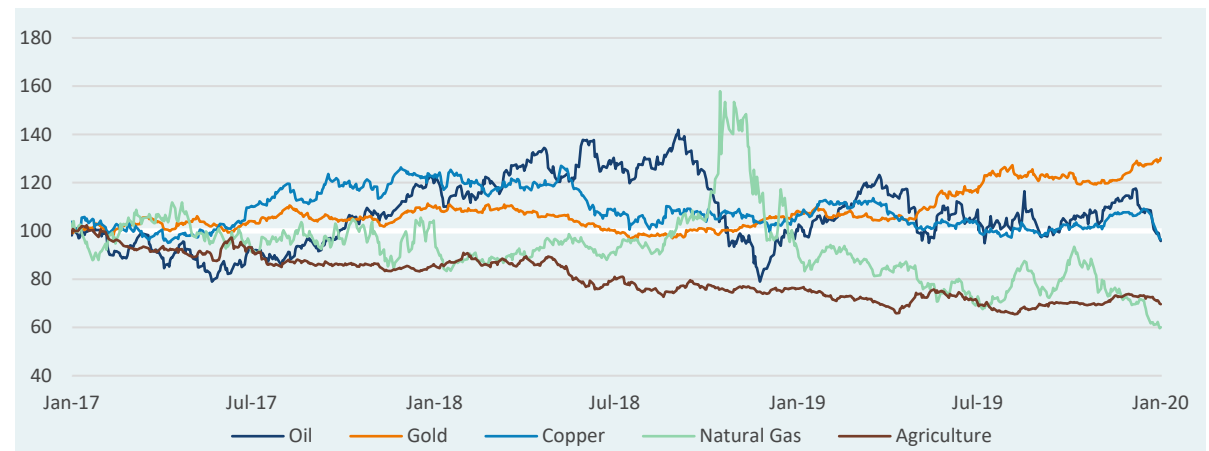
- The Bloomberg Commodity Index plummeted -7.4% in the first month of 2020. The Precious Metals (+3.2%) component was a bright spot within the overall index while the Energy (-14.8%), Petroleum (-14.6%), and Livestock sectors (-11.0%) dragged on performance.
- The Precious Metals (+3.2%) component of the Bloomberg Commodity Index was the only positive performer in January as risk-off sentiment stoked demand for haven assets. Declining Treasury yields further encouraged precious metals exposure as the opportunity cost for holding non-yielding assets decreased.
- Qasem Soleimani, an Iranian general and leader of the elite Quds Force, was killed in a U.S. drone strike on January 3<sup>rd</sup>. Oil prices jumped on the news and subsequently retraced those gains as tensions subsided.
- On January 7<sup>th</sup>, Chinese officials announced the spread of a novel coronavirus, 2019n-CoV, which originated in the Chinese city of Wuhan. In its efforts to contain the virus and prevent a pandemic, Chinese officials implemented a series of economically disruptive containment measures, resulting in significantly negative price action in both the Energy (-14.8%) and Industrial Metals (-7.3%) sectors.

## INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	(7.4)	(7.4)	(7.4)	(5.4)	(3.5)	(4.7)	(4.7)
Bloomberg Agriculture	(5.3)	(5.3)	(5.3)	(6.5)	(9.6)	(6.9)	(3.6)
Bloomberg Energy	(14.8)	(14.8)	(14.8)	(12.8)	(4.9)	(9.5)	(12.3)
Bloomberg Grains	(4.1)	(4.1)	(4.1)	(7.0)	(8.1)	(8.0)	(3.7)
Bloomberg Industrial Metals	(7.3)	(7.3)	(7.3)	(8.2)	(1.3)	(0.9)	(3.4)
Bloomberg Livestock	(11.0)	(11.0)	(11.0)	(15.0)	(3.9)	(6.0)	(2.8)
Bloomberg Petroleum	(14.6)	(14.6)	(14.6)	0.4	2.0	(4.9)	(6.5)
Bloomberg Precious Metals	3.2	3.2	3.2	17.0	6.4	2.7	2.6
Bloomberg Softs	(5.0)	(5.0)	(5.0)	(5.5)	(14.9)	(7.8)	(6.1)

Source: Morningstar, as of 1/31/20

## COMMODITY PERFORMANCE



Source: Bloomberg, as of 1/31/20

# Appendix

# Periodic table of returns

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	YTD	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	2.2	15.5	16.0
Cash	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	31.4	2.1	12.1	14.0
US Bonds	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	28.5	1.9	9.6	13.4
Hedge Funds of Funds	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	26.5	0.6	8.7	11.9
Large Cap Equity	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	25.5	0.1	8.3	11.9
Real Estate	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.4	0.0	8.2	10.3
60/40 Global Portfolio	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.0	-0.2	6.7	10.2
Small Cap Growth	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	18.6	-1.1	6.3	6.7
International Equity	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	18.4	-2.1	5.1	5.8
Large Cap Value	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	-2.2	4.5	3.8
Small Cap Equity	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	-3.2	3.0	3.8
Emerging Markets Equity	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	7.7	-4.7	2.5	2.9
Small Cap Value	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	6.4	-5.4	1.1	0.6
Commodities	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	2.1	-7.4	-4.7	-4.7

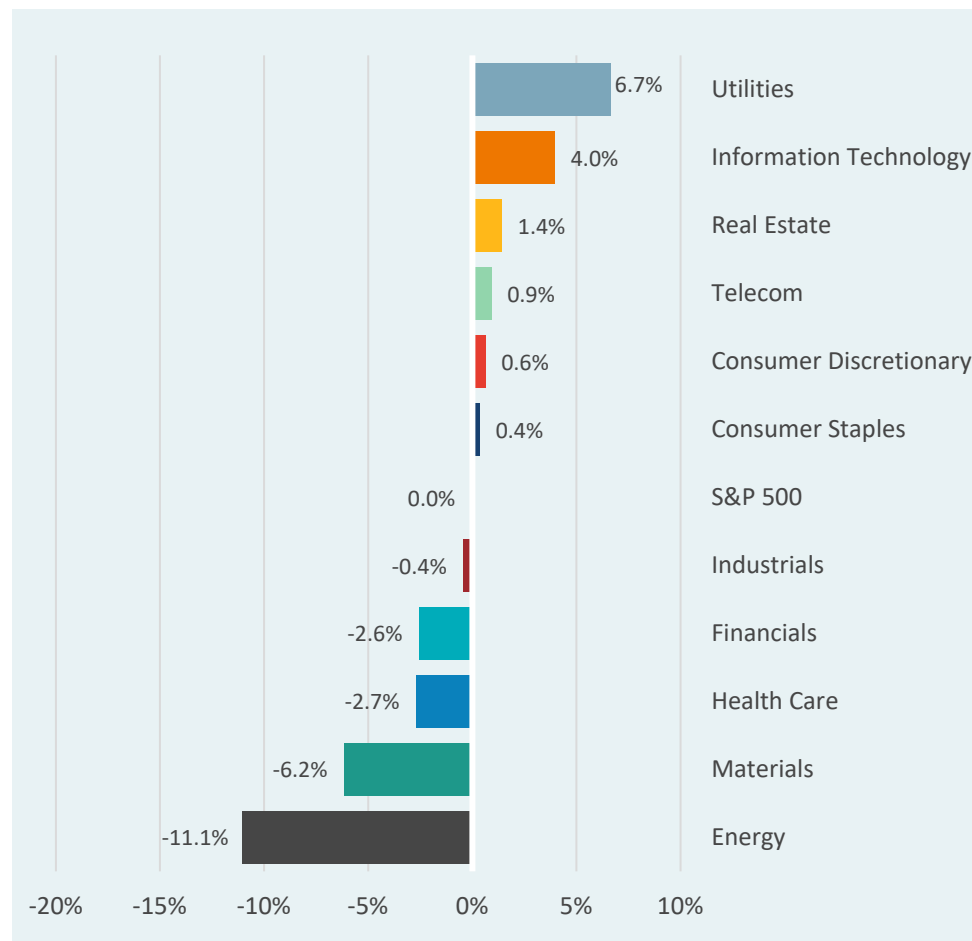
BEST  
↑  
WORST  
↓



Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 12/31/19.

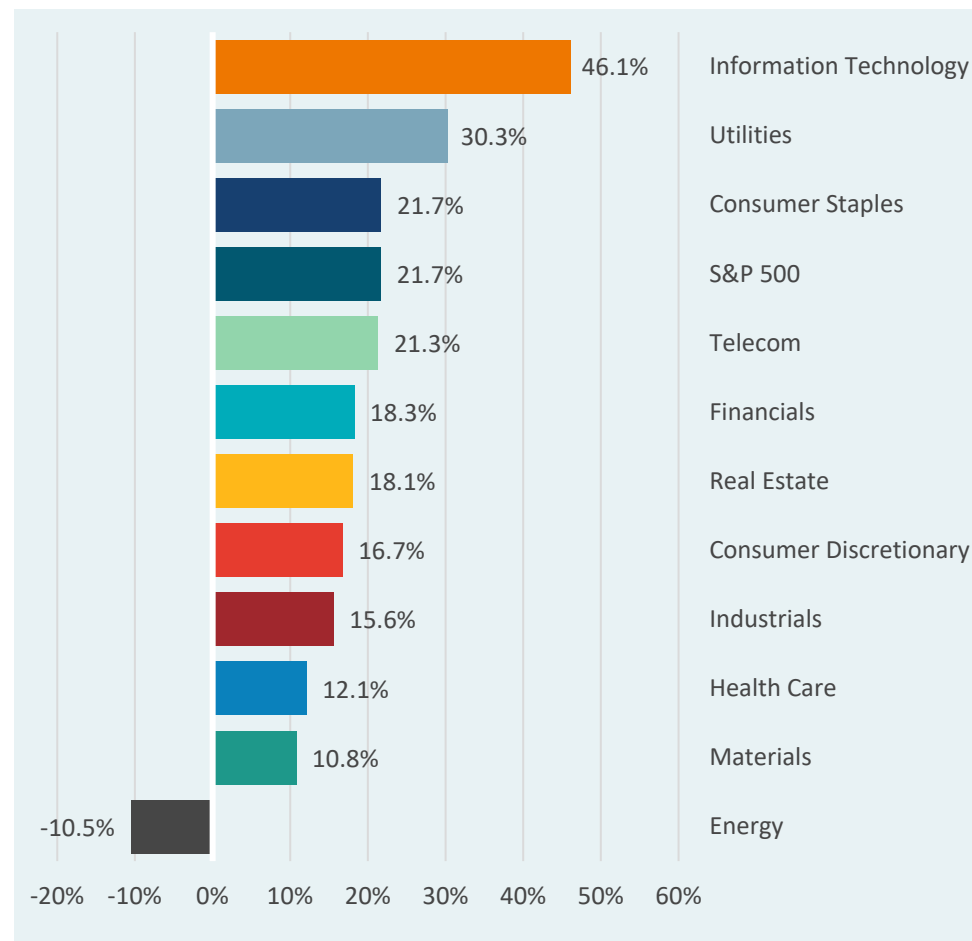
# S&P 500 sector returns

QTD



Source: Morningstar, as of 1/31/20

ONE YEAR ENDING JANUARY



Source: Morningstar, as of 1/31/20



# Detailed index returns

## DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Core Index</b>							
S&P 500	(0.0)	(0.0)	(0.0)	21.7	14.5	12.4	14.0
S&P 500 Equal Weighted	(1.8)	(1.8)	(1.8)	15.5	10.9	10.0	13.7
DJ Industrial Average	(0.9)	(0.9)	(0.9)	15.8	15.1	13.2	13.7
Russell Top 200	0.4	0.4	0.4	23.1	15.7	13.2	14.1
Russell 1000	0.1	0.1	0.1	21.4	14.3	12.1	14.0
Russell 2000	(3.2)	(3.2)	(3.2)	9.2	7.3	8.2	11.9
Russell 3000	(0.1)	(0.1)	(0.1)	20.5	13.8	11.8	13.8
Russell Mid Cap	(0.8)	(0.8)	(0.8)	16.9	10.9	9.5	13.5
<b>Style Index</b>							
Russell 1000 Growth	2.2	2.2	2.2	27.9	20.0	15.5	16.0
Russell 1000 Value	(2.2)	(2.2)	(2.2)	14.9	8.6	8.7	11.9
Russell 2000 Growth	(1.1)	(1.1)	(1.1)	13.9	11.5	9.6	13.4
Russell 2000 Value	(5.4)	(5.4)	(5.4)	4.4	3.1	6.7	10.3

## INTERNATIONAL EQUITY

<b>Broad Index</b>							
MSCI ACWI	(1.1)	(1.1)	(1.1)	16.0	11.0	8.5	9.1
MSCI ACWI ex US	(2.7)	(2.7)	(2.7)	9.9	7.6	5.0	5.2
MSCI EAFE	(2.1)	(2.1)	(2.1)	12.1	7.8	5.1	5.8
MSCI EM	(4.7)	(4.7)	(4.7)	3.8	7.9	4.5	3.8
MSCI EAFE Small Cap	(2.9)	(2.9)	(2.9)	12.3	8.6	8.2	8.5
<b>Style Index</b>							
MSCI EAFE Growth	(0.6)	(0.6)	(0.6)	19.5	11.4	7.3	7.3
MSCI EAFE Value	(3.6)	(3.6)	(3.6)	4.9	4.2	2.8	4.1
<b>Regional Index</b>							
MSCI UK	(3.8)	(3.8)	(3.8)	8.8	6.5	2.7	5.2
MSCI Japan	(1.4)	(1.4)	(1.4)	11.2	7.1	6.9	6.2
MSCI Euro	(3.2)	(3.2)	(3.2)	11.9	7.6	4.4	4.3
MSCI EM Asia	(4.5)	(4.5)	(4.5)	6.1	9.1	5.2	5.9
MSCI EM Latin American	(5.6)	(5.6)	(5.6)	(3.5)	6.0	4.3	(0.3)

## FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
BBgBarc US TIPS	2.1	2.1	2.1	9.2	3.7	2.4	3.4
BBgBarc US Treasury Bills	0.1	0.1	0.1	2.3	1.7	1.1	0.6
BBgBarc US Agg Bond	1.9	1.9	1.9	9.6	4.6	3.0	3.8
<b>Duration</b>							
BBgBarc US Treasury 1-3 Yr	0.6	0.6	0.6	3.9	2.0	1.4	1.2
BBgBarc US Treasury Long	6.8	6.8	6.8	21.9	9.2	3.8	7.4
BBgBarc US Treasury	2.4	2.4	2.4	9.0	4.1	2.3	3.2
<b>Issuer</b>							
BBgBarc US MBS	0.7	0.7	0.7	6.3	3.5	2.6	3.1
BBgBarc US Corp. High Yield	0.0	0.0	0.0	9.4	5.9	6.0	7.4
BBgBarc US Agency Interm	0.9	0.9	0.9	5.0	2.6	1.9	2.0
BBgBarc US Credit	2.3	2.3	2.3	14.0	6.5	4.3	5.4

## OTHER

<b>Index</b>							
Bloomberg Commodity	(7.4)	(7.4)	(7.4)	(5.4)	(3.5)	(4.7)	(4.7)
Wilshire US REIT	0.8	0.8	0.8	13.7	8.2	5.7	12.7
CS Leveraged Loans	0.5	0.5	0.5	6.3	4.5	4.6	5.0
Alerian MLP	(5.9)	(5.9)	(5.9)	(11.1)	(8.3)	(7.6)	4.0
<b>Regional Index</b>							
JPM EMBI Global Div	1.5	1.5	1.5	11.9	6.7	6.4	7.0
JPM GBI-EM Global Div	(1.3)	(1.3)	(1.3)	6.2	5.8	2.4	2.5
<b>Hedge Funds</b>							
HFRI Composite	(0.2)	(0.2)	(0.2)	6.5	4.1	3.5	4.1
HFRI FOF Composite	0.6	0.6	0.6	6.3	3.7	2.5	2.9
<b>Currency (Spot)</b>							
Euro	(1.3)	(1.3)	(1.3)	(3.4)	0.8	(0.4)	(2.2)
Pound	(0.5)	(0.5)	(0.5)	0.2	1.6	(2.6)	(1.9)
Yen	0.3	0.3	0.3	0.4	1.3	1.6	(1.8)

Source: Morningstar, HFR, as of 1/31/20

# Notices & disclosures

**Past performance is no guarantee of future results.** This report or presentation is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and should not be relied upon by retail investors. Nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security or pursue a particular investment vehicle or any trading strategy. The opinions and information expressed are current as of the date provided or cited only and are subject to change without notice. This information is obtained from sources deemed reliable, but there is no representation or warranty as to its accuracy, completeness or reliability. Verus Advisory Inc. expressly disclaim any and all implied warranties or originality, accuracy, completeness, non-infringement, merchantability and fitness for a particular purpose. This report or presentation cannot be used by the recipient for advertising or sales promotion purposes.

The material may include estimates, outlooks, projections and other “forward-looking statements.” Such statements can be identified by the use of terminology such as “believes,” “expects,” “may,” “will,” “should,” “anticipates,” or the negative of any of the foregoing or comparable terminology, or by discussion of strategy, or assumptions such as economic conditions underlying other statements. No assurance can be given that future results described or implied by any forward looking information will be achieved. Actual events may differ significantly from those presented. Investing entails risks, including possible loss of principal. Risk controls and models do not promise any level of performance or guarantee against loss of principal.

“VERUS ADVISORY”™ and any associated designs are the respective trademarks of Verus Advisory, Inc. Additional information is available upon request.

Verus<sup>777</sup> is a registered trademark of Verus Advisory, Inc.

**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**  
**Board of Retirement**

February 25, 2020

Agenda Item 6.2

**TO:** Board of Retirement

**FROM:** Michael Coultrip, Chief Investment Officer *Michael R. Coultrip*

**SUBJECT:** Report on Quarterly Investment Performance Report for the Period Ended December 31, 2019

**Recommendation**

Accept Verus Advisory's quarterly performance report for the period ended December 31, 2019.

**Discussion**

The 4th quarter net total return for the SamCERA portfolio was +3.9%, which was 80 bps lower than the +4.7% policy benchmark return. As can be seen on Page 20 and 21, private equity, domestic equity, and risk parity were the primary source of underperformance during the quarter.

Margaret Jadallah will present the report to the Board and will be available for questions.

**Attachment**

Verus Quarterly Performance Report Ending 12/31/2019



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: DECEMBER 31, 2019**

Investment Performance Review for

**San Mateo County Employees' Retirement Association**

# Table of Contents



---

[VERUSINVESTMENTS.COM](http://VERUSINVESTMENTS.COM)

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

---

Market Environment

TAB I

---

Alternatives

TAB VI

---

Total Fund

TAB II

---

Inflation Hedge

TAB VII

---

US Equity

TAB III

---

Risk Parity

TAB VIII

---

International Equity

TAB IV

---

Appendix

TAB IX

---

Fixed Income

TAB V

# 4<sup>th</sup> quarter summary

## THE ECONOMIC CLIMATE

- Real GDP grew at a 2.1% rate year-over-year in the third quarter (2.1% quarterly annualized rate). Falling imports and weak fixed investment (-0.2% contribution) acted as a drag on growth, while personal consumption continued to be the greatest driver of growth.
- U.S. and Chinese negotiators signed the “phase one” trade agreement, and Boris Johnson’s Conservative Party in the U.K. won a decisive victory. These events appear to have removed some uncertainty from the geopolitical landscape over the short- to intermediate-term.

## PORTFOLIO IMPACTS

- Global equity markets exhibited strong performance through Q4, and U.S. equity performance was in-line (MSCI ACWI +9.0%, S&P 500 +9.1%). Emerging markets were the top performing asset class (+11.8%).
- U.S. headline inflation increased 2.3% YoY in December, alongside the core inflation growth figure, and up from 1.7% in September. Although this was a notable jump in the inflation rate, investors appear more concerned about global deflationary forces, as indicated by the 10yr U.S. TIPS Breakeven Inflation Rate of 1.73%. Cyclical price pressures remain surprisingly absent from the current environment.

## THE INVESTMENT CLIMATE

- In October, the Federal Open Market Committee cut interest rates by 0.25% to a new range of 1.50 – 1.75%. This marked the third consecutive rate cut by the committee.
- Global sovereign bond yields picked up modestly in Q4, on higher inflation and growth prospects. The dollar value of negative-yielding outstanding debt fell from nearly \$15 trillion to just above \$11 trillion. Central bankers appealed for fiscal action, citing the limited capacity of monetary policy to sustain further economic expansion.

## ASSET ALLOCATION ISSUES

- Most risk assets provided sizable gains in Q4. Global equities delivered +9.0%, U.S. high yield increased +2.6%, and Emerging Market Local Debt rose +5.2%. Longer duration fixed income saw losses as interest rates rebounded.
- The U.S. dollar weakened -0.5% against both developed and emerging currencies in Q4, reversing moves of the prior quarter. Dollar volatility remains low relative to the big swings that occurred throughout 2014-2018.
- Although risk assets appear to have rocketed higher in 2019, which may create concerns over valuations, it is important to note that much of this performance was due to assets recovering from a sharp fall in late-2018.

A neutral risk stance may be appropriate in today’s environment

# U.S. economics summary

- Real GDP grew at a 2.1% rate year-over-year in the third quarter (2.0% quarterly annualized rate). Falling imports and weak fixed investment (-0.2% contribution) acted as a drag on growth, while personal consumption continued to be the greatest driver of growth.
- U.S. headline inflation came in at 2.3% YoY in December, in line with the core inflation growth figure. Despite more than 10 years of economic expansion, cyclical price pressures seem surprisingly absent from the current environment. Investors appear more concerned about global deflationary forces.
- The U.S. labor market showed further strength in the fourth quarter and unemployment remained at 50-year lows of 3.5%.
- Consumer sentiment indicators remain near all-time-highs and improved slightly over the quarter.
- American households are in a

strong financial position, with balance sheets that appear increasingly robust. At the end of Q3, U.S. household debt outstanding was equal to about 74% of GDP, the healthiest level since Q4 2001.

- U.S. and Chinese negotiators signed the “phase one” agreement on trade, and Boris Johnson’s Conservative Party won a decisive victory in the U.K. These developments may ease some of the economic uncertainty across the global economy, providing a tailwind to future growth.
- Existing home sales grew +2.7% YoY in November. New home sales, a far smaller portion of the overall market, grew at a stronger rate of +16.9% YoY, as construction activity further accelerated. Rising homebuilder activity in recent years may ease some of the low inventory pressures in the current market environment.

	Most Recent	12 Months Prior
GDP (YoY)	2.1% <i>9/30/19</i>	3.1% <i>9/30/18</i>
Inflation (CPI YoY, Core)	2.3% <i>12/31/19</i>	2.2% <i>12/31/18</i>
Expected Inflation (5yr-5yr forward)	1.8% <i>12/31/19</i>	1.8% <i>12/31/18</i>
Fed Funds Target Range	1.50 – 1.75% <i>12/31/19</i>	2.25 – 2.50% <i>12/31/18</i>
10 Year Rate	1.9% <i>12/31/19</i>	2.7% <i>12/31/18</i>
U-3 Unemployment	3.5% <i>12/31/19</i>	3.9% <i>12/31/18</i>
U-6 Unemployment	6.7% <i>12/31/19</i>	7.6% <i>12/31/18</i>



# International economics summary

- The growth of international developed economies remains in a range of 0.5% to 2.0%, near the 2.1% growth rate of the slowing U.S. economy.
- In January, the IMF forecasted 2.9% global growth in 2019 and an acceleration to 3.3% in 2020. These growth expectations were 0.1% lower than the previous quarter’s report, and were mostly a result of downward adjustments to emerging markets expectations.
- Inflation continues to be muted across international developed markets, keeping more options on the table for central banks to step in as needed with accommodative policy.
- The U.K. general election in December resulted in a landslide victory for Boris Johnson. The election, through a consolidation of Tory party power, effectively guarantees that Brexit will ultimately be carried out.
- While the global economy has exhibited mild growth, labor markets continue to tighten across the board. By traditional unemployment measures, job markets are now stronger than pre-2008 levels in most major economies.
- U.S. and Chinese negotiators signed the “phase one” agreement on trade, and the decisive victory of Boris Johnson’s Conservative Party in the U.K. appears to have at least removed some uncertainty from the geopolitical landscape over the short- to intermediate-term.
- China has experienced a significant jump in inflation to 4.5% as an outbreak of African swine fever resulted in a doubling of pork prices. This compares to a 5-year average inflation rate of 1.9%. An acceleration of inflation may create issues for Chinese leadership in an already-slowing economy.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.1% <i>9/30/19</i>	2.3% <i>12/31/19</i>	3.5% <i>12/31/19</i>
Eurozone	1.2% <i>9/30/19</i>	1.3% <i>12/31/19</i>	7.5% <i>11/30/19</i>
Japan	1.7% <i>9/30/19</i>	0.9% <i>12/31/19</i>	2.2% <i>11/30/19</i>
BRICS Nations	4.9% <i>9/30/19</i>	4.4% <i>12/31/19</i>	5.1% <i>9/30/19</i>
Brazil	1.2% <i>9/30/19</i>	4.3% <i>12/31/19</i>	11.2% <i>11/30/19</i>
Russia	1.7% <i>9/30/19</i>	3.1% <i>12/31/19</i>	4.6% <i>11/30/19</i>
India	4.5% <i>9/30/19</i>	7.4% <i>12/31/19</i>	8.5% <i>12/31/17</i>
China	6.0% <i>9/30/19</i>	4.5% <i>12/31/19</i>	3.6% <i>9/30/19</i>



# Equity environment

- Global equity markets exhibited strong performance through Q4, and U.S. equity performance was in-line (MSCI ACWI +9.0%, S&P 500 +9.1%). Emerging markets were the top performing asset class (+11.8%).
- Global currency volatility has been muted over the last few years, which has made ignoring currency exposure less consequential. Expecting low currency volatility to persist may be an assumption that gets investors into trouble.
- Unhedged U.S. investors in U.K. equities outperformed their hedged peers by 7.8% in Q4, as a stronger pound sterling dominated the U.K. equity return narrative.
- Based on price-to-forward earnings ratios international equity valuations appear elevated, but unlike in the U.S., they do not yet appear stretched.
- The outlook for monetary policy remains supportive of global equity price movement in 2020. Of the five major global central banks (Federal Reserve, European Central Bank, Bank of England, Bank of Japan, People’s Bank of China), four out of five are providing accommodation through their respective balance sheets. Futures imply better than 50/50 odds that the Bank of England cuts its main rate 0.25% at the end of January and China has continued to cut its benchmark lending rate.
- Inflation remains muted in emerging economies, and most economies are experiencing CPI below the 5-year average. Central bank policy has remained accommodative in many major countries within the universe such as China, South Korea, Brazil, and South Africa. This accommodation could provide a boost for equity market pricing as we move further into 2020.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	9.1%		31.5%	
US Small Cap (Russell 2000)	9.9%		25.5%	
US Large Value (Russell 1000 Value)	7.4%		26.5%	
US Large Growth (Russell 1000 Growth)	10.6%		36.4%	
International Large (MSCI EAFE)	8.2%	5.8%	22.0%	24.6%
Eurozone (Euro Stoxx 50)	8.3%	5.9%	25.9%	32.1%
U.K. (FTSE 100)	10.8%	3.0%	22.1%	19.5%
Japan (NIKKEI 225)	8.2%	9.6%	21.9%	23.5%
Emerging Markets (MSCI Emerging Markets)	11.8%	9.5%	18.4%	17.7%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 12/31/19

# Domestic equity

U.S. equities outpaced international in the third quarter (S&P 500 +9.1%, MSCI EAFE +8.2%) as domestic markets continued to lead.

Falling interest rates in 2019 have supported stock prices, as fixed income becomes less attractive on a relative basis, and cheaper borrowing should bolster future corporate earnings. As the dividend yield of U.S. stocks is once again higher than U.S. Treasury yields, investors may feel pressure to maintain greater exposure to equities in order to meet return objectives.

The S&P 500 delivered a 31.5% total return in calendar year

2019, while underlying corporate profits are expected to be flat at +0.3%. This of course means that performance has been driven by higher stock multiples rather than fundamentals. It is worth noting that a significant portion of 2019 performance was a recovery from the late-2018 sell-off of nearly -20%.

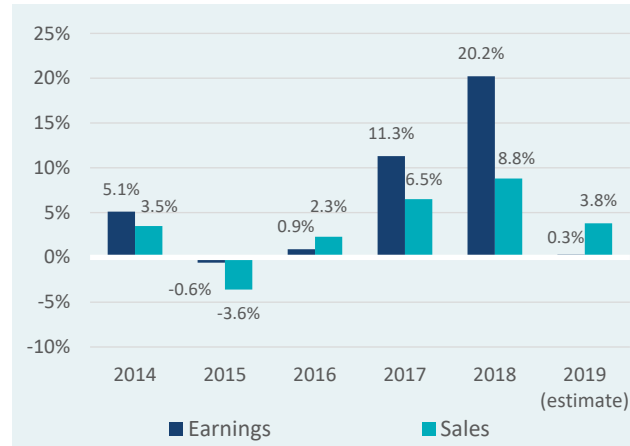
U.S. markets may continue to outperform over the shorter-term due to relative economic and market strength, and prices may certainly rise further. But history suggests that a widening gap between U.S. and international stock valuations will constrain U.S. performance over the longer-term.

## U.S. EQUITIES



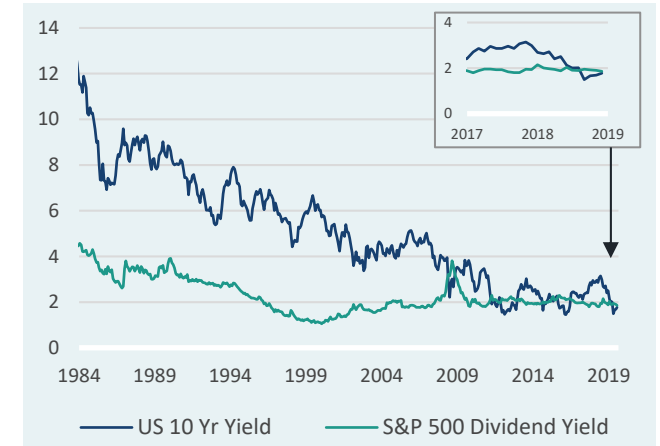
Source: Standard & Poor's, as of 12/31/19

## EARNINGS



Source: FactSet, as of 12/20/19

## RELATIVE YIELDS



Source: Standard & Poor's, as of 11/30/19

# Domestic equity size & style

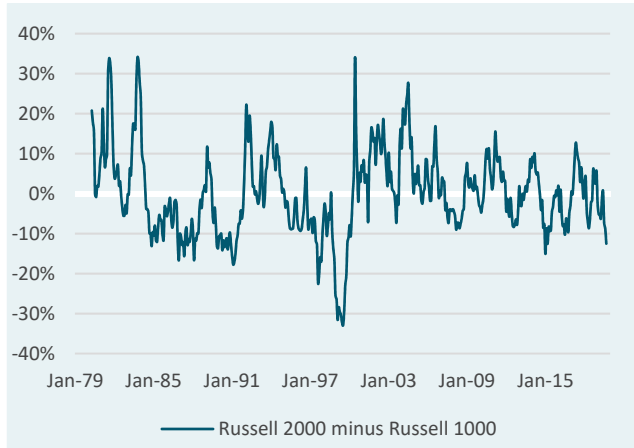
Value stock performance was on par with growth stocks during the third quarter (Russell 1000 Value +1.4%, Russell 1000 Growth +1.5%) while small cap stocks underperformed large stocks (Russell 2000 -2.4%, Russell 1000 +1.4%). Year-to-date, the size factor and value factor have extended their run of weakness.

The impact of sector performance on the value premium was mixed in the third quarter. Financials (+2.0%) and Utilities (+9.3%) outperformed the overall index (S&P 500 +1.7%) which boosted value, but poor Energy (-6.3%) performance counteracted these effects. Information Technology beat the

overall index (+3.3%) which acted as a headwind for value stocks.

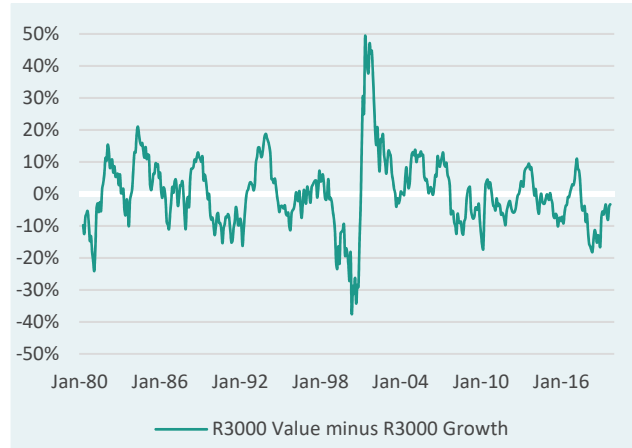
Value stocks have exhibited a long run of underperformance over the past decade. Our view has been that value stocks did not appear attractive, despite persistent performance pain. This was because value stocks had underperformed due to fundamental reasons rather than due to prices becoming stretched. Now, for the first time in this cycle it appears value prices are becoming unusually cheap, as indicated by a large disparity between Russell 1000 Value and Russell 1000 Growth P/E multiples.

**SMALL CAP VS LARGE CAP (YOY)**



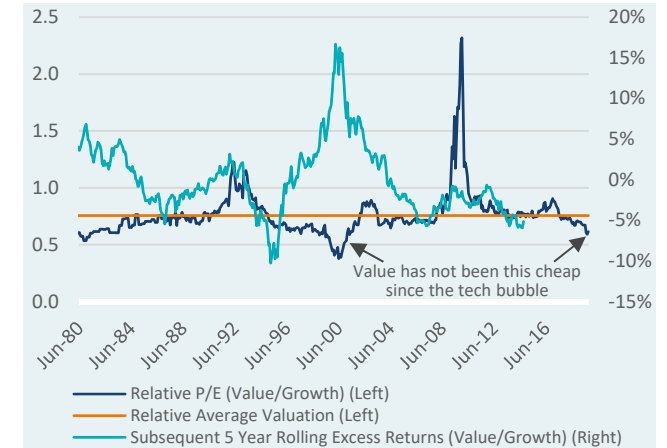
Source: FTSE, as of 9/30/19

**VALUE VS GROWTH (YOY)**



Source: FTSE, as of 9/30/19

**VALUE STARTING TO LOOK CHEAP**



Source: Russell, Bloomberg, as of 9/30/19

# International developed equity

Equities in Europe and Japan posted strong performance for the quarter but failed to keep up with stocks in the U.S. and emerging markets. The U.S. dollar appreciated slightly against the yen, providing headwinds (-1.4%) for unhedged U.S. investors in Japanese stocks. Conversely, a slightly weaker U.S. dollar against the euro put some additional wind in the sails (+2.4%) of U.S. investors in European equities.

When investing in international equities, the “which currency should my assets be denominated?” question has been nearly equally as important as the “what assets should I hold?” question. Over the last three years however, global

currency volatility has been muted, which has made it much easier for investors to avoid thinking about their various currency exposures. Verus’ view remains that currency risk is not compensated, and that it tends to result in increased risk without necessarily adding to return.

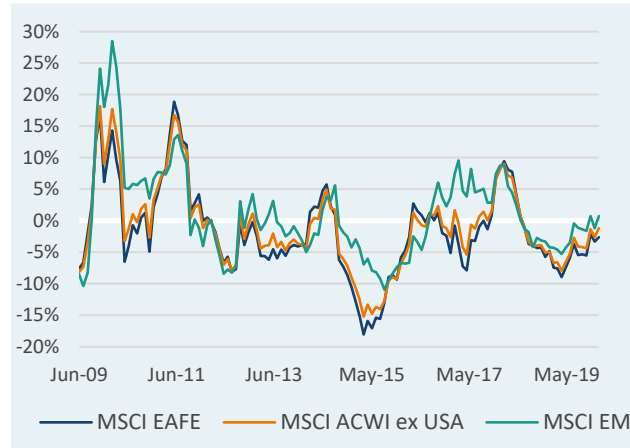
International equity valuations remain elevated, but unlike in the U.S., they do not yet appear stretched. Forward price-to-earnings ratios for the MSCI U.K. and Italy indices rank in the 59<sup>th</sup> and 52<sup>nd</sup> percentiles respectively, relative to the monthly expansion average. Valuations are a bit richer in the rest of the EAFE complex, but they may still have room to run.

## INTERNATIONAL DEVELOPED EQUITIES



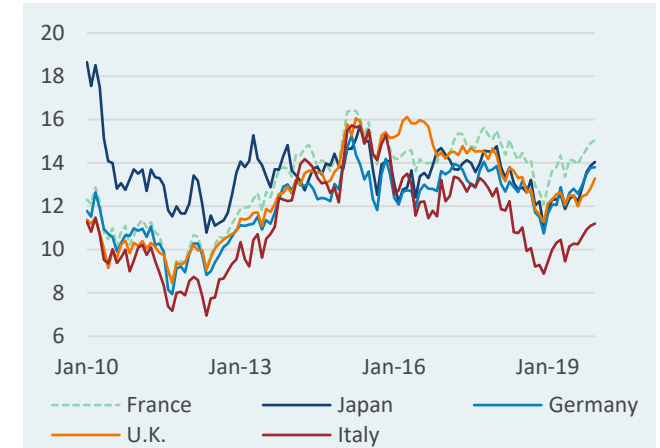
Source: MSCI, as of 12/31/19

## EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 12/31/19

## BLENDED FORWARD 12-MONTH P/E RATIOS



Source: MSCI, Bloomberg, as of 12/31/19

# Emerging market equity

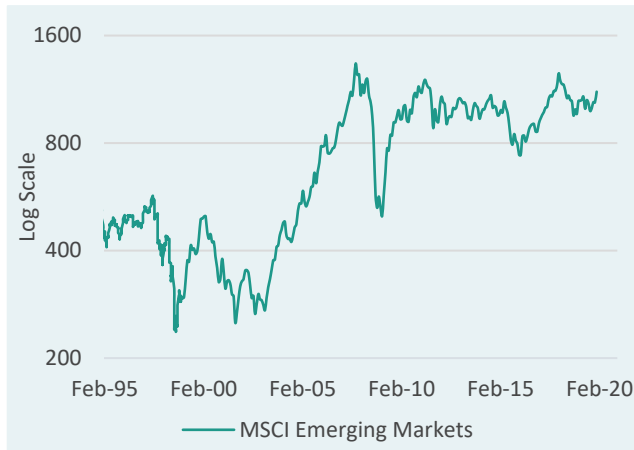
Emerging market equities (+11.8%) outperformed both U.S. (+9.1%) and international developed equities (+8.2%) over the quarter, but still lagged over the full calendar year. In 2019, emerging market equities delivered a total return of 18.4%, and trailed the total return of international developed equities by 3.6%. Regionally, the Asian segment (+12.5%) of the emerging market complex performed better than the Latin American (+10.5%) segment in both Q4 and in 2019.

Emerging market equities saw multiple expansion in Q4: the forward P/E of the MSCI EM Index expanded from a level in

line with the 5-year average to a bit higher than average levels. We do not yet view pricing in this space as rich and see there being more room for multiple expansion.

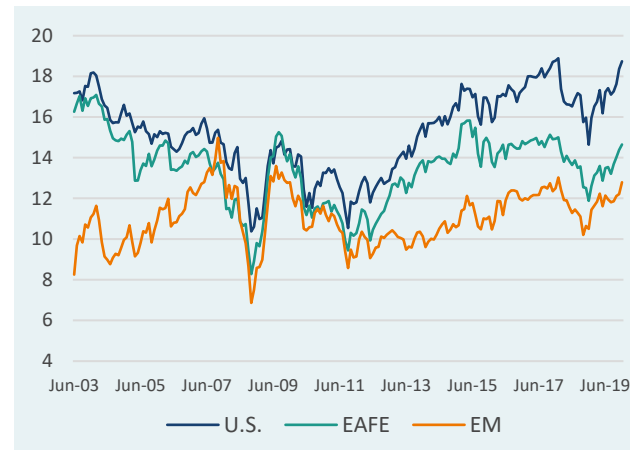
Inflation remains muted in emerging economies, and most economies are experiencing CPI below the 5-year average. Central bank policy has remained accommodative in many major countries within the universe such as China, South Korea, Brazil, and South Africa. This accommodation could provide a boost for equity market pricing as we move further into 2020.

## EMERGING MARKET EQUITY



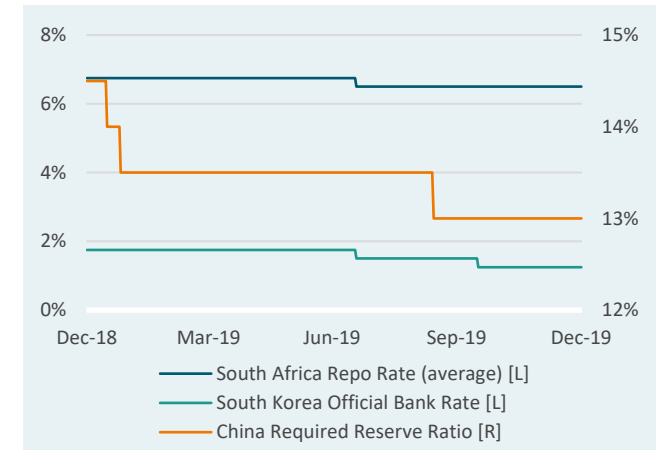
Source: MSCI, as of 12/31/19

## FORWARD P/E



Source: MSCI, as of 12/31/19

## CENTRAL BANK ACCOMODATION



Source: MSCI, as of 12/31/19

# Interest rate environment

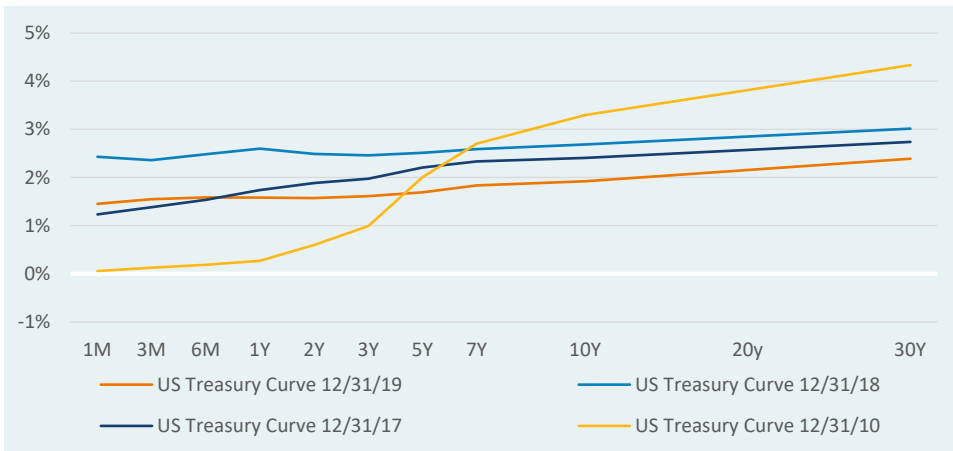
- The global sovereign bond rally lost steam in Q4 as inflation and growth prospects mildly reflat. Central bankers at the European Central Bank and the Federal Reserve signaled that policy would likely remain on hold in the absence of significant economic developments.
- Global ten-year sovereign bond yields picked up moderately, most significantly in Europe. Over the quarter, the U.S.-dollar value of global outstanding negative-yielding debt fell from nearly \$15 trillion to just above \$11 trillion.
- In October, the Federal Open Market Committee cut the range for its benchmark interest rate by 0.25% to a new range of 1.50 to 1.75%.
- Diversity of opinion among FOMC participants about the path of interest rates has faded. Most members now expect rates to remain flat in 2020, and move back toward 2.50% over the longer term.
- The New York Fed conducted a series of term repurchase operations aimed at providing sufficient liquidity for firms to get through the year-end turn when demand for cash typically surges. The Fed balance sheet grew by \$300B in Q4, and analysts continue to debate whether the Fed’s involvement in repo markets should be considered “technical” or “stimulative” in nature.
- The Governing Council of the ECB decided to leave key interest rates unchanged and confirmed that net asset purchases to the tune of €20 billion per month had begun in November.
- In Christine Lagarde’s first major move as President, she announced the ECB’s first Strategic Policy review since 2003, which will begin in January and will address a wide range of topics, including: low inflation, the price-stability goal, climate change, and cryptocurrency.

Area	Short Term (3M)	10-Year
United States	1.54%	1.92%
Germany	(0.78%)	(0.19%)
France	(0.65%)	0.12%
Spain	(0.61%)	0.47%
Italy	(0.34%)	1.41%
Greece	0.26%	1.47%
U.K.	0.69%	0.82%
Japan	(0.10%)	(0.01%)
Australia	0.94%	1.37%
China	2.43%	3.14%
Brazil	4.30%	6.79%
Russia	4.95%	6.36%

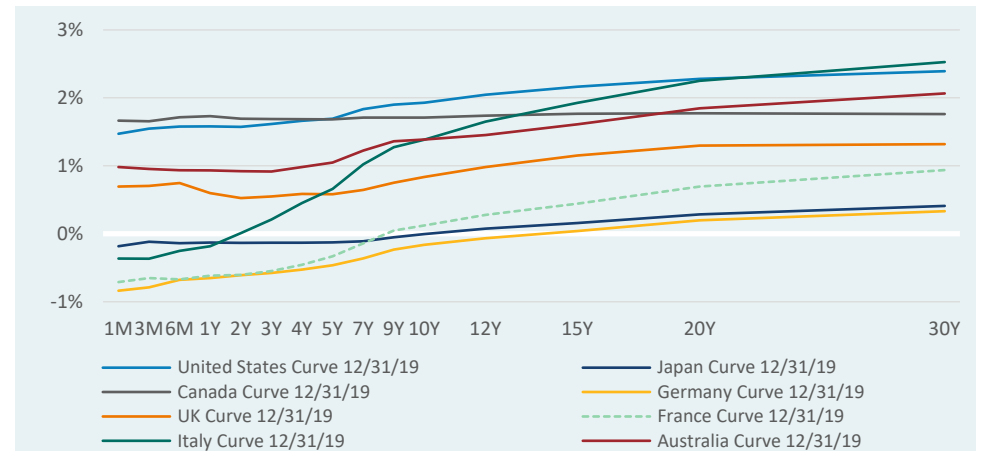
Source: Bloomberg, as of 12/31/19

# Yield environment

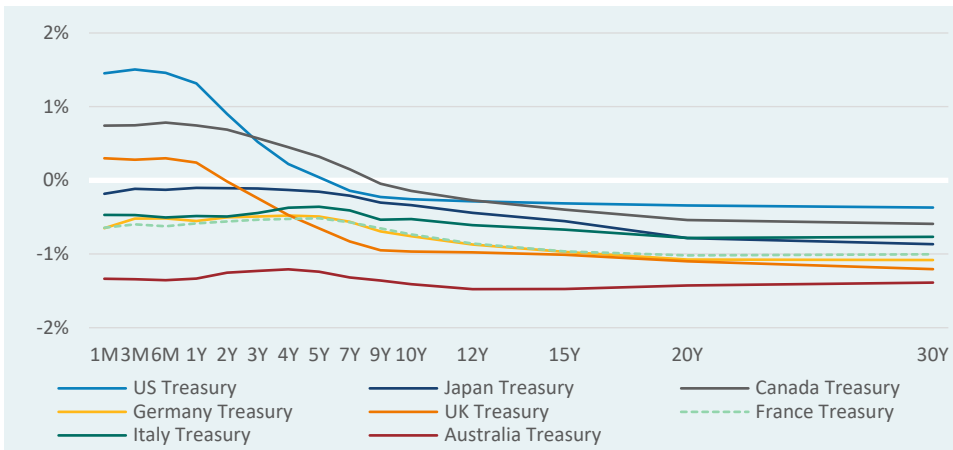
## U.S. YIELD CURVE



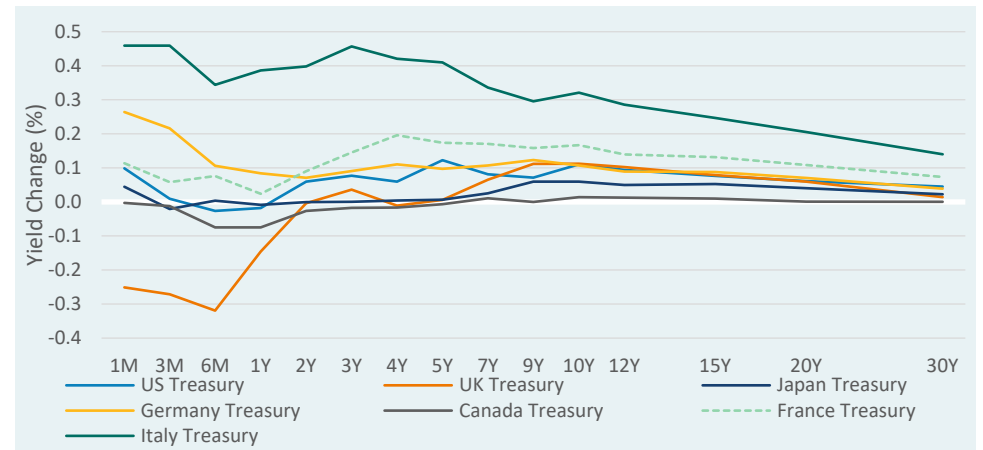
## GLOBAL GOVERNMENT YIELD CURVES



## YIELD CURVE CHANGES OVER LAST FIVE YEARS



## IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 12/31/19

# Currency

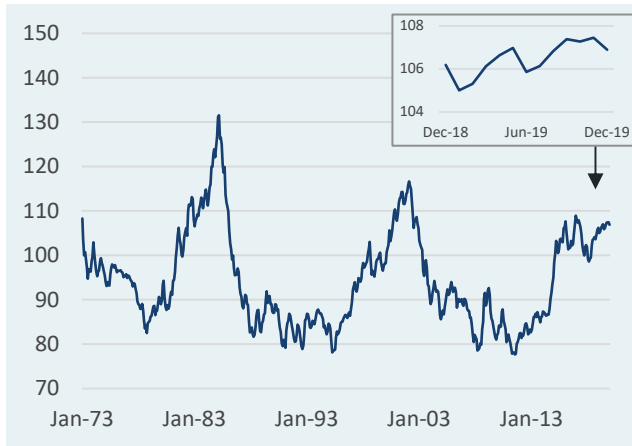
The U.S. dollar weakened versus both developed and emerging market currency baskets in the 4<sup>th</sup> quarter, fading some of the strong relative performance it had experienced back in Q3 2019. An index tracking the weighted average of the foreign exchange value of the U.S. dollar against major currencies fell 0.5%.

J.P. Morgan’s Emerging Market Currency Index fell -1.4% in 2019. Many analysts have argued that global disinflationary pressures have eased some long-standing concerns over the risk of capital flight within the emerging market complex. So

long as inflationary risks are muted, then higher nominal interest rates in the emerging market complex should afford emerging market central bankers’ further room to cut rates than their developed market peers. If implemented, the relative accommodation supplied may fuel both growth and currency depreciation.

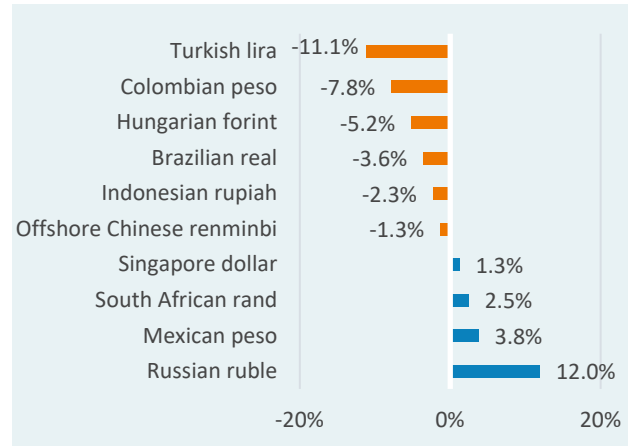
The British pound sterling bounced back sharply in Q4, rising from \$1.23 to \$1.33. Prime Minister Boris Johnson’s Conservative Party secured a firm majority in Parliament, lifting the shroud of “Brexit” from the geopolitical landscape.

**U.S. DOLLAR TRADE WEIGHTED INDEX**



Source: Federal Reserve, Verus, as of 12/31/19

**JP MORGAN EMCI CONSTITUENT 2019 RETURNS**



Source: J.P. Morgan, Bloomberg, as of 12/31/19

**GBP/USD**



Source: Bloomberg, as of 12/31/19



- The Total Fund, net of manager fees, returned 3.9% in the fourth quarter of 2019 and in the ranked 92<sup>nd</sup> percentile among other public plans greater than \$1 billion (median of 5.2%). It lagged the policy index return of 4.7%. The Total Fund ex Overlay returned 4.1% for the quarter. The Total Fund one-year return of 16.3% lagged the policy index return of 17.1% and ranked in the 61<sup>st</sup> percentile of its peer universe. The three-year return of 8.5% (69<sup>th</sup> percentile) lagged the median large public plan (8.9%) and the policy index (9.3%).
  
- Fourth quarter results were enhanced by the following factors:
  1. Baillie Gifford gained 12.5% beating the MSCI ACWI ex US (9.0%). Baillie Gifford noted the international markets appear to be in a market environment in which good quality operational performance and potential is being rewarded.
  2. Western TRU gained 3.0% for the quarter beating the Bloomberg Barclays Agg return of 0.2%. Duration positioning specifically in Emerging markets enhanced returns as yields declined.
  3. Mondrian outperformed the MSCI ACWI ex US Value gaining 10.7% vs 8.3%. Strong performance in securities in the UK and Japan helped relative performance; as did the country allocation (primarily in the Asia Pacific region.)
  
- Fourth quarter results were hindered by the following factors:
  1. PanAgora Defensive Equity gained 3.3% trailing the Russell 1000 gain of 9.0%. A significant part of the underperformance came from the healthcare and information technology sectors which are underweight in the portfolio, but had the highest sector returns in the Russell 1000.
  2. Acadian trailed the Russell 1000 (5.2% versus 9.0%.) Key sources of negative active return included stock selection and an underweight position in information technology, and an overweight position to consumer discretionary.
  3. Parametric Emerging markets gained 8.1% but underperformed the MSCI EM index which gained 11.9%. Their strategic underweight to China contributed to the relative underperformance.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: December 31, 2019

	3 Mo (%)	Rank*	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>Total Fund**</b>	<b>3.9</b>	<b>92</b>	<b>5.5</b>	<b>56</b>	<b>16.3</b>	<b>61</b>	<b>5.5</b>	<b>66</b>	<b>8.5</b>	<b>69</b>	<b>6.9</b>	<b>42</b>	<b>8.2</b>	<b>40</b>
<i>Policy Index<sup>1</sup></i>	4.7	72	5.9	31	17.1	50	6.3	36	9.3	34	7.3	32	8.8	28
<i>InvMetrics Public DB &gt; \$1B Net Median</i>	5.2		5.6		17.1		5.9		8.9		6.8		7.9	
<b>Total Fund ex Overlay</b>	<b>4.1</b>	<b>90</b>	<b>5.5</b>	<b>56</b>	<b>16.1</b>	<b>71</b>	<b>5.4</b>	<b>77</b>	<b>8.3</b>	<b>76</b>	<b>6.7</b>	<b>51</b>	<b>8.2</b>	<b>43</b>
<i>Policy Index<sup>1</sup></i>	4.7	72	5.9	31	17.1	50	6.3	36	9.3	34	7.3	32	8.8	28
<i>InvMetrics Public DB &gt; \$1B Net Median</i>	5.2		5.6		17.1		5.9		8.9		6.8		7.9	
<b>Public Equity</b>	<b>8.2</b>	<b>78</b>	<b>8.7</b>	<b>63</b>	<b>26.2</b>	<b>73</b>	<b>6.9</b>	<b>72</b>	<b>12.2</b>	<b>59</b>	<b>8.7</b>	<b>64</b>	<b>9.9</b>	<b>64</b>
<i>Blended Public Equity Index<sup>1</sup></i>	8.6	64	9.0	47	26.7	65	7.0	70	12.5	47	8.9	53	10.4	55
<i>InvMetrics All DB Total Eq Net Median</i>	8.9		8.9		27.4		7.7		12.4		9.0		10.6	
<b>US Equity</b>	<b>7.6</b>	<b>83</b>	<b>9.4</b>	<b>51</b>	<b>28.8</b>	<b>77</b>	<b>10.3</b>	<b>56</b>	<b>13.8</b>	<b>48</b>	<b>10.6</b>	<b>47</b>	<b>12.7</b>	<b>50</b>
<i>Blended US Equity Index<sup>1</sup></i>	9.1	18	10.4	10	31.0	21	11.4	19	14.6	21	11.1	25	13.4	18
<i>Russell 3000</i>	9.1	18	10.4	10	31.0	21	11.4	19	14.6	21	11.2	19	13.4	17
<i>InvMetrics All DB US Eq Net Median</i>	8.6		9.5		30.0		10.5		13.7		10.5		12.7	
<b>Large Cap Equity</b>	<b>7.5</b>	<b>67</b>	<b>9.5</b>	<b>52</b>	<b>29.5</b>	<b>46</b>	<b>11.4</b>	<b>38</b>	<b>15.5</b>	<b>35</b>	<b>11.8</b>	<b>26</b>	<b>13.1</b>	<b>35</b>
<i>Russell 1000</i>	9.0	37	10.6	28	31.4	35	11.9	34	15.0	37	11.5	29	13.5	25
<i>eV US Large Cap Equity Net Median</i>	8.3		9.6		28.9		10.0		13.3		10.1		12.6	
<i>Acadian US MGD V***</i>	5.2	87	8.1	78	25.2	81	--	--	--	--	--	--	--	--
<i>BlackRock Russell 1000</i>	9.0	30	10.6	29	31.4	28	11.9	29	--	--	--	--	--	--
<i>DE Shaw</i>	8.9	33	10.4	32	27.6	66	10.3	48	14.9	29	12.4	8	13.9	8
<i>PanAgora Defuseq***</i>	3.3	97	6.5	92	29.3	46	--	--	--	--	--	--	--	--
<i>Russell 1000</i>	9.0	30	10.6	29	31.4	28	11.9	29	15.0	27	11.5	21	13.5	13
<i>eV US Large Cap Core Equity Net Median</i>	8.0		9.7		28.9		10.0		13.6		10.2		12.8	

\* Total Fund and asset class aggregates are ranked in InvMetrics universes. Managers are ranked in eVest (eA) manager universes.

\*\* Includes Parametric Minneapolis manager funded in August 2013.

\*\*\*Funded December 2018.

1. See Appendix for Benchmark History.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: December 31, 2019

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>Small Cap Equity</b>	<b>9.4</b>	<b>31</b>	<b>8.4</b>	<b>24</b>	<b>22.1</b>	<b>69</b>	<b>3.1</b>	<b>62</b>	<b>6.2</b>	<b>65</b>	<b>5.7</b>	<b>82</b>	<b>10.8</b>	<b>75</b>
<i>Russell 2000</i>	9.9	25	7.3	41	25.5	45	5.7	45	8.6	46	8.2	50	11.8	54
<i>eV US Small Cap Equity Net Median</i>	8.3		6.5		24.7		4.8		7.8		8.1		12.0	
<b>QMA US Small Cap</b>	<b>9.4</b>	<b>28</b>	<b>8.4</b>	<b>21</b>	<b>22.1</b>	<b>67</b>	<b>3.1</b>	<b>67</b>	<b>6.2</b>	<b>76</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>Russell 2000</i>	9.9	23	7.3	45	25.5	41	5.7	44	8.6	46	8.2	56	11.8	57
<i>eV US Small Cap Core Equity Net Median</i>	8.4		6.7		24.4		4.9		8.2		8.5		12.1	
<b>International Equity</b>	<b>8.9</b>	<b>84</b>	<b>8.0</b>	<b>44</b>	<b>23.3</b>	<b>42</b>	<b>3.1</b>	<b>21</b>	<b>10.5</b>	<b>31</b>	<b>6.3</b>	<b>30</b>	<b>5.0</b>	<b>69</b>
<i>Blended International Equity Index<sup>1</sup></i>	8.0	95	7.4	61	21.8	62	1.9	49	10.1	42	6.0	36	5.5	52
<i>MSCI EAFE Gross</i>	8.2	94	7.1	76	22.7	50	3.1	21	10.1	40	6.2	31	6.0	31
<i>InvMetrics All DB ex-US Eq Net Median</i>	9.7		7.7		22.6		1.9		9.9		5.8		5.5	
<b>Developed Markets</b>	<b>10.5</b>	<b>23</b>	<b>8.7</b>	<b>34</b>	<b>24.9</b>	<b>37</b>	<b>3.6</b>	<b>39</b>	<b>10.8</b>	<b>40</b>	<b>6.6</b>	<b>39</b>	<b>5.4</b>	<b>69</b>
<i>MSCI ACWI ex USA Gross</i>	9.0	65	7.1	66	22.1	54	2.6	54	10.4	45	6.0	54	5.4	68
<i>InvMetrics All DB Dev Mkt ex-US Eq Net Median</i>	9.4		7.5		22.6		2.9		10.0		6.1		6.0	
<b>Baillie Gifford</b>	<b>12.5</b>	<b>20</b>	<b>11.3</b>	<b>16</b>	<b>33.6</b>	<b>18</b>	<b>5.5</b>	<b>39</b>	<b>13.6</b>	<b>56</b>	<b>8.4</b>	<b>54</b>	<b>--</b>	<b>--</b>
<i>MSCI ACWI ex US<sup>1</sup></i>	9.0	77	7.1	77	22.1	94	2.6	77	10.4	92	6.0	95	--	--
<i>MSCI ACWI ex US Growth<sup>1</sup></i>	9.6	70	8.8	42	27.8	70	4.8	51	13.3	63	7.7	64	--	--
<i>eV ACWI ex-US Growth Equity Net Median</i>	10.3		8.3		29.8		4.9		13.8		8.5		7.9	
<b>BlackRock EAFE Index</b>	<b>8.2</b>	<b>69</b>	<b>7.1</b>	<b>60</b>	<b>22.4</b>	<b>48</b>	<b>2.9</b>	<b>33</b>	<b>10.0</b>	<b>47</b>	<b>6.0</b>	<b>57</b>	<b>--</b>	<b>--</b>
<i>MSCI EAFE</i>	8.2	69	7.0	62	22.0	53	2.6	37	9.6	50	5.7	64	5.5	87
<i>MSCI EAFE Gross</i>	8.2	69	7.1	56	22.7	46	3.1	32	10.1	43	6.2	54	6.0	73
<i>eV EAFE Core Equity Net Median</i>	9.1		7.4		22.2		1.6		9.6		6.4		7.1	
<b>Mondrian</b>	<b>10.7</b>	<b>40</b>	<b>7.7</b>	<b>59</b>	<b>19.1</b>	<b>46</b>	<b>2.3</b>	<b>23</b>	<b>8.8</b>	<b>32</b>	<b>5.0</b>	<b>41</b>	<b>5.0</b>	<b>55</b>
<i>MSCI ACWI ex USA Value Gross</i>	8.3	92	5.4	92	16.5	65	0.4	43	7.5	52	4.3	57	4.2	70
<i>MSCI ACWI ex USA Gross</i>	9.0	71	7.1	70	22.1	38	2.6	21	10.4	21	6.0	22	5.4	45
<i>eV ACWI ex-US Value Equity Net Median</i>	10.2		8.6		18.5		-0.3		7.5		4.6		5.0	

1. See Appendix for Benchmark History.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: December 31, 2019

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>Emerging Markets</b>	<b>8.1</b>	<b>89</b>	<b>3.4</b>	<b>85</b>	<b>13.7</b>	<b>80</b>	<b>-1.0</b>	<b>51</b>	<b>7.9</b>	<b>79</b>	<b>3.6</b>	<b>78</b>	<b>--</b>	<b>--</b>
MSCI Emerging Markets Gross	11.9	15	7.3	26	18.9	33	1.0	23	12.0	12	6.0	13	4.0	30
InvMetrics All DB Emg Mkt Eq Net Median	11.2		6.3		17.9		-1.0		9.6		4.6		3.3	
Parametric Core	8.1	87	3.4	87	13.7	84	-1.0	66	7.9	88	--	--	--	--
MSCI Emerging Markets Gross	11.9	34	7.3	46	18.9	55	1.0	35	12.0	37	6.0	38	4.0	64
eV Emg Mkts Equity Net Median	11.4		7.0		19.3		0.1		10.7		5.5		4.4	
Parametric Currency Overlay	-18.5	--	7.0	--	18.3	--	--	--	--	--	--	--	--	--
<b>Fixed Income</b>	<b>1.3</b>	<b>17</b>	<b>2.5</b>	<b>46</b>	<b>8.4</b>	<b>56</b>	<b>4.3</b>	<b>43</b>	<b>4.7</b>	<b>33</b>	<b>4.2</b>	<b>25</b>	<b>5.4</b>	<b>17</b>
Blended Fixed Income Index <sup>1</sup>	0.9	27	3.1	22	10.8	23	4.9	21	4.9	28	3.9	33	4.2	59
InvMetrics All DB Total Fix Inc Net Median	0.6		2.4		8.7		4.1		4.3		3.4		4.3	
<b>Core Fixed</b>	<b>0.9</b>	<b>--</b>	<b>2.5</b>	<b>--</b>	<b>8.0</b>	<b>--</b>	<b>3.8</b>	<b>--</b>	<b>4.0</b>	<b>--</b>	<b>3.4</b>	<b>--</b>	<b>4.7</b>	<b>--</b>
BBgBarc US Aggregate TR	0.2	--	2.5	--	8.7	--	4.3	--	4.0	--	3.0	--	3.7	--
BlackRock Intermediate Govt	0.0	31	1.2	69	5.3	75	3.4	61	--	--	--	--	--	--
BBgBarc US Govt Int TR	0.0	34	1.2	71	5.2	77	3.3	73	2.6	82	2.0	86	2.4	87
eV US Government Fixed Inc Net Median	-0.2		1.5		6.4		3.6		3.3		2.3		3.0	
FIAM Bond	0.6	7	2.8	9	9.7	16	4.6	16	4.4	18	3.6	16	4.5	16
BBgBarc US Aggregate TR	0.2	43	2.5	53	8.7	69	4.3	53	4.0	57	3.0	66	3.7	72
Western TRU	3.0	1	3.9	1	9.3	33	3.0	99	4.9	4	--	--	--	--
3-Month Libor Total Return USD	0.5	10	1.0	99	2.4	99	2.4	99	2.0	99	1.4	99	0.9	99
BBgBarc US Aggregate TR	0.2	43	2.5	53	8.7	69	4.3	53	4.0	57	3.0	66	3.7	72
eV US Core Fixed Inc Net Median	0.1		2.5		9.1		4.3		4.1		3.2		4.0	
<b>Opportunistic Credit</b>	<b>1.9</b>	<b>--</b>	<b>2.5</b>	<b>--</b>	<b>9.2</b>	<b>--</b>	<b>5.2</b>	<b>--</b>	<b>6.4</b>	<b>--</b>	<b>6.3</b>	<b>--</b>	<b>9.7</b>	<b>--</b>
BBgBarc BA Intermediate HY <sup>1</sup>	2.3	--	4.2	--	14.7	--	6.1	--	6.1	--	5.8	--	6.2	--
Angelo Gordon Opportunistic**	2.2	--	5.6	--	12.1	--	16.6	--	16.9	--	11.6	--	--	--
Angelo Gordon STAR**	2.2	--	4.3	--	16.1	--	18.9	--	18.8	--	13.3	--	--	--
BBgBarc US Aggregate TR	0.2	--	2.5	--	8.7	--	4.3	--	4.0	--	3.0	--	3.7	--

\*\* Preliminary return as of 12/31/2019.

1. See Appendix for Benchmark History.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: December 31, 2019

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Beach Point Select	3.4	3	4.9	5	12.9	58	6.7	4	7.3	6	--	--	--	--
BBgBarc BA Intermediate HY <sup>1</sup>	2.3	58	4.2	32	14.7	30	6.1	15	6.1	33	5.8	32	6.2	91
eV US High Yield Fixed Inc Net Median	2.4		3.7		13.5		5.3		5.9		5.5		7.1	
Brigade Capital	3.2	8	2.8	79	9.1	85	4.0	90	5.2	80	5.1	72	--	--
BBgBarc BA Intermediate HY <sup>1</sup>	2.3	58	4.2	32	14.7	30	6.1	15	6.1	33	5.8	32	6.2	91
50% Barclays HY/ 50% Bank Loan	2.1	65	3.3	68	11.2	75	5.2	56	5.4	70	5.3	61	--	--
eV US High Yield Fixed Inc Net Median	2.4		3.7		13.5		5.3		5.9		5.5		7.1	
PIMCO Diversified	1.7	85	2.9	76	12.8	61	5.7	37	--	--	--	--	--	--
Blended PIMCO Diversified Index <sup>1</sup>	1.7	85	3.7	53	13.7	47	5.4	45	6.0	39	5.5	53	6.5	78
BBgBarc BA Intermediate HY	2.3	58	4.2	32	14.7	30	6.1	15	6.1	33	5.8	32	6.2	91
eV US High Yield Fixed Inc Net Median	2.4		3.7		13.5		5.3		5.9		5.5		7.1	
Franklin Templeton	1.4	57	-2.1	99	1.1	99	0.5	96	1.7	99	1.7	88	--	--
BBgBarc Multiverse TR	0.6	77	1.3	84	7.1	81	2.8	72	4.4	68	2.5	72	2.7	82
eV All Global Fixed Inc Net Median	1.8		2.7		9.6		3.8		4.9		3.5		4.1	
<b>Private Credit</b>	<b>0.5</b>	<b>--</b>	<b>2.4</b>	<b>--</b>	<b>6.4</b>	<b>--</b>	<b>7.1</b>	<b>--</b>	<b>6.9</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
Cliffwater Direct Lending Index**	1.8	--	3.6	--	8.9	--	8.5	--	8.5	--	8.4	--	10.4	--
PIMCO Private Income**	0.0	99	3.5	63	--	--	--	--	--	--	--	--	--	--
BBgBarc BA Intermediate HY	2.3	58	4.2	32	14.7	30	6.1	15	6.1	33	5.8	32	6.2	91
Cliffwater Direct Lending Index	1.8	84	3.6	56	8.9	88	8.5	1	8.5	2	8.4	1	10.4	1
eV US High Yield Fixed Inc Net Median	2.4		3.7		13.5		5.3		5.9		5.5		7.1	
TCP Direct Lending VIII**	1.5	88	3.0	73	7.2	95	7.1	2	7.1	7	--	--	--	--
White Oak Yield**	0.0	99	1.2	97	5.2	99	7.0	3	--	--	--	--	--	--
Cliffwater Direct Lending Index	1.8	84	3.6	56	8.9	88	8.5	1	8.5	2	8.4	1	10.4	1
eV US High Yield Fixed Inc Net Median	2.4		3.7		13.5		5.3		5.9		5.5		7.1	

\* Funded April 2019.

\*\* Preliminary return as of 12/31/2019.

1. See Appendix for Benchmark History.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: December 31, 2019

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>Risk Parity</b>	2.1	--	4.9	--	23.2	--	6.9	--	9.5	--	6.6	--	--	--
<i>Blended Risk Parity Index<sup>1</sup></i>	4.9	--	6.3	--	19.8	--	7.0	--	9.4	--	7.5	--	--	--
AQR GRP, 10% Volatility	4.5	--	5.8	--	24.2	--	7.6	--	10.4	--	6.1	--	--	--
PanAgora	-0.2	--	4.0	--	22.1	--	6.2	--	8.7	--	6.9	--	--	--
<i>Blended Risk Parity Index<sup>1</sup></i>	4.9	--	6.3	--	19.8	--	7.0	--	9.4	--	7.5	--	--	--
<i>S&amp;P Risk Parity 10% Target Volatility Index TR USD</i>	3.2	--	5.6	--	19.0	--	6.9	--	7.3	--	5.1	--	6.3	--
<b>Alternatives</b>	-2.6	--	5.7	--	7.6	--	4.9	--	6.5	--	6.9	--	--	--
<i>Blended Alternatives Index<sup>1</sup></i>	1.9	--	4.9	--	6.5	--	8.0	--	10.3	--	7.9	--	--	--
<b>Private Equity**</b>	-3.6	97	11.7	8	16.8	13	17.2	14	16.0	25	16.6	9	--	--
<i>Blended Private Equity Index<sup>1</sup></i>	2.3	22	6.5	24	5.9	66	9.3	65	14.1	38	12.2	38	15.4	4
<i>InvMetrics All DB Private Eq Net Median</i>	0.9		3.1		8.0		11.2		11.8		10.8		11.4	
<b>Hedge Fund/Absolute Return</b>	-1.2	97	-1.2	87	-2.7	92	-7.3	97	-3.4	95	0.0	80	--	--
<i>Libor 1 month +4%</i>	1.4	67	3.0	35	6.3	53	6.2	10	5.8	21	5.2	10	4.7	29
<i>InvMetrics All DB Hedge Funds Net Median</i>	2.4		2.2		6.7		3.0		3.8		2.7		4.1	
AQR DELTA XN	-3.1	92	-4.2	93	-10.3	96	-12.8	98	-7.1	96	-2.1	93	--	--
Aberdeen Standard GARS	1.3	59	2.9	49	9.1	46	1.5	63	2.2	75	--	--	--	--
<i>Libor 1 month +4%</i>	1.4	58	3.0	48	6.3	63	6.2	24	5.8	44	5.2	43	4.7	60
<i>eV Alt All Multi-Strategy Median</i>	2.0		2.8		8.6		3.4		4.7		4.5		5.5	
<b>Inflation Hedge</b>	2.7	--	2.4	--	8.1	--	3.2	--	4.9	--	--	--	--	--
<i>Blended Inflation Hedge Index<sup>1</sup></i>	2.5	--	2.8	--	9.3	--	4.3	--	5.8	--	--	--	--	--
<b>Real Estate</b>	2.1	8	4.1	20	6.6	27	7.6	13	7.8	17	9.4	5	11.3	8
NCREIF ODCE	1.5	21	2.8	40	5.3	54	6.8	33	7.1	30	9.0	12	11.4	6
<i>InvMetrics All DB Real Estate Pub Net Median</i>	1.1		2.5		5.5		6.4		6.6		7.7		10.0	

\* Excludes EnCap Energy Capital Fund and Sheridan Production Partners.

\*\* Returns are one-quarter lag.

1. See Appendix for Benchmark History.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: December 31, 2019

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Invesco	2.2	--	4.1	--	6.2	--	7.6	--	7.7	--	9.3	--	11.2	--
NCREIF ODCE	1.5	--	2.8	--	5.3	--	6.8	--	7.1	--	9.0	--	11.4	--
Invesco US Val IV	3.4	--	8.5	--	13.9	--	12.6	--	12.4	--	--	--	--	--
NCREIF ODCE	1.5	--	2.8	--	5.3	--	6.8	--	7.1	--	9.0	--	11.4	--
NCREIF CEVA 1Q Lag - NET	3.0	--	6.0	--	12.3	--	12.1	--	11.5	--	12.9	--	--	--
Invesco US Val V***	4.8	--	5.7	--	--	--	--	--	--	--	--	--	--	--
NCREIF ODCE	1.5	--	2.8	--	5.3	--	6.8	--	7.1	--	9.0	--	11.4	--
NCREIF CEVA 1Q Lag - NET	3.0	--	6.0	--	12.3	--	12.1	--	11.5	--	12.9	--	--	--
PGIM RE US Debt Fund	1.4	--	3.0	--	6.2	--	6.0	--	--	--	--	--	--	--
NCREIF ODCE	1.5	--	2.8	--	5.3	--	6.8	--	7.1	--	9.0	--	11.4	--
<b>Private Real Asset**</b>	<b>0.1</b>	<b>--</b>	<b>-0.6</b>	<b>--</b>	<b>-10.9</b>	<b>--</b>	<b>-3.5</b>	<b>--</b>	<b>-3.3</b>	<b>--</b>	<b>4.7</b>	<b>--</b>	<b>--</b>	<b>--</b>
Blended Private Real Asset Index <sup>1</sup>	-2.7	--	1.0	--	4.1	--	0.4	--	4.3	--	4.8	--	--	--
Blended Secondary CA Private RA Index <sup>1</sup>	-1.2	--	-1.3	--	-1.3	--	4.2	--	7.2	--	3.7	--	--	--
<b>Public Real Assets</b>	<b>4.3</b>	<b>--</b>	<b>1.2</b>	<b>--</b>	<b>14.7</b>	<b>--</b>	<b>0.0</b>	<b>--</b>	<b>4.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
Blended Public Real Asset Index <sup>1</sup>	5.8	--	3.0	--	15.8	--	1.9	--	5.7	--	5.9	--	--	--
Cushing MLP Alpha TR	-1.1	--	-5.0	--	10.5	--	--	--	--	--	--	--	--	--
50% BBgBarc US TIPS/ 50% Blended PRA Index	3.3	--	2.7	--	12.3	--	--	--	--	--	--	--	--	--
Alerian MLP TR USD	-4.1	--	-8.9	--	6.6	--	-3.4	--	-4.4	--	-7.0	--	4.2	--
SSgA Custom Real Asset	5.8	--	3.1	--	15.9	--	1.9	--	5.8	--	--	--	--	--
SSgA Custom Real Asset Index <sup>1</sup>	5.8	--	3.0	--	15.8	--	1.9	--	5.7	--	--	--	--	--
<b>TIPS</b>	<b>0.8</b>	<b>--</b>	<b>1.4</b>	<b>--</b>	<b>7.0</b>	<b>--</b>	<b>3.1</b>	<b>--</b>	<b>2.9</b>	<b>--</b>	<b>2.4</b>	<b>--</b>	<b>--</b>	<b>--</b>
BBgBarc US TIPS TR	0.8	--	2.1	--	8.4	--	3.5	--	3.3	--	2.6	--	3.4	--
Brown Brothers Harriman	0.8	48	1.4	99	7.0	71	3.1	73	2.9	67	2.4	60	--	--
BBgBarc US TIPS TR	0.8	50	2.1	42	8.4	54	3.5	33	3.3	52	2.6	42	3.4	34
eV US TIPS / Inflation Fixed Inc Net Median	0.8	--	2.1	--	8.5	--	3.3	--	3.3	--	2.5	--	3.2	--

\*\* Returns are one-quarter lag.

