



# Notice of Public Meeting

## The Board of Retirement

of the San Mateo County Employees' Retirement Association will meet on  
**Tuesday, August 28, 2018, 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 Board Meeting Minutes from July 24, 2018
- 4. Approval of the Consent Agenda\***

4.1 Disability Retirements (none)	4.8 Member Account Redeposits
4.2 Survivor Death Benefits <ul style="list-style-type: none"><li>• Anthony Seto</li></ul>	4.9 Acceptance of Trustees' Reports of Educational Activities
4.3 Service Retirements	4.10 Acceptance of Semi-Annual Compliance Certification Statements for Period Ended June 30, 2018
4.4 Continuances	4.11 Reaffirmation of Board of Retirement Policy and Procedure for Correcting Inaccuracies Relating to Member Contributions, Withdrawals and the Payment of Benefits
4.5 Deferred Retirements	
4.6 Member Account Refunds	
4.7 Member Account Rollovers	
- 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 Report for the Period Ended July 31, 2018
  - 6.2 Report on Quarterly Investment Performance Report for the Period Ended June 30, 2018
  - 6.3 Report on Fixed Income Manager Annual Reviews
  - 6.4 Report on Private Asset Semi-Annual Performance Reports as of December 31, 2017
  - 6.5 Report on Government Code Section 7514.7 Annual Disclosure for 2017
  - 6.6 Approval of Currency Hedging Recommendation
  - 6.7 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 Approval of Board of Retirement's Response to the 2017-2018 Civil Grand Jury Report
  - 7.2 Report on Preliminary Financial Statements for the Fiscal Year Ended June 30, 2018
  - 7.3 Report on Budget-to-Actual for the Fiscal Year Ended June 30, 2018
  - 7.4 Approval of Resolution Adopting Felony Forfeiture Procedures
- 8. Management Reports**
  - 8.1 Chief Executive Officer's Report
  - 8.2 Assistant Executive Officer's Reports
  - 8.3 Chief Investment Officer's Report
  - 8.4 Chief Legal Counsel's Report

# Notice of Public Meeting

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**CLOSED SESSION** – The Board may meet in closed session prior to adjournment

- C1 Consideration of Disability Items, if any, removed from the Consent Agenda
- C2 Approval of Proposed Alternative Investment (*to be heard in Closed Session, Confidential Under Gov. Code §54956.81 and §6254.26, see item 6.7*)

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

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

Cristina Enriquez	July 5, 2018	Human Services
Norma Antonio	July 6, 2018	Public Works
Glenn Nelson	July 11, 2018	Assessor
Darlene Wich	July 13, 2018	Superior Court
Howard Lader	July 17, 2018	Mental Health
Suzuye Shoda	July 22, 2018	Health Services
Harris Crain	July 28, 2018	Hospital
Janet Miller	July 30, 2018	Planning & Building
Aldaniel Goodspeed	August 1, 2018	Engineering & Road Dept
Helen Cannon	August 3, 2018	Outpatient Clinic
Samuel Rosa	August 4, 2018	Crystal Springs Rehab

Scott Hood, Chief Executive Officer

Posted: August 22, 2018

(\* 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.*

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**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

JULY 24, 2018 – REGULAR BOARD MEETING MINUTES

**1807.1 Call to Order, Roll Call and Miscellaneous Business**

**Call to Order:** Mr. Mark Battey, Chair, called the Regular Meeting of the Board of Retirement to order at 10:00 a.m.

**Roll Call:**

Present: Mark Battey, Ben Bowler, Albert David, Alma Salas (for Paul Hackleman), Kurt Hoefer, Katherine OMalley, Robert Raw and Eric Tashman.

Absent: Sandie Arnott and Paul Hackleman.

Alternates present: Susan Lee and Alma Salas.

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

Consultants and speakers: Margaret Jadallah and Stephen Abdou (Verus).

**1807.1.1 Administration of Oath of Office to Newly Elected and Reappointed Trustees:** Mr. Wozniak administered the oath of office to reappointed trustees Mark Battey (Sixth Member) and Eric Tashman (Fourth Member), as well as newly elected trustees Katherine OMalley (Second Member), Robert Raw (Seventh Member) and Susan Lee (Seventh Member Alternate).

**1807.1.2 Election of Board Officers:** Mr. Hoefer, Chair of the Ad Hoc Nominating Committee reported to the Board that the committee, consisting of Ms. Arnott, Ms. Salas and himself, discussed candidates for the officer positions. They recommended the following slate of officers for the term ending June 30, 2019: Sandie Arnott, Chair; Kurt Hoefer, Vice Chair; and Al David, Secretary. There were no other nominations made.

**Action:** Mr. Tashman moved to approve the nominations of Sandie Arnott, Chair; Kurt Hoefer, Vice Chair; and Al David, Secretary. The motion was seconded by Mr. David. A roll call vote was taken. The motion carried by a vote of 8-0.

AYES: Battey, Bowler, David, Salas, Hoefer, OMalley, Raw and Tashman.

NOES: None.

The remainder of the meeting was chaired by Mr. Hoefer.

**1807.1.3 Announcement of Appointment of Board Committees:** Mr. Hoefer advised the announcement of Board committees will be done by Ms. Arnott at the next Board meeting.

**1807.2.1 Oral Communications from the Board:** None.

**1807.2.2 Oral Communications from the Public:** None.

**1807.3.1 Approval of Board Meeting Minutes:** Mr. Hoefer asked if there were any changes or corrections, or objections, to the meeting minutes from the Board meeting held on May 22, 2018.

**Action:** Mr. Bowler moved to approve the minutes from the Board Meeting on May 22, 2018. The motion was seconded by Ms. Salas and carried with a vote of 7-0-1, with trustees Battey, Bowler, David, Hoefer, OMalley, Raw and Salas, all in favor; Mr. Tashman abstained; none opposed.

**1807.4.0 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. Prior to the vote Mr. Tashman requested that staff inform the County of the costs of disability retirements and to ensure that the County is

providing accommodations wherever possible so that members can remain employed rather than apply for disability retirement.

**Action:** Mr. Battey moved to approve the items on the Consent Agenda, and the motion was seconded by Mr. David. The motion carried with a vote of 8-0, with trustees Battey, Bowler, David, Hoefer, OMalley, Raw, Salas and Tashman, all in favor; none opposed.

1807.4.1 **Disability Retirements:**

- a) The Board found that Larry Burriss is (1) permanently incapacitated from the performance of his usual and customary duties as a Legal Office Specialist, (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 found that Marie Castellanos is (1) permanently incapacitated from the performance of her usual and customary duties as a Benefits Analyst II, (2) found that her disability was the result of an injury arising out of and in the course of her employment and (3) granted her application for a service-connected disability retirement.
- c) The Board found that Mario Cousenes is (1) permanently incapacitated from the performance of his usual and customary duties as a Custodian, (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.
- d) The Board found that Luz Hart is (1) permanently incapacitated from the performance of her usual and customary duties as a Licensed Vocational Nurse, (2) found that her disability was the result of an injury arising out of and in the course of her employment and (3) granted her application for a service-connected disability retirement.
- e) The Board found that Debbie Liljegren-Cullen is (1) permanently incapacitated from the performance of her usual and customary duties as an Airport Operations Specialist II, (2) found that her disability was the result of an injury arising out of and in the course of her employment and (3) granted her application for a service-connected disability retirement.
- f) The Board found that Ines McMacken is (1) permanently incapacitated from the performance of her usual and customary duties as a Human Services Agency Supervisor, (2) found that her disability was not the result of an illness arising out of and in the course of her employment and (3) granted her application for a non-service-connected disability retirement.

1807.4.2 **Survivor Death Benefits:** None.

1807.4.3 **Service Retirements:**

<b>Member Name</b>	<b>Effective Retirement Date</b>	<b>Department</b>
Boyd, Susie	April 18, 2018	Deferred from Parks
Calderon-Sanchez, Maria	May 11, 2018	Assessor
Ervin, Rose	May 15, 2018	Deferred from Medical Center
Espiritu, Catalina	April 30, 2018	Deferred from Medical Center
Fletcher, Sherry	June 1, 2018	Deferred from District Attorney
Ganiban, Carolina	April 25, 2018	Deferred from Assessor



Houston, George	May 8, 2018	Deferred from Sheriff's Office
Kettering, David	April 22, 2018	Sheriff's Office
Kittell, Elihu	May 15, 2018	Sheriff's Office
Myers, Karen	May 21, 2018	Deferred from Medical Center
Raines, Marcia	April 7, 2018	Deferred from Environmental Health
Ramos, Beverly	May 1, 2018	Deferred from Mental Health
Rodriguez, Vicente	April 20, 1998	Agriculture Weights and Measures
Sterling, Prime	April 12, 2018	Public Works
Van Der Schoor, Patricia	June 1, 2018	Superior Court

1807.4.4 **Continuances:**

The Board ratifies the actions as listed below for the following members regarding continuances:

<b>Survivor's Name</b>	<b>Beneficiary of:</b>
Aleman, Abit	Gayle, Linford
Belding, Debra	Belding, James
Burton, Nadene	Burton, Stephen
Fornes, Roseanna	Fornes, Kevin
Gregory, Jonathan	Gloria, Emilia
<b>Survivor's Name</b>	<b>Beneficiary of:</b>
Aleman, Abit	Gayle, Linford

1807.4.5 **Deferred Retirements:**

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

<b>Member Name</b>	<b>Retirement Plan Type</b>
Ortiz-Gutierrez, Maricela	G7, Non-vested - Reciprocity
Smith, Sean Robert	G4, Vested - Reciprocity
Hart, Colin	G7, Non-vested - Reciprocity
Perkins, Maya J.	G4, Vested
Levintov, Irene L.	G4, Vested

1807.4.6 **Member Account Refunds:**

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

<b>Member Name</b>	<b>Retirement Plan Type</b>
Blank, Martin	G7, Non-vested
Carranza de Guzman, Maria	G4/G3, Non-vested
Cervantes-Mansberger, Gerardo	G7, Non-vested
Dela Cruz, Corina	G7, Non-vested
Grayson, Cathy (FBO: Gladys Grayson)	G2, Vested
Hernandez, Guadalupe	G7, Non-vested
Kamerschen, Vanessa	G7, Non-vested

1807.4.7 **Member Account Rollovers:**

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

<b>Member Name</b>	<b>Retirement Plan Type</b>
Anjomshoaa, Andrea	G7, Non-vested
Baskin, Liane	G7, Non-vested
Desai, Natasha	G4, Non-vested
Phan, Jane	G7, Non-vested
Williams, John	G7, Non-vested

1807.4.8 **Member Account Redeposits:** None.

1807.4.9 **Acceptance of Trustees' Reports of Educational Activities:** The Board accepted the submitted reports for educational activities attended by trustees Arnott, Battey, David, Hoefer, Lee, Salas and Spinello.

1807.4.10 **Acceptance of Semi-Annual Compliance Certification Statements for Period Ended June 30, 2018:** The Board accepted the semi-annual Compliance Certification Statements for SamCERA's non-alternative investment managers and investment consultant, as of June 30, 2018.

1807.4.11 **Approval of Resolution Amending Records Retention Policy and Reaffirmance of Code of Conduct:** The Board reaffirmed its Code of Conduct and approved a resolution amending the Records Retention Policy.

1807.4.12 **Approval to Reaffirm Conflict of Interest Code:** The Board reaffirmed SamCERA's Conflict of Interest Code.

1807.4.13 **Approval of 8<sup>th</sup> Amendment to Contract with Vitech Systems Group, Inc.:** The Board approved a resolution authorizing the Chief Executive Officer to execute an Eighth Amendment to the agreement with Vitech Systems Group, Inc. ("Vitech") increasing the total up to \$12,000,000 for all services from May 1, 2014 through December 31, 2021.

1807.5.1 **Consideration of Agenda Items, if any, removed from the Consent Agenda:** None.

1807.6.1 **Report on Preliminary Monthly Portfolio Performance Report for the Period Ended June 30, 2018:** Mr. Coultrip discussed the preliminary monthly performance report with the Board. He reported that SamCERA's net preliminary return for June 2018 was -0.5%, bringing the preliminary trailing twelve-month return ending June 2018 to 6.6% net. The preliminary twelve-month net return is below both SamCERA's Plan Benchmark return of 8.3% and SamCERA's Actuarial Assumed Earnings Rate of 6.75%. Staff will be providing more detail on SamCERA's fiscal-year absolute and benchmark-relative performance next month. This item was informational and for discussion only, no action was taken.

1807.6.2 **Report on SamCERA's Securities Lending Program:** Ms. Dames discussed the report on SamCERA's Securities Lending Program. Ms. Dames informed the Board that in the eleven years since inception, the securities lending program has earned \$7.0 million for SamCERA. During the fiscal year ended June 30, 2018, the program earned \$43,329 which is a 4.3% decrease from last fiscal year's earnings of \$45,271. At the end of last fiscal year (June 30, 2017), securities lending utilization had dropped to zero due to a combination of factors that year. Upon speaking with Northern Trust, two changes were made to the securities lending guidelines to allow increased securities lending utilization. Overall, staff is satisfied with the Securities Lending Program parameters. This item was informational and for discussion only, no action was taken.

- 1807.6.3 **Report on the Core Equity and Passive Manager Annual Reviews:** Ms. Ng reviewed the meeting notes from the annual reviews of SamCERA's Core Equity and Passive Managers. Staff met at SamCERA's offices with D.E. Shaw, Quantitative Management Associates (QMA), and Blackrock on May 3, 2018. Each meeting consisted of a firm/organizational update, investment process review, performance review and attribution, and current positioning/market outlook. There were no major concerns identified during the reviews. This item was informational and for discussion only, no action was taken.
- 1807.6.4 **Report on the International Equity Manager Annual Reviews:** Ms. Ng reviewed the meeting notes from the annual review reviews of SamCERA's International Equity Managers. Staff met at SamCERA's offices with Baillie Gifford and Eaton Vance Parametric on June 7, 2018; and with Mondrian on June 14, 2018. Each meeting consisted of a firm/organizational update, investment process review, performance review and attribution, and current positioning/market outlook. There were no major concerns identified during the reviews. There was discussion regarding the current and potential future China weighting in the emerging market index, and the current underweighting to China in SamCERA's emerging markets portfolio. This item was informational and for discussion only, no action was taken.
- 1807.6.5 **Educational Presentation on Low Volatility Equity:** Ms. Jadallah and Mr. Abdou provided an educational presentation on low volatility equity. They discussed the evolution of factor investing, the academic underpinnings of the low volatility anomaly, the persistency of the low volatility factor and the various ways to implement a low volatility equity approach.

The meeting was adjourned for break at 11:03 a.m. and reconvened at 11:13 a.m.

- 1807.7.1 **Approval of Board Strategic Plan:** Mr. Hood discussed the proposed "Vision" statement as well as the proposed Board level Strategic Plan for 2018-2023 with the Board and welcomed any comments or suggestions. He also thanked SamCERA's newly hired Communications Specialist, Natasha Jeong, for assisting in the creation of the graphics to convey the plan.

**Action:** Mr. David moved to approve the proposed "Vision" statement and the proposed Board of Retirement Strategic Plan for 2018-2023. The motion was seconded by Mr. Bowler and carried with a vote of 8-0, with trustees Battey, Bowler, David, Hoefler, OMalley, Raw, Salas and Tashman all in favor; none opposed.

- 1807.7.2 **Report on Staff's Strategic Plan Implementation:** Mr. Hood discussed the status on the two-year Staff Strategic Plan for Fiscal Years 2017-2018 and 2018-2019. Prior to the approval of the Board Strategic Plan, staff has been using the Mission and Goals to drive the staff's strategic planning process. With the approval of the Board's Strategic Plan, staff can now integrate the SamCERA's Strategic Plan with the Board's focus priorities.

- 1807.7.3 **Approval of Trustee Request for Attendance at a Conference not on the Approved List:** Mr. Hoefler reviewed the requests to attend the Public Funds Forum submitted by Ms. Lee.

**Action:** Ms. Salas moved to approve the request submitted by Ms. Lee to attend the Public Funds Forum. The motion was seconded by Mr. Raw. A roll call vote was taken. The motion carried by a vote of 6-2. AYES: Bowler, David, Hoefler, OMalley, Raw and Salas. NOES: Battey and Tashman.

- 1807.8.1 **Chief Executive Officer's Report:** Mr. Hood mentioned he had forwarded a copy of the Grand Jury Report to the Board and responses to the report need to be submitted by mid-October. Staff has drafted responses that will be presented to the Board at its August meeting. Mr. Hood also called attention to

the items in the Day of Meeting folder including the Roeder Financial Report and the memo regarding spousal benefits for active member death benefits. He mentioned that SamCERA's actuarial contract will be expiring at the end of this year and a Request for Proposal (RFP) process will commence later this year. Lastly, Mr. Hood noted that he and Mr. Raw will be attending the Wharton Investment Seminar in San Francisco.

1807.8.2 **Assistant Executive Officer's Report:** Ms. Smith reported the auditors, Brown Armstrong, have begun their interim audit. She also advised the recruitment for a Retirement Specialist is underway due to a staffing vacancy.

Ms. Trujillo reminded Board members about upcoming educational events and included a list outlining the Board education events for the new fiscal year in the Day of Meeting folder. She also requested Board members complete the Emergency Contacts form.

1807.8.3 **Chief Investment Officer's Report:** Mr. Coultrip informed the Board that staff will be funding the MLP Strategy in July. Cushing Asset Management has been hired to manage an \$80 million MLP portfolio, which will be funded 50% from TIPS and 50% from liquid real assets. He advised that he will be sending the Board the recommendation via email. Mr. Coultrip also reported SamCERA has received the \$98.2 million from the County for its prepayment and discussed how the money will be allocated. He also advised the Board of an upcoming Risk Dashboard that will be presented to the Board later this year.

1805.8.4 **Chief Legal Counsel's Report:** Ms. Carlson briefly gave an update on appellate cases addressing the application of PEPR, felony forfeiture procedures, and collections of pension overpayments.

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

1805.9.0 **Report on Actions Taken in Closed Session:** None.