\*\*\* Funded February 2019.

1. See Appendix for Benchmark History.

Total Fund  
Performance Summary (Net of Fees)

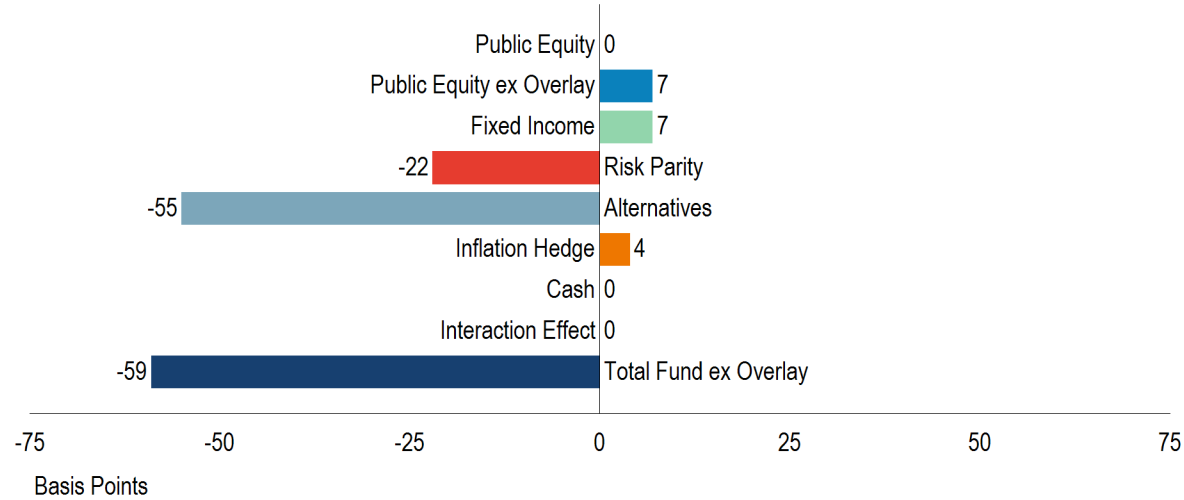
Period Ending: December 31, 2019

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Cash	0.3	--	0.5	--	1.2	--	1.2	--	1.1	--	1.1	--	0.9	--
91 Day T-Bills	0.4	--	0.9	--	2.1	--	2.0	--	1.6	--	1.1	--	0.6	--
General Account	0.5	--	1.1	--	3.1	--	4.0	--	3.3	--	2.5	--	1.4	--
Treasury & LAIF	0.7	--	1.4	--	3.1	--	3.9	--	3.0	--	2.1	--	1.5	--
91 Day T-Bills	0.4	--	0.9	--	2.1	--	2.0	--	1.6	--	1.1	--	0.6	--



Total Fund ex Overlay  
Performance Attribution

Period Ending: December 31, 2019

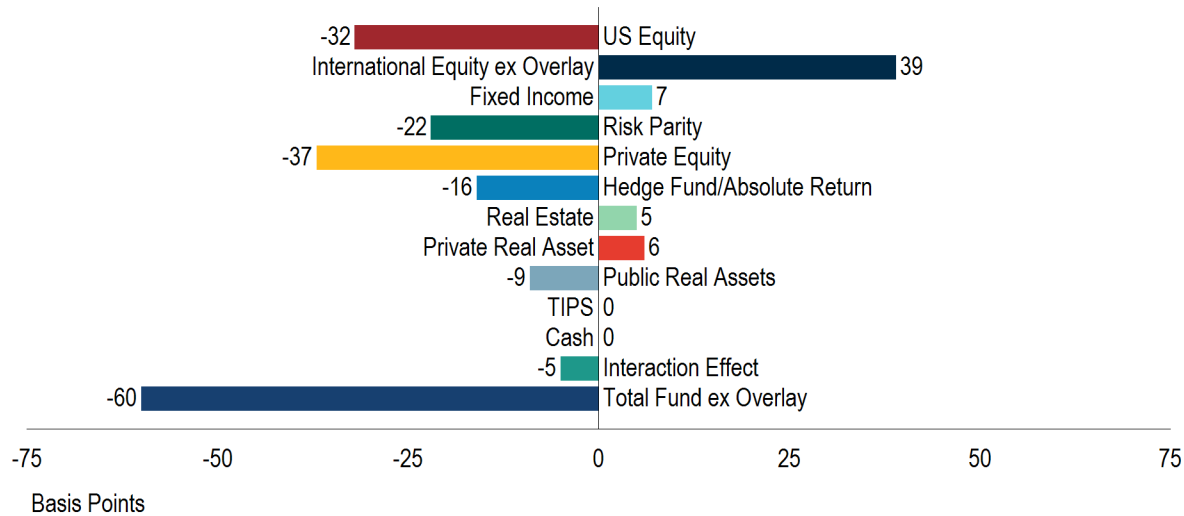


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction* Effects	Total Effects
Public Equity	8.21%	8.61%	-0.41%	0.00%	0.00%	0.00%	0.00%
Public Equity ex Overlay	8.80%	8.61%	0.18%	0.07%	0.00%	0.00%	0.07%
Fixed Income	1.26%	0.95%	0.32%	0.07%	0.02%	0.00%	0.09%
Risk Parity	2.12%	4.87%	-2.75%	-0.22%	0.00%	-0.01%	-0.23%
Alternatives	-2.57%	1.88%	-4.45%	-0.55%	0.02%	0.01%	-0.52%
Inflation Hedge	2.69%	2.50%	0.19%	0.04%	0.00%	0.00%	0.03%
Cash	0.26%	0.39%	-0.13%	0.00%	-0.03%	0.00%	-0.03%
<b>Total</b>	<b>4.07%</b>	<b>4.67%</b>	<b>-0.59%</b>	<b>-0.60%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>-0.59%</b>

Attribution does not include the impact of the Parametric Minneapolis strategy.  
\* Interaction Effects include Residual Effects.

Total Fund ex Overlay  
Performance Attribution

Period Ending: December 31, 2019

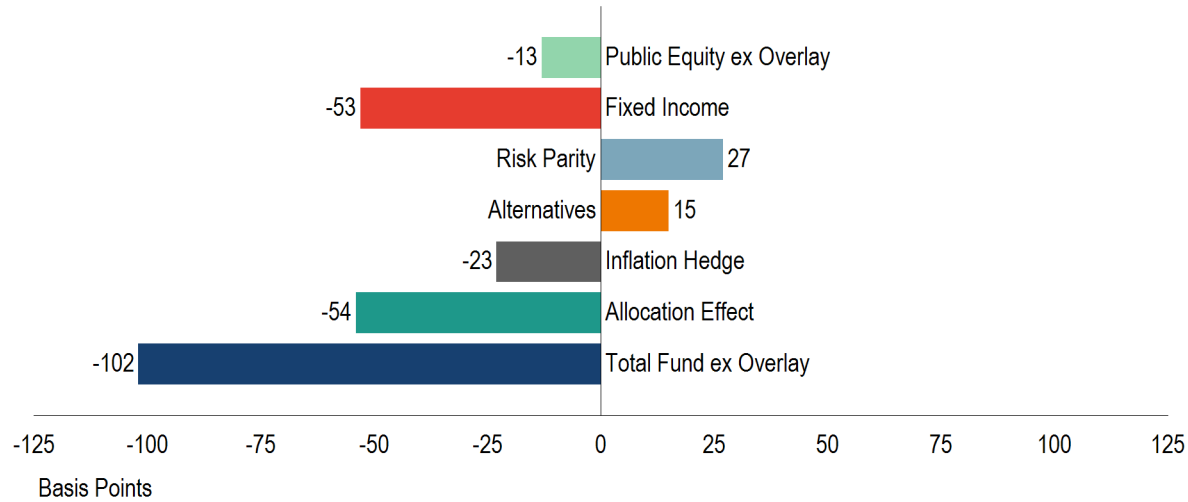


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction *	Total Effects
US Equity	7.63%	9.10%	-1.47%	-0.32%	-0.01%	0.01%	-0.32%
International Equity ex Overlay	10.22%	8.01%	2.21%	0.39%	0.00%	0.00%	0.39%
Fixed Income	1.26%	0.95%	0.32%	0.07%	0.02%	0.00%	0.09%
Risk Parity	2.12%	4.87%	-2.75%	-0.22%	0.00%	-0.01%	-0.23%
Private Equity	-3.63%	2.29%	-5.92%	-0.37%	-0.01%	-0.04%	-0.41%
Hedge Fund/Absolute Return	-1.22%	1.44%	-2.66%	-0.16%	0.03%	0.02%	-0.11%
Real Estate	2.13%	1.51%	0.62%	0.05%	0.00%	0.00%	0.05%
Private Real Asset	0.12%	-2.65%	2.77%	0.06%	0.02%	-0.01%	0.07%
Public Real Assets	4.25%	5.83%	-1.58%	-0.09%	0.00%	-0.01%	-0.10%
TIPS	0.85%	0.79%	0.06%	0.00%	0.01%	0.00%	0.01%
Cash	0.26%	0.39%	-0.13%	0.00%	-0.03%	0.00%	-0.03%
<b>Total</b>	<b>4.07%</b>	<b>4.67%</b>	<b>-0.60%</b>	<b>-0.59%</b>	<b>0.04%</b>	<b>-0.05%</b>	<b>-0.60%</b>

Attribution does not include the impact of the Parametric Minneapolis strategy.  
\* Interaction Effects include Residual Effects.

Total Fund ex Overlay  
Performance Attribution (1 Year)

Period Ending: December 31, 2019

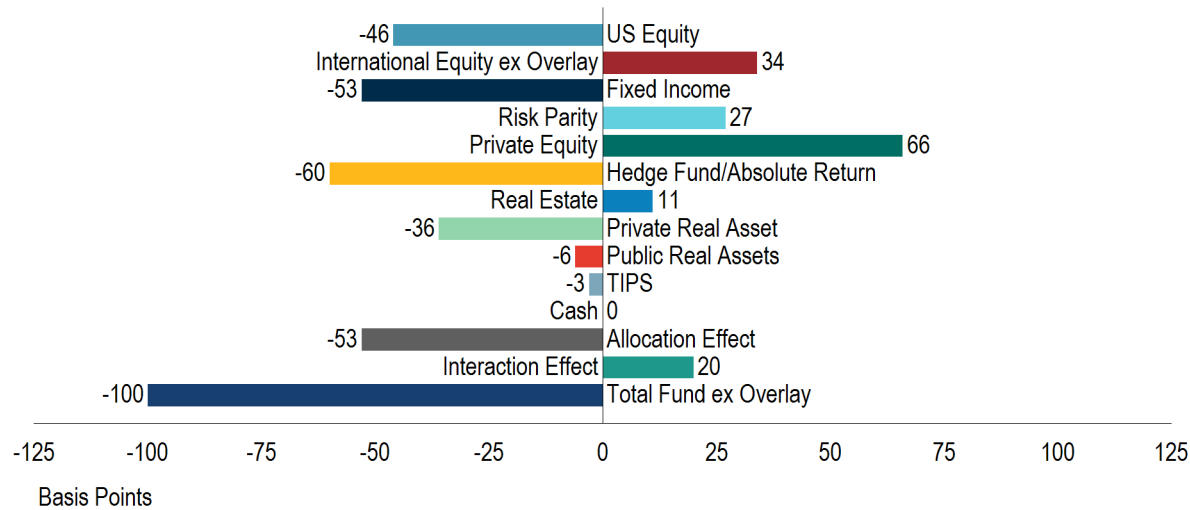


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction *	Total Effects
Public Equity	26.21%	26.69%	-0.48%	0.00%	0.00%	0.00%	0.00%
Public Equity ex Overlay	26.40%	26.69%	-0.30%	-0.13%	-0.23%	0.02%	-0.34%
Fixed Income	8.41%	10.77%	-2.36%	-0.53%	-0.03%	-0.02%	-0.57%
Risk Parity	23.20%	19.78%	3.42%	0.27%	0.00%	-0.01%	0.26%
Alternatives	7.56%	6.53%	1.03%	0.15%	-0.05%	0.00%	0.10%
Inflation Hedge	8.10%	9.33%	-1.24%	-0.23%	0.00%	0.01%	-0.22%
Cash	1.18%	2.07%	-0.90%	0.00%	-0.24%	-0.01%	-0.25%
<b>Total</b>	<b>16.07%</b>	<b>17.09%</b>	<b>-1.02%</b>	<b>-0.47%</b>	<b>-0.54%</b>	<b>-0.01%</b>	<b>-1.02%</b>

Attribution does not include the impact of the Parametric Minneapolis strategy.  
\* Interaction Effects include Residual Effects.

Total Fund ex Overlay  
Performance Attribution (1 Year)

Period Ending: December 31, 2019



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction *	Total Effects
US Equity	28.84%	31.02%	-2.18%	-0.46%	-0.18%	0.02%	-0.62%
International Equity ex Overlay	23.62%	21.75%	1.87%	0.34%	-0.06%	0.01%	0.28%
Fixed Income	8.41%	10.77%	-2.36%	-0.53%	-0.03%	-0.02%	-0.57%
Risk Parity	23.20%	19.78%	3.42%	0.27%	0.00%	-0.01%	0.26%
Private Equity	16.78%	5.92%	10.87%	0.66%	-0.10%	0.03%	0.60%
Hedge Fund/Absolute Return	-2.66%	6.26%	-8.91%	-0.60%	0.06%	0.07%	-0.47%
Real Estate	6.63%	5.34%	1.29%	0.11%	-0.05%	0.00%	0.07%
Private Real Asset	-10.90%	4.14%	-15.04%	-0.36%	0.04%	0.10%	-0.22%
Public Real Assets	14.70%	15.82%	-1.11%	-0.06%	-0.03%	-0.01%	-0.10%
TIPS	7.00%	8.43%	-1.43%	-0.03%	0.05%	0.02%	0.04%
Cash	1.18%	2.07%	-0.90%	0.00%	-0.24%	-0.01%	-0.25%
<b>Total</b>	<b>16.09%</b>	<b>17.09%</b>	<b>-1.00%</b>	<b>-0.67%</b>	<b>-0.53%</b>	<b>0.20%</b>	<b>-1.00%</b>

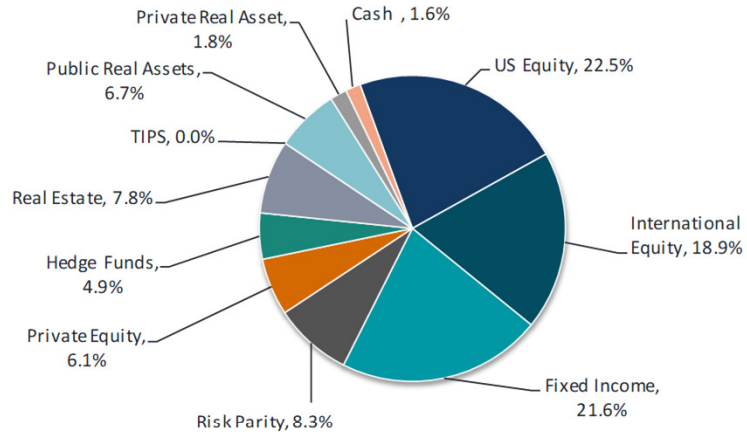
Attribution does not include the impact of the Parametric Minneapolis strategy.  
\* Interaction Effects include Residual Effects.

# Total Fund

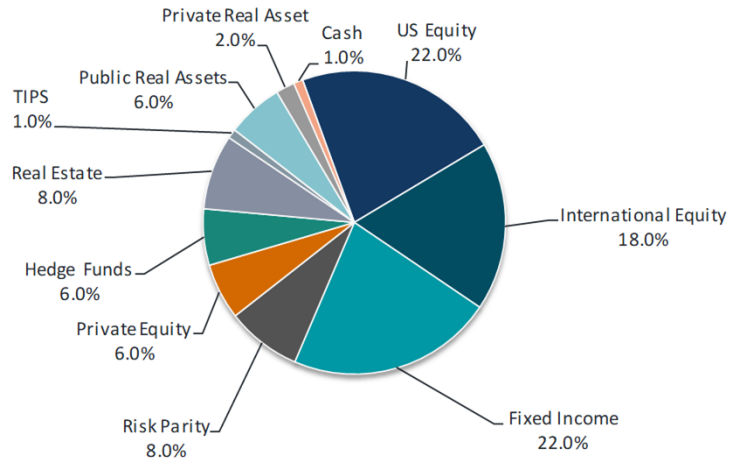
## Asset Allocation Analysis

Period Ending: December 31, 2019

**Current w/Overlay**



**Target**

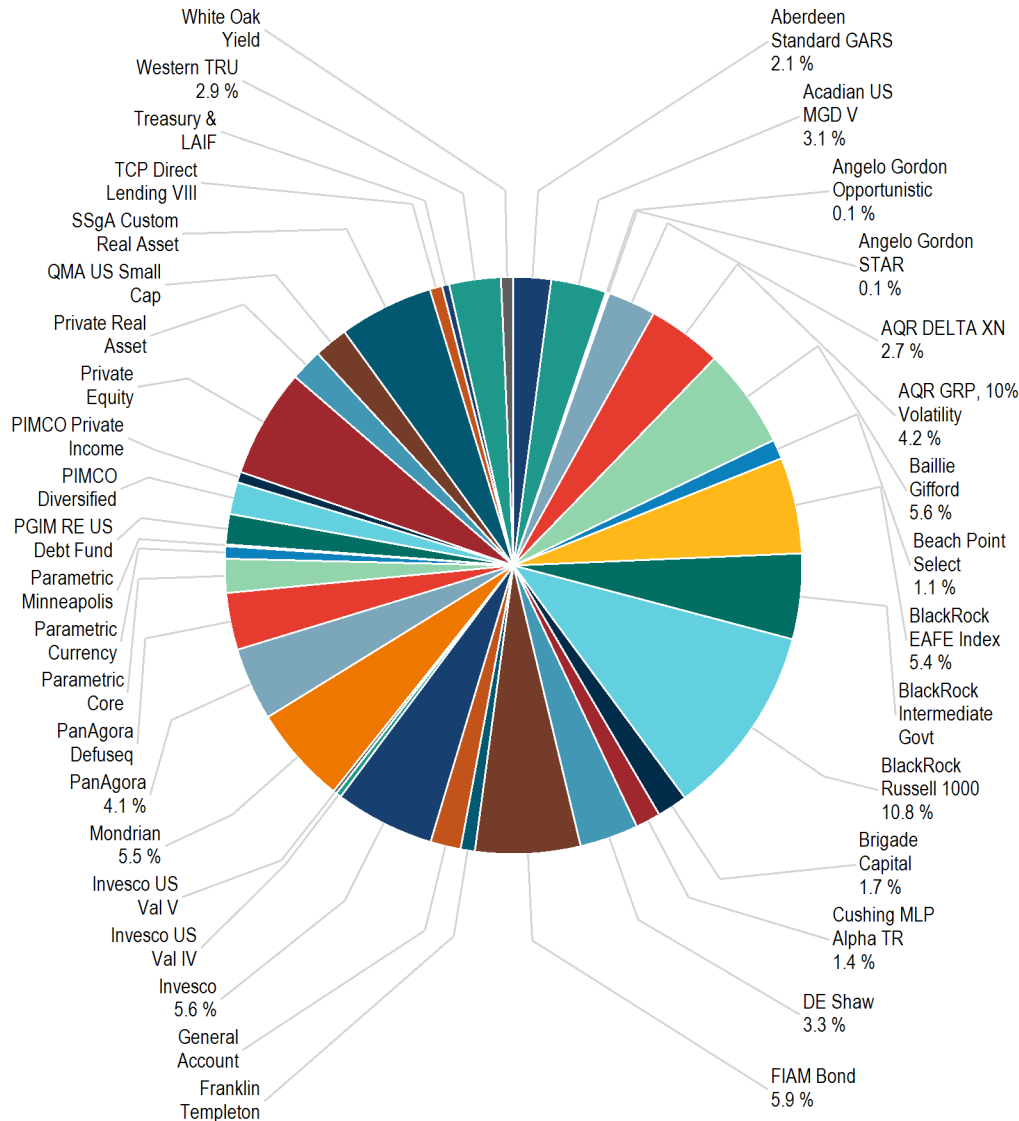


ASSET ALLOCATION	MARKET VALUE	
	W/OVERLAY	W/O OVERLAY
US Equity	1,109,093,001	22.5%
International Equity	934,362,052	18.9%
Fixed Income	1,065,012,457	21.6%
Risk Parity	407,983,746	8.3%
Private Equity	298,636,081	6.1%
Hedge Funds	240,037,601	4.9%
Real Estate	383,339,271	7.8%
TIPS	5	0.0%
Public Real Assets	330,270,554	6.7%
Private Real Asset	87,423,517	1.8%
Cash	78,525,669	1.6%
<b>TOTAL</b>	<b>4,934,683,954</b>	<b>100.0%</b>

ASSET ALLOCATION	W/OVERLAY	TARGET	DIFF
US Equity	22.5%	22.0%	0.5%
International Equity	18.9%	18.0%	0.9%
Fixed Income	21.6%	22.0%	-0.4%
Risk Parity	8.3%	8.0%	0.3%
Private Equity	6.1%	6.0%	0.1%
Hedge Funds	4.9%	6.0%	-1.1%
Real Estate	7.8%	8.0%	-0.2%
TIPS	0.0%	1.0%	-1.0%
Public Real Assets	6.7%	6.0%	0.7%
Private Real Asset	1.8%	2.0%	-0.2%
Cash	1.6%	1.0%	0.6%
<b>TOTAL</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

# Total Fund Manager Allocation Analysis

Period Ending: December 31, 2019



	Actual	Actual
Aberdeen Standard GARS	\$105,385,764	2%
Acadian US MGD V	\$152,706,391	3%
Angelo Gordon Opportunistic	\$4,346,389	0%
Angelo Gordon STAR	\$3,678,183	0%
AQR DELTA XN	\$134,651,837	3%
AQR GRP, 10% Volatility	\$207,741,992	4%
Baillie Gifford	\$276,173,566	6%
Beach Point Select	\$55,137,254	1%
BlackRock EAFE Index	\$268,646,221	5%
BlackRock Intermediate Govt	\$236,638,615	5%
BlackRock Russell 1000	\$532,966,024	11%
Brigade Capital	\$81,482,442	2%
Brown Brothers Harriman	\$5	0%
Cushing MLP Alpha TR	\$71,126,241	1%
DE Shaw	\$160,378,842	3%
FIAM Bond	\$289,118,024	6%
Franklin Templeton	\$41,472,564	1%
General Account	\$84,692,916	2%
Invesco	\$275,736,268	6%
Invesco US Val IV	\$14,544,147	0%
Invesco US Val V	\$7,808,539	0%
Mondrian	\$272,195,593	6%
PanAgora	\$200,241,754	4%
PanAgora Defuseq	\$156,628,211	3%
Parametric Core	\$94,515,798	2%
Parametric Currency Overlay	\$34,036,460	1%
Parametric Minneapolis Overlay	\$7,285,198	0%
PGIM RE US Debt Fund	\$85,250,317	2%
PIMCO Diversified	\$90,318,923	2%
PIMCO Private Income	\$27,291,328	1%
Private Equity	\$298,636,081	6%
Private Real Asset	\$87,423,517	2%
QMA US Small Cap	\$91,978,218	2%
SSgA Custom Real Asset	\$259,144,313	5%
TCP Direct Lending VIII	\$32,550,535	1%
Transition 3	\$6	0%
Treasury & LAIF	\$17,837,111	0%
Western TRU	\$142,225,506	3%
White Oak Yield	\$32,692,859	1%
<b>Total</b>	<b>\$4,934,683,954</b>	<b>100%</b>

**Statistics Summary**

**3 Years**

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	8.5%	69	5.8%	34	1.2	53	-0.8	83	1.1%	59
Policy Index	9.3%	34	5.9%	36	1.3	23	--	--	0.0%	1
InvMetrics Public DB > \$1B Net Median	8.9%	--	6.4%	--	1.2	--	-0.1	--	0.9%	--

**Statistics Summary**

**5 Years**

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	6.9%	42	6.3%	45	0.9	38	-0.4	71	1.2%	60
Policy Index	7.3%	32	6.7%	54	0.9	34	--	--	0.0%	1
InvMetrics Public DB > \$1B Net Median	6.8%	--	6.6%	--	0.9	--	-0.1	--	1.1%	--

**Statistics Summary**

**3 Years**

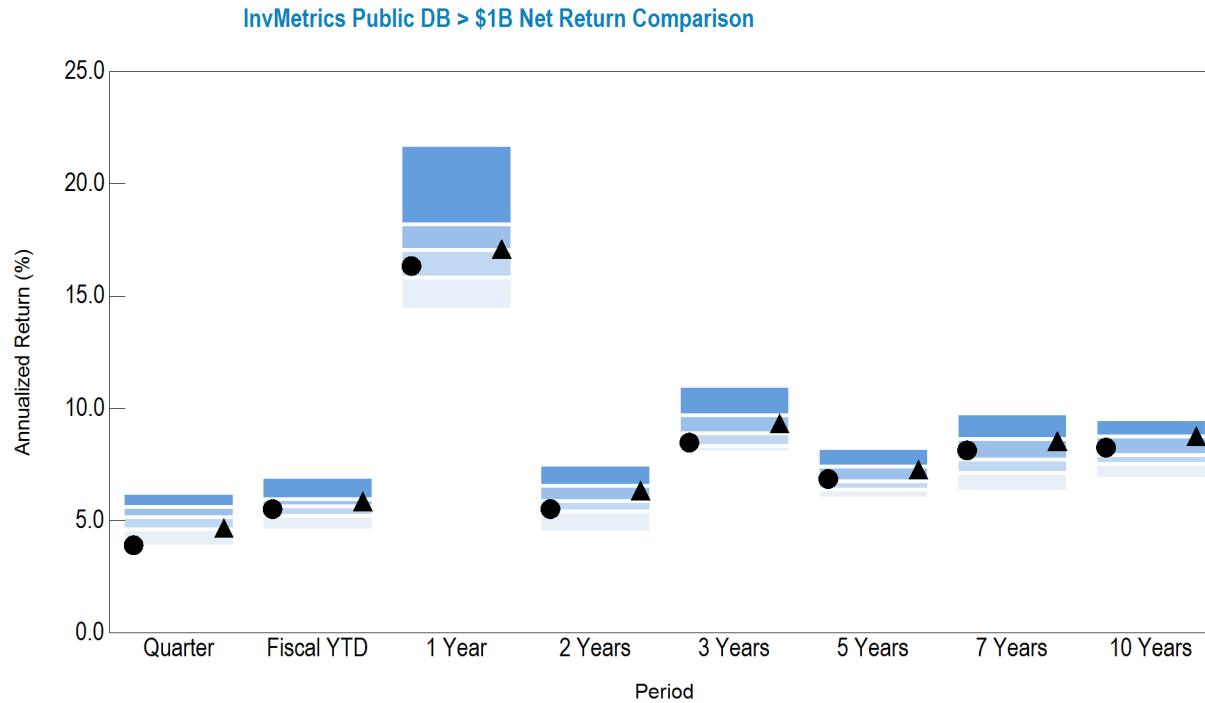
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Cash	1.1%	0.2%	-3.7	-3.1	0.2%
91 Day T-Bills	1.6%	0.2%	0.0	--	0.0%
General Account	3.3%	0.9%	1.7	1.8	0.9%
91 Day T-Bills	1.6%	0.2%	0.0	--	0.0%
Treasury & LAIF	3.0%	1.0%	1.4	1.4	0.9%
91 Day T-Bills	1.6%	0.2%	0.0	--	0.0%

**Statistics Summary**

**5 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Cash	1.1%	0.3%	0.0	0.0	0.4%
91 Day T-Bills	1.1%	0.2%	0.0	--	0.0%
General Account	2.5%	0.9%	1.7	1.9	0.8%
91 Day T-Bills	1.1%	0.2%	0.0	--	0.0%
Treasury & LAIF	2.1%	0.9%	1.2	1.3	0.8%
91 Day T-Bills	1.1%	0.2%	0.0	--	0.0%

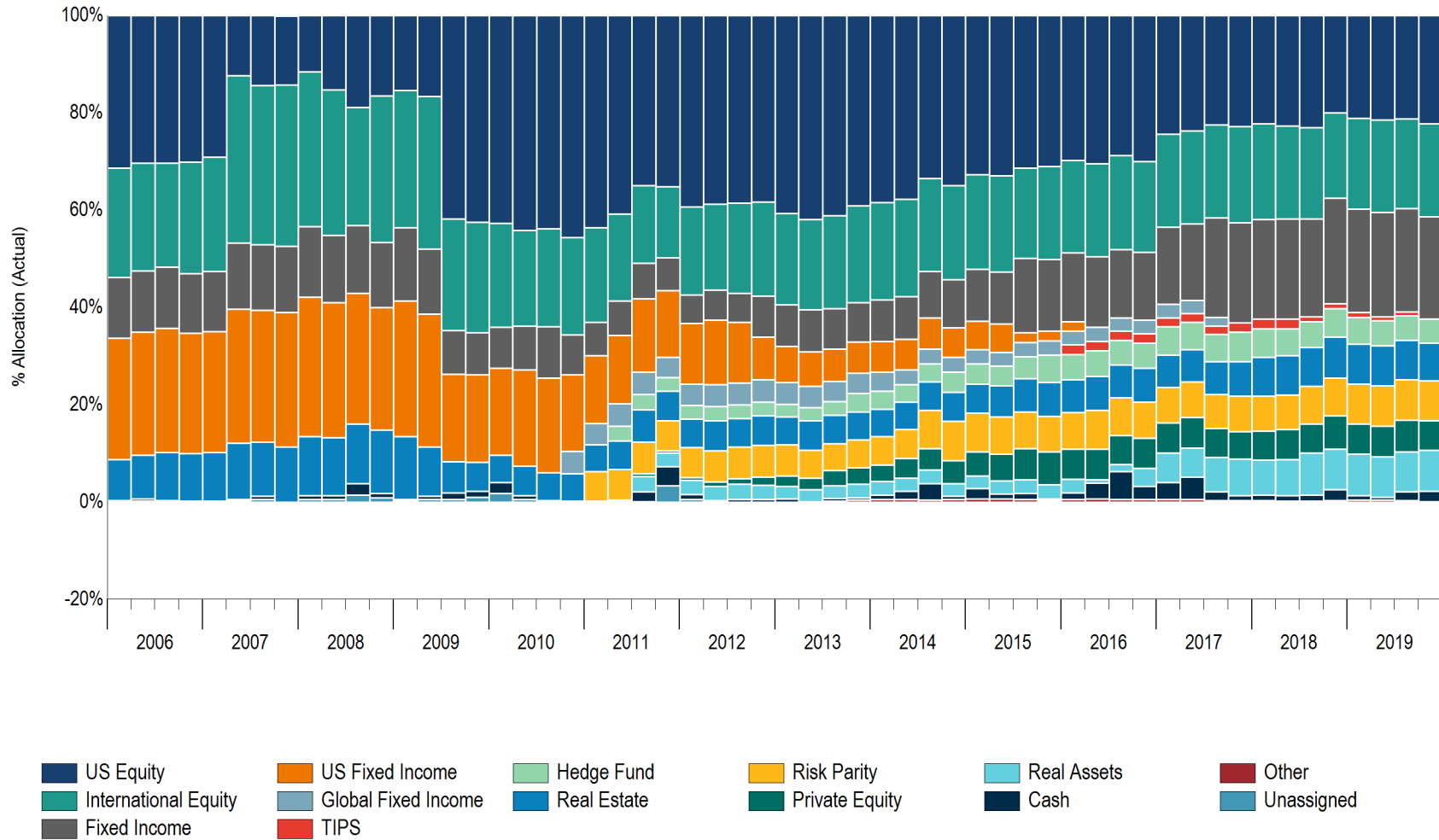




	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>Return (Rank)</b>								
5th Percentile	6.2	6.9	21.7	7.5	11.0	8.2	9.8	9.5
25th Percentile	5.6	6.0	18.2	6.6	9.7	7.4	8.7	8.8
Median	5.2	5.6	17.1	5.9	8.9	6.8	7.7	7.9
75th Percentile	4.6	5.2	15.9	5.4	8.3	6.4	7.1	7.5
95th Percentile	3.9	4.6	14.4	4.5	8.0	6.0	6.3	6.9
# of Portfolios	58	58	58	58	58	56	55	49
● Total Fund	3.9 (92)	5.5 (56)	16.3 (61)	5.5 (66)	8.5 (69)	6.9 (42)	8.1 (47)	8.2 (40)
▲ Policy Index	4.7 (72)	5.9 (31)	17.1 (50)	6.3 (36)	9.3 (34)	7.3 (32)	8.5 (28)	8.8 (28)

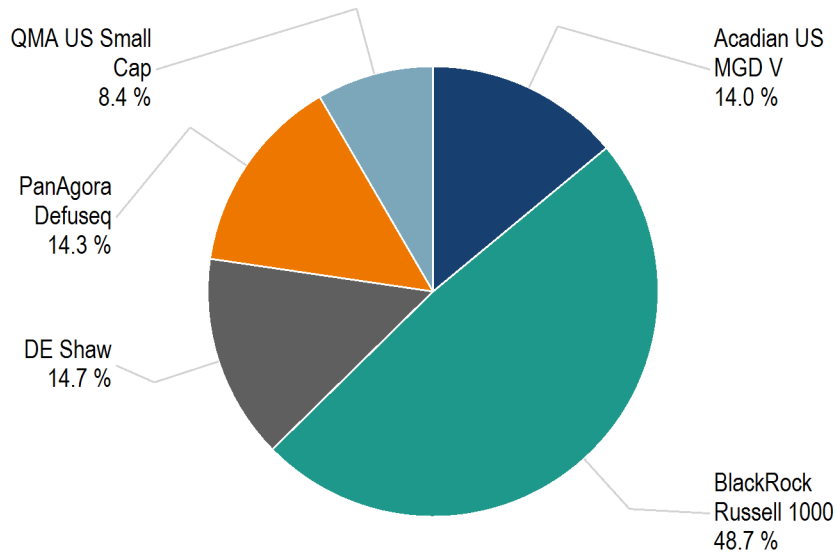
Total Fund  
Asset Allocation History

Period Ending: December 31, 2019



US Equity  
 Manager Allocation Analysis

Period Ending: December 31, 2019



	Actual \$	Actual %	Manager Contribution to Excess Return %
Acadian US MGD V	\$152,706,391	14.0%	-0.6%
BlackRock Russell 1000	\$532,966,024	48.7%	0.0%
DE Shaw	\$160,378,842	14.7%	0.0%
PanAgora Defuseq	\$156,628,211	14.3%	-0.9%
QMA US Small Cap	\$91,978,218	8.4%	-0.1%
Transition Account	\$6	0.0%	0.0%
Actual vs. Policy Weight Difference			0.0%
<b>Total</b>	<b>\$1,094,657,692</b>	<b>100.0%</b>	<b>-1.5%</b>

**Statistics Summary**

**3 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	13.8%	11.9%	1.0	-0.8	1.0%
Blended US Equity Index	14.6%	12.4%	1.0	--	0.0%
Russell 3000	14.6%	12.4%	1.0	--	0.0%

**Statistics Summary**

**3 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	15.5%	11.6%	1.2	0.3	1.5%
Russell 1000	15.0%	12.2%	1.1	--	0.0%
DE Shaw	14.9%	11.8%	1.1	-0.1	2.2%
Russell 1000	15.0%	12.2%	1.1	--	0.0%
Small Cap Equity	6.2%	16.1%	0.3	-0.9	2.6%
Russell 2000	8.6%	15.9%	0.4	--	0.0%
QMA US Small Cap	6.2%	16.1%	0.3	-0.9	2.6%
Russell 2000	8.6%	15.9%	0.4	--	0.0%

**Statistics Summary**

**5 Years**

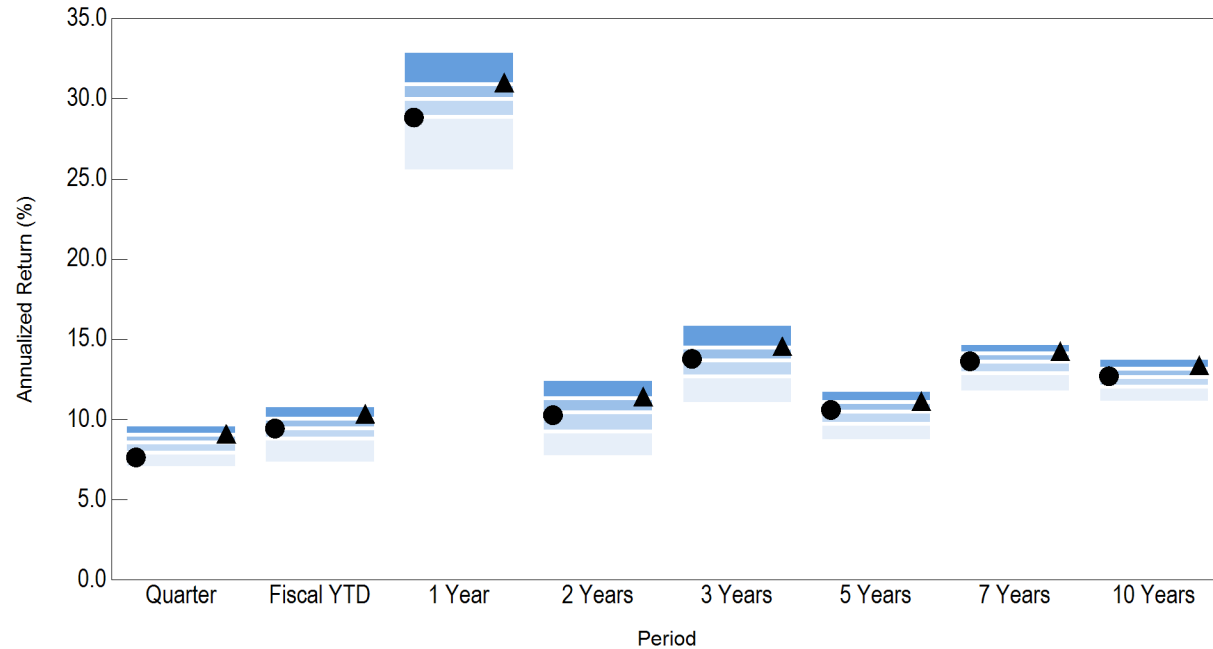
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	10.6%	12.0%	0.8	-0.6	0.9%
Blended US Equity Index	11.1%	12.3%	0.8	--	0.0%
Russell 3000	11.2%	12.2%	0.8	0.2	0.5%

**Statistics Summary**

**5 Years**

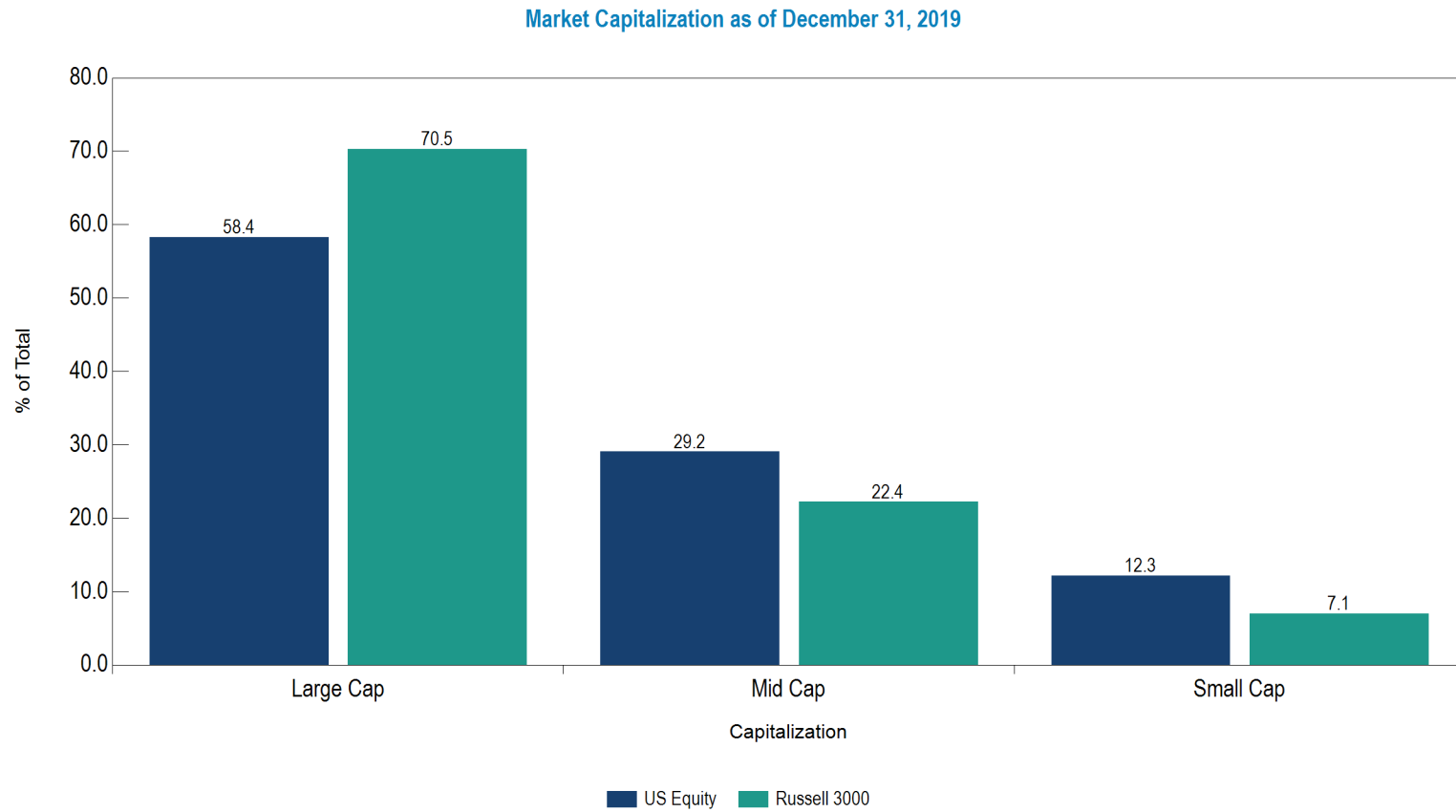
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	11.8%	11.7%	0.9	0.3	1.3%
Russell 1000	11.5%	12.1%	0.9	--	0.0%
DE Shaw	12.4%	12.0%	0.9	0.4	2.3%
Russell 1000	11.5%	12.1%	0.9	--	0.0%
Small Cap Equity	5.7%	15.9%	0.3	-0.9	2.7%
Russell 2000	8.2%	16.0%	0.4	--	0.0%

InvMetrics All DB US Eq Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	9.7	10.9	33.0	12.5	16.0	11.8	14.7	13.8
25th Percentile	9.1	10.1	30.9	11.4	14.5	11.1	14.1	13.2
Median	8.6	9.5	30.0	10.5	13.7	10.5	13.6	12.7
75th Percentile	8.0	8.8	28.9	9.3	12.7	9.8	12.9	12.1
95th Percentile	7.0	7.3	25.5	7.7	11.0	8.7	11.7	11.1
# of Portfolios	557	556	552	548	536	511	455	355
● US Equity	7.6 (83)	9.4 (51)	28.8 (77)	10.3 (56)	13.8 (48)	10.6 (47)	13.6 (49)	12.7 (50)
▲ Blended US Equity Index	9.1 (18)	10.4 (10)	31.0 (21)	11.4 (19)	14.6 (21)	11.1 (25)	14.3 (22)	13.4 (18)





See appendix for the market capitalization breakpoints.

Characteristics

	Portfolio	Russell 3000
Number of Holdings	2,914	2,992
Weighted Avg. Market Cap. (\$B)	174.8	230.5
Median Market Cap. (\$B)	3.4	1.8
Price To Earnings	21.9	22.8
Price To Book	3.3	3.6
Price To Sales	1.7	1.9
Return on Equity (%)	21.1	20.9
Yield (%)	1.9	1.8
Beta (holdings; domestic)	1.0	1.0

Top Holdings

APPLE	2.8%
MICROSOFT	2.7%
AMAZON.COM	1.6%
JOHNSON & JOHNSON	1.3%
ALPHABET A	1.1%
VERIZON COMMUNICATIONS	1.0%
JP MORGAN CHASE & CO.	1.0%
VISA 'A'	0.9%
FACEBOOK CLASS A	0.9%
AT&T	0.8%

Best Performers

	Return %
IVERIC BIO (ISEE)	666.1%
FORTY SEVEN (FTSV)	513.2%
CHEMOCENTRYX (CCXI)	483.3%
AXSOME THERAPEUTICS (AXSM)	410.7%
KODIAK SCIENCES (KOD)	400.3%
CLEARSIDE BIOMEDICAL (CLSD)	360.3%
INTRA CELLULAR THERAPIES (ITCI)	359.3%
NEOLEUKIN THERAPEUTICS (NLTX)	332.3%
STAGE STORES (SSI)	331.9%
SUPERIOR ENERGY SVCS (SPN)	285.4%

Worst Performers

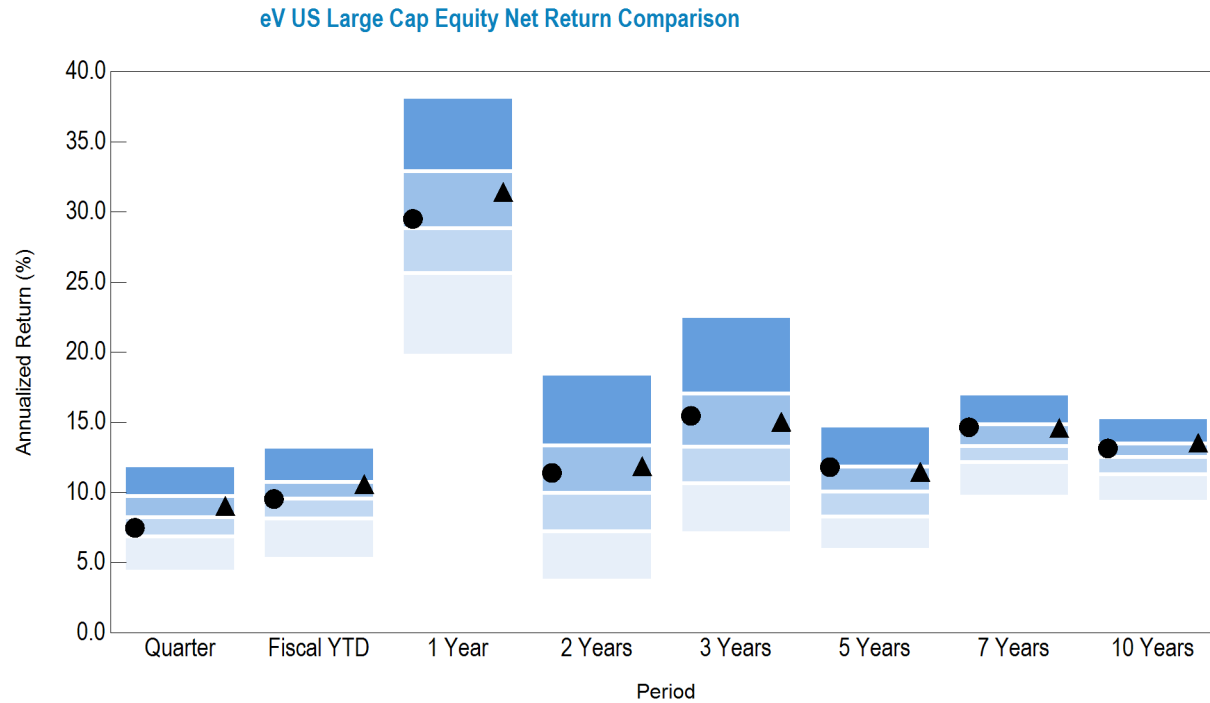
	Return %
APPROACH RES (AREXQ)	-95.5%
DEAN FOODS (DFODQ)	-94.8%
NUVECTRA (NVTRQ)	-93.0%
CARBO CERAMICS (CRRT)	-90.2%
HORNBECK OFFS.SVS. (HOSS)	-86.2%
LSC COMMUNICATIONS (LKSD)	-85.1%
SIENNA BIOPH. (SNNAQ)	-83.9%
BASIC ENERGY SERVICES (BASX)	-81.6%
UNIT (UNT)	-79.4%
CYCLERION THERAPEUTICS (CYCN)	-77.6%

US Equity Performance Attribution vs. Russell 3000

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.1%	0.0%	0.0%	0.0%	6.8%	6.0%	3.4%	4.3%			
Materials	-0.1%	-0.1%	0.0%	0.0%	4.4%	7.0%	3.6%	2.9%			
Industrials	0.0%	0.0%	0.0%	0.0%	5.5%	5.9%	9.7%	10.2%			
Consumer Discretionary	-0.2%	-0.2%	-0.1%	0.0%	4.2%	5.8%	12.1%	10.4%			
Consumer Staples	-0.2%	-0.1%	-0.1%	0.0%	2.4%	3.7%	7.9%	6.6%			
Health Care	-0.2%	-0.2%	0.0%	0.0%	13.4%	15.0%	13.4%	13.3%			
Financials	0.0%	0.0%	0.0%	0.0%	9.5%	9.8%	11.9%	13.5%			
Information Technology	-0.4%	-0.3%	-0.1%	0.0%	12.5%	14.0%	18.8%	21.5%			
Communication Services	-0.1%	-0.2%	0.0%	0.0%	7.6%	9.3%	8.8%	9.5%			
Utilities	-0.2%	0.0%	-0.3%	0.0%	0.8%	0.4%	6.2%	3.4%			
Real Estate	0.1%	0.1%	0.0%	0.0%	2.1%	0.7%	3.9%	4.2%			
Cash	0.0%	0.0%	0.0%	0.0%	0.4%	--	0.1%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	9.1%	9.2%	0.1%	0.0%			
<b>Portfolio</b>	<b>-1.5%</b>	<b>=</b>	<b>-1.0%</b>	<b>+</b>	<b>-0.5%</b>	<b>+</b>	<b>0.0%</b>	<b>7.7%</b>	<b>9.2%</b>	<b>100.0%</b>	<b>100.0%</b>

U.S. Effective Style Map





	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>5th Percentile</b>	11.9	13.2	38.2	18.5	22.6	14.8	17.0	15.3
<b>25th Percentile</b>	9.8	10.8	32.9	13.4	17.1	11.9	14.9	13.5
<b>Median</b>	8.3	9.6	28.9	10.0	13.3	10.1	13.3	12.6
<b>75th Percentile</b>	6.9	8.2	25.7	7.3	10.7	8.3	12.2	11.3
<b>95th Percentile</b>	4.4	5.3	19.8	3.8	7.1	5.9	9.7	9.4
<b># of Portfolios</b>	607	607	607	602	591	556	518	442
<b>● Large Cap Equity</b>	7.5 (67)	9.5 (52)	29.5 (46)	11.4 (38)	15.5 (35)	11.8 (26)	14.6 (29)	13.1 (35)
<b>▲ Russell 1000</b>	9.0 (37)	10.6 (28)	31.4 (35)	11.9 (34)	15.0 (37)	11.5 (29)	14.6 (29)	13.5 (25)

Characteristics

	Portfolio	Russell 1000
Number of Holdings	2,860	997
Weighted Avg. Market Cap. (\$B)	190.3	246.6
Median Market Cap. (\$B)	3.9	10.4
Price To Earnings	22.3	23.1
Price To Book	3.5	3.8
Price To Sales	2.0	2.1
Return on Equity (%)	22.1	23.8
Yield (%)	1.9	1.8
Beta (holdings; domestic)	0.9	1.0

Top Holdings

APPLE	3.0%
MICROSOFT	2.9%
AMAZON.COM	1.8%
JOHNSON & JOHNSON	1.4%
ALPHABET A	1.2%
VERIZON COMMUNICATIONS	1.1%
JP MORGAN CHASE & CO.	1.1%
VISA 'A'	1.0%
FACEBOOK CLASS A	1.0%
AT&T	0.9%

Best Performers

	Return %
IVERIC BIO (ISEE)	666.1%
FORTY SEVEN (FTSV)	513.2%
CHEMOCENTRYX (CCXI)	483.3%
AXSOME THERAPEUTICS (AXSM)	410.7%
KODIAK SCIENCES (KOD)	400.3%
CLEARSIDE BIOMEDICAL (CLSD)	360.3%
INTRA CELLULAR THERAPIES (ITCI)	359.3%
NEOLEUKIN THERAPEUTICS (NLTX)	332.3%
STAGE STORES (SSI)	331.9%
SUPERIOR ENERGY SVCS (SPN)	285.4%

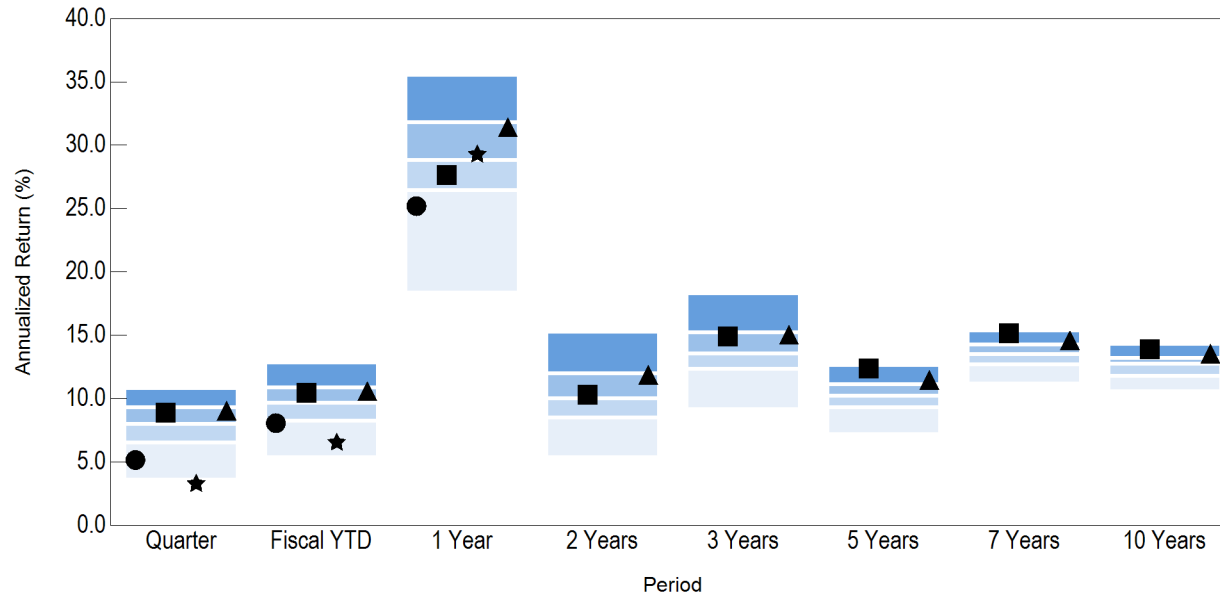
Worst Performers

	Return %
APPROACH RES (AREXQ)	-95.5%
DEAN FOODS (DFODQ)	-94.8%
NUVECTRA (NVTRQ)	-93.0%
CARBO CERAMICS (CRRT)	-90.2%
HORNBECK OFFS.SVS. (HOSS)	-86.2%
LSC COMMUNICATIONS (LKSD)	-85.1%
SIENNA BIOPH. (SNNAQ)	-83.9%
BASIC ENERGY SERVICES (BASX)	-81.6%
UNIT (UNT)	-79.4%
CYCLERION THERAPEUTICS (CYCN)	-77.6%

Large Cap Equity Performance Attribution vs. Russell 1000

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.0%	0.0%	0.0%	0.0%	6.3%	5.9%	3.4%	4.4%			
Materials	-0.1%	-0.1%	0.0%	0.0%	4.3%	6.5%	3.6%	2.8%			
Industrials	0.0%	-0.1%	0.0%	0.0%	4.9%	5.7%	9.0%	9.8%			
Consumer Discretionary	-0.2%	-0.1%	-0.1%	0.0%	4.2%	5.5%	12.1%	10.4%			
Consumer Staples	-0.2%	-0.1%	-0.1%	0.0%	2.4%	3.6%	8.4%	6.9%			
Health Care	-0.1%	-0.1%	0.0%	0.0%	13.5%	14.3%	13.3%	13.1%			
Financials	-0.1%	-0.1%	0.0%	0.0%	9.6%	10.0%	11.5%	13.2%			
Information Technology	-0.5%	-0.4%	-0.1%	0.1%	12.3%	14.1%	19.2%	22.0%			
Communication Services	-0.2%	-0.2%	0.0%	0.0%	7.6%	9.4%	9.4%	10.0%			
Utilities	-0.2%	0.0%	-0.3%	0.0%	0.8%	0.5%	6.5%	3.3%			
Real Estate	0.1%	0.0%	0.0%	0.0%	1.2%	0.3%	3.5%	3.9%			
Cash	0.0%	0.0%	0.0%	0.0%	0.4%	--	0.1%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	9.1%	--	0.1%	0.0%			
<b>Portfolio</b>	<b>-1.5%</b>	<b>=</b>	<b>-1.1%</b>	<b>+</b>	<b>-0.5%</b>	<b>+</b>	<b>0.0%</b>	<b>7.6%</b>	<b>9.1%</b>	<b>100.0%</b>	<b>100.0%</b>

eV US Large Cap Core Equity Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	10.8	12.8	35.5	15.3	18.3	12.6	15.3	14.3
25th Percentile	9.4	10.9	31.8	12.0	15.3	11.1	14.3	13.2
Median	8.0	9.7	28.9	10.0	13.6	10.2	13.6	12.8
75th Percentile	6.6	8.3	26.5	8.5	12.4	9.4	12.7	11.8
95th Percentile	3.6	5.4	18.4	5.4	9.2	7.2	11.2	10.6
# of Portfolios	194	194	194	192	188	172	155	127
● Acadian US MGD V	5.2 (87)	8.1 (78)	25.2 (81)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
■ DE Shaw	8.9 (33)	10.4 (32)	27.6 (66)	10.3 (48)	14.9 (29)	12.4 (8)	15.2 (8)	13.9 (8)
★ PanAgora Defuseq	3.3 (97)	6.5 (92)	29.3 (46)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
▲ Russell 1000	9.0 (30)	10.6 (29)	31.4 (28)	11.9 (29)	15.0 (27)	11.5 (21)	14.6 (18)	13.5 (13)



Characteristics

	Portfolio	Russell 1000
Number of Holdings	150	997
Weighted Avg. Market Cap. (\$B)	85.0	246.6
Median Market Cap. (\$B)	15.6	10.4
Price To Earnings	20.1	23.1
Price To Book	2.8	3.8
Price To Sales	1.9	2.1
Return on Equity (%)	21.6	23.8
Yield (%)	2.1	1.8
Beta (holdings; domestic)	0.9	1.0

Top Holdings

ZOETIS A	1.3%
ESTEE LAUDER COS.'A'	1.3%
ANSYS	1.2%
BANK OF AMERICA	1.2%
DANAHER	1.2%
JP MORGAN CHASE & CO.	1.2%
CITIGROUP	1.2%
AMGEN	1.2%
ROYAL GOLD	1.2%
COSTCO WHOLESALE	1.2%

Best Performers

	Return %
HUMANA (HUM)	43.6%
UNITEDHEALTH GROUP (UNH)	35.8%
ANTHEM (ANTM)	26.1%
HERBALIFE NUTRITION (HLF)	25.9%
AMGEN (AMGN)	25.4%
WESCO INTL. (WCC)	24.3%
ACUSHNET HOLDINGS (GOLF)	23.7%
HCA HEALTHCARE (HCA)	23.1%
BANK OF AMERICA (BAC)	21.4%
TARGET (TGT)	20.6%

Worst Performers

	Return %
SERVICEMASTER GLB.HDG. (SERV)	-30.8%
K12 (LRN)	-22.9%
AMC NETWORKS CL.A (AMCX)	-19.3%
MARCUS (MCS)	-13.7%
YUM! BRANDS (YUM)	-10.8%
HASBRO (HAS)	-10.4%
IMAX (NYS) (IMAX)	-6.9%
VERISK ANALYTICS CL.A (VRSK)	-5.4%
HOME DEPOT (HD)	-5.3%
MOTOROLA SOLUTIONS (MSI)	-5.1%

Acadian US MGD V Performance Attribution vs. Russell 1000

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.1%	-0.3%	0.1%	0.2%	0.2%	5.9%	0.7%	4.4%			
Materials	0.0%	-0.1%	0.0%	0.0%	3.9%	6.5%	2.2%	2.8%			
Industrials	0.0%	-0.3%	0.2%	0.2%	2.7%	5.7%	4.7%	9.8%			
Consumer Discretionary	-1.2%	-0.8%	-0.1%	-0.3%	-2.4%	5.5%	13.8%	10.4%			
Consumer Staples	-0.2%	0.0%	-0.2%	0.0%	3.3%	3.6%	10.7%	6.9%			
Health Care	-0.2%	-0.3%	0.1%	0.0%	12.2%	14.3%	14.7%	13.1%			
Financials	0.2%	0.2%	0.0%	0.0%	11.4%	10.0%	14.3%	13.2%			
Information Technology	-1.5%	-1.9%	-0.5%	0.9%	5.4%	14.1%	12.0%	22.0%			
Communication Services	-0.4%	-0.3%	0.0%	0.0%	6.0%	9.4%	11.2%	10.0%			
Utilities	-0.8%	0.0%	-1.0%	0.2%	1.9%	0.5%	14.6%	3.3%			
Real Estate	0.3%	0.3%	0.3%	-0.2%	6.7%	0.3%	0.6%	3.9%			
Cash	0.0%	0.0%	0.0%	0.0%	0.4%	--	0.3%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
<b>Portfolio</b>	<b>-3.8%</b>	<b>=</b>	<b>-3.5%</b>	<b>+</b>	<b>-1.1%</b>	<b>+</b>	<b>0.9%</b>	<b>5.3%</b>	<b>9.1%</b>	<b>100.0%</b>	<b>100.0%</b>

Characteristics

	Portfolio	Russell 1000
Number of Holdings	997	997
Weighted Avg. Market Cap. (\$B)	246.9	246.6
Median Market Cap. (\$B)	10.4	10.4
Price To Earnings	23.1	23.1
Price To Book	3.8	3.8
Price To Sales	2.1	2.1
Return on Equity (%)	23.8	23.8
Yield (%)	1.8	1.8
Beta (holdings; domestic)	1.0	1.0

Top Holdings

APPLE	4.4%
MICROSOFT	4.0%
AMAZON.COM	2.6%
FACEBOOK CLASS A	1.7%
BERKSHIRE HATHAWAY 'B'	1.5%
JP MORGAN CHASE & CO.	1.5%
ALPHABET A	1.4%
ALPHABET 'C'	1.4%
JOHNSON & JOHNSON	1.3%
VISA 'A'	1.1%

Best Performers

	Return %
TESLA (TSLA)	73.7%
SAREPTA THERAPEUTICS (SRPT)	71.3%
UBIQUITI (UI)	60.1%
ADVANCED MICRO DEVICES (AMD)	58.2%
QORVO (QRVO)	56.8%
ZILLOW GROUP CLASS A (ZG)	54.8%
ALIGN TECHNOLOGY (ALGN)	54.2%
ZILLOW GROUP CLASS C (Z)	54.1%
TRANSOCEAN (RIG)	53.9%
SKYWORKS SOLUTIONS (SWKS)	53.2%

Worst Performers

	Return %
BEYOND MEAT (BYND)	-49.1%
SAGE THERAPEUTICS (SAGE)	-48.5%
CHESAPEAKE ENERGY (CHK)	-41.4%
SERVICEMASTER GLB.HDG. (SERV)	-30.8%
TWITTER (TWTR)	-22.2%
TAUBMAN CENTERS (TCO)	-22.1%
ELASTIC (ESTC)	-21.9%
ETSY (ETSY)	-21.6%
SINCLAIR BROADCAST 'A' (SBGI)	-21.5%
VENTAS (VTR)	-19.9%

Characteristics

	Portfolio	Russell 1000
Number of Holdings	121	997
Weighted Avg. Market Cap. (\$B)	58.3	246.6
Median Market Cap. (\$B)	15.8	10.4
Price To Earnings	24.8	23.1
Price To Book	3.2	3.8
Price To Sales	2.3	2.1
Return on Equity (%)	19.6	23.8
Yield (%)	2.5	1.8
Beta (holdings; domestic)	0.6	1.0

Top Holdings

OMNICOM GROUP	1.9%
CHEVRON	1.9%
EXXON MOBIL	1.9%
VERIZON COMMUNICATIONS	1.8%
APTARGROUP	1.8%
ALLIANT ENERGY (XSC)	1.7%

Best Performers

	Return %
LEGGETT&PLATT (LEG)	25.1%
MARRIOTT INTL.'A' (MAR)	22.2%
HYATT HOTELS CL.A (H)	22.1%
CARTER'S (CRI)	20.5%
VARIAN MEDICAL SYSTEMS (VAR)	19.2%

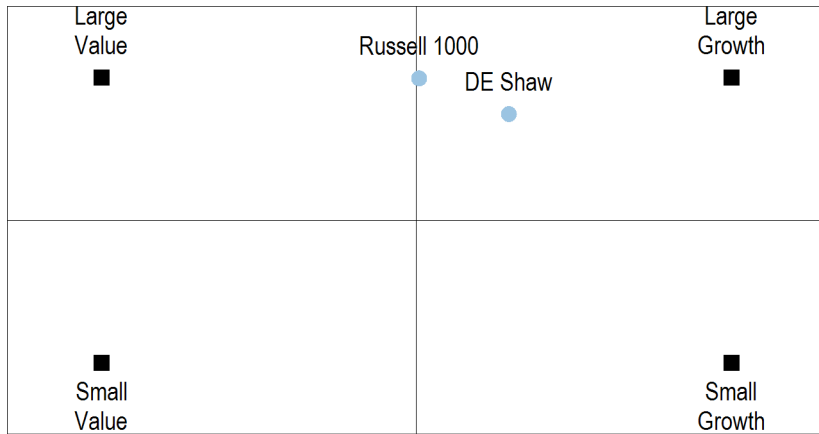
Worst Performers

	Return %
YUM! BRANDS (YUM)	-10.8%
KAR AUCTION SERVICES (KAR)	-10.5%
WP CAREY (WPC)	-9.4%
CNA FINANCIAL (CNA)	-8.3%
MCDONALDS (MCD)	-7.4%

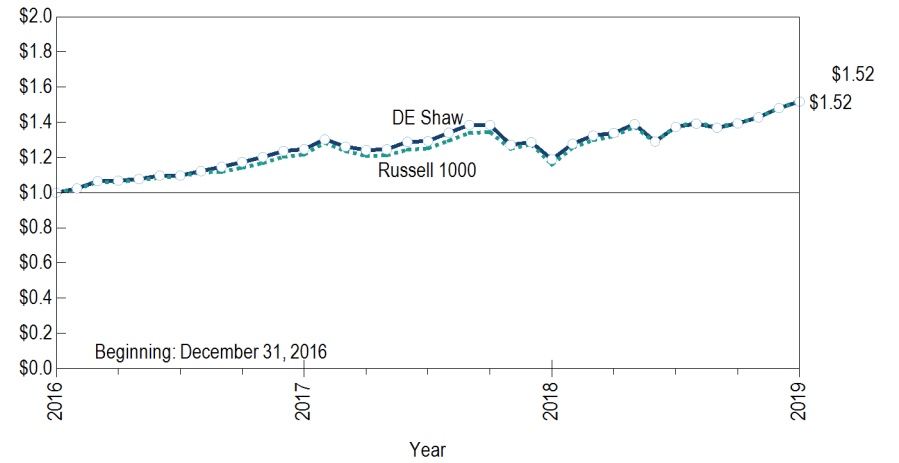
**PanAgora Defuseq Performance Attribution vs. Russell 1000**

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.2%	-0.2%	0.0%	0.0%	1.8%	5.9%	4.0%	4.4%			
Materials	-0.5%	-0.1%	-0.2%	-0.2%	2.8%	6.5%	9.1%	2.8%			
Industrials	-0.4%	-0.4%	0.0%	0.0%	2.0%	5.7%	9.8%	9.8%			
Consumer Discretionary	0.3%	0.3%	0.0%	0.0%	8.2%	5.5%	10.8%	10.4%			
Consumer Staples	-0.6%	-0.1%	-0.3%	-0.1%	1.4%	3.6%	12.4%	6.9%			
Health Care	-1.1%	-1.3%	-0.2%	0.4%	4.5%	14.3%	9.1%	13.1%			
Financials	-0.4%	-0.8%	-0.1%	0.5%	4.0%	10.0%	5.5%	13.2%			
Information Technology	-1.3%	-1.5%	-0.7%	0.9%	7.4%	14.1%	8.9%	22.0%			
Communication Services	-0.3%	-0.3%	0.0%	0.0%	6.3%	9.4%	9.0%	10.0%			
Utilities	-1.1%	0.0%	-1.0%	-0.1%	0.1%	0.5%	14.9%	3.3%			
Real Estate	-0.1%	0.1%	-0.2%	0.0%	2.2%	0.3%	6.4%	3.9%			
Cash	0.0%	0.0%	0.0%	0.0%	0.4%	--	0.1%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
<b>Portfolio</b>	<b>-5.5%</b>	<b>=</b>	<b>-4.3%</b>	<b>+</b>	<b>-2.6%</b>	<b>+</b>	<b>1.4%</b>	<b>3.6%</b>	<b>9.1%</b>	<b>100.0%</b>	<b>100.0%</b>

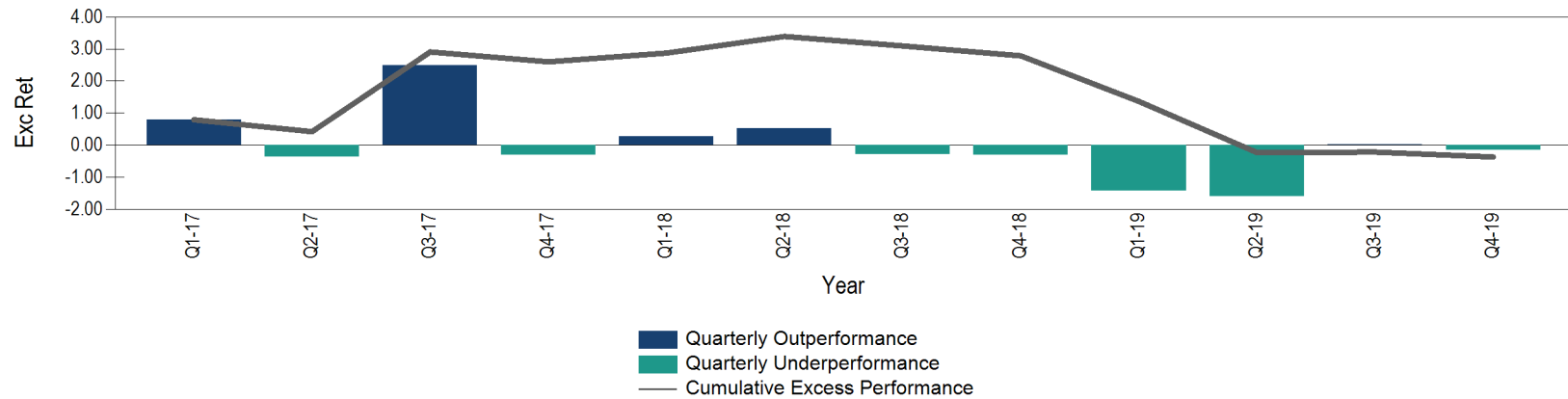
U.S. Effective Style Map

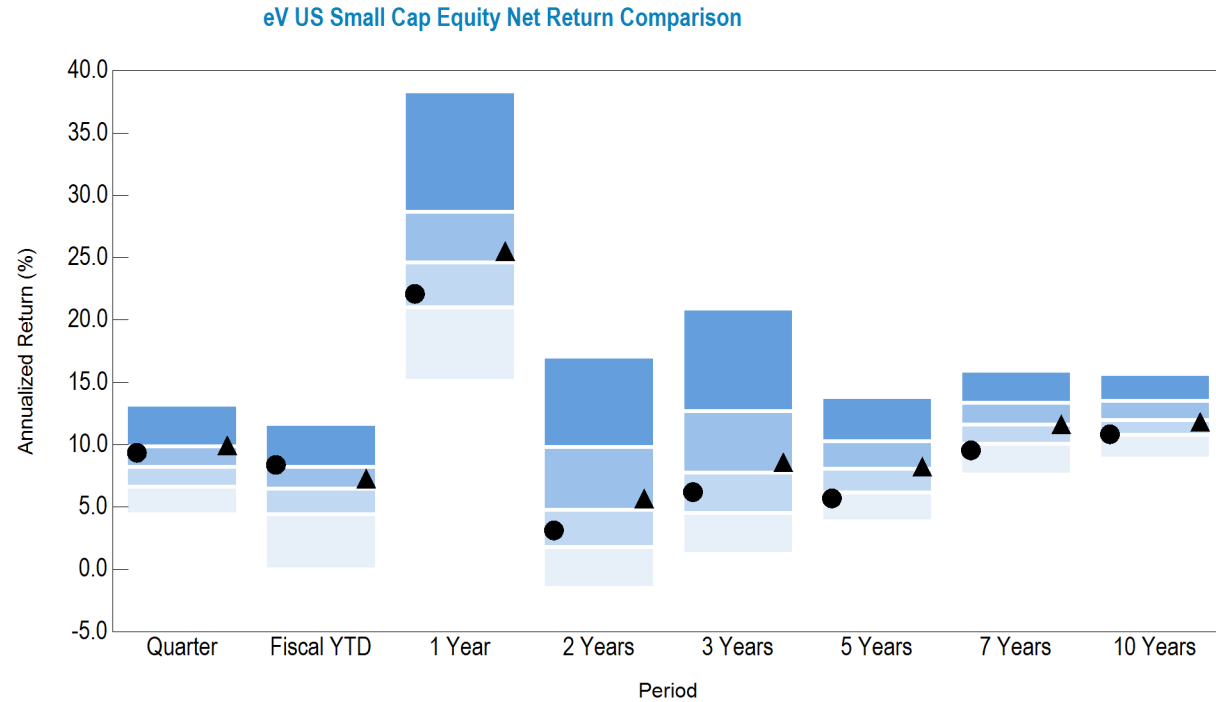


Growth of a Dollar



Quarterly and Cumulative Excess Performance





	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>Return (Rank)</b>								
5th Percentile	13.2	11.6	38.3	17.1	20.9	13.8	15.9	15.7
25th Percentile	9.9	8.3	28.7	9.8	12.7	10.3	13.4	13.6
Median	8.3	6.5	24.7	4.8	7.8	8.1	11.6	12.0
75th Percentile	6.7	4.5	21.0	1.8	4.6	6.2	10.1	10.8
95th Percentile	4.5	0.0	15.1	-1.5	1.2	3.9	7.6	8.9
# of Portfolios	395	395	395	392	385	358	335	303
● Small Cap Equity	9.4 (31)	8.4 (24)	22.1 (69)	3.1 (62)	6.2 (65)	5.7 (82)	9.6 (82)	10.8 (75)
▲ Russell 2000	9.9 (25)	7.3 (41)	25.5 (45)	5.7 (45)	8.6 (46)	8.2 (50)	11.6 (50)	11.8 (54)

Characteristics

	Portfolio	Russell 2000
Number of Holdings	342	1,995
Weighted Avg. Market Cap. (\$B)	2.3	2.5
Median Market Cap. (\$B)	1.4	0.8
Price To Earnings	17.5	19.8
Price To Book	2.2	2.5
Price To Sales	0.7	1.2
Return on Equity (%)	10.2	1.3
Yield (%)	1.6	1.4
Beta (holdings; domestic)	1.3	1.2

Top Holdings

EMCOR GROUP	0.9%
PORTLAND GEN.ELEC.	0.9%
TECH DATA	0.9%
WORLD FUEL SVS.	0.9%
KBR	0.9%
NEWMARK GROUP CL.A	0.8%
RYMAN HOSPITALITY PROPS.	0.8%
ATKORE INTERNATIONAL GP.	0.8%
RADIAN GP.	0.8%
VERINT SYSTEMS	0.8%

Best Performers

	Return %
JOUNCE THERAPEUTICS (JNCE)	162.2%
ARROWHEAD PHARMS. (ARWR)	125.1%
AUDENTES THERAPEUTICS (BOLD)	113.0%
PROTHENA (PRTA)	101.9%
PRINCIPIA BIOPHARMA (PRNB)	94.0%
RECRO PHARMA (REPH)	84.5%
TENET HEALTHCARE (THC)	71.9%
AMNEAL PHARMACEUTICALS A (AMRX)	66.2%
TURNING POINT THERAPEUTICS (TPTX)	65.7%
SYNAPTICS (SYNA)	64.6%

Worst Performers

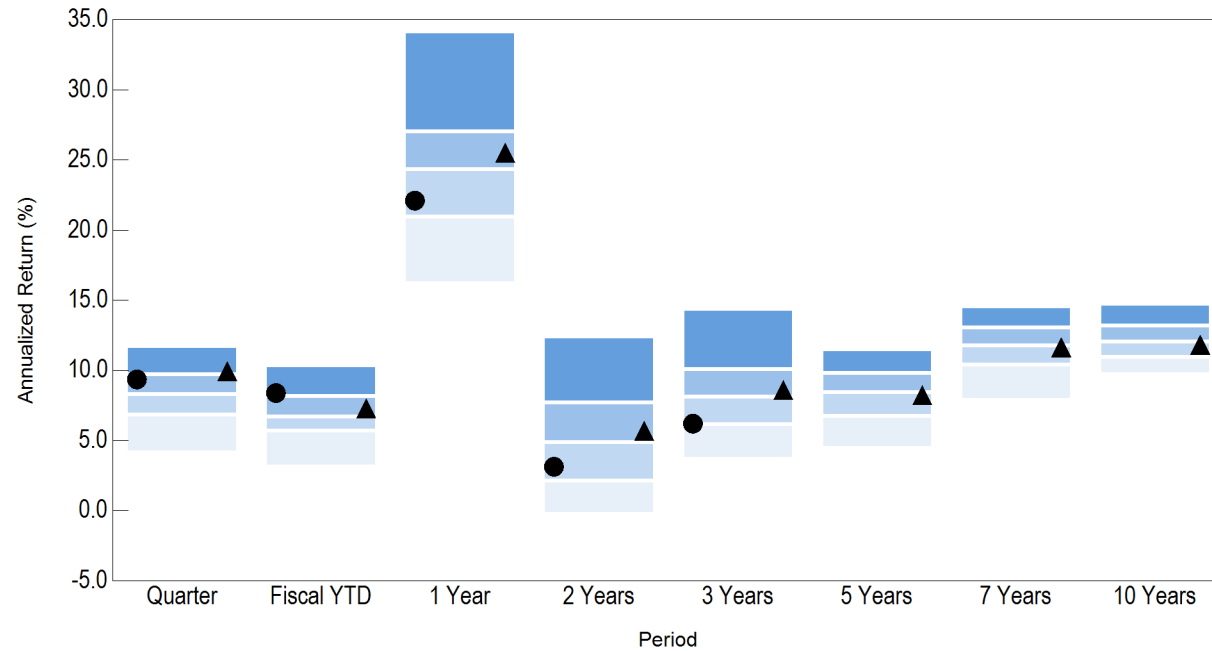
	Return %
SAGE THERAPEUTICS (SAGE)	-48.5%
TUPPERWARE BRANDS (TUP)	-45.9%
PROTAGONIST THERAPEUTICS (PTGX)	-41.3%
J JILL (JILL)	-40.5%
EXTERRAN (EXTN)	-40.0%
MODINE MANUFACTURING (MOD)	-32.3%
OPKO HEALTH (OPK)	-29.7%
CATALYST PHARMACEUTICAL PARTNERS (CPRX)	-29.4%
ACORDA THERAPEUTICS (ACOR)	-28.9%
TARGET HOSPITALITY (TH)	-26.6%



Small Cap Equity Performance Attribution vs. Russell 2000

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.2%	0.2%	0.0%	0.0%	12.6%	7.5%	3.6%	3.4%			
Materials	-0.2%	-0.2%	0.0%	0.0%	6.0%	11.7%	4.1%	4.0%			
Industrials	0.2%	0.2%	0.0%	0.0%	9.0%	7.9%	17.2%	16.2%			
Consumer Discretionary	-0.6%	-0.5%	0.0%	0.0%	4.3%	8.9%	12.0%	11.0%			
Consumer Staples	-0.1%	-0.2%	0.0%	0.0%	1.5%	7.2%	2.2%	3.0%			
Health Care	-1.7%	-1.7%	-0.2%	0.1%	12.3%	22.7%	15.1%	16.3%			
Financials	0.3%	0.2%	0.0%	0.0%	8.7%	7.4%	17.3%	18.1%			
Information Technology	0.7%	0.7%	0.0%	0.0%	16.7%	11.8%	14.2%	13.4%			
Communication Services	0.2%	0.2%	0.0%	0.0%	11.5%	5.2%	2.1%	2.5%			
Utilities	0.1%	0.0%	0.1%	0.0%	-0.8%	-1.7%	3.3%	4.0%			
Real Estate	0.2%	0.2%	0.0%	0.0%	6.5%	3.4%	8.7%	8.0%			
Cash	0.0%	--	--	--	--	--	0.0%	0.0%			
Unclassified	0.0%	--	0.0%	--	--	10.2%	0.0%	0.0%			
<b>Portfolio</b>	<b>-0.9%</b>	<b>=</b>	<b>-0.9%</b>	<b>+</b>	<b>-0.1%</b>	<b>+</b>	<b>0.2%</b>	<b>9.3%</b>	<b>10.2%</b>	<b>100.0%</b>	<b>100.0%</b>

eV US Small Cap Core Equity Net Return Comparison



	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>5th Percentile</b>	11.7	10.3	34.2	12.4	14.4	11.5	14.6	14.7
<b>25th Percentile</b>	9.8	8.2	27.1	7.7	10.1	9.8	13.1	13.2
<b>Median</b>	8.4	6.7	24.4	4.9	8.2	8.5	11.8	12.1
<b>75th Percentile</b>	6.9	5.7	21.0	2.2	6.2	6.8	10.4	11.0
<b>95th Percentile</b>	4.2	3.2	16.2	-0.2	3.7	4.5	7.9	9.7
<b># of Portfolios</b>	109	109	109	109	105	100	93	80
<b>● QMA US Small Cap</b>	9.4 (28)	8.4 (21)	22.1 (67)	3.1 (67)	6.2 (76)	-- (--)	-- (--)	-- (--)
<b>▲ Russell 2000</b>	9.9 (23)	7.3 (45)	25.5 (41)	5.7 (44)	8.6 (46)	8.2 (56)	11.6 (56)	11.8 (57)

Characteristics

	Portfolio	Russell 2000
Number of Holdings	342	1,995
Weighted Avg. Market Cap. (\$B)	2.3	2.5
Median Market Cap. (\$B)	1.4	0.8
Price To Earnings	17.5	19.8
Price To Book	2.2	2.5
Price To Sales	0.7	1.2
Return on Equity (%)	10.2	1.3
Yield (%)	1.6	1.4
Beta (holdings; domestic)	1.3	1.2

Top Holdings

EMCOR GROUP	0.9%
PORTLAND GEN.ELEC.	0.9%
TECH DATA	0.9%
WORLD FUEL SVS.	0.9%
KBR	0.9%
NEWMARK GROUP CL.A	0.8%
RYMAN HOSPITALITY PROPS.	0.8%
ATKORE INTERNATIONL GP.	0.8%
RADIAN GP.	0.8%
VERINT SYSTEMS	0.8%

Best Performers

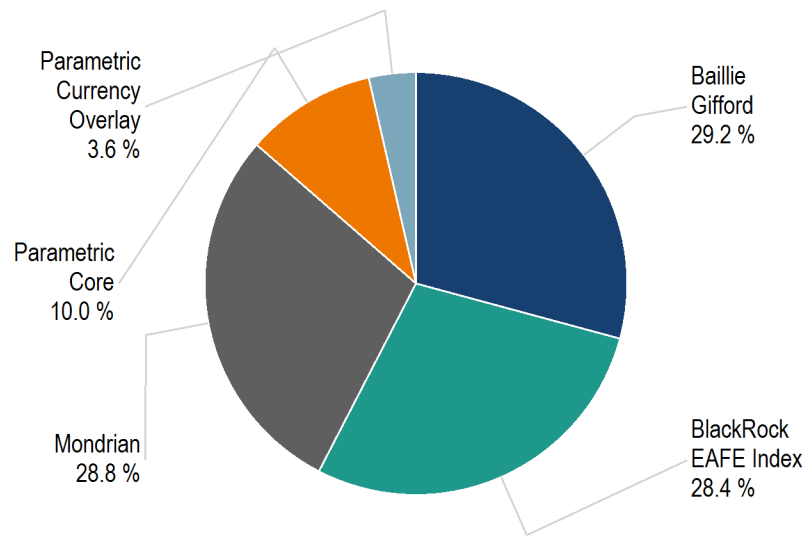
	Return %
JOUNCE THERAPEUTICS (JNCE)	162.2%
ARROWHEAD PHARMS. (ARWR)	125.1%
AUDENTES THERAPEUTICS (BOLD)	113.0%
PROTHENA (PRTA)	101.9%
PRINCIPIA BIOPHARMA (PRNB)	94.0%
RECRO PHARMA (REPH)	84.5%
TENET HEALTHCARE (THC)	71.9%
AMNEAL PHARMACEUTICALS A (AMRX)	66.2%
TURNING POINT THERAPEUTICS (TPTX)	65.7%
SYNAPTICS (SYNA)	64.6%

Worst Performers

	Return %
SAGE THERAPEUTICS (SAGE)	-48.5%
TUPPERWARE BRANDS (TUP)	-45.9%
PROTAGONIST THERAPEUTICS (PTGX)	-41.3%
J JILL (JILL)	-40.5%
EXTERRAN (EXTN)	-40.0%
MODINE MANUFACTURING (MOD)	-32.3%
OPKO HEALTH (OPK)	-29.7%
CATALYST PHARMACEUTICAL PARTNERS (CPRX)	-29.4%
ACORDA THERAPEUTICS (ACOR)	-28.9%
TARGET HOSPITALITY (TH)	-26.6%

**QMA US Small Cap Performance Attribution vs. Russell 2000**

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.2%	0.2%	0.0%	0.0%	12.6%	7.5%	3.6%	3.4%			
Materials	-0.2%	-0.2%	0.0%	0.0%	6.0%	11.7%	4.1%	4.0%			
Industrials	0.2%	0.2%	0.0%	0.0%	9.0%	7.9%	17.2%	16.2%			
Consumer Discretionary	-0.6%	-0.5%	0.0%	0.0%	4.3%	8.9%	12.0%	11.0%			
Consumer Staples	-0.1%	-0.2%	0.0%	0.0%	1.5%	7.2%	2.2%	3.0%			
Health Care	-1.7%	-1.7%	-0.2%	0.1%	12.3%	22.7%	15.1%	16.3%			
Financials	0.3%	0.2%	0.0%	0.0%	8.7%	7.4%	17.3%	18.1%			
Information Technology	0.7%	0.7%	0.0%	0.0%	16.7%	11.8%	14.2%	13.4%			
Communication Services	0.2%	0.2%	0.0%	0.0%	11.5%	5.2%	2.1%	2.5%			
Utilities	0.1%	0.0%	0.1%	0.0%	-0.8%	-1.7%	3.3%	4.0%			
Real Estate	0.2%	0.2%	0.0%	0.0%	6.5%	3.4%	8.7%	8.0%			
Cash	0.0%	--	--	--	--	--	0.0%	0.0%			
Unclassified	0.0%	--	0.0%	--	--	10.2%	0.0%	0.0%			
<b>Portfolio</b>	<b>-0.9%</b>	<b>=</b>	<b>-0.9%</b>	<b>+</b>	<b>-0.1%</b>	<b>+</b>	<b>0.2%</b>	<b>9.3%</b>	<b>10.2%</b>	<b>100.0%</b>	<b>100.0%</b>



	Actual \$	Actual %	Manager Contribution to Excess Return %
Baillie Gifford	\$276,173,566	29.2%	1.0%
BlackRock EAFE Index	\$268,646,221	28.4%	0.0%
Mondrian	\$272,195,593	28.8%	0.7%
Parametric Core	\$94,515,798	10.0%	-0.4%
Parametric Currency Overlay	\$34,036,460	3.6%	0.0%
Actual vs. Policy Weight Difference			-0.5%
<b>Total</b>	<b>\$945,567,638</b>	<b>100.0%</b>	<b>0.9%</b>

**Statistics Summary**

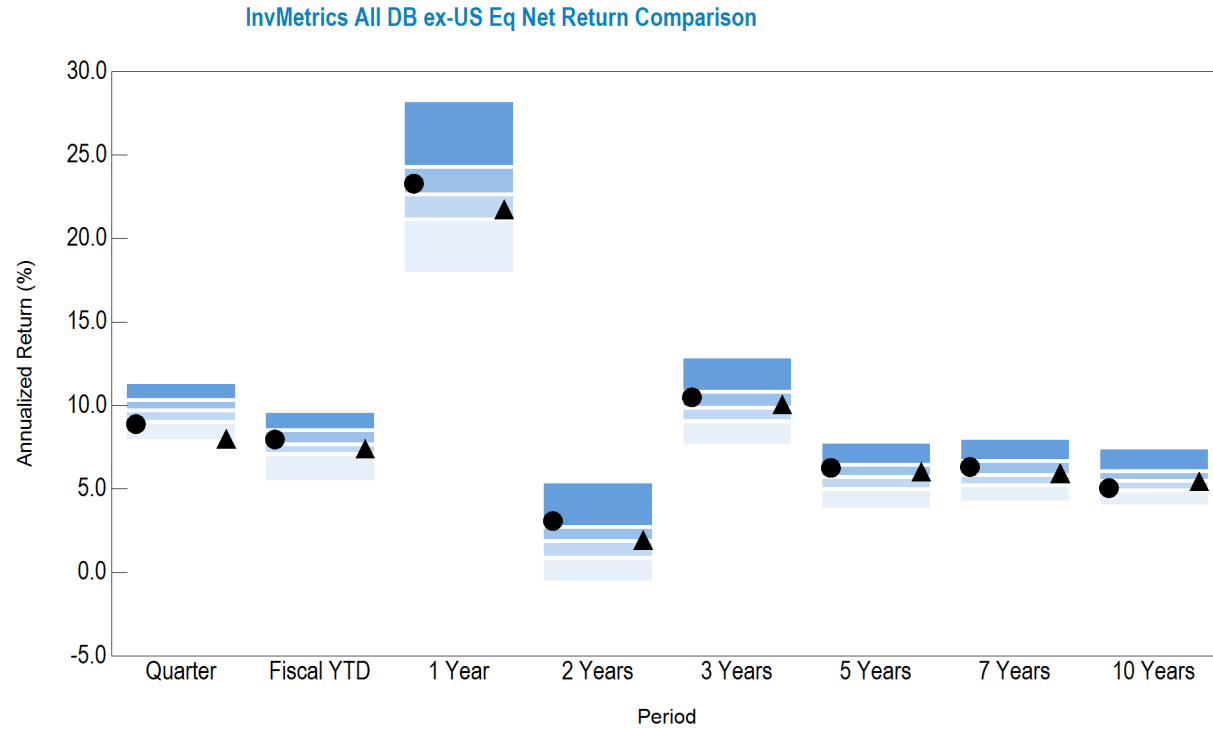
**3 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	10.5%	11.2%	0.8	0.3	1.4%
Blended International Equity Index	10.1%	11.2%	0.8	--	0.0%
Developed Markets	10.8%	11.6%	0.8	0.2	1.8%
MSCI ACWI ex USA Gross	10.4%	11.5%	0.8	--	0.0%
Baillie Gifford	13.6%	13.1%	0.9	0.7	4.8%
MSCI ACWI ex US	10.4%	11.5%	0.8	--	0.0%
BlackRock EAFE Index	10.0%	11.0%	0.8	1.8	0.2%
MSCI EAFE	9.6%	11.0%	0.7	--	0.0%
Mondrian	8.8%	11.9%	0.6	0.4	3.1%
MSCI ACWI ex USA Value Gross	7.5%	11.9%	0.5	--	0.0%
Emerging Markets	7.9%	12.4%	0.5	-1.1	3.8%
MSCI Emerging Markets Gross	12.0%	14.4%	0.7	--	0.0%
Parametric Core	7.9%	12.4%	0.5	-1.1	3.8%
MSCI Emerging Markets Gross	12.0%	14.4%	0.7	--	0.0%

Statistics Summary

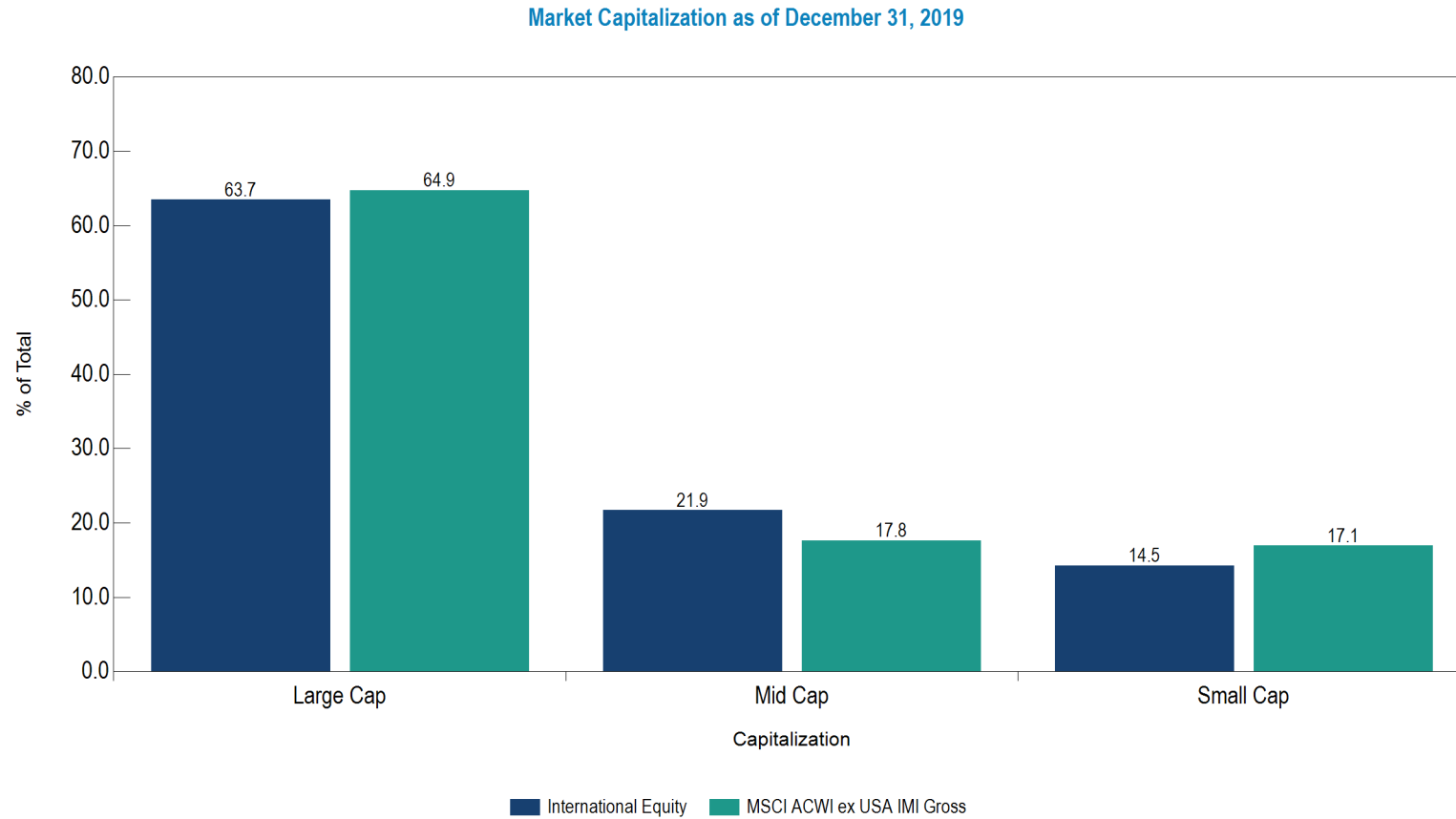
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	6.3%	12.1%	0.4	0.1	1.6%
Blended International Equity Index	6.0%	12.3%	0.4	--	0.0%
Developed Markets	6.6%	12.4%	0.4	0.3	2.1%
MSCI ACWI ex USA Gross	6.0%	12.5%	0.4	--	0.0%
Baillie Gifford	8.4%	13.9%	0.5	0.5	4.6%
MSCI ACWI ex US	6.0%	12.5%	0.4	--	0.0%
BlackRock EAFE Index	6.0%	12.3%	0.4	2.0	0.2%
MSCI EAFE	5.7%	12.2%	0.4	--	0.0%
Mondrian	5.0%	12.2%	0.3	0.2	4.3%
MSCI ACWI ex USA Value Gross	4.3%	13.3%	0.2	--	0.0%
Emerging Markets	3.6%	14.0%	0.2	-0.6	4.0%
MSCI Emerging Markets Gross	6.0%	15.8%	0.3	--	0.0%



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	11.4	9.7	28.2	5.4	12.9	7.8	8.0	7.5
25th Percentile	10.4	8.5	24.3	2.8	10.8	6.5	6.7	6.1
Median	9.7	7.7	22.6	1.9	9.9	5.8	5.8	5.5
75th Percentile	9.0	7.1	21.2	0.9	9.1	5.0	5.2	4.9
95th Percentile	7.9	5.4	17.9	-0.6	7.6	3.8	4.2	4.0
# of Portfolios	363	361	361	354	343	328	285	212
● International Equity	8.9 (84)	8.0 (44)	23.3 (42)	3.1 (21)	10.5 (31)	6.3 (30)	6.3 (36)	5.0 (69)
▲ Blended International Equity Index	8.0 (95)	7.4 (61)	21.8 (62)	1.9 (49)	10.1 (42)	6.0 (36)	5.9 (48)	5.5 (52)





See appendix for the market capitalization breakpoints.

Characteristics

	Portfolio	MSCI ACWI ex USA IMI Gross
Number of Holdings	2,141	6,587
Weighted Avg. Market Cap. (\$B)	55.6	64.4
Median Market Cap. (\$B)	7.3	1.7
Price To Earnings	17.5	16.2
Price To Book	2.5	2.4
Price To Sales	1.1	1.1
Return on Equity (%)	15.0	14.5
Yield (%)	2.9	3.0
Beta (holdings; global)	1.0	0.9

Top Holdings

UNITED OVERSEAS BANK	1.3%
ALIBABA GROUP HOLDING ADR 1:8	1.2%
TAIWAN SEMICON.SPN.ADR 1:5	0.9%
GLAXOSMITHKLINE	0.9%
SANOFI	0.9%
NOVARTIS 'R'	0.9%
ASML HOLDING	0.9%
AIA GROUP	0.9%
LLOYDS BANKING GROUP	0.8%
TAKEDA PHARMACEUTICAL	0.8%

Best Performers

	Return %
HLB (KO:KPI)	96.8%
IMPD.DSRRL.ECO.DE AMLAT. DE CV (MX:IDL)	90.1%
TRG PAKISTAN (PK:TRG)	88.5%
SIBANYE GOLD (R:SGLJ)	85.5%
SILLAJEN (KO:JLS)	84.9%
IS GAYMEN.YATOTA. (TK:IGY)	72.2%
CENTRAL PUERTO ADR 1:10 (CEPU)	69.7%
MITSUBISHI TANABE PHARMA (J:EF@N)	68.5%
BUMI ARMADA (L:ARMO)	66.9%
AAC TECHNOLOGIES (HSC) HOLDINGS (K:AACAS)	64.9%

Worst Performers

	Return %
CENTRAL PLAZA HOTEL FB (Q:CENF)	-71.4%
MANILA WATER (PH:MWC)	-46.3%
TELKOM SA SOC (R:TKGJ)	-45.7%
HANSON INTERNATIONAL (ID:MAT)	-44.4%
SINO-THAI ENGR.CON. FB (Q:STFF)	-43.8%
SALFA CORPORATION (CL:SSA)	-42.1%
BEIJING ENTERPRISE CLEAN ENERGY GP (K:JCCI)	-38.8%
RIPLEY CORPORATION (CL:RPY)	-37.3%
IMPERIAL PAC.INTL.HDG. (K:FNAT)	-35.2%
PPC (R:PPCJ)	-32.4%

International Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.1%	-0.1%	0.1%	0.0%	5.7%	6.9%	4.7%	6.3%			
Materials	-0.1%	0.0%	0.0%	-0.1%	11.6%	11.1%	5.6%	7.8%			
Industrials	0.3%	0.1%	0.0%	0.1%	11.8%	10.3%	14.0%	12.9%			
Consumer Discretionary	0.1%	0.0%	0.0%	0.1%	11.5%	11.4%	12.8%	11.6%			
Consumer Staples	0.1%	0.2%	0.0%	-0.1%	3.4%	2.4%	9.6%	9.5%			
Health Care	0.1%	0.0%	0.0%	0.0%	12.7%	12.8%	9.4%	8.2%			
Financials	0.0%	0.1%	0.0%	-0.1%	8.7%	8.3%	16.9%	20.2%			
Information Technology	0.3%	0.4%	0.0%	-0.1%	18.7%	15.3%	8.5%	9.0%			
Communication Services	0.2%	0.1%	0.0%	0.1%	10.4%	7.4%	7.2%	6.6%			
Utilities	0.1%	0.1%	0.0%	0.0%	9.7%	5.4%	3.3%	3.4%			
Real Estate	-0.1%	-0.1%	0.0%	0.0%	5.0%	7.3%	2.1%	4.4%			
Cash	-0.4%	0.0%	-0.4%	0.0%	0.4%	--	5.9%	0.0%			
Unclassified	0.0%	--	0.0%	--	--	9.3%	0.0%	0.0%			
<b>Portfolio</b>	<b>0.5%</b>	<b>=</b>	<b>0.9%</b>	<b>+</b>	<b>-0.2%</b>	<b>+</b>	<b>-0.1%</b>	<b>9.8%</b>	<b>9.3%</b>	<b>100.0%</b>	<b>100.0%</b>

Int'l Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

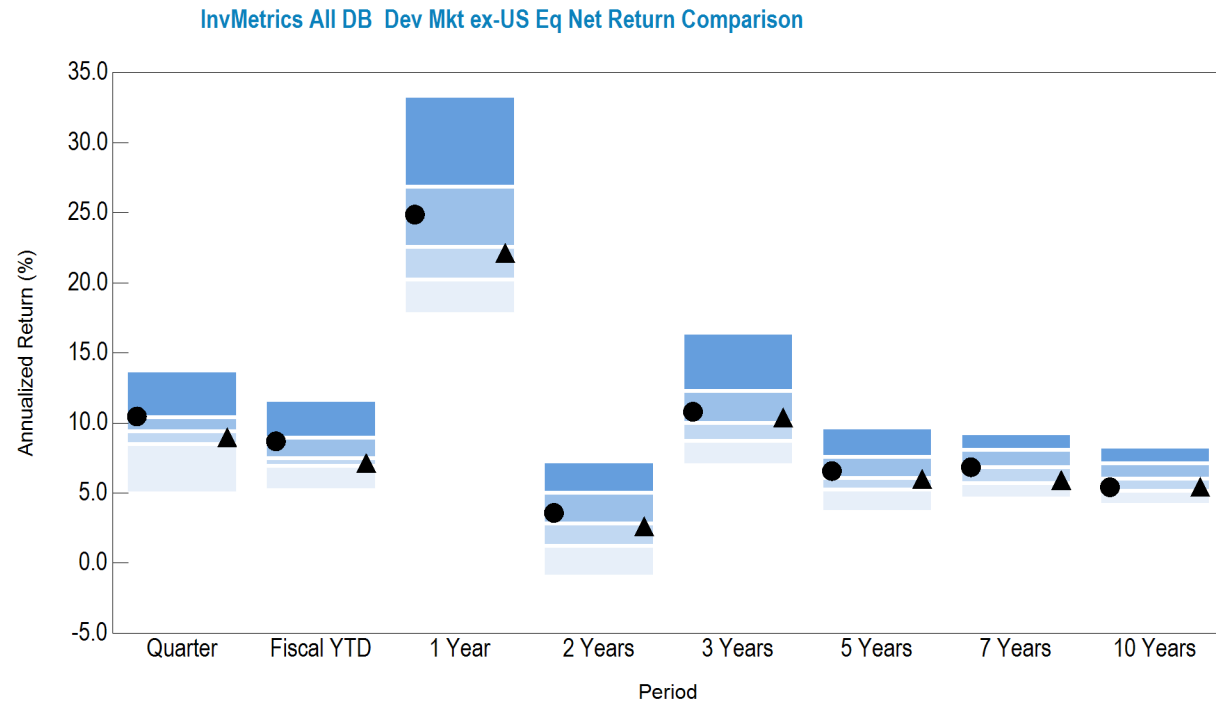
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	8.1%	9.1%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Belgium	-1.3%	3.0%	0.3%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	9.4%	9.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Denmark	9.6%	13.4%	1.3%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Finland	9.7%	4.8%	0.6%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
France	9.8%	8.7%	5.3%	6.8%	0.1%	0.0%	0.0%	0.0%	0.0%
Germany	11.7%	10.4%	6.9%	5.5%	0.1%	0.0%	0.0%	0.0%	0.1%
Greece*	11.9%	11.8%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Hungary*	20.9%	20.9%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Ireland	24.1%	16.6%	0.5%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Italy	5.7%	8.9%	1.7%	1.7%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Luxembourg	-3.6%	9.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	7.9%	7.9%	2.6%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Norway	4.5%	8.4%	0.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	8.7%	5.4%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Portugal	-1.3%	8.8%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Russia*	17.8%	17.3%	0.9%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Spain	7.8%	6.6%	2.1%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Sweden	15.0%	14.6%	2.8%	2.1%	0.0%	0.0%	0.0%	0.0%	0.1%
Switzerland	10.1%	8.0%	4.8%	5.8%	0.1%	0.0%	0.0%	0.0%	0.1%
United Kingdom	14.5%	11.4%	13.2%	11.0%	0.3%	-0.1%	0.2%	0.1%	0.5%

Int'l Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Returns and Weights				Attribution Effects				Total Effects	
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect		
<b>AsiaPacific</b>										
Australia	5.1%	4.3%	3.6%	4.8%	0.0%	0.1%	-0.1%	0.0%	0.1%	
China*	14.7%	14.5%	3.7%	7.7%	0.0%	-0.3%	0.0%	0.0%	-0.3%	
Hong Kong	10.6%	7.6%	4.4%	2.3%	0.1%	0.0%	0.0%	0.1%	0.2%	
India*	5.0%	5.6%	3.2%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
Indonesia*	5.3%	6.0%	0.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	
Japan	8.3%	7.8%	18.2%	17.3%	0.1%	0.0%	0.0%	0.0%	0.1%	
Korea*	12.1%	11.9%	1.8%	3.2%	0.0%	0.0%	-0.1%	0.0%	-0.1%	
Malaysia*	2.4%	3.4%	0.7%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	
New Zealand	17.3%	13.1%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
Pakistan*	27.3%	27.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Philippines*	0.5%	2.4%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
Singapore	6.4%	7.6%	2.4%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	
Taiwan*	19.7%	16.6%	2.2%	3.1%	0.1%	-0.1%	-0.1%	0.0%	0.0%	
Thailand*	-0.7%	-1.2%	0.4%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	
<b>Americas</b>										
Argentina*	24.4%	21.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
Brazil*	16.2%	15.5%	1.8%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	
Canada	14.1%	5.9%	1.2%	7.0%	0.7%	0.2%	-0.1%	-0.5%	0.1%	
Chile*	-11.4%	-10.6%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
Colombia*	11.4%	14.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
Mexico*	5.7%	6.8%	1.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	
Peru*	2.8%	6.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
United States	15.2%	9.2%	1.2%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	

Int'l Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Other</b>									
Egypt*	-2.3%	1.7%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Israel	8.5%	7.9%	0.1%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Kuwait**	9.8%	9.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	3.2%	1.9%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	6.0%	9.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Saudi Arabia*	--	4.1%	0.0%	0.6%	--	0.0%	0.0%	--	0.0%
South Africa*	12.9%	13.6%	1.1%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Turkey*	4.8%	1.6%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
United Arab Emirates*	-0.2%	-1.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Totals</b>									
Americas	11.7%	7.6%	6.0%	10.1%	0.5%	0.1%	-0.1%	-0.2%	0.2%
Europe	11.6%	9.9%	44.5%	42.7%	0.6%	0.0%	0.2%	0.0%	0.8%
Asia/Pacific	9.0%	9.1%	41.5%	44.1%	0.1%	0.0%	-0.2%	0.0%	-0.1%
Other	8.9%	8.1%	2.1%	3.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.4%	--	5.9%	0.0%	0.0%	-0.4%	0.0%	0.0%	-0.4%
<b>Total</b>	<b>9.8%</b>	<b>9.3%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>1.2%</b>	<b>-0.3%</b>	<b>-0.2%</b>	<b>-0.2%</b>	<b>0.6%</b>
<b>Totals</b>									
Developed	10.3%	8.5%	74.2%	74.4%	1.3%	0.0%	0.0%	0.0%	1.3%
Emerging*	10.9%	11.6%	19.8%	25.6%	-0.1%	-0.2%	-0.2%	0.0%	-0.4%
Frontier**	9.4%	--	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.4%	--	5.9%	0.0%	0.0%	-0.4%	0.0%	0.0%	-0.4%



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	13.7	11.6	33.3	7.2	16.4	9.7	9.3	8.3
25th Percentile	10.4	9.0	26.9	5.0	12.3	7.6	8.1	7.1
Median	9.4	7.5	22.6	2.9	10.0	6.1	6.9	6.0
75th Percentile	8.5	7.0	20.3	1.2	8.8	5.3	5.7	5.2
95th Percentile	5.0	5.2	17.8	-0.9	7.0	3.7	4.6	4.2
# of Portfolios	161	161	159	156	152	144	124	84
● Developed Markets	10.5 (23)	8.7 (34)	24.9 (37)	3.6 (39)	10.8 (40)	6.6 (39)	6.8 (52)	5.4 (69)
▲ MSCI ACWI ex USA Gross	9.0 (65)	7.1 (66)	22.1 (54)	2.6 (54)	10.4 (45)	6.0 (54)	5.9 (71)	5.4 (68)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	1,028	2,379
Weighted Avg. Market Cap. (\$B)	58.9	74.1
Median Market Cap. (\$B)	11.7	8.2
Price To Earnings	18.3	16.3
Price To Book	2.5	2.4
Price To Sales	1.1	1.2
Return on Equity (%)	15.1	15.1
Yield (%)	2.9	3.0
Beta (holdings; global)	1.0	0.9

Top Holdings

UNITED OVERSEAS BANK	1.4%
ALIBABA GROUP HOLDING ADR 1:8	1.3%
TAIWAN SEMICON.SPN.ADR 1:5	1.0%
GLAXOSMITHKLINE	1.0%
SANOFI	1.0%
NOVARTIS 'R'	1.0%
ASML HOLDING	1.0%
AIA GROUP	0.9%
LLOYDS BANKING GROUP	0.9%
TAKEDA PHARMACEUTICAL	0.9%

Best Performers

	Return %
mitsubishi tanabe pharma (J:EF@N)	68.5%
Z HOLDINGS (J:YHOO)	50.8%
EISAI (J:ES@N)	48.6%
ASOS (UKIR:ASC)	46.4%
TEVA PHARM.INDS.ADR 1:1 (TEVA)	42.4%
SHARP (J:SH@N)	40.2%
U-BLOX HOLDING (S:BHOL)	39.9%
BECHTLE (D:BC8)	39.6%
STMICROELECTRONICS (F:STM)	39.5%
FISHER & PAYKEL HLTHCR. (Z:FPHZ)	39.0%

Worst Performers

	Return %
NMC HEALTH (UKIR:NMC)	-29.9%
WISETECH GLOBAL (A:WTCX)	-29.9%
NOKIA (M:NOK1)	-27.0%
WIRECARD (D:WDI)	-24.7%
SUZUKEN (J:SKEN)	-23.4%
SES FDR (LX:SES)	-23.0%
BANK OF QLND. (A:BOQX)	-21.1%
1&1 DRILLISCH (D:DRI)	-18.0%
AIR WATER (J:QW@N)	-17.6%
RENAULT (F:RENU)	-17.5%



Developed Markets Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.1%	-0.2%	0.1%	0.0%	4.7%	6.9%	4.4%	6.8%			
Materials	-0.1%	0.0%	0.0%	-0.1%	11.3%	10.7%	5.4%	7.5%			
Industrials	0.5%	0.2%	0.0%	0.2%	12.1%	9.6%	15.1%	12.0%			
Consumer Discretionary	0.2%	0.0%	0.1%	0.1%	11.7%	11.3%	14.0%	11.5%			
Consumer Staples	0.1%	0.2%	0.0%	-0.1%	3.4%	2.1%	10.0%	9.9%			
Health Care	0.1%	0.1%	0.1%	0.0%	12.6%	12.5%	10.4%	8.4%			
Financials	0.0%	0.1%	0.0%	-0.1%	8.7%	8.2%	17.9%	21.7%			
Information Technology	0.4%	0.4%	0.0%	-0.1%	19.2%	15.3%	9.4%	8.7%			
Communication Services	0.3%	0.1%	0.0%	0.1%	10.8%	7.2%	7.2%	6.9%			
Utilities	0.2%	0.1%	0.0%	0.0%	10.5%	4.9%	3.1%	3.5%			
Real Estate	-0.1%	-0.2%	0.0%	0.1%	2.7%	7.6%	1.7%	3.2%			
Cash	-0.1%	0.0%	-0.1%	0.0%	0.4%	--	1.5%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
<b>Portfolio</b>	<b>1.5%</b>	<b>=</b>	<b>1.0%</b>	<b>+</b>	<b>0.2%</b>	<b>+</b>	<b>0.3%</b>	<b>10.4%</b>	<b>9.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Developed Markets Performance Attribution vs. MSCI ACWI ex USA Gross

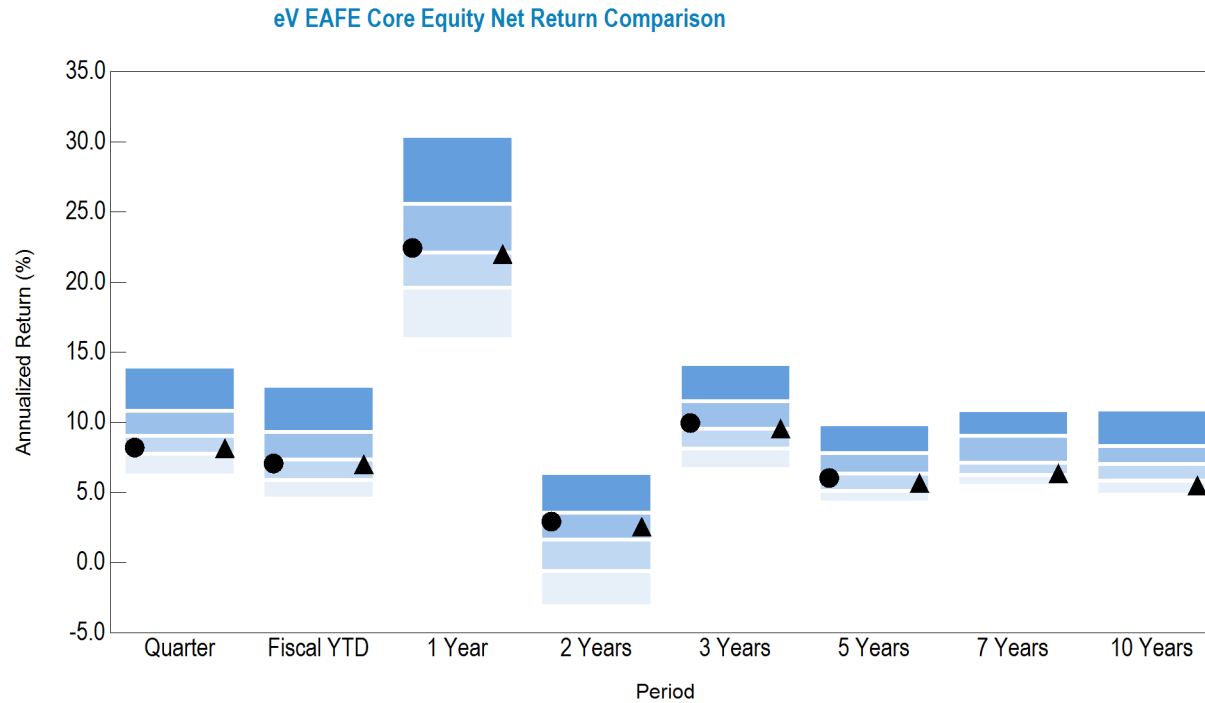
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	8.1%	8.2%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Belgium	-1.5%	-1.5%	0.3%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	--	9.3%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Denmark	9.6%	13.2%	1.6%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Finland	9.7%	3.1%	0.8%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
France	9.8%	8.6%	6.1%	7.5%	0.1%	0.0%	0.0%	0.0%	0.0%
Germany	11.7%	9.5%	8.0%	5.7%	0.1%	0.0%	0.1%	0.0%	0.3%
Greece*	--	13.1%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	22.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	24.1%	18.7%	0.5%	0.4%	0.0%	0.0%	0.0%	0.0%	0.1%
Italy	5.7%	8.5%	2.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Luxembourg	-7.3%	9.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	7.9%	7.4%	3.0%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Norway	4.5%	4.5%	0.2%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	--	4.1%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	-1.3%	8.6%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Russia*	19.8%	18.0%	0.3%	1.0%	0.1%	-0.1%	0.0%	0.0%	-0.1%
Spain	7.8%	6.1%	2.4%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Sweden	15.0%	13.6%	3.3%	1.7%	0.0%	0.0%	0.1%	0.0%	0.2%
Switzerland	10.1%	7.7%	5.5%	6.2%	0.1%	0.0%	0.0%	0.0%	0.1%
United Kingdom	14.6%	10.1%	15.3%	10.8%	0.4%	-0.2%	0.4%	0.2%	0.9%

Developed Markets Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>AsiaPacific</b>									
Australia	5.1%	4.4%	4.2%	4.7%	0.0%	0.0%	0.0%	0.0%	0.0%
China*	15.0%	14.8%	3.6%	8.6%	0.0%	-0.4%	0.0%	0.0%	-0.4%
Hong Kong	10.4%	7.7%	4.6%	2.5%	0.1%	0.0%	0.0%	0.1%	0.2%
India*	5.2%	5.6%	2.9%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Indonesia*	9.2%	7.8%	0.1%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	8.3%	7.7%	21.1%	16.5%	0.1%	0.1%	0.0%	0.0%	0.2%
Korea*	14.0%	12.1%	1.3%	3.2%	0.1%	0.0%	-0.1%	0.0%	-0.1%
Malaysia*	1.4%	3.3%	0.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	17.3%	17.1%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Pakistan*	--	27.0%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	--	2.9%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Singapore	6.4%	7.6%	2.7%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Taiwan*	24.2%	17.9%	1.8%	3.0%	0.2%	-0.1%	-0.1%	-0.1%	0.0%
Thailand*	-2.1%	-0.9%	0.1%	0.8%	0.0%	0.1%	0.0%	0.0%	0.0%
<b>Americas</b>									
Argentina*	--	18.1%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Brazil*	16.2%	14.3%	1.3%	2.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Canada	14.1%	5.3%	1.4%	6.9%	0.7%	0.2%	-0.1%	-0.6%	0.2%
Chile*	--	-9.6%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	15.2%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	2.7%	6.3%	0.5%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	3.4%	6.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
United States	16.5%	9.2%	1.2%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%

Developed Markets Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Other</b>									
Egypt*	--	5.8%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	8.5%	8.1%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	4.1%	2.4%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	6.0%	9.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Saudi Arabia*	--	3.7%	0.0%	0.7%	--	0.0%	0.0%	--	0.0%
South Africa*	11.0%	12.1%	0.7%	1.4%	0.0%	0.0%	-0.1%	0.0%	0.0%
Turkey*	--	0.1%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
United Arab Emirates*	0.8%	-1.1%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Totals</b>									
Americas	13.8%	6.9%	4.5%	10.1%	0.8%	0.1%	-0.2%	-0.4%	0.3%
Europe	11.5%	9.1%	50.1%	43.1%	0.9%	-0.1%	0.5%	0.1%	1.4%
Asia/Pacific	9.2%	9.4%	43.0%	43.8%	0.1%	0.0%	-0.2%	0.0%	-0.1%
Other	9.3%	7.5%	0.9%	3.0%	0.0%	0.1%	-0.1%	0.0%	0.0%
Cash	0.4%	--	1.5%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%
<b>Total</b>	<b>10.4%</b>	<b>9.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>1.7%</b>	<b>-0.1%</b>	<b>0.0%</b>	<b>-0.3%</b>	<b>1.5%</b>
<b>Totals</b>									
Developed	10.3%	8.0%	85.2%	73.7%	1.6%	-0.1%	0.4%	0.3%	2.2%
Emerging*	12.6%	11.9%	13.3%	26.3%	0.4%	-0.4%	-0.4%	-0.2%	-0.6%
Frontier**	6.0%	--	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.4%	--	1.5%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%



	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>5th Percentile</b>	14.0	12.6	30.4	6.4	14.1	9.8	10.9	10.9
<b>25th Percentile</b>	10.8	9.3	25.6	3.6	11.6	7.8	9.1	8.3
<b>Median</b>	9.1	7.4	22.2	1.6	9.6	6.4	7.1	7.1
<b>75th Percentile</b>	7.8	5.9	19.6	-0.6	8.2	5.1	6.3	5.9
<b>95th Percentile</b>	6.2	4.6	15.9	-3.1	6.7	4.3	5.5	4.9
<b># of Portfolios</b>	149	147	147	145	144	123	106	86
<b>● BlackRock EAFE Index</b>	8.2 (69)	7.1 (60)	22.4 (48)	2.9 (33)	10.0 (47)	6.0 (57)	-- (--)	-- (--)
<b>▲ MSCI EAFE</b>	8.2 (69)	7.0 (62)	22.0 (53)	2.6 (37)	9.6 (50)	5.7 (64)	6.3 (73)	5.5 (87)

Characteristics

	Portfolio	MSCI EAFE
Number of Holdings	919	918
Weighted Avg. Market Cap. (\$B)	63.3	63.7
Median Market Cap. (\$B)	10.8	10.8
Price To Earnings	17.1	17.2
Price To Book	2.4	2.4
Price To Sales	1.1	1.1
Return on Equity (%)	14.3	14.4
Yield (%)	3.2	3.2
Beta (holdings; global)	1.0	0.9

Top Holdings

NESTLE 'R'	2.1%
ROCHE HOLDING	1.5%
NOVARTIS 'R'	1.3%
TOYOTA MOTOR	1.1%
HSBC HOLDINGS	1.1%
TOTAL	0.9%
ASTRAZENECA	0.9%
LVMH	0.9%
SAP	0.9%
AIA GROUP	0.9%

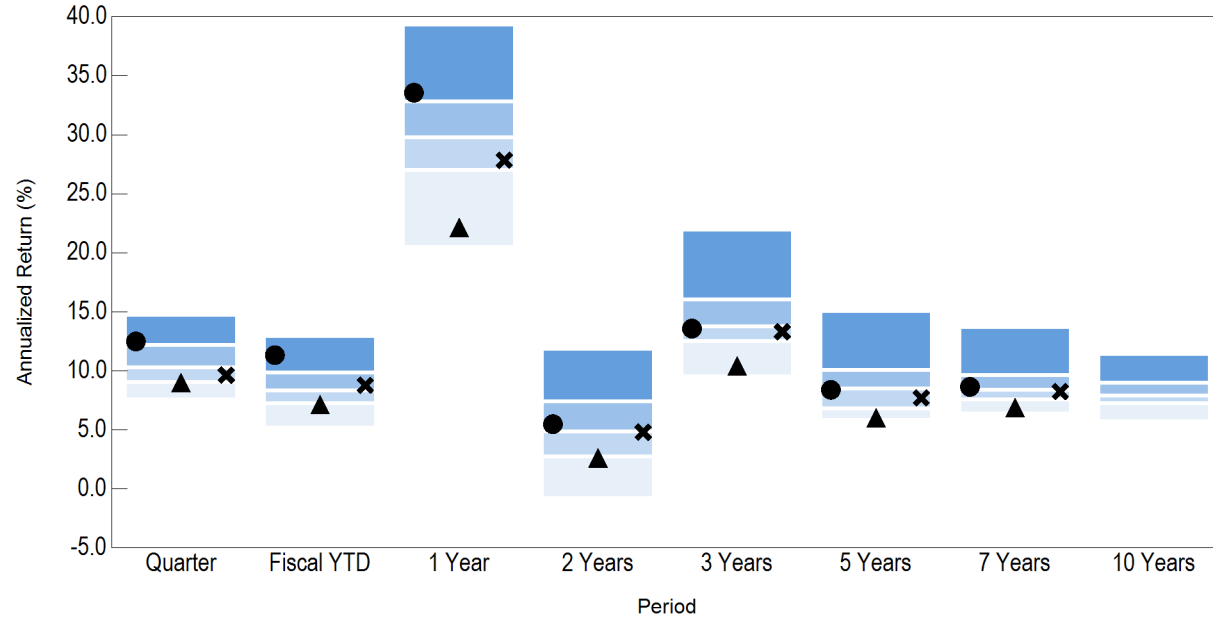
Best Performers

	Return %
MITSUBISHI TANABE PHARMA (J:EF@N)	68.5%
Z HOLDINGS (J:YHOO)	50.8%
EISAI (J:ES@N)	48.6%
TEVA PHARM.INDS.ADR 1:1 (TEVA)	42.4%
SHARP (J:SH@N)	40.2%
STMICROELECTRONICS (F:STM)	39.5%
FISHER & PAYKEL HLTHCR. (Z:FPHZ)	39.0%
BANK OF IRELAND GROUP (UKIR:BIRG)	38.1%
ILIAD (F:ILD)	38.0%
LINE (J:LINE)	37.7%

Worst Performers

	Return %
NMC HEALTH (UKIR:NMC)	-29.9%
WISETECH GLOBAL (A:WTCX)	-29.9%
NOKIA (M:NOK1)	-27.0%
WIRECARD (D:WDI)	-24.7%
SUZUKEN (J:SKEN)	-23.4%
SES FDR (LX:SES)	-23.0%
BANK OF QLND. (A:BOQX)	-21.1%
1&1 DRILLISCH (D:DRI)	-18.0%
AIR WATER (J:QW@N)	-17.6%
RENAULT (F:RENU)	-17.5%

eV ACWI ex-US Growth Equity Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	14.7	12.9	39.3	11.8	21.9	15.0	13.7	11.4
25th Percentile	12.2	9.9	32.8	7.4	16.1	10.1	9.6	9.0
Median	10.3	8.3	29.8	4.9	13.8	8.5	8.4	7.9
75th Percentile	9.1	7.3	27.0	2.7	12.5	6.9	7.6	7.3
95th Percentile	7.6	5.2	20.5	-0.8	9.5	5.9	6.4	5.7
# of Portfolios	75	75	75	71	69	61	52	42
● Baillie Gifford	12.5 (20)	11.3 (16)	33.6 (18)	5.5 (39)	13.6 (56)	8.4 (54)	8.6 (44)	-- (--)
▲ MSCI ACWI ex US	9.0 (77)	7.1 (77)	22.1 (94)	2.6 (77)	10.4 (92)	6.0 (95)	6.9 (88)	-- (--)
✕ MSCI ACWI ex US Growth	9.6 (70)	8.8 (42)	27.8 (70)	4.8 (51)	13.3 (63)	7.7 (64)	8.2 (55)	-- (--)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	90	2,379
Weighted Avg. Market Cap. (\$B)	53.7	74.1
Median Market Cap. (\$B)	15.9	8.2
Price To Earnings	26.9	16.3
Price To Book	3.9	2.4
Price To Sales	2.1	1.2
Return on Equity (%)	21.8	15.1
Yield (%)	1.4	3.0
Beta (holdings: global)	1.1	0.9

Top Holdings

TAIWAN SEMICON.SPN.ADR 1:5	3.1%
ALIBABA GROUP HOLDING ADR 1:8	2.8%
SHOPIFY 'A' (NYS)	2.4%
HARGREAVES LANSDOWN	2.2%
RIGHTMOVE	2.2%
ASML HOLDING	2.0%
SHISEIDO	2.0%
HOUSING DEVELOPMENT FINANCE CORPORATION	2.0%
AIA GROUP	2.0%
INDITEX	1.9%

Best Performers

	Return %
ASOS (UKIR:ASC)	46.4%
U-BLOX HOLDING (S:BHOL)	39.9%
BECHTLE (D:BC8)	39.6%
NIBE INDUSTRIER B (W:NIBE)	36.6%
XERO (A:XROX)	33.9%
SPOTIFY TECHNOLOGY (SPOT)	31.2%
NEMETSCHEK (D:NEM)	30.9%
ATLAS COPCO A (W:SR@G)	30.6%
TRAINLINE (UKIR:TRN)	30.1%
ATLAS COPCO B (W:ACBF)	29.4%

Worst Performers

	Return %
UNITED SPIRITS (IN:MLC)	-10.8%
SHISEIDO (J:SHDO)	-10.0%
PIGEON (J:PIGC)	-9.6%
TREASURY WINE ESTATES (A:TWEX)	-8.9%
JERONIMO MARTINS (P:JMT)	-2.5%
MAHINDRA AND MAHINDRA REG S GDR (UKIR:MHID)	-2.5%
WALMART DE MEXICO 'V' (MX:WAV)	-2.2%
SUGI HOLDINGS (J:SUGP)	-2.1%
SUZUKI MOTOR (J:IX@N)	-1.0%
PUBLIC BANK (L:PBOM)	-0.9%



**Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross**

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.0%	0.2%	0.2%	-0.4%	12.8%	6.6%	0.5%	6.8%			
Materials	-0.3%	-0.1%	0.0%	-0.1%	7.9%	10.8%	4.6%	7.4%			
Industrials	1.3%	0.5%	0.1%	0.7%	15.3%	9.6%	18.3%	11.9%			
Consumer Discretionary	0.7%	0.1%	0.2%	0.4%	12.9%	11.3%	18.2%	11.6%			
Consumer Staples	-0.3%	0.1%	-0.2%	-0.1%	0.4%	2.0%	12.7%	9.9%			
Health Care	0.0%	0.1%	0.0%	-0.2%	12.3%	12.5%	8.4%	8.3%			
Financials	-0.2%	0.0%	0.1%	-0.3%	7.8%	8.2%	14.9%	21.7%			
Information Technology	1.6%	1.0%	0.3%	0.4%	26.0%	15.3%	12.0%	8.8%			
Communication Services	1.1%	0.8%	0.0%	0.3%	20.3%	7.0%	8.1%	6.9%			
Utilities	0.0%	--	0.1%	--	--	4.8%	0.0%	3.5%			
Real Estate	0.0%	--	0.0%	--	--	7.3%	0.0%	3.2%			
Cash	-0.1%	0.0%	-0.1%	0.0%	0.4%	--	2.2%	0.0%			
<b>Portfolio</b>	<b>3.7%</b>	<b>=</b>	<b>2.6%</b>	<b>+</b>	<b>0.6%</b>	<b>+</b>	<b>0.5%</b>	<b>12.7%</b>	<b>8.9%</b>	<b>100.0%</b>	<b>100.0%</b>

**Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross**

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	--	8.0%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Belgium	--	-1.6%	0.0%	0.7%	--	0.1%	0.0%	--	0.1%
Czech Republic*	--	8.5%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Denmark	16.5%	13.1%	1.6%	1.2%	0.0%	0.0%	0.0%	0.0%	0.1%
Finland	14.9%	3.0%	1.2%	0.7%	0.1%	0.0%	0.0%	0.1%	0.1%
France	14.2%	8.5%	1.4%	7.5%	0.4%	0.1%	-0.2%	-0.3%	-0.1%
Germany	19.0%	9.8%	7.4%	5.7%	0.5%	0.0%	0.1%	0.2%	0.8%
Greece*	--	12.9%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	22.4%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	25.1%	18.6%	1.3%	0.4%	0.0%	0.1%	0.0%	0.1%	0.2%
Italy	--	8.5%	0.0%	1.6%	--	0.0%	-0.1%	--	0.0%
Netherlands	14.5%	7.6%	2.8%	2.6%	0.2%	0.0%	0.0%	0.0%	0.2%
Norway	--	4.5%	0.0%	0.4%	--	0.0%	0.0%	--	0.0%
Poland*	--	3.9%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	-2.5%	8.6%	1.3%	0.1%	0.0%	0.0%	0.0%	-0.1%	-0.1%
Russia*	--	17.8%	0.0%	1.0%	--	-0.1%	0.0%	--	-0.1%
Spain	15.5%	6.0%	1.9%	1.9%	0.2%	0.0%	0.0%	0.0%	0.2%
Sweden	22.9%	13.5%	5.0%	1.7%	0.2%	0.1%	0.2%	0.3%	0.7%
Switzerland	11.8%	7.7%	3.1%	6.2%	0.3%	0.1%	-0.1%	-0.1%	0.1%
United Kingdom	16.2%	9.9%	13.9%	10.8%	0.7%	-0.1%	0.3%	0.2%	1.0%

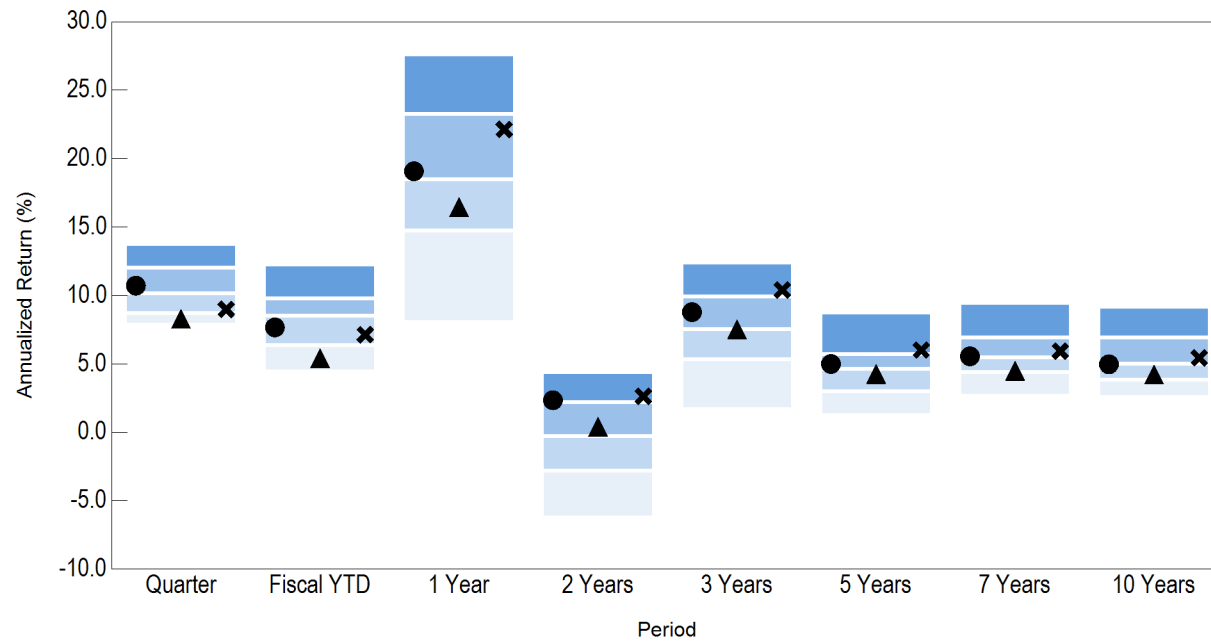
**Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross**

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>AsiaPacific</b>									
Australia	5.9%	4.3%	4.5%	4.7%	0.1%	0.0%	0.0%	0.0%	0.1%
China*	17.6%	14.5%	6.6%	8.6%	0.3%	-0.2%	0.0%	-0.1%	0.0%
Hong Kong	13.2%	7.6%	3.0%	2.5%	0.1%	0.0%	0.0%	0.0%	0.2%
India*	5.7%	5.5%	5.3%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Indonesia*	--	7.3%	0.0%	0.5%	--	0.0%	0.0%	--	0.0%
Japan	5.8%	7.6%	20.0%	16.5%	-0.3%	0.1%	0.0%	-0.1%	-0.3%
Korea*	22.9%	12.2%	0.6%	3.2%	0.3%	-0.1%	-0.1%	-0.3%	-0.1%
Malaysia*	-0.9%	3.2%	0.9%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	2.3%	17.5%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Pakistan*	--	27.1%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	--	3.0%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Singapore	4.3%	7.5%	3.4%	0.9%	0.0%	-0.1%	0.0%	-0.1%	-0.1%
Taiwan*	25.9%	18.0%	2.8%	3.0%	0.3%	0.0%	-0.1%	0.0%	0.2%
Thailand*	--	-0.8%	0.0%	0.8%	--	0.1%	0.0%	--	0.1%
<b>Americas</b>									
Argentina*	--	16.4%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Brazil*	20.8%	14.4%	1.5%	2.0%	0.1%	0.0%	0.0%	0.0%	0.1%
Canada	21.3%	5.0%	3.0%	6.9%	1.2%	0.1%	-0.1%	-0.7%	0.5%
Chile*	--	-9.6%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	14.7%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	-2.2%	6.3%	0.7%	0.7%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Peru*	--	6.1%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
United States	16.7%	9.0%	3.0%	0.0%	0.0%	0.1%	0.0%	0.2%	0.3%

**Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross**

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Other</b>									
Egypt*	--	5.8%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	--	7.7%	0.0%	0.4%	--	0.0%	0.0%	--	0.0%
Qatar*	--	2.4%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Saudi Arabia*	--	3.6%	0.0%	0.7%	--	0.0%	0.0%	--	0.0%
South Africa*	8.2%	12.9%	1.7%	1.4%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Turkey*	--	0.2%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
United Arab Emirates*	--	-1.1%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
<b>Totals</b>									
Americas	17.6%	6.7%	8.1%	10.1%	1.2%	0.0%	-0.2%	-0.2%	0.9%
Europe	16.7%	9.1%	40.9%	43.1%	2.9%	0.0%	0.2%	-0.1%	3.0%
Asia/Pacific	9.1%	9.4%	47.0%	43.8%	0.1%	0.1%	-0.3%	0.0%	-0.1%
Other	8.2%	7.7%	1.7%	3.0%	-0.1%	0.0%	0.0%	0.1%	0.0%
Cash	0.4%	--	2.2%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%
<b>Total</b>	<b>12.7%</b>	<b>8.9%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>4.2%</b>	<b>0.1%</b>	<b>-0.2%</b>	<b>-0.3%</b>	<b>3.7%</b>
<b>Totals</b>									
Developed	12.7%	7.9%	77.9%	73.6%	3.5%	-0.1%	0.2%	0.2%	3.9%
Emerging*	13.8%	11.7%	19.9%	26.4%	0.8%	-0.2%	-0.4%	-0.2%	0.0%
Cash	0.4%	--	2.2%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%

eV ACWI ex-US Value Equity Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	13.8	12.2	27.6	4.4	12.4	8.7	9.4	9.1
25th Percentile	12.1	9.8	23.3	2.2	10.0	5.8	6.9	6.9
Median	10.2	8.6	18.5	-0.3	7.5	4.6	5.5	5.0
75th Percentile	8.7	6.4	14.8	-2.8	5.4	3.0	4.4	3.8
95th Percentile	7.9	4.5	8.1	-6.2	1.7	1.3	2.7	2.6
# of Portfolios	36	36	36	34	34	32	26	19
● Mondrian	10.7 (40)	7.7 (59)	19.1 (46)	2.3 (23)	8.8 (32)	5.0 (41)	5.6 (47)	5.0 (55)
▲ MSCI ACWI ex USA Value Gross	8.3 (92)	5.4 (92)	16.5 (65)	0.4 (43)	7.5 (52)	4.3 (57)	4.5 (75)	4.2 (70)
✕ MSCI ACWI ex USA Gross	9.0 (71)	7.1 (70)	22.1 (38)	2.6 (21)	10.4 (21)	6.0 (22)	5.9 (43)	5.4 (45)

Characteristics

	Portfolio	MSCI ACWI ex USA Value Gross
Number of Holdings	122	1,466
Weighted Avg. Market Cap. (\$B)	59.7	52.7
Median Market Cap. (\$B)	23.0	7.3
Price To Earnings	14.4	12.3
Price To Book	1.8	1.7
Price To Sales	0.8	0.9
Return on Equity (%)	11.0	11.4
Yield (%)	4.1	4.3
Beta (holdings: global)	1.0	1.0

Top Holdings

SSE	2.5%
UNITED OVERSEAS BANK	2.4%
LLOYDS BANKING GROUP	2.3%
TAKEDA PHARMACEUTICAL	2.3%
GLAXOSMITHKLINE	2.3%
CK HUTCHISON HOLDINGS	2.3%
BANCO SANTANDER	2.2%
SANOFI	2.2%
SAINT GOBAIN	2.2%
FUJIFILM HOLDINGS	2.1%

Best Performers

	Return %
TRAVIS PERKINS (UKIR:TPK)	35.1%
SASOL (R:SOLJ)	30.0%
SOCIETE GENERALE (F:SGE)	27.0%
TAIWAN SEMICON.MNFG. (TW:TSM)	26.9%
ALIBABA GROUP HOLDING ADR 1:8 (BABA)	26.8%
INDIABULLS HOUSING FIN (IN:IEZ)	25.6%
ANGLO AMERICAN (UKIR:AAL)	24.8%
SSE (UKIR:SSE)	24.2%
LLOYDS BANKING GROUP (UKIR:LLOY)	24.1%
G4S (UKIR:GFS)	23.9%

Worst Performers

	Return %
LARSEN & TOUBRO (IN:LST)	-12.6%
INFOSYS ADR 1:1 (INFY)	-8.1%
H&R RLST.IT.STAPLE UNIT (C:HR.UN)	-5.4%
POWER GRID CORPORATION OF INDIA (IN:PGC)	-5.1%
BRILLIANCE CHINA AUTOMOTIVE HOLDINGS (K:CBA)	-3.5%
CSTCN.INTHDG. (K:CSCI)	-3.3%
ISS (DK:ISS)	-3.0%
DEUTSCHE TELEKOM (D:DTE)	-2.7%
KASIKORNBANK FB (Q:TFBF)	-2.1%
KOREA ZINC (KO:KRZ)	-1.9%

**Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross**

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.2%	-0.2%	0.1%	0.0%	4.8%	6.3%	7.7%	11.0%			
Materials	-0.1%	0.9%	-0.1%	-0.8%	20.4%	10.7%	4.5%	9.3%			
Industrials	0.2%	0.0%	0.1%	0.2%	9.6%	8.9%	12.2%	8.8%			
Consumer Discretionary	0.3%	0.1%	0.1%	0.1%	10.2%	9.2%	12.5%	8.8%			
Consumer Staples	0.4%	0.2%	0.0%	0.2%	15.0%	9.2%	5.5%	2.9%			
Health Care	0.8%	0.1%	0.3%	0.4%	15.0%	12.7%	11.4%	4.7%			
Financials	-0.2%	0.4%	0.0%	-0.6%	9.5%	8.3%	20.6%	33.4%			
Information Technology	0.4%	0.2%	0.0%	0.2%	13.0%	10.2%	9.4%	3.8%			
Communication Services	0.0%	-0.1%	-0.1%	0.1%	4.8%	4.8%	8.1%	7.0%			
Utilities	0.7%	0.4%	0.0%	0.2%	15.2%	4.5%	5.5%	5.8%			
Real Estate	-0.3%	-0.6%	0.0%	0.4%	-3.3%	9.1%	1.7%	4.4%			
Cash	-0.1%	0.0%	-0.1%	0.0%	0.4%	--	0.9%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
<b>Portfolio</b>	<b>1.9%</b>	<b>=</b>	<b>1.4%</b>	<b>+</b>	<b>0.2%</b>	<b>+</b>	<b>0.3%</b>	<b>10.2%</b>	<b>8.3%</b>	<b>100.0%</b>	<b>100.0%</b>

**Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross**

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	--	11.2%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Belgium	--	11.0%	0.0%	0.5%	--	0.0%	0.0%	--	0.0%
Czech Republic*	--	12.3%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Denmark	-3.0%	17.7%	1.4%	0.2%	0.0%	0.1%	0.0%	-0.2%	-0.1%
Finland	--	-0.5%	0.0%	0.9%	--	0.1%	0.0%	--	0.0%
France	11.1%	7.6%	5.7%	6.9%	0.2%	0.0%	0.0%	0.0%	0.2%
Germany	7.3%	8.9%	8.4%	5.7%	-0.1%	0.0%	0.1%	0.0%	0.0%
Greece*	--	14.3%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	15.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	--	30.3%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Italy	4.0%	8.1%	3.8%	2.4%	-0.1%	0.0%	0.0%	-0.1%	-0.1%
Netherlands	1.3%	12.5%	1.9%	0.8%	-0.1%	0.0%	0.0%	-0.1%	-0.1%
Norway	--	2.2%	0.0%	0.5%	--	0.0%	0.0%	--	0.0%
Poland*	--	6.9%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	--	11.7%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Russia*	19.8%	21.0%	0.9%	1.1%	0.0%	0.0%	-0.1%	0.0%	0.0%
Spain	3.9%	3.5%	2.5%	2.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Sweden	-1.4%	9.1%	2.3%	1.4%	-0.1%	0.0%	0.0%	-0.1%	-0.2%
Switzerland	14.2%	10.5%	4.3%	3.2%	0.1%	0.0%	0.0%	0.0%	0.2%
United Kingdom	16.1%	11.0%	17.7%	14.6%	0.7%	-0.1%	0.3%	0.1%	1.1%



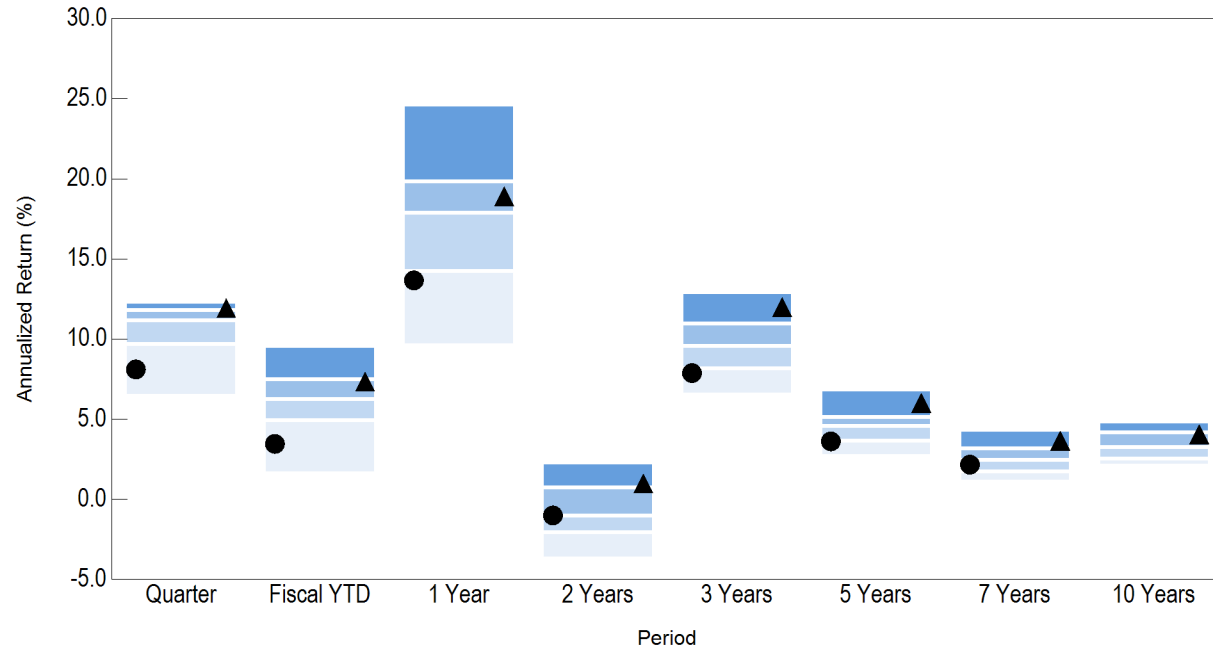
Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>AsiaPacific</b>									
Australia	6.9%	0.8%	1.0%	4.9%	0.3%	0.3%	-0.2%	-0.2%	0.2%
China*	11.0%	10.4%	4.3%	8.8%	0.1%	-0.2%	0.0%	0.0%	-0.2%
Hong Kong	11.8%	5.2%	6.3%	2.5%	0.2%	0.0%	0.0%	0.3%	0.4%
India*	4.2%	7.0%	3.3%	2.3%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Indonesia*	9.2%	5.0%	0.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	11.8%	7.0%	19.0%	16.9%	0.8%	0.1%	0.0%	0.1%	0.9%
Korea*	12.5%	9.1%	3.4%	3.2%	0.1%	0.0%	0.0%	0.0%	0.1%
Malaysia*	4.5%	3.7%	0.7%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	--	4.8%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Pakistan*	--	24.7%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	--	2.6%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Singapore	8.3%	7.4%	3.3%	0.9%	0.0%	0.0%	0.1%	0.0%	0.1%
Taiwan*	22.2%	12.2%	2.5%	3.0%	0.3%	0.0%	0.0%	0.0%	0.2%
Thailand*	-2.1%	-0.2%	0.3%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Americas</b>									
Argentina*	--	21.1%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Brazil*	13.4%	15.9%	2.5%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Canada	-5.4%	5.2%	1.2%	7.1%	-0.7%	0.1%	-0.1%	0.6%	-0.1%
Chile*	--	-8.9%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	16.4%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	6.7%	5.6%	0.9%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	3.4%	5.6%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross

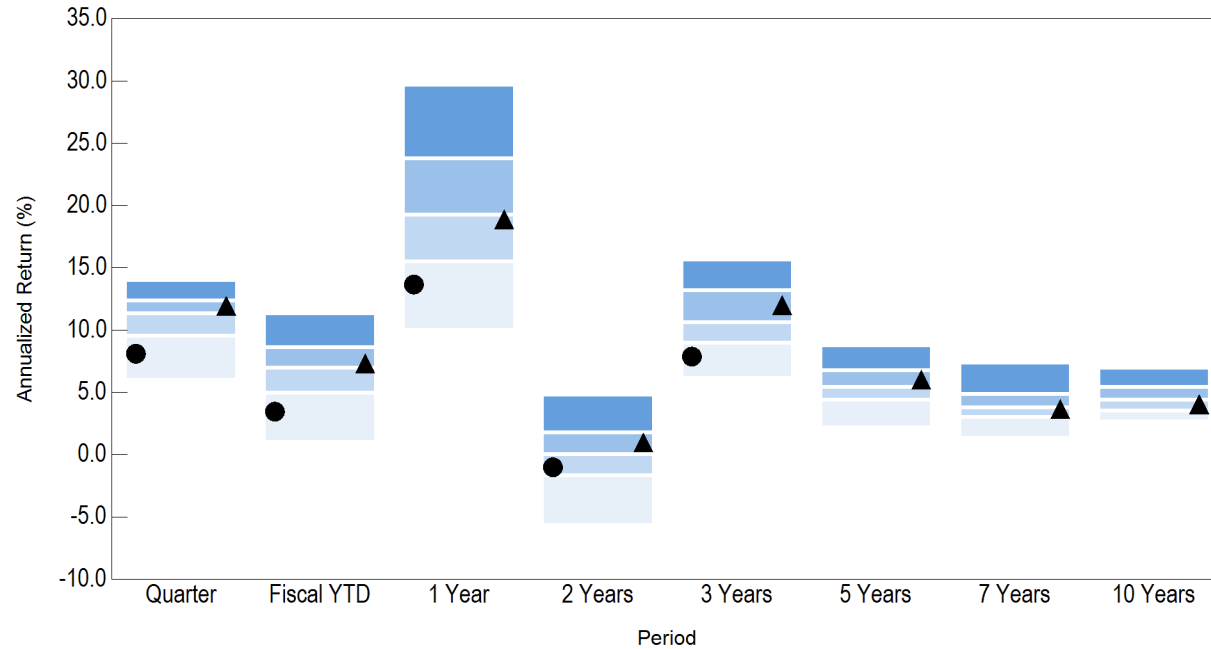
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Other</b>									
Egypt*	--	2.7%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	--	12.5%	0.0%	0.4%	--	0.0%	0.0%	--	0.0%
Qatar*	4.1%	4.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	6.0%	8.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Saudi Arabia*	--	4.7%	0.0%	0.7%	--	0.0%	0.0%	--	0.0%
South Africa*	30.0%	10.7%	0.3%	1.5%	0.3%	0.0%	-0.1%	-0.2%	0.0%
Turkey*	--	-1.4%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
United Arab Emirates*	0.8%	-0.6%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Totals</b>									
Americas	7.0%	7.0%	4.7%	10.2%	0.0%	0.0%	-0.1%	0.0%	-0.1%
Europe	10.4%	9.4%	49.0%	41.9%	0.4%	0.0%	0.4%	0.1%	0.8%
Asia/Pacific	11.2%	7.2%	44.6%	44.7%	1.9%	0.0%	-0.1%	0.0%	1.8%
Other	12.5%	7.7%	0.7%	3.2%	0.2%	0.0%	-0.1%	-0.1%	0.0%
Cash	0.4%	--	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>10.5%</b>	<b>8.1%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>2.4%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>-0.1%</b>	<b>2.4%</b>
<b>Totals</b>									
Developed	10.4%	7.5%	78.9%	73.2%	2.0%	0.0%	0.2%	0.2%	2.4%
Emerging*	11.6%	9.7%	20.1%	26.8%	0.6%	-0.1%	-0.2%	-0.1%	0.1%
Frontier**	6.0%	--	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.4%	--	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