1805.10 **Adjournment:** Mr. Hoefer adjourned the meeting at 11:54 a.m. in memory of the deceased members listed below.

Umblas, Eusebia	April 22, 2018	Controller's
Rushin, Pauline	April 26, 2018	Chope Hospital
Gallant, Michael	April 28, 2018	Probation
Burton, Stephen	May 2, 2018	Sheriff's
Anderson, Icelyn	May 10, 2018	Crystal Springs Rehab Center
Cougoule, Gary	May 14, 2018	Sheriff's
Holmes, Alice	May 17, 2018	County Manager's Office
Ayala, Joe	May 22, 2018	Chope Hospital
Frank, Kenneth	May 24, 2018	Sheriff's
Fisher, Maxine	May 29, 2018	Health Services
Peck, Michael	June 2, 2018	Sheriff's
Kofahl, Jeanette	June 5, 2018	Controller's
Nicholas, George	June 5, 2018	Probation

Ference, Georgene	June 10, 2018	County Manager
Ali, Margarita	June 15, 2018	Superior Court
King, Genevieve	June 16, 2018	Social Services
Ritchie, Iva	June 18, 2018	County Clerk
Cornyn, Virginia	June 23, 2018	Public Health
Henry, Estella	June 24, 2018	Crystal Springs Rehab Center
Duggan, Kevin	June 26, 2018	Information Services
Burkhart, Hannah	June 30, 2018	General Services
Cougoule, Ruth	July 7, 2018	Courts
Hamilton, Arloene	July 9, 2018	Library

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Scott Hood  
Chief Executive Officer

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Anne Trujillo  
Retirement Executive Secretary

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

August 28, 2018

Agenda Items 4.1- 4.9

**TO:** Board of Retirement

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



**SUBJECT:** Approval of Consent Agenda Items 4.1 – 4.9

**4.1 Disability Retirements**

None.

**4.2 Survivor Death Benefits**

- a) The Board find that Anthony Seto, would have been entitled to a non-service-connected disability but has died, and Jing Lang, the surviving spouse, has elected to receive an optional death allowance pursuant to Government Code § 31781.1.

**4.3 Service Retirements**

The Board ratifies the actions as listed below for the following members regarding service retirements:

<b>Member Name</b>	<b>Effective Retirement Date</b>	<b>Department</b>
Chapman, Kim	June 9, 2018	Dept. of Public Works
Clark, Ellen	June 7, 2018	Deferred from Sheriff's
Cohen, William	June 30, 2018	Behavioral Health & Recovery Services
Darby, John	June 12, 2018	Behavioral Health & Recovery Services
De Anda, Maria	June 30, 2018	Human Services Agency
Filia, Richard	June 30, 2018	Deferred from Communications
Fletcher, Sherry	June 1, 2018	Deferred from District Attorney
Healy, Scott	May 16, 2018	QDRO
Kao, Shen	June 30, 2018	Sheriff's
Lewellen, William	June 30, 2018	Sheriff's
Lindstrom, Joyce	July 1, 2018	QDRO
Mesinger, Jonathan	June 23, 2018	Health System

Parker, Melvin	June 30, 2018	Probation
Rashed, Sami	June 3, 2018	Sheriff's
Sanchez, Patricia L.	June 7, 2018	Sheriff's
Simpson, Susan	July 1, 2018	Deferred from District Attorney
Stacey, Elain Keolani	June 30, 2018	Probation
Vaillancourt, Donna	June 29, 2018	Human Resources

#### 4.4 Continuances

The Board ratifies the actions as listed below for the following members regarding continuances:

<b>Survivor's Name</b>	<b>Beneficiary of:</b>
Burkart-Frank, Lori	Frank, Kenneth
Carbon, Glenn	Lamis, Aurelia
Cougoule, Ruth	Cougoule, Gary
Peck, Elve	Peck, Michael
Ritchie, Robert	Ritchie, Iva

#### 4.5 Deferred Retirements

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

<b>Member Name</b>	<b>Retirement Plan Type</b>
Alfonso, Catherine	G7, Non-vested - Reciprocity
Pham, Irving	G7, Non-vested – Reciprocity
Lloyd, Rebecca	G4, Vested - Reciprocity
Solano, Irma Vasquez	G7, Non-vested - Reciprocity
Le, Don	G7, Vested - Reciprocity
Yee, Theresa Ann	G4, Vested - Reciprocity
Gill, Sandeep Singh	G7, Non-vested - Reciprocity

#### 4.6 Member Account Refunds

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

<b>Member Name</b>	<b>Retirement Plan Type</b>
Jackson, Monica	G7, Non-vested
Mendoza, Zaida	G7, Non-vested
Milligan, Edwin (FBO: Alexandra Cook-Milligan)	G4, Non-vested
Milligan, Edwin (FBO: Dana Cook-Milligan)	G4, Non-vested
Morales, Jessica	G4, Non-vested
Vidrio Corro, Arely	G7, Non-vested

#### 4.7 Member Account Rollovers

The Board ratifies the actions as listed below for the following members regarding rollovers:

<b>Member Name</b>	<b>Retirement Plan Type</b>
Birkeland, Sarah	G7, Non-vested
Hartman, Dana	G7, Non-vested
Kuchan, Allison	S7, Non-vested
Laskowski, Michele	G7, Non-vested
Meneghetti, Cristina	G7, Non-vested
Pfaff, Elizabeth	G4, Non-vested

#### 4.8 Member Account Redeposits

None.

#### 4.9 Acceptance of Trustees' Reports of Educational Activities

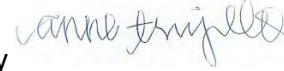


SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
**Board of Retirement**

August 28, 2018

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:

SACRS 2018 Public Pension Investment Management Program @ UC Berkeley  
Robert Raw

IFEBP Wharton Alternative Investment Strategies  
Robert Raw

**Attachments**

Trustee's Education Proof of Participation Certificates and Summaries

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



Trustee Name Robert Raw		Date(s) of Event 7/15-7/18/18
Education Event Name Public Pension Investment Management Program		
Event Provider SACRS		
Type of Participation: Attended Event <input checked="" type="checkbox"/> Listened to Audio/Watched Video <input type="checkbox"/>	Eligible Credit: Total hours for sessions you participated in: <u>27</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 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?

PENSION FUND INVESTMENT BASICS, PRACTICAL MEAN-VARIANCE ANALYSIS, CAPM, FORECASTING LIABILITIES, PORTFOLIO MANAGEMENT, ALTERNATIVE INVESTMENT STRATEGIES, PENSION FUND GOVERNANCE AND THE ROLE OF THE TRUSTEE.

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).

Trustee Signature (print this form and sign) 	Date 7/24/18
--	-----------------

**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.

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



<b>Trustee Name</b> Robert Raw		<b>Date(s) of Event</b> 7/30-8/1/18
<b>Education Event Name</b> Wharton Alternative Investment Strategies		
<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>17.5</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 type="checkbox"/> Fiduciary responsibilities  | <input type="checkbox"/> Disability evaluation        |
| <input type="checkbox"/> Ethics  | <input type="checkbox"/> Fair hearings                |
| <input type="checkbox"/> Benefits administration   | <input 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?

HEDGE FUNDS, ASSET ALLOCATION, PERFORMANCE MEASURES, MANAGER SELECTION, MARKET TIMING, ALTERNATIVE INVESTMENTS, EQUITY INVESTMENTS, AND DEBT INVESTMENTS IN REAL ESTATE.

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> 8/7/18
---	-----------------------

**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**

August 28, 2018

Agenda Item 4.10

**TO:** Board of Retirement

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



**SUBJECT:** Semi-Annual Compliance Certification Statements for Period Ended  
June 30, 2018

**Recommendation**

Accept the semi-annual Compliance Certification Statements for Eaton Vance Parametric, Franklin Templeton and The Clifton Group (Parametric), as of June 30, 2018.

**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, risk parity 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.

The attached Compliance Certification Statements (along with applicable statements for "alternative investment vehicles" – which will be submitted separately to the Board) were not received in time to be included in the mailing for the July Board meeting.

**Discussion**

The attached Compliance Certification Statements report that SamCERA's investment managers, Eaton Vance Parametric, Franklin Templeton and The Clifton Group (Parametric), are in compliance with SamCERA's Investment Policy as of June 30, 2018. There were no reported significant developments in portfolio construction, investment approach, firm ownership or organizational structure. 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.

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

**Attachments**

Compliance Certification Statement Matrix 6-2018

Compliance Certification Statements (3)

- A. Emerging Market Equity: Eaton Vance Parametric
- B. Fixed Income: Franklin Templeton
- C. Cash Overlay: The Clifton Group (Parametric)

## Compliance Certification Statement Matrix – June 30, 2018

Investment Manager	Mandate	General Compliance Issues	Derivative Instruments	Investment Manager Guidelines	Mandate Specific
<b>Emerging Market Equity</b>					
<b>Eaton Vance Parametric</b>		No Concerns	Not Applicable	No Concerns	<ul style="list-style-type: none"> <li>• 8.5% ADRs</li> <li>• 1.3% GDRs</li> <li>• 4.93% in Frontier Markets</li> <li>• Vestige (include non-bmrk holdings) – 25.84%</li> </ul>
<b>Fixed Income</b>					
<b>Franklin Templeton</b>		<ul style="list-style-type: none"> <li>• Jan 2018-Dr. Mark Mobius, Exec Chairman of Emerging Mkts Grp retired, succeeded by Stephen Dover</li> <li>• Feb 2018-Formed Emerging Markets Equity platform to align all EM teams under one org structure</li> <li>• Mar 2018-Acquired Random Forest Capital, LLC to broaden access to</li> </ul>	No Concerns	No Concerns	No Concerns

## Compliance Certification Statement Matrix – June 30, 2018

Investment Manager	Mandate	General Compliance Issues	Derivative Instruments	Investment Manager Guidelines	Mandate Specific
		private lending invmnt opportunities • May 2018-Acquired Edinburgh Partners Ltd, a global invmnt mgmt. firm			
<b>Cash Overlay</b>					
<b>The Clifton Group (Parametric)</b>		No Concerns	No Concerns	No Concerns	No Concerns

***Eaton Vance Parametric Emerging Markets Core Fund – June 30, 2018***

***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 **Thursday, July 12, 2018.**

**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.**

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?
- 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?

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

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.

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:

<i>Foreign Ordinary Shares</i>	<i>89.0%</i>
<i>ADR's</i>	<i>8.5%</i>
<i>GDR's</i>	<i>1.3%</i>
<i>Derivatives</i>	<i>0.0%</i>
<i>Cash &amp; Equivalents (Foreign)</i>	<i>0.3%</i>
<i>Cash &amp; Equivalents (Domestic)</i>	<i>0.9%</i>

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

<i>Market Cap (USD x 1,000,000)</i>	<i>Weight</i>
<i>&gt; 50,000</i>	<i>4.22%</i>
<i>15,000 – 50,000</i>	<i>12.77%</i>
<i>7,500 – 15,000</i>	<i>12.01%</i>
<i>1,500 – 7,500</i>	<i>48.38%</i>
<i>750 – 1,500</i>	<i>11.96%</i>
<i>400 – 750</i>	<i>6.48%</i>
<i>&lt;400</i>	<i>4.17%</i>

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

*Frontier –4.93%*

*Kuwait 1.70%*

*Vietnam 1.65%*

*China A Shanghai 0.78%*

*China A Shenzhen 0.80%*

*Vestige -25.84%*

*Brazil 1.23%*

*Chile 0.65%*

*China 2.14%*

*China Shanghai 0.07%*

*China Shenzhen 0.04%*

*Colombia 0.62%*

*Czech Republic 0.06%*

Egypt 0.44%  
Greece 0.69%  
Hungary 0.03%  
India 0.49%  
Indonesia 0.71%  
Korea 0.38%  
Kuwait 1.73%  
Malaysia 0.73%  
Mexico 1.08%  
Pakistan 1.25%  
Peru 0.57%  
Philippines 0.90%  
Poland 0.65%  
Qatar 0.45%  
Russia 2.55%  
South Africa 1.00%  
Taiwan 1.10%  
Thailand 3.12%  
Turkey 0.88%  
U.A.E. 0.29%  
United Kingdom 0.30%  
Vietnam 1.67%

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 6/30/18 was \$415,856,823.51 M USD, while the firm AUM was approximately \$231.5 B which makes the proportion of this product 0.18%. Also as of 6/30/18 SAMCERA consisted of 8,011,840.765 shares worth \$ 88,129,671.56 or 21.19% of this product.*



Signed by: Randall Hegarty, CCO

Dated: July 17, 2018

Name of Firm: Parametric Portfolio Associates LLC



FRANKLIN TEMPLETON  
INVESTMENTS

July 30, 2018

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

Franklin Templeton Global Multisector Plus (Master) Fund, Ltd. (3c7)  
*Review Period: January 1, 2018 – June 30, 2018*

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**Bill Deakyne, CFA**

Senior Vice President, Head of US Institutional Relationship Management

tel: (650) 312-2270

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

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**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 June 30, 2018.

### Firm Ownership

There have been no material changes to the ownership structure of Franklin Resources, Inc. (Parent Company) during the past six months ended June 30, 2018.

### Organizational Structure

Please refer to the below changes within the Franklin Templeton business organization during the first half of 2018.

- Franklin SystematiQ formed in January 2018, combining the previous quantitative capabilities of Franklin Templeton Multi-Asset Solutions in factor research and risk premia with AlphaParity's expertise.
- Dr. Mark Mobius, Executive Chairman of the Templeton Emerging Markets Group (TEMG), retired from the firm on January 31, 2018. Franklin Templeton has evolved its emerging markets equity investment team structure, and succession planning for TEMG has been a key component in that process. Over the past few years, Mark had transitioned the day-to-day management of the group to Stephen Dover, who was appointed CIO of TEMG in early 2016. In addition, Dr. Mobius also stepped down from the majority of retail and institutional portfolios on which he was named as portfolio manager, with responsibility being passed on to other senior members of TEMG, in recognition of the contributions of key investment professionals and leaders within the team.
- In February, the Franklin Templeton Emerging Markets Equity (FTEME) platform was formed, in an effort to strengthen investment performance and increase collaboration across investment groups, by aligning Franklin Templeton's emerging markets equity teams under one organizational structure. The FTEME platform now combines the Templeton Emerging Markets Group (TEMG) and Franklin Local Asset Management (LAM). Manraj Sekhon joined as Chief Investment Officer of FTEME, reporting to Stephen Dover, who serves as a member of the CEO Executive Committee and as Head of Equities.
- In March, Franklin Templeton acquired Random Forest Capital, LLC—a San Francisco, California-based investment firm with expertise in data science and non-bank marketplace lending—to join the Franklin Templeton Fixed Income Group (FTFIG). The acquisition supported efforts to build a new generation of complementary research to FTFIG's existing capabilities and open up broader access to private lending investment opportunities.

- In May, Franklin Templeton acquired Edinburgh Partners Limited (EPL), an Edinburgh-based, independent fund management company that invests globally, with an emphasis on absolute returns over a long-term time horizon. Dr. Sandy Nairn, CEO of Edinburgh Partners, has been appointed Chairman of the Templeton Global Equity Group (TGEG). The TGEG and Edinburgh Partners will remain distinct businesses, each focused on delivering strong long-term results for their value equity offerings around the globe.

There have been no significant developments to the Franklin Templeton Global Multisector Plus (Master) Fund, Ltd. over the last six months ended June 30, 2018.

## Personnel

Please refer to the below changes within the Templeton Global Macro group, the investment team responsible for managing the Franklin Templeton Global Multisector Plus (Master) Fund, Ltd., during the past six months ending June 30, 2018.

The promotions/additions listed below recognize the individual's accomplishments and align their titles with current responsibilities, and do not signify any material changes in the investment process.

- Vivian Guo was promoted to Research Analyst (previously, she was a Research Associate)
- Addition of Richard Herbert as an Institutional Portfolio Manager
- Addition of Kevin Nest as a Trader

## 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.

During the period of January 1, 2018 through June 30, 2018, Franklin Advisers Inc. (FAV) was not the subject of any *investment-related proceedings, findings or orders* brought or made 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 March 31, 2018, 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 may be 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

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 June 30, 2018.

Sector	Region	MV%
Certificates of Deposit (by region)		0.00
Cash & Cash Equivalents		10.67
Preferred Stock <sup>[1]</sup>		0.57
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	83.77
Agency Securities (by region)	US	0.00
	Non-US	3.30
Investment Grade Corporate Bonds (by region)	US	0.00
	Non-US	0.00
High Yield Corporate Bonds (by region)	US	0.02
	Non-US	0.00
Mortgage and asset-backed securities (by region)		0.00
Supranational		0.06
Derivatives		0.68
Bank Loans		0.00
Other <sup>[2]</sup>		0.93
Total		100.00

<sup>[1]</sup> Includes Convertibles.

<sup>[2]</sup> Other includes 0.92% Sovereign and 0.01% Equity.

Region	Percentage (%)
Americas	45.15
Asia	36.63
Europe/Africa	7.49
Cash and Cash Equivalents	10.67
Other	0.00
Supranational	0.06
Total	100.00

**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 June 30, 2018. During the quarter ended June 30, 2018, 38.88% of the portfolio consisted of holdings that were below investment grade or not rated.

Range	IG/Non-IG	Percentage
AAA	IG	0.06
AA+	IG	0.00
AA	IG	11.18
AA-	IG	0.00
A+	IG	0.00
A	IG	0.00
A-	IG	19.35
BBB+	IG	5.04
BBB	IG	16.00
BBB-	IG	9.50
BB+	Non-IG	0.00
BB	Non-IG	0.00
BB-	Non-IG	11.84
B+	Non-IG	0.26
B	Non-IG	10.28
B-	Non-IG	5.22
CCC+	Non-IG	0.00
CCC	Non-IG	0.00
CCC-	Non-IG	0.00
CC+	Non-IG	0.00
C	Non-IG	0.00
NR	Non-IG	0.60
N/A	Non-IG	0.00
Cash & Cash Equivalents	Non-IG	10.67

**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?**

As of June 30, 2018, the portfolio did not hold any Rule 144A securities.

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 the SamCERA's account comprise of total product assets?