InvMetrics All DB Emg Mkt Eq Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	12.3	9.5	24.6	2.3	12.9	6.8	4.3	4.8
25th Percentile	11.8	7.5	19.9	0.7	11.0	5.2	3.2	4.2
Median	11.2	6.3	17.9	-1.0	9.6	4.6	2.5	3.3
75th Percentile	9.7	4.9	14.3	-2.1	8.2	3.7	1.8	2.6
95th Percentile	6.5	1.6	9.6	-3.7	6.6	2.7	1.1	2.1
# of Portfolios	86	86	86	83	79	73	60	19
● Emerging Markets	8.1 (89)	3.4 (85)	13.7 (80)	-1.0 (51)	7.9 (79)	3.6 (78)	2.1 (58)	-- (--)
▲ MSCI Emerging Markets Gross	11.9 (15)	7.3 (26)	18.9 (33)	1.0 (23)	12.0 (12)	6.0 (13)	3.6 (16)	4.0 (30)

eV Emg Mkts Equity Net Return Comparison



	Return (Rank)											
5th Percentile	14.0	11.3	29.7	4.8	15.6	8.7	7.4	6.9				
25th Percentile	12.4	8.7	23.8	1.8	13.2	6.8	4.9	5.5				
Median	11.4	7.0	19.3	0.1	10.7	5.5	3.8	4.4				
75th Percentile	9.6	5.0	15.6	-1.6	9.0	4.4	3.0	3.6				
95th Percentile	6.0	1.0	10.1	-5.6	6.2	2.2	1.3	2.7				
# of Portfolios	218	217	216	207	199	173	142	84				
● Parametric Core	8.1 (87)	3.4 (87)	13.7 (84)	-1.0 (66)	7.9 (88)	-- (--)	-- (--)	-- (--)				
▲ MSCI Emerging Markets Gross	11.9 (34)	7.3 (46)	18.9 (55)	1.0 (35)	12.0 (37)	6.0 (38)	3.6 (58)	4.0 (64)				

Characteristics

	Portfolio	MSCI Emerging Markets Gross
Number of Holdings	1,173	1,371
Weighted Avg. Market Cap. (\$B)	25.7	106.2
Median Market Cap. (\$B)	3.3	5.9
Price To Earnings	13.5	15.0
Price To Book	2.3	2.6
Price To Sales	1.0	1.3
Return on Equity (%)	14.8	17.0
Yield (%)	3.3	2.7
Beta (holdings; global)	0.7	1.0

Top Holdings

PJSC GAZPROM ADR (OTC) CDI 1:2	1.1%
SBERBANK OF RUSSIA	1.1%
LUKOIL OAO SPN.ADR 1:1	0.9%
CREDICORP	0.8%
AMERICA MOVIL SAB DE CV SPN.ADR 'L' 1:20	0.7%
SAMSUNG ELECTRONICS	0.7%
TAIWAN SEMICON.MNFG.	0.6%
GPO FINANCE BANORTE	0.6%
PJSC MMC NORILSK NICKEL SPN.ADR 10:1	0.6%
MTN GROUP	0.6%

Best Performers

	Return %
HLB (KO:KPI)	96.8%
IMPD.DSRRL.ECO.DE AMLAT. DE CV (MX:IDL)	90.1%
TRG PAKISTAN (PK:TRG)	88.5%
SIBANYE GOLD (R:SGLJ)	85.5%
SILLAJEN (KO:JLS)	84.9%
IS GAYMEN.YATOTA. (TK:IGY)	72.2%
CENTRAL PUERTO ADR 1:10 (CEPU)	69.7%
BUMI ARMADA (L:ARMO)	66.9%
AAC TECHNOLOGIES (HSC) HOLDINGS (K:AACAS)	64.9%
IMPALA PLATINUM (R:IMPJ)	63.3%

Worst Performers

	Return %
CENTRAL PLAZA HOTEL FB (Q:CENF)	-71.4%
MANILA WATER (PH:MWC)	-46.3%
TELKOM SA SOC (R:TKGJ)	-45.7%
HANSON INTERNATIONAL (ID:MAT)	-44.4%
SINO-THAI ENGR.CON. FB (Q:STFF)	-43.8%
SALFA CORPORATION (CL:SSA)	-42.1%
BEIJING ENTERPRISE CLEAN ENERGY GP (K:JCCI)	-38.8%
RIPLEY CORPORATION (CL:RPY)	-37.3%
IMPERIAL PAC.INTL.HDG. (K:FNAT)	-35.2%
PPC (R:PPCJ)	-32.4%

**Parametric Core Performance Attribution vs. MSCI Emerging Markets Gross**

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.0%	0.0%	0.0%	0.0%	9.8%	10.2%	9.9%	7.7%			
Materials	0.2%	0.1%	0.0%	0.1%	13.3%	11.9%	10.4%	7.5%			
Industrials	-0.1%	0.0%	-0.2%	0.1%	7.2%	7.2%	10.2%	5.4%			
Consumer Discretionary	-1.0%	-1.1%	-0.3%	0.4%	9.1%	16.8%	8.4%	13.3%			
Consumer Staples	-0.2%	0.0%	-0.4%	0.1%	3.5%	3.1%	10.5%	6.6%			
Health Care	0.1%	-0.1%	0.1%	0.0%	13.5%	14.9%	4.9%	2.7%			
Financials	-0.2%	-0.4%	0.2%	0.0%	8.4%	9.7%	15.8%	24.9%			
Information Technology	-1.4%	-1.3%	-0.6%	0.5%	8.9%	18.6%	4.8%	14.5%			
Communication Services	-0.2%	-0.3%	0.0%	0.1%	8.0%	10.1%	11.0%	11.6%			
Utilities	-0.1%	0.0%	-0.3%	0.1%	6.5%	4.6%	6.9%	2.8%			
Real Estate	-0.2%	-0.2%	0.2%	-0.2%	10.5%	17.9%	6.6%	2.9%			
Cash	-0.1%	0.0%	-0.1%	0.0%	0.4%	--	0.6%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
<b>Portfolio</b>	<b>-3.2%</b>	<b>=</b>	<b>-3.2%</b>	<b>+</b>	<b>-1.2%</b>	<b>+</b>	<b>1.3%</b>	<b>8.7%</b>	<b>11.9%</b>	<b>100.0%</b>	<b>100.0%</b>

Parametric Core Performance Attribution vs. MSCI Emerging Markets Gross

	Returns and Weights				Attribution Effects				Total Effects	
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect		
<b>Europe</b>										
Belgium	3.5%	-1.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	9.4%	9.3%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Greece*	11.9%	13.1%	1.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hungary*	20.9%	22.0%	0.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Luxembourg	13.4%	11.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	5.4%	7.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	8.7%	4.1%	3.3%	1.0%	0.0%	-0.3%	0.1%	0.1%	0.0%	0.0%
Russia*	17.0%	18.0%	7.0%	4.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.2%
United Kingdom	13.9%	10.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>AsiaPacific</b>										
China*	13.4%	14.8%	6.3%	32.5%	-0.4%	-1.2%	-0.2%	0.3%	-1.5%	
Hong Kong	12.0%	7.7%	5.4%	0.0%	0.0%	-0.1%	0.0%	0.2%	0.1%	
India*	4.4%	5.6%	7.4%	8.4%	-0.1%	0.0%	0.0%	0.0%	0.0%	
Indonesia*	4.1%	7.8%	3.6%	2.1%	-0.1%	-0.1%	0.0%	-0.1%	-0.2%	
Korea*	8.7%	12.1%	6.8%	12.0%	-0.4%	0.1%	-0.2%	0.2%	-0.4%	
Malaysia*	3.7%	3.3%	3.2%	2.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%	
Pakistan*	27.3%	27.0%	0.7%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	
Philippines*	0.5%	2.9%	3.5%	1.1%	0.0%	-0.2%	0.1%	-0.1%	-0.2%	
Singapore	3.2%	7.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Taiwan*	9.8%	17.9%	7.4%	11.3%	-0.9%	-0.2%	-0.2%	0.3%	-0.9%	
Thailand*	-0.3%	-0.9%	3.5%	2.9%	0.0%	-0.1%	0.0%	0.0%	0.0%	
<b>Americas</b>										
Argentina*	24.4%	18.1%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
Brazil*	16.2%	14.3%	7.5%	7.5%	0.2%	0.0%	0.0%	0.0%	0.1%	
Chile*	-11.4%	-9.6%	3.4%	1.0%	0.0%	-0.4%	-0.1%	-0.1%	-0.5%	
Colombia*	11.4%	15.2%	1.8%	0.4%	0.0%	0.0%	0.1%	0.0%	0.0%	
Mexico*	7.9%	6.3%	6.8%	2.5%	0.1%	-0.3%	0.1%	0.1%	0.0%	
Peru*	2.6%	6.1%	1.4%	0.4%	0.0%	0.0%	0.0%	0.0%	-0.1%	
United States	8.5%	9.2%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

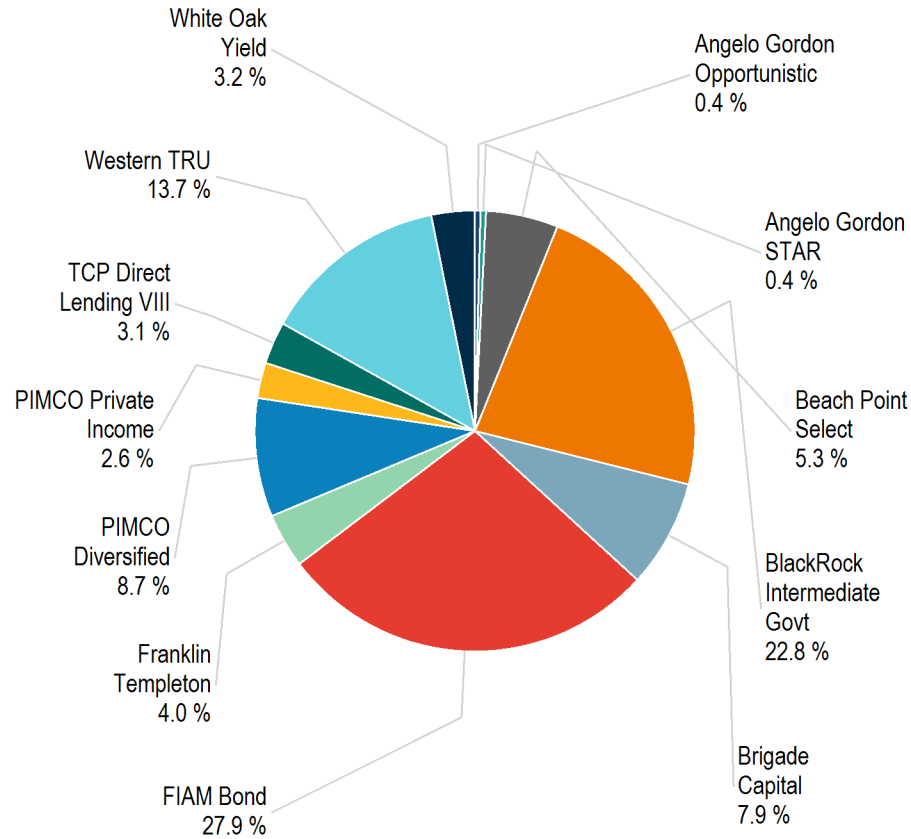
Parametric Core Performance Attribution vs. MSCI Emerging Markets Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Other</b>									
Egypt*	-2.3%	5.8%	0.8%	0.2%	0.0%	0.0%	0.0%	-0.1%	-0.1%
Kuwait**	9.8%	11.9%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	3.1%	2.4%	1.7%	1.0%	0.0%	-0.1%	0.0%	0.0%	0.0%
Saudi Arabia*	--	3.7%	0.0%	2.5%	--	0.1%	0.0%	--	0.1%
South Africa*	14.7%	12.1%	6.3%	5.2%	0.1%	-0.1%	0.1%	0.0%	0.2%
Turkey*	4.8%	0.1%	1.9%	0.6%	0.0%	-0.1%	-0.1%	0.1%	0.0%
United Arab Emirates*	-0.8%	-1.1%	1.5%	0.7%	0.0%	-0.1%	0.0%	0.0%	-0.1%
<b>Totals</b>									
Americas	8.0%	10.5%	23.5%	11.9%	-0.2%	-0.3%	0.1%	-0.1%	-0.5%
Europe	14.0%	15.3%	14.0%	5.7%	0.0%	0.1%	0.3%	0.0%	0.3%
Asia/Pacific	7.5%	12.4%	48.0%	72.2%	-3.6%	-0.3%	-0.4%	1.2%	-3.0%
Other	8.6%	7.4%	13.9%	10.1%	0.2%	-0.2%	0.0%	0.1%	0.1%
Cash	0.4%	--	0.6%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%
<b>Total</b>	<b>8.7%</b>	<b>11.9%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>-3.6%</b>	<b>-0.8%</b>	<b>0.0%</b>	<b>1.1%</b>	<b>-3.2%</b>
<b>Totals</b>									
Developed	10.8%	--	8.4%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
Emerging*	8.5%	11.9%	89.3%	100.0%	-3.6%	0.0%	0.0%	0.4%	-3.3%
Frontier**	9.8%	--	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.4%	--	0.6%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%



Fixed Income  
 Manager Allocation Analysis

Period Ending: December 31, 2019



	Actual \$	Actual %	Manager Contribution to Excess Return %
Angelo Gordon Opportunistic	\$4,346,389	0.4%	0.0%
Angelo Gordon STAR	\$3,678,183	0.4%	0.0%
Beach Point Select	\$55,137,254	5.3%	0.1%
BlackRock Intermediate Govt	\$236,638,615	22.8%	0.0%
Brigade Capital	\$81,482,442	7.9%	0.1%
FIAM Bond	\$289,118,024	27.9%	0.1%
Franklin Templeton	\$41,472,564	4.0%	0.0%
PIMCO Diversified	\$90,318,923	8.7%	0.0%
PIMCO Private Income	\$27,291,328	2.6%	0.0%
TCP Direct Lending VIII	\$32,550,535	3.1%	0.0%
Western TRU	\$142,225,506	13.7%	0.3%
White Oak Yield	\$32,692,859	3.2%	-0.1%
Actual vs. Policy Weight Difference			-0.2%
<b>Total</b>	<b>\$1,036,952,624</b>	<b>100.0%</b>	<b>0.3%</b>

Statistics Summary

3 Years

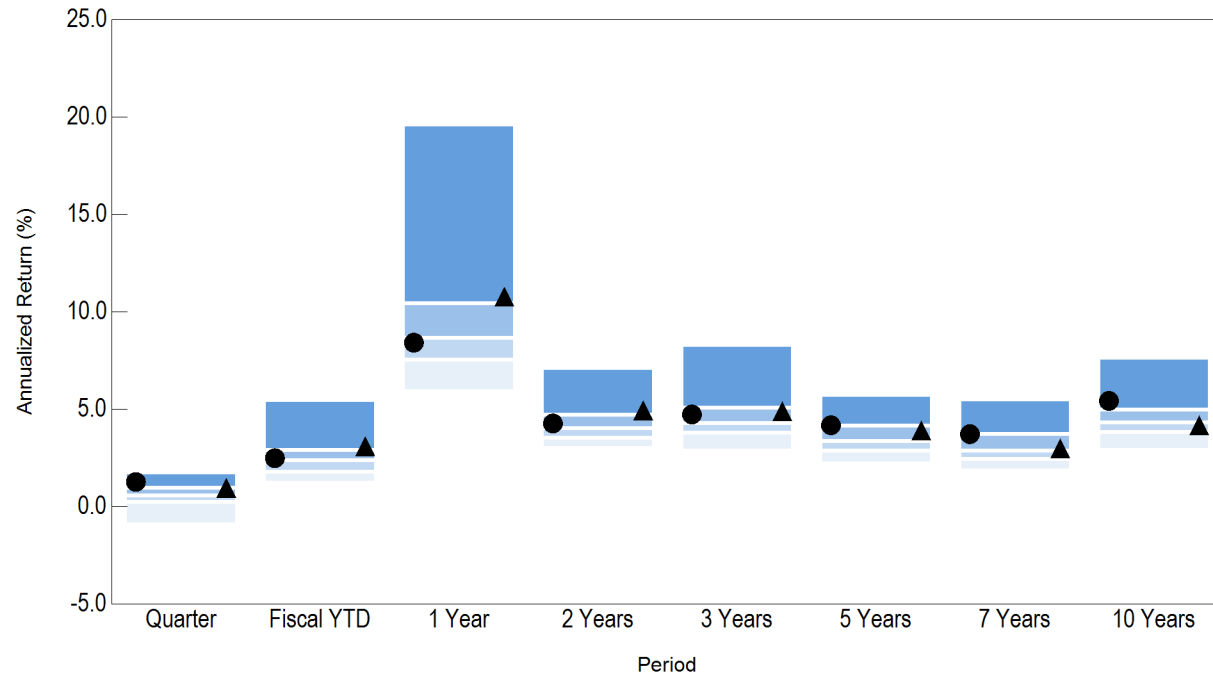
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	4.7%	1.7%	1.8	-0.1	1.6%
Blended Fixed Income Index	4.9%	2.5%	1.3	--	0.0%
Core Fixed	4.0%	2.1%	1.1	0.0	1.2%
BBgBarc US Aggregate TR	4.0%	2.9%	0.8	--	0.0%
FIAM Bond	4.4%	2.7%	1.0	0.8	0.5%
BBgBarc US Aggregate TR	4.0%	2.9%	0.8	--	0.0%
Western TRU	4.9%	3.5%	0.9	0.8	3.5%
3-Month Libor Total Return USD	2.0%	0.2%	2.3	--	0.0%
Opportunistic Credit	6.4%	2.6%	1.8	0.1	2.6%
BBgBarc BA Intermediate HY	6.1%	3.5%	1.3	--	0.0%
Angelo Gordon Opportunistic	16.9%	8.9%	1.7	1.3	9.6%
BBgBarc US Aggregate TR	4.0%	2.9%	0.8	--	0.0%
Angelo Gordon STAR	18.8%	8.0%	2.2	1.7	8.5%
BBgBarc US Aggregate TR	4.0%	2.9%	0.8	--	0.0%
Beach Point Select	7.3%	3.1%	1.8	0.5	2.6%
BBgBarc BA Intermediate HY	6.1%	3.5%	1.3	--	0.0%
Brigade Capital	5.2%	4.1%	0.9	-0.3	3.5%
BBgBarc BA Intermediate HY	6.1%	3.5%	1.3	--	0.0%
Franklin Templeton	1.7%	6.8%	0.0	-0.3	8.0%
BBgBarc Multiverse TR	4.4%	3.5%	0.8	--	0.0%

Statistics Summary

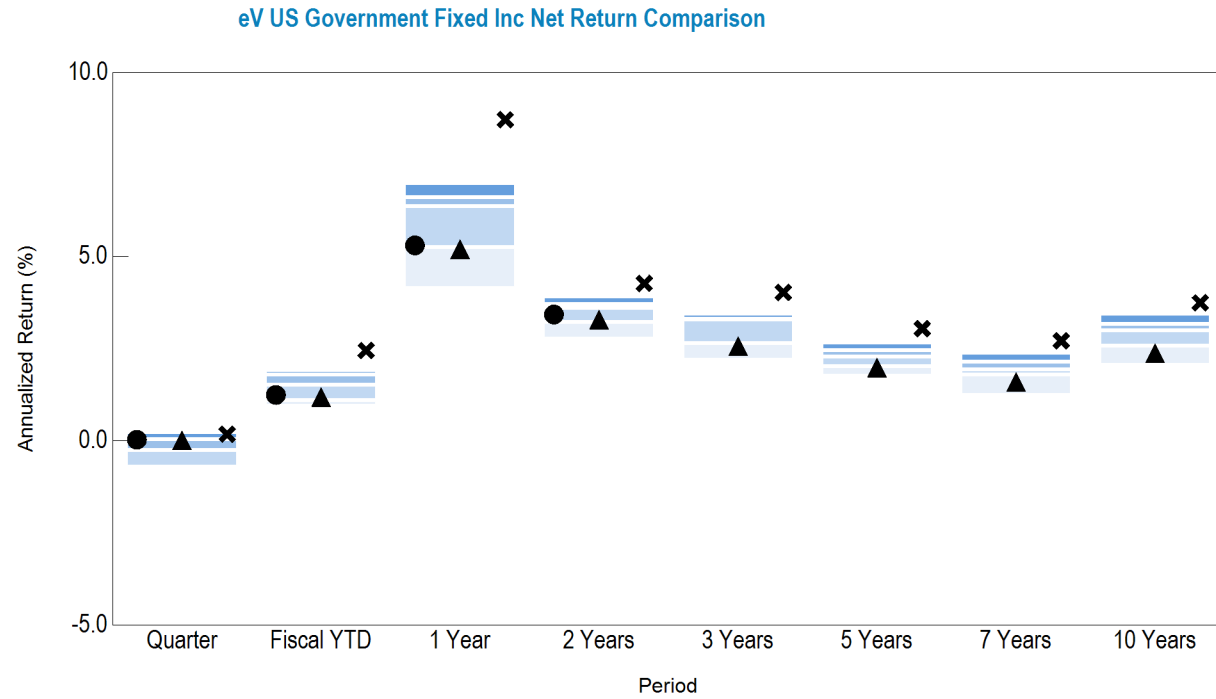
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	4.2%	2.5%	1.3	0.1	1.9%
Blended Fixed Income Index	3.9%	2.8%	1.0	--	0.0%
Core Fixed	3.4%	2.7%	0.9	0.2	1.6%
BBgBarc US Aggregate TR	3.0%	3.1%	0.7	--	0.0%
FIAM Bond	3.6%	3.1%	0.8	0.7	0.8%
BBgBarc US Aggregate TR	3.0%	3.1%	0.7	--	0.0%
Opportunistic Credit	6.3%	3.4%	1.5	0.2	3.0%
BBgBarc BA Intermediate HY	5.8%	4.2%	1.1	--	0.0%
Angelo Gordon Opportunistic	11.6%	7.5%	1.4	1.0	8.3%
BBgBarc US Aggregate TR	3.0%	3.1%	0.7	--	0.0%
Angelo Gordon STAR	13.3%	7.0%	1.8	1.4	7.5%
BBgBarc US Aggregate TR	3.0%	3.1%	0.7	--	0.0%
Brigade Capital	5.1%	6.3%	0.6	-0.2	4.2%
BBgBarc BA Intermediate HY	5.8%	4.2%	1.1	--	0.0%
Franklin Templeton	1.7%	6.9%	0.1	-0.1	8.5%
BBgBarc Multiverse TR	2.5%	4.4%	0.3	--	0.0%

InvMetrics All DB Total Fix Inc Net Return Comparison



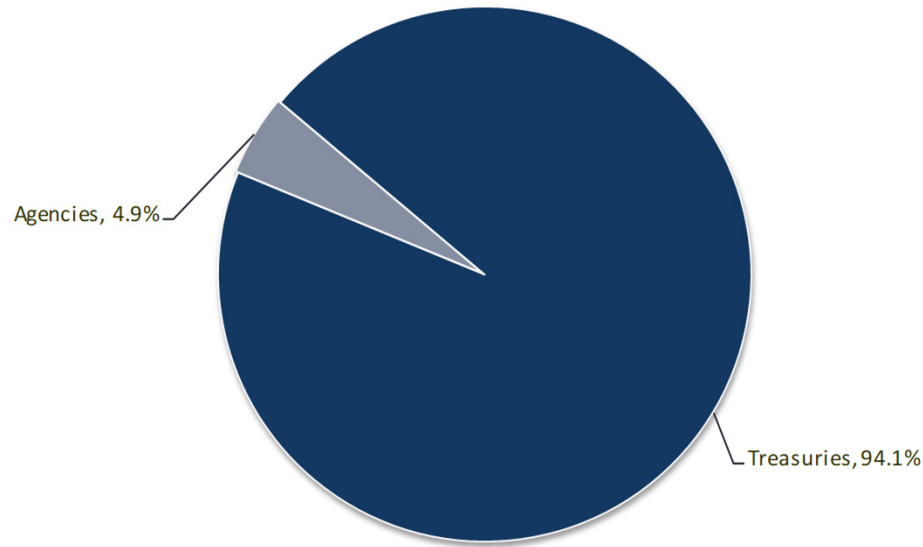
	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.7	5.5	19.6	7.1	8.3	5.7	5.5	7.6
25th Percentile	1.0	2.9	10.4	4.7	5.1	4.2	3.8	5.0
Median	0.6	2.4	8.7	4.1	4.3	3.4	2.9	4.3
75th Percentile	0.2	1.8	7.6	3.5	3.8	2.9	2.5	3.8
95th Percentile	-0.9	1.2	6.0	3.0	2.9	2.2	1.9	2.9
# of Portfolios	319	319	318	314	302	285	262	201
● Fixed Income	1.3 (17)	2.5 (46)	8.4 (56)	4.3 (43)	4.7 (33)	4.2 (25)	3.7 (27)	5.4 (17)
▲ Blended Fixed Income Index	0.9 (27)	3.1 (22)	10.8 (23)	4.9 (21)	4.9 (28)	3.9 (33)	3.0 (46)	4.2 (59)



	Return (Rank)															
	Quarter		Fiscal YTD		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	0.2	1.9	0.2	1.9	7.0	3.9	3.4	2.7	2.4	3.4						
25th Percentile	0.0	1.8	0.0	1.8	6.6	3.7	3.3	2.5	2.2	3.2						
Median	-0.2	1.5	-0.2	1.5	6.4	3.6	3.3	2.3	1.9	3.0						
75th Percentile	-0.7	1.1	-0.7	1.1	5.3	3.2	2.7	2.0	1.8	2.6						
95th Percentile	-0.8	1.0	-0.8	1.0	4.2	2.8	2.2	1.8	1.3	2.1						
# of Portfolios	12	12	12	12	12	12	11	11	11	11						
● BlackRock Intermediate Govt	0.0 (31)	1.2 (69)	5.3 (75)	3.4 (61)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)						
▲ BBgBarc US Govt Int TR	0.0 (34)	1.2 (71)	5.2 (77)	3.3 (73)	2.6 (82)	2.0 (86)	1.6 (86)	2.4 (87)								
✕ BBgBarc US Aggregate TR	0.2 (7)	2.5 (1)	8.7 (1)	4.3 (1)	4.0 (1)	3.0 (1)	2.7 (1)	3.7 (1)								

BlackRock Intermediate Govt Market Duration Pool  
 Bond Sector Allocation

Period Ending: December 31, 2019



Sector	Account Weight	BBgBarc Intermediate	
		Govt Weight	Difference
Treasuries	94.1%	97.1%	-3.0%
Agencies	4.9%	2.9%	1.9%
Corporates	0.0%	0.0%	0.0%
Utilities	0.0%	0.0%	0.0%
Foreign	0.0%	0.0%	0.0%
MBS	0.0%	0.0%	0.0%
CMO	0.0%	0.0%	0.0%
ABS	0.0%	0.0%	0.0%
Municipals	0.0%	0.0%	0.0%
Others/Cash	1.1%	0.0%	1.1%
<b>TOTAL</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

# BlackRock Intermediate Govt Market Duration Pool

## Bond Summary Statistics

Period Ending: December 31, 2019

Portfolio Characteristics		Portfolio	BBgBarc Intermediate Govt	
Total Number of Securities		240		
Total Market Value	\$	236,638,615		
Current Coupon		2.73		2.18
Yield to Maturity		1.70		1.68
Average Life		4.05		4.03
Duration		3.74		3.76
Quality		AA+		AA+

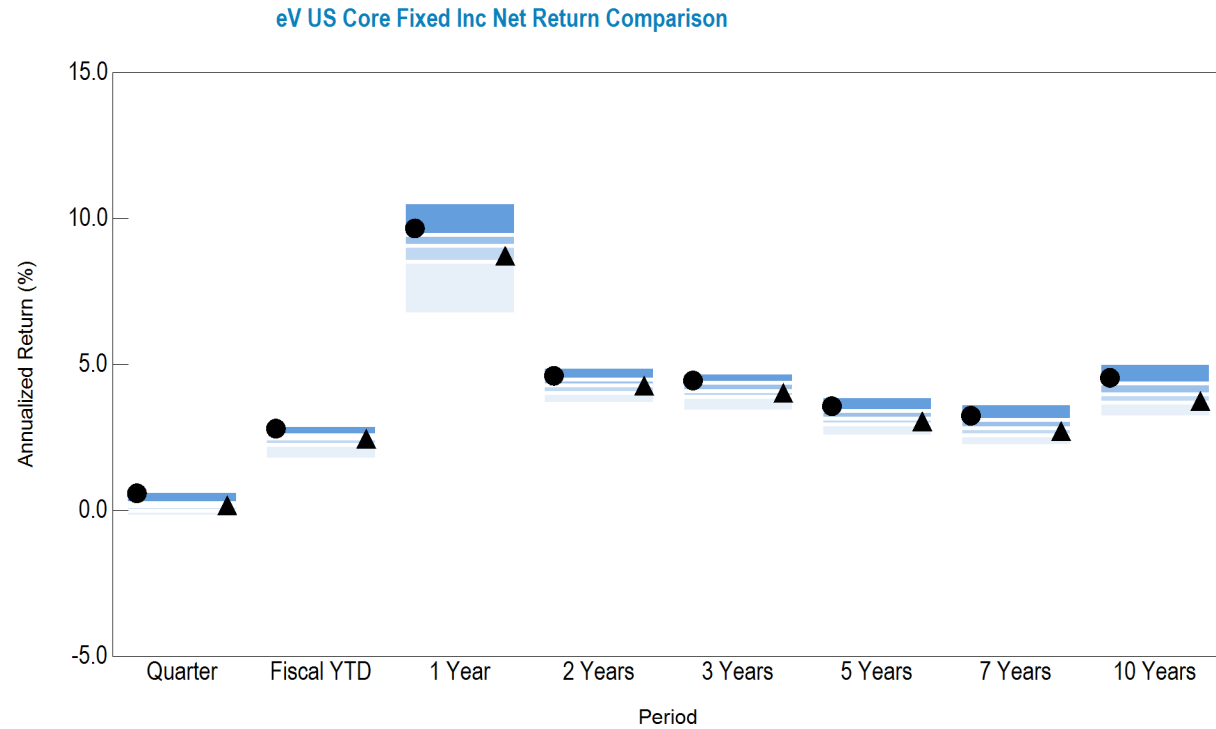
Yield to Maturity	
Range	% Held
0.0 - 5.0	100.0
5.0 - 7.0	0.0
7.0 - 9.0	0.0
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	0.0
Unclassified	0.0

Average Life	
Range	% Held
0.0 - 1.0	n/a
1.0 - 3.0	n/a
3.0 - 5.0	n/a
5.0 - 10.0	n/a
10.0 - 20.0	n/a
20.0+	n/a
Unclassified	n/a

Duration	
Range	% Held
0.0 - 2.0	26.6
2.0 - 4.0	33.1
4.0 - 6.0	21.2
6.0 - 8.0	17.2
8.0+	1.9
Unclassified	0.0

Quality	
Range	% Held
Govt (10)	0.0
Aaa (10)	100.0
Aa (9)	0.0
A (8)	0.0
Baa (7)	0.0
Below Baa (6-1)	0.0
Other	0.0

Coupon	
Range	% Held
0.0 - 5.0	100.0
5.0 - 7.0	0.0
7.0 - 9.0	0.0
9.0 - 10.0	0.0
10.0+	0.0
Unclassified	0.0

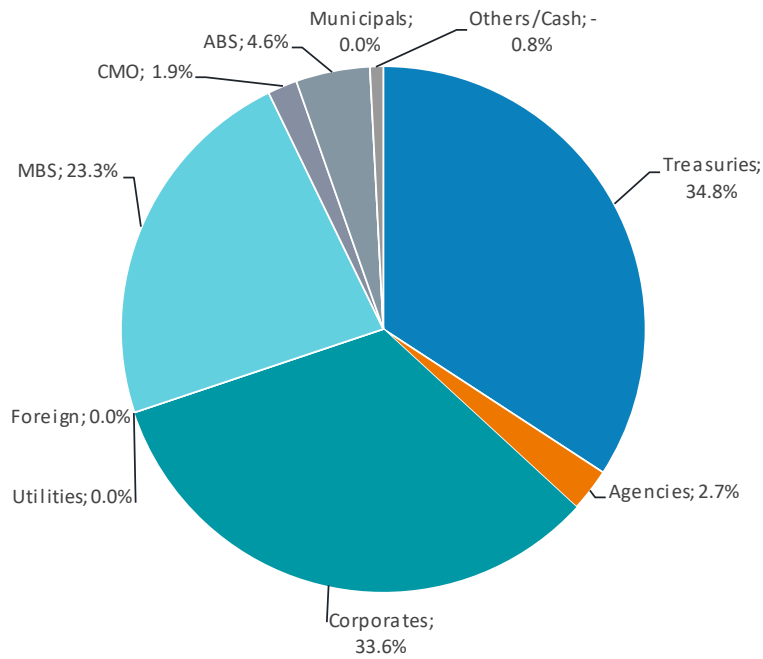


	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	0.7	2.9	10.5	4.9	4.7	3.9	3.7	5.0
25th Percentile	0.3	2.6	9.4	4.5	4.4	3.4	3.1	4.4
Median	0.1	2.5	9.1	4.3	4.1	3.2	2.8	4.0
75th Percentile	0.0	2.3	8.5	4.0	3.9	3.0	2.6	3.7
95th Percentile	-0.2	1.8	6.7	3.7	3.4	2.5	2.2	3.2
# of Portfolios	137	137	137	136	135	131	129	118
● FIAM Bond	0.6 (7)	2.8 (9)	9.7 (16)	4.6 (16)	4.4 (18)	3.6 (16)	3.2 (16)	4.5 (16)
▲ BBgBarc US Aggregate TR	0.2 (43)	2.5 (53)	8.7 (69)	4.3 (53)	4.0 (57)	3.0 (66)	2.7 (60)	3.7 (72)



FIAM Bond Market Duration Pool  
Bond Sector Allocation

Period Ending: December 31, 2019



Sector	BBgBarc Aggregate		
	Account Weight	Weight	Difference
Treasuries	34.8%	39.7%	-4.9%
Agencies	2.7%	5.8%	-3.1%
Corporates	33.6%	25.2%	8.4%
Utilities	0.0%	0.0%	0.0%
Foreign	0.0%	0.0%	0.0%
MBS	23.3%	26.9%	-3.6%
CMO	1.9%	0.0%	1.9%
ABS	4.6%	2.5%	2.2%
Municipals	0.0%	0.0%	0.0%
Others/Cash	-0.8%	0.0%	-0.9%
<b>TOTAL</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

FIAM Bond Market Duration Pool  
Bond Summary Statistics

Period Ending: December 31, 2019

Portfolio Characteristics		
	Portfolio	
Total Number of Securities		933
Total Market Value	\$	289,118,024
Current Coupon		3.26
Yield to Maturity		2.56
Average Life		8.09
Duration		5.73
Quality		AA-

BBgBarc Aggregate	
	3.24
	2.32
	8.02
	5.79
	AA

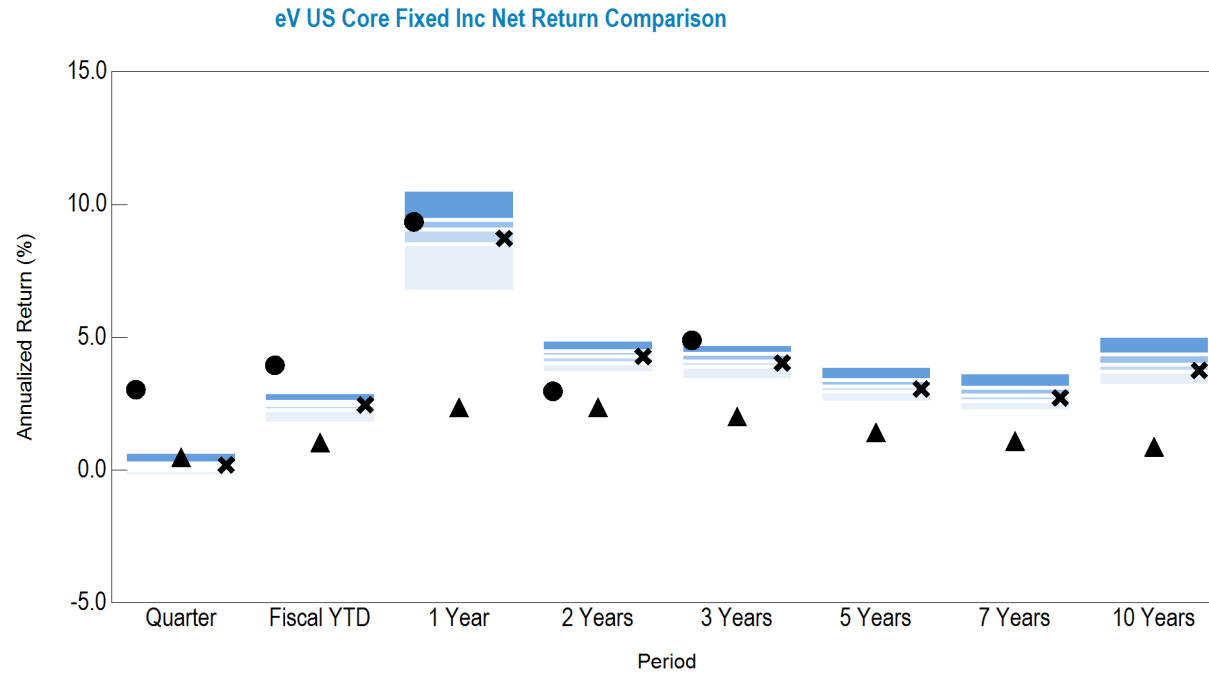
Yield to Maturity	
Range	% Held
0.0 - 5.0	98.3
5.0 - 7.0	2.0
7.0 - 9.0	0.1
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	-0.4
Unclassified	0.0

Average Life	
Range	% Held
0.0 - 1.0	0.6
1.0 - 3.0	13.1
3.0 - 5.0	32.4
5.0 - 10.0	41.3
10.0 - 20.0	3.8
20.0+	8.6
Unclassified	0.0

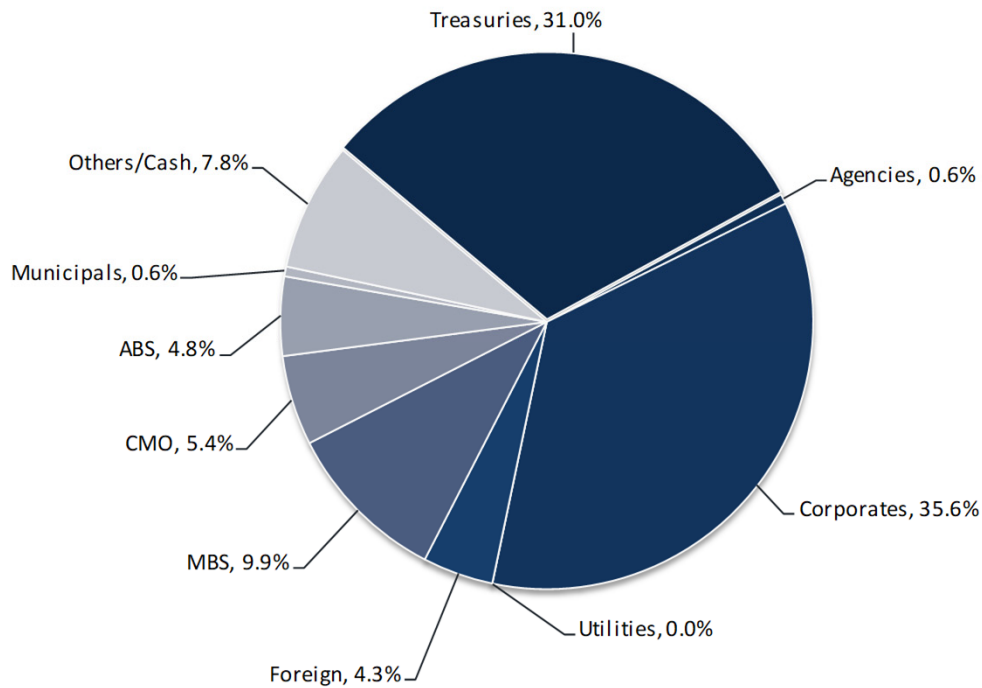
Duration	
Range	% Held
0.0 - 1.0	0.9
1.0 - 3.0	22.8
3.0 - 5.0	34.9
5.0 - 7.0	17.5
7.0 - 10.0	9.4
10.0+	14.5
Unclassified	0.0

Quality	
Range	% Held
Govt (10)	62.1
Aaa (10)	2.6
Aa (9)	2.0
A (8)	15.2
Baa (7)	20.0
Below Baa (6-1)	0.6
Other	-2.5

Coupon	
Range	% Held
0.0 - 5.0	88.2
5.0 - 7.0	9.1
7.0 - 9.0	1.1
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	1.7
Unclassified	0.0



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	0.7	2.9	10.5	4.9	4.7	3.9	3.7	5.0
25th Percentile	0.3	2.6	9.4	4.5	4.4	3.4	3.1	4.4
Median	0.1	2.5	9.1	4.3	4.1	3.2	2.8	4.0
75th Percentile	0.0	2.3	8.5	4.0	3.9	3.0	2.6	3.7
95th Percentile	-0.2	1.8	6.7	3.7	3.4	2.5	2.2	3.2
# of Portfolios	137	137	137	136	135	131	129	118
● Western TRU	3.0 (1)	3.9 (1)	9.3 (33)	3.0 (99)	4.9 (4)	-- (--)	-- (--)	-- (--)
▲ 3-Month Labor Total Return USD	0.5 (10)	1.0 (99)	2.4 (99)	2.4 (99)	2.0 (99)	1.4 (99)	1.1 (99)	0.9 (99)
✕ BBgBarc US Aggregate TR	0.2 (43)	2.5 (53)	8.7 (69)	4.3 (53)	4.0 (57)	3.0 (66)	2.7 (60)	3.7 (72)



Sector	Account Weight	BBgBarc Aggregate	
		Weight	Difference
Treasuries	31.0%	39.7%	-8.7%
Agencies	0.6%	5.8%	-5.2%
Corporates	35.6%	25.2%	10.4%
Utilities	0.0%	0.0%	0.0%
Foreign	4.3%	0.0%	4.3%
MBS	9.9%	26.9%	-17.0%
CMO	5.4%	0.0%	5.4%
ABS	4.8%	2.5%	2.3%
Municipals	0.6%	0.0%	0.6%
Others/Cash	7.8%	0.0%	7.7%
<b>TOTAL</b>	<b>100.0%</b>	<b>100.0%</b>	<b>-0.1%</b>

Portfolio Characteristics		
		Portfolio
Total Number of Securities		5,034
Total Market Value	\$	142,225,506
Current Coupon		4.56
Yield to Maturity		4.16
Average Life		9.74
Duration		2.78
Quality		A-

BBgBarc Aggregate	
	3.24
	2.32
	8.02
	5.79
	AA

Yield to Maturity	
Range	% Held
0.0 - 5.0	68.2
5.0 - 7.0	24.4
7.0 - 9.0	2.9
9.0 - 11.0	1.3
11.0 - 13.0	0.8
13.0+	1.7
Unclassified	0.7

Average Life	
Range	% Held
0.0 - 1.0	14.4
1.0 - 3.0	16.5
3.0 - 5.0	16.0
5.0 - 10.0	18.6
10.0 - 20.0	16.1
20.0+	18.4
Unclassified	0.0

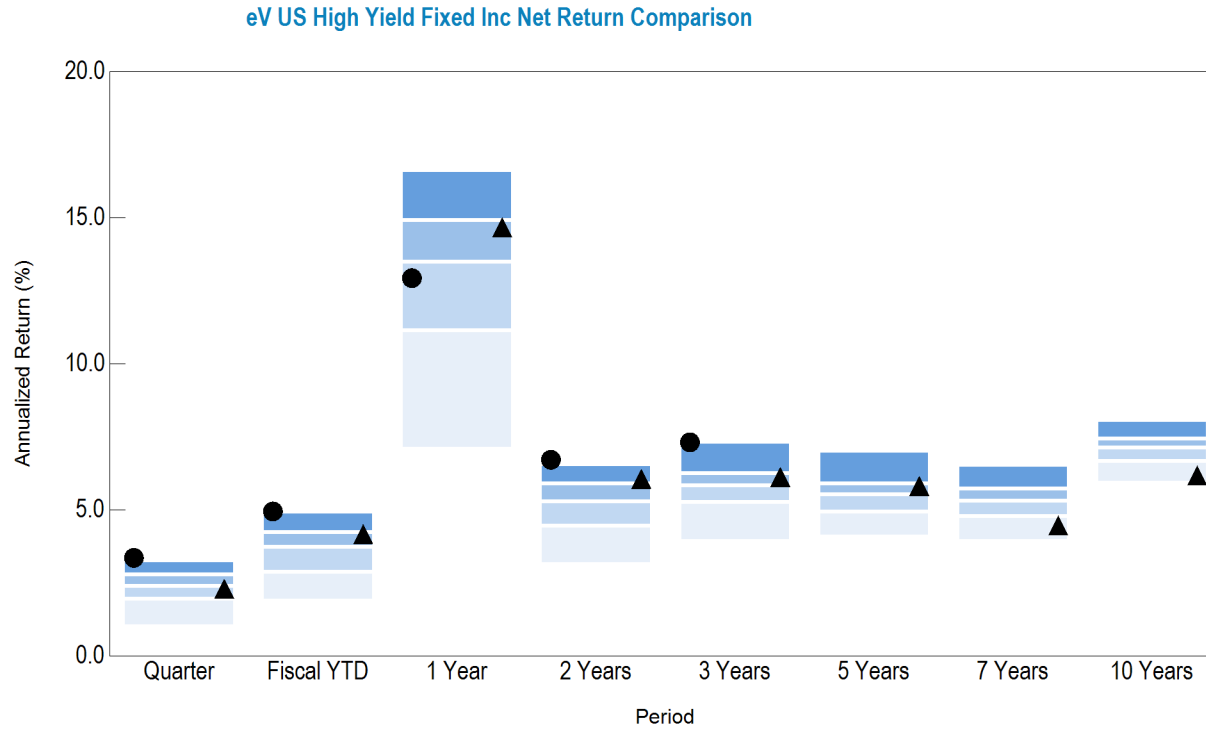
Duration	
Range	% Held
< 1.0	28.6
1.0 - 3.0	11.4
3.0 - 5.0	20.3
5.0 - 7.0	19.5
7.0 - 10.0	3.6
10.0+	16.5
Unclassified	0.0

\*Unclassified includes negative YTM

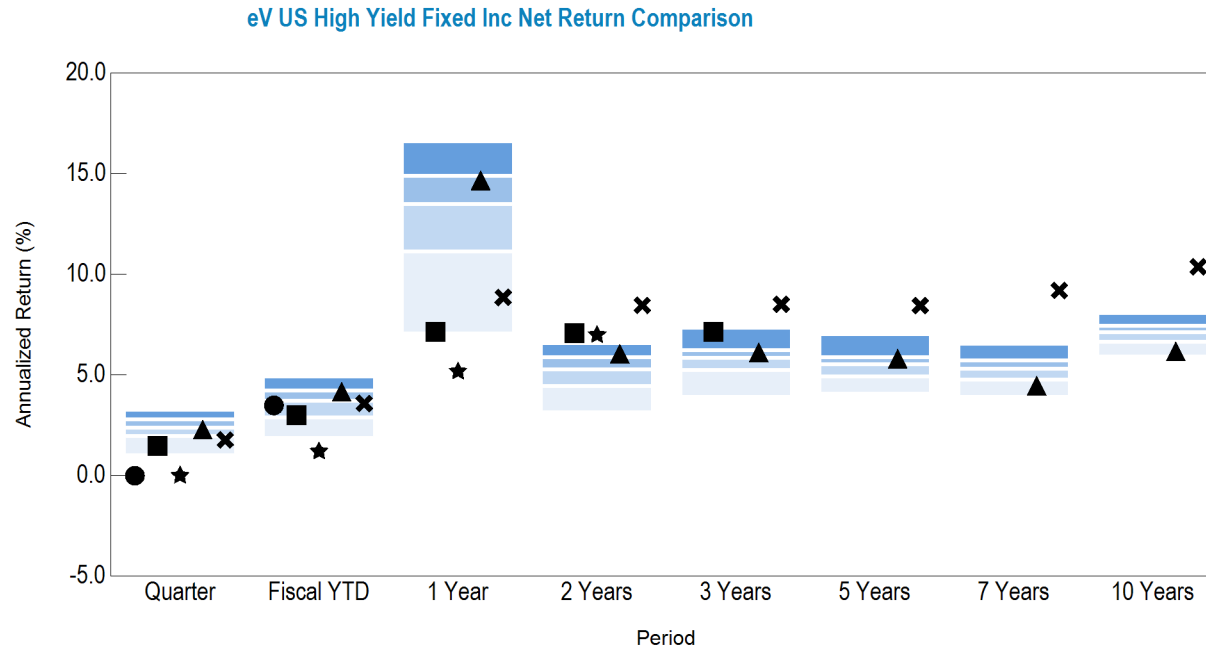
Quality	
Range	% Held
Govt* (10)	7.6
Aaa (10)	17.1
Aa (9)	1.9
A (8)	19.8
Baa (7)	27.5
Below Baa (6-1)	25.9
Other	0.2

Coupon	
Range	% Held
0.0 - 5.0	55.1
5.0 - 7.0	25.7
7.0 - 9.0	13.9
9.0 - 10.0	0.4
10.0+	4.8
Unclassified	0.0

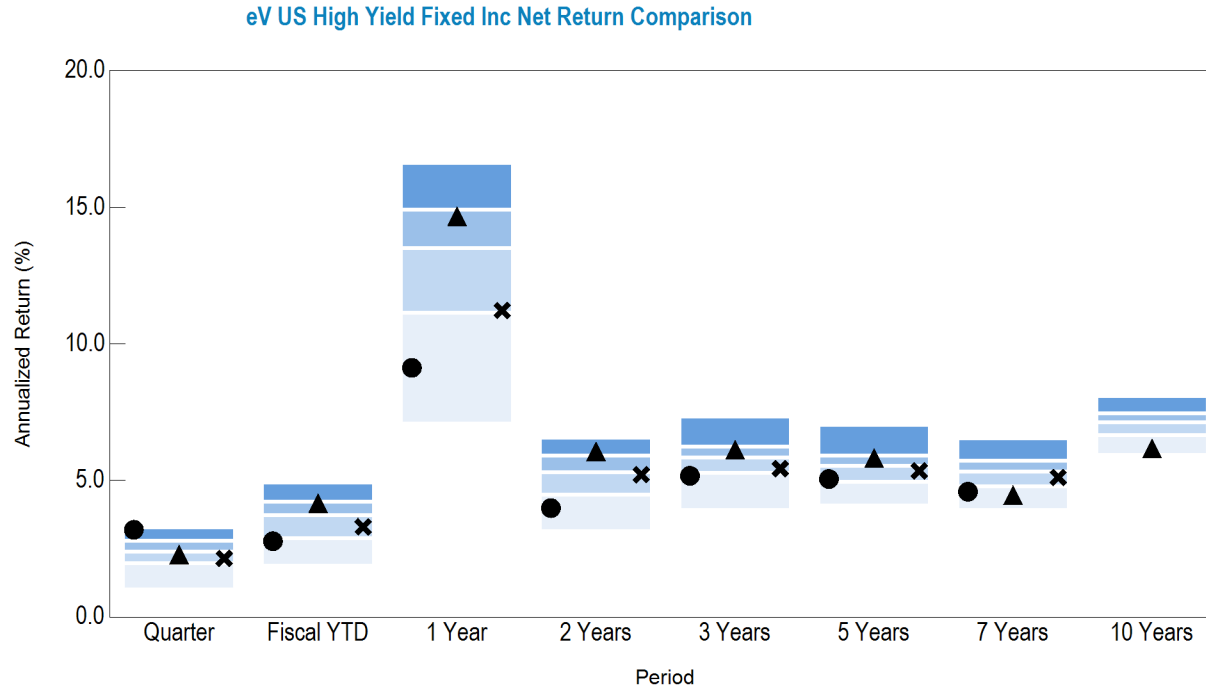
\*Govt is specifically U.S Govt securities



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.3	4.9	16.6	6.6	7.3	7.0	6.5	8.1
25th Percentile	2.8	4.2	14.9	5.9	6.3	5.9	5.7	7.5
Median	2.4	3.7	13.5	5.3	5.9	5.5	5.3	7.1
75th Percentile	2.0	2.9	11.1	4.5	5.3	5.0	4.8	6.7
95th Percentile	1.0	1.9	7.1	3.1	3.9	4.1	3.9	5.9
# of Portfolios	131	131	131	131	127	114	95	74
● Beach Point Select	3.4 (3)	4.9 (5)	12.9 (58)	6.7 (4)	7.3 (6)	-- (--)	-- (--)	-- (--)
▲ BBgBarc BA Intermediate HY	2.3 (58)	4.2 (32)	14.7 (30)	6.1 (15)	6.1 (33)	5.8 (32)	4.5 (87)	6.2 (91)

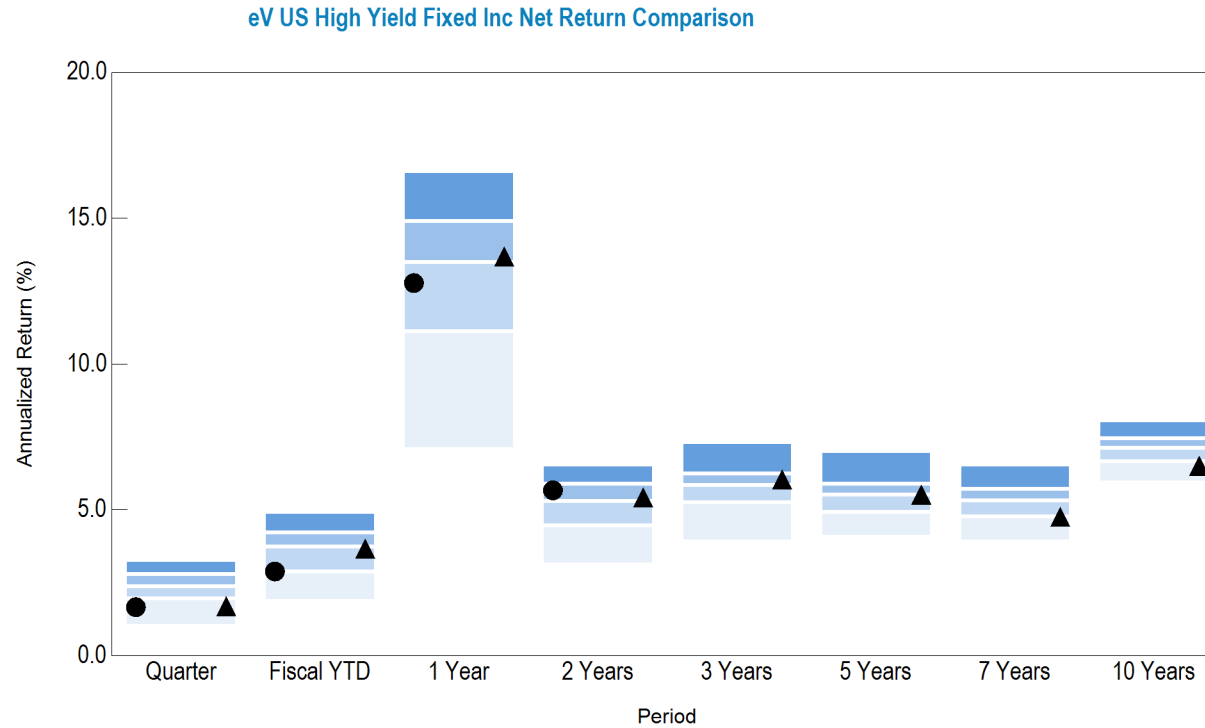


	Quarter		Fiscal YTD		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>Return (Rank)</b>																
5th Percentile	3.3	4.9	16.6	6.6	7.3	7.0	6.5	8.1	3.3	4.9	16.6	6.6	7.3	7.0	6.5	8.1
25th Percentile	2.8	4.2	14.9	5.9	6.3	5.9	5.7	7.5	2.8	4.2	14.9	5.9	6.3	5.9	5.7	7.5
Median	2.4	3.7	13.5	5.3	5.9	5.5	5.3	7.1	2.4	3.7	13.5	5.3	5.9	5.5	5.3	7.1
75th Percentile	2.0	2.9	11.1	4.5	5.3	5.0	4.8	6.7	2.0	2.9	11.1	4.5	5.3	5.0	4.8	6.7
95th Percentile	1.0	1.9	7.1	3.1	3.9	4.1	3.9	5.9	1.0	1.9	7.1	3.1	3.9	4.1	3.9	5.9
# of Portfolios	131	131	131	131	127	114	95	74	131	131	131	131	127	114	95	74
● PIMCO Private Income	0.0 (99)	3.5 (63)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	0.0 (99)	3.5 (63)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
■ TCP Direct Lending VIII	1.5 (88)	3.0 (73)	7.2 (95)	7.1 (2)	7.1 (7)	-- (--)	-- (--)	-- (--)	1.5 (88)	3.0 (73)	7.2 (95)	7.1 (2)	7.1 (7)	-- (--)	-- (--)	-- (--)
★ White Oak Yield	0.0 (99)	1.2 (97)	5.2 (99)	7.0 (3)	-- (--)	-- (--)	-- (--)	-- (--)	0.0 (99)	1.2 (97)	5.2 (99)	7.0 (3)	-- (--)	-- (--)	-- (--)	-- (--)
▲ BBgBarc BA Intermediate HY	2.3 (58)	4.2 (32)	14.7 (30)	6.1 (15)	6.1 (33)	5.8 (32)	4.5 (87)	6.2 (91)	2.3 (58)	4.2 (32)	14.7 (30)	6.1 (15)	6.1 (33)	5.8 (32)	4.5 (87)	6.2 (91)
✕ Cliffwater Direct Lending Index	1.8 (84)	3.6 (56)	8.9 (88)	8.5 (1)	8.5 (2)	8.4 (1)	10.4 (1)		1.8 (84)	3.6 (56)	8.9 (88)	8.5 (1)	8.5 (2)	8.4 (1)	9.2 (1)	10.4 (1)

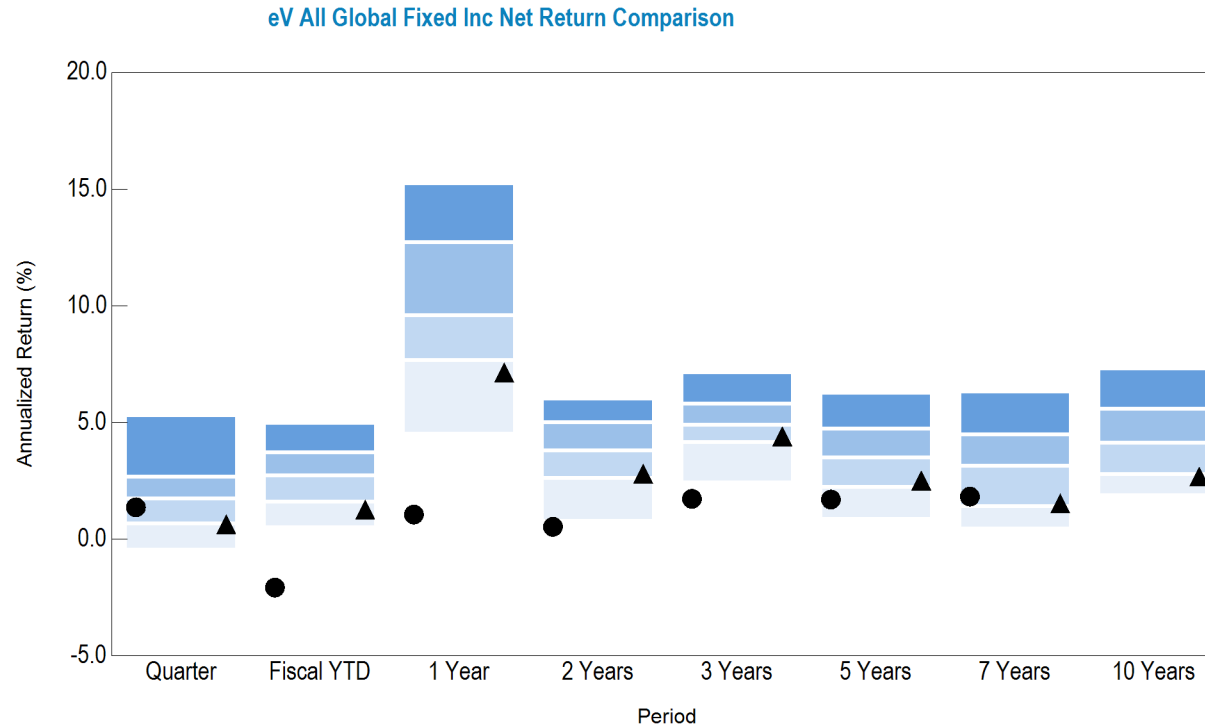


	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.3	4.9	16.6	6.6	7.3	7.0	6.5	8.1
25th Percentile	2.8	4.2	14.9	5.9	6.3	5.9	5.7	7.5
Median	2.4	3.7	13.5	5.3	5.9	5.5	5.3	7.1
75th Percentile	2.0	2.9	11.1	4.5	5.3	5.0	4.8	6.7
95th Percentile	1.0	1.9	7.1	3.1	3.9	4.1	3.9	5.9
# of Portfolios	131	131	131	131	127	114	95	74
● Brigade Capital	3.2 (8)	2.8 (79)	9.1 (85)	4.0 (90)	5.2 (80)	5.1 (72)	4.6 (83)	-- (--)
▲ BBgBarc BA Intermediate HY	2.3 (58)	4.2 (32)	14.7 (30)	6.1 (15)	6.1 (33)	5.8 (32)	4.5 (87)	6.2 (91)
✕ 50% Barclays HY/ 50% Bank Loan	2.1 (65)	3.3 (68)	11.2 (75)	5.2 (56)	5.4 (70)	5.3 (61)	5.1 (60)	-- (--)





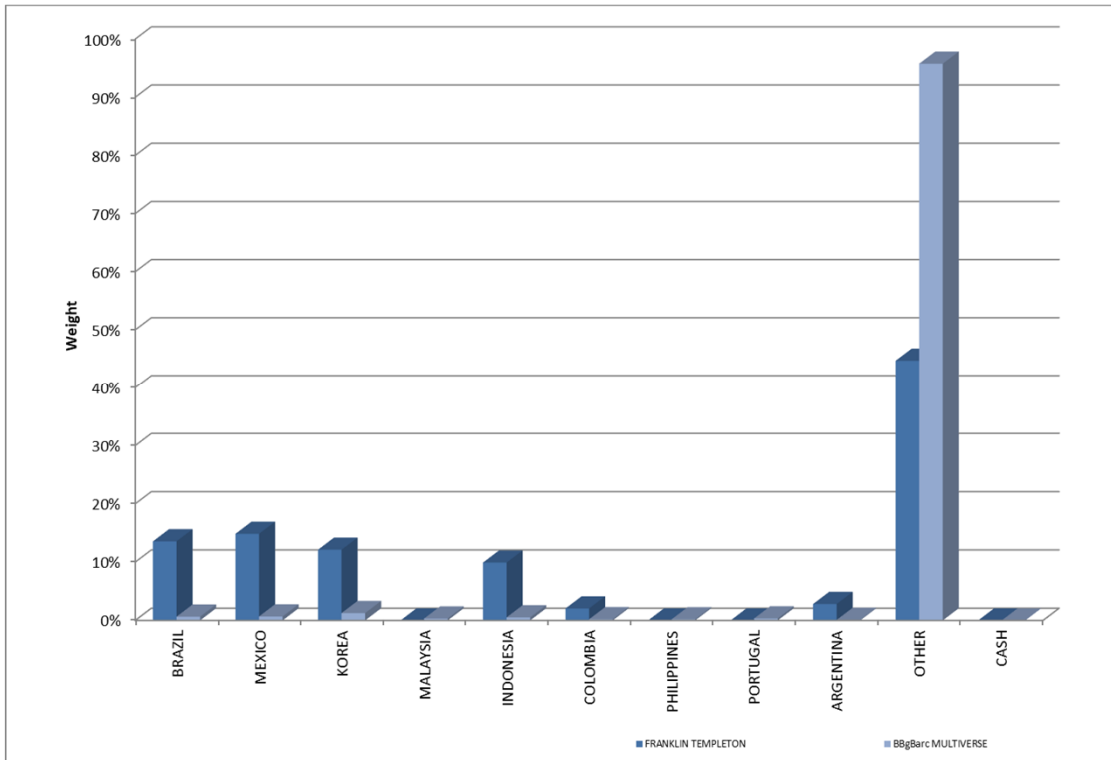
	Return (Rank)															
	Quarter		Fiscal YTD		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	3.3	4.9	3.3	4.9	16.6	6.6	7.3	7.0	6.5	8.1						
25th Percentile	2.8	4.2	2.8	4.2	14.9	5.9	6.3	5.9	5.7	7.5						
Median	2.4	3.7	2.4	3.7	13.5	5.3	5.9	5.5	5.3	7.1						
75th Percentile	2.0	2.9	2.0	2.9	11.1	4.5	5.3	5.0	4.8	6.7						
95th Percentile	1.0	1.9	1.0	1.9	7.1	3.1	3.9	4.1	3.9	5.9						
# of Portfolios	131	131	131	131	131	131	127	114	95	74						
● PIMCO Diversified	1.7 (85)	2.9 (76)	12.8 (61)	5.7 (37)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)						
▲ Blended PIMCO Diversified Index	1.7 (85)	3.7 (53)	13.7 (47)	5.4 (45)	6.0 (39)	5.5 (53)	4.8 (76)	6.5 (78)								



	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>Return (Rank)</b>								
5th Percentile	5.3	5.0	15.2	6.0	7.1	6.3	6.3	7.3
25th Percentile	2.7	3.7	12.8	5.0	5.8	4.8	4.5	5.6
Median	1.8	2.7	9.6	3.8	4.9	3.5	3.2	4.1
75th Percentile	0.7	1.6	7.7	2.6	4.2	2.2	1.4	2.8
95th Percentile	-0.4	0.5	4.5	0.8	2.4	0.9	0.5	1.9
# of Portfolios	233	233	231	228	223	204	177	122
● Franklin Templeton	1.4 (57)	-2.1 (99)	1.1 (99)	0.5 (96)	1.7 (99)	1.7 (88)	1.8 (69)	-- (--)
▲ BBgBarc Multiverse TR	0.6 (77)	1.3 (84)	7.1 (81)	2.8 (72)	4.4 (68)	2.5 (72)	1.5 (73)	2.7 (82)

Franklin Templeton  
Portfolio Country Weights

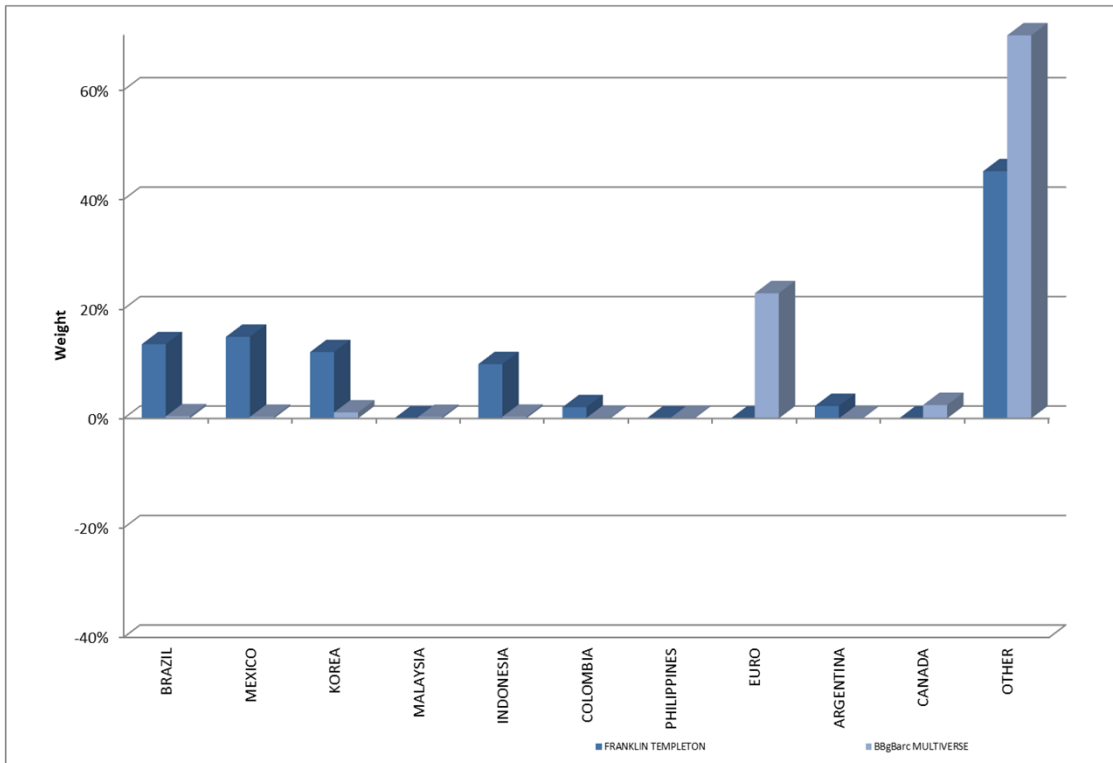
Period Ending: December 31, 2019



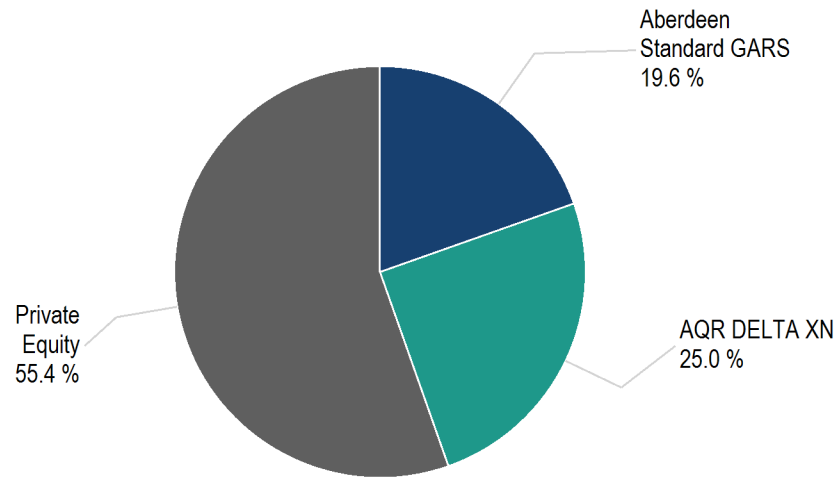
COUNTRY	MARKET VALUE	FRANKLIN TEMPLETON	BBgBarc MULTIVERSE	DIFF
BRAZIL	\$ 5,624	13.6%	0.6%	+12.9%
MEXICO	\$ 6,159	14.9%	0.7%	+14.2%
KOREA	\$ 5,026	12.1%	1.3%	+10.9%
MALAYSIA	\$ -	0.0%	0.3%	-0.3%
INDONESIA	\$ 4,114	9.9%	0.5%	+9.4%
COLOMBIA	\$ 850	2.1%	0.2%	+1.9%
PHILIPPINES	\$ -	0.0%	0.2%	-0.2%
PORTUGAL	\$ -	0.0%	0.3%	-0.3%
ARGENTINA	\$ 1,165	2.8%	0.1%	+2.7%
OTHER	\$ 18,534	44.7%	95.8%	-51.1%
CASH	\$ -	0.0%	0.0%	0.0%
	\$ 41,473	100.0%	100.0%	0.0%

Franklin Templeton  
Portfolio Currency Exposures

Period Ending: December 31, 2019



CURRENCY	MARKET VALUE	FRANKLIN TEMPLETON	BBgBarc MULTIVERSE	DIFF
BRAZIL	\$ 5,624	13.6%	0.4%	+13.2%
MEXICO	\$ 6,184	14.9%	0.3%	+14.6%
KOREA	\$ 5,026	12.1%	1.1%	+11.0%
MALAYSIA	\$ -	0.0%	0.3%	-0.3%
INDONESIA	\$ 4,114	9.9%	0.3%	+9.6%
COLOMBIA	\$ 850	2.1%	0.1%	+2.0%
PHILIPPINES	\$ -	0.0%	0.1%	-0.1%
EURO	\$ -	0.0%	22.9%	-22.9%
ARGENTINA	\$ 941	2.3%	0.0%	+2.3%
CANADA	\$ -	0.0%	2.5%	-2.5%
OTHER	\$ 18,733	45.2%	72.1%	-26.9%
	\$ 41,473	100.0%	100.0%	0.0%



	Actual \$	Actual %	Manager Contribution to Excess Return %
Aberdeen Standard GARS	\$105,385,764	19.6%	0.0%
AQR DELTA XN	\$134,651,837	25.0%	-1.1%
Private Equity	\$298,636,081	55.4%	-3.3%
Actual vs. Policy Weight Difference			0.1%
<b>Total</b>	<b>\$538,673,682</b>	<b>100.0%</b>	<b>-4.4%</b>

Statistics Summary

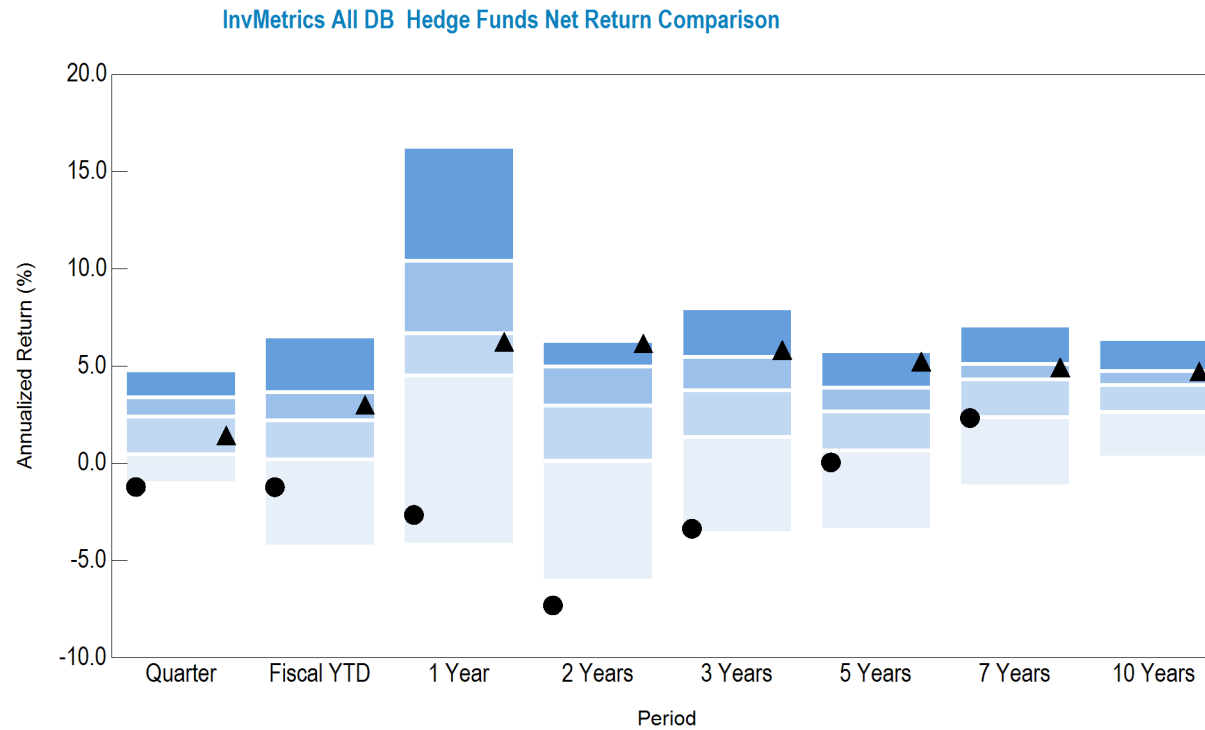
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	6.5%	6.8%	0.7	-0.5	7.5%
Blended Alternatives Index	10.3%	6.4%	1.4	--	0.0%
Private Equity	16.0%	11.5%	1.3	0.1	14.0%
Blended Private Equity Index	14.1%	12.5%	1.0	--	0.0%
Hedge Fund/Absolute Return	-3.4%	4.6%	-1.1	-2.0	4.6%
Libor 1 month +4%	5.8%	0.2%	22.7	--	0.0%
AQR DELTA XN	-7.1%	6.0%	-1.4	-2.1	6.1%
Libor 1 month +4%	5.8%	0.2%	22.7	--	0.0%
Aberdeen Standard GARS	2.2%	3.6%	0.2	-1.0	3.6%
Libor 1 month +4%	5.8%	0.2%	22.7	--	0.0%