The table below provides assets under management for the Templeton Global Multisector Plus strategy and the Franklin Templeton Global Multisector Plus (Master) Fund, Ltd. (3c7) as of June 30, 2018.

	Assets Under Management <sup>(1)</sup> (in Millions \$)	% of Total Firm Assets
Templeton Global Multisector Plus Strategy	37,102.97	5.12
Franklin Templeton Global Multisector Plus (Master) Fund, Ltd. (3c7)	1,172.97	0.16


<sup>(1)</sup> This information relating to assets under management (AUM) is being provided in response to the particular request contained in the Due Diligence 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.franklinresources.com](http://www.franklinresources.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.

The table below provides the requested data for the SamCERA account assets compared to Templeton Global Multisector Plus strategy and the Franklin Templeton Global Multisector Plus (Master) Fund, Ltd. (3c7) as of June 30, 2018.

SamCERA Assets Under Management (in Millions \$) <sup>(1)</sup>	% of Strategy Assets	% of Product Assets
40.06	0.11	3.42

<sup>(1)</sup> This information relating to assets under management (AUM) is being provided in response to the particular request contained in the Due Diligence 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.franklinresources.com](http://www.franklinresources.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.



**Signed By:**   
**Name:** Breda Beckerle  
**Title:** Chief Compliance Officer  
**Dated:** July 30, 2018  
**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.

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.

## ***The Parametric Portfolio Associates LLC Cash Overlay – June 30, 2018***

### *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 **Thursday, July 12, 2018.**

#### **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 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, only exchange traded derivatives are utilized**

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.**

**Not Applicable**

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.

**Not Applicable: No limited allocation derivatives are utilized in the 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.

Parametric seeks to only hold investment instruments that would be deemed as 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 190 overlay programs and has relationships with numerous counterparties trading in global markets, we have developed a 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.

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: Benjamin Hammes - Deputy CCO  
Dated: 7/18/18  
Name of Firm  
Parametric Portfolio Associates LLC

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
Board of Retirement

August 28, 2018

Agenda Item 4.11

**TO:** Board of Retirement



**FROM:** Scott Hood, Chief Executive Officer

**SUBJECT:** Policy and Procedures for the Correction of Inaccuracies Relating to Member Contributions, Withdrawals and the Payment of Benefits Accounts

**Recommendation**

Reaffirm the Board's "Policy and Procedure for the Correction of Inaccuracies Relating to Member Contributions, Withdrawals and the Payment of Benefits."

**Background**

The Board has 19 policies which it has adopted at various times to govern the Board in its activities and to guide staff's administration of the system. Staff brings these policies to the Board for periodic reaffirmation or amendment on an as needed basis.

**Discussion**

The "Policy and Procedures for the Correction of Inaccuracies Relating to Member Accounts" reflects the Board's on-going direction to staff to:

- Collect member contributions and issue all disbursements in accordance with the law;
- Correct inaccuracies as soon as administratively feasible once identified and verified;
- Recover under-payments of member contributions and over-payments of funds where it is both in accordance with the law and reasonable to do so in the opinion of the Board; and
- Remit to a member the amount of any overpayment of contributions or underpayment of benefits consistent with this policy and procedures.

The correction procedures differ depending if the member is an active member, retiree or made a lump sum withdrawal/rollover. The steps also differ if the amount owed is greater or less than \$50. Because unique situations inevitably will arise, the policy grants the Chief Executive Officer authority to make minor adjustments in implementing the policy so that it can be accomplished in a fair and reasonable manner.

**Attachment**

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
Board of Retirement

Policy and Procedure for Correction of Inaccuracies Relating to Member Contributions,  
Withdrawals and the Payment of Benefits

**POLICY AND PROCEDURE FOR THE CORRECTION OF INACCURACIES RELATING TO  
MEMBER CONTRIBUTIONS, WITHDRAWALS  
AND THE PAYMENT OF BENEFITS**

**I. POLICY OF THE BOARD OF RETIREMENT**

Pursuant to the Board of Retirement's ("Board") fiduciary duty to conserve retirement fund assets and protect the integrity of the fund for the benefit of the members and beneficiaries ("Members"), it is the policy of the Board:

- To collect member contributions and issue all disbursements in accordance with the law;
- To correct inaccuracies as soon as administratively feasible once identified and verified;
- To recover under-payments of member contributions and over-payments of SamCERA funds where it is both in accordance with the law and reasonable to do so in the opinion of the Board; and
- To remit to a member the amount of any overpayment in contributions or underpayment of benefits consistent with this policy and procedures.

For purposes of this policy, the term Chief Executive Officer (CEO) means the Chief Executive Officer and his or her designee. The term "member" means member, beneficiary or survivor.

This Policy is designed for use when calculation and other inaccuracies affect an individual or small number of members. In the event of a system-wide inaccuracy that affects multiple members, the Board may direct staff to implement a system-wide correction process that it determines is appropriate under all the circumstances.

In the event of any inconsistency between applicable state and federal law or regulation and this Policy, the law or regulation shall take precedence.

**II. PROCEDURE FOR RESOLVING CONTRIBUTION INACCURACIES**

**A. Under-Payment of Member Contributions Discovered While A Member is Still Active.**

1. The CEO shall confirm the amount of contributions that the member should have paid, the period of time that the under-payment occurred, and the total amount of contributions owed.



2. Staff shall promptly notify the employer to correct the inaccuracy on a going forward basis in order that the correct amount of contributions is deducted from the member's bi-weekly pay. The member shall be notified as well.
3. In regards to collection of arrears under-payments, the amount of the under-payment and the applicable interest on that amount shall be collected. The interest shall be assessed at the rate(s) of interest credited to the members' accounts for the period in which the under-payments were made, and shall be applied to the outstanding amount due until a repayment arrangement is commenced. The rate of interest during the repayment period shall be the assumed actuarial rate of return applicable at the commencement of the repayment. If the under-payment by the member was due to an incorrect pick-up or cost share, or COLA cost share in which the employer paid rather than the member, no interest shall be assessed.
4. If the full amount of the past due contributions and interest equals \$50 or less, staff shall send a notice setting forth:
  - (a) The total amount of contributions and interest owed; and
  - (b) The amount of the additional contributions to be deducted from the member's next payroll.
5. If collecting the full amount of the past due contributions and interest will exceed \$50, staff shall commence a collection effort that shall commence after sending a notice to the member setting forth:
  - (a) The total amount of contributions and interest owed and the fact that interest will continue to accrue on the contributions owed amount;
  - (b) The bi-weekly amount of the additional contributions to be deducted from the member's payroll;
  - (c) The commencement date of the collection and the number of affected pay periods;
  - (d) The member's right to object the collection of the additional contributions and/or collection method and the deadline for such action; and
  - (e) The fact that repayment will commence if a written appeal is not received within 15 days of the date of the notice.
6. For those members whom staff has determined are on disability leave and the payments received through their employer are insufficient to allow the correct

deduction of member contributions, staff shall send a notice to the member stating that the member:

- (a) Must pay the amount of contributions not correctly deducted while on disability leave;
- (b) Must pay any assessed interest on the unpaid contributions until repayment is made;
- (c) Can pay the amounts owed by check(s) while still on leave; and
- (d) Will have any outstanding amount of contributions and interest owed deducted from their bi-weekly payroll upon return to active status in addition to regular contributions until repayment is completed.

Staff will send a follow-up letter to the member regarding the required repayment of contributions and interest upon determination that the member has either: returned to active service, applied for service or disability retirement, or terminated employment.

- 7. All methods of repayments should be completed no later than three years from the date of the notice to member of the amount owed unless otherwise extended by the CEO.
- 8. Notwithstanding paragraphs 5, 6, and 7 above, the full amount of the required contributions and interest must be paid prior to the commencement of any pension benefit payments to the member.
- 9. If the member withdraws/rolls over funds, staff shall note the underpayment plus accrued interest amount owing in the member's account and that this amount must be repaid in addition to any future redeposit made by the member.

**B. Under-Payment of Member Contributions Discovered After Member Left Active Status.**

- 1. The CEO shall confirm the amount of contributions that the member should have paid, the period of time that the under-payment occurred, and the total amount of the under-payment of contributions by the member.
- 2. In regards to the collection of arrears under-payments, the amount of the under-payment and the applicable interest on that amount shall be collected. If the under-payment was due to an incorrect pick-up or cost share, or COLA cost share in which the employer paid rather than the member, no interest shall be assessed.

3. Interest shall be assessed at the rate of interest credited to the members' accounts for the period in which the under-payments were made, and shall be applied to the under-payment amount due until repayment is complete. However, if the member has withdrawn the funds or has commenced a benefit, interest shall from that point forward be assessed at the assumed actuarial rate of return until repayment is complete.
4. If the member withdraws/rolls over funds, staff shall note the underpayment plus accrued interest amount in the member's account and that this amount must be repaid in addition to any future redeposit made by the member.
5. If the member has left funds on deposit or has already retired, staff shall endeavor to recover under-payments and interest by: (a) a lump sum payment from the member, (b) installment payments from the member, (c) offsets to future benefit payments to the member or (d) a combination of the foregoing, unless the Board, in its discretion and because of legal or practical considerations, determines that other action is warranted.
6. If the member has left active membership and if the CEO believes that considerations of cost effectiveness make it prudent and reasonable to not pursue recovery of under-payments where the cumulative total amount of member contributions underpaid, not including interest, is \$50 or less, then no further action is required.
7. The CEO may, on the advice of legal counsel, compromise the recovery of under-payments when the total amount of under-payment, not including interest, is less than \$5,000. Only the Board may compromise claims in which the total amount of under-payment, not including interest, is \$5,000 or more. Among other things, the likelihood of collection, the cost of collection, the amount of possible recovery and extreme hardship to the member will be considered by the CEO and/or the Board when determining whether to compromise a claim. Compromising claims may include a different method of repayment than is otherwise provided by this Policy and/or a partial reduction of the amounts underpaid or interest due.
8. The CEO's collection process shall include a notice to the member setting forth:
  - (a) The total amount of contributions and interest owed and the fact that interest will continue to accrue on the contributions owed until the repayment is made;
  - (b) An agreement to pay the amounts owed with the payment options;

(c) A statement that, if the member is receiving a monthly payment, a repayment by equal installments for the amount of the contributions and interest owed will be deducted from benefit payments for approximately the same length of time that the under-payments occurred and will go into effect by default if a written response from the member is not received within 30 days following the date the letter was delivered; and

(d) The member's right to appeal the collection of the additional contributions and/or collection method and the deadline for such action.

9. If the amount of the under-payment, not including interest, is \$5,000 or more, staff will attempt to contact the member by phone to discuss the contents of the letter before the letter is sent out for delivery.
10. The CEO may pursue all legal remedies to collect under-payments, including making a claim on an estate or trust, if appropriate.

**C. Over-Payment of Member Contributions Discovered While Member Is Still Active.**

1. The CEO shall confirm the amount of contribution that the member should have paid, the period of time that the over-payment occurred, and the total amount of the over-payment of contributions.
2. Staff shall promptly notify the employer to correct the inaccuracy on a going forward basis in order that the correct amount of contributions is deducted from the member's bi-weekly pay.
3. Staff shall promptly notify the employer that the member is entitled to a lump sum credit equal to the amount of the over-payment plus the interest credited to the member's account on the over-payment. The adjustment reflecting the credit applicable to future deductions shall be made in the member's pay from their SamCERA participating employer as soon as is reasonably practicable following the confirmation of the over-payment.
4. Staff shall notify the member of the adjustments made to the deductions.

**D. Over-payment of Member Contributions Discovered After Member Has Left Active Status.**

1. The CEO shall confirm the amount of contribution that the member should have paid, the period of time that the over-payment occurred, and the total amount

of the over-payment of contributions.

2. Staff shall ensure that the member receives a lump sum payment in the amount of the over-payment plus interest at a rate of the rate of interest credited to the member's account on the over-payment, and the interest accruing from the date of the last over payment until the date that the lump sum is paid accruing at the applicable assumed actuarial rate of return. The payment shall be made as soon as is reasonably practicable following the confirmation of the over-payment and shall be made in a manner that is in compliance with requirements contained in the Internal Revenue Code and applicable Internal Revenue Service regulations.
3. If the member has died prior to payment of the lump sum amount due, the following procedures will be followed:
  - (a) If the member has named a designated beneficiary, the payment will be made directly to the designated beneficiary.
  - (b) If there is no beneficiary but there is an open estate (i.e., no order for final distribution yet), payment will be made to the estate (through the personal representative). If an estate was not established, distribution will be made in accordance with any applicable and valid Affidavit for Payment of Personal Property on file with SamCERA pursuant to Probate Code Section 13101. In cases where there is no designated beneficiary and the total amount of over-payment is less than \$50, staff need not take proactive measures to locate the person(s) entitled to such funds. All claims presented to SamCERA, however, will be considered regardless of size.

### **III. PROCEDURE FOR RESOLVING BENEFIT PAYMENT INACCURACIES**

#### **A. Under-payments to members Who Withdrew/Rolled Over Funds Or Retired.**

1. The CEO shall confirm the amount of the under-payment contained in the withdrawal/rollover) of monthly benefit.
2. If the member has withdrawn/rolled over an incorrect amount of contributions and interest, staff shall promptly contact the member and remit to the member the amount owed and interest accrued. Interest should be paid at the rate(s) of interest credited to the member's account for the period in which the under-payments were made. The correction shall be on the next Consent Agenda for ratification by the Board.
3. For the under payment of a monthly benefit, staff promptly shall correct the monthly benefit amount on a going forward basis and make a lump sum

payment of the arrears owed, for up to three years from the date of the discovery of the under-payment, plus interest that accrued at the applicable assumed actuarial rate of return and report the correction in the next Consent Agenda for ratification by the Board.

4. If a monthly benefit is no longer being paid, the staff shall make a reasonable attempt to pay the amount of the under-payment for up to three years from the date of the discovery of the under-payment, plus interest at the assumed actuarial rate of return to the beneficiary, survivor, or estate of the deceased recipient and shall report such action in the next Consent Agenda for ratification by the Board.

**B. Over-payments to Members Who Withdrew/Rolled Over Funds or Retired.**

1. The CEO shall confirm the amount of the over-payment contained in the withdrawal/rollover or monthly benefit.
2. For withdrawn/rolled over contributions and interest, staff shall contact the member and request payment of the amount of the over-payment plus interest at the rate of the applicable assumed actuarial rate of return from date of withdrawal/rollover to the completion of the repayment. If payment is not made, the collection procedure is set forth in paragraph (5) below.
3. For retirees receiving an over payment of a monthly benefit, staff shall correct the monthly benefit on a going forward basis at the earliest practical time after confirming the inaccuracy.
4. For the over payment of a monthly benefit, staff shall take all reasonable steps to recover the full amount of all past over-payments made within three years from the date of the discovery of the over-payment, interest shall accrue from the dates of the over-payment until the completion of the repayment at the applicable assumed actuarial rate of return. If payment is not made, the collection procedure is set forth in paragraph (5) below. Collection of over-payments that are subject to the provisions of paragraph 12, shall not be limited to three years.
5. Staff shall endeavor to recover over-payments by: (a) a lump sum payment from the member, (b) periodic installment payments from the member or (c) offsetting the amount to be recovered against future benefits, or a combination of these methods; unless the Board, in its discretion and because of legal or practical considerations, determines that another action is warranted, including but not limited to repayment by the employer. The member shall have a right to appeal the collection of the over-payment amount and/or collection method and the deadline for such action.

6. If the CEO believes that considerations of cost effectiveness make it prudent and reasonable to not pursue recovery of over-payments where the cumulative total amount of the over-payment, not including interest, is \$50 or less, then no further steps shall be taken.
7. The CEO shall have authority, on the advice of legal counsel, to compromise recovery of over-payments when the total amount of over-payment, not including interest, is less than \$5,000. Only the Board may compromise claims in which the total amount of over-payment, not including interest, is \$5,000 or more. Among other things, the likelihood of collection, the cost of collection, the amount of possible recovery and the extreme hardship to the member will be considered by the CEO and/or the Board when determining whether to compromise a claim. Compromising claims may include a different method of repayment than is otherwise provided by this Policy and/or a partial forgiveness of the amounts overpaid.
8. Upon confirmation of an over-payment, staff shall send a letter by certified mail, return receipt requested, or by express delivery service, to the member advising the member of the over-payment and proposing a repayment schedule, as follows:
  - (a) The letter will identify the circumstances of the over-payment and the fact that adjustments will be made to all future benefit payments.
  - (b) The letter will request repayment of the amount overpaid and interest, subject to the provisions of this Policy.
  - (c) The letter will include an agreement to repay excess benefits and interest and a consent form for the spouse, survivor or beneficiary, as applicable.
  - (d) The agreement to repay excess benefits and interest will provide options including, but not limited to:
    - Option 1 — equal installments over the same length of time that the over-payments occurred, with interest that accrued during the over-payment period and during the repayment period.
    - Option 2 — lump sum payment for the full amount overpaid, with interest that accrued during the over-payment period and during the repayment period.

Option 3 — reduction of monthly benefit until the over-payment is paid in full, with interest applied during the over-payment period and during the repayment period.

- e. The letter and agreement to repay excess benefits may provide that Option 3 will go into effect by default if a written response from the member is not received within 30 days following the date the letter was delivered.
  - f. The letter shall inform the member of the right to appeal the collection effort and/or collection method and the deadline for such action.
9. If the amount of the over-payment, not including interest, is \$5,000 or more, staff will attempt to contact the member by phone to schedule a meeting to discuss the contents of the letter before the letter is sent out for delivery.
  10. Staff may pursue all legal remedies to collect over-payments, including making a claim on an estate or trust, if appropriate.
  11. Upon the death of the member before full repayment has been made, staff shall endeavor to pursue a claim or claims against the member's estate, survivors, heirs and/or beneficiaries to recover the unpaid amounts.
  12. In cases where the inaccuracy in the calculation of the member's monthly allowance or other benefits was made as a result of either (1) fraudulent reports for compensation made, or caused to be made, by the member for his or her own benefit or (2) the member caused his or her final compensation to be improperly increased or otherwise overstated at the time of retirement and the system applied that overstated amount as the basis for calculating the member's monthly retirement allowance or other benefits, the correction of this inaccuracy shall be subject to the procedures sets forth in Government Code section 31529.