**Statistics Summary**

**5 Years**

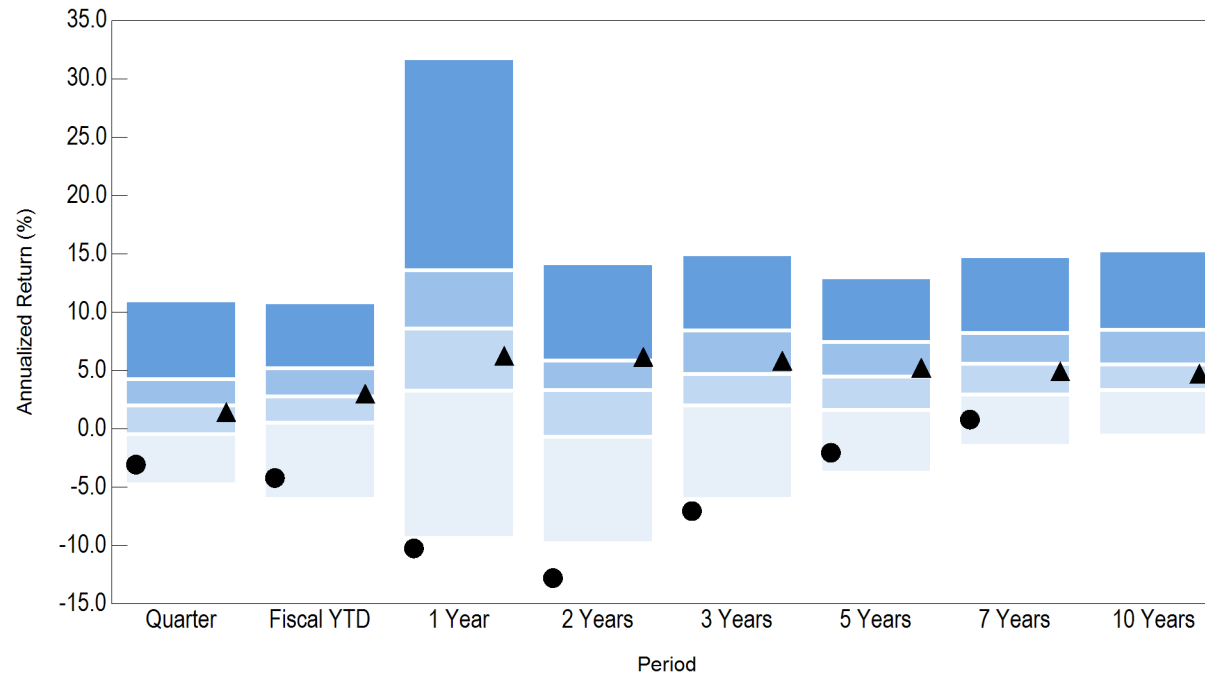
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	6.9%	6.4%	0.9	-0.1	7.7%
Blended Alternatives Index	7.9%	6.4%	1.1	--	0.0%
Private Equity	16.6%	11.1%	1.4	0.3	14.6%
Blended Private Equity Index	12.2%	12.2%	0.9	--	0.0%
Hedge Fund/Absolute Return	0.0%	4.9%	-0.2	-1.0	5.0%
Libor 1 month +4%	5.2%	0.3%	16.3	--	0.0%
AQR DELTA XN	-2.1%	6.0%	-0.5	-1.2	6.1%
Libor 1 month +4%	5.2%	0.3%	16.3	--	0.0%



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	4.8	6.5	16.3	6.3	8.0	5.8	7.1	6.4
25th Percentile	3.4	3.7	10.4	5.0	5.5	3.9	5.1	4.8
Median	2.4	2.2	6.7	3.0	3.8	2.7	4.3	4.1
75th Percentile	0.5	0.2	4.5	0.2	1.4	0.7	2.4	2.7
95th Percentile	-1.0	-4.3	-4.2	-6.0	-3.6	-3.4	-1.2	0.3
# of Portfolios	201	201	200	194	190	180	166	110
● Hedge Fund/Absolute Return	-1.2 (97)	-1.2 (87)	-2.7 (92)	-7.3 (97)	-3.4 (95)	0.0 (80)	2.3 (77)	-- (--)
▲ Libor 1 month +4%	1.4 (67)	3.0 (35)	6.3 (53)	6.2 (10)	5.8 (21)	5.2 (10)	4.9 (30)	4.7 (29)

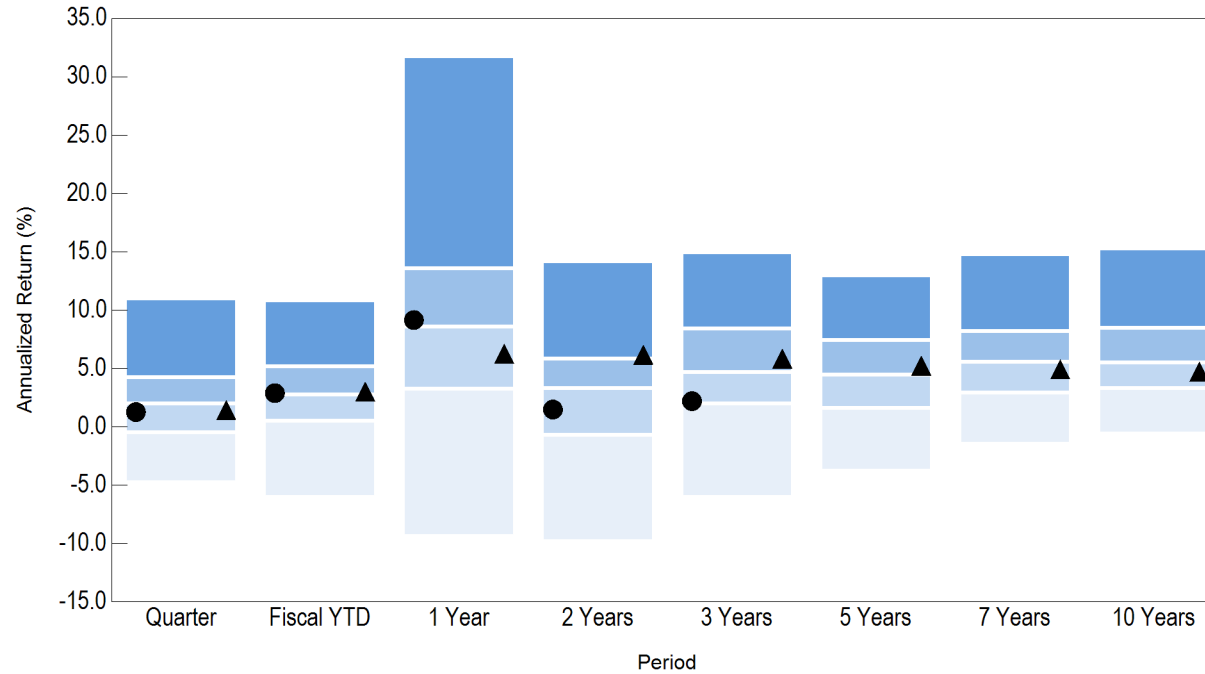


eV Alt All Multi-Strategy Return Comparison

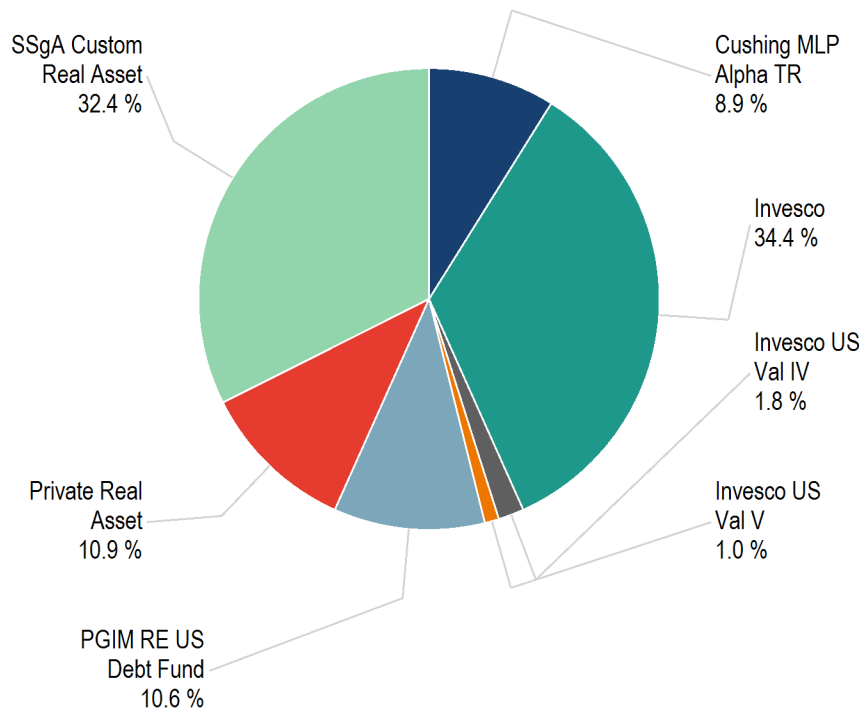


	Return (Rank)							
5th Percentile	11.0	10.8	31.8	14.2	15.0	12.9	14.7	15.3
25th Percentile	4.3	5.2	13.6	5.8	8.5	7.5	8.2	8.5
Median	2.0	2.8	8.6	3.4	4.7	4.5	5.6	5.5
75th Percentile	-0.5	0.6	3.3	-0.7	2.0	1.7	3.0	3.4
95th Percentile	-4.7	-6.0	-9.3	-9.8	-6.0	-3.7	-1.4	-0.6
# of Portfolios	247	247	242	230	215	184	160	117
● AQR DELTA XN	-3.1 (92)	-4.2 (93)	-10.3 (96)	-12.8 (98)	-7.1 (96)	-2.1 (93)	0.8 (89)	-- (--)
▲ Libor 1 month +4%	1.4 (58)	3.0 (48)	6.3 (63)	6.2 (24)	5.8 (44)	5.2 (43)	4.9 (57)	4.7 (60)

eV Alt All Multi-Strategy Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	11.0	10.8	31.8	14.2	15.0	12.9	14.7	15.3
25th Percentile	4.3	5.2	13.6	5.8	8.5	7.5	8.2	8.5
Median	2.0	2.8	8.6	3.4	4.7	4.5	5.6	5.5
75th Percentile	-0.5	0.6	3.3	-0.7	2.0	1.7	3.0	3.4
95th Percentile	-4.7	-6.0	-9.3	-9.8	-6.0	-3.7	-1.4	-0.6
# of Portfolios	247	247	242	230	215	184	160	117
● Aberdeen Standard GARS	1.3 (59)	2.9 (49)	9.1 (46)	1.5 (63)	2.2 (75)	-- (--)	-- (--)	-- (--)
▲ Libor 1 month +4%	1.4 (58)	3.0 (48)	6.3 (63)	6.2 (24)	5.8 (44)	5.2 (43)	4.9 (57)	4.7 (60)



	Actual \$	Actual %	Manager Contribution to Excess Return %
Brown Brother Harriman	\$5	0.0%	0.0%
Cushing MLP Alpha TR	\$71,126,241	8.9%	-0.4%
Invesco	\$275,736,268	34.4%	0.2%
Invesco US Val IV	\$14,544,147	1.8%	0.1%
Invesco US Val V	\$7,808,539	1.0%	0.0%
PGIM RE US Debt Fund	\$85,250,317	10.6%	0.0%
Private Real Asset	\$87,423,517	10.9%	0.3%
SSgA Custom Real Asset	\$259,144,313	32.4%	0.0%
Actual vs. Policy Weight Difference			0.0%
<b>Total</b>	<b>\$801,033,347</b>	<b>100.0%</b>	<b>0.2%</b>

Statistics Summary

3 Years

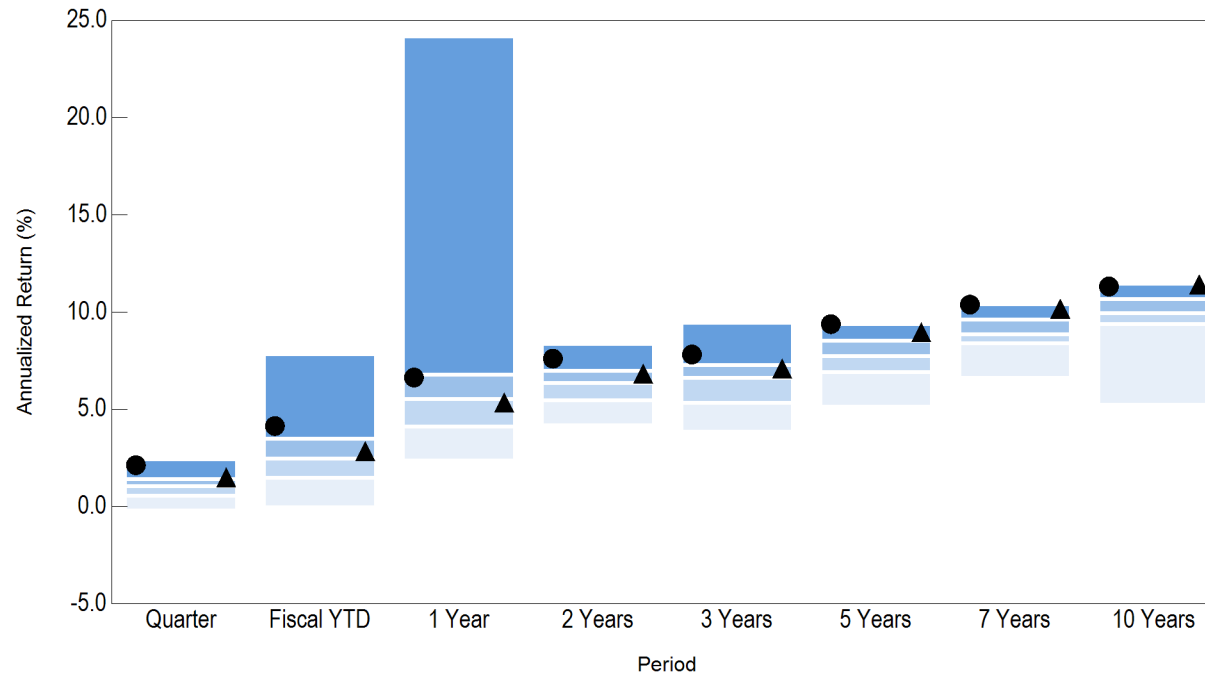
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Inflation Hedge	4.9%	4.1%	0.8	-0.7	1.3%
Blended Inflation Hedge Index	5.8%	3.8%	1.1	--	0.0%
Real Estate	7.8%	3.3%	1.9	0.9	0.8%
NCREIF ODCE	7.1%	2.9%	1.8	--	0.0%
Invesco	7.7%	3.3%	1.9	0.8	0.8%
NCREIF ODCE	7.1%	2.9%	1.8	--	0.0%
Invesco US Val IV	12.4%	5.6%	1.9	1.5	3.5%
NCREIF ODCE	7.1%	2.9%	1.8	--	0.0%
Private Real Asset	-3.3%	8.9%	-0.6	-0.7	11.5%
Blended Private Real Asset Index	4.3%	10.8%	0.2	--	0.0%
Private Real Asset	-3.3%	8.9%	-0.6	-0.7	11.5%
Blended Private Real Asset Index	4.3%	10.8%	0.2	--	0.0%
Public Real Assets	4.5%	10.3%	0.3	-0.7	1.7%
Blended Public Real Asset Index	5.7%	9.6%	0.4	--	0.0%
SSgA Custom Real Asset	5.8%	9.6%	0.4	1.1	0.1%
SSgA Custom Real Asset Index	5.7%	9.6%	0.4	--	0.0%
TIPS	2.9%	2.3%	0.5	-0.5	1.0%
BBgBarc US TIPS TR	3.3%	3.0%	0.6	--	0.0%
Brown Brothers Harriman	2.9%	2.3%	0.5	-0.5	1.0%
BBgBarc US TIPS TR	3.3%	3.0%	0.6	--	0.0%

Statistics Summary

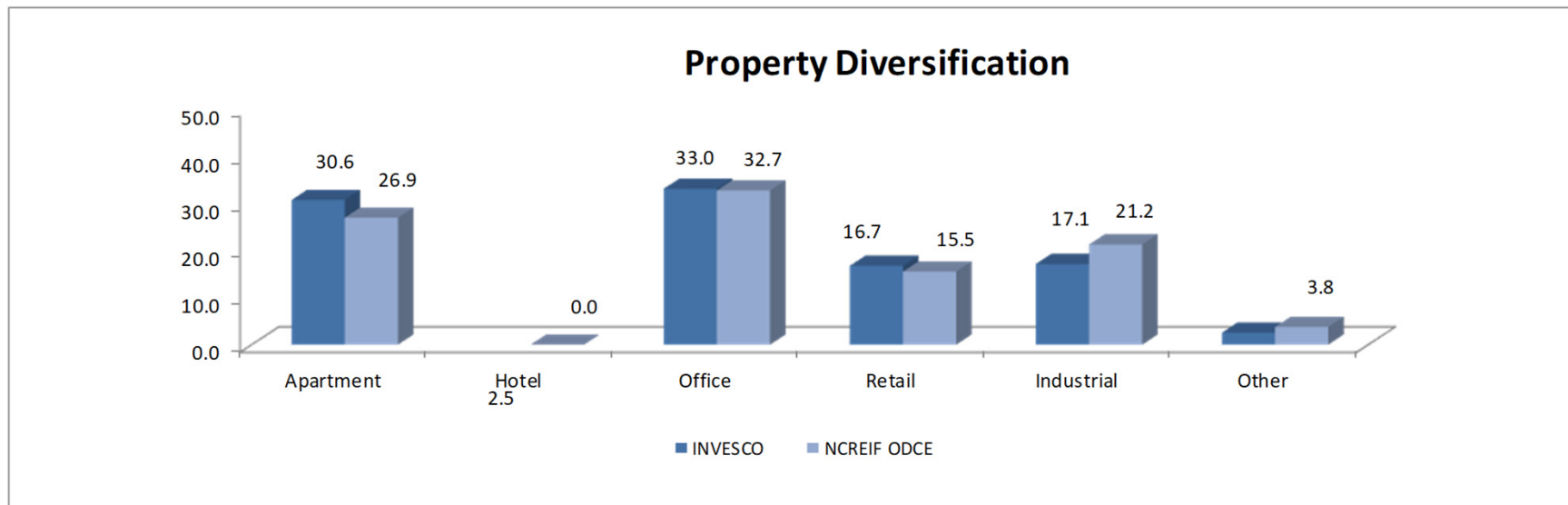
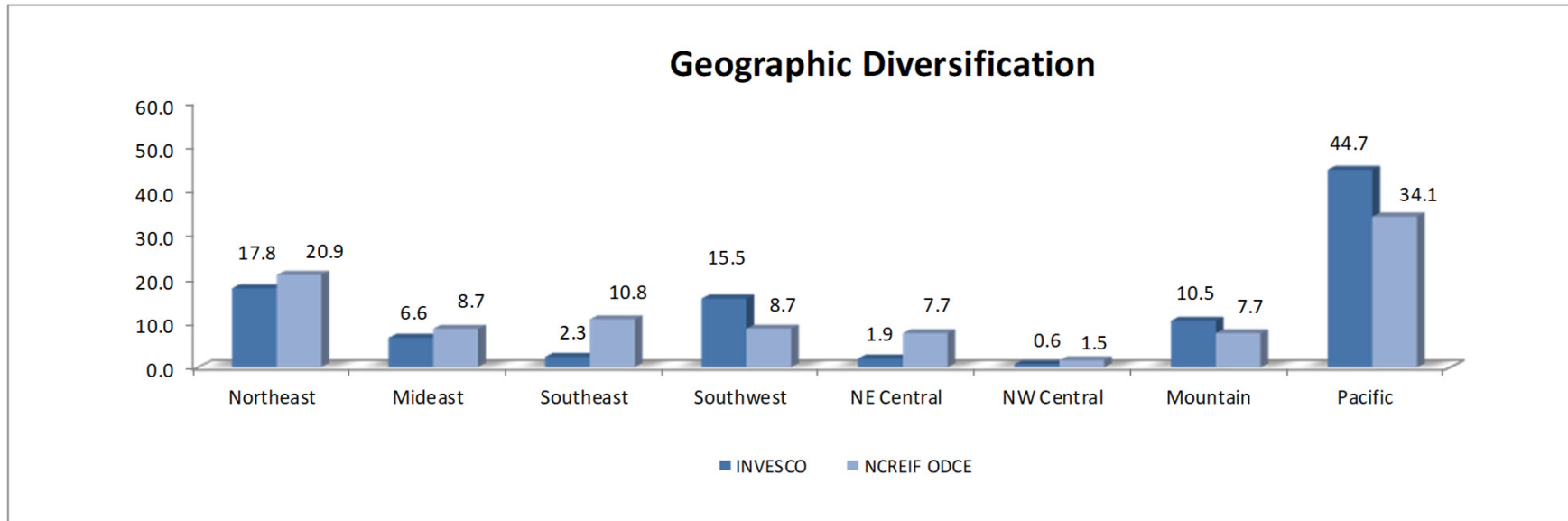
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error Rank
Real Estate	9.4%	4.2%	2.0	0.3	33
NCREIF ODCE	9.0%	3.9%	2.0	--	1
Invesco	9.3%	4.2%	2.0	0.2	--
NCREIF ODCE	9.0%	3.9%	2.0	--	--
Private Real Asset	4.7%	21.6%	0.2	0.0	--
Blended Private Real Asset Index	4.8%	8.5%	0.4	--	--
TIPS	2.4%	2.5%	0.5	-0.1	--
BBgBarc US TIPS TR	2.6%	3.4%	0.5	--	--
Brown Brothers Harriman	2.4%	2.5%	0.5	-0.1	58
BBgBarc US TIPS TR	2.6%	3.4%	0.5	--	1

InvMetrics All DB Real Estate Pub Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	2.4	7.8	24.2	8.4	9.4	9.4	10.4	11.4
25th Percentile	1.4	3.5	6.8	7.0	7.3	8.5	9.6	10.7
Median	1.1	2.5	5.5	6.4	6.6	7.7	8.9	10.0
75th Percentile	0.6	1.5	4.1	5.5	5.4	6.9	8.4	9.4
95th Percentile	-0.2	0.0	2.4	4.2	3.9	5.2	6.6	5.2
# of Portfolios	90	90	86	86	82	82	72	61
● Real Estate	2.1 (8)	4.1 (20)	6.6 (27)	7.6 (13)	7.8 (17)	9.4 (5)	10.4 (6)	11.3 (8)
▲ NCREIF ODCE	1.5 (21)	2.8 (40)	5.3 (54)	6.8 (33)	7.1 (30)	9.0 (12)	10.2 (8)	11.4 (6)



INVESCO Core Real Estate  
Real Estate Valuation Analysis

Period Ending: December 31, 2019

Property Name	MSA	Prior Quarter Carry Value	Current Quarter Carry Value	Net Market Value	Date Added to Fund	Last Valuation Date	SamCERA ownership as of 12/31/2019 2.60%
<b>APARTMENTS</b>							
Stoneridge Apartments	Pleasanton, CA	\$240,000,000	\$240,000,000	\$240,000,000	4Q06	December-19	\$6,247,232
Instrata Pentagon City	Arlington, VA	\$167,000,000	\$168,000,000	\$168,000,000	3Q10	December-19	\$4,373,063
Ladd Tower	Portland, OR	\$126,000,000	\$126,000,000	\$76,343,838	4Q10	December-19	\$1,987,240
Legacy Fountain Plaza	San Jose, CA	\$166,000,000	\$167,000,000	\$86,007,591	1Q11	December-19	\$2,238,789
Instrata Gramercy (fka The Elektra)	New York, NY	\$174,000,000	\$175,000,000	\$103,834,319	1Q11	December-19	\$2,702,821
Instrata Brooklyn Heights (fka 75 Clinton Street)	Brooklyn, NY	\$62,900,000	\$62,900,000	\$62,900,000	1Q12	December-19	\$1,637,295
The Artisan Laguna Beach	Orange County, CA	\$169,000,000	\$169,000,000	\$90,702,674	3Q12	December-19	\$2,361,003
The GoodWynn	Atlanta, GA	\$0	\$0	\$0	4Q12	December-19	\$0
Instrata Hell's Kitchen	New York, NY	\$190,000,000	\$190,000,000	\$190,000,000	1Q13	December-19	\$4,945,726
Sunset Vine Tower	Los Angeles, CA	\$104,300,000	\$105,300,000	\$105,300,000	2Q13	December-19	\$2,740,973
Instrata Ashton Uptown	Dallas, TX	\$115,000,000	\$0	\$0	4Q13	Sold 4Q19	\$0
206 Bell	Seattle, WA	\$49,100,000	\$48,000,000	\$48,000,000	4Q13	December-19	\$1,249,446
Cadence Union Station	Denver, CO	\$92,800,000	\$93,600,000	\$53,488,879	1Q14	December-19	\$1,392,323
Joseph Arnold Lofts	Seattle, WA	\$72,771,160	\$0	\$0	2Q14	Sold 4Q19	\$0
Verve	Denver, CO	\$107,500,000	\$107,500,000	\$107,500,000	3Q14	December-19	\$2,798,239
Broadstone Little Italy	San Diego, CA	\$120,000,000	\$118,000,000	\$65,030,608	3Q14	December-19	\$1,692,755
33 Tehama	San Francisco, CA	\$304,641,337	\$303,205,047	\$164,434,799	3Q14	December-19	\$4,280,260
The Parker	Portland, OR	\$62,600,000	\$62,700,000	\$31,017,962	1Q15	December-19	\$807,402
Legacy West Apartments	Plano, TX	\$145,000,000	\$145,000,000	\$52,965,428	1Q15	December-19	\$1,378,697
The Royce	Irvine, CA	\$217,614,827	\$218,110,537	\$110,633,089	2Q15	December-19	\$2,879,794
Jefferson Marketplace	Washington, DC	\$160,000,000	\$161,000,000	\$89,901,240	4Q15	December-19	\$2,340,141
Retreat at Park Meadows	Littleton, CO	\$162,000,000	\$163,000,000	\$163,000,000	4Q15	December-19	\$4,242,912
North Water Apartments	Chicago, IL	\$256,000,000	\$254,000,000	\$254,000,000	1Q16	December-19	\$6,611,654
2270 Broadway	Oakland, CA	\$28,211,284	\$28,211,284	\$28,211,284	1Q16	December-19	\$734,344
Runway at Playa Vista Apartments	Playa Vista, CA	\$167,480,000	\$168,540,000	\$106,098,669	1Q16	December-19	\$2,761,763
Clayton Lane Apartments	Denver, CO	\$42,072,964	\$42,401,309	\$42,401,309	1Q16	December-19	\$1,103,712
Biscayne 27	Miami, FL	\$106,190,134	\$109,135,267	\$56,862,381	2Q16	December-19	\$1,480,135
Flats 8300	Washington DC	\$236,000,000	\$236,000,000	\$236,000,000	2Q16	December-19	\$6,143,112
407 1st Ave	New York, NY	\$204,200,000	\$204,000,000	\$204,000,000	4Q16	December-19	\$5,310,147
5250 Park	Miami, FL	\$46,045,322	\$48,667,833	\$31,115,651	2Q17	December-19	\$809,945
The Mason	Pleasanton, CA	\$104,000,000	\$104,000,000	\$104,000,000	3Q17	December-19	\$2,707,134
The Arnold	Austin, TX	\$110,000,000	\$111,000,000	\$111,000,000	4Q18	December-19	\$2,889,345
The Harlo	Boston, MA	\$158,000,000	\$159,000,000	\$159,000,000	1Q19	December-19	\$4,138,791
Sunset Vine Tower II	Hollywood, CA	\$19,019,023	\$23,958,645	\$23,958,645	2Q19	December-19	\$623,647
Legacy West - Block H - Apartment	Plano, TX	\$6,291,532	\$15,732,365	\$15,732,365	2Q19	December-19	\$409,516
		<b>\$4,491,737,584</b>	<b>\$4,327,962,287</b>	<b>\$3,381,440,732</b>			<b>\$88,019,358</b>



INVESCO Core Real Estate  
Real Estate Valuation Analysis

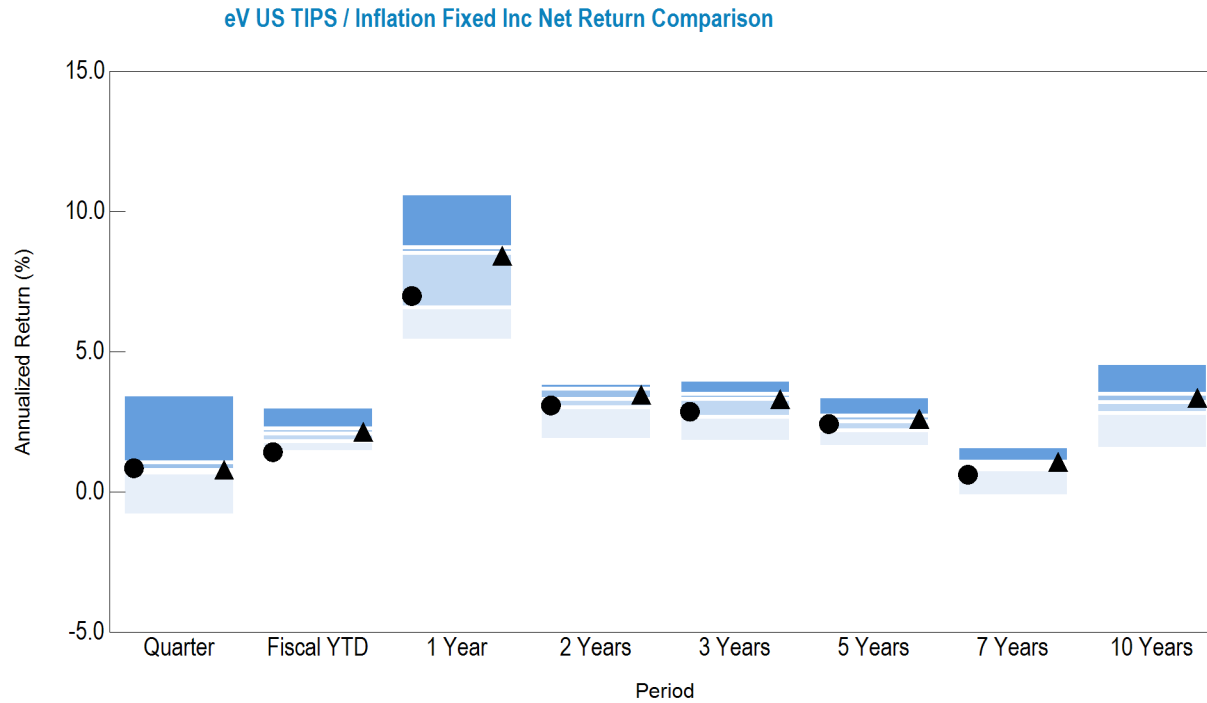
Period Ending: December 31, 2019

INDUSTRIAL							
Arjons Industrial Park	San Diego CA	\$49,700,000	\$50,200,000	\$50,200,000	2Q04	December-19	\$1,306,713
Gateway Business Park	Dallas TX	\$14,600,000	\$15,600,000	\$15,600,000	2Q04	December-19	\$406,070
Hayward Industrial	Oakland CA	\$224,900,000	\$240,000,000	\$240,000,000	3Q04-3Q07	December-19	\$6,247,232
Oakesdale Commerce Center	Seattle - Belle - Eve WA	\$71,400,000	\$73,700,000	\$73,700,000	1Q06	December-19	\$1,918,421
South Bay Industrial	Los Angeles, CA	\$70,700,000	\$71,500,000	\$71,500,000	4Q06	December-19	\$1,861,155
Steeplechase Portfolio	Capitol Heights, MD	\$110,300,000	\$115,200,000	\$115,200,000	1Q11	December-19	\$2,998,672
Airport Trade Center Portfolio	Dallas, TX	\$148,400,000	\$149,800,000	\$149,800,000	1Q11	December-19	\$3,899,314
IE Logistics	San Bernardino, CA	\$172,800,000	\$175,100,000	\$175,100,000	3Q11	December-19	\$4,557,877
Railhead Industrial	Dallas, TX	\$66,100,000	\$65,800,000	\$65,800,000	4Q11	December-19	\$1,712,783
Empire Gateway aka Chino South Logistics Center	Chino, CA	\$317,000,000	\$319,000,000	\$319,000,000	4Q12	December-19	\$8,303,613
SFO Logistics Center	San Francisco, CA	\$165,000,000	\$177,000,000	\$177,000,000	4Q13	December-19	\$4,607,334
Miami Industrial Portfolio	Various ,FL	\$87,654,891	\$88,107,509	\$61,525,541	1Q16	December-19	\$1,601,518
Miami Industrial Portfolio - Fedex	Hollywood, FL	\$47,600,000	\$48,000,000	\$34,184,641	1Q16	December-19	\$889,831
OMP Burbank	Los Angeles, CA	\$143,095,390	\$179,504,652	\$179,504,652	2Q16	December-19	\$4,672,530
Pacific Commons	Freemont, CA	\$256,112,410	\$273,046,317	\$218,466,944	1Q17	December-19	\$5,686,724
Gateway 80 Business Park	Fairfield, CA	\$107,800,000	\$108,000,000	\$108,000,000	1Q18	December-19	\$2,811,255
Meridian Distribution Center II	Riverside, CA	\$61,100,000	\$62,600,000	\$62,600,000	3Q18	December-19	\$1,629,486
Bayport North Industrial Building II and III	Riverside, CA	\$60,700,000	\$61,000,000	\$61,000,000	4Q18	December-19	\$1,587,838
Skyline Industrial	Riverside, CA	\$65,684,266	\$66,600,000	\$66,600,000	3Q19	December-19	\$1,733,607
North PDX Logistics Portfolio	Portland, OR	\$0	\$75,000,000	\$75,000,000	4Q19	Acq in 4Q19	\$1,952,260
		<b>\$2,240,646,956</b>	<b>\$2,414,758,478</b>	<b>\$2,319,781,777</b>			<b>\$58,431,972</b>
OFFICE							
55 Cambridge Parkway	Boston MA - NH	\$369,000,000	\$391,000,000	\$391,000,000	4Q06	December-19	\$10,177,783
1800 Larimer	Denver, CO	\$338,000,000	\$333,000,000	\$333,000,000	1Q11	December-19	\$8,668,035
Hillview Office	San Jose, CA	\$68,700,000	\$68,700,000	\$68,700,000	3Q12	December-19	\$1,788,270
Williams Tower	Houston, TX	\$613,000,000	\$616,000,000	\$430,682,796	1Q13	December-19	\$11,210,731
Westlake Park Place	Westlake Village, CA	\$109,000,000	\$108,000,000	\$108,000,000	4Q13	December-19	\$2,811,255
101 Second	San Francisco, CA	\$493,000,000	\$505,000,000	\$505,000,000	1Q14	December-19	\$13,145,218
Energy Crossing II	Houston, TX	\$104,000,000	\$104,000,000	\$104,000,000	2Q14	December-19	\$2,707,134
1776 Wilson Blvd.	Arlington, VA	\$85,100,000	\$84,900,000	\$84,900,000	3Q14	December-19	\$2,209,958
631 Howard	San Francisco, CA	\$117,000,000	\$117,000,000	\$117,000,000	3Q14	December-19	\$3,045,526
Barton Oaks	Austin, TX	\$112,000,000	\$113,000,000	\$113,000,000	3Q14	December-19	\$2,941,405
Hercules East and South Campus	Los Angeles, CA	\$193,429,166	\$200,740,591	\$200,740,591	3Q14	December-19	\$5,225,305
The Reserve	Playa Vista, CA	\$400,189,063	\$420,673,141	\$420,673,141	1Q15	December-19	\$10,950,179
Fort Point Portfolio	Boston, MA	\$291,857,083	\$298,782,506	\$298,782,506	2Q15	December-19	\$7,777,349
Legacy West Office	Plano, TX	\$152,000,000	\$154,000,000	\$61,965,428	1Q15	December-19	\$1,612,968
1101 Westlake	Seattle, WA	\$148,000,000	\$150,000,000	\$150,000,000	3Q15	December-19	\$3,904,520
PearlWest	Boulder, CO	\$135,000,000	\$135,000,000	\$135,000,000	4Q16	December-19	\$3,514,068
The Mark 302	Santa Monica, CA	\$60,074,234	\$64,458,940	\$64,458,940	1Q18	December-19	\$1,677,875
430 West 15th Street	New York NY	\$164,000,000	\$166,000,000	\$166,000,000	2Q18	December-19	\$4,321,002
Ten Fawcett	Cambridge, MA	\$60,916,000	\$65,087,000	\$35,987,000	3Q18	December-19	\$936,746
Press Blocks	Portland, OR	\$27,070,467	\$38,918,740	\$38,918,740	3Q18	December-19	\$1,013,060
Union Tower West	Denver, CO	\$70,600,000	\$69,600,000	\$69,600,000	4Q18	December-19	\$1,811,697
Tryon South End	Denver, CO	\$57,115,990	\$75,109,006	\$75,109,006	1Q19	December-19	\$1,955,098
22 Boston Wharf Rd	Boston, MA	\$183,000,000	\$185,000,000	\$185,000,000	1Q19	December-19	\$4,815,575
Legacy West - Block H - Office	Plano, TX	\$10,244,324	\$13,530,737	\$13,530,737	2Q19	December-19	\$352,207
Pasadena Commons - Office	Pasadena, CA	\$0	\$47,300,000	\$25,000,000	4Q19	December-19	\$650,753
Shops at Legacy - Office	Plano, TX	\$0	\$25,000,000	\$47,300,000	4Q19	December-19	\$1,231,225
		<b>\$4,476,296,327</b>	<b>\$4,664,800,660</b>	<b>\$4,358,348,884</b>			<b>\$111,566,430</b>

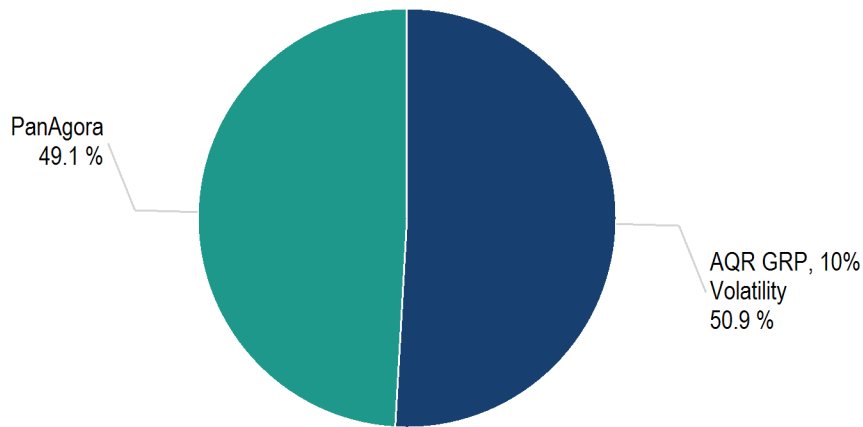
INVESCO Core Real Estate  
Real Estate Valuation Analysis

Period Ending: December 31, 2019

RETAIL							
Chandler Pavilion	Phoenix - Mesa AZ	\$22,500,000	\$21,800,000	\$21,800,000	2Q04	December-19	\$567,457
Cityline at Tenley	Washington, D.C.	\$66,000,000	\$67,300,000	\$67,300,000	4Q05	December-19	\$1,751,828
The Beacon Retail	San Francisco, CA	\$74,300,000	\$73,700,000	\$73,700,000	1Q06	December-19	\$1,918,421
The Beacon Garage (units)	San Francisco, CA	\$38,800,000	\$39,200,000	\$39,200,000	1Q06	December-19	\$1,020,381
The Beacon Office (210 King)	San Francisco, CA	\$31,400,000	\$31,600,000	\$31,600,000	1Q15	December-19	\$822,552
Hawthorne Plaza	Overland Park, KS	\$52,000,000	\$49,550,000	\$49,550,000	4Q07	December-19	\$1,289,793
The Loop	Boston MA - NH	\$73,400,000	\$72,300,000	\$72,300,000	1Q08	December-19	\$1,881,979
Westbank Market	Austin, TX	\$66,100,000	\$67,100,000	\$67,100,000	3Q10	December-19	\$1,746,622
910 Lincoln Road	Miami, FL	\$30,900,000	\$29,400,000	\$29,400,000	4Q10	December-19	\$765,286
Lake Pointe Village	Houston, TX	\$88,250,000	\$88,250,000	\$88,250,000	4Q11	December-19	\$2,297,159
Safeway Kapahulu	Hawaii	\$95,100,000	\$95,800,000	\$59,563,598	4Q11	December-19	\$1,550,448
Safeway Burlingame	San Francisco, CA	\$58,300,000	\$58,400,000	\$35,676,947	4Q11	December-19	\$928,676
Shamrock Plaza	Oakland, CA	\$40,800,000	\$40,800,000	\$24,533,676	4Q11	December-19	\$638,615
Pavilions Marketplace	West Hollywood, CA	\$71,200,000	\$71,300,000	\$46,599,924	1Q12	December-19	\$1,213,002
130 Prince	New York, NY	\$0	\$0	\$0	2Q12	December-19	\$0
Safeway Pleasanton	Pleasanton, CA	\$86,500,000	\$86,500,000	\$86,500,000	4Q12	December-19	\$2,251,607
Liberty Wharf	Boston, MA	\$92,000,000	\$93,300,000	\$93,300,000	4Q12	December-19	\$2,428,612
Shops at Legacy	Plano, TX	\$126,000,000	\$73,600,000	\$73,600,000	3Q13	December-19	\$1,915,818
Pasadena Commons	Pasadena, CA	\$63,800,000	\$40,000,000	\$40,000,000	4Q14	December-19	\$1,041,205
Rush Street Retail	Chicago, IL	\$16,900,000	\$16,900,000	\$16,900,000	4Q14	December-19	\$439,909
Legacy West Retail	Plano, TX	\$280,000,000	\$285,000,000	\$162,287,237	1Q15	December-19	\$4,224,359
131-137 Spring Street	New York, NY	\$231,000,000	\$218,000,000	\$218,000,000	3Q15	December-19	\$5,674,569
Runway at Playa Vista - Retail	Playa Vista, CA	\$133,560,000	\$131,970,000	\$70,571,531	1Q16	December-19	\$1,836,986
139 Spring	New York, NY	\$100,151,600	\$88,252,400	\$88,252,400	1Q16	December-19	\$2,297,222
Clayton Lane	Denver, CO	\$150,754,381	\$149,842,165	\$103,950,916	1Q16	December-19	\$2,705,856
4th & Colorado	Santa Monica, CA	\$13,280,000	\$13,280,000	\$13,280,000	1Q16	December-19	\$345,680
Legacy West - Block H	Plano, TX	\$13,153,668	\$15,630,501	\$15,630,501	4Q17	December-19	\$406,864
Shops at Crystals	Las Vegas, NV	\$302,000,000	\$301,500,000	\$163,854,787	2Q16	December-19	\$4,265,162
		<b>\$2,458,249,649</b>	<b>\$2,360,075,066</b>	<b>\$1,892,501,517</b>			<b>\$49,262,069</b>
Other							
Baranof - Walden Park	San Marcos, TX	\$9,816,617	\$9,724,008	\$9,724,008	1Q18	December-19	\$253,117
Baranof - Ranch Road 620	San Marcos, TX	\$9,353,569	\$9,353,569	\$9,353,569	1Q18	December-19	\$243,475
Baranof - Glenwood Avenue	Raleigh, NC	\$9,816,617	\$9,724,008	\$9,724,008	1Q18	December-19	\$253,117
Baranof - 1-84 & 60th	Vancouver, WA	\$23,708,057	\$23,800,667	\$23,800,667	1Q18	December-19	\$619,535
Baranof - Fishers Landing Vancouver	Vancouver, WA	\$17,503,214	\$17,595,824	\$17,595,824	1Q18	December-19	\$458,022
US Storage - Compton	Compton, CA	\$29,099,353	\$29,642,339	\$19,046,168	4Q17	December-19	\$495,774
The Quad	New York NY	\$118,473,747	\$132,601,284	\$92,398,293	2Q18	December-19	\$2,405,140
Baranof - 622 Capital	Raleigh, NC	\$20,837,160	\$20,837,160	\$20,837,160	3Q18	December-19	\$542,394
51st Street Self Storage	Austin, TX	\$12,400,000	\$12,900,000	\$12,900,000	3Q18	December-19	\$335,789
Campbell Self Storage	Campbell, CA	\$18,600,000	\$18,700,000	\$18,700,000	3Q18	December-19	\$486,764
Baranof - Belmont and 7th	Portland, OR	\$19,540,625	\$19,633,235	\$19,633,235	4Q18	December-19	\$511,056
Boston Lane Self Storage	Austin, TX	\$16,300,000	\$16,500,000	\$16,500,000	4Q18	December-19	\$429,497
US Storage - 4800 Valley	Los Angeles, CA	\$6,091,061	\$6,325,923	\$6,325,923	1Q19	December-19	\$164,665
Newark Self Storage	Newark, CA	\$8,593,119	\$12,757,360	\$12,757,360	1Q19	December-19	\$332,076
Norwood Extra Space	Norwood, MA	\$19,300,000	\$19,400,000	\$19,400,000	1Q19	December-19	\$504,985
		<b>\$339,433,141</b>	<b>\$359,495,376</b>	<b>\$308,696,215</b>			<b>\$8,035,404</b>
<b>Portfolio Total</b>		<b>\$14,006,363,657</b>	<b>\$14,127,091,867</b>	<b>\$12,260,769,125</b>			<b>\$315,315,233</b>



	Return (Rank)							
5th Percentile	3.5	3.0	10.7	3.9	4.0	3.4	1.6	4.6
25th Percentile	1.1	2.3	8.7	3.7	3.5	2.7	1.1	3.5
Median	0.8	2.1	8.5	3.3	3.3	2.5	1.0	3.2
75th Percentile	0.7	1.8	6.6	3.0	2.7	2.2	0.8	2.8
95th Percentile	-0.8	1.4	5.4	1.9	1.8	1.6	-0.1	1.5
# of Portfolios	19	19	19	19	19	18	16	12
● Brown Brothers Harriman	0.8 (48)	1.4 (99)	7.0 (71)	3.1 (73)	2.9 (67)	2.4 (60)	0.6 (87)	-- (--)
▲ BBgBarc US TIPS TR	0.8 (50)	2.1 (42)	8.4 (54)	3.5 (33)	3.3 (52)	2.6 (42)	1.1 (26)	3.4 (34)



	Actual \$	Actual %	Manager Contribution to Excess Return %
AQR GRP, 10% Volatility	\$207,741,992	50.9%	-0.2%
PanAgora	\$200,241,754	49.1%	-2.6%
Actual vs. Policy Weight Difference			0.0%
<b>Total</b>	<b>\$407,983,746</b>	<b>100.0%</b>	<b>-2.8%</b>

**Statistics Summary**

**3 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Risk Parity	9.5%	7.1%	1.1	0.0	4.8%
Blended Risk Parity Index	9.4%	6.6%	1.2	--	0.0%
AQR GRP, 10% Volatility	10.4%	7.5%	1.2	0.2	4.3%
Blended Risk Parity Index	9.4%	6.6%	1.2	--	0.0%
PanAgora	8.7%	7.3%	1.0	-0.1	5.9%
Blended Risk Parity Index	9.4%	6.6%	1.2	--	0.0%

**Statistics Summary**

**5 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Risk Parity	6.6%	7.8%	0.7	-0.2	6.0%
Blended Risk Parity Index	7.5%	6.8%	0.9	--	0.0%
AQR GRP, 10% Volatility	6.1%	7.9%	0.6	-0.2	5.6%
Blended Risk Parity Index	7.5%	6.8%	0.9	--	0.0%
PanAgora	6.9%	8.3%	0.7	-0.1	7.0%
Blended Risk Parity Index	7.5%	6.8%	0.9	--	0.0%

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: December 31, 2019

	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
<b>Total Fund</b>	<b>3.9</b>	<b>5.6</b>	<b>16.5</b>	<b>5.7</b>	<b>8.7</b>	<b>7.1</b>	<b>8.5</b>
<i>Policy Index</i>	4.7	5.9	17.1	6.3	9.3	7.3	8.8
<b>Total Fund ex Overlay</b>	<b>4.1</b>	<b>5.6</b>	<b>16.2</b>	<b>5.5</b>	<b>8.5</b>	<b>7.0</b>	<b>8.5</b>
<i>Policy Index</i>	4.7	5.9	17.1	6.3	9.3	7.3	8.8
<b>Public Equity</b>	<b>8.3</b>	<b>8.9</b>	<b>26.5</b>	<b>7.1</b>	<b>12.5</b>	<b>9.0</b>	<b>10.3</b>
<i>Blended Public Equity Index</i>	8.6	9.0	26.7	7.0	12.5	8.9	10.4
<b>US Equity</b>	<b>7.7</b>	<b>9.5</b>	<b>29.0</b>	<b>10.4</b>	<b>14.0</b>	<b>10.9</b>	<b>13.0</b>
<i>Blended US Equity Index</i>	9.1	10.4	31.0	11.4	14.6	11.1	13.4
<i>Russell 3000</i>	9.1	10.4	31.0	11.4	14.6	11.2	13.4
<b>Large Cap Equity</b>	<b>7.5</b>	<b>9.6</b>	<b>29.7</b>	<b>11.5</b>	<b>15.6</b>	<b>12.0</b>	<b>13.4</b>
<i>Russell 1000</i>	9.0	10.6	31.4	11.9	15.0	11.5	13.5
Acadian US MGD V	5.2	8.2	25.4	--	--	--	--
BlackRock Russell 1000	9.0	10.6	31.5	11.9	--	--	--
DE Shaw	9.0	10.7	28.1	10.8	15.6	13.2	14.5
PanAgora Defuseq	3.3	6.6	29.4	--	--	--	--
<i>Russell 1000</i>	9.0	10.6	31.4	11.9	15.0	11.5	13.5
<b>Small Cap Equity</b>	<b>9.4</b>	<b>8.7</b>	<b>22.8</b>	<b>3.8</b>	<b>6.8</b>	<b>6.4</b>	<b>11.6</b>
<i>Russell 2000</i>	9.9	7.3	25.5	5.7	8.6	8.2	11.8
QMA US Small Cap	9.4	8.7	22.8	3.8	6.8	--	--
<i>Russell 2000</i>	9.9	7.3	25.5	5.7	8.6	8.2	11.8
<b>International Equity</b>	<b>9.0</b>	<b>8.1</b>	<b>23.6</b>	<b>3.4</b>	<b>10.8</b>	<b>6.6</b>	<b>5.4</b>
<i>Blended International Equity Index</i>	8.0	7.4	21.8	1.9	10.1	6.0	5.5
<i>MSCI EAFE Gross</i>	8.2	7.1	22.7	3.1	10.1	6.2	6.0
<b>Developed Markets</b>	<b>10.5</b>	<b>8.8</b>	<b>25.2</b>	<b>3.9</b>	<b>11.1</b>	<b>6.9</b>	<b>5.8</b>
<i>MSCI ACWI ex USA Gross</i>	9.0	7.1	22.1	2.6	10.4	6.0	5.4
Baillie Gifford	12.6	11.6	34.1	5.9	14.1	8.9	--
<i>MSCI ACWI ex US</i>	9.0	7.1	22.1	2.6	10.4	6.0	--
<i>MSCI ACWI ex US Growth</i>	9.6	8.8	27.8	4.8	13.3	7.7	--

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: December 31, 2019

	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
BlackRock EAFE Index	8.2	7.1	22.5	3.0	10.0	6.1	--
<i>MSCI EAFE</i>	8.2	7.0	22.0	2.6	9.6	5.7	5.5
<i>MSCI EAFE Gross</i>	8.2	7.1	22.7	3.1	10.1	6.2	6.0
Mondrian	10.8	7.9	19.5	2.7	9.2	5.4	5.3
<i>MSCI ACWI ex USA Value Gross</i>	8.3	5.4	16.5	0.4	7.5	4.3	4.2
<i>MSCI ACWI ex USA Gross</i>	9.0	7.1	22.1	2.6	10.4	6.0	5.4
<b>Emerging Markets</b>	<b>8.2</b>	<b>3.6</b>	<b>14.0</b>	<b>-0.7</b>	<b>8.2</b>	<b>4.0</b>	<b>--</b>
<i>MSCI Emerging Markets Gross</i>	11.9	7.3	18.9	1.0	12.0	6.0	4.0
Parametric Core	8.2	3.6	14.0	-0.7	8.2	--	--
<i>MSCI Emerging Markets Gross</i>	11.9	7.3	18.9	1.0	12.0	6.0	4.0
Parametric Currency Overlay	-18.5	7.1	18.6	--	--	--	--
<b>Fixed Income</b>	<b>1.3</b>	<b>2.5</b>	<b>8.5</b>	<b>4.4</b>	<b>4.8</b>	<b>4.4</b>	<b>5.7</b>
<i>Blended Fixed Income Index</i>	0.9	3.1	10.8	4.9	4.9	3.9	4.2
<b>Core Fixed</b>	<b>0.9</b>	<b>2.6</b>	<b>8.2</b>	<b>4.0</b>	<b>4.2</b>	<b>3.6</b>	<b>4.9</b>
<i>BBgBarc US Aggregate TR</i>	0.2	2.5	8.7	4.3	4.0	3.0	3.7
BlackRock Intermediate Govt	0.0	1.3	5.3	3.5	--	--	--
<i>BBgBarc US Govt Int TR</i>	0.0	1.2	5.2	3.3	2.6	2.0	2.4
FIAM Bond	0.6	2.9	9.8	4.7	4.6	3.7	4.7
<i>BBgBarc US Aggregate TR</i>	0.2	2.5	8.7	4.3	4.0	3.0	3.7
Western TRU	3.1	4.1	9.7	3.3	5.4	--	--
<i>3-Month Libor Total Return USD</i>	0.5	1.0	2.4	2.4	2.0	1.4	0.9
<i>BBgBarc US Aggregate TR</i>	0.2	2.5	8.7	4.3	4.0	3.0	3.7
<b>Opportunistic Credit</b>	<b>1.9</b>	<b>2.5</b>	<b>9.2</b>	<b>5.2</b>	<b>6.4</b>	<b>6.7</b>	<b>10.1</b>
<i>BBgBarc BA Intermediate HY</i>	2.3	4.2	14.7	6.1	6.1	5.8	6.2
Angelo Gordon Opportunistic	2.2	5.6	12.1	16.6	16.9	12.1	--
Angelo Gordon STAR	2.2	4.3	16.1	18.9	18.8	14.0	--
<i>BBgBarc US Aggregate TR</i>	0.2	2.5	8.7	4.3	4.0	3.0	3.7

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: December 31, 2019

	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Beach Point Select	3.4	4.9	12.9	6.7	7.3	--	--
<i>BBgBarc BA Intermediate HY</i>	2.3	4.2	14.7	6.1	6.1	5.8	6.2
Brigade Capital	3.2	2.8	9.1	4.0	5.2	5.4	--
<i>BBgBarc BA Intermediate HY</i>	2.3	4.2	14.7	6.1	6.1	5.8	6.2
<i>50% Barclays HY/ 50% Bank Loan</i>	2.1	3.3	11.2	5.2	5.4	5.3	--
PIMCO Diversified	1.7	2.9	12.8	5.7	--	--	--
<i>Blended PIMCO Diversified Index</i>	1.7	3.7	13.7	5.4	6.0	5.5	6.5
<i>BBgBarc BA Intermediate HY</i>	2.3	4.2	14.7	6.1	6.1	5.8	6.2
Franklin Templeton	1.4	-2.1	1.1	0.5	1.7	1.7	--
<i>BBgBarc Multiverse TR</i>	0.6	1.3	7.1	2.8	4.4	2.5	2.7
<b>Private Credit</b>	<b>0.5</b>	<b>2.4</b>	<b>6.4</b>	<b>7.1</b>	<b>6.9</b>	<b>--</b>	<b>--</b>
<i>Cliffwater Direct Lending Index</i>	1.8	3.6	8.9	8.5	8.5	8.4	10.4
PIMCO Private Income	0.0	3.5	--	--	--	--	--
<i>BBgBarc BA Intermediate HY</i>	2.3	4.2	14.7	6.1	6.1	5.8	6.2
<i>Cliffwater Direct Lending Index</i>	1.8	3.6	8.9	8.5	8.5	8.4	10.4
TCP Direct Lending VIII	1.5	3.0	7.2	7.1	7.1	--	--
White Oak Yield	0.0	1.2	5.2	7.0	--	--	--
<i>Cliffwater Direct Lending Index</i>	1.8	3.6	8.9	8.5	8.5	8.4	10.4
<b>Risk Parity</b>	<b>2.1</b>	<b>4.9</b>	<b>23.2</b>	<b>6.9</b>	<b>9.5</b>	<b>6.6</b>	<b>--</b>
<i>Blended Risk Parity Index</i>	4.9	6.3	19.8	7.0	9.4	7.5	--
AQR GRP, 10% Volatility	4.5	5.8	24.2	7.6	10.4	6.1	--
PanAgora	-0.2	4.0	22.1	6.2	8.7	6.9	--
<i>Blended Risk Parity Index</i>	4.9	6.3	19.8	7.0	9.4	7.5	--
<i>S&amp;P Risk Parity 10% Target Volatility Index TR USD</i>	3.2	5.6	19.0	6.9	7.3	5.1	6.3
<b>Alternatives</b>	<b>-2.6</b>	<b>5.7</b>	<b>7.6</b>	<b>4.9</b>	<b>6.5</b>	<b>6.9</b>	<b>--</b>
<i>Blended Alternatives Index</i>	1.9	4.9	6.5	8.0	10.3	7.9	--
<b>Private Equity</b>	<b>-3.6</b>	<b>11.7</b>	<b>16.8</b>	<b>17.2</b>	<b>16.0</b>	<b>16.6</b>	<b>--</b>
<i>Blended Private Equity Index</i>	2.3	6.5	5.9	9.3	14.1	12.2	15.4



Total Fund  
Performance Summary (Gross of Fees)

Period Ending: December 31, 2019

	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
<b>Hedge Fund/Absolute Return</b>	<b>-1.2</b>	<b>-1.2</b>	<b>-2.7</b>	<b>-7.3</b>	<b>-3.4</b>	<b>0.0</b>	<b>--</b>
<i>Libor 1 month +4%</i>	1.4	3.0	6.3	6.2	5.8	5.2	4.7
AQR DELTA XN	-3.1	-4.2	-10.3	-12.8	-7.1	-2.1	--
Aberdeen Standard GARS	1.3	2.9	9.1	1.5	2.2	--	--
<i>Libor 1 month +4%</i>	1.4	3.0	6.3	6.2	5.8	5.2	4.7
<b>Inflation Hedge</b>	<b>2.8</b>	<b>2.6</b>	<b>8.5</b>	<b>3.6</b>	<b>5.2</b>	<b>--</b>	<b>--</b>
<i>Blended Inflation Hedge Index</i>	2.5	2.8	9.3	4.3	5.8	--	--
<b>Real Estate</b>	<b>2.2</b>	<b>4.4</b>	<b>7.1</b>	<b>8.1</b>	<b>8.3</b>	<b>9.8</b>	<b>11.8</b>
<i>NCREIF ODCE</i>	1.5	2.8	5.3	6.8	7.1	9.0	11.4
Invesco	2.3	4.3	6.6	7.9	8.1	9.6	11.7
<i>NCREIF ODCE</i>	1.5	2.8	5.3	6.8	7.1	9.0	11.4
Invesco US Val IV	3.6	9.0	14.9	13.6	13.4	--	--
<i>NCREIF ODCE</i>	1.5	2.8	5.3	6.8	7.1	9.0	11.4
<i>NCREIF CEVA 1Q Lag - NET</i>	3.0	6.0	12.3	12.1	11.5	12.9	--
Invesco US Val V	5.2	6.3	--	--	--	--	--
<i>NCREIF ODCE</i>	1.5	2.8	5.3	6.8	7.1	9.0	11.4
<i>NCREIF CEVA 1Q Lag - NET</i>	3.0	6.0	12.3	12.1	11.5	12.9	--
PGIM RE US Debt Fund	1.6	3.3	6.8	6.7	--	--	--
<i>NCREIF ODCE</i>	1.5	2.8	5.3	6.8	7.1	9.0	11.4
<b>Private Real Asset</b>	<b>0.1</b>	<b>-0.6</b>	<b>-10.9</b>	<b>-3.5</b>	<b>-3.3</b>	<b>5.8</b>	<b>--</b>
<i>Blended Private Real Asset Index</i>	-2.7	1.0	4.1	0.4	4.3	4.8	--
<i>Blended Secondary CA Private RA Index</i>	-1.2	-1.3	-1.3	4.2	7.2	3.7	--
<b>Public Real Assets</b>	<b>4.3</b>	<b>1.4</b>	<b>15.0</b>	<b>0.3</b>	<b>4.7</b>	<b>--</b>	<b>--</b>
<i>Blended Public Real Asset Index</i>	5.8	3.0	15.8	1.9	5.7	5.9	--
Cushing MLP Alpha TR	-0.9	-4.6	11.2	--	--	--	--
<i>50% BBgBarc US TIPS/ 50% Blended PRA Index</i>	3.3	2.7	12.3	--	--	--	--
<i>Alerian MLP TR USD</i>	-4.1	-8.9	6.6	-3.4	-4.4	-7.0	4.2
SSgA Custom Real Asset	5.9	3.2	16.1	2.1	6.0	--	--
<i>SSgA Custom Real Asset Index</i>	5.8	3.0	15.8	1.9	5.7	--	--

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: December 31, 2019

	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
<b>TIPS</b>	<b>0.8</b>	<b>1.4</b>	<b>7.1</b>	<b>3.2</b>	<b>3.0</b>	<b>2.6</b>	<b>--</b>
<i>BBgBarc US TIPS TR</i>	0.8	2.1	8.4	3.5	3.3	2.6	3.4
Brown Brothers Harriman	0.8	1.4	7.1	3.2	3.0	2.6	--
<i>BBgBarc US TIPS TR</i>	0.8	2.1	8.4	3.5	3.3	2.6	3.4
<b>Cash</b>	<b>0.3</b>	<b>0.5</b>	<b>1.2</b>	<b>1.2</b>	<b>1.1</b>	<b>1.1</b>	<b>0.9</b>
<i>91 Day T-Bills</i>	0.4	0.9	2.1	2.0	1.6	1.1	0.6
General Account	0.5	1.1	3.1	4.0	3.3	2.5	1.4
Treasury & LAIF	0.7	1.4	3.1	3.9	3.0	2.1	1.5
<i>91 Day T-Bills</i>	0.4	0.9	2.1	2.0	1.6	1.1	0.6

## **Acadian Asset Management – Acadian U.S. Managed Volatility**

Acadian attempts to take advantage of the mispricing of risk by building low-risk equity portfolios that hold predominantly low-risk stocks, and then also adding information on the correlation structure of equities to help further reduce risk through diversification.

## **Angelo, Gordon & Co. – AG STAR Fund**

The STAR Fund will focus on CMBS and non-Agency RMBS priced between 25-75% of par, which AG believes are even today mispriced due to their complex nature and a dearth of natural buyers capable of accurately valuing these assets. In addition, AG will target securities that are well-positioned to benefit from home and commercial property price stabilization and recovery, and/or borrower credit quality improvement. In this regard the STAR Fund will be more aggressive than the PPIP Fund since it will target securities that are more geared to a recovery of the commercial and residential real estate markets. The Fund will utilize a moderate amount of leverage (1x to 1.5x) and is targeting a base-case 15% net IRR with a downside return in the mid/high single digits and an upside projection of 25%+ returns.

## **Angelo, Gordon & Co. – AG Opportunistic Whole Loan Fund**

As bank balance sheets have strengthened since the crisis, Angelo Gordon expects approximately \$40 billion of re-performing loans and non-performing loans will trade hands each year in the near term. By acquiring these loans at a discounted price and replacing original servicers with better-focused special servicers, Angelo Gordon believes it can improve operational efficiency and generate attractive returns. To take advantage of this opportunity, Angelo Gordon established this Opportunistic Whole Loan Fund to make investments primarily in a portfolio of non-performing loans and re-performing, but will also include investments in new residential mortgage loans and excess mortgage servicing rights. Opportunistic investments in commercial mortgage loans and other mortgage related investments may also be included in the Fund's portfolio. Angelo Gordon has been an active participant in the residential and consumer debt market since 2008. The Partnership's investment approach to residential mortgage loans and securities is guided by an analytically based investment process anchored by distressed asset valuation and cash flow modeling. Angelo Gordon's analysis of re-performing and non-performing loans begins with its loan due diligence process. This process will include a review of substantially all of the properties in the pool, as well as a review of the loan files backing the loan pool. In addition, a macro overlay is embedded in the investment process which incorporates general economic trends, along with specific views on interest rates, unemployment, collateral appreciation or depreciation, governmental intervention in creditors' rights and liquidation timelines.

## **AQR Capital Management - AQR Delta**

The AQR DELTA Fund aims to deliver efficient exposure to a well-diversified portfolio of hedge fund strategies, including Convertible Arbitrage, Event Driven, Fixed Income Relative Value, Equity Market Neutral, Long/Short Equity, Dedicated Short Bias, Global Macro, Managed Futures, and Emerging Markets. The Delta Fund's approach is to capture and deliver the "hedge fund risk premiums" that explain much of the returns of each of these strategies by building bottom-up positions in each strategy. AQR's research has demonstrated that many hedge funds use similar strategies to generate returns. These strategies are often well-known, widely understood and share common exposures. AQR's experience and research suggests much of the insight underlying these strategies - as well as a meaningful portion of their returns - can be captured using a dynamic, disciplined investment approach. Just as the equity risk premium can explain a large portion of the returns from equity investing, hedge fund risk premiums can explain the returns from hedge fund investing. Importantly, while compensation for equity risk is dependent on economic growth, hedge fund risk premiums are largely unrelated to economic activity, and thus provide attractive diversification properties.

## **AQR – Risk Parity**

The objective of Global Risk Parity (GRP) is to generate excess returns from a risk diversified portfolio of asset exposures. AQR believes that its approach maximizes the diversification benefit across a broad range of economic environments. For many institutional portfolios, equity risk has historically been the predominant risk and the source of most return expectations since equities offer higher expected returns to compensate for their high risk. Investor preference for and concentration in equities has been driven by their expected return needs, which cannot be satisfied in a well-diversified un-levered portfolio. GRP is a diversified portfolio that can be scaled to similar levels of risk as a portfolio concentrated in equities, but with a higher expected return resulting from diversification across asset class risk. The approach helps do away with the compromise of concentrating in high risk assets to meet high return needs. Consistent with portfolio theory, the GRP strategy is designed to maximize diversification across a broad spectrum of liquid global risk premia to create a portfolio with higher expected risk-adjusted returns. Research shows that risk-adjusted returns across asset classes are similar over the long-term. Since realized risk-adjusted returns across asset classes are similar, AQR expects a portfolio that is diversified equally by risk to perform better. The Global Risk Premium strategy aims to deliver efficient market exposure across four broad asset classes in a risk balanced fashion.

## **Baillie Gifford – ACWI ex US Focus Equities**

ACWI ex US Focus is a fundamental growth strategy. Research is organized primarily by regional teams, with each member of the ACWI ex US Focus Portfolio Construction Group representing a regional team. Four global sector groups also contribute research. Baillie Gifford conducts approximately 2000 company meetings annually both in Edinburgh and onsite. Companies are evaluated on their growth opportunity relative to the average company, their ability to execute on that opportunity, and the degree to which probability of future success is already valued by the market. Baillie Gifford's basic philosophy is that share prices ultimately follow earnings. They believe that the stock market has a recurring tendency to under-appreciate the value of long-term compound growth. The process seeks to add value through use of proprietary fundamental research to identify companies exhibiting some combination of sustained above average growth, and attractive financial characteristics. The portfolio generally holds 80-120 stocks, with country and sector weights +/-6% relative to the index and industry weights +/- 5% relative to the index.

## **Beach Point Capital Management, L.P. - Beach Point Select Fund**

Beach Point Select Fund is a commingled fund vehicle within the firm's Opportunistic Credit strategy. This fund focuses on off-the-run, complex, and less-liquid securities. It is a best ideas portfolio of distressed debt, special situations, private/direct loans, catalyst-driven high yield bonds and bank loans, and credit-informed equities with a North American and European focus. The Select Fund differs from other funds and accounts in the Opportunistic Credit strategy by pursuing a more concentrated portfolio and emphasizing a higher percentage of less-liquid/private investments. Beach Point invests up and down the entire capital structure and it constructs portfolios with a bottom-up, research-driven approach that also takes into account top-down macro considerations. Its investment process includes idea generation, detailed credit analysis, relative value decision making and investment selection, portfolio construction and on-going monitoring. The ultimate goal of its investment process is to produce a well-diversified investment portfolio with limited downside risk and substantial upside potential.

## **BlackRock – EAFE Index**

The EAFE Index Fund seeks to replicate the return of the MSCI EAFE Index. This index represents the developed equity markets outside of North America: Europe, Austral, Asia and the Far East.

## **BlackRock – Intermediate Government Index**

The Intermediate Government Index Fund seeks to track the results of an index composed of U.S. dollar-denominated government, government related, and investment grade U.S. corporate bonds with maturities between 1 and 10 years.

## **BlackRock – Russell 1000 Index**

The Russell 1000 Index Fund tracks large U.S. companies and achieve broad diversification with low costs by fully replicating the Russell 1000 Index.

## **Brigade – Opportunistic Credit**

Opportunistic Credit is a fundamental, bottom-up strategy focused on high yield corporate bonds and bank loans with tactical allocations to structured securities, convertibles and other sectors of the bond markets as they become attractive on a relative value basis. While performing credits represent the majority, Brigade will invest up to 35% of the portfolio in distressed securities and restructuring situations if these types of opportunities are attractive on a risk-adjusted basis and the timing is right with respect to the credit cycle. The portfolio is comprised of mostly North American issuers, but they are not restricted geographically and expect to have a moderate allocation to Europe over time. Although the portfolio is generally long-only, Brigade has the ability to implement a limited amount of tactical macro hedges.

## **Brown Brothers Harriman – Inflation Indexed Securities**

BBH manages TIPS using three main types of strategies: Fundamental, Technical and Opportunistic. The Fundamental bucket has two sub-strategies, real yield duration and real yield curve slope vs. nominal yield curve slope. The Technical strategies consist of yield curve roll-down, auction cycle trading, seasonal vs. non-seasonal CPI and security selection/option value analysis. Finally, nominal Treasuries vs. TIPS, sector relative value (i.e., corporate or Agency inflation-linked bonds) and non-Dollar inflation-linked bonds make up the Opportunistic group. Real yield duration is held to +/- 1 year vs. the benchmark and the portfolio has a limited allocation to non-index securities, typically 5-10% with a maximum of 20% (including nominal Treasuries).

## **Cushing MLP Alpha TR**

A strategy focusing on bottom-up research of company and sectors that will allow them to identify superior distribution growth opportunities in public MLPs.

## **DE Shaw – DE Shaw US Broad Market Core Alpha Extension Fund**

The D. E. Shaw group believes that there exist some market inefficiencies that may be identified through quantitative analysis, advanced technology, and the insight of practitioners. Identifying these inefficiencies involves a process of hypothesis formulation, testing, and validation. Importantly, to avoid data-mining, the hypothesis formulation precedes the analysis of the historical data. D.E. Shaw's Structured Equity strategies rely largely on quantitative and computational investment techniques developed by the D. E. Shaw over the last 19 years in the course of research conducted for purposes of managing the firm's hedge funds. In addition to its beta one strategies, D.E. Shaw manages substantial assets in its hedge fund strategies. D.E. Shaw's investment process involves a suite of quantitative models, each designed to capitalize on a distinct and uncorrelated set of market inefficiencies. Some of these models are technical in nature and involve price and volume inputs. Other models rely on fundamental data, such as figures gleaned from corporate balance sheets or income statements. Still others, again quantitative, anticipate or react to a particular corporate event or set of events. These models typically operate with forecast horizons of a few weeks to many months. The ability to trade on shorter-term signals distinguishes D.E. Shaw from many of its long only and 130/30 peers. Portfolio construction involves the use of a proprietary optimizer which runs dynamically throughout the trading day. The portfolio is broadly diversified with several hundred long and short positions. Over- and under-weighting of sectors and industries relative to the benchmark will be quite modest, with the intention that most of the alpha be generated by security selection. The US Broad Market Core Alpha Extension Fund is a 130/30 strategy which maintains a beta that is approximately neutral to the Russell 1000 Index.

## **Eaton Vance/Parametric – Structured Emerging Markets Core Equity**

Parametric utilizes a structured, rules-based approach, which they believe is capable of generating enhanced returns with lower volatility compared to both traditional active management and passive capitalization weighted indices. The basic idea is to structure the portfolio with more balanced country weights than the market cap weighted indices, and also to capture a rebalancing premium. This provides more diversification and greater exposure to smaller countries than is provided by the market cap weighted indices. The approach is to divide emerging markets countries into three tiers, and to equally weight the countries within each tier. Tier 1 countries are the largest eight countries that dominate the cap weighted index. Each successive tier is comprised of smaller countries, each of which is given a smaller target weighting in the model portfolio. In aggregate, the eight Tier 1 countries are given a much lower weighting than in the capitalization weighted index, but they nevertheless comprise more than 50% of the portfolio. The Core SEM strategy targets excess return of 3% over a market cycle with 2.5%-4.5% tracking error. It is designed to generate a level of volatility 90%-100% of the MSCI EM index. The strategy invests in 44 countries and will typically hold 700-1,000 securities. Turnover is expected to be in the range of 5%-15%.

## **Franklin Templeton Investments – Global Fixed Income**

Franklin Templeton manages the global bond mandate in an unconstrained fashion using a top-down, fundamental framework. In the short term and on a country-by-country basis there are often inefficiencies in global bond and currency markets, however, over the longer term the market will generally price to fundamentals. Thus, FT focuses on fundamental research to identify long-term opportunities and uses short-term market inefficiencies to build positions in such investments. The investment and portfolio construction process begin with the determination of the Fund's or institutional client's investment objectives, resulting in a set of risk-return parameters and exposure limits within which the portfolio is managed. Next the firm's global economic outlook for the industrialized countries is developed, with a focus on interest rate and exchange rate forecasts. The portfolio's interest rate outlook is a function of global general equilibrium macroeconomic analysis as well as country-specific research. Macroeconomic conditions in the G-3 economies are analyzed first, primarily with respect to how current and projected growth and inflation dynamics are expected to influence monetary policy. This analysis is then extended out to the rest of the industrialized countries (G-13) as well as emerging markets, which results in broad targets for cash, duration, currencies and the developed/emerging market mix. Using the firm's interest rate and exchange rate outlook, probability-weighted horizon returns for bonds of various countries are then calculated. This analysis is used to establish specific country weights and duration targets based on risk-adjusted expected total return measured in the portfolio's base currency. Analysis of emerging markets includes sovereign credit analysis along with greater emphasis on capital flows, inter-market dynamics and trends in the level of risk aversion in the market.

### **INVESCO Realty Advisors – INVESCO Core Equity, LLC**

SamCERA is a founding member of INVESCO's open-end Core Equity real estate fund and rolled its separate account properties into the fund. INVESCO Core Equity, LLC (the "Fund") is a perpetual life, open-end vehicle which invests in a diversified portfolio of institutional quality office, retail, industrial and multifamily residential real estate assets. The Fund buys core properties that are located within the United States, typically requiring an investment of \$10 million or more. The portfolio cannot be more than 30% leveraged.

### **INVESCO Realty Advisors – INVESCO US Val IV**

Invesco has provided SamCERA with Core Real Estate exposure since 2004 through the Invesco Core Equity Fund. The Invesco real estate team manages around \$62B in assets with investments and offices around the globe. Invesco Value Fund IV will look to acquire fundamentally sound but broken "core" assets that can be repositioned into institutional-quality, income producing properties. Investments will be limited to direct equity interests in office, multi-family, retail and industrial properties across the US. The Fund is expected to be geographically concentrated in U.S. gateway cities and top 25 Metropolitan Statistical Areas (MSA's). Invesco Value Fund IV will provide a nice compliment to the more conservative Invesco Core Fund and offer the potential of enhanced returns to the SamCERA Real Estate portfolio.