#### **IV. Chief Executive Officer Implementation Authority**

In the implementation of this policy and procedure, the Chief Executive Officer has the authority to make minor adjustments in order that such implementation is accomplished in a fair and reasonable manner consistent with the objectives set forth in Section I. Interest may be waived on inaccuracies caused by systemic constraints or events.



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

August 28, 2018

Agenda Item 6.1

**TO:** Board of Retirement

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



**SUBJECT:** Preliminary Monthly Portfolio Performance Report for the Period Ended  
July 31, 2018

**Recommendation**

Accept the preliminary performance report dated July 31, 2018.

**Background**

This preliminary report is intended to provide a high-level view of the portfolio and its trends. It is not intended to provide short-term performance upon which the Board would act. As discussed previously, preliminary performance estimates are now included for AQR Risk Parity, AQR Delta, PanAgora Risk Parity, and Beach Point Select. The quarterly performance metrics are not yet available for our private equity, private credit, private real asset, and real estate portfolios. The performance for these portfolios will be reflected in the quarterly performance report generated by Verus.

The attached performance report shows both net and gross of fee returns for the total plan on page one, with net composite returns (pages 2-3) and net manager returns (pages 4-9) also shown.

**Discussion**

The fund's net preliminary return for July was 1.4%, bringing the preliminary trailing twelve-month return ending July 2018 to 6.6% net. The preliminary twelve-month net return is below both SamCERA's Plan Benchmark return of 8.0% and SamCERA's Actuarial Assumed Earnings Rate of 6.75%.

July was a positive month for risk assets. In U.S. equity markets, the broad U.S. equity market (as measured by the Russell 3000 Index) was up 3.3%. International markets were also up on the month, with developed international equity (as measured by MSCI EAFE) up 2.5% and emerging markets up 2.2%.

Economic activity remained mostly strong during the month. Real GDP grew at an estimated annual rate of 4.1% in the second quarter, which was the strongest rate of growth since 2014. Manufacturing activity slowed in July, although it still continues to grow, but at a slower rate. The unemployment rate fell to 3.9% in July from 4.0% in June, marking the lowest level in nearly 50 years. Core inflation (CPI) rose 2.4% on an annualized basis, marking its fastest pace since the 12-month period ending September 2008.

The general U.S. fixed income market was flat during the month as tighter credit spreads were offset by higher treasury yields. The 10-year U.S. Treasury yield was higher during the month, with the yield increasing 10 basis points and ending at 2.96% by month-end.

**Attachments**

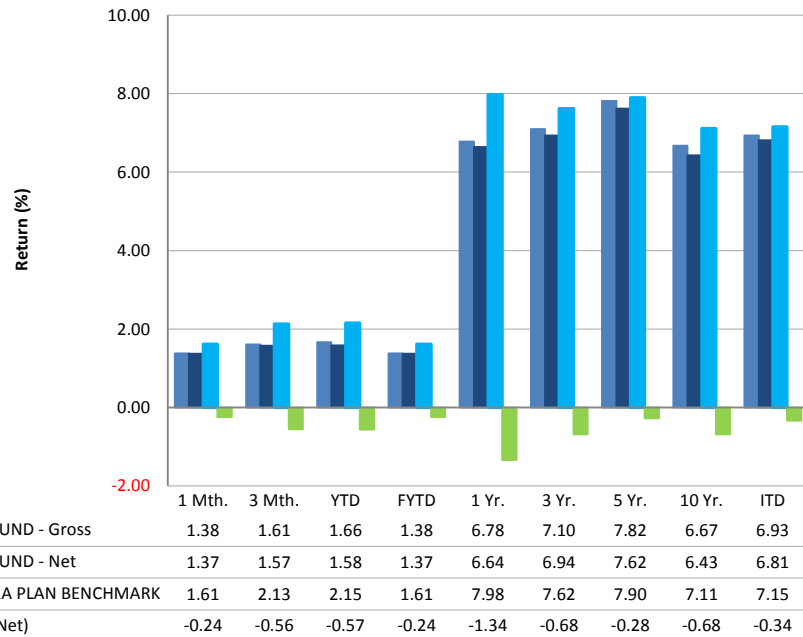
Northern Trust Performance Report  
Verus Capital Markets Update

# San Mateo County Total Fund Characteristics

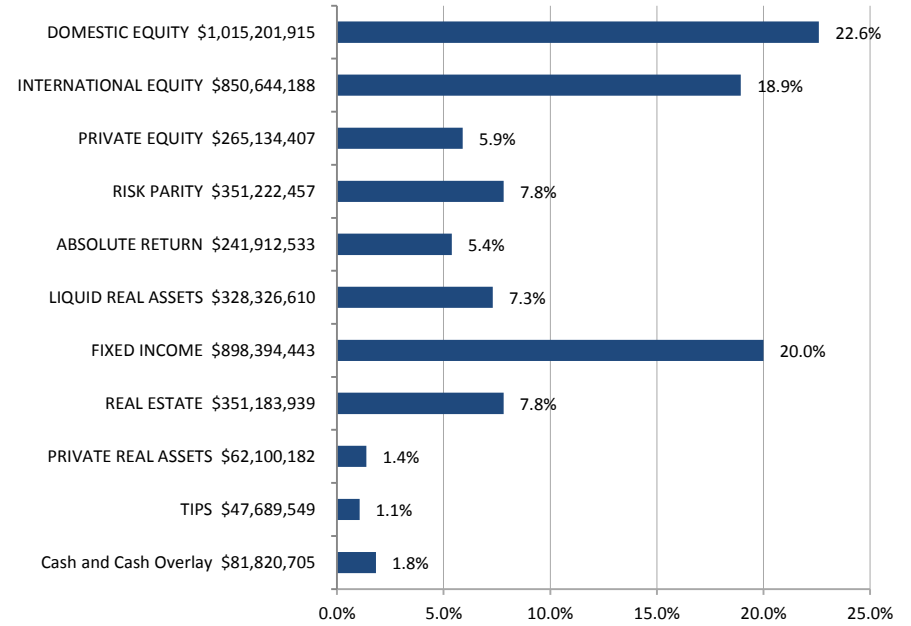


July 31, 2018

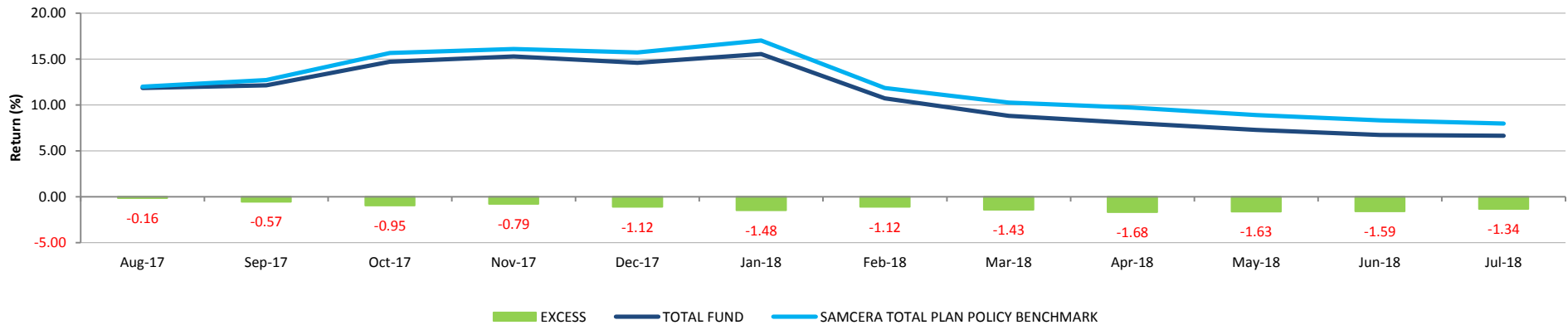
**Total Fund Performance**



**Asset Allocation**



**Rolling Month End Annual Returns**

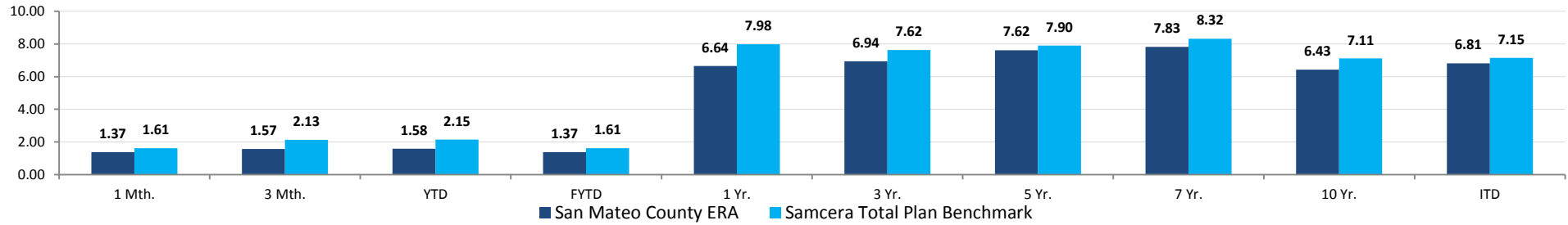


# San Mateo County Composite Return Summary



July 31, 2018

Return Comparison



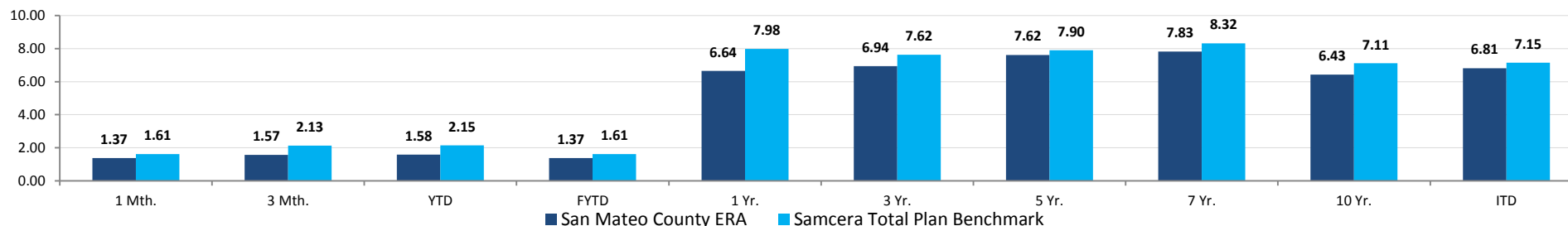
Composite Returns (Net of Manager Fees)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
San Mateo County ERA	4,493,630,928	1.37	1.57	1.58	1.37	6.64	6.94	7.62	7.83	6.43	6.81
Samcera Total Plan Benchmark		1.61	2.13	2.15	1.61	7.98	7.62	7.90	8.32	7.11	7.15
Excess		-0.24	-0.56	-0.57	-0.24	-1.34	-0.68	-0.28	-0.50	-0.68	-0.34
San Mateo Ex-Clifton Overlay	4,481,867,652	1.39	1.54	1.58	1.39	6.65	6.87	7.52	7.78	6.35	6.74
Samcera Total Plan Benchmark		1.61	2.13	2.15	1.61	7.98	7.62	7.90	8.32	7.11	7.15
Excess		-0.22	-0.58	-0.57	-0.22	-1.33	-0.76	-0.38	-0.54	-0.76	-0.41
Total Equity	1,865,846,104	2.88	3.10	3.17	2.88	11.43	9.66	9.91	10.22	7.42	7.97
Samcera Total Equity Benchmark		2.79	2.83	2.89	2.79	11.71	10.87	11.18	11.27	8.70	8.58
Excess		0.09	0.27	0.28	0.09	-0.28	-1.21	-1.27	-1.05	-1.28	-0.61
Fixed Income	898,394,443	0.49	0.60	-0.15	0.49	1.27	3.74	3.82	4.20	5.56	5.50
Samcera Fixed Income Benchmark		0.39	0.73	-1.18	0.39	-0.38	2.55	2.67	2.57	4.07	4.90
Excess		0.10	-0.13	1.02	0.10	1.65	1.19	1.15	1.63	1.49	0.60
Risk Parity	351,222,457	0.03	-0.36	-1.58	0.03	4.57	5.56	6.33	5.38	--	6.07
Samcera Risk Parity Benchmark		1.81	1.67	1.53	1.81	6.86	8.04	8.68	9.38	--	8.89
Excess		-1.78	-2.03	-3.11	-1.78	-2.29	-2.48	-2.35	-4.00	--	-2.82

# San Mateo County Composite Return Summary



July 31, 2018

Return Comparison



Composite Returns (Net of Manager Fees)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
Alternatives	507,046,940	0.65	0.05	-0.68	0.65	3.27	5.23	5.76	4.53	-8.39	-2.42
Samcera Alternatives Benchmark		2.15	4.81	6.17	2.15	13.15	9.67	8.55	8.94	7.50	7.92
Excess		-1.50	-4.76	-6.85	-1.50	-9.87	-4.44	-2.78	-4.41	-15.89	-10.35
Inflation Hedge	789,300,280	0.16	0.97	2.92	0.16	5.52	--	--	--	--	9.23
SamCERA Inflation Hedge Index		0.01	0.90	2.00	0.01	6.80	--	--	--	--	7.97
Excess		0.16	0.07	0.92	0.16	-1.28	--	--	--	--	1.26
Cash	70,057,429	0.04	0.14	0.51	0.04	0.88	0.71	0.63	0.61	0.34	1.95
Samcera Cash Benchmark		0.16	0.48	0.97	0.16	1.43	0.73	0.45	0.35	0.35	1.83
Excess		-0.12	-0.33	-0.46	-0.12	-0.55	-0.03	0.18	0.26	-0.02	0.12

# San Mateo County Manager Return Summary



July 31, 2018

Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
Total Equity	1,865,846,104	2.88	3.10	3.17	2.88	11.43	9.66	9.91	10.22	7.42	7.97
Samcera Total Equity Benchmark		2.79	2.83	2.89	2.79	11.71	10.87	11.18	11.27	8.70	8.58
Excess		0.09	0.27	0.28	0.09	-0.28	-1.21	-1.27	-1.05	-1.28	-0.61
Domestic Equity	1,015,201,915	3.33	7.25	6.82	3.33	16.64	12.12	12.31	13.19	9.89	8.89
Samcera Dom. Equity Benchmark		3.32	6.93	6.64	3.32	16.39	12.01	12.57	13.72	10.64	9.22
Excess		0.01	0.32	0.18	0.01	0.25	0.11	-0.26	-0.53	-0.75	-0.33
Large Cap Equity	906,063,388	3.47	6.96	6.57	3.47	16.71	12.73	13.15	13.75	10.07	9.62
Russell 1000		3.45	6.78	6.40	3.45	16.19	12.20	12.96	14.03	10.70	9.91
Excess		0.02	0.18	0.17	0.02	0.52	0.53	0.19	-0.28	-0.64	-0.29
Blackrock Russell 1000	743,485,157	3.43	6.76	6.39	3.43	16.17	--	--	--	--	17.35
Russell 1000		3.45	6.78	6.40	3.45	16.19	--	--	--	--	17.21
Excess		-0.02	-0.02	-0.01	-0.02	-0.02	--	--	--	--	0.15
DE Shaw Commingled Fund	162,578,231	3.64	7.87	7.39	3.64	19.33	14.13	--	--	--	13.35
Russell 1000		3.45	6.78	6.40	3.45	16.19	12.20	--	--	--	11.23
Excess		0.19	1.10	0.98	0.19	3.14	1.94	--	--	--	2.12
Small Cap Equity	109,138,527	2.19	9.12	8.47	2.19	16.30	9.05	8.54	10.95	9.03	6.95
Russell 2000		1.74	8.69	9.54	1.74	18.73	12.04	11.33	12.70	10.39	8.45
Excess		0.45	0.42	-1.07	0.45	-2.43	-2.99	-2.79	-1.75	-1.35	-1.50
QMA US Small Cap	109,138,527	2.19	9.12	8.47	2.19	16.30	--	--	--	--	17.94
Russell 2000		1.74	8.69	9.54	1.74	18.73	--	--	--	--	18.22
Excess		0.45	0.42	-1.07	0.45	-2.43	--	--	--	--	-0.28
International Equity	850,644,188	2.35	-1.49	-0.91	2.35	5.62	6.17	6.13	4.77	2.65	5.68
MS AC WldxUS IMI Nt		2.15	-2.02	-1.57	2.15	6.17	6.39	5.92	4.57	3.54	5.26
Excess		0.20	0.53	0.66	0.20	-0.55	-0.21	0.21	0.19	-0.90	0.41

# San Mateo County Manager Return Summary



July 31, 2018

Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
Developed Markets Equity	759,475,633	2.22	-1.01	-0.39	2.22	6.15	6.14	6.47	5.22	3.11	4.65
MS AC WldxUS IMI Nt		2.15	-2.02	-1.57	2.15	6.17	6.39	5.92	4.57	3.54	5.11
Excess		0.08	1.01	1.19	0.08	-0.02	-0.25	0.55	0.65	-0.44	-0.46
Baillie Gifford	259,064,305	1.58	1.63	1.18	1.58	8.30	8.41	7.96	--	--	9.03
MSCI ACWI ex US Growth		1.73	-0.35	-0.32	1.73	8.44	7.46	7.15	--	--	7.45
Excess		-0.15	1.98	1.50	-0.15	-0.14	0.94	0.81	--	--	1.59
Blackrock EAFE Index Fund	247,861,673	2.45	-0.97	-0.05	2.45	6.79	5.41	--	--	--	4.15
MSCI EAFE ND		2.46	-1.07	-0.36	2.46	6.40	5.03	--	--	--	3.81
Excess		-0.01	0.10	0.31	-0.01	0.39	0.38	--	--	--	0.34
Mondrian Investment Partners	252,549,655	2.67	-3.62	-2.26	2.67	3.63	4.12	5.12	4.48	3.24	5.60
MSCI ACWI ex US Value		3.15	-3.03	-1.91	3.15	4.44	5.48	4.94	4.09	3.24	5.52
Excess		-0.47	-0.59	-0.35	-0.47	-0.80	-1.35	0.18	0.39	-0.00	0.08
Emerging Markets Equity	91,168,555	3.45	-5.34	-5.07	3.45	1.42	6.45	3.19	--	--	2.36
MSCI Emerging Markets ND		2.20	-5.52	-4.61	2.20	4.36	8.94	5.25	--	--	3.23
Excess		1.25	0.18	-0.47	1.25	-2.94	-2.50	-2.07	--	--	-0.88
EV Parametric EM	91,168,555	3.45	-5.34	-5.07	3.45	1.42	6.93	--	--	--	6.93
MSCI Emerging Markets GD		2.28	-5.35	-4.37	2.28	4.74	9.35	--	--	--	9.35
Excess		1.16	0.01	-0.70	1.16	-3.33	-2.42	--	--	--	-2.42
Fixed Income	898,394,443	0.49	0.60	-0.15	0.49	1.27	3.74	3.82	4.20	5.56	5.50
Samcera Fixed Income Benchmark		0.39	0.73	-1.18	0.39	-0.38	2.55	2.67	2.57	4.07	4.90
Excess		0.10	-0.13	1.02	0.10	1.65	1.19	1.15	1.63	1.49	0.60
Core Fixed Income	609,599,318	0.19	0.27	-1.38	0.19	-0.45	2.46	3.23	3.41	4.84	5.19
BB Barclays U.S. Aggregate		0.02	0.61	-1.59	0.02	-0.80	1.49	2.25	2.34	3.73	4.76
Excess		0.17	-0.34	0.21	0.17	0.35	0.97	0.98	1.07	1.11	0.43

# San Mateo County Manager Return Summary



July 31, 2018

Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
FIAM Core Bond	260,474,399	0.13	0.76	-1.23	0.13	-0.32	2.19	2.86	3.01	4.76	4.44
BB Barclays U.S. Aggregate		0.02	0.61	-1.59	0.02	-0.80	1.49	2.25	2.34	3.73	3.97
Excess		0.11	0.15	0.37	0.11	0.48	0.70	0.61	0.67	1.03	0.48
Western Total Return	129,689,573	0.93	-1.05	-2.68	0.93	0.14	3.85	--	--	--	3.85
BB Barclays U.S. Aggregate		0.02	0.61	-1.59	0.02	-0.80	1.49	--	--	--	1.49
Excess		0.91	-1.66	-1.08	0.91	0.94	2.36	--	--	--	2.36
Blackrock Inter Gov	219,435,346	-0.18	0.48	-0.75	-0.18	-1.06	--	--	--	--	0.23
BB Barclays U.S. Aggregate		0.02	0.61	-1.59	0.02	-0.80	--	--	--	--	1.24
Excess		-0.21	-0.13	0.84	-0.21	-0.26	--	--	--	--	-1.00
Opportunistic Credit	288,795,125	1.11	1.29	2.52	1.11	5.08	7.00	6.68	8.14	--	9.36
BB Barc BA Intermediate HY Ind		1.11	0.97	-0.36	1.11	0.62	4.66	4.88	5.73	--	7.12
Excess		0.00	0.32	2.88	0.00	4.46	2.34	1.79	2.41	--	2.24
AG Opportunistic Whole Loan	7,336,251	0.00	6.42	19.96	0.00	25.10	13.49	--	--	--	8.78
BB Barc BA Intermediate HY Ind		1.11	0.97	-0.36	1.11	0.62	4.66	--	--	--	4.11
Excess		-1.11	5.45	20.31	-1.11	24.48	8.83	--	--	--	4.67
Angelo Gordon	6,287,698	0.00	9.20	13.30	0.00	30.13	14.00	13.11	--	--	12.95
BB Barc BA Intermediate HY Ind		1.11	0.97	-0.36	1.11	0.62	4.66	4.88	--	--	4.81
Excess		-1.11	8.23	13.66	-1.11	29.51	9.34	8.23	--	--	8.14
Beach Point Select Fund	49,950,983	0.00	2.01	3.28	0.00	7.18	8.30	--	--	--	8.75
BB Barc BA Intermediate HY Ind		1.11	0.97	-0.36	1.11	0.62	4.66	--	--	--	4.39
Excess		-1.11	1.04	3.63	-1.11	6.56	3.65	--	--	--	4.36
Brigade Cap Mngmt	78,108,543	1.02	2.57	3.65	1.02	4.43	7.11	5.27	6.31	--	6.99
BB Barc BA Intermediate HY Ind		1.11	0.97	-0.36	1.11	0.62	4.66	4.88	5.73	--	6.40
Excess		-0.08	1.61	4.01	-0.08	3.81	2.46	0.39	0.58	--	0.59



# San Mateo County Manager Return Summary



July 31, 2018

Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
SAMCERA - White Oak Yield Spec	12,326,151	0.00	1.23	5.16	0.00	4.50	--	--	--	--	--
BB Barc BA Intermediate HY Ind		1.11	0.97	-0.36	1.11	0.62	--	--	--	--	--
Excess		-1.11	0.26	5.52	-1.11	3.88	--	--	--	--	--
SAMCERA-PIMCO Div. Income Fund	80,665,275	1.11	0.60	-0.33	1.11	1.46	--	--	--	--	1.46
BB Barc BA Intermediate HY Ind		1.11	0.97	-0.36	1.11	0.62	--	--	--	--	0.62
Excess		0.00	-0.36	0.03	0.00	0.84	--	--	--	--	0.84
TCP Direct Lending VIII	12,601,993	0.63	-2.48	-0.88	0.63	3.85	--	--	--	--	--
BB Barc BA Intermediate HY Ind		1.11	0.97	-0.36	1.11	0.62	--	--	--	--	--
Excess		-0.48	-3.45	-0.53	-0.48	3.23	--	--	--	--	--
Franklin Templeton	41,518,231	3.63	-1.45	1.17	3.63	1.48	3.01	2.78	3.48	--	4.12
BB Barclays Multiverse Index		-0.06	-1.36	-1.63	-0.06	-0.42	2.70	1.40	1.04	--	1.81
Excess		3.69	-0.09	2.80	3.69	1.90	0.31	1.38	2.44	--	2.31
Risk Parity	351,222,457	0.03	-0.36	-1.58	0.03	4.57	5.56	6.33	5.38	--	6.07
Samcera Risk Parity Benchmark		1.81	1.67	1.53	1.81	6.86	8.04	8.68	9.38	--	8.89
Excess		-1.78	-2.03	-3.11	-1.78	-2.29	-2.48	-2.35	-4.00	--	-2.82
AQR Global Risk III	177,715,461	0.80	0.00	-0.88	0.80	5.54	5.25	4.99	4.42	--	5.17
Samcera Risk Parity Benchmark		1.81	1.67	1.53	1.81	6.86	8.04	8.68	9.38	--	8.89
Excess		-1.01	-1.67	-2.41	-1.01	-1.31	-2.79	-3.69	-4.95	--	-3.73
Panagora	173,506,996	-0.65	-0.69	-2.21	-0.65	3.71	5.85	--	--	--	5.76
Samcera Risk Parity Benchmark		1.81	1.67	1.53	1.81	6.86	8.04	--	--	--	7.51
Excess		-2.46	-2.36	-3.74	-2.46	-3.15	-2.20	--	--	--	-1.75
Alternatives	507,046,940	0.65	0.05	-0.68	0.65	3.27	5.23	5.76	4.53	-8.39	-2.42
Samcera Alternatives Benchmark		2.15	4.81	6.17	2.15	13.15	9.67	8.55	8.94	7.50	7.92
Excess		-1.50	-4.76	-6.85	-1.50	-9.87	-4.44	-2.78	-4.41	-15.89	-10.35

# San Mateo County Manager Return Summary



July 31, 2018

Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
Private Equity	265,134,407	1.47	4.63	6.85	1.47	11.46	11.35	14.94	11.09	--	-19.41
Samcera PE Benchmark		3.57	7.71	8.48	3.57	19.84	15.52	16.12	17.26	--	17.44
Excess		-2.10	-3.07	-1.63	-2.10	-8.38	-4.17	-1.18	-6.17	--	-36.85
Absolute Return	241,912,533	-0.24	-4.59	-7.82	-0.24	-4.51	1.65	4.02	3.74	--	3.57
Samcera LIBOR + 4%		0.50	1.48	3.37	0.50	5.59	4.90	4.61	4.50	--	4.50
Excess		-0.74	-6.07	-11.19	-0.74	-10.10	-3.25	-0.59	-0.76	--	-0.92
AQR Delta XN	147,878,652	-0.97	-6.77	-10.58	-0.97	-6.41	1.12	3.69	3.51	--	3.34
Samcera LIBOR + 4%		0.50	1.48	3.37	0.50	5.59	4.90	4.61	4.50	--	4.50
Excess		-1.48	-8.25	-13.95	-1.48	-12.00	-3.78	-0.92	-0.99	--	-1.15
SamCERA-Aberdeen Std GARS	94,033,881	0.95	-0.94	-3.12	0.95	-1.73	--	--	--	--	-0.66
Samcera LIBOR + 4%		0.50	1.48	3.37	0.50	5.59	--	--	--	--	4.94
Excess		0.44	-2.42	-6.48	0.44	-7.32	--	--	--	--	-5.60
Inflation Hedge	789,300,280	0.16	0.97	2.92	0.16	5.52	--	--	--	--	9.23
SamCERA Inflation Hedge Index		0.01	0.90	2.00	0.01	6.80	--	--	--	--	7.97
Excess		0.16	0.07	0.92	0.16	-1.28	--	--	--	--	1.26
TIPS	47,689,549	-0.23	0.44	0.23	-0.23	1.77	--	--	--	--	1.77
BBG Barclays US TIPS		-0.48	0.34	-0.51	-0.48	1.17	--	--	--	--	1.15
Excess		0.26	0.10	0.73	0.26	0.60	--	--	--	--	0.62
Brown Brothers Harriman	47,689,549	-0.23	0.44	0.23	-0.23	1.77	1.85	0.92	1.23	--	2.45
BBG Barclays US TIPS		-0.48	0.34	-0.51	-0.48	1.17	1.69	1.43	1.46	--	2.70
Excess		0.26	0.10	0.73	0.26	0.60	0.16	-0.51	-0.23	--	-0.24
Real Estate	351,183,939	0.09	1.78	5.80	0.09	7.47	--	--	--	--	8.84
Samcera NCREIF ODCE EW (gross)		0.00	2.13	4.35	0.00	8.60	--	--	--	--	8.12
Excess		0.09	-0.35	1.46	0.09	-1.14	--	--	--	--	0.73

# San Mateo County Manager Return Summary



July 31, 2018

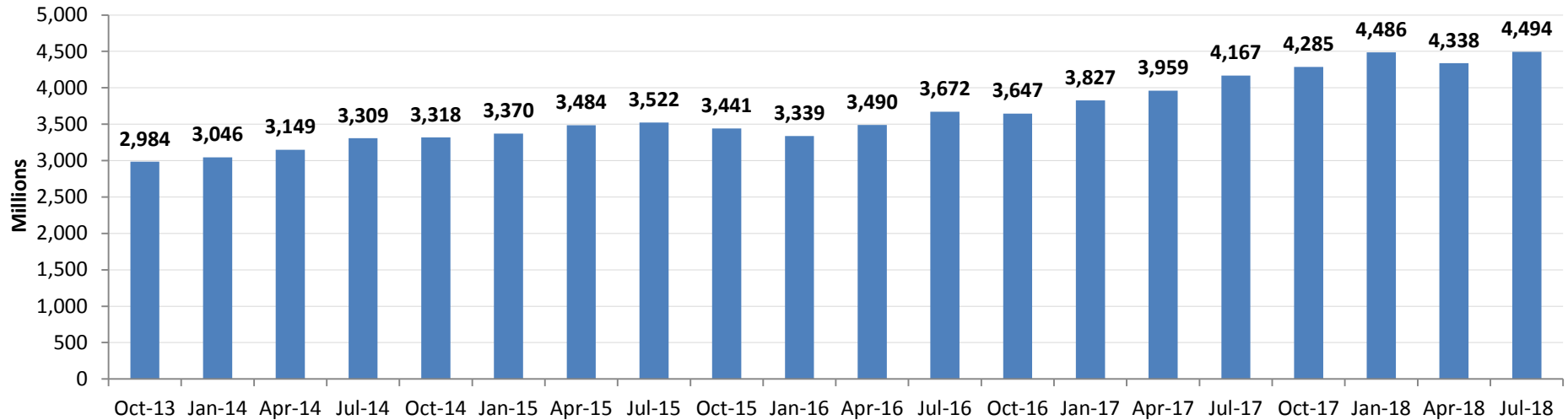
Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
Invesco Core Real Estate	260,104,148	0.00	1.76	6.45	0.00	7.92	8.89	10.77	10.77	5.04	7.90
Samcera NCREIF ODCE EW (gross)		0.00	2.13	4.35	0.00	8.60	9.62	11.14	11.44	5.08	7.78
Excess		0.00	-0.37	2.11	0.00	-0.69	-0.74	-0.37	-0.67	-0.04	0.12
Invesco US Val IV	21,068,842	1.62	3.99	5.90	1.62	11.54	--	--	--	--	12.14
Samcera NCREIF ODCE EW (gross)		0.00	2.13	4.35	0.00	8.60	--	--	--	--	9.42
Excess		1.62	1.86	1.55	1.62	2.93	--	--	--	--	2.72
PGIM Real Estate US Debt Fund	70,010,949	0.00	1.25	2.92	0.00	3.03	--	--	--	--	2.79
Samcera NCREIF ODCE EW (gross)		0.00	2.13	4.35	0.00	8.60	--	--	--	--	7.92
Excess		0.00	-0.88	-1.43	0.00	-5.58	--	--	--	--	-5.13
Liquid Real Assets	328,326,610	0.02	-0.48	-0.23	0.02	6.04	--	--	--	--	--
SamCera Custom Real Asset Index		0.14	-0.19	0.17	0.14	6.31	--	--	--	--	--
Excess		-0.12	-0.28	-0.40	-0.12	-0.27	--	--	--	--	--
CUSHING MLP ALPHA TR	79,951,315	-0.06	--	--	-0.06	--	--	--	--	--	-0.06
50% BC US TIPS/50% SamCERA CRA		-0.17	--	--	-0.17	--	--	--	--	--	-0.17
Excess		0.11	--	--	0.11	--	--	--	--	--	0.11
SSGA CST REAL ASSET NL	248,375,295	0.04	-0.46	-0.21	0.04	6.06	--	--	--	--	--
SamCera Custom Real Asset Index		0.14	-0.19	0.17	0.14	6.31	--	--	--	--	--
Excess		-0.10	-0.27	-0.38	-0.10	-0.24	--	--	--	--	--
Private Real Assets	62,100,182	1.78	3.49	5.84	1.78	-2.10	--	--	--	--	17.90
SamCera Liquid Real Asset Inde		0.14	-0.19	0.17	0.14	6.31	--	--	--	--	11.20
Excess		1.64	3.68	5.68	1.64	-8.41	--	--	--	--	6.69
Cash	70,057,429	0.04	0.14	0.51	0.04	0.88	0.71	0.63	0.61	0.34	1.95
Samcera Cash Benchmark		0.16	0.48	0.97	0.16	1.43	0.73	0.45	0.35	0.35	1.83
Excess		-0.12	-0.33	-0.46	-0.12	-0.55	-0.03	0.18	0.26	-0.02	0.12
SamCera General Account	9,537,914	0.18	0.53	1.07	0.18	1.60	0.94	0.64	0.50	0.53	1.98
County Treasury Pool	60,519,417	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.34	0.06	2.55
San Mateo County ERA	4,493,630,928	1.37	1.57	1.58	1.37	6.64	6.94	7.62	7.83	6.43	6.81
Samcera Total Plan Benchmark		1.61	2.13	2.15	1.61	7.98	7.62	7.90	8.32	7.11	7.15
Excess		-0.24	-0.56	-0.57	-0.24	-1.34	-0.68	-0.28	-0.50	-0.68	-0.34

July 31, 2018

**Record of Asset Growth**

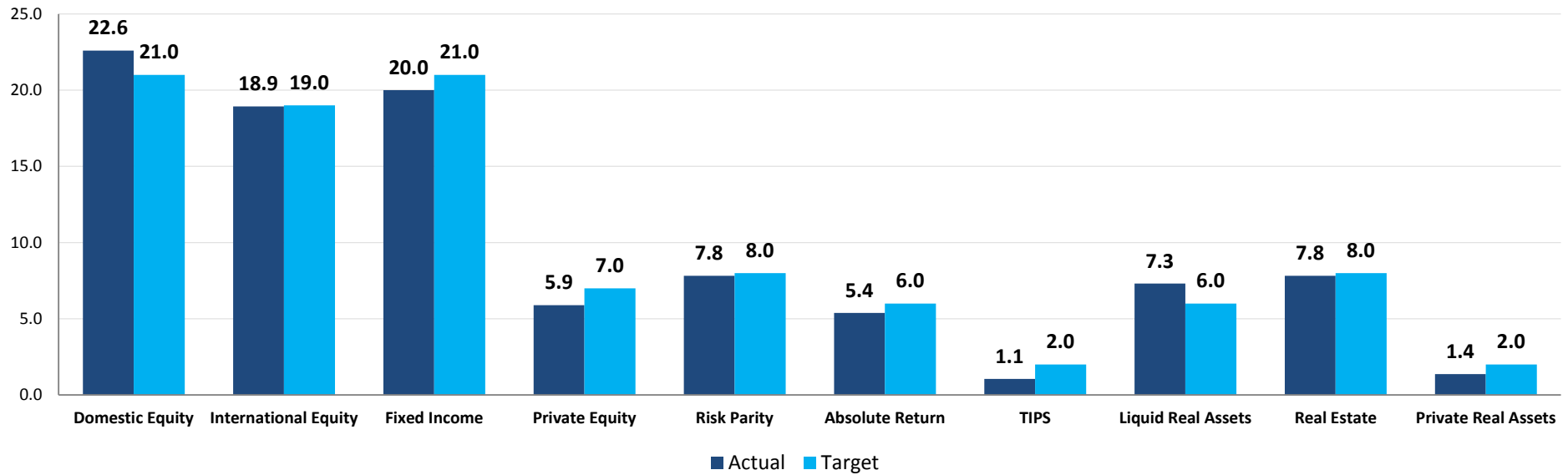
	Three Months	One Year
<b>TOTAL FUND</b>		
Beginning Market Value	4,338,473,681	4,167,174,088
Contributions	145,981,876	263,379,547
Withdrawals	-61,829,410	-220,889,032
Income Received	10,926,684	37,639,109
Gain/Loss	60,087,792	244,430,993
Ending Market Value	4,493,630,928	4,493,630,928