### **INVESCO Realty Advisors – INVESCO US Val V**

Invesco has provided SamCERA with Core Real Estate exposure since 2004 through the Invesco Core Equity Fund and through the Invesco US Value IV Fund since December 2015. The Invesco real estate team manages around \$62B in assets with investments and offices around the globe. Invesco Value Fund V will be similar to the Value Add IV and look to acquire fundamentally sound but broken "core" assets that can be repositioned into institutional-quality, income producing properties. Investments will be limited to direct equity interests in office, multi-family, retail and industrial properties across the US. The Fund is expected to be geographically concentrated in U.S. gateway cities and top 25 Metropolitan Statistical Areas (MSA's).

### **Mondrian Investment Partners – International Equity**

Mondrian is a value-oriented, defensive manager whose investment philosophy is based on the principle that investments must be evaluated for their fundamental long-term value. The firm's philosophy involves three stated investment objectives: 1) provide a rate of return meaningfully greater than the client's domestic rate of inflation, 2) structure client portfolios that preserve capital during protracted international market declines, and 3) provide portfolio performance that is less volatile than benchmark indices and other international managers. Mondrian applies typical value screening criteria to a universe of 1,500 stocks, from which 500 are selected for more detailed work. Through fundamental research, and the deliberations of the Investment Committee, the universe is further reduced to a list of 150 stocks. The investment team conducts detailed fundamental analysis on the remaining stocks, a process which includes applying the firm's dividend discount model consistently across all markets and industries. Mondrian also uses a purchasing power parity model to give an accurate currency comparison of the value of the stocks under consideration. The firm will only consider buying stocks in countries with good investor protection practices and relatively simple repatriation procedures. A computer-based optimization program is employed in the portfolio construction process. Mondrian's portfolio holds 80-125 issues.

### **PanAgora Asset Management – Defensive U.S. Equity Low Volatility**

PanAgora's Defensive Equity strategy seeks to balance risk exposures within the portfolio across multiple dimensions to achieve true diversification. The Defensive Equity approach is used to construct equity portfolios designed to achieve tailored exposure to certain factors, including low volatility, multi-factor (value, quality, and momentum), and high dividend yield while maintaining less risk concentration throughout the portfolio.

## **Panagora – Diversified Risk Multi Asset Fund**

The Multi Asset team is headed up by Edward Qian, CIO of the group, and the founder of Panagora’s risk parity strategy. A staff of approximately thirteen works in this group on research and portfolio construction, with some people spending more time on the former and some more on the latter. Panagora implements risk parity by distinguishing between three categories of assets: equities, nominal fixed income, and inflation protection. Each of these categories corresponds to a respective economic environment: economic growth, economic contraction and inflation. Panagora’s risk allocation targets 40% each from equities and nominal fixed income, and 20% from inflation protection. In addition to applying concept of risk parity between asset classes, Panagora also applies it within each asset class. The 40/40/20 allocation to equities/nominal fixed income/inflation protection is a long-term strategic allocation. In 2009 Panagora introduced what they refer to as “Dynamic Risk Allocation” or “DRA,” which involves tactically tilting the risk allocations away from the neutral targets in order to enhance returns and reduce risk.

## **Parametric Currency Overlay – Currency Hedge**

An overlay hedge placed on half of the notional value of international equities. The portfolio uses Parametric for this overlay.

## **PIMCO Diversified**

PIMCO Diversified Income Fund offers a broad and flexible multi-credit approach in a liquid and cost-effective format. The Diversified Income Fund seeks to produce consistent above benchmark performance using diversified sources of alpha from a universe that includes global credit as well as “non-core” credit sectors (ex., securitized, emerging markets).

## **PIMCO Private Income Fund**

PIMCO Private Income Fund provides an attractive total return oriented global credit exposure utilizing both top-down sector relative value and bottom up security selection. The strategy invests across private residential, commercial, corporate and specialty finance markets.

## **PGIM RE Debt**

PGIM Real Estate US Debt Fund focuses on a loan origination strategy with a mix of 20% senior long duration loans on stable assets, 60% senior short/medium duration loans on stable and transitional assets, and 20% mezzanine mid/long duration debt.

## **Pyramis Global Advisors – Broad Market Duration Commingled Pool**

Pyramis’ Broad Market Duration (BMD) investment strategy seeks to achieve absolute and risk-adjusted returns in excess of the BC U.S. Aggregate Index, focusing its investments in US Treasuries, agencies, investment grade corporate bonds, mortgage-backed and asset-backed securities. The BMD commingled pool can also hold small, opportunistic positions in out-of-benchmark securities, such as inflation-linked bonds. The investable universe includes all US dollar denominated, investment grade debt securities. The BMD investment approach emphasizes issuer and sector valuation and individual security selection. Through the integration of fundamental and quantitative research and trading, the BMD strategy is implemented in a team environment. Risk management technology is utilized to explicitly quantify benchmark exposures on a daily basis, and Pyramis uses the same analytical framework to assess both index and portfolio risk. Tracking error should range between 40 and 60 basis points per annum over the benchmark, and stringent portfolio construction risk control rules are strictly adhered to.



## **Quantitative Management Associates – QMA Small-Cap Core**

Quantitative Management Associates (QMA) utilizes a bottom-up quantitative framework in order provide a diversified exposure to core U.S. small-cap stocks, while attempting to produce consistent outperformance versus the benchmark with moderate tracking error levels. QMA uses an adaptive, systematic investment process to exploit opportunities created by mispriced securities to consistently add value over long time periods. Bottom-up stock selection drives exposure to key sources of alpha (valuation, growth, and quality). The QMA stock selection model adapts to changes in company growth rates and market environments by putting more emphasis on valuation for slowly growing companies, and more emphasis on future growth projections for companies with higher projected growth rates.

## **Standard Life Aberdeen Global Absolute Return Strategy (GARS)**

The Standard Life Aberdeen Global Absolute Return Strategy (GARS) was initially launched in 2005 to help address Standard Life's own pension plan's deficit problem. GARS' primary investment objective is to deliver a positive absolute return over the medium to long term with lower volatility than equities, irrespective of market conditions. It seeks returns through dynamic allocation to investment opportunities in traditional and advanced asset classes, and also separately exploits the team's security selection expertise. In the search for attractive investment positions, the team follows a rigorous research process. This includes a variety of research techniques, including broad global macro-economic, fundamental analysis, quantitative research and valuation modeling. The GARS investment process is designed to capitalize on an array of research and investment techniques and draws together the team's three-year investment insights. The team then rigorously examines and review position proposals to approve a high conviction, short list of positions that work well together. Having a cash benchmark means that GARS has a potentially unrestricted investment universe and all portfolio holdings are at the Portfolio Manager's discretion. The GARS portfolio also routinely uses a variety of conventional derivatives for investment, liquidity, efficiency and hedging purposes. The GARS strategy has experienced significant growth in its asset under management since it becomes available to external investors in 2006.

## **State Street Global Advisors (SSgA) Custom Real Asset**

SSgA Custom Real Asset portfolio uses a portfolio of liquid real assets to proxy private real assets. The portfolio is comprised of equal weightings of the Bloomberg Commodity Index, S&P Global Natural Resources Index, and S&P Global Infrastructure Index. The portfolio is used to fund upcoming private real asset mandates.

## **Tennenbaum Capital Partners - TCP Direct Lending Fund VIII**

TCP Direct Lending Fund VIII is a private investment fund managed by Tennenbaum Capital Partners ("TCP"). The Fund is designed to continue TCP's successful strategy of investing in privately-originated, performing senior secured debt primarily in North America-based companies with target enterprise values between \$100 million and \$1.5 billion. The Fund will include positions in 1st lien, 2nd lien and unitranche debt, with a preference for floating-rate debt, which TCP believes provides better flexibility to adapt to market conditions. TCP's direct lending strategy has generated attractive investment opportunities across market cycles, as evidenced by the Firm's prior direct lending track record. Fund VIII targets an unlevered annual yield of approximately 9-12%, with its return primarily driven by current income.

### **Western Asset Management – Total Return Unconstrained (TRU)**

Western Asset's Total Return Unconstrained strategy (TRU) seeks to provide bond-like risk and return over the long term but does not have a benchmark. This allows for asset allocation based on value rather than using the construction of a benchmark as baseline positioning. The investment approach is active with very broad latitude on duration (-3 to +8 years) and on asset allocation across all of the eligible sectors in a core plus mandate. The portfolio must have at least 50% of its holdings in investment-grade securities. The flexibility offered by this strategy allows for defensive positioning in rising rate environments and opportunistic deployment of capital when value opportunities arise. It also allows the portfolio managers to emphasize (or deemphasize) either credit or rates when one or the other appears to offer greater (or lesser) value. um non-US exposure.

### **White Oak - White Oak Yield Spectrum Fund**

The White Oak Yield Spectrum Fund's objective is to earn substantial current income by originating, extending, and/or investing in a diversified portfolio of primarily senior secured corporate credit and debt instruments consisting of term loans, asset-based loans and equipment leases and loans issued by small to middle-market companies located primarily in the United States and Canada. It focuses on providing self-originated deals for predominantly non-sponsored, privately-held borrowers.

# Policy Index and Benchmark History

Period Ending: December 31, 2019

Total Plan Policy Index	As of					
	10/1/19	7/1/19	4/1/19	1/1/19	10/1/18	4/1/18
10 Year Treasury +2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
60/40 MSCI World/BBgBarc Global Aggregate (RP)	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
60/40 Russell 3000/BBgBarc US Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
91 Day T-Bills	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Aggregate	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%
BBgBarc BA Intermediate HY	8.0%	7.0%	7.0%	7.0%	7.0%	7.0%
BBgBarc BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Multiverse	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc TIPS	1.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Bloomberg Commodity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
CPI + 5% (RA)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blended Liquid Real Asset	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Blended Private Real Asset	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Libor +4% (HF)	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	9.0%	7.6%	5.7%	3.8%	1.9%	0.0%
MSCI ACWI ex-US IMI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI (Net)	9.0%	11.4%	13.3%	15.2%	17.1%	19.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
NCREIF ODCE	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
NCREIF Property	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 1000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 2000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000	22.0%	22.0%	22.0%	22.0%	22.0%	21.0%
Russell 3000 +3% (PE)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000 +3% 1Q Lag (PE)	6.0%	6.0%	6.0%	6.0%	6.0%	7.0%
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

	10/1/17	2/1/17	1/1/17	10/1/16	9/1/16	1/1/16	7/1/14	1/1/14	2/1/13	1/1/11	10/1/10	1/1/09	5/1/07	6/1/00	3/1/99	9/1/98	7/1/96
10 Year Treasury +2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	10.0%	10.0%
60/40 MSCI World/BBgBarc Global Aggregate (RP)	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
60/40 Russell 3000/BBgBarc US Aggregate (RP)	0.0%	0.0%	0.0%	8.0%	8.0%	8.0%	8.0%	8.0%	6.0%	6.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Aggregate	14.0%	12.0%	10.0%	10.0%	10.0%	10.0%	10.0%	9.3%	11.0%	11.0%	12.9%	27.0%	27.0%	29.0%	25.0%	21.0%	21.0%
BBgBarc BA Intermediate HY	7.0%	6.0%	6.0%	6.0%	5.0%	5.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Multiverse	0.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.8%	4.4%	4.4%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc TIPS	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	3.1%	3.3%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Commodity	0.0%	0.0%	0.0%	0.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	9.0%	9.0%
CPI + 5% (RA)	0.0%	0.0%	0.0%	0.0%	2.0%	2.0%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blended Liquid Real Asset	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blended Private Real Asset	8.0%	7.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Libor +4% (HF)	6.0%	6.0%	5.0%	5.0%	5.0%	5.0%	4.0%	4.0%	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.0%	18.0%	18.0%	21.0%	21.0%	15.0%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	0.0%	19.0%	19.0%	19.0%	20.0%	20.0%	20.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI (Net)	19.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	20.0%	20.0%
NCREIF ODCE	8.0%	7.0%	7.0%	7.0%	7.0%	7.0%	6.0%	6.0%	5.0%	5.0%	5.0%	6.0%	6.0%	6.0%	0.0%	0.0%	0.0%
NCREIF Property	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	6.0%	0.0%	0.0%	0.0%
Russell 1000	0.0%	0.0%	0.0%	0.0%	0.0%	24.0%	24.0%	24.0%	28.0%	28.0%	28.0%	37.0%	37.0%	40.0%	22.0%	20.0%	20.0%
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	0.0%
Russell 2000	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	6.0%	6.0%	7.0%	7.0%	7.0%	9.0%	9.0%	10.0%	15.0%	15.0%	15.0%
Russell 3000	21.0%	23.0%	28.0%	28.0%	28.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000 +3% (PE)	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	8.0%	8.0%	8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000 +3% 1Q Lag (PE)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%
	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

# Policy Index and Benchmark History

Period Ending: December 31, 2019

## Public Equity Benchmark

	As of:																
	10/1/19	7/1/19	4/1/19	1/1/19	10/1/18	10/1/17	2/1/17	10/1/16	9/1/16	1/1/16	1/1/14	10/1/10	5/1/07	6/1/00	3/1/99	9/1/98	1/1/96
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	34.0%	31.3%	23.1%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	22.5%	18.5%	13.9%	9.3%	4.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	0.0%	0.0%	0.0%	0.0%	0.0%	47.5%	45.2%	40.4%	41.7%	41.7%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI (Net)	22.5%	27.8%	32.4%	37.0%	41.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.3%	33.3%	33.3%
Russell 1000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	48.0%	52.8%	55.2%	61.5%	35.5%	33.3%	33.3%
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	8.4%	0.0%
Russell 2000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%	12.0%	13.2%	13.5%	15.4%	24.2%	25.0%	25.0%
Russell 3000	55.0%	53.7%	53.7%	53.7%	53.7%	52.5%	54.8%	59.6%	58.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.4%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

## US Equity Benchmark

	As of:						
	9/1/16	1/1/16	6/1/00	3/1/99	9/1/98	7/1/96	1/1/95
Russell 1000	0.0%	85.7%	80.0%	52.0%	50.0%	50.0%	69.0%
Russell 1000 Value	0.0%	0.0%	0.0%	12.0%	12.5%	0.0%	0.0%
Russell 2000	0.0%	14.3%	20.0%	36.0%	37.5%	37.5%	14.0%
Russell 3000	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S & P 500	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	17.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

## International Equity Benchmark

	As of:								
	10/1/19	7/1/19	4/1/19	1/1/19	10/1/18	10/1/17	1/1/14	6/1/00	1/1/96
MSCI ACWI ex US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	50.0%	40.0%	30.0%	20.0%	10.0%	0.0%	0.0%	100.0%	0.0%
MSCI ACWI ex US IMI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
MSCI ACWI ex US IMI (Net)	50.0%	60.0%	70.0%	80.0%	90.0%	100.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

## Fixed Income Benchmark

	As of:												
	10/1/19	10/1/17	2/1/17	10/1/16	4/1/16	7/1/14	1/1/14	2/1/13	1/1/11	10/1/10	6/1/00	3/1/99	7/1/96
BBgBarc Aggregate	63.6%	66.7%	57.1%	52.6%	55.5%	50.0%	46.3%	50.0%	50.0%	58.6%	100.0%	83.3%	70.0%
BBgBarc BA Intermediate HY	36.4%	33.3%	28.6%	31.6%	27.8%	25.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.3%	0.0%	0.0%	0.0%
BBgBarc Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.0%	15.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Multiverse	0.0%	0.0%	14.3%	15.8%	16.7%	15.0%	18.8%	20.0%	20.0%	20.5%	0.0%	0.0%	0.0%
BBgBarc TIPS	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%	10.0%	14.0%	15.0%	13.6%	0.0%	0.0%	0.0%
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.7%	30.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

## Opportunistic Credit Benchmark

	As of:	
	1/1/14	12/1/09
BBgBarc BA Intermediate HY	100.0%	0.0%
BBgBarc Credit BAA	0.0%	100.0%
	100.0%	100.0%

## Risk Parity Benchmark

	As of:	
	1/1/17	10/1/10
BBgBarc Aggregate	0.0%	40.0%
BBgBarc Global Aggregate	40.0%	0.0%
MSCI World	60.0%	0.0%
Russell 3000	0.0%	60.0%
	100.0%	100.0%

# Policy Index and Benchmark History

Period Ending: December 31, 2019

Alternatives Benchmark	As of:						
	10/1/18	4/1/18	2/1/17	4/1/16	1/1/16	1/1/14	1/1/11
60/40 Russell 3000/BBgBarc US Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	30.0%
Bloomberg Commodity	0.0%	0.0%	0.0%	0.0%	17.7%	18.8%	15.0%
CPI + 5% (RA)	0.0%	0.0%	0.0%	0.0%	11.8%	12.5%	0.0%
Libor +4% (HF)	50.0%	46.2%	46.2%	41.7%	29.4%	25.0%	15.0%
Russell 3000 +3% (PE)	0.0%	0.0%	53.8%	58.3%	41.2%	43.8%	40.0%
Russell 3000 +3% 1Q Lag (PE)	50.0%	53.8%	0.0%	0.0%	0.0%	0.0%	0.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Private Equity Benchmark	As of:	
	4/1/18	10/1/10
Russell 3000 +3% 1Q Lag	100.0%	0.0%
Russell 3000 +3%	0.0%	100.0%
	100.0%	100.0%

Hedge Fund Benchmark	As of:
	10/1/10
Libor +4%	100.0%
	100.0%

Inflation Hedge	As of:				
	10/1/19	4/1/18	2/1/17	10/1/16	4/1/16
BBgBarc TIPS	5.88%	11.11%	12.50%	14.3%	14.3%
Bloomberg Commodity	0.00%	0.00%	0.00%	0.0%	21.4%
CPI + 5% (RA)	0.00%	0.00%	0.00%	0.0%	14.3%
Blended Liquid Real Asset	35.29%	33.34%	0.00%	0.0%	0.0%
Blended Private Real Asset	11.77%	11.11%	43.75%	35.7%	0.0%
NCREIF ODCE	47.06%	44.44%	43.75%	50.0%	50.0%
	100.0%	100.0%	100.0%	100.0%	100.0%

Public Real Asset Benchmark	As of:	
	10/1/16	1/1/14
Bloomberg Roll Select Commodity	34.0%	0.0%
S&P Global Large-MidCap Commodity and Resources	33.0%	0.0%
S&P Global Infrastructure	33.0%	0.0%
CPI + 5%	0.0%	100.0%
	100.0%	100.0%

Private Real Asset Benchmark	As of:		
	4/1/18	10/1/16	1/1/14
Bloomberg Roll Select Commodity	0.0%	34.0%	0.0%
S&P Global Large-MidCap Commodity and Resources	0.0%	33.0%	0.0%
50/50 S&P Global Infra & Lrg-MidCap Com & Resources +2% 1QL	100.0%	0.0%	0.0%
S&P Global Infrastructure	0.0%	33.0%	0.0%
CPI + 5%	0.0%	0.0%	100.0%
	100.0%	100.0%	100.0%

Private RA Secondary Benchmark	As of:
	9/1/14
Cambridge Associates Private Natural Resources 1 Qtr Lag	50.0%
Cambridge Associates Private Infrastructure 1 Qtr Lag	50.0%
	100.0%

Real Estate Benchmark	As of:		
	1/1/09	6/1/00	7/1/96
10 Year Treasury +2%	0.0%	0.0%	100.0%
NCREIF ODCE	100.0%	0.0%	0.0%
NCREIF Property	0.0%	100.0%	0.0%
	100.0%	100.0%	100.0%

# Policy Index and Benchmark History

Period Ending: December 31, 2019

Baillie Gifford Benchmark	As of:	
	1/1/14	5/1/12
MSCI ACWI ex-US	100.0%	0.0%
MSCI EAFE	0.0%	100.0%
	<b>100.0%</b>	<b>100.0%</b>

Baillie Gifford Secondary Benchmark	As of:	
	1/1/14	5/1/12
MSCI ACWI ex-US Growth	100.0%	0.0%
MSCI EAFE Growth	0.0%	100.0%
	<b>100.0%</b>	<b>100.0%</b>

Brigade Secondary Benchmark	As of:	
	8/1/10	
BBgBarc High Yield	50.0%	
Credit Suisse Leveraged Loans	50.0%	
	<b>100.0%</b>	

AQR GRP, 10% Volatility	As of:	
	1/1/17	3/1/11
BBgBarc Aggregate	0.0%	40.0%
BBgBarc Global Aggregate	40.0%	0.0%
MSCI World	60.0%	0.0%
Russell 3000	0.0%	60.0%
	<b>100.0%</b>	<b>100.0%</b>

PanAgora	As of:	
	1/1/17	8/1/14
BBgBarc Aggregate	0.0%	40.0%
BBgBarc Global Aggregate	40.0%	0.0%
MSCI World	60.0%	0.0%
Russell 3000	0.0%	60.0%
	<b>100.0%</b>	<b>100.0%</b>

PIMCO Diversified	As of:	
	9/1/17	
JPMorgan EMBI Global	33.3%	
ICE BofAMLBB-BRatedDvlpdMktsHYHdgdUSD	33.3%	
Global Agg Credit Ex EM USD hedged	33.4%	
	<b>100.0%</b>	

SSgA Custom Real Asset	As of:	
	10/1/16	
Bloomberg Roll Select Commodity TR	33.34%	
S&P Global Large-MidCap Commodity and Resources	33.33%	
S&P Global Infrastructure	33.33%	
	<b>100.0%</b>	

# Fee Schedule

Period Ending: December 31, 2019

## **Baillie Gifford**

First \$25 million:	0.60% per annum
Next \$75 million:	0.50% per annum
Next \$300 million:	0.40% per annum
Thereafter:	0.30% per annum

## **BlackRock-EAFE Equity Index Fund**

On All Assets:	0.03% per annum
----------------	-----------------

## **BlackRock-Russell 1000 Index Fund**

On All Assets:	0.01% per annum
----------------	-----------------

## **BlackRock-Intermediate Govt Bond Index Fund**

On All Assets:	0.025% per annum
----------------	------------------

## **Brown Brothers Harriman**

On All Assets:	0.15% per annum
----------------	-----------------

## **Parametric**

On All Assets:	0.30% per annum
----------------	-----------------

## **Acadian Asset Management**

First \$50 million:	0.27% per annum
Next \$50 million:	0.225% per annum
Thereafter:	0.18% per annum

## **Parametric Overlay**

First \$50 million:	0.12% per annum
Next \$100 million:	0.10% per annum
Thereafter:	0.05% per annum
Plus monthly reporting fee of \$1500	

## **Parametric Currency Overlay**

First \$250 million:	0.05% per annum
Thereafter:	0.03% per annum

## **Cushing Asset Management**

First \$50 million:	0.70% per annum
Next \$50 million:	0.60% per annum
Thereafter:	0.55% per annum

## **Franklin Templeton Investment**

First \$50 million:	0.40% per annum
Next \$50 million:	0.30% per annum
Thereafter:	0.25% per annum

## **FIAM Bond**

First \$50 million:	0.20% per annum
Next \$50 million:	0.175% per annum
Next \$100 million:	0.10% per annum
Thereafter:	0.085% per annum

## **PanAgora Asset Management**

First \$50 million:	0.25% per annum
Next \$50 million:	0.15% per annum
Thereafter:	0.10% per annum

## **PIMCO Diversified**

On All Assets:	0.75% per annum
----------------	-----------------

## **QMA**

First \$50 million:	0.55% per annum
Thereafter:	0.50% per annum

## **Western Asset Management**

On All Assets:	0.25% per annum
Performance Fee:	20.00%

## **Mondrian Investment Partners**

### Assets Below \$190 million

First \$20 million:	1.00% per annum
Thereafter:	0.33% per annum

### Assets Above \$190 million

First \$50 million:	1.00% per annum
Next \$150 million:	0.19% per annum
Thereafter:	0.33% per annum

Name	Primary Benchmark	Rule 1	Rule 2	Rule 3
Acadian US MGD V	Russell 1000	--	--	--
DE Shaw	Russell 1000	✓	✓	✓
PanAgora Defuseq	Russell 1000	--	--	--
QMA US Small Cap	Russell 2000	--	--	--
Baillie Gifford	MSCI ACWI ex US	✓	✗	✓
Mondrian	MSCI ACWI ex USA Value Gross	✓	✓	✓
Parametric Core	MSCI Emerging Markets Gross	--	--	--
FIAM Bond	BBgBarc US Aggregate TR	✓	✓	✓
Western TRU	3-Month Libor Total Return USD	--	--	--
Angelo Gordon Opportunistic	BBgBarc US Aggregate TR	✓	--	✓
Angelo Gordon STAR	BBgBarc US Aggregate TR	✓	--	✓
Beach Point Select	BBgBarc BA Intermediate HY	--	--	--
Brigade Capital	BBgBarc BA Intermediate HY	✗	✗	✗
PIMCO Diversified	Blended PIMCO Diversified Index	--	--	--
Franklin Templeton	BBgBarc Multiverse TR	--	--	--
PIMCO Private Income	BBgBarc BA Intermediate HY	--	--	--
TCP Direct Lending VIII	Cliffwater Direct Lending Index	--	--	--
White Oak Yield	Cliffwater Direct Lending Index	--	--	--
AQR DELTA XN	Libor 1 month +4%	✗	✗	✗
Aberdeen Standard GARS	Libor 1 month +4%	--	--	--

Rule 1 - Manager has underperformed the benchmark index for the five year period.

Rule 2 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.

Rule 3 - Excess 5 Year Sharpe Ratio vs. Benchmark is positive



Manager Compliance (Gross)

Period Ending: December 31, 2019

Name	Primary Benchmark	Rule 1	Rule 2	Rule 3
Acadian US MGD V	Russell 1000	--	--	--
DE Shaw	Russell 1000	✓	✓	✓
PanAgora Defuseq	Russell 1000	--	--	--
QMA US Small Cap	Russell 2000	--	--	--
Baillie Gifford	MSCI ACWI ex US	✓	✓	✓
Mondrian	MSCI ACWI ex USA Value Gross	✓	✓	✓
Parametric Core	MSCI Emerging Markets Gross	--	--	--
FIAM Bond	BBgBarc US Aggregate TR	✓	✓	✓
Western TRU	3-Month Libor Total Return USD	--	--	--
Angelo Gordon Opportunistic	BBgBarc US Aggregate TR	✓	--	✓
Angelo Gordon STAR	BBgBarc US Aggregate TR	✓	--	✓
Beach Point Select	BBgBarc BA Intermediate HY	--	--	--
Brigade Capital	BBgBarc BA Intermediate HY	✗	✗	✗
PIMCO Diversified	Blended PIMCO Diversified Index	--	--	--
Franklin Templeton	BBgBarc Multiverse TR	--	--	--
PIMCO Private Income	BBgBarc BA Intermediate HY	--	--	--
TCP Direct Lending VIII	Cliffwater Direct Lending Index	--	--	--
White Oak Yield	Cliffwater Direct Lending Index	--	--	--
AQR DELTA XN	Libor 1 month +4%	✗	✗	✗
Aberdeen Standard GARS	Libor 1 month +4%	--	--	--

Rule 1 - Manager has underperformed the benchmark index for the five year period.

Rule 2 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.

Rule 3 - Excess 5 Year Sharpe Ratio vs. Benchmark is positive

Manager Performance Comparison (Gross of Fees)

Period Ending: December 31, 2019

	Oct	Nov	Dec	4th Qtr. 2019	Difference	3rd Qtr. 2019	Difference	2nd Qtr. 2019	Difference	1st Qtr. 2019	Difference	4th Qtr. 2018	Difference
Verus	-0.21%	2.51%	2.85%	5.21%		2.82%		4.71%		10.70%		-13.79%	
Acadian US MGD V	-0.21%	2.51%	2.85%	5.21%	0.00%	2.82%	0.00%	4.71%	0.00%	10.69%	0.01%	-13.79%	0.00%
Russell 1000 Index	2.12%	3.78%	2.89%	9.04%		1.42%		4.25%		14.00%		-13.82%	
Verus	2.12%	3.78%	2.89%	9.04%		1.43%		4.25%		14.02%		-13.79%	
BlackRock Russell 1000	2.12%	3.78%	2.89%	9.04%	0.00%	1.42%	0.01%	4.25%	0.00%	14.02%	0.00%	-13.79%	0.00%
Russell 1000 Index	2.12%	3.78%	2.89%	9.04%		1.42%		4.25%		14.00%		-13.82%	
Verus	2.50%	3.72%	2.52%	8.98%		1.53%		2.75%		12.68%		-14.04%	
D.E. Shaw	2.50%	3.72%	2.52%	8.98%	0.00%	1.54%	-0.01%	2.75%	0.00%	12.69%	-0.01%	-14.04%	0.00%
Russell 1000 Index	2.12%	3.78%	2.89%	9.04%		1.42%		4.25%		14.00%		-13.82%	
Verus	-0.68%	1.37%	2.62%	3.32%		3.20%		5.51%		15.01%		-14.04%	
PanAgora Defuseq	-0.67%	1.37%	2.62%	3.33%	-0.01%	3.19%	0.01%	5.55%	-0.04%	15.01%	0.00%	-14.04%	0.00%
Russell 1000 Index	2.12%	3.78%	2.89%	9.04%		1.42%		4.25%		14.00%		-13.82%	
Verus	3.10%	3.78%	2.20%	9.35%		-0.62%		0.37%		12.59%		-20.52%	
QMA US Small Cap	3.10%	3.78%	2.20%	9.35%	0.00%	-0.62%	0.00%	0.38%	-0.01%	12.59%	0.00%	-20.52%	0.00%
Russell 2000 Index	2.63%	4.12%	2.88%	9.94%		-2.40%		2.10%		14.58%		-20.20%	
Verus	4.84%	2.07%	5.22%	12.60%		-0.92%		5.96%		13.47%		-15.28%	
Baillie Gifford (net)	4.80%	2.02%	5.18%	12.46%	0.15%	-0.95%	0.03%	5.89%	0.08%	13.41%	0.06%	-15.28%	0.00%
MSCI ACWI ex US	3.50%	0.90%	4.36%	8.99%		-1.70%		3.22%		10.44%		-11.41%	
MSCI ACWI ex US Growth	3.65%	1.53%	4.17%	9.63%		-0.79%		4.55%		12.42%		-12.16%	
Verus	3.60%	1.15%	3.26%	8.22%		-1.05%		3.92%		10.08%		-12.52%	
BlackRock EAFE Equity	3.60%	1.16%	3.26%	8.22%	0.00%	-1.05%	0.00%	3.92%	0.00%	10.08%	0.00%	-12.52%	0.00%
MSCI EAFE (Net)	3.59%	1.13%	3.25%	8.17%		-1.07%		3.68%		9.98%		-12.54%	
MSCI EAFE (Gross)	3.60%	1.14%	3.27%	8.21%		-1.00%		3.97%		10.13%		-12.50%	
Verus	4.83%	0.91%	4.76%	10.81%		-2.66%		1.47%		9.19%		-8.82%	
Mondrian	4.82%	0.90%	4.77%	10.81%	0.00%	-2.62%	-0.04%	1.48%	-0.01%	9.18%	0.01%	-8.79%	-0.03%
MSCI ACWI -ex US Value Index	3.35%	0.22%	4.56%	8.29%		-2.66%		1.86%		8.46%		-10.63%	
MSCI ACWI -ex US	3.50%	0.90%	4.36%	8.99%		-1.70%		3.22%		10.44%		-11.41%	
Verus	2.81%	-0.71%	5.98%	8.18%		-4.23%		2.13%		7.73%		-5.81%	
Parametric Core	2.82%	-0.70%	6.00%	8.23%	-0.05%	-4.19%	-0.04%	2.19%	-0.06%	7.80%	-0.07%	-5.77%	-0.04%
MSCI EM Market Index	4.23%	-0.13%	7.53%	11.92%		-4.11%		0.74%		9.97%		-7.40%	
Verus	0.30%	-0.23%	-0.03%	0.04%		1.22%		2.37%		1.63%		2.24%	
BlackRock Intermediate Govt	0.30%	-0.23%	-0.03%	0.04%	0.00%	1.22%	0.00%	2.37%	0.00%	1.63%	0.00%	2.24%	0.00%
BBgBarc US Govt Int Index	0.29%	-0.24%	-0.03%	0.01%		1.18%		2.34%		1.58%		2.22%	
Verus	0.48%	0.06%	0.08%	0.62%		2.23%		3.16%		3.47%		1.07%	
FIAM Bond	0.48%	0.06%	0.08%	0.62%	0.00%	2.23%	0.00%	3.16%	0.00%	3.47%	0.00%	1.07%	0.00%
BBgBarc US Aggregate Index	0.30%	-0.05%	-0.07%	0.18%		2.27%		3.08%		2.94%		1.64%	

Manager Performance Comparison (Gross of Fees)

Period Ending: December 31, 2019

	Oct	Nov	Dec	4th Qtr. 2019	Difference	3rd Qtr. 2019	Difference	2nd Qtr. 2019	Difference	1st Qtr. 2019	Difference	4th Qtr. 2018	Difference
Verus	1.04%	-0.06%	2.10%	3.09%		1.02%		2.31%		2.95%		0.74%	
Western TRU	1.04%	-0.06%	2.10%	3.09%	0.00%	1.02%	0.00%	2.31%	0.00%	2.95%	0.00%	0.74%	0.00%
3-Month Libor Total Return USD Index	0.16%	0.16%	0.16%	0.49%		0.55%		0.62%		0.67%		0.68%	
BBgBarc US Aggregate Index	0.30%	-0.05%	-0.07%	0.18%		2.27%		3.08%		2.94%		1.64%	
Verus (Net)				2.21%		3.34%		5.43%		0.89%		0.45%	
Angelo Gordon Opportunistic				2.21%	0.00%	3.34%	0.00%	5.43%	0.00%	0.89%	0.00%	0.45%	0.00%
BBgBarc US Aggregate Index				0.18%		2.27%		3.08%		2.94%		1.64%	
Verus (Net)				2.20%		-3.95%		6.24%		5.44%		2.51%	
Angelo Gordon STAR Fund (Net)				2.20%	0.00%	-3.95%	0.00%	6.24%	0.00%	5.44%	0.00%	2.51%	0.00%
BBgBarc US Aggregate Index				0.18%		2.27%		3.08%		2.94%		1.64%	
Verus	-0.24%	1.19%	2.38%	3.36%		1.54%		3.03%		4.44%		-3.98%	
Beach Point Select (Net)	-0.24%	1.19%	2.38%	3.35%	0.00%	1.54%	0.00%	3.03%	0.00%	4.44%	0.00%	-3.98%	0.00%
BBgBarc BA Intermediate HY	0.54%	0.59%	1.14%	2.29%		1.84%		2.87%		7.00%		-2.67%	
Verus	0.19%	-0.20%	3.21%	3.19%		-0.41%		1.92%		4.26%		-5.56%	
Brigade Capital (Net)	0.19%	-0.20%	3.21%	3.19%	0.00%	-0.41%	0.00%	1.92%	0.00%	4.18%	0.08%	-5.55%	-0.01%
BBgBarc BA Intermediate HY	0.54%	0.59%	1.14%	2.29%		1.84%		2.87%		7.00%		-2.67%	
50% BBgBarc HY/ 50% Bank Loan	-0.10%	0.44%	1.81%	2.15%		1.13%		2.05%		5.51%		-3.81%	
Verus	0.51%	0.34%	0.82%	1.67%		1.20%		3.59%		5.82%		-1.26%	
PIMCO Diversified (Net)	0.51%	0.34%	0.82%	1.67%	0.00%	1.20%	0.00%	3.59%	0.00%	5.81%	0.01%	-1.26%	0.00%
Blended PIMCO Diversified Index	0.31%	0.21%	1.18%	1.70%		1.93%		3.48%		5.97%		-1.47%	
BBgBarc BA Intermediate HY	0.54%	0.59%	1.14%	2.29%		1.84%		2.87%		7.00%		-2.67%	
Verus	-0.04%	-0.55%	1.96%	1.36%		-3.39%		1.45%		1.72%		2.14%	
Franklin Templeton Investments	-0.04%	-0.55%	1.96%	1.36%	0.01%	-3.39%	0.00%	1.45%	0.00%	1.72%	0.00%	2.14%	0.00%
BBgBarc Multiverse Index	0.70%	-0.75%	0.70%	0.64%		0.63%		3.31%		2.40%		1.02%	
Verus				-0.01%		0.00%							
PIMCO Private Income				-0.01%	0.00%	0.00%	0.00%						
BBgBarc BA Intermediate HY				2.29%		1.84%							
Cliffwater Direct Lending Index				1.77%		2.25%							
Verus				1.46%		1.57%		1.75%		2.41%		1.75%	
TCP Direct Lending VIII				1.46%	0.00%	1.57%	0.00%	1.75%	0.00%	2.41%	0.00%	1.75%	0.00%
Cliffwater Direct Lending Index				1.77%		2.25%		2.78%		0.84%		2.38%	
Verus				0.00%		0.00%		0.00%		0.00%		2.03%	
White Oak Yield				0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.03%	0.00%
Cliffwater Direct Lending Index				1.77%		2.25%		2.78%		0.84%		2.38%	

Manager Performance Comparison (Gross of Fees)

Period Ending: December 31, 2019

	Oct	Nov	Dec	4th Qtr. 2019	Difference	3rd Qtr. 2019	Difference	2nd Qtr. 2019	Difference	1st Qtr. 2019	Difference	4th Qtr. 2018	Difference
Verus	1.16%	0.16%	3.11%	4.47%		1.23%		5.70%		11.14%		-5.44%	
AQR GRP, 10% Volatility (Net)	1.16%	0.16%	3.11%	4.47%	0.00%	1.23%	0.00%	5.70%	0.00%	11.14%	0.00%	-5.44%	0.00%
60% R3000/ 40% BBgBarc Agg	1.46%	1.62%	1.72%	4.87%		1.38%		3.68%		8.65%		-7.49%	
S&P Risk Parity 10% Target Volatility TR	1.35%	0.32%	1.46%	3.16%		2.41%		4.34%		7.98%			
Verus	0.07%	-0.70%	0.42%	-0.21%		4.18%		5.44%		11.43%		-4.10%	
PanAgora (Net)	0.07%	-0.70%	0.42%	-0.21%	0.00%	4.18%	0.00%	5.44%	0.00%	11.43%	0.00%	-4.10%	0.00%
60% R3000/ 40% BBgBarc Agg	1.46%	1.62%	1.72%	4.87%		1.38%		3.68%		8.65%		-7.49%	
S&P Risk Parity 10% Target Volatility TR	1.35%	0.32%	1.46%	3.16%		2.41%		4.34%		7.98%		-8.05%	
Verus	-2.53%	-1.62%	1.08%	-3.07%		-1.18%		-4.43%		-1.95%		-4.31%	
AQR DELTA XN (Net)	-2.53%	-1.62%	1.08%	-3.07%	0.00%	-1.18%	0.00%	-4.43%	0.00%	-1.97%	0.02%	-4.31%	0.00%
Libor + 4%	0.48%	0.47%	0.48%	1.44%		1.54%		1.62%		1.52%		1.59%	
Verus	-0.25%	0.00%	1.51%	1.26%		1.60%		1.39%		4.63%		-2.24%	
Aberdeen Standard GARS (Net)	-0.25%	0.00%	1.51%	1.26%	0.00%	1.60%	0.00%	1.39%	0.00%	4.63%	0.00%	-2.25%	0.01%
Libor + 4%	0.48%	0.47%	0.48%	1.44%		1.54%		1.62%		1.52%		1.59%	
Verus				2.27%		2.01%		1.04%		1.09%		2.16%	
INVESCO Real Estate				2.29%	-0.02%	2.00%	0.01%	1.04%	0.00%	1.11%	-0.02%	2.16%	0.00%
NCREIF NFI ODCE Index				1.51%		1.31%		0.99%		1.42%		1.76%	
Verus				3.64%		2.12%		1.20%		4.17%		4.25%	
Invesco US Val IV				3.64%	0.00%	2.12%	0.00%	1.20%	0.00%	4.17%	0.00%	4.25%	0.00%
NCREIF NFI ODCE Index				1.51%		1.31%		0.99%		1.42%		1.76%	
NCREIF CEVA 1Q Lag - NET				2.95%		2.95%		2.95%		2.95%		2.95%	
Verus				5.17%		1.09%		5.72%					
Invesco US Val V				5.17%	0.00%	1.09%	0.00%	5.72%	0.00%				
NCREIF NFI ODCE Index				1.51%		1.31%		0.99%					
NCREIF CEVA 1Q Lag - NET				2.95%		2.95%		2.95%					
Verus (net)				1.38%		1.57%		1.45%		1.61%		1.64%	
PGIM RE US Debt Fund (net)				1.38%	0.00%	1.57%	0.00%	1.45%	0.00%	1.61%	0.00%	1.64%	0.00%
NCREIF NFI ODCE Index				1.51%		1.31%		0.99%		1.42%		1.76%	
Verus	-4.85%	-3.49%	7.89%	-0.93%		-3.73%		-1.06%		17.88%		-17.65%	
Cushing MLP Alpha TR	-4.85%	-3.49%	7.89%	-0.93%	0.00%	-3.73%	0.00%	-1.06%	0.00%	17.88%	0.00%	-17.65%	0.00%
50% BBgBarc US TIPS/ 50% Blended PRA	0.75%	-0.34%	2.89%	3.31%		-0.63%		2.17%		6.62%		-4.98%	
Alerian MLP TR USD	-6.22%	-5.75%	8.53%	-4.08%		-5.02%		0.12%		16.82%		-17.30%	

**1 MSCI**

**1.1 MSCI US MARKET BREAKPOINTS**

Break Point*	Companies included
Large Cap	1-200
Medium-Large Cap	201-550
Medium Cap	551-750
Medium-Small Cap	751-2500
Small Cap	2501+

\*MSCI only categorizes equities per size into large, mid and small cap. For InvestorForce Report analytics coherence regarding domestic benchmarks the buffer zones of the mid-cap category are used to determine Medium-Large and Medium-Small Cap categories.

As Of	Large Cap	Medium Large Cap	Medium Cap	Medium Small Cap	Small Cap
12/31/2019	19.41	11.708	5.699	2.981	0
9/30/2019	19.41	11.708	5.699	2.981	0
6/30/2019	17.991	11.416	5.265	3.039	0
3/31/2019	17.991	11.416	5.265	3.039	0
12/31/2018	18.559	11.536	5.547	3.012	0
09/30/2018	18.559	11.536	5.547	3.012	0
06/30/2018	17.921	10.888	5.334	3.023	0
03/31/2018	17.921	10.888	5.334	3.023	0
12/31/2017	17.679	9.979	5.011	2.793	0
9/30/2017	17.696	9.979	5.011	2.793	0
6/30/2017	15.834	9.267	4.517	2.573	0
3/31/2017	15.834	9.267	4.517	2.573	0
12/31/2016	15.239	9.375	4.416	2.520	0
9/30/2016	15.239	9.375	4.416	2.520	0
6/30/2016	15.358	9.43	4.548	2.591	0
3/31/2016	15.358	9.43	4.548	2.591	0
12/31/2015	16.507	9.968	5.069	2.917	0
9/30/2015	16.507	9.968	5.069	2.917	0
6/30/2015	15.288	9.09	4.506	2.596	0
3/31/2015	15.356	9.083	4.491	2.577	0
12/31/2014	15.356	9.083	4.491	2.577	0



Number in billion USD

InvestorForce Report reflects changes in the MSCI breakpoints once MSCI publishes new breakpoints. For months when no new breakpoints are published always the last breakpoints are applied. Changes usually but always happen around re-balancing of the indexes. Some index reviews do not contain changes to the market-cap breakpoints.

1.2 MSCI DEVELOPED AND EMERGING MARKET BREAKPOINTS

In case of MSCI Indexes to define the Size - Segment Indexes for a market, the following free float - adjustedmarket capitalization Market Coverage Target Ranges are applied to the Market Investable Equity Universe:

Break Point	Companies included
Large Cap Index	70% ±5%
Standard Index*	85% ±5%
Investable Market Index**	99%+1% or -0.5%

\* Standard Index (Large+Mid)

\*\*Investable Market Index (Large+Mid+Small)

MSCI Country Classification can be found here: <https://www.msci.com/market-classification>

For Emerging Markets, the Global Minimum Size Reference is set at *one-half* the corresponding level of full market capitalization used for the Developed Markets for each size-segment.

As Of	Large Cap DM	Large Cap EM	Medium Cap DM	Medium Cap EM	Small Cap
12/31/2019	17.828	8.914	6.127	3.0635	0
9/30/2019	17.274	8.637	6.203	3.1015	0
6/30/2019	17.274	8.637	6.203	3.1015	0
3/31/2019	16.204	8.102	5.928	2.964	0
12/31/2018	16.204	8.102	5.928	2.964	0
9/30/2018	17.201	8.6005	6.374	3.187	0
6/30/2018	17.201	8.6005	6.374	3.187	0
3/31/2018	16.392	8.196	6.106	3.053	0
12/31/2017	16.392	8.196	6.106	3.053	0
9/30/2017	15.008	7.504	5.500	2.750	0
6/30/2017	15.008	7.504	5.500	2.750	0

3/31/2017	14.361	7.180	5.077	2.538	0
12/31/2016	14.361	7.180	5.077	2.538	0
9/30/2016	14.180	7.090	5.076	2.538	0
6/30/2016	14.180	7.090	5.076	2.538	0
3/31/2016	14.077	7.0385	5.046	2.523	0
12/31/2015	14.077	7.0385	5.046	2.5230	0
9/30/2015	14.883	7.4415	5.359	2.6795	0
6/30/2015	14.883	7.4415	5.359	2.6795	0
3/31/2015	13.368	6.684	4.781	2.3905	0
12/31/2014	13.368	6.684	4.781	2.3905	0

Number in billion USD

InvestorForce Report shows changes in the MSCI breakpoints once MSCI publishes a new one. For months when no new breakpoints are published always the last breakpoint is applied. Changes usually happen around re-balancing of the indexes.

**2 RUSSELL US BREAKPOINTS**

The market capitalization breakpoints that appear in the Market Capitalization Chart are defined by the Russell 3000 Index and change for each period end. Russell calculated the total market capitalization of each security for the end of the period, based on the total shares and price, to determine whether it is large enough for inclusion in one or more of the Russell Breakpoints.

Once the market capitalization for each security is determined, each security is then placed in the appropriate market capitalization breakpoint. A market capitalization breakpoint is determined by the break between the companies below.

Break Point	Companies included
Large Cap	50 Largest US Companies
Medium Large Cap	Next largest 150 US Companies
Medium Cap	Next largest 300 US Companies
Medium Small Cap	Next largest 500 US Companies
Small Cap	All US Companies below 1,000 largest

After the breakpoints are determined by the ranges above, new members are assigned on the basis of the breakpoints and existing members are reviewed to determine if they fall within a cumulative 5% market cap range around the new market capitalization breakpoints. If an existing securities market cap falls within this 5%, it will remain in its current index rather than move into a new market capitalization based index.

## Market Capitalization Breakpoints

Period Ending: December 31, 2019

As Of	Large Cap	Medium Large Cap	Medium Cap	Medium Small Cap	Small Cap
12/31/2019	111.442	29.379	11.055	4.376	0
9/30/2019	111.164	28.416	9.142	3.059	0
6/30/2019	110.136	28.151	9.061	3.057	0
3/31/2019	113.008	26.539	8.787	2.951	0
12/31/2018	93.377	23.285	7.693	2.595	0
9/30/2018	106.633	28.088	9.457	3.273	0
6/30/2018	104.455	26.511	9.202	3.171	0
3/31/2018	101.922	26.399	8.890	2.958	0
12/31/2017	95.036	26.237	8.819	3.021	0
9/30/2017	93.539	24.882	8.344	2.935	0
6/30/2017	87.845	25.481	8.204	2.859	0
3/31/2017	89.968	25.293	8.241	2.737	0
12/31/2016	84.960	23.168	7.890	2.702	0
9/30/2016	78.745	23.385	7.394	2.533	0
6/30/2016	77.349	22.250	7.1432	2.444	0
3/31/2016	83.360	22.414	7.435	2.395	0
12/31/2015	90.075	24.308	8.141	2.936	0
9/30/2015	88.944	23.139	7.993	2.946	0
6/30/2015	92.87	25.07	8.797	3.352	0
3/31/2015	93.082	25.494	8.794	3.384	0
12/31/2014	89.92	25.19	8.51	3.29	0
9/30/2014	84.51	24.44	7.97	3.04	0
6/30/2014	80.39	23.62	8.07	3.24	0
3/31/2014	76.77	23.15	7.83	3.06	0
12/31/2013	77.11	22.27	7.65	3.03	0
9/30/2013	72.4	19.93	7.15	2.71	0
6/30/2013	68.47	19.36	6.48	2.46	0
3/31/2013	64.31	18.64	6.39	2.39	0
12/31/2012	58.45	16.8	5.75	2.13	0
9/30/2012	57.06	16.48	5.49	2.08	0
6/30/2012	55.65	16.13	5.14	1.99	0
3/31/2012	57.58	16.43	5.55	2.13	0
12/31/2011	51.97	14.66	4.93	1.93	0

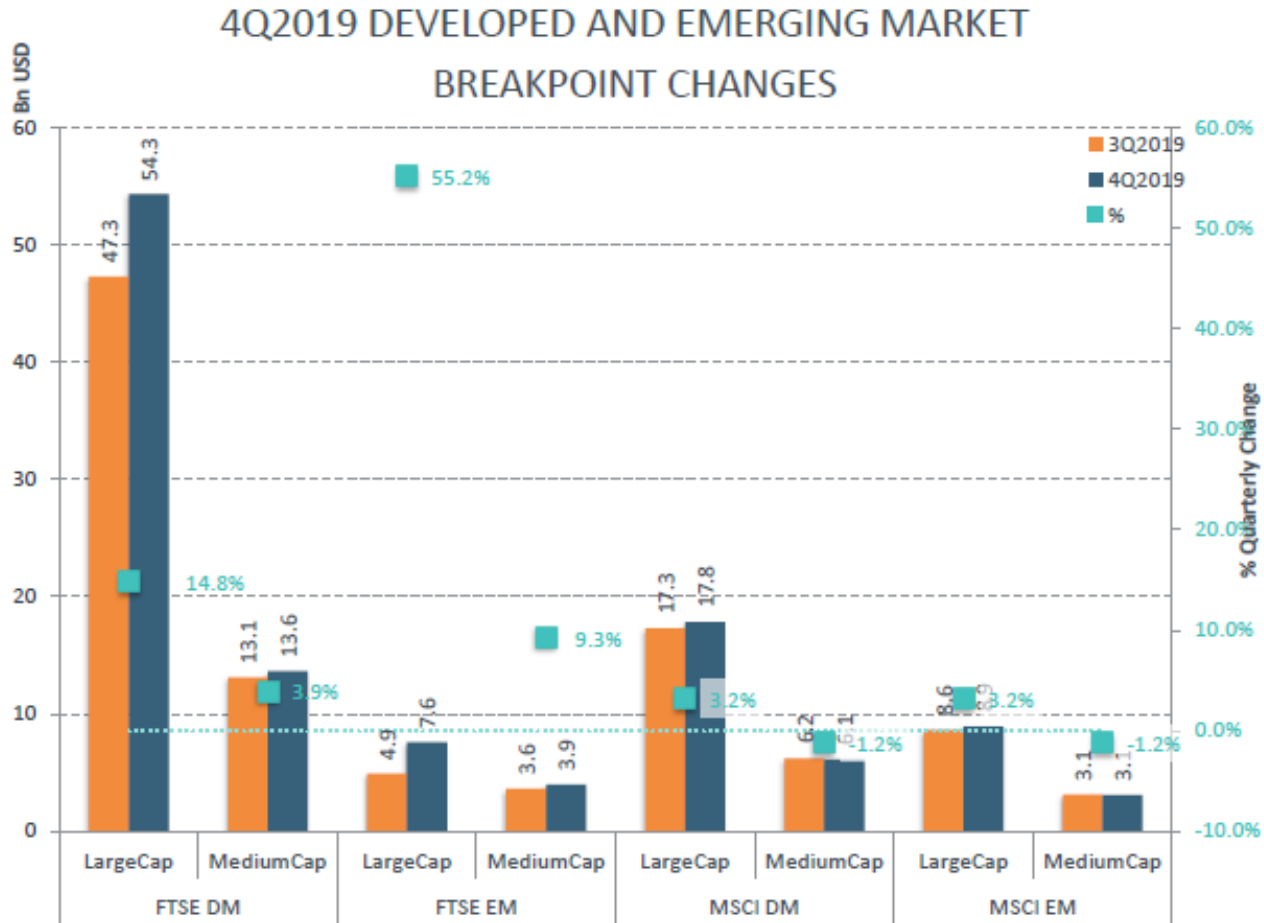


## Market Capitalization Breakpoints

Period Ending: December 31, 2019

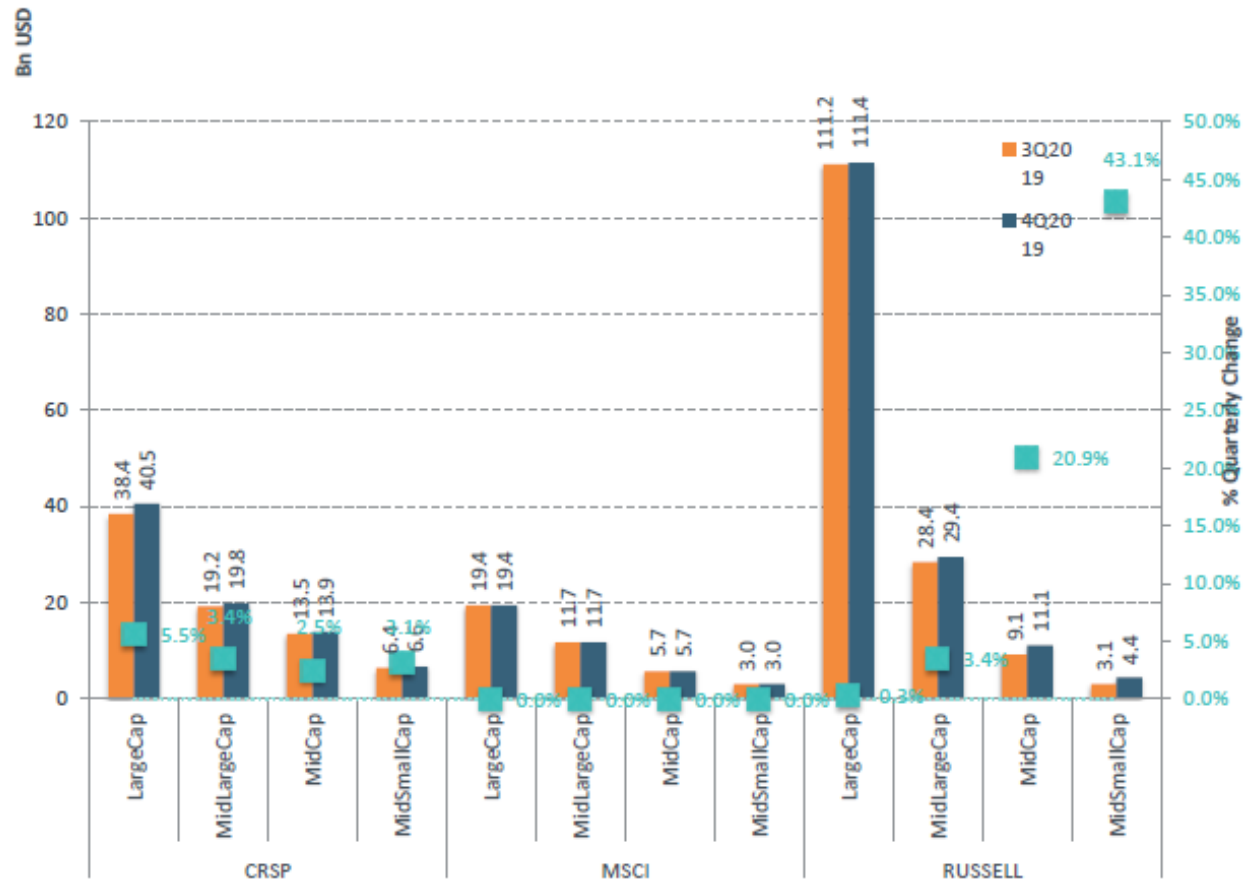
9/30/2011	45.35	13.88	4.38	1.66	0
6/30/2011	54.25	15.95	5.66	2.16	0
3/31/2011	52.22	15.69	5.7	2.16	0
12/31/2010	49.54	14.8	5.16	2.04	0
9/30/2010	42.83	13.13	4.64	1.8	0
6/30/2010	39.95	11.58	4.1	1.59	0

*Numbers are billions USD*



*MSCI is releasing market capitalization breakpoints less frequently than others, hence the market capitalization breakpoints are longer in effect. This could result in no change.*

4Q2019 US MARKET BREAKPOINT CHANGES



MSCI is releasing market capitalization breakpoints less frequently than others, hence the market capitalization breakpoints are longer in effect. This could result in no change.





**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

1<sup>ST</sup> QUARTER 2020  
Investment Landscape



# Recent Verus research

Visit: <https://www.verusinvestments.com/insights/>

## Annual outlooks

### CAPITAL MARKET ASSUMPTIONS

Some important developments occurred in the last year. During our 2020 Capital Market Assumptions webinar, we discussed:

- Market movements of 2019 and how these shifts have affected our long-term outlook
- The impact of falling interest rates on fixed income expectations
- Why it is important to differentiate between shorter-term and longer-term forecasting exercises

## Topics of interests

### WHY BENCHMARKS MATTER

In this Topics of Interest paper, we seek to outline the importance of benchmark selection within the investment process. The white paper addresses the following points:

- Benchmarks which appear similar can behave very differently, even over long periods of time
- Unconsidered benchmark selection can introduce uncompensated tracking error
- Tools available to investors to assist in determining appropriate benchmark indexes

### RISK IN MANAGER SELECTION

In our latest Topics of Interest paper, we provide a framework for assessing the candidacy of a manager for portfolio inclusion and consider the implications of one manager versus alternatives. It addresses the following questions:

- Does the manager add a desired exposure?
- Does the manager exhibit skill?
- What does the manager add to the broader portfolio relative to other candidates?

# Table of contents



---

VERUSINVESTMENTS.COM

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

---

Economic environment 6

---

Fixed income rates & credit 17

---

Equity 23

---

Other assets 34

---

Appendix 36

# 4<sup>th</sup> quarter summary

## THE ECONOMIC CLIMATE

- Real GDP grew at a 2.1% rate year-over-year in the third quarter (2.1% quarterly annualized rate). Falling imports and weak fixed investment (-0.2% contribution) acted as a drag on growth, while personal consumption continued to be the greatest driver of growth. **p. 7**
- U.S. and Chinese negotiators signed the “phase one” trade agreement, and Boris Johnson’s Conservative Party in the U.K. won a decisive victory. These events appear to have removed some uncertainty from the geopolitical landscape over the short- to intermediate-term. **p. 15**

## PORTFOLIO IMPACTS

- Global equity markets exhibited strong performance through Q4, and U.S. equity performance was in-line (MSCI ACWI +9.0%, S&P 500 +9.1%). Emerging markets were the top performing asset class (+11.8%). **p. 40**
- U.S. headline inflation increased 2.3% YoY in December, alongside the core inflation growth figure, and up from 1.7% in September. Although this was a notable jump in the inflation rate, investors appear more concerned about global deflationary forces, as indicated by the 10yr U.S. TIPS Breakeven Inflation Rate of 1.73%. Cyclical price pressures remain surprisingly absent from the current environment. **p. 9**

## THE INVESTMENT CLIMATE

- In October, the Federal Open Market Committee cut interest rates by 0.25% to a new range of 1.50 – 1.75%. This marked the third consecutive rate cut by the committee. **p. 18**
- Global sovereign bond yields picked up modestly in Q4, on higher inflation and growth prospects. The dollar value of negative-yielding outstanding debt fell from nearly \$15 trillion to just above \$11 trillion. Central bankers appealed for fiscal action, citing the limited capacity of monetary policy to sustain further economic expansion. **p. 18**

## ASSET ALLOCATION ISSUES

- Most risk assets provided sizable gains in Q4. Global equities delivered +9.0%, U.S. high yield increased +2.6%, and Emerging Market Local Debt rose +5.2%. Longer duration fixed income saw losses as interest rates rebounded. **p. 40**
- The U.S. dollar weakened -0.5% against both developed and emerging currencies in Q4, reversing moves of the prior quarter. Dollar volatility remains low relative to the big swings that occurred throughout 2014-2018. **p. 35**
- Although risk assets appear to have rocketed higher in 2019, which may create concerns over valuations, it is important to note that much of this performance was due to assets recovering from a sharp fall in late-2018. **p. 25**

A neutral risk stance may be appropriate in today’s environment

# What drove the market in Q4?

**“U.S. trade deficit falls 7.6% in October to 16-month low on decline in Chinese imports”**

## U.S. FEDERAL TRADE DEFICIT (\$BILLIONS)

Jun	Jul	Aug	Sep	Oct	Nov
53.7	52.7	53.5	51.1	46.9	43.1

Article Source: MarketWatch, December 5<sup>th</sup>, 2019

**“As markets climb higher, are stocks becoming overvalued?”**

## BLENDED FORWARD 12-MONTH P/E RATIO OF THE S&P 500 INDEX

Jul	Aug	Sep	Oct	Nov	Dec
17.0x	16.6x	16.9x	17.3x	17.8x	18.3x

Article Source: CNBC, December 30<sup>th</sup>, 2019

**“Fed ‘prepared to adjust’ balance sheet to prevent repo market flare-up”**

## MONTHLY CHANGE IN THE SIZE OF THE FED BALANCE SHEET (\$BILLIONS)

Jul	Aug	Sep	Oct	Nov	Dec
-47.7	-19.2	97.8	162.1	33.1	112.7

Article Source: Yahoo Canada Finance, December 11<sup>th</sup>, 2019

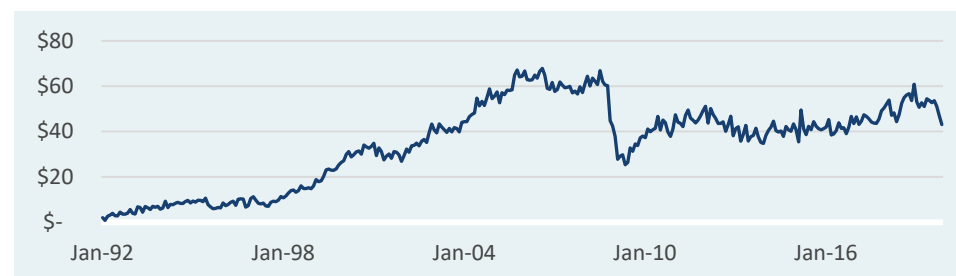
**“China’s pork price jumps 110 per cent, sending consumer inflation rocketing to eight-year high”**

## CHINA CPI INFLATION (YoY % CHANGE)

Jul	Aug	Sep	Oct	Nov	Dec
2.8	2.8	3.0	3.8	4.5	4.5

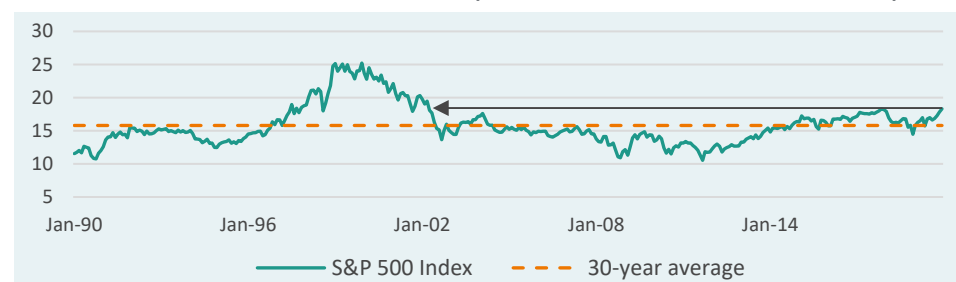
Article Source: South China Morning Post, December 10<sup>th</sup>, 2019

## U.S. MONTHLY TRADE DEFICIT (BILLIONS)



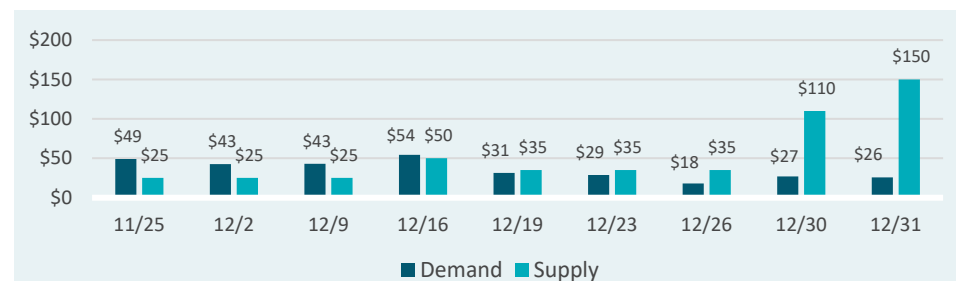
Source: Bloomberg, as of 11/30/19

## FORWARD PRICE/EARNINGS RATIO (BLENDED 12-MONTH EARNINGS)



Source: Bloomberg, as of 12/31/19.

## YEAR-END LIQUIDITY OFFERED UP BY THE NEW YORK FED (BILLIONS)



Source: New York Fed, as of 12/31/19.



# Economic environment

# U.S. economics summary

- Real GDP grew at a 2.1% rate year-over-year in the third quarter (2.0% quarterly annualized rate). Falling imports and weak fixed investment (-0.2% contribution) acted as a drag on growth, while personal consumption continued to be the greatest driver of growth.
- U.S. headline inflation came in at 2.3% YoY in December, in line with the core inflation growth figure. Despite more than 10 years of economic expansion, cyclical price pressures seem surprisingly absent from the current environment. Investors appear more concerned about global deflationary forces.
- The U.S. labor market showed further strength in the fourth quarter and unemployment remained at 50-year lows of 3.5%.
- Consumer sentiment indicators remain near all-time-highs and improved slightly over the quarter.
- American households are in a

strong financial position, with balance sheets that appear increasingly robust. At the end of Q3, U.S. household debt outstanding was equal to about 74% of GDP, the healthiest level since Q4 2001.

- U.S. and Chinese negotiators signed the “phase one” agreement on trade, and Boris Johnson’s Conservative Party won a decisive victory in the U.K. These developments may ease some of the economic uncertainty across the global economy, providing a tailwind to future growth.
- Existing home sales grew +2.7% YoY in November. New home sales, a far smaller portion of the overall market, grew at a stronger rate of +16.9% YoY, as construction activity further accelerated. Rising homebuilder activity in recent years may ease some of the low inventory pressures in the current market environment.

	Most Recent	12 Months Prior
GDP (YoY)	2.1% <i>9/30/19</i>	3.1% <i>9/30/18</i>
Inflation (CPI YoY, Core)	2.3% <i>12/31/19</i>	2.2% <i>12/31/18</i>
Expected Inflation (5yr-5yr forward)	1.8% <i>12/31/19</i>	1.8% <i>12/31/18</i>
Fed Funds Target Range	1.50 – 1.75% <i>12/31/19</i>	2.25 – 2.50% <i>12/31/18</i>
10 Year Rate	1.9% <i>12/31/19</i>	2.7% <i>12/31/18</i>
U-3 Unemployment	3.5% <i>12/31/19</i>	3.9% <i>12/31/18</i>
U-6 Unemployment	6.7% <i>12/31/19</i>	7.6% <i>12/31/18</i>

# GDP growth

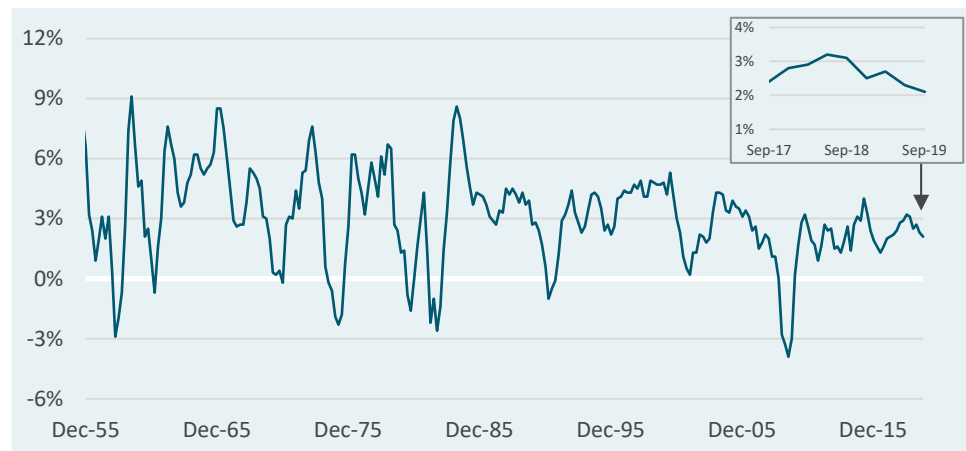
Real GDP grew at a 2.1% rate year-over-year in the third quarter (2.1% quarterly annualized rate). Falling imports detracted -0.3% from the overall GDP print, along with weak fixed investment (-0.2% contribution). Personal consumption, the largest component of gross domestic product, continued to drive the economy forward. The U.S. economy is pacing near the 2.0% rate that economists generally expect for full year 2020.

While trade policies and conflict likely resulted in a mild drag on economic growth in 2019, the U.S. and China have signed

the “phase one” trade deal. A partial trade resolution, or at least an indication that negotiations are headed in a more positive direction, could provide a lift to the economy and markets.

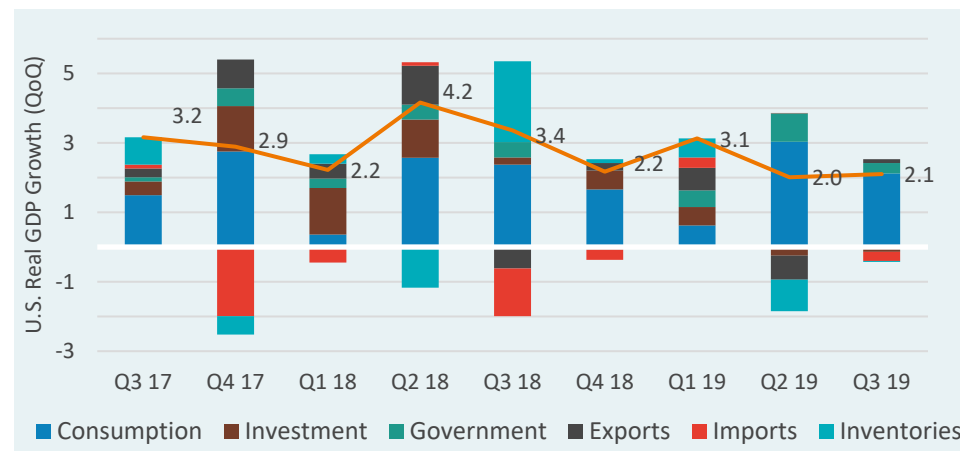
On January 17<sup>th</sup>, the Federal Reserve Bank of Atlanta GDPNow forecast indicated GDP growth of 1.8% in the fourth quarter. This forecast dipped recently due to weak personal consumption expenditures.

**U.S. REAL GDP GROWTH (YOY)**



Source: Bloomberg, as of 9/30/19

**U.S. GDP GROWTH ATTRIBUTION**



Source: BEA, annualized quarterly rate, as of 9/30/19

# Inflation

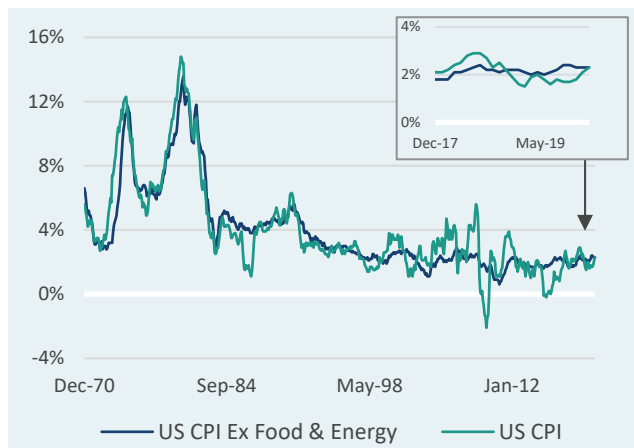
U.S. headline inflation increased 2.3% YoY in December, in line with the core inflation growth figure, and up from 1.7% in September. Although this is a notable jump in the inflation rate, investors appear more concerned about global deflationary forces. Cyclical price pressures remain surprisingly absent from the current environment.

During the quarter, the market's pricing of inflation increased from a low of 1.48% to 1.73%. While the breakeven rate has risen materially from its cycle low of 1.18% achieved in February 2016, it remains depressed by historical standards.

Consumer expectations moved in the opposite direction, falling from 2.7% at the beginning of the year to 2.3% in December.

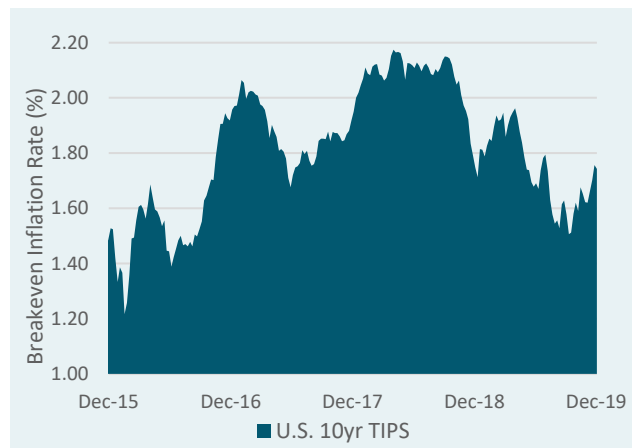
We believe it is likely that inflation will remain subdued. But it is also worth noting that if inflation or inflation fears returned to the markets, this might place central banks in a perilous position. It is doubtful that central banks could hike interest rates for any sustained period of time without risking recession.

**U.S. CPI (YOY)**



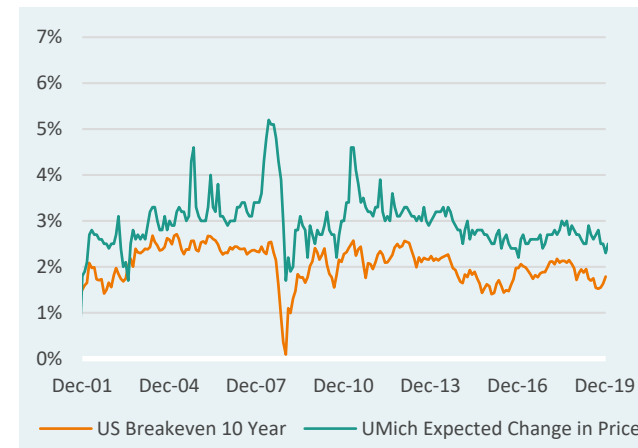
Source: Bloomberg, as of 12/31/19

**U.S. BREAKEVEN INFLATION RATE**



Source: FRED, as of 12/31/19

**INFLATION EXPECTATIONS**



Source: Bloomberg, as of 12/31/19

# Labor market

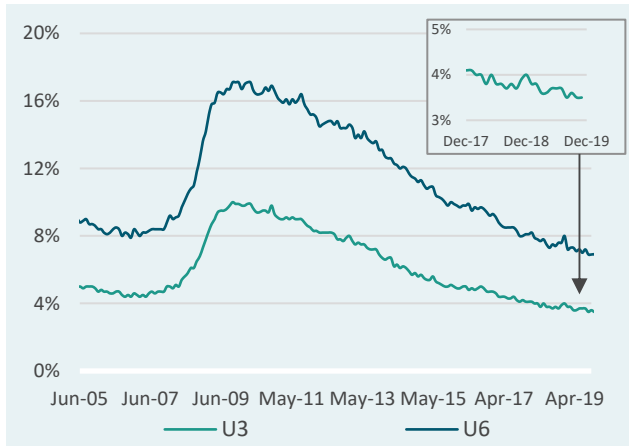
The U.S. labor market continued to show strength in Q4 and unemployment remained at 50-year lows of 3.5%. Year-over-year growth in non-farm payroll additions slowed to its lowest level since September 2017 at 1.4%. Nearly 1.24 jobs are now available per unemployed worker in the labor force, which suggests there is a limited remaining supply of workers to meet business hiring demands.

Average hourly earnings for production and nonsupervisory employees grew 3.0% year-over-year in December, outpacing inflation (2.3%). Sustained real wage growth would support sentiment, which is near cycle highs.

One plausible case for strong consumption to continue hinges on the fact that several key unemployment rates are near historic lows. The unemployment rate for workers who are at least 25 years old and lack high school diplomas (5.3%) is at an at all-time-low level since the data was first recorded in the year 2000. Typically, workers with less education earn less in nominal terms, but have a higher marginal propensity to consume per each dollar earned. These recent increases in employment for those workers who are more likely to spend may lead to outsized positive impacts on economic growth.