**Net Asset Values Over Time (\$000)**



July 31, 2018

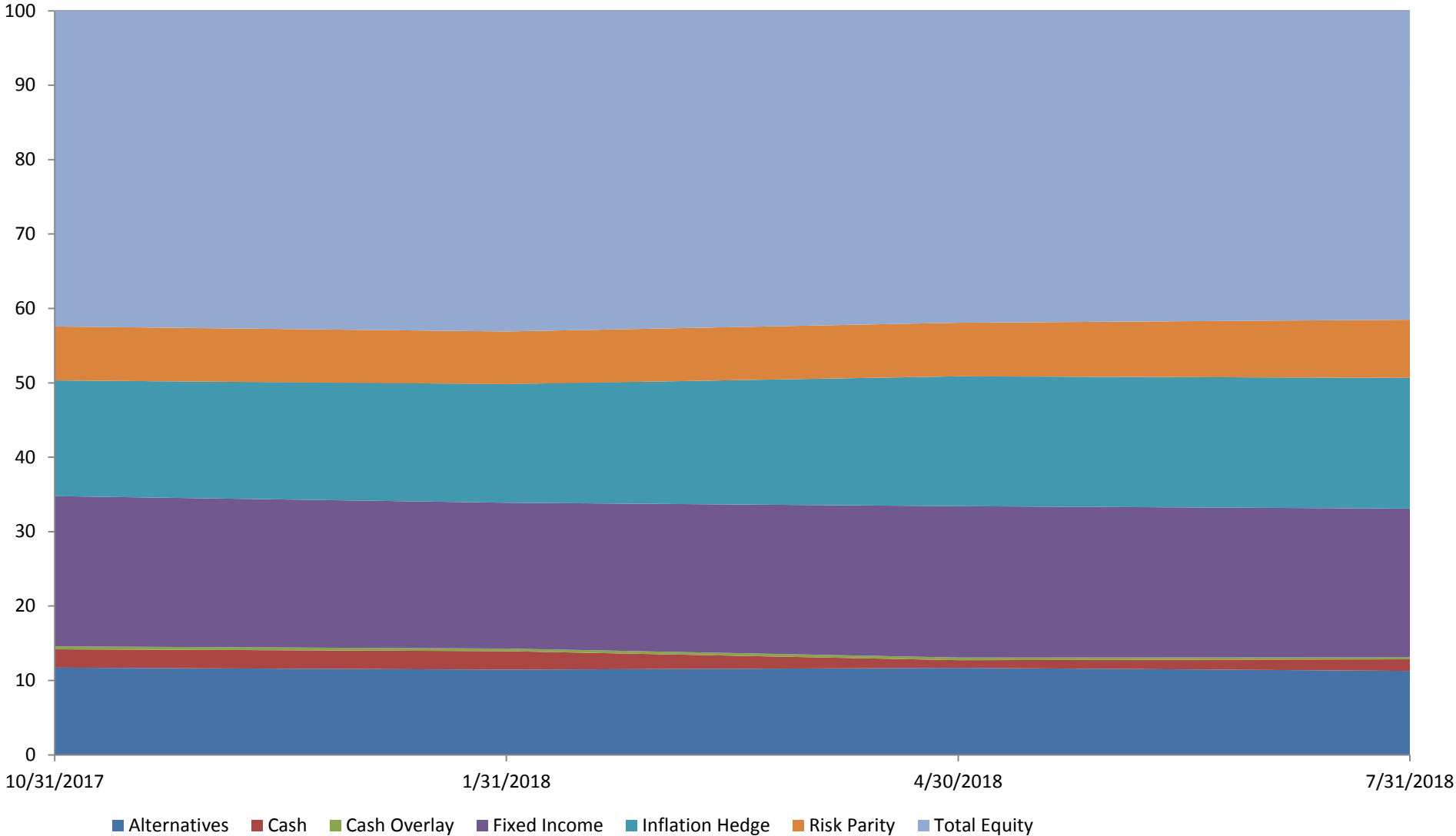
Actual vs Target Weights



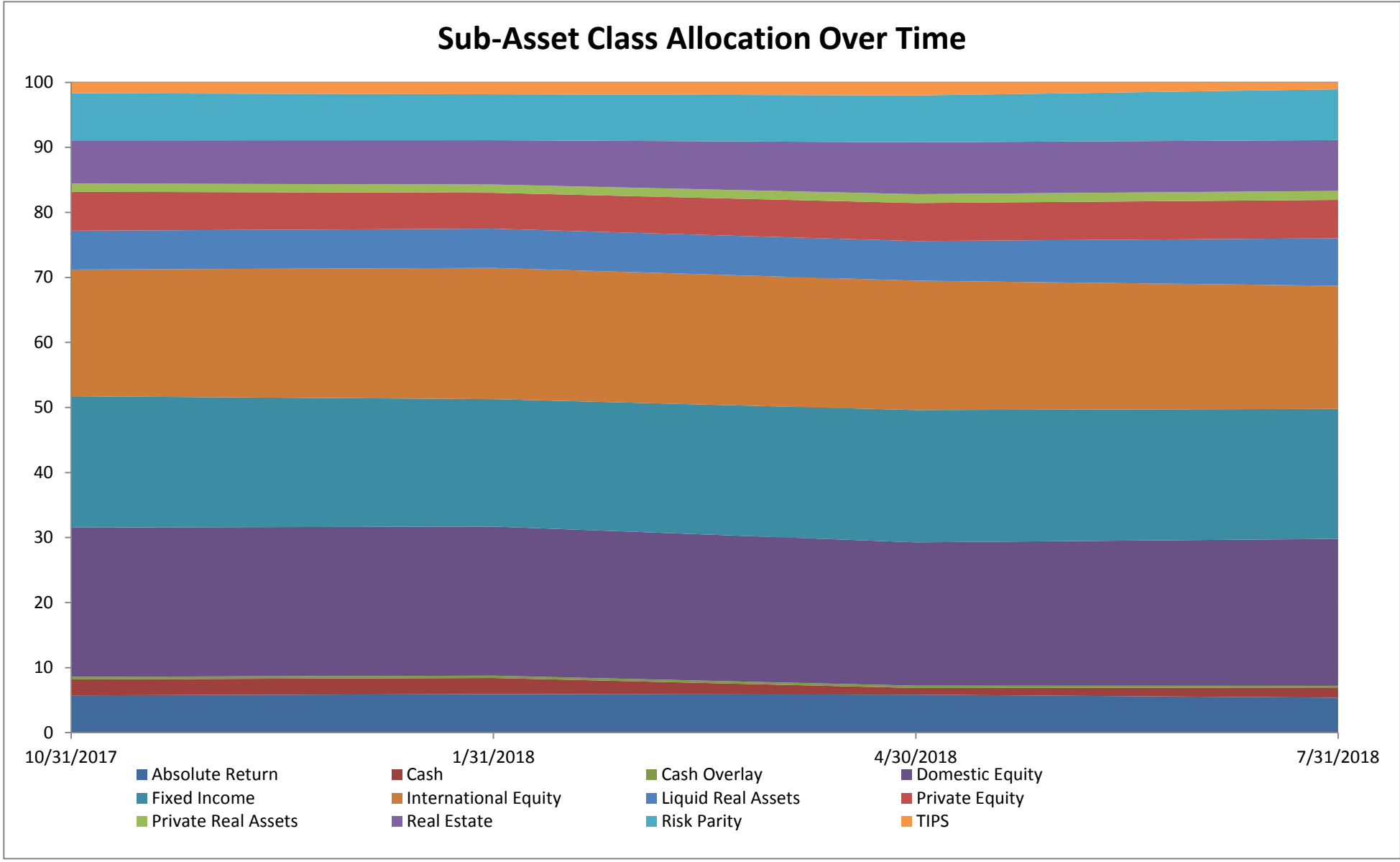
	Min	Actual	Target	Deviation	Max
<b>Domestic Equity</b>	19.0	22.6	21.0	1.6	23.0
<b>International Equity</b>	17.0	18.9	19.0	-0.1	21.0
<b>Fixed Income</b>	19.0	20.0	21.0	-1.0	23.0
<b>Private Equity</b>	5.0	5.9	7.0	-1.1	9.0
<b>Risk Parity</b>	6.0	7.8	8.0	-0.2	10.0
<b>Absolute Return</b>	4.0	5.4	6.0	-0.6	8.0
<b>TIPS</b>	0.0	1.1	2.0	-0.9	4.0
<b>Liquid Real Assets</b>	4.0	7.3	6.0	1.3	8.0
<b>Real Estate</b>	6.0	7.8	8.0	-0.2	10.0
<b>Private Real Assets</b>	0.0	1.4	2.0	-0.6	4.0

July 31, 2018

Asset Allocation over Time



July 31, 2018



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**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

JULY 2018  
Capital Markets Update



# Market commentary

## U.S. ECONOMICS

- U.S. real GDP grew at an annualized quarterly rate of 4.1% in the second quarter (2.8% YoY), marking the best rate of growth since 2014. Net exports contributed 1.1% of the 4.1% growth rate, the biggest contribution since Q1 of 2014.
- Non-farm payrolls increased by 157,000 jobs in July, compared to the 248,000 jobs added in the prior month. The U-6 unemployment rate, which includes discouraged workers as well as workers who are involuntarily part-time, dropped from 7.8% to 7.5%, the lowest mark since 2001.
- Despite a slightly shorter average work week and a smaller “underemployed” (U-6 unemployment rate) contingent in the labor force, average hourly wage growth remained relatively low at 2.7% over the past year.

## U.S. EQUITIES

- Amidst ongoing trade concerns, U.S. equities traded higher on the back of strong earnings and the best quarterly GDP growth since 2014. The S&P 500 Index returned 3.7% in July, its highest monthly return since January, bringing the year-to-date return to 7.3%.
- Second quarter earnings have been strong – of the firms in the S&P 500 that have reported results, 80% topped earnings estimates and 74% beat revenue estimates. Price reaction to positive earnings beats (+1.1%) was mostly in line with the 5-year average (+1.0%), according to FactSet.

## U.S. FIXED INCOME

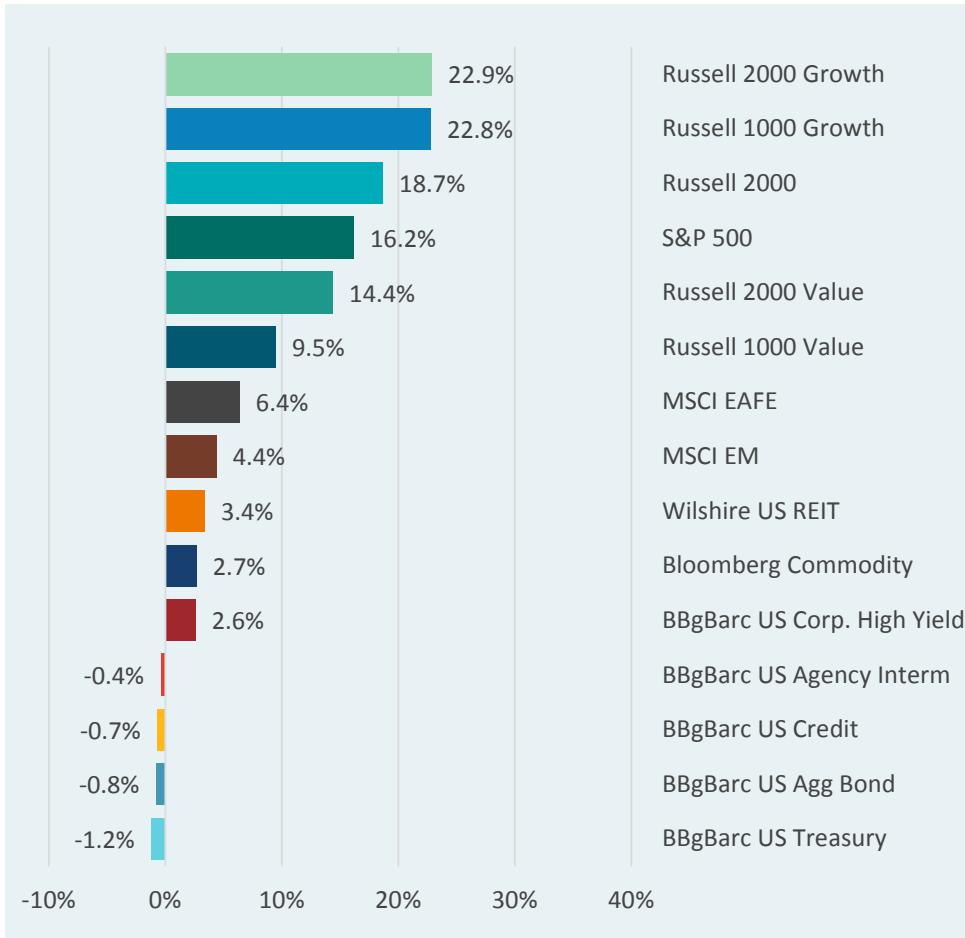
- The 10-year Treasury yield rose 10 bps over the month, ending at 2.96%.
- Short-term Treasury yields continued to climb, resulting in further yield curve flattening. During the month, the spread between the 2- and 10-year yields dropped to a cycle low of 24 bps, further fueling concerns over potential yield curve inversion. At month-end, the 2-10 spread settled at 29 bps.
- Economists expect the Federal Reserve to hold the fed funds target range at 1.8% to 2.0% until September. On July 31<sup>st</sup>, the implied probability of at least two more rate hikes before the end of the year was 68.5% based on fed fund futures.

## INTERNATIONAL MARKETS

- On July 10, the U.S. Trade Representative's office released a \$200 billion list of Chinese goods that could be subject to a 10% tariff. At the end of the month, the Trump administration raised the proposed tariff rate to 25%.
- President Trump met with Jean-Claude Juncker, President of the European Commission, which yielded a “handshake agreement” to de-escalate trade negotiations. In exchange for the relaxed tariffs on E.U. automakers, Juncker pledged E.U. commitment to buy more U.S. soybeans and liquid natural gas.
- International developed equities underperformed U.S. equities (MSCI EAFE +2.5%) for the third straight month, with currency movements producing a slight headwind. On a hedged basis, the MSCI EAFE returned 2.8%.

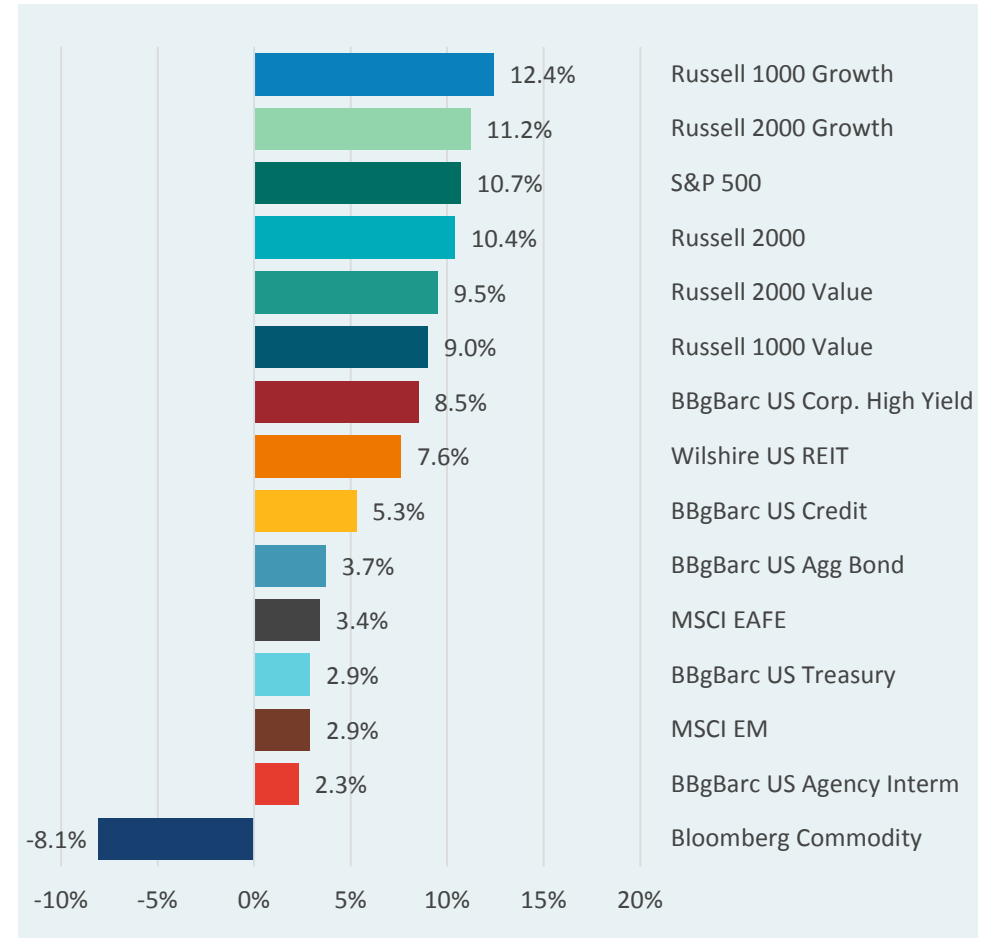
# Major asset class returns

ONE YEAR ENDING JULY



Source: Morningstar, as of 7/31/18

TEN YEARS ENDING JULY



Source: Morningstar, as of 7/31/18

# U.S. large cap equities

- The S&P 500 Index broke through the upper end of its trailing five-month trading range (2800) in the middle of the month, before settling at 2816 by month-end, 1.8% above its 50-day moving average.
- Within the S&P 500 Index, Industrials (+7.3%), Healthcare (+6.6%), and Financials (+5.3%) outperformed, led by cyclical subsectors such as airlines, pharmaceuticals, and banks. Real estate (+1.1%), and Energy (+1.4%) underperformed the overall index.
- Mega-cap tech firms led the advance with Microsoft, Amazon, Apple, and Google accounting for 23% of the monthly return.
- Several market leaders experienced significant corrections during the month. Netflix returned -13.8% in July after missing Q2 net subscriber expectations. On July 26th, Facebook dropped 19% after missing expectations on revenue user growth. Despite a slight recovery, Facebook finished the month down 11.2%.

**S&P 500 PRICE INDEX**



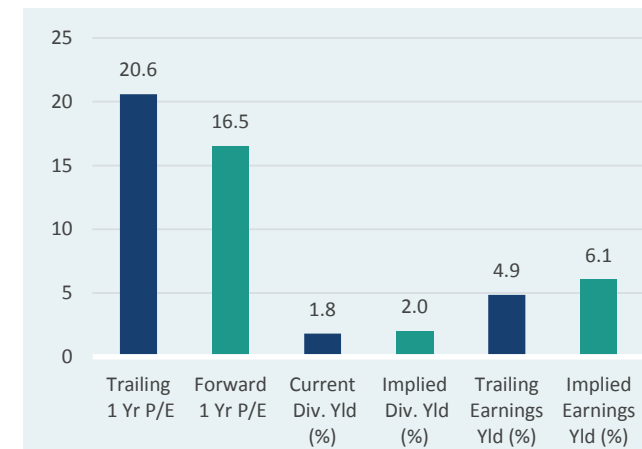
Source: Bloomberg, as of 7/31/18

**IMPLIED VOLATILITY (VIX INDEX)**



Source: CBOE, as of 7/31/18

**S&P 500 VALUATION SNAPSHOT**



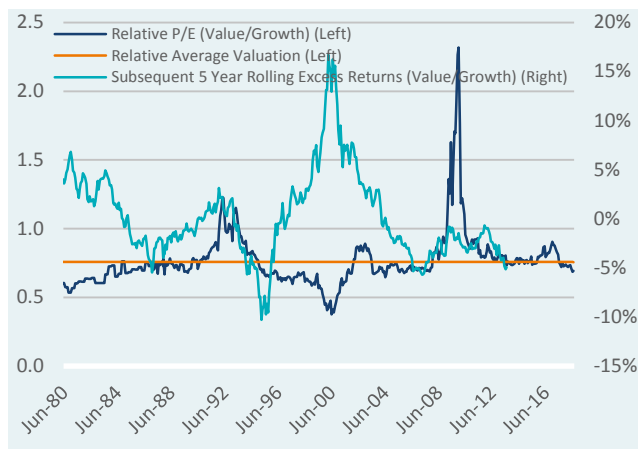
Source: Bloomberg, as of 7/31/18

# Domestic equity size and style

- Small cap equity performance significantly lagged large cap equities. The Russell 2000 Index and Russell 1000 Index returned 1.7% and 3.5% in July, respectively.
- The momentum story with small cap equities continued. At the end of July, the Russell 2000 Index was trading 6.2% above its 200-day moving average. In comparison, the Russell 1000 Index was trading only 2.3% above its 200-day moving average.
- Value equities outperformed growth equities for the first month since March. The Russell 1000 Value Index and Russell 1000 Growth Index returned 4.0% and 2.9%, respectively.
- While value outperformed growth in the large cap universe, style impact on small cap performance was negligible. Both the Russell 2000 Value Index and the Russell 2000 Growth Index returned 1.7%.

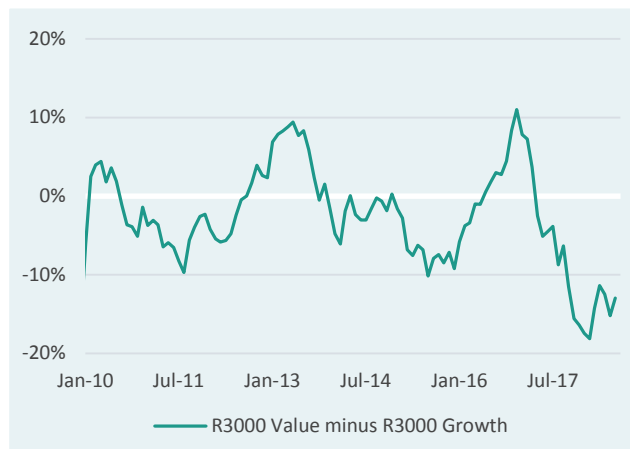
Value outperformed growth, especially within large cap equities

VALUE VS. GROWTH RELATIVE VALUATIONS



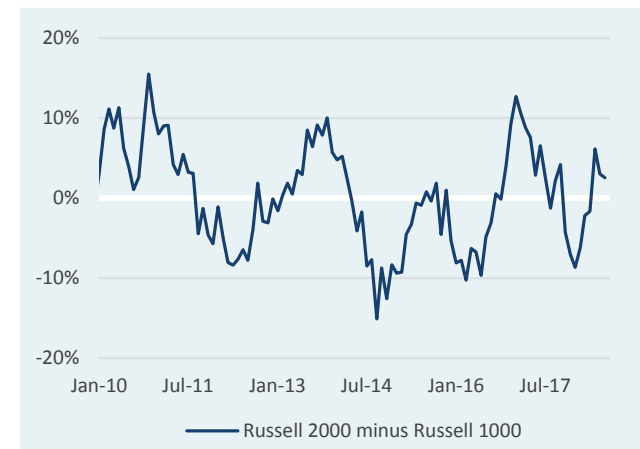
Source: Russell, Bloomberg, as of 7/31/18

VALUE VS. GROWTH 1-YR ROLLING RELATIVE PERFORMANCE



Source: FTSE, as of 7/31/18

SMALL VS. LARGE 1-YR ROLLING RELATIVE PERFORMANCE



Source: FTSE, as of 7/31/18

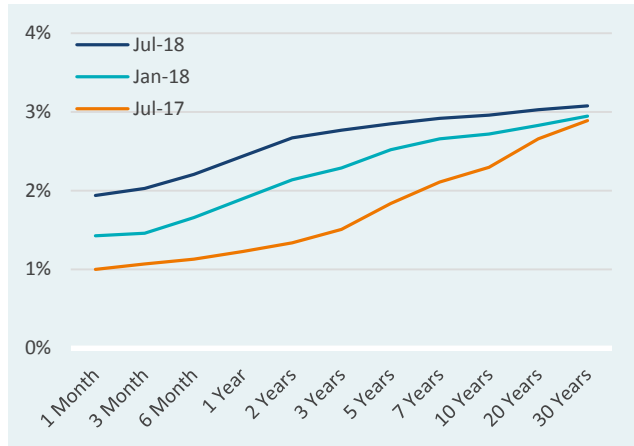
# Fixed income

- The Bloomberg Barclays Aggregate Index was unchanged over the month – Treasury yields rose slightly while investment grade credit spreads narrowed. The yield on the index ticked up to 3.4%, below the 20-year average of 4.0%.
- The spread over the sovereign curve on the Bloomberg Barclays Global High Yield Index narrowed from 4.2% to 3.8% during the month – the index posted a 1.7% gain. Currency effects were muted, as the dollar-hedged index also gained 1.7% in July.

- Investment grade credit spreads narrowed, ending nearly a six-month widening trend. The spread on corporate bonds in the U.S. Aggregate Index dropped from 1.23% to 1.09%.
- The Bank of Japan voted to maintain ultra-loose monetary policy through a short-term rate target of -0.1% and a 10-year target yield of 0.0%, although it expanded the allowable range from +/- 0.1% to +/- 0.2%. The BOJ had to step in several times by offering to buy unlimited amounts of 5-10-year bonds to bring yields back toward the 0.0% target.

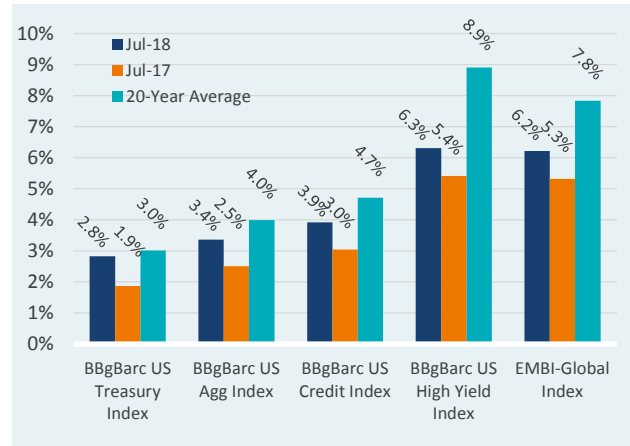
Investment grade credit spreads narrowed for the first time in six months

U.S. TREASURY YIELD CURVE



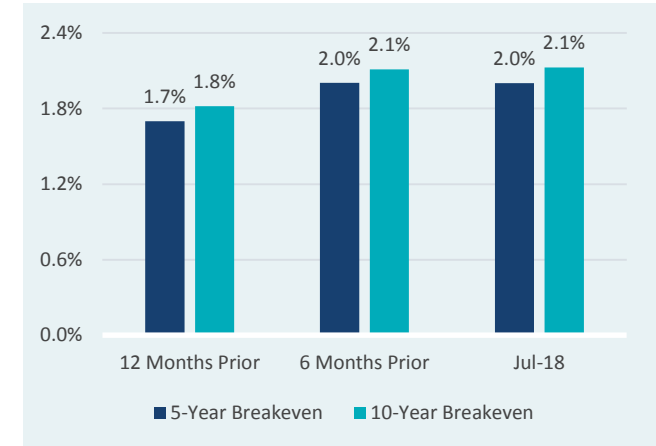
Source: Bloomberg, as of 7/31/18

NOMINAL YIELDS



Source: Morningstar, as of 7/31/18

BREAKEVEN INFLATION RATES

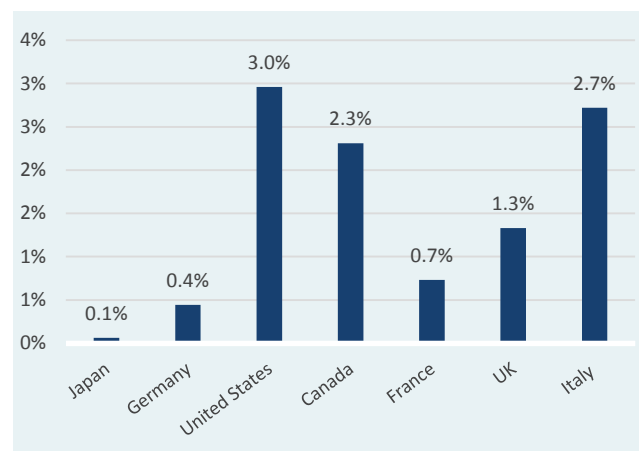


Source: Bloomberg, as of 7/31/18

# Global markets

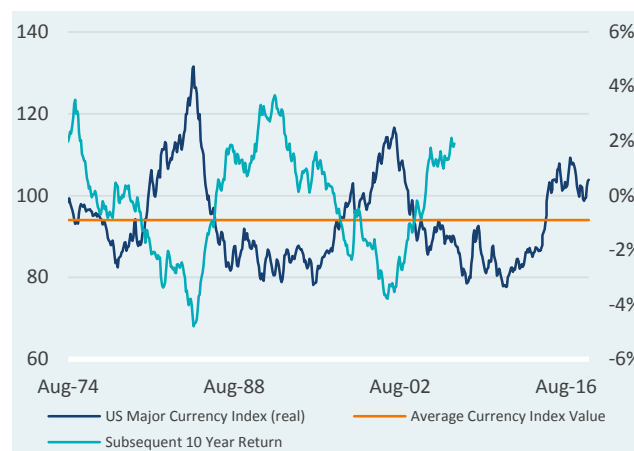
- Emerging market equities bounced back, but developed market equities still outperformed. The MSCI Emerging Markets Index and the MSCI World Index returned 2.3% and 3.2% respectively.
- The ECB reaffirmed that it will cut bond purchases by year-end and keep rates steady “through the summer of 2019”. ECB President Mario Draghi waved off the pickup in the headline inflation rate, which has already breached the 2% target, stating that it is “very early to call victory” on inflation.
- Chinese mainland equities weathered the escalating tariff tensions in July. The CSI 300 Index managed a 0.2% return for the month, holding its trailing three-month return at -6.5%.
- The yuan depreciated another 2.9% against the dollar in July, bringing the three-month slide to 7.1%. Historically, prolonged currency devaluation has led to capital flight risks, while sustained currency appreciation has compromised the competitiveness of domestic industry.

## GLOBAL SOVEREIGN 10-YEAR YIELDS



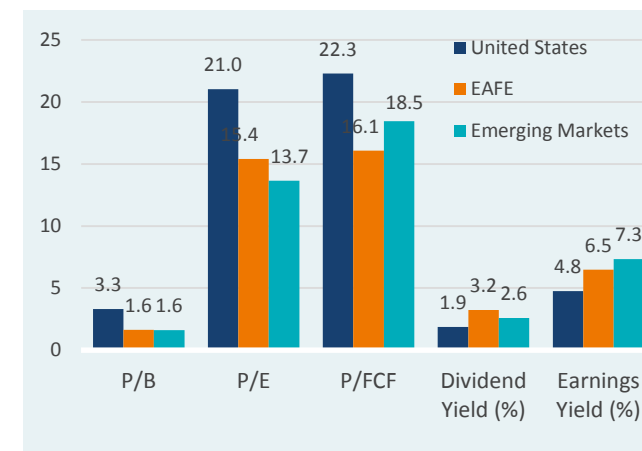
Source: Bloomberg, as of 7/31/18

## U.S. DOLLAR MAJOR CURRENCY INDEX



Source: Federal Reserve, as of 7/31/18

## MSCI VALUATION METRICS (3-MONTH AVG)



Source: Bloomberg, as of 7/31/18

# Commodities

- The Bloomberg Commodity Index dropped another 2.1% in July, led by oil and industrial metals.
- The Bloomberg Commodity Industrial Metals Index fell 4.7%, as copper and zinc dropped 3.8% and 8.0%, respectively. The drawdown in industrial metals may have been impacted by uncertainty surrounding global trade policies.

- Oil suffered its worst month in two years. WTI oil prices fell back down to \$69 per barrel, losing 7.3% on the month and price volatility hit its highest level since February.
- Many factors impacted oil prices during the month, including pending U.S. sanctions on Iran, supply shortages in several OPEC member countries, unexpected increases in U.S. reserves, and reports of potential production increases from Saudi Arabia.

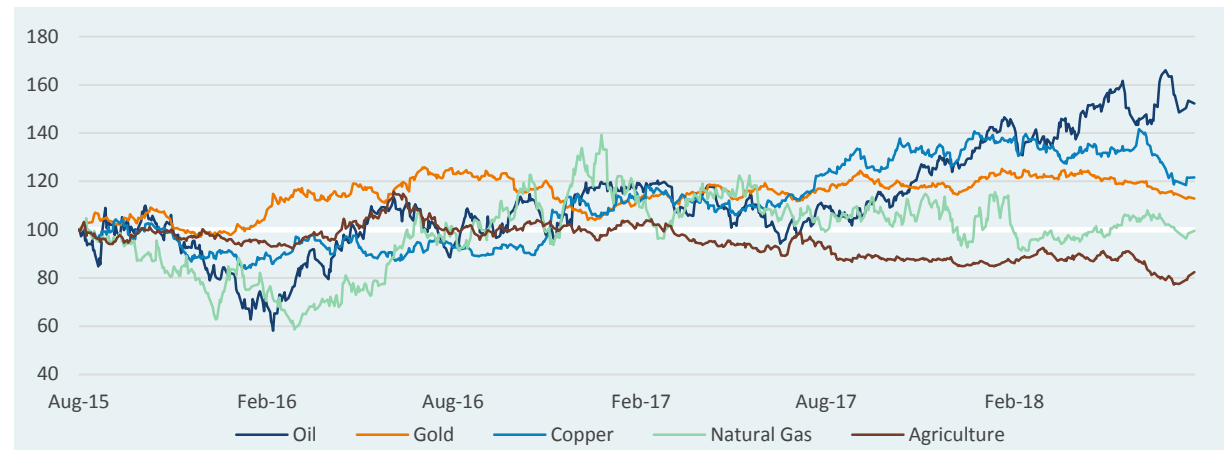
Commodities fell, erasing year-to-date gains

## INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	(2.1)	(2.1)	(2.1)	2.7	(1.6)	(7.1)	(8.1)
Bloomberg Agriculture	2.7	2.7	(3.2)	(11.7)	(5.5)	(8.5)	(5.8)
Bloomberg Energy	(4.4)	(4.4)	7.8	23.2	(5.6)	(14.5)	(18.6)
Bloomberg Grains	6.5	6.5	2.9	(9.3)	(7.7)	(10.1)	(7.5)
Bloomberg Industrial Metals	(4.7)	(4.7)	(9.8)	5.4	7.2	(0.2)	(4.5)
Bloomberg Livestock	(4.3)	(4.3)	(9.2)	(8.9)	(5.2)	(3.3)	(6.0)
Bloomberg Petroleum	(4.5)	(4.5)	13.0	38.6	0.7	(13.1)	(13.3)
Bloomberg Precious Metals	(2.7)	(2.7)	(7.5)	(5.1)	2.5	(2.9)	1.3
Bloomberg Softs	(5.7)	(5.7)	(16.8)	(19.1)	(3.6)	(9.4)	(5.0)

Source: Morningstar, as of 7/31/18

## COMMODITY PERFORMANCE



Source: Bloomberg, as of 7/31/18



# 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	YTD	5-Year	10-Year
Small 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	11.6	15.8	12.4
Large Cap Growth	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	10.4	13.0	11.2
Small Cap Equity	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	9.5	12.4	10.7
Small 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	7.3	11.3	10.4
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	6.4	10.2	9.5
Real Estate	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	3.5	10.0	9.0
Large 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	2.2	9.8	6.2
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	0.9	6.0	5.1
Cash	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	0.9	5.9	3.7
Hedge Funds of Funds	-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	0.8	5.3	3.4
International 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	5.1	-0.4	3.3	2.9
US Bonds	-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	-1.6	2.2	1.7
Commodities	-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	-2.1	0.4	0.3
Emerging Markets Equity	-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	-4.6	-7.1	-8.1