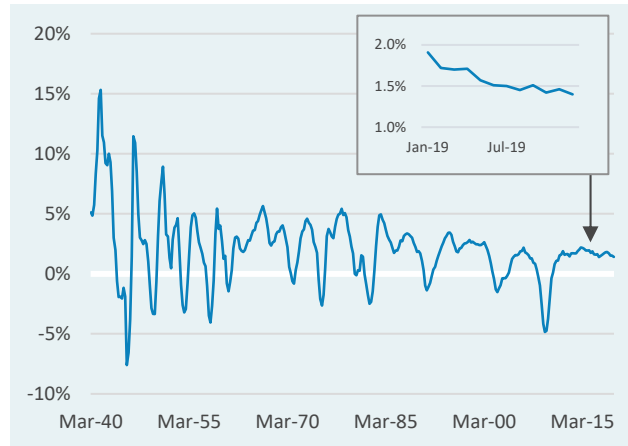
**U.S. labor market remains strong, though further upside may be limited**

## U.S. UNEMPLOYMENT



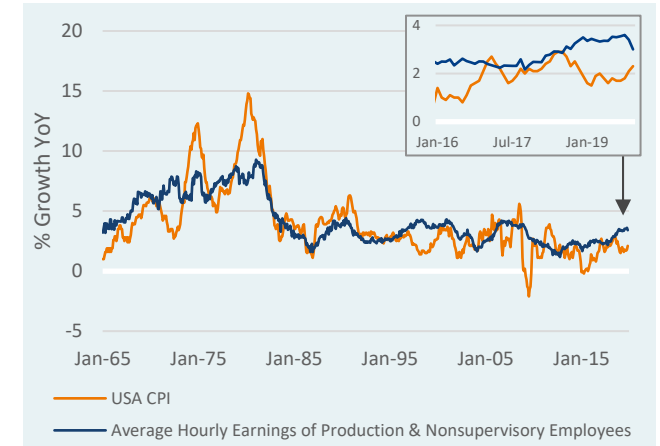
Source: FRED, as of 12/31/19

## NON-FARM PAYROLL GROWTH (YOY)



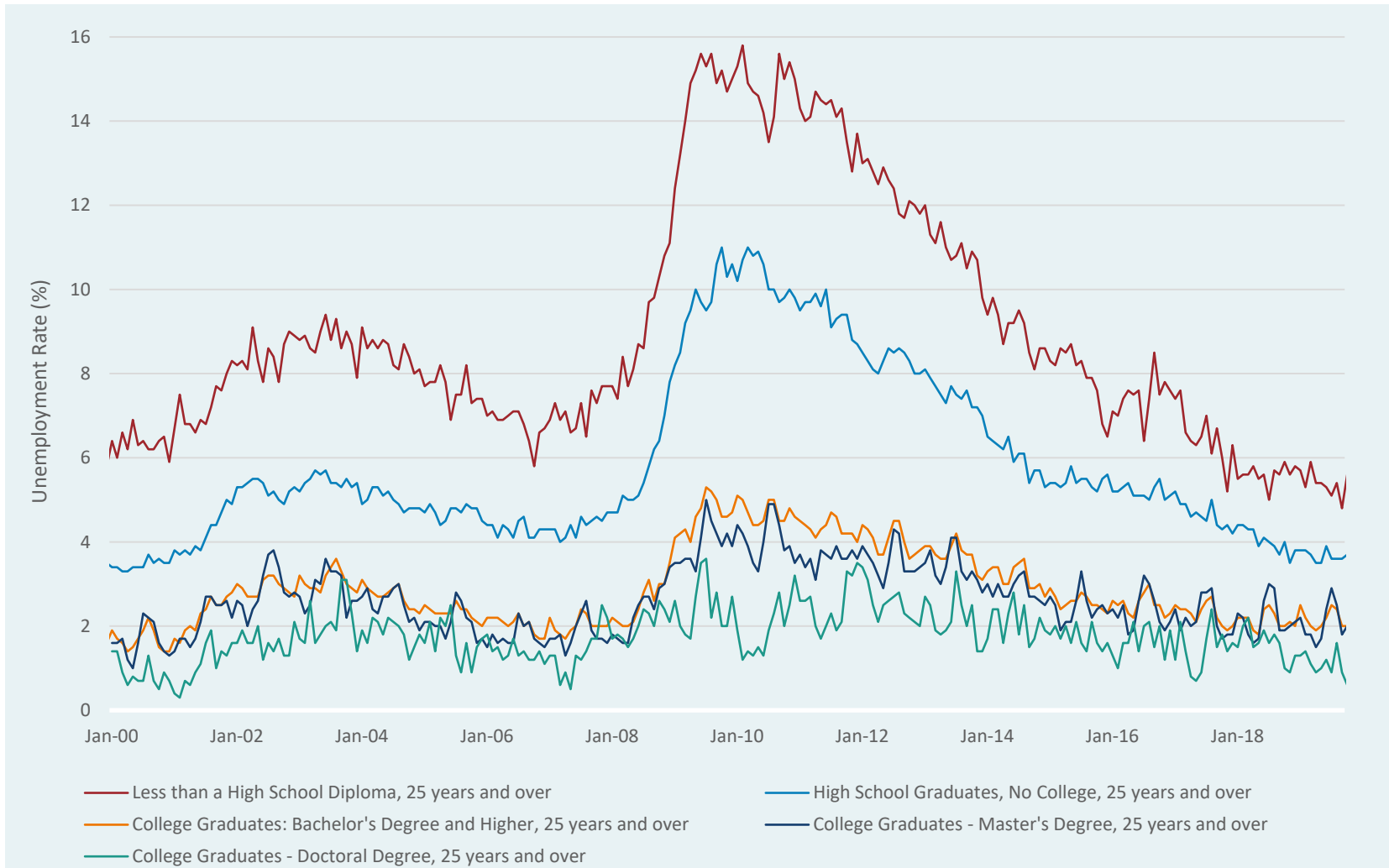
Source: BLS, as 12/31/19

## U.S. WAGE GROWTH



Source: FRED, as of 11/30/19

# U.S. unemployment



The U.S. job market is very strong, for all levels of education

Source: FRED, as of 11/30/19

# The consumer

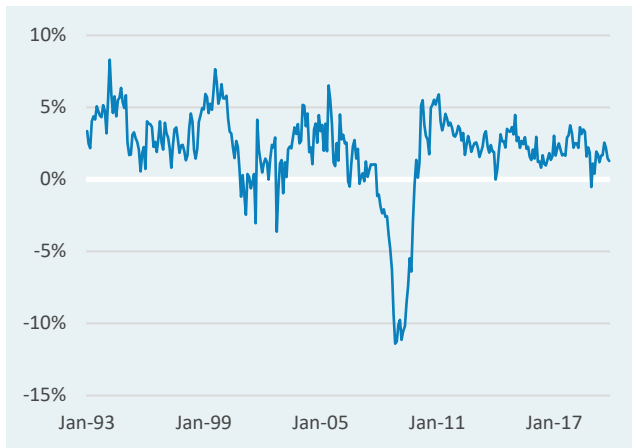
The U.S. consumer continued to push the U.S. economy forward, supported by low unemployment, solid wage gains, and high sentiment. American households are in a strong financial position, with balance sheets that appear robust. At the end of Q3, U.S. household debt outstanding was equal to about 74% of GDP, the healthiest level since Q4 2001.

Retail sales growth slid a bit in real terms, but much of this move was due to a pickup in inflation. The price of a barrel of WTI crude oil rose from \$53 to \$61, helping to propel year-over-year growth in headline inflation from 1.7% to 2.3%. Overall, retail sales growth remains solid, and has been boosted

recently by a surge in e-commerce sales. Cyber Monday sales grew nearly 20% this year, hitting a record \$9.4 billion U.S. dollars according to data from Adobe Analytics. Shoppers' carts were also about 6% larger at checkout than they were last year, perhaps hinting at a more optimistic consumer outlook.

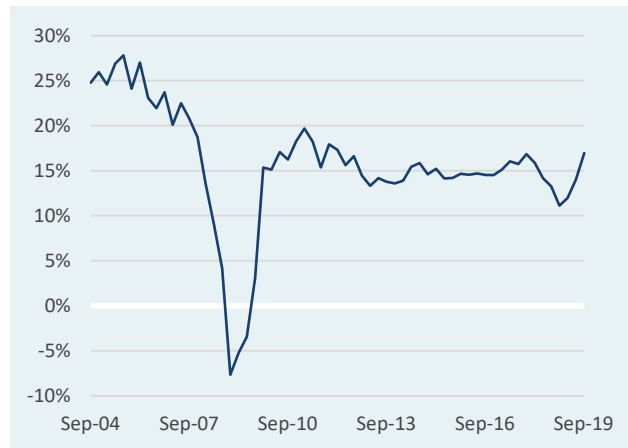
Credit conditions remain benign. Credit-card borrowing ticked down slightly and was offset by faster growth in auto and student loans. Some might consider credit-card debt "worse debt" and auto and student loan debt "better debt" in that prudent investments in transportation and human capital are likely higher-returning than ultra-short-term consumption.

**REAL RETAIL SALES GROWTH (YOY)**



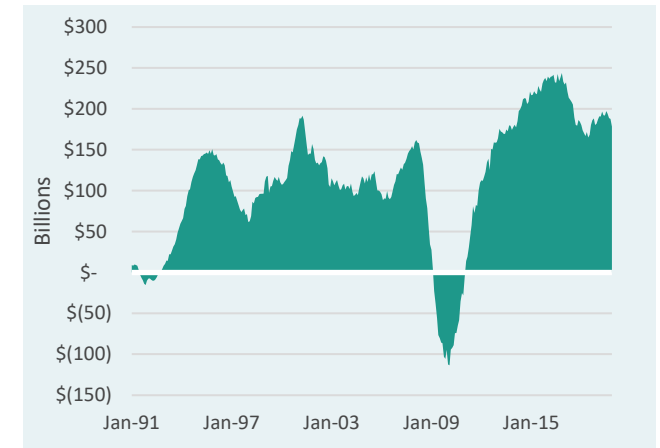
Source: FRED, as of 11/30/19

**E-COMMERCE SALES GROWTH (QUARTERLY YOY)**



Source: U.S. Census Bureau, Bloomberg, as of 9/30/19

**12-MONTH GROWTH IN CONSUMER CREDIT**



Source: Federal Reserve, Bloomberg, as of 11/30/19

# Sentiment

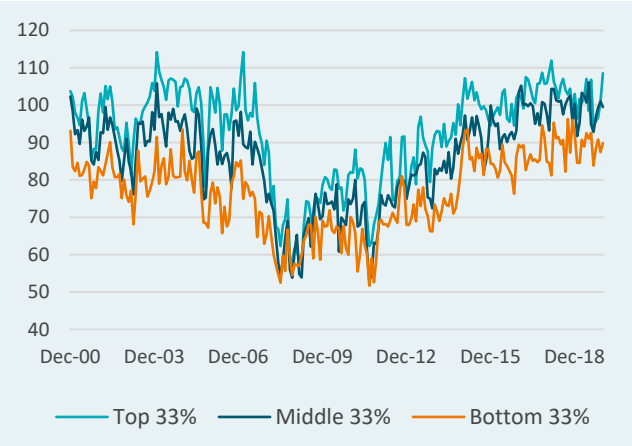
Consumer sentiment indicators remain near all-time-highs and improved slightly as a number of closely-followed geopolitical storylines appeared to move closer to resolution. The U.S. and China “phase one” trade deal, and the victory of Boris Johnson’s Conservative Party in the U.K. appears to have at least removed some uncertainty from the geopolitical landscape over the short- to intermediate-term.

Over the quarter, the difference between the sentiment reading for the top third of income earners and the bottom

third of income earners moved from the 10<sup>th</sup> percentile to the 65<sup>th</sup> percentile of monthly periods since 2001, indicating a widening in the gap between the “haves” and “have-nots”.

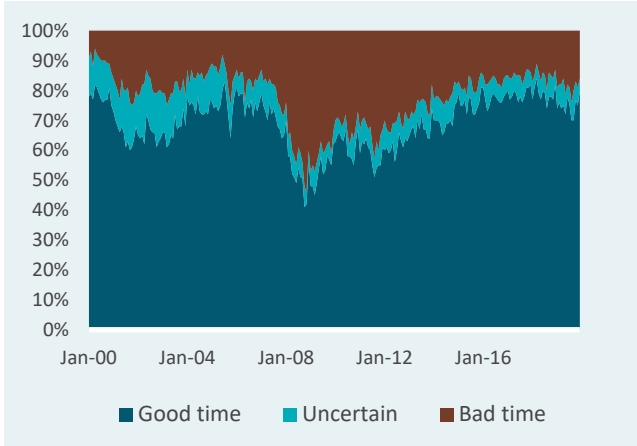
Consumers view the economic conditions for buying big-ticket household items such as furniture, refrigerators and televisions as close to as favorable as they have been over the course of the expansion. This belief appears to be rooted in dual expectations for job security and real wage gains.

**CONSUMER SENTIMENT BY INCOME BRACKET**



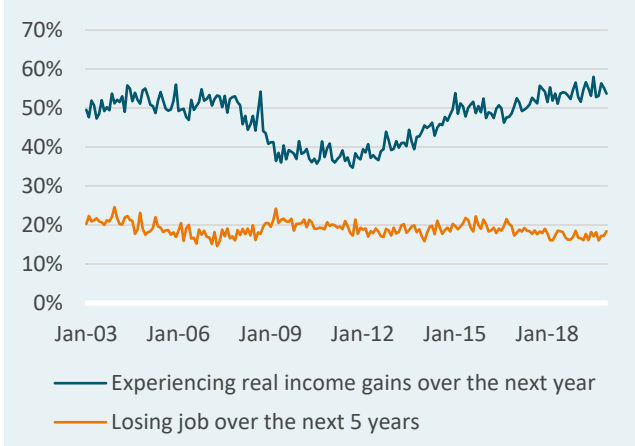
Source: University of Michigan, as of 12/31/19

**CONDITIONS FOR BUYING BIG-TICKET ITEMS (%)**



Source: University of Michigan, as of 12/31/19

**CONSUMER FEAR GAUGE**



Source: University of Michigan, as of 12/31/19



# Housing

In the first half of 2019 the housing market appeared to be cooling off, coming down from a strong boom throughout the recent economic expansion. The average home sales price is down -8% from the highs of late-2017, although other variables such as the types and location of homes sold can impact these numbers. Homebuilding activity ticked up in the second half of the year as homebuilder sentiment jolted higher in 2019.

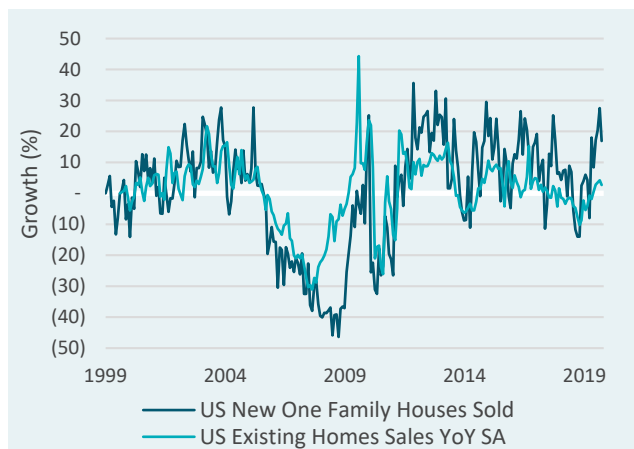
Existing home sales grew +2.7% YoY in November. New home sales, a far smaller portion of the overall market, grew at a stronger rate of +16.9% YoY, as construction activity further accelerated. Rising homebuilder activity in recent years may

ease some of the low inventory pressures in the current market environment.

The housing boom has contributed to a rebound in the U.S. homeownership rate. A decade-long trend away from buying and towards renting appears to have reversed in mid-2016. Since that time, the rate of homeownership has risen to 64.7% from a low of 63.1%.

It is always helpful to remember that home price trends can vary meaningfully by location, which means national statistics are sometimes difficult to interpret at a local level.

## U.S. HOME SALES (YOY)



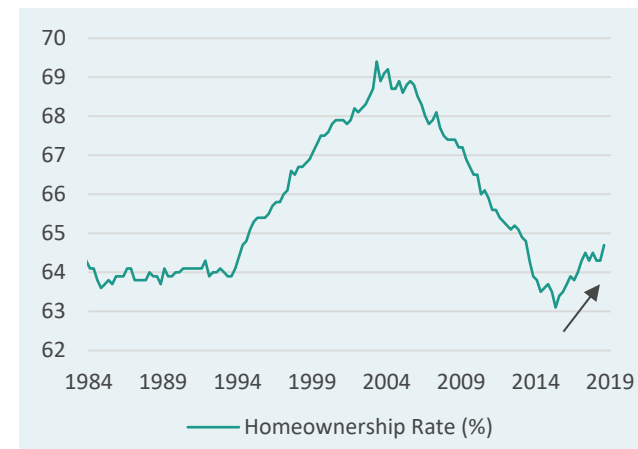
Source: FRED, as of 11/30/19

## HOUSING STARTS & PERMITS



Source: Bloomberg, NAHB, as of 11/30/19 (see appendix)

## HOMEOWNERSHIP RATE



Source: FRED, as of 9/30/19

# International economics summary

- The growth of international developed economies remains in a range of 0.5% to 2.0%, near the 2.1% growth rate of the slowing U.S. economy.
- In January, the IMF forecasted 2.9% global growth in 2019 and an acceleration to 3.3% in 2020. These growth expectations were 0.1% lower than the previous quarter's report, and were mostly a result of downward adjustments to emerging markets expectations.
- Inflation continues to be muted across international developed markets, keeping more options on the table for central banks to step in as needed with accommodative policy.
- The U.K. general election in December resulted in a landslide victory for Boris Johnson. The election, through a consolidation of Tory party power, effectively guarantees that Brexit will ultimately be carried out.
- While the global economy has exhibited mild growth, labor markets continue to tighten across the board. By traditional unemployment measures, job markets are now stronger than pre-2008 levels in most major economies.
- U.S. and Chinese negotiators signed the “phase one” agreement on trade, and the decisive victory of Boris Johnson's Conservative Party in the U.K. appears to have at least removed some uncertainty from the geopolitical landscape over the short- to intermediate-term.
- China has experienced a significant jump in inflation to 4.5% as an outbreak of African swine fever resulted in a doubling of pork prices. This compares to a 5-year average inflation rate of 1.9%. An acceleration of inflation may create issues for Chinese leadership in an already-slowing economy.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.1% <i>9/30/19</i>	2.3% <i>12/31/19</i>	3.5% <i>12/31/19</i>
Eurozone	1.2% <i>9/30/19</i>	1.3% <i>12/31/19</i>	7.5% <i>11/30/19</i>
Japan	1.7% <i>9/30/19</i>	0.9% <i>12/31/19</i>	2.2% <i>11/30/19</i>
BRICS Nations	4.9% <i>9/30/19</i>	4.4% <i>12/31/19</i>	5.1% <i>9/30/19</i>
Brazil	1.2% <i>9/30/19</i>	4.3% <i>12/31/19</i>	11.2% <i>11/30/19</i>
Russia	1.7% <i>9/30/19</i>	3.1% <i>12/31/19</i>	4.6% <i>11/30/19</i>
India	4.5% <i>9/30/19</i>	7.4% <i>12/31/19</i>	8.5% <i>12/31/17</i>
China	6.0% <i>9/30/19</i>	4.5% <i>12/31/19</i>	3.6% <i>9/30/19</i>

# International economics

The United States grew at a pace of 2.1% year-over-year in the third quarter, moving more closely in line with other developed nations which have posted growth of 1.0%-2.0%.

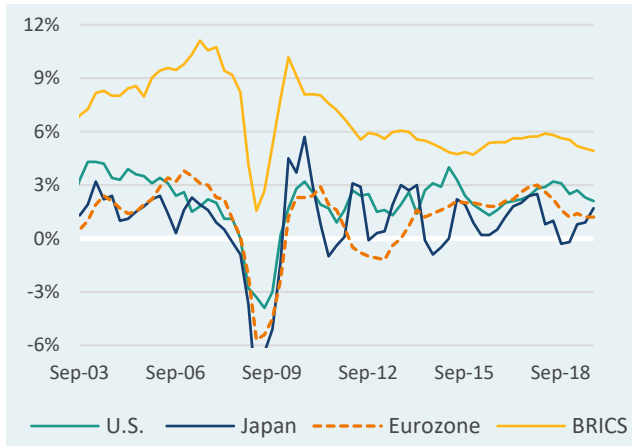
While the global economy has exhibited mild growth, labor markets continue to tighten across the board. By traditional unemployment measures, job markets are now stronger than pre-2008 levels in most major economies.

Inflation has remained subdued across international developed markets, and many pundits have viewed the mild inflation data as a cue for central banks to step in and

attempt to bolster economic growth through more accommodative policy. Inflation remains muted in emerging economies, and most economies are experiencing CPI below the 5-year average.

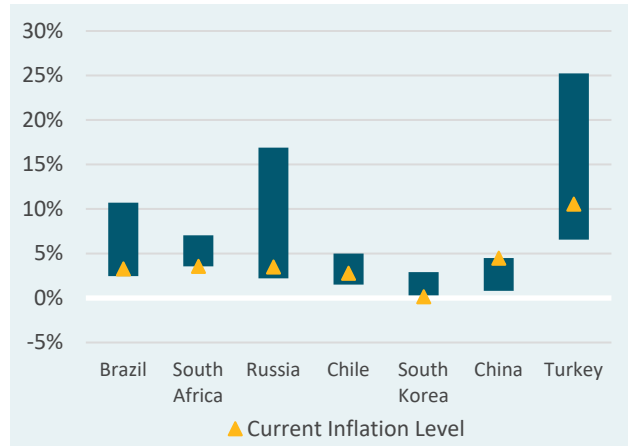
China's inflation rate has become an outlier, jumping to 4.5% as an outbreak of African swine fever resulted in a doubling of pork prices in the country during the year. This compares to a 5-year average inflation rate of 1.9%. Prices of other meats in China have also increased on heightened demand for pork substitutes. An acceleration of inflation may create issues for Chinese leadership in an already-slowing economy.

**REAL GDP GROWTH (YOY)**



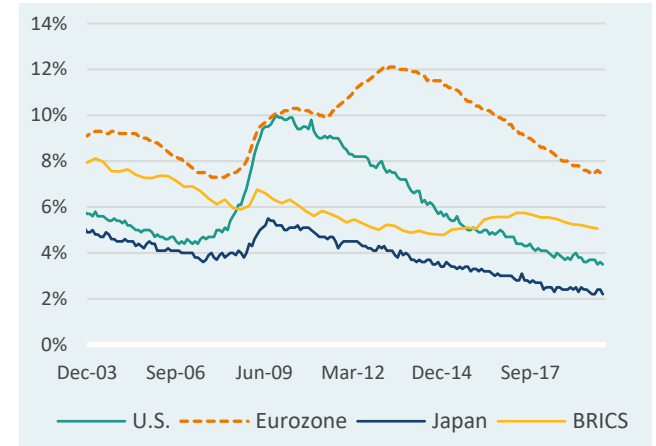
Source: Bloomberg, as of 9/30/19

**INFLATION (CPI YOY)**



Source: Bloomberg, inflation range of past 5 years, as of 11/30/19

**UNEMPLOYMENT RATE**



Source: Bloomberg, as of 11/30/19 or most recent release

# Fixed income rates & credit

# Interest rate environment

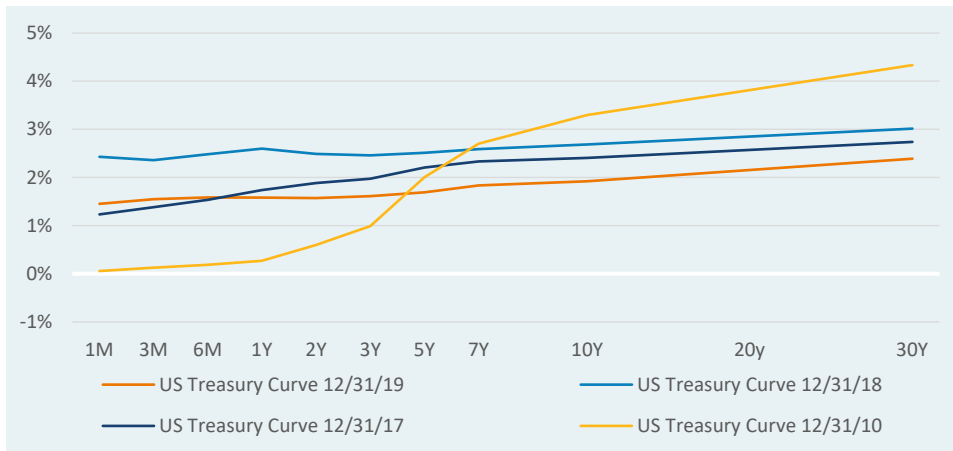
- The global sovereign bond rally lost steam in Q4 as inflation and growth prospects mildly reflat. Central bankers at the European Central Bank and the Federal Reserve signaled that policy would likely remain on hold in the absence of significant economic developments.
- Global ten-year sovereign bond yields picked up moderately, most significantly in Europe. Over the quarter, the U.S.-dollar value of global outstanding negative-yielding debt fell from nearly \$15 trillion to just above \$11 trillion.
- In October, the Federal Open Market Committee cut the range for its benchmark interest rate by 0.25% to a new range of 1.50 to 1.75%.
- Diversity of opinion among FOMC participants about the path of interest rates has faded. Most members now expect rates to remain flat in 2020, and move back toward 2.50% over the longer term.
- The New York Fed conducted a series of term repurchase operations aimed at providing sufficient liquidity for firms to get through the year-end turn when demand for cash typically surges. The Fed balance sheet grew by \$300B in Q4, and analysts continue to debate whether the Fed’s involvement in repo markets should be considered “technical” or “stimulative” in nature.
- The Governing Council of the ECB decided to leave key interest rates unchanged and confirmed that net asset purchases to the tune of €20 billion per month had begun in November.
- In Christine Lagarde’s first major move as President, she announced the ECB’s first Strategic Policy review since 2003, which will begin in January and will address a wide range of topics, including: low inflation, the price-stability goal, climate change, and cryptocurrency.

Area	Short Term (3M)	10-Year
United States	1.54%	1.92%
Germany	(0.78%)	(0.19%)
France	(0.65%)	0.12%
Spain	(0.61%)	0.47%
Italy	(0.34%)	1.41%
Greece	0.26%	1.47%
U.K.	0.69%	0.82%
Japan	(0.10%)	(0.01%)
Australia	0.94%	1.37%
China	2.43%	3.14%
Brazil	4.30%	6.79%
Russia	4.95%	6.36%

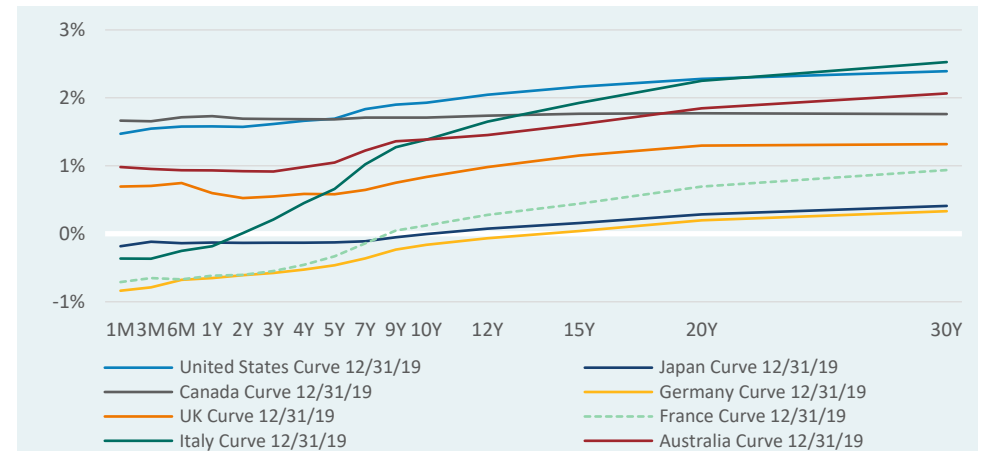
Source: Bloomberg, as of 12/31/19

# Yield environment

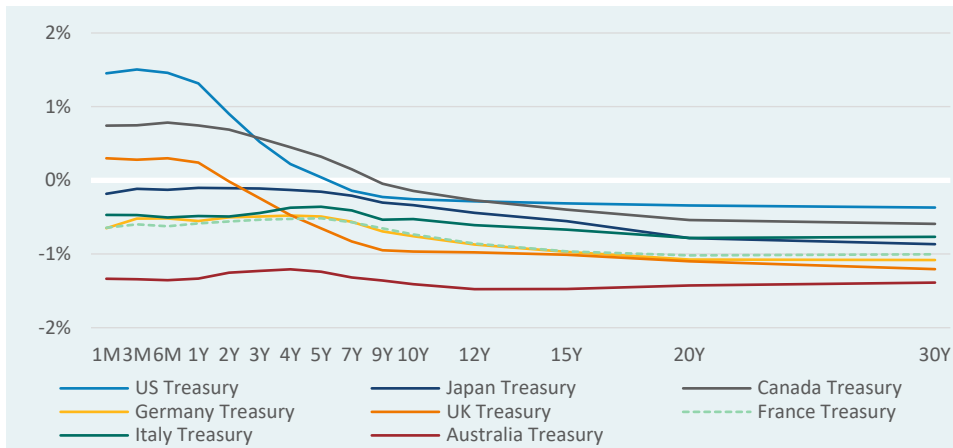
## U.S. YIELD CURVE



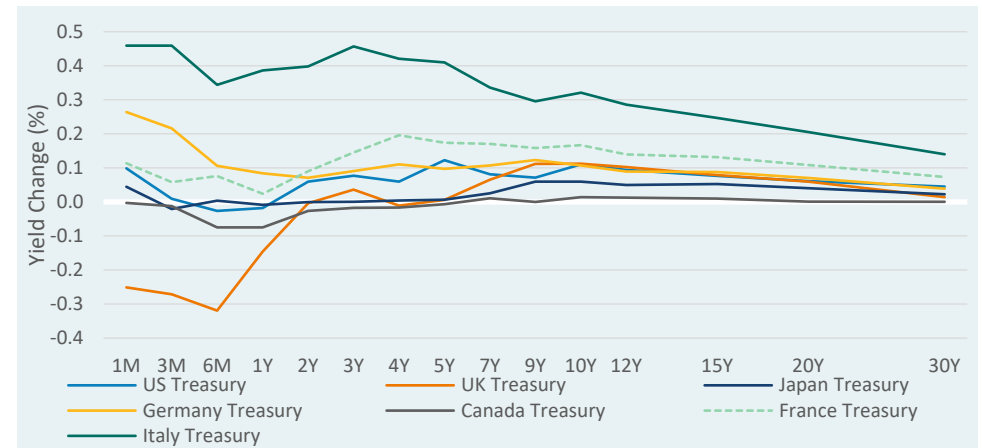
## GLOBAL GOVERNMENT YIELD CURVES



## YIELD CURVE CHANGES OVER LAST FIVE YEARS



## IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 12/31/19

# Credit environment

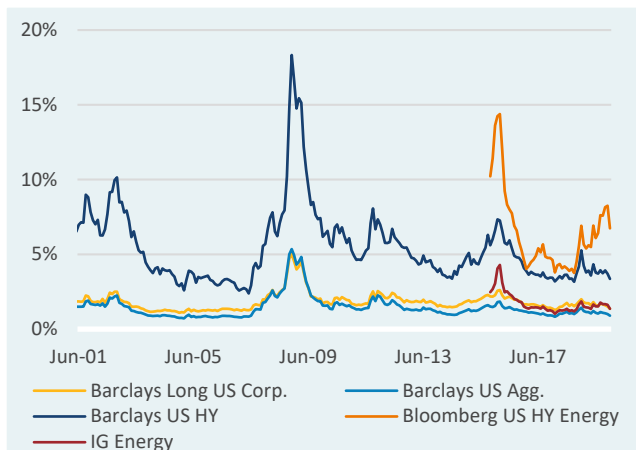
Credit enjoyed a positive 2019 driven by tightening spreads. Both investment grade and below-investment grade assets remained somewhat stable over the period. In high yield, CCCs and energy-related bonds were the best performers during Q4. High yield spreads tightened meaningfully over the year and the quarter (190 bps and 37 bps, respectively). Investment grade bonds also enjoyed positive performance fueled by this year's rate rally, attractive profit margins, and continued demand from investors for higher quality credit.

In the fourth quarter, high yield bonds have returned +3.4%, materially outperforming bank loans (+1.7%) and investment grade credit (+1.1%). In 2019, high yield bonds have returned +14.4%, materially outperforming bank loans (+8.6%) and slightly

outperforming investment grade credit (+13.8%). Bank loans have experienced outflows for much of the year driven by lessening demand for the asset class.

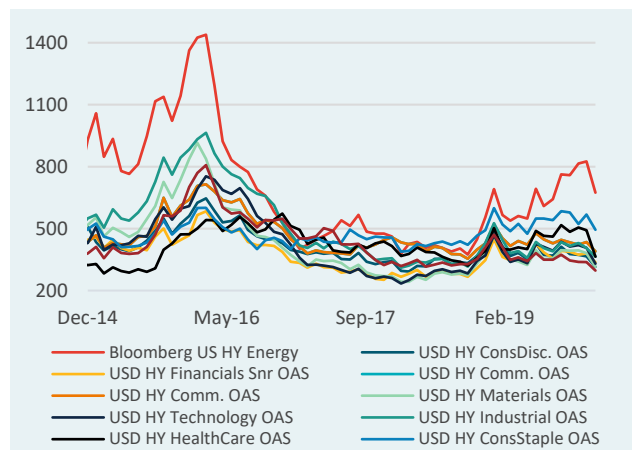
Based on concerns over late-cycle behavior in credit markets, we do not believe investors are being adequately compensated for credit risk. Late-cycle volatility tends to coincide with widening credit spreads and higher propensity for default activity. An underweight to U.S. investment grade, high yield credit, and bank loans may be warranted, with an overweight to emerging market debt which appears to offer more attractive value. This positioning should result in an overall neutral credit risk stance. Within U.S. markets, higher quality and more liquid assets appear most attractive.

## SPREADS



Source: Barclays, Bloomberg, as of 12/31/19

## HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 12/31/19

Market	Credit Spread (OAS)	
	12/31/19	12/31/18
Long U.S. Corp	1.4%	2.0%
U.S. Inv Grade Corp	0.9%	1.5%
U.S. High Yield	3.4%	5.3%
U.S. Bank Loans*	4.4%	5.1%

Source: Barclays, Credit Suisse, Bloomberg, as of 12/31/19

\*Discount margin (4-year life)

# High yield – what’s in it?

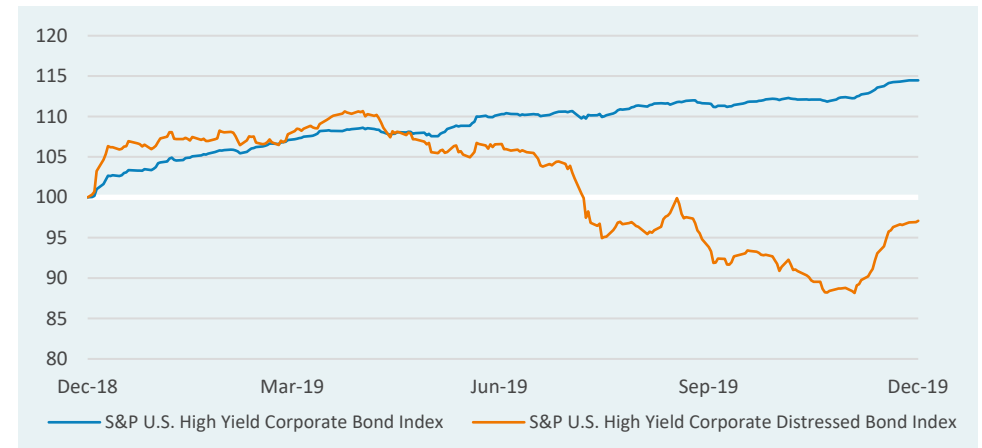
The high yield market rallied in 2019 to provide double digit positive returns for only the fourth time since the 2008-2009 global financial crisis. However, the market was characterized by significant divergences as investors rotated into upper-tier credits relative to lower-tier credits due to volatility and geopolitical uncertainty picking up during the year. This was evidenced by the ratio of CCC/BB credit spread levels, which climbed to levels last seen two decades ago. Investors generally see CCC credits as a proxy for less liquid and/or more complex situations and risks, especially relative to the BB segment.

The distressed market was negatively impacted by investor distaste for less liquid risk during the year. This was particularly true in the energy sector, and in certain retail and healthcare industries. Selling pressures peaked in November as the riskiest segment of the high yield market suffered losses in excess of those experienced during the 2018 year-end drawdown. Market participants pulled money from the space, which resulted in significant redemptions amongst distressed-focused hedge funds and even closures of hedge funds that had previously successfully navigated the global financial crisis.

**CCC/BB SPREAD RATIO**



**HIGH YIELD VS. HIGH YIELD DISTRESSED (INDEXED 12/31/2018=100)**



Source: Standard & Poor’s, J.P. Morgan, Wall Street Journal, as of 12/31/19



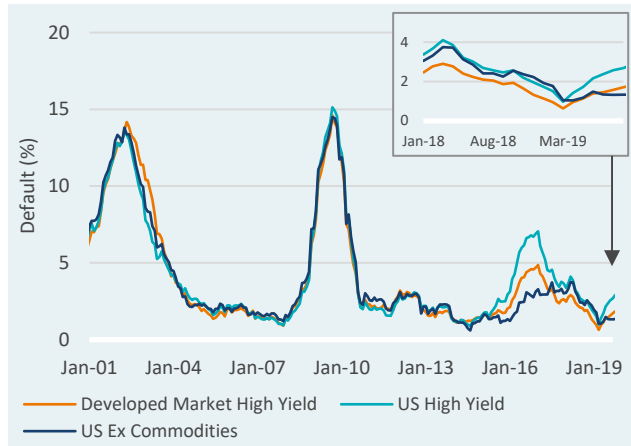
# Default & issuance

Default activity for 2019 was slightly higher than 2018 by roughly 0.8%. This was mainly due to elevated defaults in commodity-related industries such as energy and metals/mining. The par-weighted default rate for high yield ended the year at 2.6% and remained below its long-term average range of 3.0-3.5%.

For loans, the par-weighted default rate for 2019 was 1.6% and remained below the long-term average of 3.1%, according to data from J.P. Morgan. Notably, defaults in commodity-related sectors accounted for essentially half of the year's default/distressed activity.

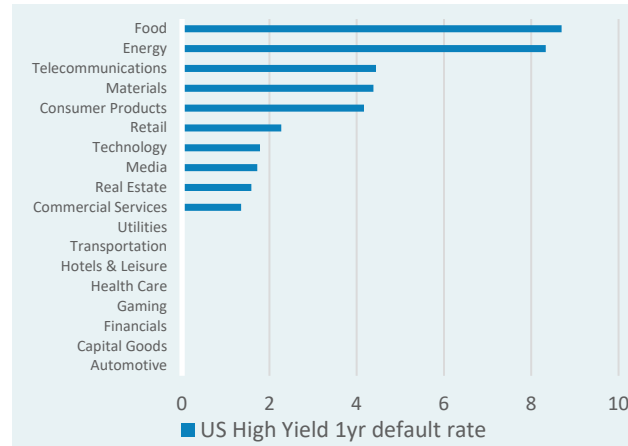
Gross high yield issue activity for 2019 was \$287 billion which was up 52% from a year ago. Loan market issuance is significantly behind last year's pace, likely influenced by lower demand for floating rate securities now that the Federal Reserve has paused monetary tightening. Gross loan issuance is essentially down 44% from a year ago although there was an increase in issuance at the end of December.

**HY DEFAULT RATE (ROLLING 1-YEAR)**



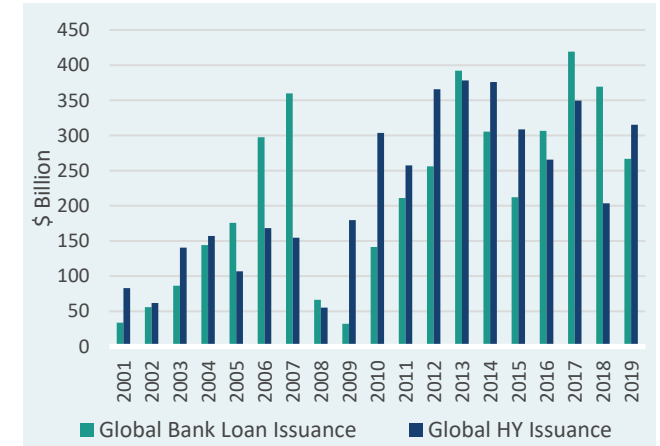
Source: BofA Merrill Lynch, as of 12/31/19

**U.S. HY SECTOR DEFAULTS (LAST 12 MONTHS)**



Source: BofA Merrill Lynch, as of 12/31/19 – par weighted

**GLOBAL ISSUANCE (\$ BILLIONS)**



Source: Bloomberg, BofA Merrill Lynch, as of 12/31/19

# Equity

# Equity environment

- Global equity markets exhibited strong performance through Q4, and U.S. equity performance was in-line (MSCI ACWI +9.0%, S&P 500 +9.1%). Emerging markets were the top performing asset class (+11.8%).
- Global currency volatility has been muted over the last few years, which has made ignoring currency exposure less consequential. Expecting low currency volatility to persist may be an assumption that gets investors into trouble.
- Unhedged U.S. investors in U.K. equities outperformed their hedged peers by 7.8% in Q4, as a stronger pound sterling dominated the U.K. equity return narrative.
- Based on price-to-forward earnings ratios international equity valuations appear elevated, but unlike in the U.S., they do not yet appear stretched.
- The outlook for monetary policy remains supportive of global equity price movement in 2020. Of the five major global central banks (Federal Reserve, European Central Bank, Bank of England, Bank of Japan, People’s Bank of China), four out of five are providing accommodation through their respective balance sheets. Futures imply better than 50/50 odds that the Bank of England cuts its main rate 0.25% at the end of January and China has continued to cut its benchmark lending rate.
- Inflation remains muted in emerging economies, and most economies are experiencing CPI below the 5-year average. Central bank policy has remained accommodative in many major countries within the universe such as China, South Korea, Brazil, and South Africa. This accommodation could provide a boost for equity market pricing as we move further into 2020.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	9.1%		31.5%	
US Small Cap (Russell 2000)	9.9%		25.5%	
US Large Value (Russell 1000 Value)	7.4%		26.5%	
US Large Growth (Russell 1000 Growth)	10.6%		36.4%	
International Large (MSCI EAFE)	8.2%	5.8%	22.0%	24.6%
Eurozone (Euro Stoxx 50)	8.3%	5.9%	25.9%	32.1%
U.K. (FTSE 100)	10.8%	3.0%	22.1%	19.5%
Japan (NIKKEI 225)	8.2%	9.6%	21.9%	23.5%
Emerging Markets (MSCI Emerging Markets)	11.8%	9.5%	18.4%	17.7%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 12/31/19

# A different look at 2019 performance



Most of the high returns of 2019 were due to markets recovering from the 2018 drop

Adjusting for this effect shows us that 2019 was a fairly average year

Source: Standard & Poor's, MSCI, Verus, as of 12/31/19 – "Drawdown" defined as the total market fall in 2018, "Rebound" defined as the total % return from the low point of the fall to the end of 2019. "Net Change" defined as the % market return from the 2018 high point to the end of 2019.

# Domestic equity

U.S. equities outpaced international in the third quarter (S&P 500 +9.1%, MSCI EAFE +8.2%) as domestic markets continued to lead.

Falling interest rates in 2019 have supported stock prices, as fixed income becomes less attractive on a relative basis, and cheaper borrowing should bolster future corporate earnings. As the dividend yield of U.S. stocks is once again higher than U.S. Treasury yields, investors may feel pressure to maintain greater exposure to equities in order to meet return objectives.

The S&P 500 delivered a 31.5% total return in calendar year

2019, while underlying corporate profits are expected to be flat at +0.3%. This of course means that performance has been driven by higher stock multiples rather than fundamentals. It is worth noting that a significant portion of 2019 performance was a recovery from the late-2018 sell-off of nearly -20%.

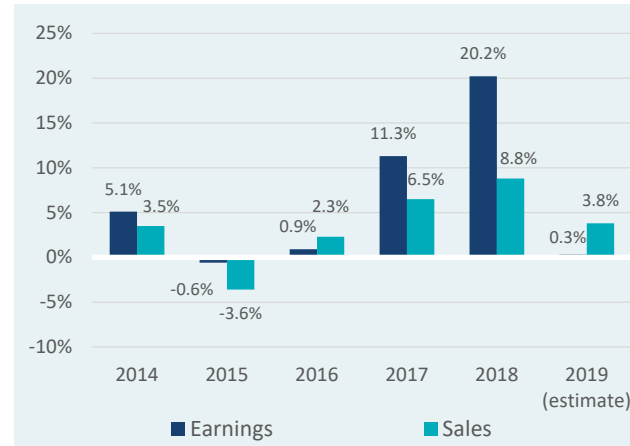
U.S. markets may continue to outperform over the shorter-term due to relative economic and market strength, and prices may certainly rise further. But history suggests that a widening gap between U.S. and international stock valuations will constrain U.S. performance over the longer-term.

## U.S. EQUITIES



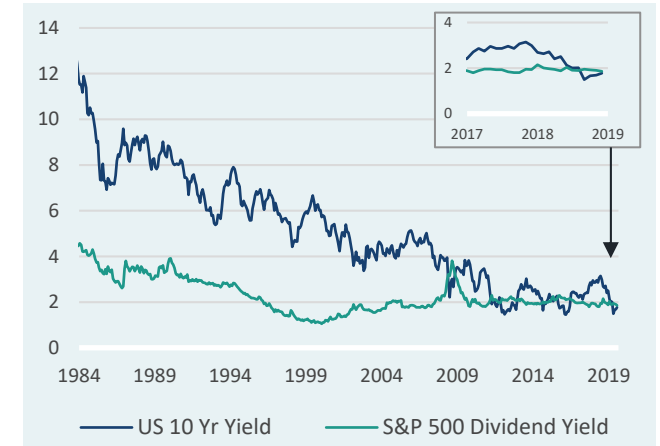
Source: Standard & Poor's, as of 12/31/19

## EARNINGS



Source: FactSet, as of 12/20/19

## RELATIVE YIELDS



Source: Standard & Poor's, as of 11/30/19

# Domestic equity size & style

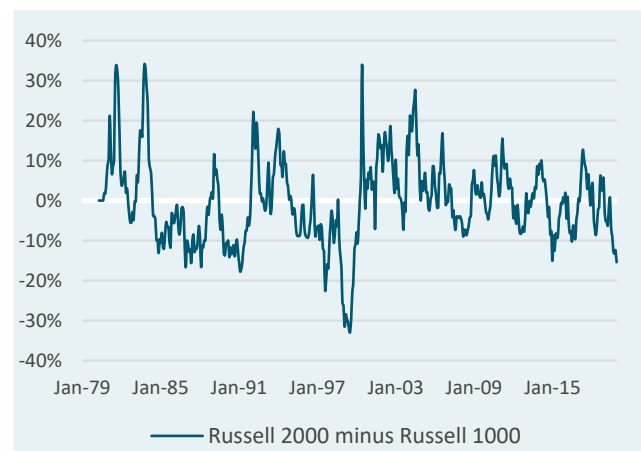
Value stocks lagged growth stocks during the fourth quarter (Russell 1000 Growth +10.6%, Russell 1000 Value +7.4%) while small cap stocks outperformed large stocks (Russell 2000 +9.9%, Russell 1000 +9.0%). During calendar year 2019, both size and value factors significantly underperformed (Russell 1000 +31.4%, Russell 2000 +25.5%; Russell 3000 Growth +35.8%, Russell 3000 Value +26.2%).

The impact of sector performance on the value premium was significant, once again, in 2019. Information Technology delivered very high returns (+50.3%) – a sector which tends to contain more growth stocks. Energy (+11.8%) and Materials (+24.6%) – industries which traditionally contain more value stocks – lagged

the overall index (S&P 500 +31.5%).

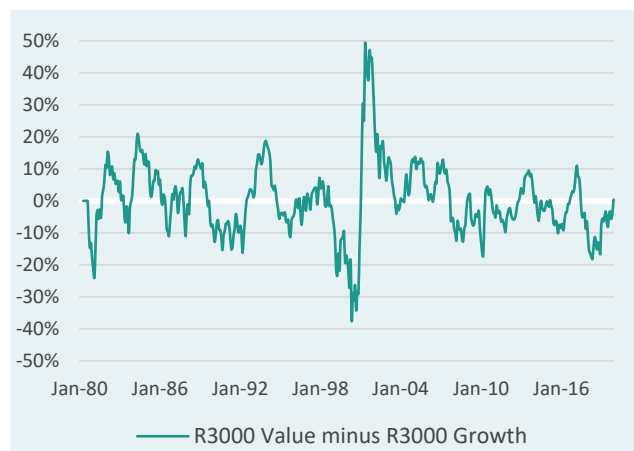
In mid-2016 we argued that there were clear and economic reasons for long-term value factor underperformance, and that a tactical overweight to the value factor did not appear warranted. This view has continued to be correct, as those who bought into value anytime of the past three years would have underperformed. While value continues to be historically cheap, price itself is not a catalyst for outperformance. We remain watchful of value stocks, but do not yet see clear signs of opportunity. As always, attempting to time factors is extremely difficult. We believe this should be done only rarely, if at all, and only when market conditions are particularly compelling.

**SMALL CAP VS LARGE CAP (YOY)**



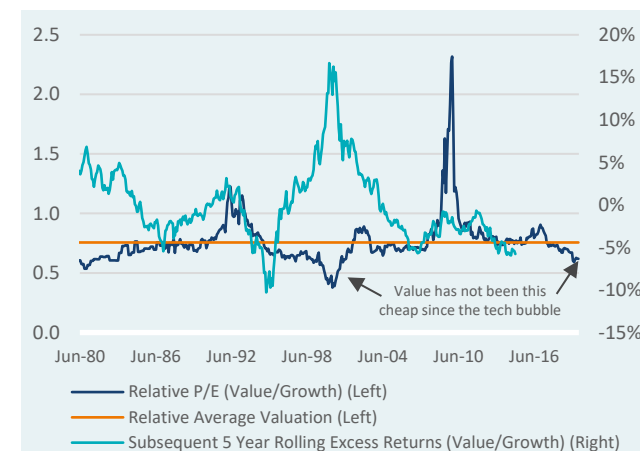
Source: FTSE, as of 12/31/19

**VALUE VS GROWTH (YOY)**



Source: FTSE, as of 12/31/19

**VALUE CONTINUES TO LOOK CHEAP**



Source: Russell, Bloomberg, as of 12/31/19

# International developed equity

Equities in Europe and Japan posted strong performance for the quarter but failed to keep up with stocks in the U.S. and emerging markets. The U.S. dollar appreciated slightly against the yen, providing headwinds (-1.4%) for unhedged U.S. investors in Japanese stocks. Conversely, a slightly weaker U.S. dollar against the euro put some additional wind in the sails (+2.4%) of U.S. investors in European equities.

When investing in international equities, the “which currency should my assets be denominated?” question has been nearly equally as important as the “what assets should I hold?” question. Over the last three years however, global

currency volatility has been muted, which has made it much easier for investors to avoid thinking about their various currency exposures. Verus’ view remains that currency risk is not compensated, and that it tends to result in increased risk without necessarily adding to return.

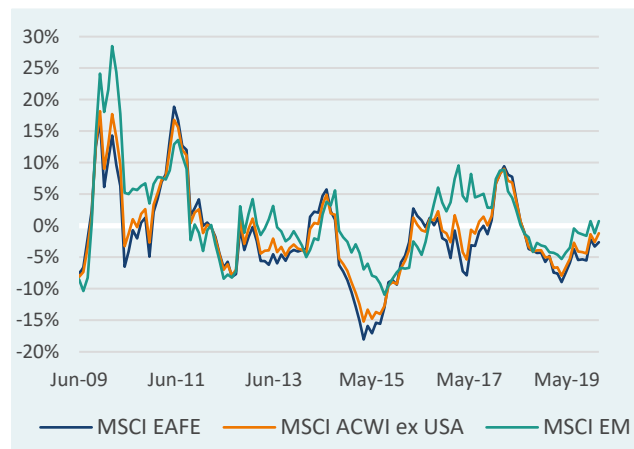
International equity valuations remain elevated, but unlike in the U.S., they do not yet appear stretched. Forward price-to-earnings ratios for the MSCI U.K. and Italy indices rank in the 59<sup>th</sup> and 52<sup>nd</sup> percentiles respectively, relative to the monthly expansion average. Valuations are a bit richer in the rest of the EAFE complex, but they may still have room to run.

## INTERNATIONAL DEVELOPED EQUITIES



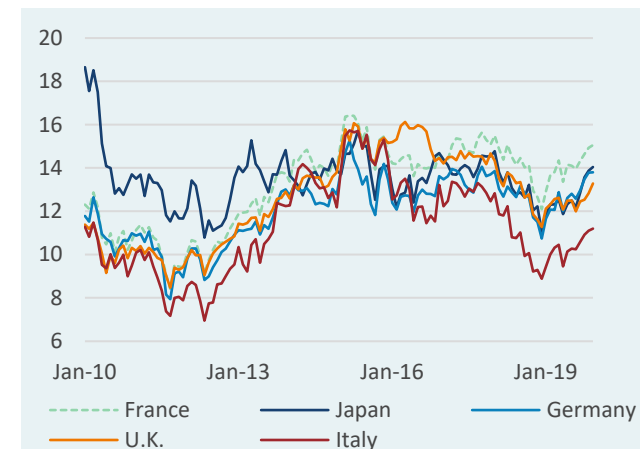
Source: MSCI, as of 12/31/19

## EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 12/31/19

## BLENDED FORWARD 12-MONTH P/E RATIOS



Source: MSCI, Bloomberg, as of 12/31/19

# Emerging market equity

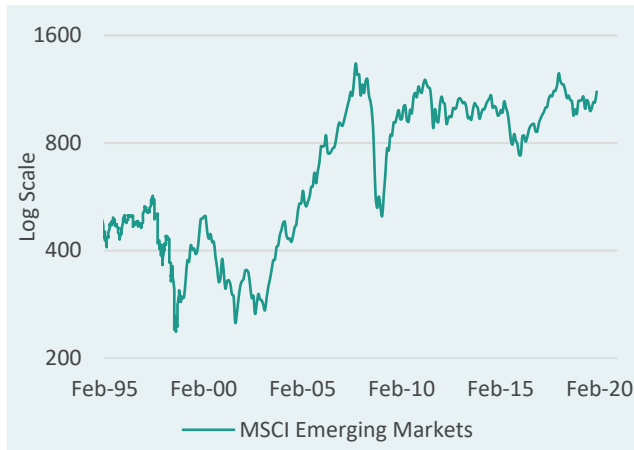
Emerging market equities (+11.8%) outperformed both U.S. (+9.1%) and international developed equities (+8.2%) over the quarter, but still lagged over the full calendar year. In 2019, emerging market equities delivered a total return of 18.4%, and trailed the total return of international developed equities by 3.6%. Regionally, the Asian segment (+12.5%) of the emerging market complex performed better than the Latin American (+10.5%) segment in both Q4 and in 2019.

Emerging market equities saw multiple expansion in Q4: the forward P/E of the MSCI EM Index expanded from a level in

line with the 5-year average to a bit higher than average levels. We do not yet view pricing in this space as rich and see there being more room for multiple expansion.

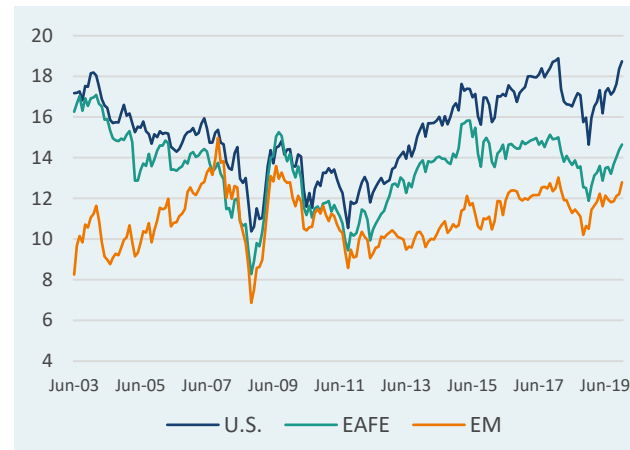
Inflation remains muted in emerging economies, and most economies are experiencing CPI below the 5-year average. Central bank policy has remained accommodative in many major countries within the universe such as China, South Korea, Brazil, and South Africa. This accommodation could provide a boost for equity market pricing as we move further into 2020.

**EMERGING MARKET EQUITY**



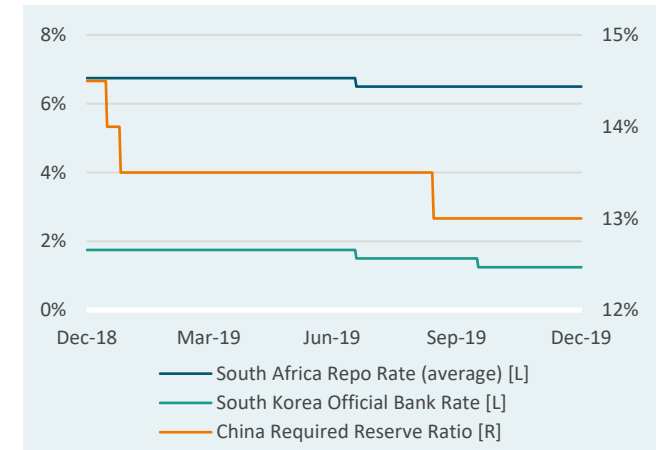
Source: MSCI, as of 12/31/19

**FORWARD P/E**



Source: MSCI, as of 12/31/19

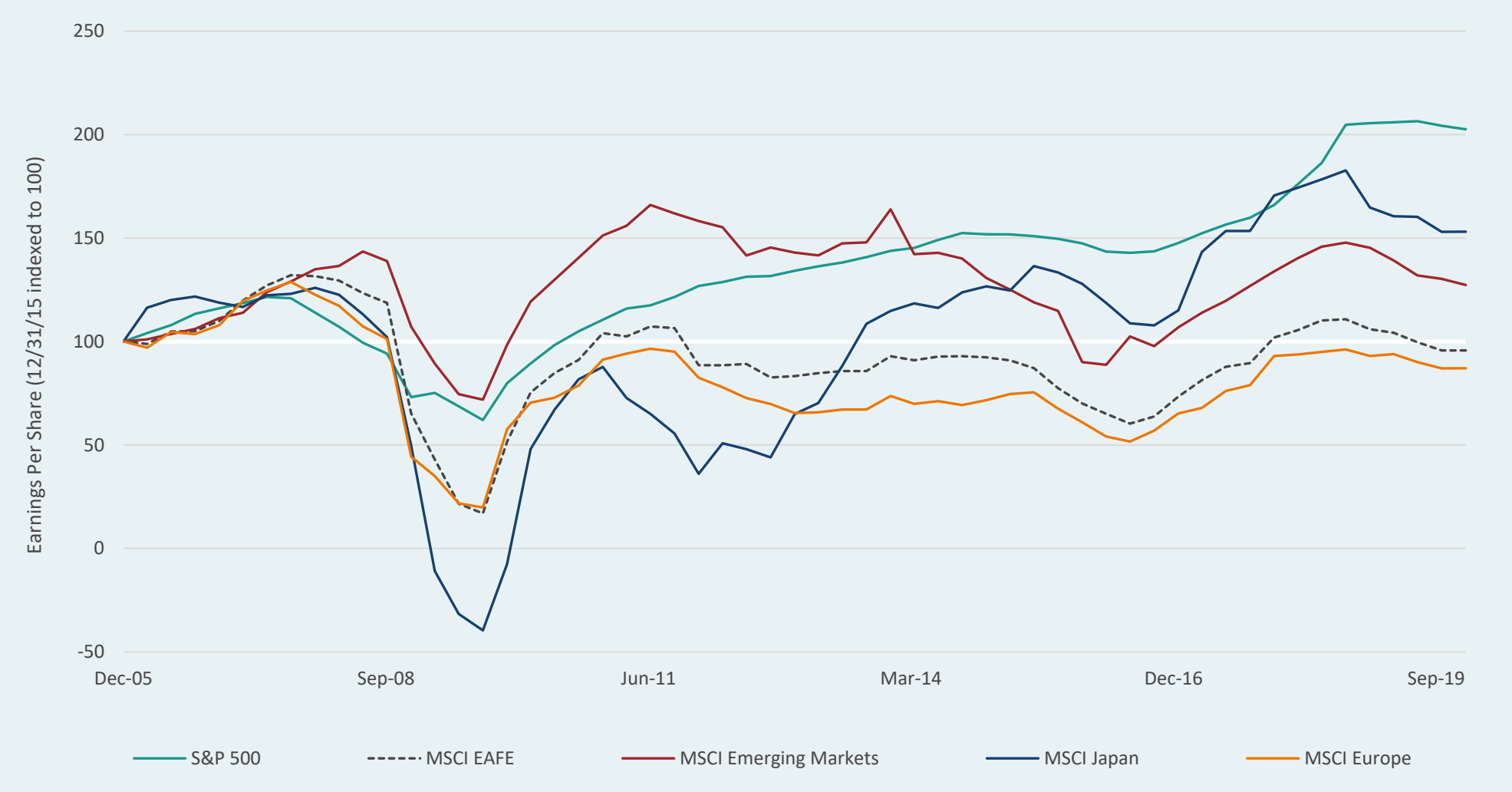
**CENTRAL BANK ACCOMODATION**



Source: MSCI, as of 12/31/19



# Equity earnings growth



Source: Bloomberg, as of 12/31/19

# Equity valuations

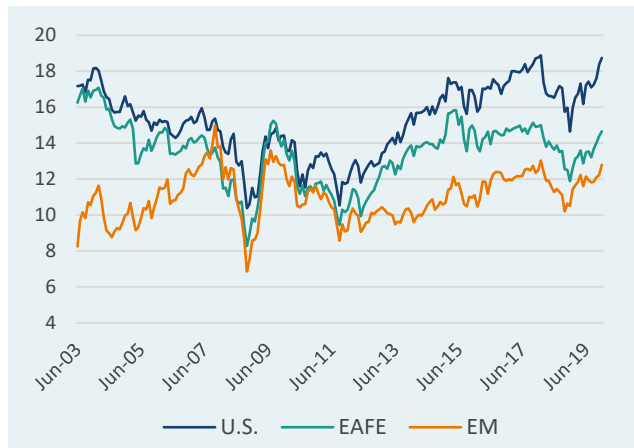
Equity valuations expanded materially in 2019 as prices recovered from their year-end 2018 fall and then continued climbing through the fourth quarter. U.S. equities are expensive relative to their long-run average and prices may become more difficult to justify in an environment of flat earnings growth. International and emerging equity valuations are near average levels. We remain watchful of earnings trends in 2020, which may have important implications for the future path of equities.

In the United States, stocks within the Information Technology

(22.7x) and Communication Services (19.5x) sectors have retained forward P/E ratios elevated well above their respective 5- and 10-year averages. Last year, growing concerns over data privacy, support for anti-trust regulation, and several idiosyncratic scandals weighed on the tech sector. Over the course of this election year, we expect the issue of mega-cap tech regulation to remain beneath the microscope.

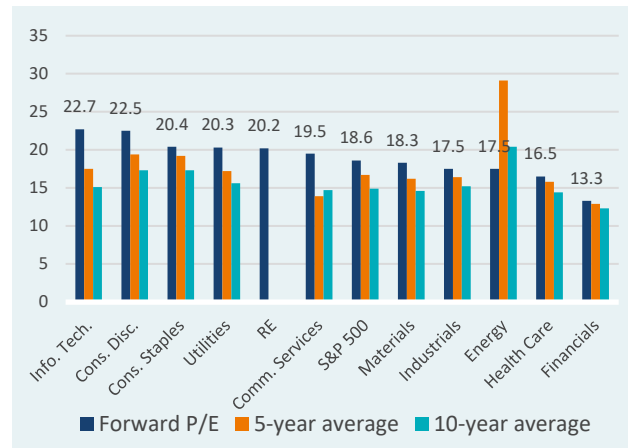
Compared to U.S. and EM equities, international developed equities offer the greatest yield at present, offering a three-month average trailing dividend yield of 3.4%.

## FORWARD P/E RATIOS



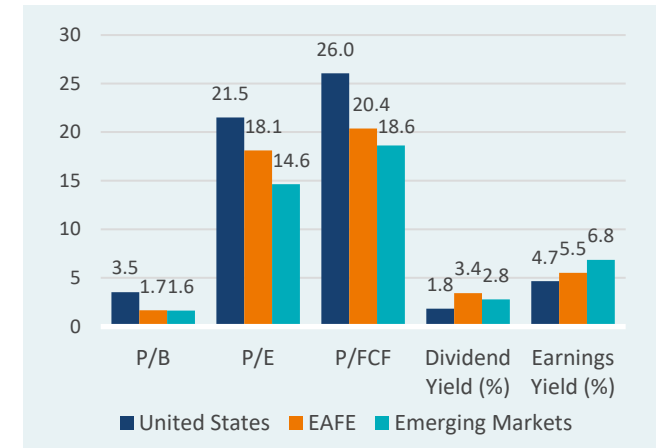
Source: MSCI, 12m forward P/E, as of 12/31/19

## S&P 500 INDEX FORWARD SECTOR P/E RATIOS



Source: Standard & Poor's, FactSet, as of 1/17/20

## VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 12/31/19 - trailing P/E

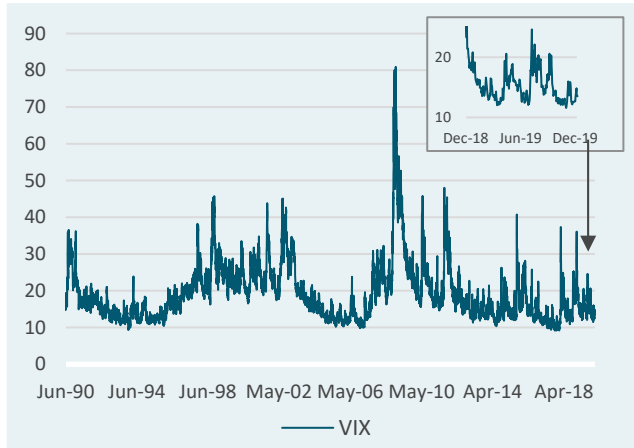
# Equity volatility

The implied volatility of large-cap U.S. stocks returned to a subdued level. The CBOE VIX Index, which calculates the market's expectation for volatility implied by S&P 500 Index options, declined from 16.2 to 13.8, a reading which lies in the 15<sup>th</sup> percentile of weekly readings over the last thirty years. Net non-commercial short VIX positioning reached new all-time-highs in the 4<sup>th</sup> quarter, meaning that many people are betting on volatility to remain low and push lower. Some investors view this assumption as concerning, and as a signal that the market may be ready for a correction.

U.S. large-cap and emerging market stocks have experienced a higher degree of volatility than international developed stocks over the last several years. Some of the divergence may be attributable to the impacts of the ever-changing U.S.-China trade narrative which has held the full attention of market participants for much of the prior two years.

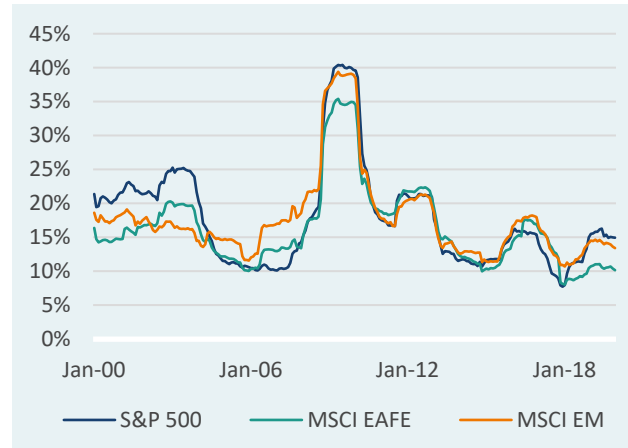
The MSCI EM Index touched new all-time highs in April and did not eclipse that level for another 174 days. In 2019, the S&P 500 and MSCI EAFE indices spent a maximum of 65 and 82 trading days between fresh all-time highs, respectively.

**U.S. IMPLIED VOLATILITY (VIX)**



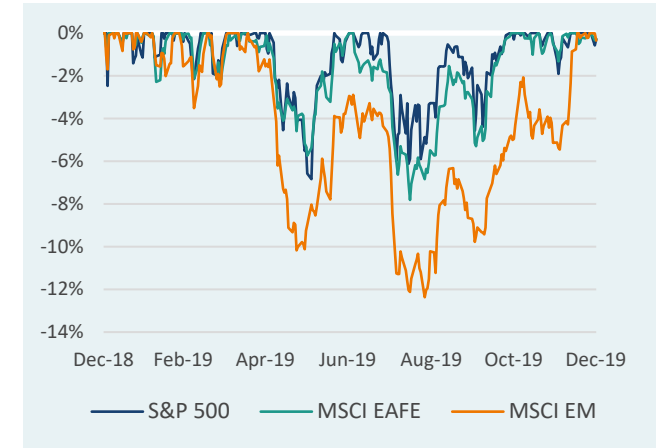
Source: CBOE, as of 12/31/19

**ROLLING 1-YEAR REALIZED VOLATILITY**



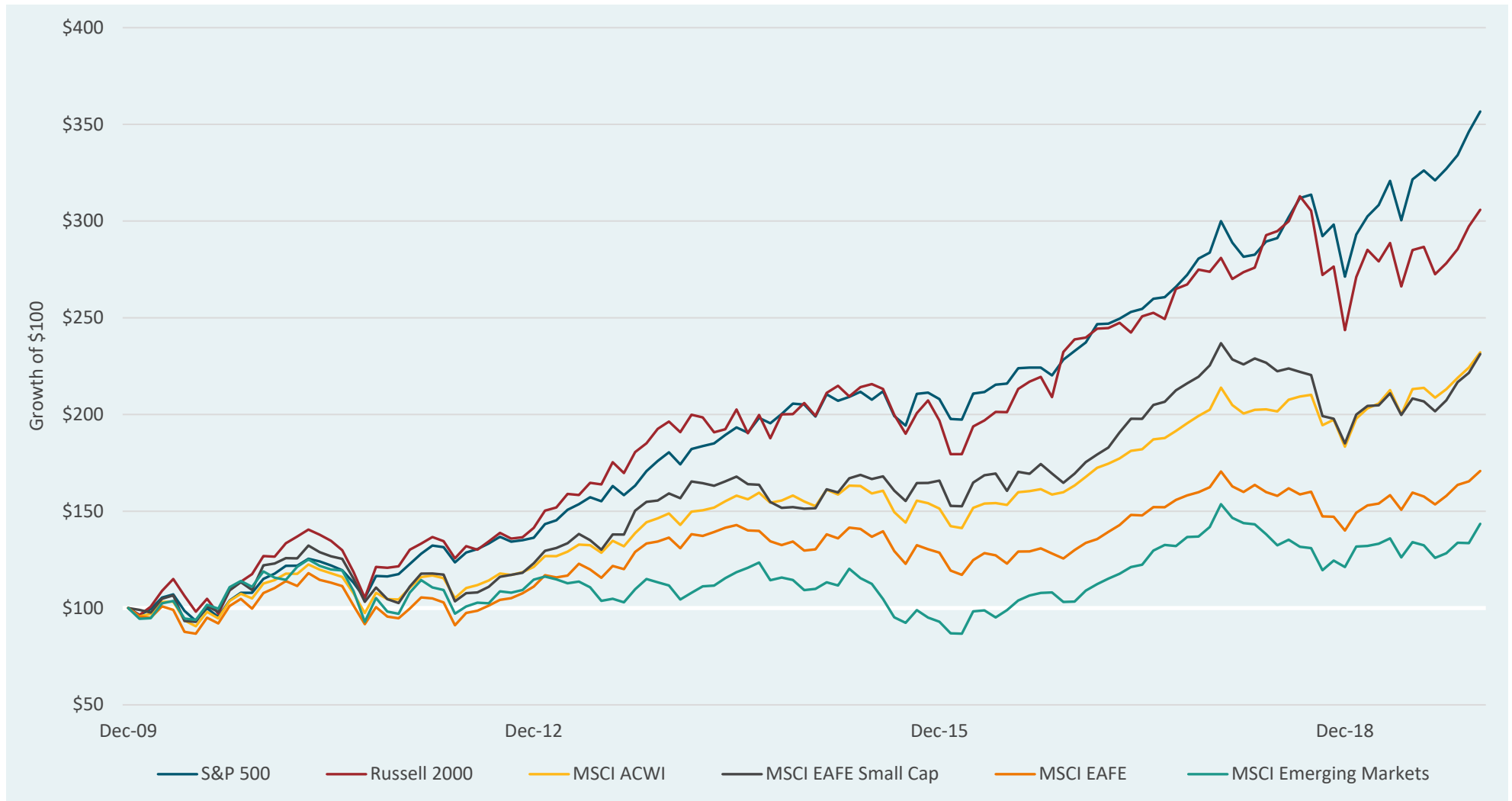
Source: Standard & Poor's, MSCI, Bloomberg, as of 12/31/19

**2019 MAX DRAWDOWNS FROM PREVIOUS ALL-TIME-HIGH INDEX LEVELS**



Source: Standard & Poor's, MSCI, Bloomberg, as of 12/31/19

# Long-term equity performance



Source: Standard & Poor's, Russell, MSCI, Bloomberg, as of 12/31/19

# Other assets

# Currency

The U.S. dollar weakened versus both developed and emerging market currency baskets in the 4<sup>th</sup> quarter, fading some of the strong relative performance it had experienced back in Q3 2019. An index tracking the weighted average of the foreign exchange value of the U.S. dollar against major currencies fell 0.5%.

J.P. Morgan’s Emerging Market Currency Index fell -1.4% in 2019. Many analysts have argued that global disinflationary pressures have eased some long-standing concerns over the risk of capital flight within the emerging market complex. So

long as inflationary risks are muted, then higher nominal interest rates in the emerging market complex should afford emerging market central bankers’ further room to cut rates than their developed market peers. If implemented, the relative accommodation supplied may fuel both growth and currency depreciation.

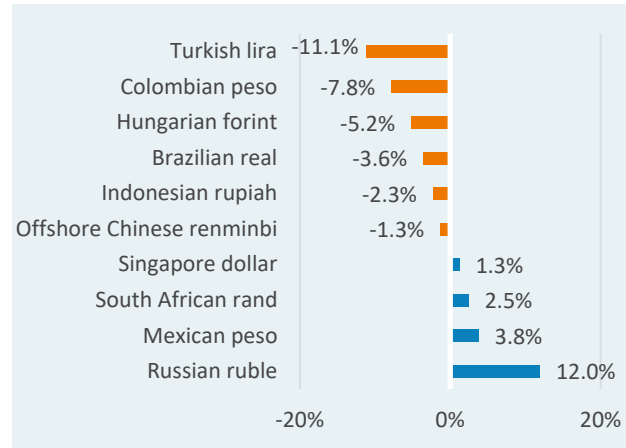
The British pound sterling bounced back sharply in Q4, rising from \$1.23 to \$1.33. Prime Minister Boris Johnson’s Conservative Party secured a firm majority in Parliament, lifting the shroud of “Brexit” from the geopolitical landscape.

**U.S. DOLLAR TRADE WEIGHTED INDEX**



Source: Federal Reserve, Verus, as of 12/31/19

**JP MORGAN EMCI CONSTITUENT 2019 RETURNS**



Source: J.P. Morgan, Bloomberg, as of 12/31/19

**GBP/USD**



Source: Bloomberg, as of 12/31/19

# Appendix

# Periodic table of returns

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	14.6	15.2
Large Cap Equity	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	31.4	11.5	13.5
Small Cap Growth	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	28.5	9.3	13.0
Large Cap Value	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	26.5	8.6	11.8
Small Cap Equity	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	25.5	8.3	11.8
Small Cap Value	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.4	8.2	10.6
International Equity	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.0	7.0	9.8
60/40 Global Portfolio	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	18.6	6.1	6.4
Emerging Markets Equity	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	18.4	5.7	5.5
US Bonds	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	5.6	3.7
Hedge Funds of Funds	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	3.0	3.7
Commodities	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	7.7	2.2	2.8
Real Estate	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	4.8	1.1	0.6
Cash	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	2.1	-3.9	-4.7

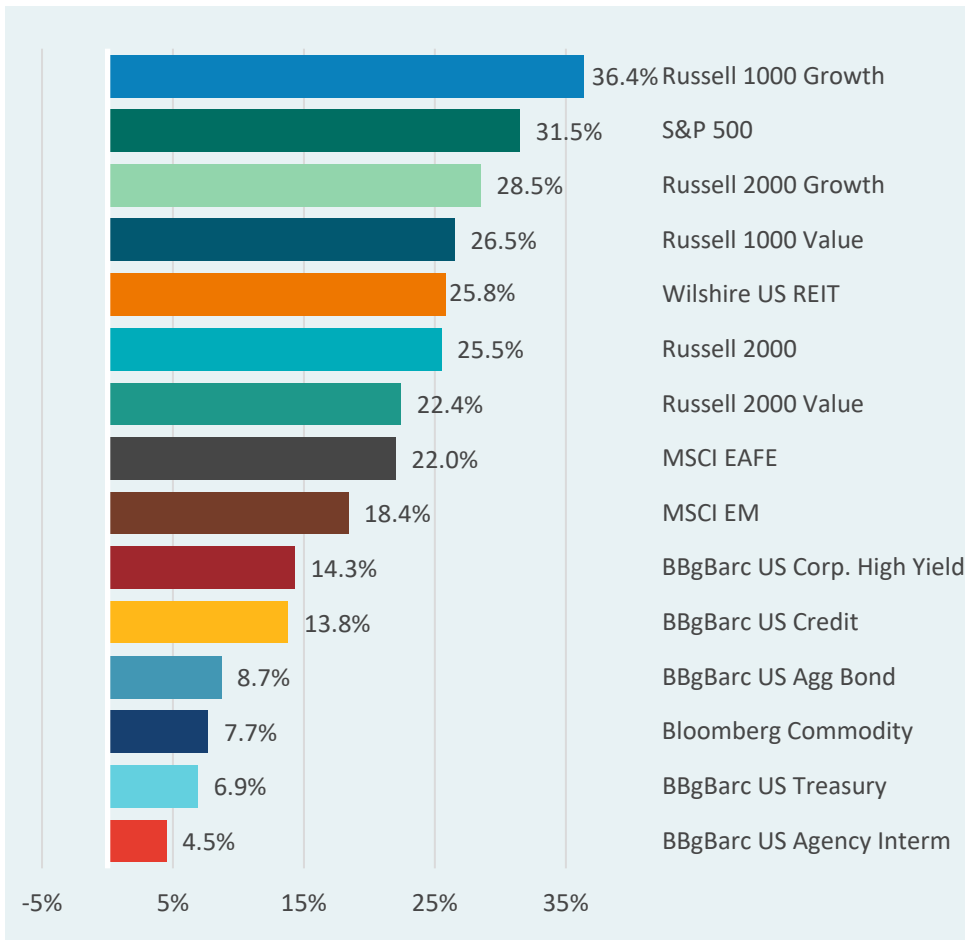
- Large Cap Equity
- Small Cap Growth
- Commodities
- Large Cap Value
- International Equity
- Real Estate
- Large Cap Growth
- Emerging Markets Equity
- Hedge Funds of Funds
- US Bonds
- 60% MSCI ACWI/40% BBgBarc Global Bond
- Cash

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 9/30/19.



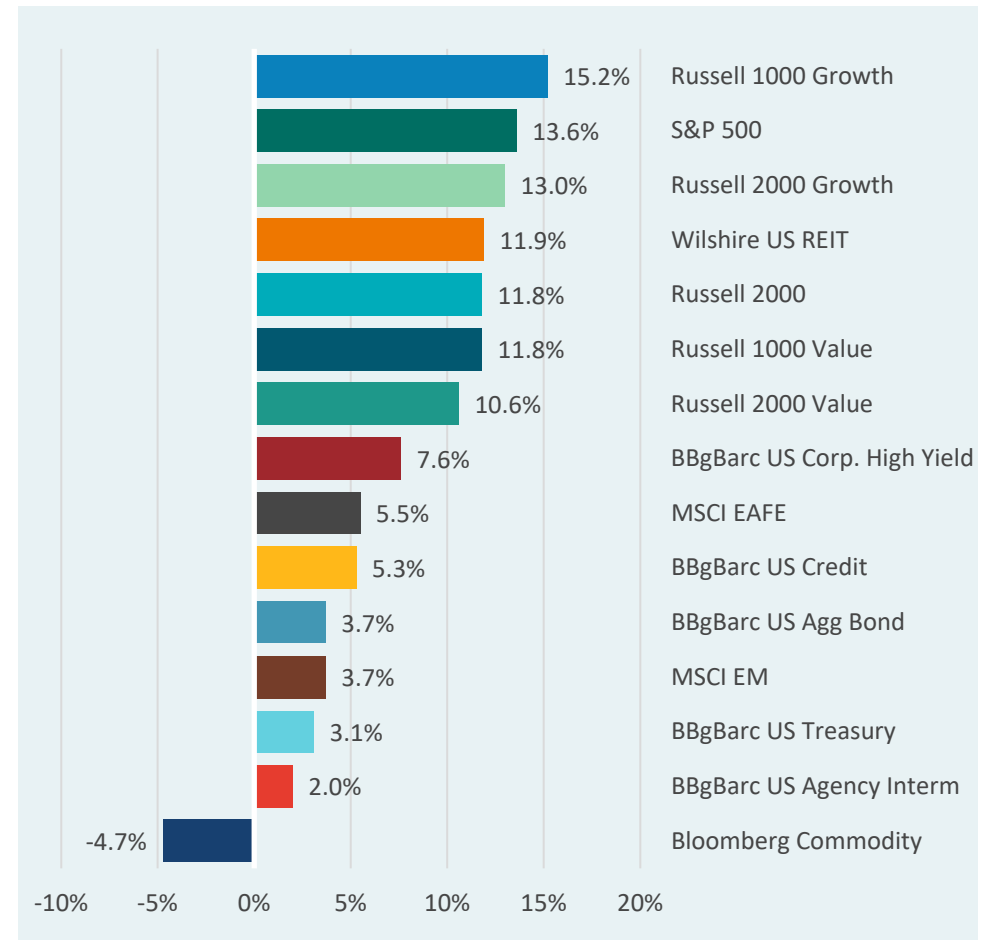
# Major asset class returns

ONE YEAR ENDING DECEMBER



Source: Morningstar, as of 12/31/19

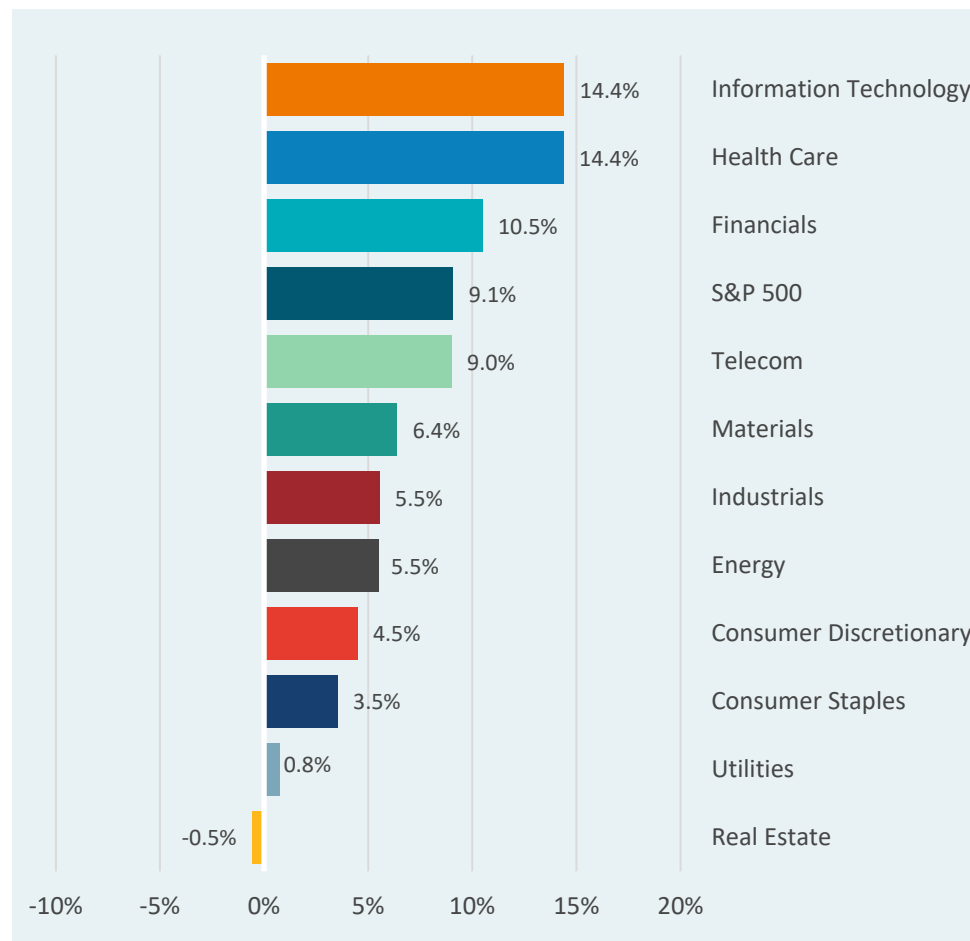
TEN YEARS ENDING DECEMBER



Source: Morningstar, as of 12/31/19

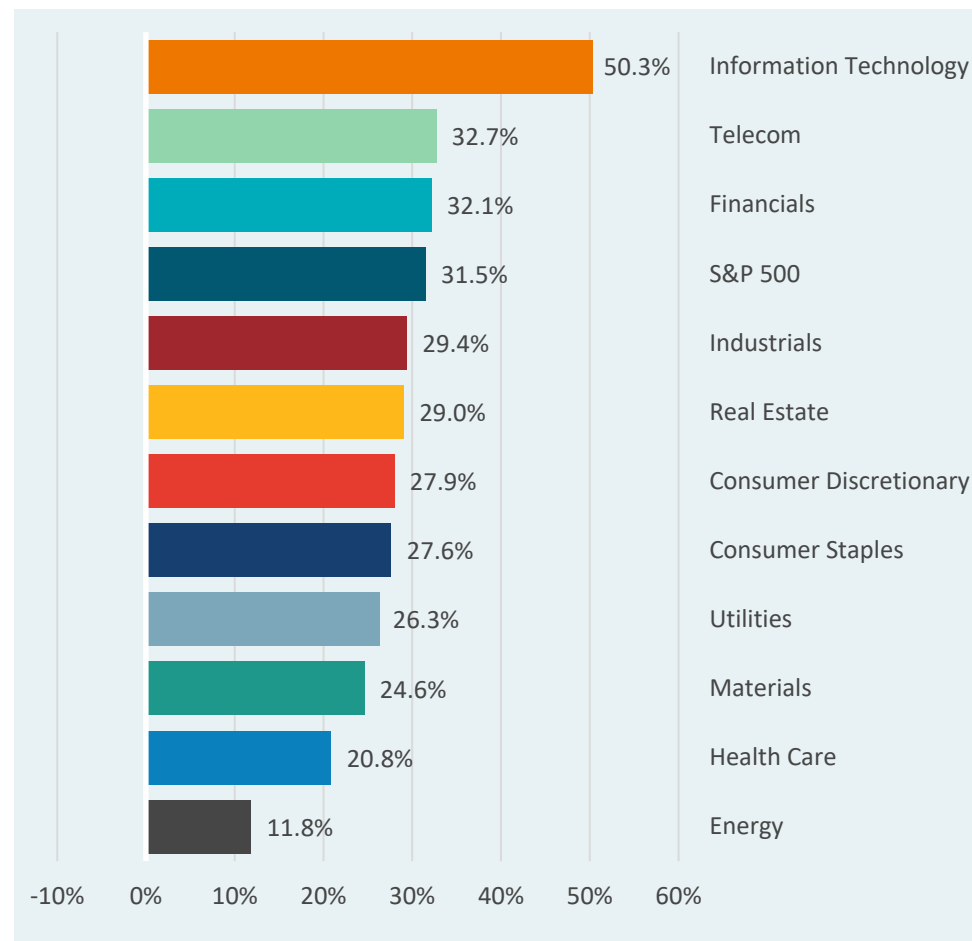
# S&P 500 sector returns

Q4 2019



Source: Morningstar, as of 12/31/19

ONE YEAR ENDING DECEMBER



Source: Morningstar, as of 12/31/19

# Detailed index returns

## DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Core Index</b>							
S&P 500	3.0	9.1	31.5	31.5	15.3	11.7	13.6
S&P 500 Equal Weighted	2.8	7.6	29.2	29.2	12.4	9.8	13.5
DJ Industrial Average	1.9	6.7	25.3	25.3	15.7	12.6	13.4
Russell Top 200	3.1	9.8	31.8	31.8	16.2	12.3	13.7
Russell 1000	2.9	9.0	31.4	31.4	15.0	11.5	13.5
Russell 2000	2.9	9.9	25.5	25.5	8.6	8.2	11.8
Russell 3000	2.9	9.1	31.0	31.0	14.6	11.2	13.4
Russell Mid Cap	2.3	7.1	30.5	30.5	12.1	9.3	13.2
<b>Style Index</b>							
Russell 1000 Growth	3.0	10.6	36.4	36.4	20.5	14.6	15.2
Russell 1000 Value	2.8	7.4	26.5	26.5	9.7	8.3	11.8
Russell 2000 Growth	2.3	11.4	28.5	28.5	12.5	9.3	13.0
Russell 2000 Value	3.5	8.5	22.4	22.4	4.8	7.0	10.6

## INTERNATIONAL EQUITY

<b>Broad Index</b>							
MSCI ACWI	3.5	9.0	26.6	26.6	12.4	8.4	8.8
MSCI ACWI ex US	4.3	8.9	21.5	21.5	9.9	5.5	5.0
MSCI EAFE	3.2	8.2	22.0	22.0	9.6	5.7	5.5
MSCI EM	7.5	11.8	18.4	18.4	11.6	5.6	3.7
MSCI EAFE Small Cap	4.4	11.5	25.0	25.0	10.9	8.9	8.7
<b>Style Index</b>							
MSCI EAFE Growth	2.9	8.4	27.9	27.9	12.8	7.7	6.9
MSCI EAFE Value	3.7	7.8	16.1	16.1	6.3	3.5	4.0
<b>Regional Index</b>							
MSCI UK	5.2	10.0	21.0	21.0	8.3	3.3	5.0
MSCI Japan	2.1	7.6	19.6	19.6	8.9	7.7	6.6
MSCI Euro	2.9	7.9	22.9	22.9	9.1	5.1	3.7
MSCI EM Asia	7.1	12.5	19.2	19.2	12.9	6.6	5.8
MSCI EM Latin American	10.3	10.5	17.5	17.5	10.7	4.2	(0.6)

## FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
BBgBarc US TIPS	0.4	0.8	8.4	8.4	3.3	2.6	3.4
BBgBarc US Treasury Bills	0.1	0.5	2.3	2.3	1.7	1.1	0.6
BBgBarc US Agg Bond	(0.1)	0.2	8.7	8.7	4.0	3.0	3.7
<b>Duration</b>							
BBgBarc US Treasury 1-3 Yr	0.2	0.5	3.6	3.6	1.9	1.4	1.2
BBgBarc US Treasury Long	(2.8)	(4.1)	14.8	14.8	6.9	4.1	7.0
BBgBarc US Treasury	(0.6)	(0.8)	6.9	6.9	3.3	2.4	3.1
<b>Issuer</b>							
BBgBarc US MBS	0.3	0.7	6.4	6.4	3.2	2.6	3.2
BBgBarc US Corp. High Yield	2.0	2.6	14.3	14.3	6.4	6.1	7.6
BBgBarc US Agency Interm	0.1	0.3	4.5	4.5	2.4	1.9	2.0
BBgBarc US Credit	0.3	1.1	13.8	13.8	5.8	4.4	5.3

## OTHER

<b>Index</b>							
Bloomberg Commodity	5.0	4.4	7.7	7.7	(0.9)	(3.9)	(4.7)
Wilshire US REIT	(0.7)	(1.1)	25.8	25.8	7.6	6.9	11.9
CS Leveraged Loans	1.6	1.7	8.2	8.2	4.5	4.5	5.2
Alerian MLP	8.9	(4.6)	6.7	6.7	(5.0)	(7.0)	4.8
<b>Regional Index</b>							
JPM EMBI Global Div	2.0	1.8	15.0	15.0	6.7	6.2	6.9
JPM GBI-EM Global Div	4.1	5.2	13.5	13.5	7.0	2.8	2.7
<b>Hedge Funds</b>							
HFRI Composite	1.8	3.5	10.4	10.4	4.5	3.5	4.0
HFRI FOF Composite	1.3	2.5	7.8	7.8	3.7	2.2	2.8
<b>Currency (Spot)</b>							
Euro	1.8	3.0	(1.8)	(1.8)	2.1	(1.5)	(2.4)
Pound	2.4	7.5	4.0	4.0	2.3	(3.2)	(2.0)
Yen	0.8	(0.6)	1.0	1.0	2.4	2.0	(1.5)

Source: Morningstar, HFR, as of 12/31/19

# Definitions

**Bloomberg US Weekly Consumer Comfort Index** - tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. ([www.lanqerresearch.com](http://www.lanqerresearch.com))

**University of Michigan Consumer Sentiment Index** - A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic conditions conducted by the University of Michigan. For the preliminary release approximately three hundred consumers are surveyed while five hundred are interviewed for the final figure. The level of consumer sentiment is related to the strength of consumer spending. ([www.Bloomberg.com](http://www.Bloomberg.com))

**NFIB Small Business Outlook** - Small Business Economic Trends (SBET) is a monthly assessment of the U.S. small-business economy and its near-term prospects. Its data are collected through mail surveys to random samples of the National Federal of Independent Business (NFIB) membership. The survey contains three broad question types: recent performance, near-term forecasts, and demographics. The topics addressed include: outlook, sales, earnings, employment, employee compensation, investment, inventories, credit conditions, and single most important problem. (<http://www.nfib-sbet.org/about/>)

**NAHB Housing Market Index** - the housing market index is a weighted average of separate diffusion indices for three key single-family indices: market conditions for the sale of new homes at the present time, market conditions for the sale of new homes in the next six months, and the traffic of prospective buyers of new homes. The first two series are rated on a scale of Good, Fair, and Poor and the last is rated on a scale of High/Very High, Average, and Low/Very Low. A diffusion index is calculated for each series by applying the formula  $(\text{Good-Poor} + 100)/2$  to the present and future sales series and  $(\text{High/Very High-Low/Very Low} + 100)/2$  to the traffic series. Each resulting index is then seasonally adjusted and weighted to produce the HMI. Based on this calculation, the HMI can range between 0 and 100.

# Notices & disclosures

**Past performance is no guarantee of future results.** This report or presentation is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and should not be relied upon by retail investors. Nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security or pursue a particular investment vehicle or any trading strategy. The opinions and information expressed are current as of the date provided or cited only and are subject to change without notice. This information is obtained from sources deemed reliable, but there is no representation or warranty as to its accuracy, completeness or reliability. Verus Advisory Inc. expressly disclaim any and all implied warranties or originality, accuracy, completeness, non-infringement, merchantability and fitness for a particular purpose. This report or presentation cannot be used by the recipient for advertising or sales promotion purposes.

The material may include estimates, outlooks, projections and other "forward-looking statements." Such statements can be identified by the use of terminology such as "believes," "expects," "may," "will," "should," "anticipates," or the negative of any of the foregoing or comparable terminology, or by discussion of strategy, or assumptions such as economic conditions underlying other statements. No assurance can be given that future results described or implied by any forward looking information will be achieved. Actual events may differ significantly from those presented. Investing entails risks, including possible loss of principal. Risk controls and models do not promise any level of performance or guarantee against loss of principal.

"VERUS ADVISORY"™ and any associated designs are the respective trademarks of Verus Advisory, Inc. Additional information is available upon request.

Verus<sup>777</sup> is a registered trademark of Verus Advisory, Inc.

# Glossary

---

**Allocation Effect:** An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

**Alpha:** The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as:  $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$ .

**Benchmark R-squared:** Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

**Beta:** A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

**Book-to-Market:** The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

**Capture Ratio:** A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

**Correlation:** A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

**Excess Return:** A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

**Information Ratio:** A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

**Interaction Effect:** An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

**Portfolio Turnover:** The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

**Price-to-Earnings Ratio (P/E):** Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

**R-Squared:** Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

**Selection Effect:** An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

**Sharpe Ratio:** A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as:  $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$ .

**Sortino Ratio:** Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

**Standard Deviation:** A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

**Style Analysis:** A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

**Style Map:** A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

## Disclaimer

---

This report contains confidential and proprietary information and is subject to the terms and conditions of the Consulting Agreement. It is being provided for use solely by the customer. The report may not be sold or otherwise provided, in whole or in part, to any other person or entity without written permission from Verus Advisory, Inc., (hereinafter Verus) or as required by law or any regulatory authority. The information presented does not constitute a recommendation by Verus and cannot be used for advertising or sales promotion purposes. This does not constitute an offer or a solicitation of an offer to buy or sell securities, commodities or any other financial instruments or products.

The information presented has been prepared using data from third party sources that Verus believes to be reliable. While Verus exercised reasonable professional care in preparing the report, it cannot guarantee the accuracy of the information provided by third party sources. Therefore, Verus makes no representations or warranties as to the accuracy of the information presented. Verus takes no responsibility or liability (including damages) for any error, omission, or inaccuracy in the data supplied by any third party. Nothing contained herein is, or should be relied on as a promise, representation, or guarantee as to future performance or a particular outcome. Even with portfolio diversification, asset allocation, and a long-term approach, investing involves risk of loss that the investor should be prepared to bear.

The information presented may be deemed to contain forward-looking information. Examples of forward looking information include, but are not limited to, (a) projections of or statements regarding return on investment, future earnings, interest income, other income, growth prospects, capital structure and other financial terms, (b) statements of plans or objectives of management, (c) statements of future economic performance, and (d) statements of assumptions, such as economic conditions underlying other statements. Such forward-looking information can be identified by the use of forward looking terminology such as believes, expects, may, will, should, anticipates, or the negative of any of the foregoing or other variations thereon comparable terminology, or by discussion of strategy. No assurance can be given that the future results described by the forward-looking information will be achieved. Such statements are subject to risks, uncertainties, and other factors which could cause the actual results to differ materially from future results expressed or implied by such forward looking information. The findings, rankings, and opinions expressed herein are the intellectual property of Verus and are subject to change without notice. The information presented does not claim to be all-inclusive, nor does it contain all information that clients may desire for their purposes. The information presented should be read in conjunction with any other material provided by Verus, investment managers, and custodians.

Verus will make every reasonable effort to obtain and include accurate market values. However, if managers or custodians are unable to provide the reporting period's market values prior to the report issuance, Verus may use the last reported market value or make estimates based on the manager's stated or estimated returns and other information available at the time. These estimates may differ materially from the actual value. Hedge fund market values presented in this report are provided by the fund manager or custodian. Market values presented for private equity investments reflect the last reported NAV by the custodian or manager net of capital calls and distributions as of the end of the reporting period. These values are estimates and may differ materially from the investments actual value. Private equity managers report performance using an internal rate of return (IRR), which differs from the time-weighted rate of return (TWRR) calculation done by Verus. It is inappropriate to compare IRR and TWRR to each other. IRR figures reported in the illiquid alternative pages are provided by the respective managers, and Verus has not made any attempts to verify these returns. Until a partnership is liquidated (typically over 10-12 years), the IRR is only an interim estimated return. The actual IRR performance of any LP is not known until the final liquidation.

Verus receives universe data from InvMetrics, eVestment Alliance, and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. The resulting universe composition is not static and will change over time. Returns are annualized when they cover more than one year. Investment managers may revise their data after report distribution. Verus will make the appropriate correction to the client account but may or may not disclose the change to the client based on the materiality of the change.

**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**  
**Board of Retirement**

February 25, 2020

Agenda Item 6.3

**TO:** Board of Retirement

**FROM:** Michael Coultrip, Chief Investment Officer *Michael R. Coultrip*

**SUBJECT:** Report on SamCERA's Risk Dashboard

**Recommendation**

Review the SamCERA risk dashboard and provide direction as needed.

**Background**

Verus is providing semi-annual risk management report (SamCERA Risk Dashboard) using index level holdings to better highlight various risk exposures of the plan. Last year the Board directed staff to present the risk dashboard on an annual basis to the Board.

**Discussion**

Margaret Jadallah of Verus will present the SamCERA risk dashboard with data as of December 31, 2019.

**Attachment**

SamCERA Risk Dashboard

# San Mateo County Employees' Retirement Association

## Portfolio Risk Report

December 31, 2019

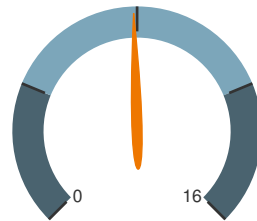
### 1 Portfolio risk



Portfolio: 7.5%



Policy: 7.5%



Average Public Pension: 7.9%



Global 60/40: 7.3%

### 2 Portfolio equity beta



Portfolio: 0.61



Policy: 0.62



Average Public Pension: 0.64



Global 60/40: 0.60

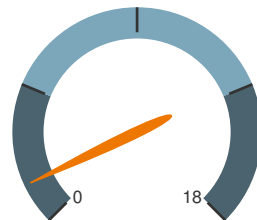
### 3 Portfolio interest rate risk - Duration



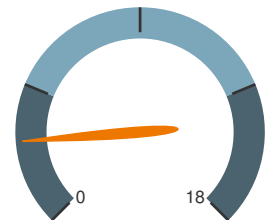
Portfolio: 2.3



Policy: 1.3

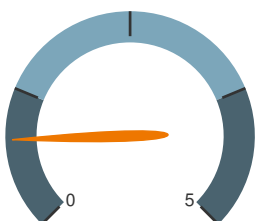


Average Public Pension: 1.3

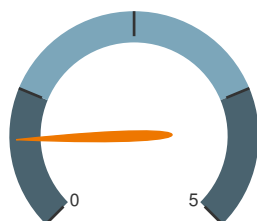


Global 60/40: 2.7

### 4 Portfolio credit risk - Spread duration



Portfolio: 0.8



Policy: 0.8



Average Public Pension: 0.7



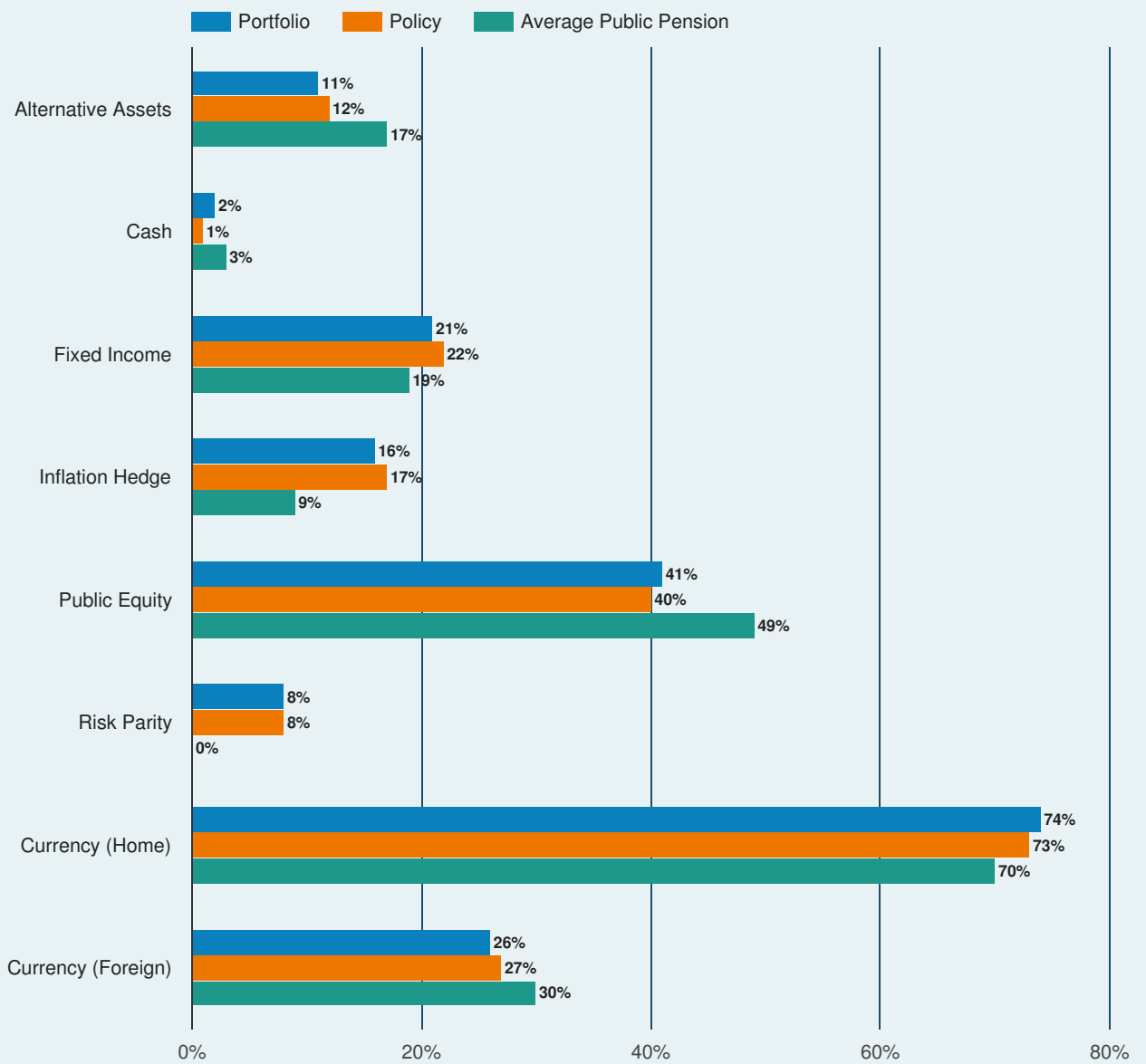
Global 60/40: 1.1



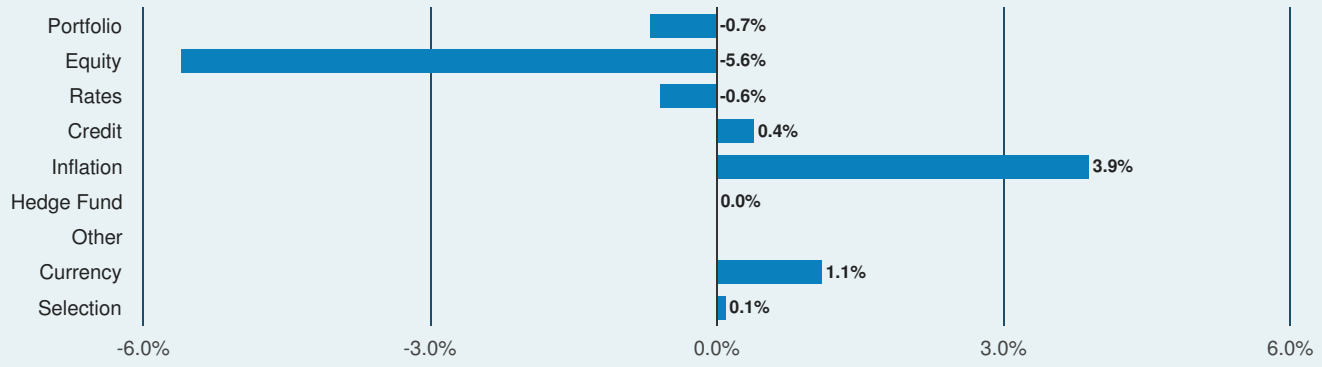
## 5 Exposure allocation by asset class

		Portfolio	Policy	Average Public Pension
Alternative Assets	Absolute Return	4.9%	6.0%	7.0%
	Private Equity	6.1%	6.0%	10.1%
<b>Alternative Assets Total</b>		<b>11.0%</b>	<b>12.0%</b>	<b>17.1%</b>
Cash	Cash	2.1%	1.0%	2.9%
<b>Cash Total</b>		<b>2.1%</b>	<b>1.0%</b>	<b>2.9%</b>
Fixed Income	Private Credit	1.9%		
	Opportunistic Credit	5.6%	8.0%	2.2%
	Core Fixed	13.7%	14.0%	16.7%
<b>Fixed Income Total</b>		<b>21.2%</b>	<b>22.0%</b>	<b>18.9%</b>
Inflation Hedge	TIPS	0.0%	1.0%	
	Private Real Assets	1.8%	2.0%	1.0%
	Public Real Assets	6.7%	6.0%	
	Real Estate	7.8%	8.0%	8.4%
<b>Inflation Hedge Total</b>		<b>16.4%</b>	<b>17.0%</b>	<b>9.4%</b>
Public Equity	Small Cap Equity	1.9%	2.0%	
	Emerging Markets	1.9%	2.0%	4.7%
	Developed International	16.7%	16.0%	20.0%
	Large Cap Equity	20.5%	20.0%	24.3%
<b>Public Equity Total</b>		<b>41.0%</b>	<b>40.0%</b>	<b>49.0%</b>
Risk Parity	Risk Parity	8.3%	8.0%	
<b>Risk Parity Total</b>		<b>8.3%</b>	<b>8.0%</b>	
<b>Total Portfolio</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>

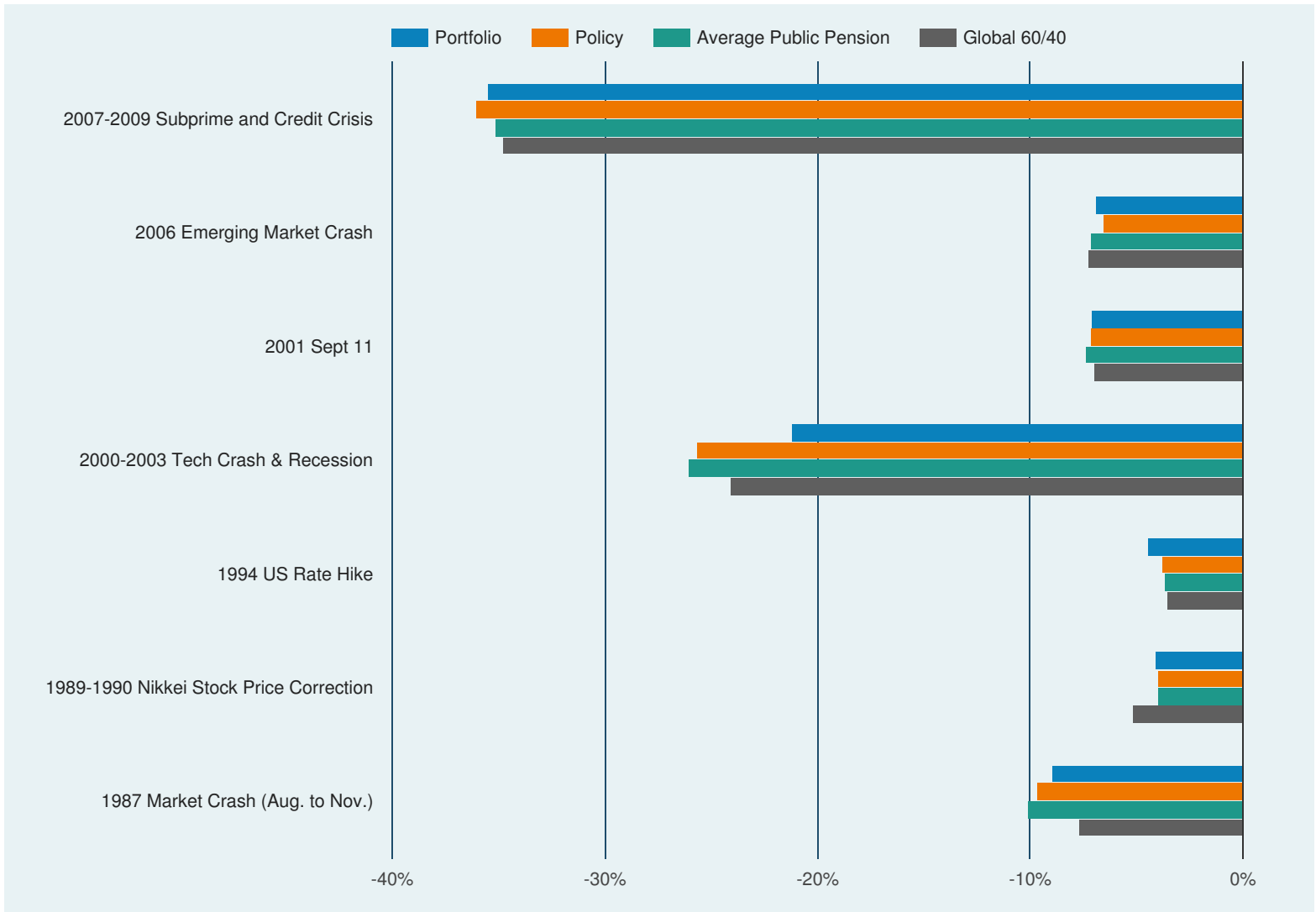
## 6 Exposure allocation



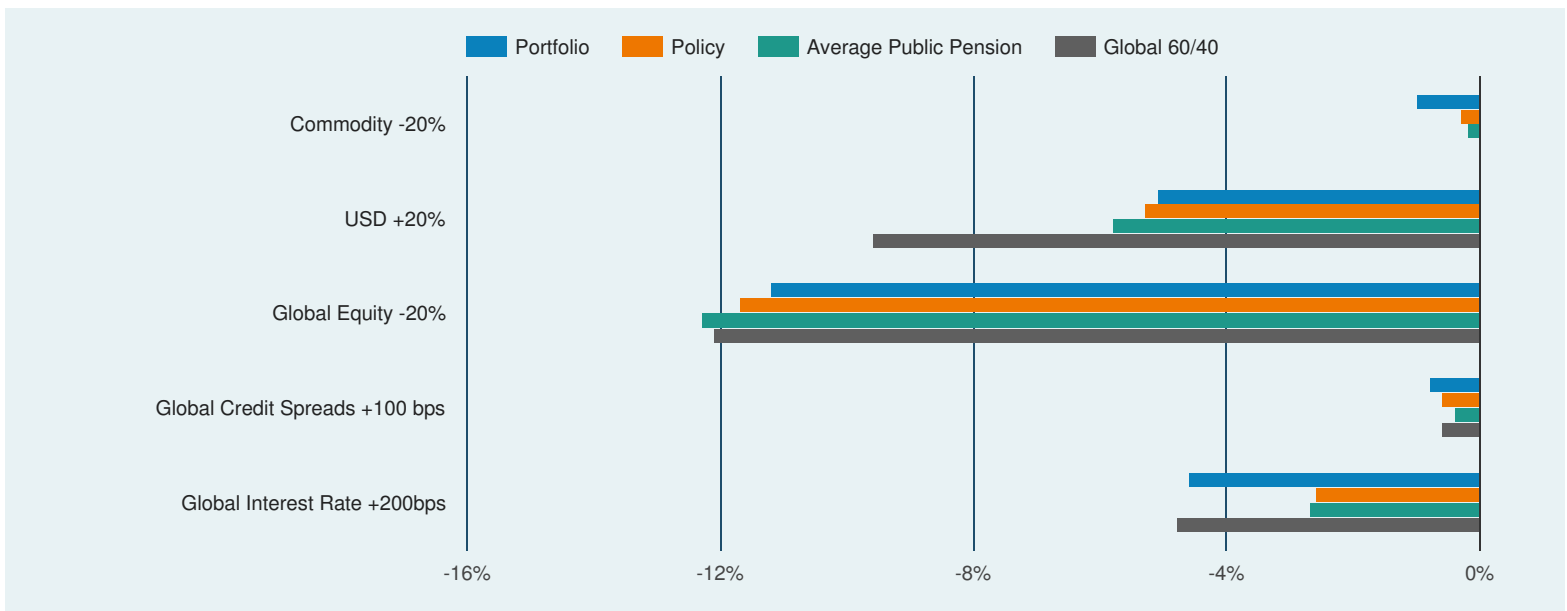
## 9 Risk factor weight relative to target



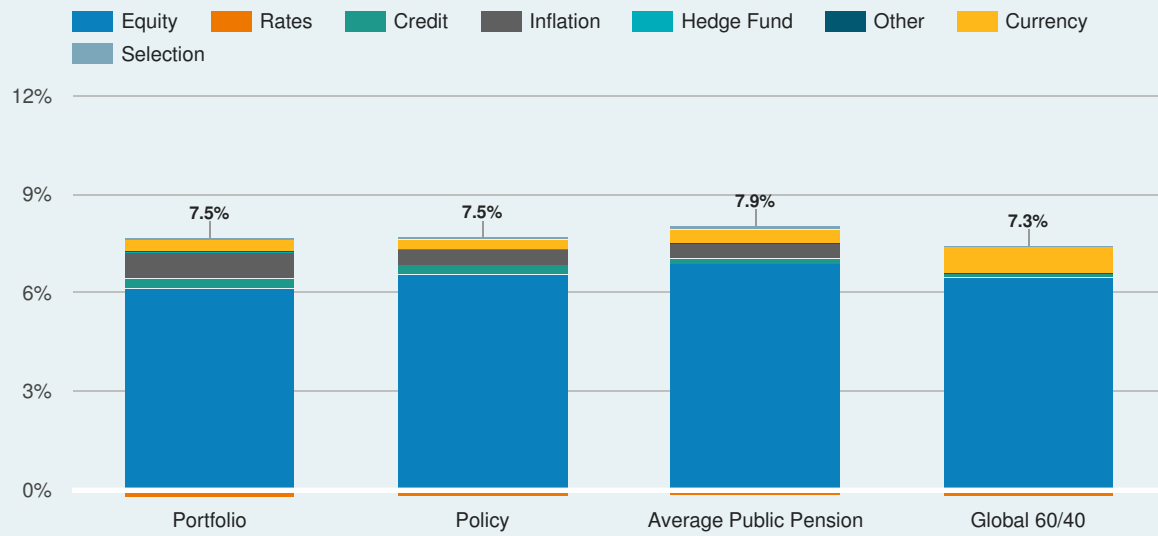
## 10 Tail risk - Scenario analysis



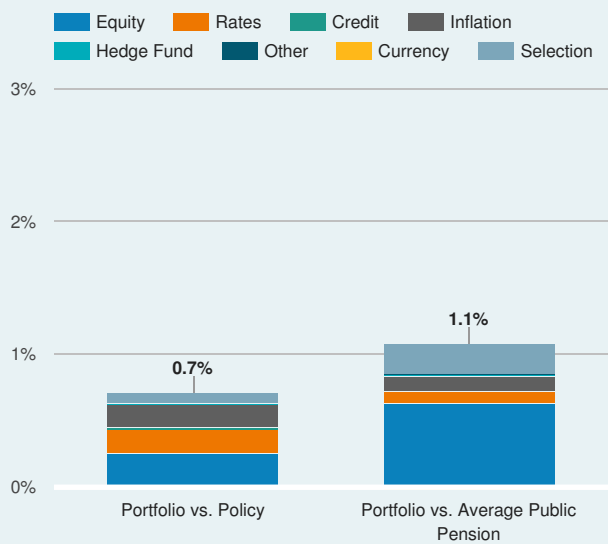
## 11 Tail risk - Stress tests



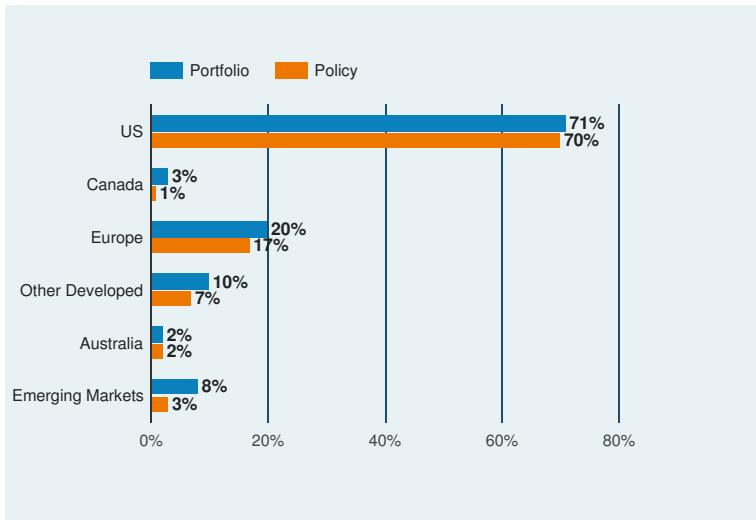
## 12 Risk contribution by risk factor



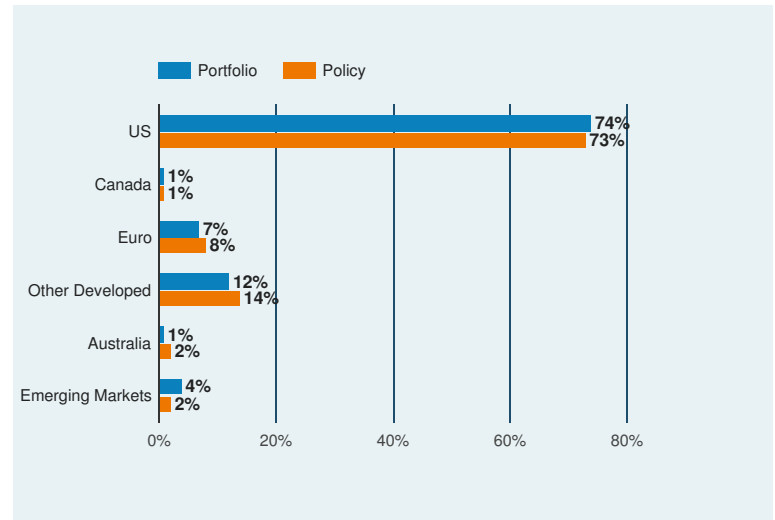
## 13 Active risk contribution by risk factor



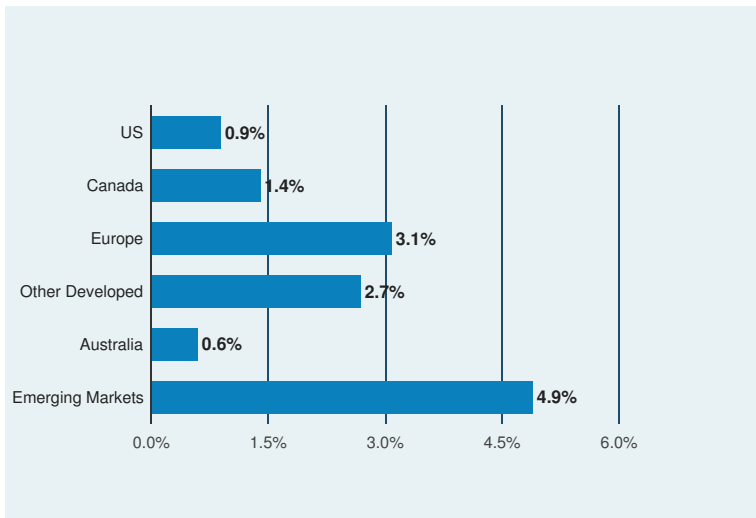
## 14 Geographic exposure



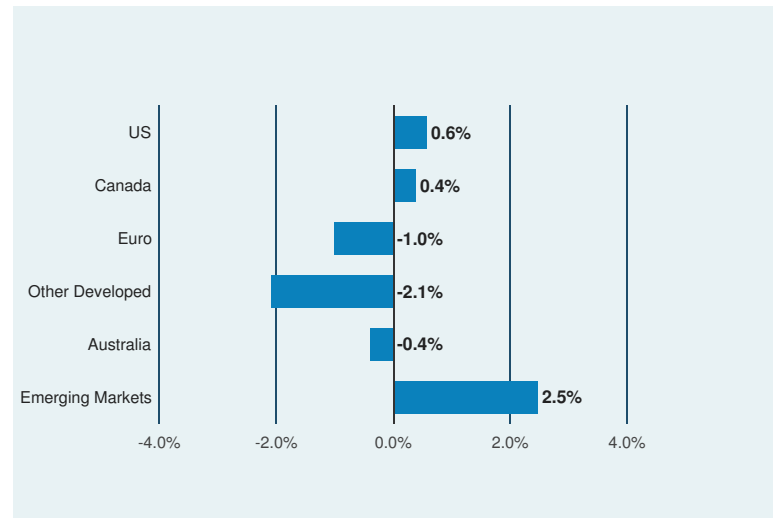
## 15 Currency exposure



## 16 Net geographic exposure



## 17 Net currency exposure



## 18 Market value summary per BarraOne

Bucket	Asset Class	Account Name	Account	Market Value (millions)	
Cash	Cash	General Account	SAMCERA049	84.7	
		Treasury & LAIF	SAMCERA050	17.8	
Cash Total				102.5	
Credit	Global Credit	PIMCO Diversified	SAMCERA064	90.3	
		Franklin Templeton	SAMCERA_FRANKTEMP	41.5	
		Private Credit	White Oak Yield	SAMCERA062	32.7
	US Credit	TCP Direct Lending VIII	SAMCERA057	32.6	
		PIMCO Private Income	SAMCERA072	27.3	
		Brigade Capital	SAMCERA029	81.5	
		Beach Point Select	SAMCERA028	55.1	
		Angelo Gordon Opportunistic	SAMCERA026	4.4	
		Angelo Gordon STAR	SAMCERA027	3.7	
Credit Total				369.0	
Equity	EM Equity	Parametric Core	SAMCERA019	94.5	
		Global Equity	Baillie Gifford	SAMCERA014	276.2
			Mondrian	SAMCERA017	272.2
	Private Equity	BlackRock EAFE Index	SAMCERA015	268.7	
		Private Equity	SAMCERA_PE	298.6	
		US Equity	BlackRock Russell 1000	SAMCERA059	533.0
	DE Shaw		SAMCERA004	160.4	
	PanAgora Defuseq		SAMCERA069	156.6	
	Acadian US MGD V		SAMCERA068	152.7	
	QMA US Small Cap	SAMCERA055	92.0		
Equity Total				2,304.8	
Hedge Fund	Fund of Funds	Aberdeen Standard GARS	SAMCERA037	105.4	
	Hedge Fund	AQR DELTA XN	SAMCERA036	134.7	

	Risk Parity	AQR GRP 10% Volatility	SAMCERA052	207.7
		PanAgora	SAMCERA034	200.2
Hedge Fund Total				648.0
Inflation	Commodities	SSgA Custom Real Asset	SAMCERA058	259.1
		Cushing MLP Alpha TR	SAMCERA066	71.1
	Real Estate	Invesco	SAMCERA044	275.7
		Private Real Asset	SAMCERA_RA	87.4
		PGIM RE US Debt Fund	SAMCERA063	85.3
		Invesco US Val IV	SAMCERA045	14.5
		Invesco US Val V	SAMCERA071	7.8
	TIPS	Brown Brothers Harriman	SAMCERA053DNU	0.0
Inflation Total				801.0
Rates	US Bonds	FIAM Bond	SAMCERA021	289.1
		BlackRock Intermediate Govt	SAMCERA060	236.6
		Western TRU	SAMCERA022	142.2
Rates Total				668.0
<b>Total Portfolio (millions)</b>				<b>4,893.4</b>



## Chart Definitions

- 1 Portfolio risk**

Total risk comparison of Portfolio, Policy, and Peer Group. Policy is composed of: 2.0% MSCI Emerging Markets, 7.0% Bloomberg Barclays U.S. Corporate High Yield, 14.0% Bloomberg Barclays Aggregate Index, 2.0% Custom Real Asset Index, 6.0% Custom Real Asset Index, 8.0% NCREIF ODCE, 17.0% MSCI EAFE, 6.0% HFRI FOF Diversified Index, 7.0% Private Equity, 3.2% Bloomberg Barclays Global Aggregate, 4.8% MSCI World, 18.0% Russell 1000 Index, 2.0% Bloomberg Barclays U.S. Treasury: U.S. TIPS, and 3.0% Russell 2000 Index. Average Public Pension consists of: 26.0% S&P 500 Index, 4.0% MSCI ACWI IMI, 16.6% MSCI ACWI ex USA IMI, 2.6% MSCI EAFE, 3.5% MSCI EM, 1.5% Bloomberg Barclays Global Aggregate, 2.0% Bloomberg Barclays Global Treasury ex US, 17.1% Bloomberg Barclays U.S. Aggregate, 1.3% Bloomberg Barclays Emerging Markets, 7.6% HFRI FOF Index, 8.3% Private Equity, 2.0% Bloomberg Commodity Index, 6.2% NCREIF Property Index, and 1.3% Barclays U.S. Treasury Bills 1-3 Months. Average Public Pension is defined as the average allocation of > \$1b InvestorForce Public defined benefit plans. Global 60/40 is composed of 60% MSCI ACWI IMI and 40% Bloomberg Barclays Global Aggregate.
- 2 Portfolio equity beta**

Equity risk presented by equity beta to market. Equity beta is a measure describing the sensitivity of portfolio returns with returns of the equity market (MSCI ACWI).
- 3 Portfolio interest rate risk - Duration**

Interest rate risk presented by duration and dollar movement of portfolios. Duration of a financial asset that consists of fixed cash flows is the weighted average of the times until those fixed cash flows are received (measured in years). It also measures the percentage change in price for a given change in yields (the price sensitivity to yield). DV01 \$ (dollar duration) is the change in price in dollars of a financial instrument resulting from a one basis point change in yield.
- 4 Portfolio credit risk - Spread duration**

Credit risk presented by spread duration and dollar movement of portfolios. Spread duration measures the percentage change in price for a one percentage point change in spreads.
- 5 Exposure allocation by asset class**

Actual exposures to various asset classes and sub-asset classes are as allocated in investment policy and are compared vs a reference benchmark. Assignment to sub-asset classes is at the custodial account level according to manager mandate.
- 6 Exposure allocation**

Exposure allocation among major risk buckets (rates, credit, equity, inflation, currency) and net currency exposure (domestic vs. foreign). Full Cash collateral is assumed for all derivatives.
- 7 Relative risk vs target by bucket**

Comparative riskiness of Portfolio vs. Target on total portfolio and risk bucket levels: For example, equity bucket relative risk compares the riskiness of the Portfolio equity bucket vs the Target equity bucket.
- 8 Relative risk vs target by risk factor**

Disregarding any specific asset class mandates and having a look through on the portfolio decomposing risk in respective risk factor contributions, this measure looks at the relative risk contributions specific factors of the portfolio vs. the reference benchmark. Formula: (factor risk contribution within portfolio / factor risk contribution within reference benchmark) - 1. "Other" includes Country factors and World factors.
- 9 Risk factor weight relative to target**

Contribution by factor to total relative risk of the Portfolio vs the Policy: For example, Equity is equity risk contribution to Portfolio minus equity risk contribution to the Policy, divided by total risk of the Policy. The factor overweights are additive to the total relative risk at the top line. "Other" includes Country factors and World factors.
- 10 Tail risk - Scenario analysis**

Tail risk is a form of risk measurement that considers the possibility that a market will experience losses greater than what the normal distribution would suggest. This graph shows the expected performance under various historical scenarios (described in the appendix at the end of this report). For each historical scenario, the current market value is recalculated to determine return under identical market conditions, assuming an instantaneous shock.
- 11 Tail risk - Stress tests**

This display shows expected performance when individual risk factors are subjected to instantaneous shocks. Directly affected assets are revalued at factor level.
- 12 Risk contribution by risk factor**

Risk contribution by risk factor. Volatility measures the price variation of a portfolio or financial instrument over time.
- 13 Active risk contribution by risk factor**

Active risk in terms of annual tracking error: Tracking Error (TE) measures how closely a portfolio follows its benchmark. It is the standard deviation of the difference between the portfolio and benchmark returns.
- 14 Geographic exposure**

Geographic exposures are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.
- 15 Currency exposure**

Currency portfolio allocation. Currency exposures from both the underlying securities and the purchasing currency of the futures contract are included.
- 16 Net geographic exposure**

Difference between portfolio and policy allocation among major geographic areas.
- 17 Net currency exposure**

Difference between portfolio and policy allocation among major currencies.
- 18 Market value summary per BarraOne**

Market Value is presented by account and risk bucket in dollars as reported by BarraOne. Some differences may exist due to timing, pricing sources and availability of information on new investments.

- 
- 18 **Interest rate bucket**  
Coupon yield (nominal yield) of a fixed income security is a fixed percentage of the par value that does not vary with the market price of the security. Yield to Maturity (YTM) is the interest rate of return earned by an investor who buys a fixed-interest security today at the market price and holds it until maturity. Ratings indicate credit quality of a security and the issuer's ability to make payments of interest and principal.
- 
- 19 **Rates bucket - Geographic exposure**  
Geographic exposures specific to the Rates bucket are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.
- 
- 20 **Rates bucket - Currency exposure**  
Currency allocation of interest rate instruments.
- 
- 21 **Rates bucket - Security type**  
Allocation of interest rate instruments among different security types.
- 
- 22 **Credit bucket**  
Various characteristics of credit instruments.
- 
- 23 **Credit bucket - Geographic exposure**  
Geographic exposures specific to the Credit bucket are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.
- 
- 24 **Credit bucket - Currency exposure**  
Currency allocation of credit instruments.
- 
- 25 **Credit bucket - Security type**  
Allocation of credit instruments among different security types.
- 
- 26 **Inflation bucket**  
Composition of inflation hedging instruments in portfolio and benchmark. Notional duration of real rates instruments is also included.
- 
- 27 **Inflation bucket - Geographic exposure**  
Geographic exposures specific to the Inflation bucket are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.
- 
- 28 **Inflation bucket - Currency exposure**  
Currency allocation of inflation instruments.
- 
- 29 **Inflation bucket - Security type**  
Allocation of inflation instruments among different security types.
- 
- 30 **Equity bucket**  
P/E ratio is a valuation ratio of a company's current share price compared to its per-share earnings. Beta measures sensitivity to Global Equities.
- 
- 31 **Equity bucket - Geographic exposure**  
Geographic exposures specific to the Equity bucket are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.
- 
- 32 **Equity bucket - Currency exposure**  
Currency allocation of equity assets.
- 
- 33 **Equity bucket - Security type**  
Allocation of equity assets among different security types.

## Tail Risk Scenario Definitions

- 
- 1 **2007-2009 Subprime and Credit Crisis**  
(9/30/2007 - 3/4/2009) The burst of the housing bubble in mid-2007 marked the beginning of the years-long subprime mortgage crisis, rooted from the easy credit, low interest rates, and loose regulatory environment in the early 2000s, which made low quality (subprime) mortgaging extremely easy. The contagious meltdown quickly led to plunging asset prices in the financial markets, rising bankruptcies, delinquencies, and foreclosures, and central bank monetary rescues and fiscal interventions by governments around the globe.
- 
- 2 **2006 Emerging Market Crash**  
(5/10/2006 - 6/14/2006) A number of emerging markets, including Brazil, India, and Argentina, plunged rapidly in May 2006.
- 
- 3 **2001 Sept 11**  
(9/7/2001 - 9/21/2001) The U.S. stock market was closed for a week upon a series of coordinated suicide attacks upon the United States on September 11, 2001. It plunged sharply over the week upon reopening.
- 
- 4 **2000-2003 Tech Crash & Recession**  
(1/19/2000 - 3/12/2003) Period of crisis and slowdown for technological firms due to a rapid jump in stock prices when a speculative technology bubble began to burst, triggering a sell-off of companies. The period includes a slowdown for internet companies that went out of business as the stock market plummeted further.
- 
- 5 **1994 US Rate Hike**  
(1/31/1994 - 12/13/1994) In combating inflation, the U.S. Federal Reserve raised its interest rate from 3.25% in February to 5.5% in November 1994.
-

---

6 **1989-1990 Nikkei Stock Price Correction**

(12/29/1989 - 3/30/1990) After hitting the Nikkei stock index's all-time high on December 29, 1989, the Japan financial market crashed and plunged to a low in March 1990.

7 **1987 Market Crash (Aug. to Nov.)**

(8/3/1987 - 11/30/1987) The U.S. stock market began to topple on October 14, 1987 after reaching a record high. It was triggered by reports of a larger trade deficit and the elimination of the tax benefits of financing mergers. The aggravating selling pressure in October 19 from confused and fearful investors and the failing portfolio insurers' models led to a substantial global market sell-off.

## DISCLAIMERS AND NOTICES

All the information presented in this risk report is furnished on a confidential basis for use solely by the client in connection with Verus Advisory, Inc. and/or Verus Investors, LLC (hereinafter collectively or individually the "Company") and the entity to whom this risk report is provided (hereinafter the client). It is agreed that use of the risk report is acceptance that the information contained therein is subject to the terms and conditions of the confidentiality agreement by and between the Company and the client and that such information is being presented through the proprietary technology known as the risk report.

The information contained in the risk report may not be copied, reproduced or distributed, in whole or in part, nor may its contents or facts or terms of any securities (if any) contained therein be disclosed to any other person except in accordance with the terms of the confidentiality agreement or unless in full conformity with prevailing NASD or SEC regulations. The information presented does not constitute a recommendation by the Company and cannot be used for advertising or sales promotion purposes.

The information presented has been prepared by the Company from sources that it believes to be reliable and the Company has exercised all reasonable professional care in preparing the information presented. However, the Company cannot insure the accuracy of the information contained therein. Subject to specific contractual terms between the Company and the client, the Company shall not be liable to clients or anyone else for inaccuracy or in-authenticity of information in the analysis or for any errors or omissions in content, except to the extent arising from sole gross negligence, regardless of the cause of such inaccuracy, in-authenticity, error, or omission. In no event shall the Company be liable for consequential damages.

Nothing contained therein is, or should be relied on as, a promise, representation, or guarantee as to future performance or a particular outcome. Even with portfolio diversification, asset allocation, and a long-term approach, investing involves risk of loss that the client should be prepared to bear. The information presented may be deemed to contain "forward looking" information. Examples of forward looking information including, but are not limited to, (a) projections of or statements regarding return on investment, future earnings, interest income, other income, growth prospects, capital structure, and other financial terms, (b) statements of plans or objectives of management, (c) statements of future economic performance, and (d) statements of assumptions, such as economic conditions underlying other statements. Such forward looking information can be identified by the use of forward looking terminology such as "believes," "expects," "may," "will," "should," "anticipates," or the negative of any of the foregoing or other variations thereon or comparable terminology, or by discussion of strategy. No assurance can be given that the future results described by the forward looking information will be achieved. Such statements are subject to risks, uncertainties, and other factors which could cause the actual results to differ materially from future results expressed or implied by such forward looking information. Such factors that could cause the actual results to differ materially from those in forward looking statements include among other items, (i) an economic downturn, (ii) changes in the competitive marketplace and/or client requirements, (iii) unanticipated changes in Company management, (iv) inability to perform client contracts at anticipated cost levels, (v) changes in the regulatory requirements of the industry, and (vi) other factors that affect businesses within the various industries within which they work.

The information presented does not purport to be all-inclusive nor does it contain all information that the client may desire for its purposes. The information presented should be read in conjunction with any other material furnished by the Company. The Company will be available, upon request, to discuss the information presented in the risk report that clients may consider necessary, as well as any information needed to verify the accuracy of the information set forth therein, to the extent Company possesses the same or can acquire it without unreasonable effort or expense.

### Company disclaimers required by information and service providers

(The identification of the information and service provider in the heading of each paragraph is for reference only)

#### Barra, LLC

This report has been prepared and provided by the Company solely for the client's internal use and may not be redistributed in any form or manner to any third party other than on a need to know basis to your board of directors, investment consultants, and other third parties with direct responsibility for monitoring the client's investments. The report contains proprietary third party data from Barra, LLC.

The data is provided to the client on an "as is" basis. The Company, its information providers (including without limitation Barra, LLC), and any other third party involved in or related to the making or compiling of the data make no representation or warranty of any kind, either express or implied, with respect to the data in this report (or the results to be obtained by the use thereof). Company, its information providers (including without limitation Barra, LLC) and any other third party involved in or related to the making or compiling of the data expressly disclaim any and all implied warranties of originality, accuracy, completeness, non-infringement, merchantability and fitness for a particular purpose.

The client assumes the entire risk of any use the client may make of the data. In no event shall the Company, its information providers (including without limitation Barra, LLC) or any third party involved in or related to the making or compiling of the data, be liable to the client, or any other third party, for any direct or indirect damages, including, without limitation, any lost profits, lost savings or other incidental or consequential damages arising out of this agreement or the inability of the client to use the data, regardless of the form of action, even if Company, any of its information providers (including without limitation Barra, LLC), or any other third party involved in or related to the making or compiling of the data has been advised of or otherwise might have anticipated the possibility of such damages.

#### FTSE TMX Global Debt Capital Markets, Inc.

The client agrees that FTSE TMX Global Debt Capital Markets, Inc. and the parties from whom FTSE TMX Global Debt Capital Markets, Inc. obtains data do not have any liability for the accuracy or completeness of the data provided or for delays, interruptions or omissions therein or the results to be obtained through the use of this data. The client further agrees that neither FTSE TMX Global Debt Capital Markets, Inc. nor the parties from whom it obtains data make any representation, warranty or condition, either express or implied, as to the results to be obtained from the use of the data, or as to the merchantable quality or fitness of the data for a particular purpose.

**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**  
**Board of Retirement**

February 25, 2020

Agenda Item 6.4

**TO:** Board of Retirement

**FROM:** Michael Coultrip, Chief Investment Officer *Michael R. Coultrip*

**SUBJECT:** Report on Core Fixed Income Manager Structure

**Recommendation**

Review the report on the core fixed income manager structure and provide feedback as needed.

**Background**

In September of 2019, the Board approved an updated asset allocation policy, with the largest changes being the removal of risk parity and a resulting increase in the allocation of core fixed income from 14% to 21%. In October the Board approved an implementation plan that adds this core fixed income exposure in multiple stages. The first stage is complete with the approval of the 4% allocation to the DoubleLine Securitized Income strategy in January.

**Discussion**

The attached core fixed income manager structure shows the impact of adding the DoubleLine strategy, namely bringing the securitized allocation to benchmark levels, decreasing expected total risk, and increasing the portfolio yield. The manager structure also helps inform the type of core fixed income manager to be considered in the next stage. Staff and Verus will look for a low-risk, high quality core fixed income manager that exhibits a duration profile in-line with the benchmark, and that has a low correlation and a differentiated strategy from our current core fixed income managers. Margaret Jadallah and Joe Abdou of Verus will review the core fixed income manager structure with the Board.

**Attachment**

Verus Core Fixed Income Manager Structure



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**FEBRUARY 25, 2020**

Fixed Income Structure Analysis

**SamCERA**

# Rationale for Core fixed income structure changes

- Allocate additional assets to Core fixed income portfolio following asset-liability study
- Take advantage of relative value opportunity in securitized credit
- Marginally decrease interest rate risk; allowance for marginal increase in credit spread risk
- Maintain high credit quality in Core fixed income portfolio
- Two phases to implementation – First phase completed with addition of DoubleLine Securitized Income; Second phase entails adding another core fixed income manager

*Fixed income structure analysis measures allocations and risk decomposition of proposed portfolio vs. benchmark and current portfolio to these ensure goals are met*

# DoubleLine Securitized Income

- Allocates equally to agency MBS and investment grade structured credit
- Deep expertise in securitized credit and MBS
  - Core competency of team
  - Large percentage of firm assets in securitized credit

*\$200MM allocation to DoubleLine approved in January*



# Sector allocations

Addition of DoubleLine Securitized Income increases allocation to the securitized sector and brings the allocation in line to the broad benchmark while reducing total portfolio risk

## CURRENT CORE FIXED INCOME PORTFOLIO

Grouping: Current Portfolio	Weight (%)	Bmk Weight (%)	Active Weight (%)	Total Risk	Portfolio Risk Contribution	Contribution To Effective Duration	Contribution To Credit Spread Duration	Yield To Maturity (%)	Moody Rating	Active Total Risk
by: sector	100.0%	100.0%	0.0%	2.5	2.5	4.2	2.7	2.5%	Aa2 / Aa3	1.06
Treasury	55.9%	39.7%	16.2%	3.0	1.6	3.2	0.0	1.5%	Aaa	0.85
Corporate	21.6%	23.7%	-2.1%	3.7	0.8	1.4	1.6	3.8%	Baa2	1.81
Securitized/Collateralized	14.9%	28.5%	-13.7%	2.5	0.3	0.5	0.7	2.7%	Aaa / Aa1	1.95
Yankee Bond	7.0%	7.4%	-0.4%	5.1	0.2	0.4	0.4	5.2%	Ba1	4.72
Municipal	0.6%	0.6%	-0.1%	4.9	0.0	0.0	0.0	4.3%	Baa2 / Baa3	3.77
Other	0.1%	0.0%	0.1%	5.8	0.0	0.0	0.0	4.9%	Baa3	5.36
Cash	0.0%	0.0%	0.0%	36.2	-0.4	-1.4	0.0	2.1%	N/A	

## PORTFOLIO WITH DOUBLELINE SECURITIZED

Grouping: New Portfolio	Weight (%)	Bmk Weight (%)	Active Weight (%)	Total Risk	Portfolio Risk Contribution	Contribution To Effective Duration	Contribution To Credit Spread Duration	Yield To Maturity (%)	Moody Rating	Active Total Risk
by: sector	100.0%	100.0%	0.0%	2.3	2.3	4.0	3.0	2.6%	Aa2 / Aa3	1.1
Treasury	43.5%	39.7%	3.8%	3.0	1.2	2.5	0.0	1.5%	Aaa	0.9
Securitized/Collateralized	28.7%	28.6%	0.1%	2.4	0.6	1.1	1.3	3.1%	Aaa / Aa1	1.7
Corporate	20.3%	23.7%	-3.4%	3.3	0.6	1.2	1.3	3.7%	Baa2	1.5
Yankee Bond	5.6%	7.4%	-1.8%	5.1	0.2	0.3	0.3	5.3%	Ba1	4.8
Cash	1.5%	0.0%	1.5%	29.8	-0.3	-1.1	0.0	2.1%	N/A	32.4
Municipal	0.4%	0.7%	-0.2%	4.9	0.0	0.0	0.0	4.3%	Baa2 / Baa3	3.8
Other	0.1%	0.0%	0.0%	5.8	0.0	0.0	0.0	4.9%	Baa3	5.4

Cash total risk includes derivatives and is shown at notional value.

Slight decrease in duration risk with offsetting increase in credit spread risk

Marginal increase in yield

Credit quality remains high

# Core fixed income portfolio statistics – phase one implementation

Fixed Income Instrument Type	BBg US Agg	Current Portfolio	Current Portfolio plus DoubleLine Securitized
Treasury	39.7%	55.9%	43.0%
Corporate	23.7%	21.6%	20.3%
Yankee Bond	7.4%	7.0%	5.6%
Securitized/Collateralized	28.6%	14.9%	28.7%
Municipal	0.7%	0.6%	0.4%
Other	0.0%	0.1%	0.1%
Cash	-	0.0%	1.5%
<b>Contribution To Effective Duration</b>	5.0	4.2	4.0
<b>Contribution To Credit Spread Duration</b>	3.6	2.7	3.0
<b>Total Risk</b>	3.3	2.5	2.3

Resulting SamCERA Core fixed income portfolio after phase one achieves stated goals for fixed income restructuring

# Manager allocations – phase one implementation

## PORTFOLIO WITH DOUBLELINE SECURITIZED

Portfolio	Weight (%)	Total Risk	Portfolio Risk Contribution	Contribution To Effective Duration	Contribution To Credit Spread Duration	Yield To Maturity (%)	Moody Rating	Active Total Risk
<b>Total</b>	100%	2.3	2.3	4.0	3.0	2.6%	Aa2 / Aa3	1.1
<b>Fidelity</b>	33%	3.0	1.0	1.7	1.2	2.7%	A1	0.6
<b>BlackRock</b>	28%	2.2	0.5	1.0	0.0	1.6%	Aaa	1.5
<b>DoubleLine</b>	22%	2.1	0.4	0.7	0.9	3.2%	Aa1 / Aa2	1.9
<b>Western TRU</b>	17%	3.4	0.4	0.5	0.9	2.8%	A3	3.0

In addition to marginal portfolio improvements, manager specific risk is reduced.

Manager specific risk will become more balanced in phase two following core bond search and liquidity study.

# Sources of risk – phase one implementation

## PORTFOLIO WITH DOUBLELINE SECURITIZED

Risk Source	Portfolio Risk Contribution	Benchmark Risk Contribution	Active Portfolio Risk Contribution	Active Risk
Total Risk	2.3	3.3	1.1	1.1
Common Factor Risk	2.3	3.3	1.1	1.1
Term Structure	2.3	3.4	1.0	1.0
Spread	-0.0	-0.1	0.0	0.3
Emerging Market	-0.0	-0.0	0.1	0.2
Selection Risk	0.0	0.0	0.0	0.2
Currency Risk	0.0	0.0	0.0	0.0

Term structure risk (interest rate risk) is the dominant risk in the portfolio; albeit lower than rate risk for the BB Agg benchmark

Negative spread risk means that it acts as an offset to rate risk

Structure keeps enough active risk to allow for incremental alpha

# Next steps – phase two implementation

- Add 3% more to core fixed income and determine liquidity solution (1% allocation)
- Allocate to second Core Bond manager
  - Look for low risk, high quality manager to add incremental alpha
    - Low correlation and differentiated strategy from FIAM
  - Allow for duration risk in line with BB Aggregate
    - Fixed income structure analysis confirms below average rate risk compared to broad benchmark; SamCERA allocating away from risk parity which will further reduce interest rate risk
- Understand liquidity/cash flow needs and implications as plan matures
  - Duration and sector decisions TBD (ex., ST Treas v. short duration Gov/Credit)
    - Discussion and potential development of cash policy based on analysis and offsite review of SamCERA portfolio and cash flow changes

Targeting completion this summer

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
Board of Retirement

February 25, 2020

Agenda Item 7.1

**TO:** Board of Retirement  
**FROM:** Scott Hood, Chief Executive Officer  
**SUBJECT:** 2020 Board-Staff Retreat Topics



**Recommendation**

Provide direction to staff regarding the topics and schedule for the March 2020 Board-Staff Retreat.

**Background**

This item is to give the Board a final opportunity to discuss the topics for the upcoming retreat in March. The Board assists with setting the topics to be addressed and provides input regarding the proposed presenters. Following this meeting, staff will finalize scheduling the presenters.

**Discussion**

Attached is a proposed schedule which reflects input from the Board over the last few meetings. This version condenses the retreat to one day and starts with a shortened regular Board meeting. Our kick-off speaker, Liz Laderman, from the San Francisco Federal Reserve Bank will provide an economic outlook and monetary policy. Mike Coultrip will then lead the Board through a deep dive of the portfolio. During lunch, Brenda Carlson will provide trustee education on ethics. After lunch, Jeff MacLean from Verus will provide a presentation on moving towards a mature plan, part 2. Our last time block will be informational presentations from staff on historical data/trends and cybersecurity.

The 2020 SamCERA Board-Staff Retreat is scheduled along the same lines as prior years:

Days: One day  
Timing: Leaves time between the presentations for discussion  
Location: SamCERA Boardroom  
Speakers: SamCERA's consultants and staff  
Regular Business: The Board's regular monthly business will be the first scheduled event in the morning  
Date: **Tuesday, March 24**  
Start Time: **8:30 a.m.**

**Attachment**

Draft 2020 Board-Staff Retreat Agenda

relation or from  
point of view.  
**Ethics** [eth'iks] n  
moral choices to  
value of human  
principles that o  
for what is thou



# Board/Staff Retreat

---

March 24, 2020

# BOARD/ STAFF RETREAT AGENDA

- 8:00 a.m. COFFEE AND REFRESHMENTS**
- 8:30 a.m. BEGINNING OF REGULAR BOARD MEETING AGENDA**
- 9:00 a.m. ECONOMIC OUTLOOK AND MONTARY POLICY**  
PRESENTER: Elizabeth Laderman, Economist, San Francisco Federal Reserve Bank
- 10:00 a.m. BREAK**
- 10:15 a.m. DEEP DIVE OF PORTFOLIO**  
PRESENTER: Michael Coultrip, SamCERA Chief Investment Officer & Margaret Jadallah, Managing Director, VERUS
- 11:30 a.m. LUNCH**
- 11:45 a.m. ANNUAL ETHICS TRAINING**  
PRESENTER: Brenda Carlson, SamCERA Chief Legal Counsel
- 12:45 p.m. MOVING TOWARDS A MATURE PLAN – PART II**  
PRESENTER: Jeff MacLean, Chief Executive Officer, VERUS
- 1:45 p.m. BREAK**
- 2:00 p.m. CYBERSECURITY**  
PRESENTER: Tariq Ali, SamCERA Chief Technology Officer
- 2:30 p.m. MEMBER HISTORICAL DATA/TRENDS**  
PRESENTER: Scott Hood, SamCERA Chief Executive Officer
- 3:15 p.m. END OF RETREAT**




**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**  
**Board of Retirement**

February 25, 2020

Agenda Item 7.2

**TO:** Board of Retirement

**FROM:** Scott Hood, Chief Executive Officer 

**SUBJECT:** Set start time of the March 24, 2020 meeting and cancel the March 25, 2020 meeting of the Board of Retirement

**Recommendation**

Approve a change to the time of the regularly scheduled March 24, 2020 meeting to 8:30 a.m. and cancel the March 25, 2020 meeting of the Board of Retirement.

**Background**

The Board's regular meetings are scheduled on the fourth Tuesday of each month at 10:00 a.m. The Board is authorized by Article III, Section 3.4 of the Board's Regulations to change its meeting times and dates.

**"Regular Meetings:** Regular meetings of the Board shall be held on the Fourth Tuesday of each month. Meetings shall begin at 10:00 a.m. Meetings shall be held in SamCERA's offices. The Board may cancel and or approve a change in the date, time and/or location of meetings within the County, if the proposed change is included on the agenda of a regular meeting."

**Discussion**

In October 2019, the Board approved the regular meeting schedule for 2020. That schedule provides that the Board would meet on both March 24 and 25 for the annual Board/staff retreat. The Board has determined that it prefers just one day for this year's retreat.

Staff recommends that Board formally change the date and time of the meeting so that staff can publish the meeting notice and reflect the new information on SamCERA's website.