WORST

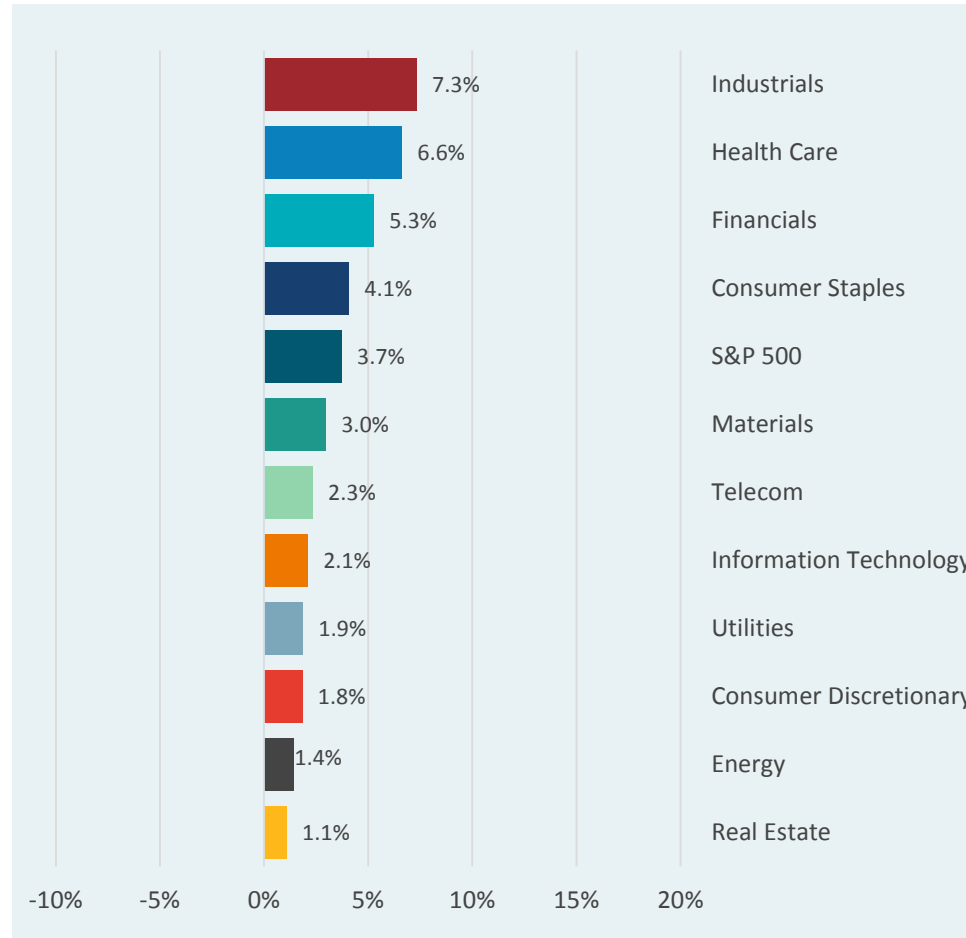
BEST

- Large Cap Equity
- Small Cap Growth
- Commodities
- Large Cap Value
- International Equity
- Real Estate
- 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 6/30/18.

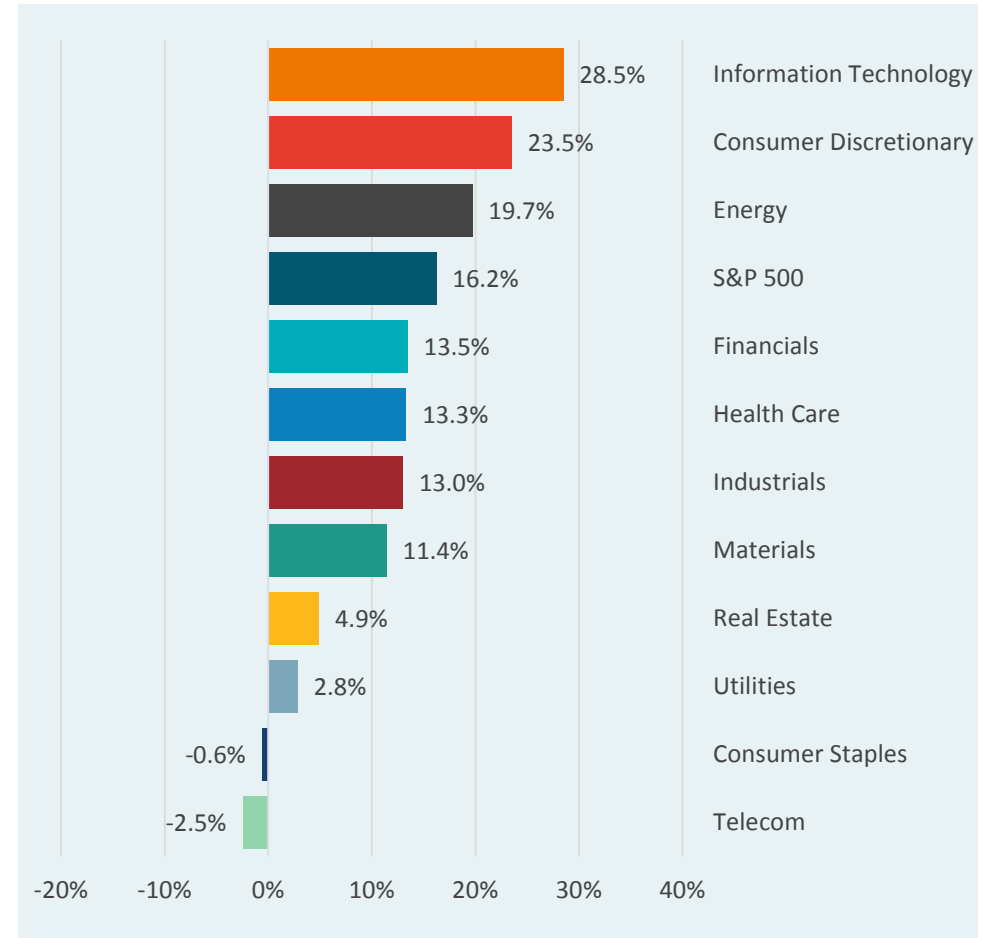
# S&P 500 sector returns

QTD



Source: Morningstar, as of 7/31/18

ONE YEAR ENDING JULY



Source: Morningstar, as of 7/31/18

# Detailed index returns

## DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Core Index</b>							
S&P 500	3.7	3.7	6.5	16.2	12.5	13.1	10.7
S&P 500 Equal Weighted	3.2	3.2	5.0	13.8	11.3	12.3	12.0
DJ Industrial Average	4.8	4.8	4.1	18.7	15.7	13.1	11.3
Russell Top 200	3.8	3.8	7.0	17.3	13.0	13.6	10.7
Russell 1000	3.5	3.5	6.4	16.2	12.2	13.0	10.7
Russell 2000	1.7	1.7	9.5	18.7	12.0	11.3	10.4
Russell 3000	3.3	3.3	6.6	16.4	12.2	12.8	10.7
Russell Mid Cap	2.5	2.5	4.9	13.5	10.2	11.5	10.8
<b>Style Index</b>							
Russell 1000 Growth	2.9	2.9	10.4	22.8	14.8	15.8	12.4
Russell 1000 Value	4.0	4.0	2.2	9.5	9.5	10.0	9.0
Russell 2000 Growth	1.7	1.7	11.6	22.9	11.1	12.4	11.2
Russell 2000 Value	1.8	1.8	7.3	14.4	12.9	10.2	9.5

## INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
MSCI ACWI	3.0	3.0	2.6	11.0	8.9	9.0	6.4
MSCI ACWI ex US	2.4	2.4	(1.5)	5.9	6.0	5.6	3.2
MSCI EAFE	2.5	2.5	(0.4)	6.4	5.0	5.9	3.4
MSCI EM	2.2	2.2	(4.6)	4.4	8.9	5.3	2.9
MSCI EAFE Small Cap	0.7	0.7	(0.7)	9.2	10.0	10.2	7.4
<b>Style Index</b>							
MSCI EAFE Growth	2.1	2.1	1.1	9.0	6.3	6.9	4.0
MSCI EAFE Value	2.9	(2.8)	(1.9)	3.8	3.7	4.8	2.8
<b>Regional Index</b>							
MSCI UK	0.9	0.9	(0.2)	8.2	2.8	3.8	3.2
MSCI Japan	0.4	0.4	(1.6)	8.8	6.2	7.3	3.9
MSCI Euro	3.6	3.6	0.3	4.9	5.2	6.1	1.6
MSCI EM Asia	0.7	0.7	(4.4)	5.0	10.3	8.1	5.8
MSCI EM Latin American	9.2	9.2	(3.0)	0.7	8.1	(0.4)	(2.0)

## FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
BBgBarc US TIPS	(0.5)	(0.5)	(0.5)	1.2	1.7	1.4	3.0
BBgBarc US Treasury Bills	0.2	0.2	0.9	1.4	0.7	0.5	0.4
BBgBarc US Agg Bond	0.0	0.0	(1.6)	(0.8)	1.5	2.2	3.7
<b>Duration</b>							
BBgBarc US Treasury 1-3 Yr	(0.0)	(0.0)	0.0	(0.2)	0.4	0.5	1.2
BBgBarc US Treasury Long	(1.5)	(1.5)	(4.4)	(1.0)	1.7	4.6	5.9
BBgBarc US Treasury	(0.4)	(0.4)	(1.5)	(1.2)	0.6	1.4	2.9
<b>Issuer</b>							
BBgBarc US MBS	(0.1)	(0.1)	(1.1)	(0.4)	1.2	2.3	3.5
BBgBarc US Corp. High Yield	1.1	1.1	1.3	2.6	6.1	5.3	8.5
BBgBarc US Agency Interim	(0.0)	(0.0)	(0.2)	(0.4)	0.7	1.1	2.3
BBgBarc US Credit	0.7	0.7	(2.3)	(0.7)	2.9	3.4	5.3

## OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Index</b>							
Bloomberg Commodity	(2.1)	(2.1)	(2.1)	2.7	(1.6)	(7.1)	(8.1)
Wilshire US REIT	0.6	2.7	2.1	3.4	6.0	8.4	7.6
CS Leveraged Loans	0.8	(4.4)	3.2	4.7	4.6	4.2	5.2
Alerian MLP	(1.5)	11.8	(0.6)	(4.6)	(5.9)	(4.1)	6.5
<b>Regional Index</b>							
JPM EMBI Global Div	2.6	2.6	(2.8)	0.1	5.3	5.4	6.9
JPM GBI-EM Global Div	1.9	1.9	(4.7)	(2.5)	3.5	(0.9)	2.2
<b>Hedge Funds</b>							
HFRI Composite	0.2	0.2	1.6	4.6	2.6	4.0	3.8
HFRI FOF Composite	0.1	0.1	0.8	4.2	1.9	3.3	1.7
<b>Currency (Spot)</b>							
Euro	0.2	0.2	(2.6)	(0.8)	1.9	(2.5)	(2.8)
Pound	(0.6)	(0.6)	(3.0)	(0.5)	(5.6)	(2.9)	(4.0)
Yen	(1.0)	(1.0)	0.6	(1.3)	3.4	(2.6)	(0.3)

Source: Morningstar, HFR, as of 7/31/18

# Notices & disclosures

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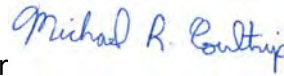
**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**  
**Board of Retirement**

August 28, 2018

Agenda Item 6.2

**TO:** Board of Retirement

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



**SUBJECT:** Report on Quarterly Investment Performance Report for the Period Ended June 30, 2018

**Recommendation**

Accept Verus Advisory's quarterly performance report for the period ended June 30, 2018.

**Discussion**

The 2nd quarter net total return for the SamCERA portfolio was +0.6%, which was 20 bps lower than the +0.8% policy benchmark return. As can be seen on Page 19 and 20, hedge fund/absolute return and risk parity were the main detractors of performance.

For the Fiscal Year ending June 30, 2018, the net total return for the SamCERA portfolio was +6.7%, which was 110 bps lower than the +7.8% policy benchmark return. Alternatives (primary impact from hedge funds/absolute return, with secondary impact from private equity) were the main detractor. Public equity (primarily international equity) also detracted, while fixed income outperformed during the year.

Table One below shows net performance characteristics for the total fund over 1, 3, 5, and 10-year trailing periods ending June 30, 2018.

*Table One: SamCERA Total Fund Net Performance Ending June 30th, 2018*

	1 Year	3 Years	5 Years	10 Years
SamCERA Return	6.7%	6.5%	8.0%	6.1%
Benchmark Return	7.8%	7.0%	8.2%	6.8%
Excess Return	(1.1%)	(0.5%)	(0.2%)	(0.7%)
Peer Rank Return (Percentile)	92nd	57th	41st	48th
SamCERA Sharpe Ratio	N.A.*	0.97	1.25	0.57
Benchmark Sharpe Ratio	N.A.*	0.96	1.22	0.60

\*Not enough observations for useful risk measure.

Table Two below shows the current allocation and the primary composite relative returns for the year ending June 30, 2018.

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

*Table Two: SamCERA Composite Net Performance for Trailing Year Ending June 30th, 2018*

Composite	Allocation (%)*	Composite Return	Benchmark Return	Excess Return
Public Equity	41.0	10.9%	11.8%	-0.9%
Fixed Income	21.9	1.0%	0.0%	1.0%
Alternatives	11.7	2.6%	10.0%	-7.4%
Inflation Hedge	17.5	6.7%	7.2%	-0.5%
Risk Parity	7.2	6.6%	7.3%	-0.7%

\*Cash balance was 0.8% as of 6/30/2018.

Margaret Jadallah will present the report to the Board and will be available for questions.

**Attachment**

Verus Quarterly Performance Report Ending 6/30/2018



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: JUNE 30, 2018**

Investment Performance Review for

**San Mateo County Employees' Retirement Association**



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Market Environment

TAB I

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Alternatives

TAB VI

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Total Fund

TAB II

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Inflation Hedge

TAB VII

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US Equity

TAB III

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Risk Parity

TAB VIII

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International Equity

TAB IV

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Appendix

TAB IX

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Fixed Income

TAB V

# 2<sup>nd</sup> quarter summary

## THE ECONOMIC CLIMATE

- U.S. economic data generally surprised to the upside in Q2, leading to a strong quarterly GDP growth estimate of 3.4%. Economic growth in the second and third quarters will likely see the biggest boost from fiscal stimulus. The U.S. is currently outshining other developed economies.
- The synchronized global growth story of the past year has shifted somewhat as economies have displayed more disparate performance. The change has not been too dramatic – growth continues to be positive, but at a more moderate pace.

## PORTFOLIO IMPACTS

- Emerging market equity and local debt delivered losses of 8.0% and 10.4% in Q2 (MSCI Emerging Markets Index, JPM GBI-EM Global Diversified). Much of the losses were due to currency movement. We believe emerging market assets offer attractive value – recent movements appear to have been driven by a shift in short-term sentiment and currency depreciation.
- The U.S. implemented a first round of tariffs on Chinese imports on July 6<sup>th</sup>, which impacted \$34 billion worth of goods. So far, only a small portion of the discussed tariffs have been enacted.

## THE INVESTMENT CLIMATE

- Strong corporate earnings growth is expected again in the second quarter. According to FactSet, the bottom-up analyst forecast for the S&P 500 is 20.0% YoY.
- Short-term U.S. Treasury yields rose, resulting in a flatter yield curve. The spread between the 10- and 2-year yield was 27 bps, a new cycle low.
- Fears were raised over Italy's role in the European Union after a coalition of the anti-establishment Five Star Movement and League Party formed a new government. Italian sovereign bond yields spiked severely during the move, but have since moderated somewhat.

## ASSET ALLOCATION ISSUES

- Following the February selloff equity markets have been range bound. As corporate earnings rise further equity valuations have been pushed down to more attractive levels closer to the long-term historical average.
- While we believe trade negotiations and geopolitical uncertainty are potential causes for concern, the backdrop of positive global growth and strong corporate earnings may allow for healthy risk-asset performance.

A neutral to mild risk overweight may be warranted in today's environment

# U.S. economics summary

- GDP growth was 2.8% year-over-year in the first quarter (2.0% quarterly annualized rate). The slightly slower pace of expansion was influenced by more conservative consumer spending than in previous quarters.
- The rate of inflation picked up moderately throughout the quarter. Core CPI rose 2.3% over the past year, reaching the upper end of its range during the current cycle. The year-over-year rate was impacted by a low base effect – the 3-month annualized core inflation rate was only 1.7%.
- Job gains during the quarter were strong, despite traditional employment measures indicating a tight labor market. Additions to nonfarm payrolls averaged 211,000 per month and the U-3 unemployment rate fell slightly from 4.1% to 4.0%.
- The broadest measure of labor market health, the ratio of employed individuals to the total population, indicates there may still be room for further improvement. More narrow indicators, such as the U-3 unemployment rate, may be overstating labor market tightness.
- The back and forth on trade between the U.S. and much of the rest of the world intensified. The White House has threatened to enact tariffs on up to \$550 billion of Chinese goods over unfair trade practices and intellectual property theft. To this point, tariffs have only been implemented on around \$40 billion of Chinese goods.
- The Fed raised interest rates for a second time this year in June to a target rate of 1.8% to 2.0%. Two more rate hikes are expected by the end of the year based on the Fed dot plot.

	Most Recent	12 Months Prior
GDP (YoY)	2.8% <i>3/31/18</i>	2.0% <i>3/31/17</i>
Inflation (CPI YoY, Core)	2.3% <i>6/30/18</i>	1.7% <i>6/30/17</i>
Expected Inflation (5yr-5yr forward)	2.2% <i>6/30/18</i>	1.8% <i>6/30/17</i>
Fed Funds Target Range	1.75 – 2.00% <i>6/30/18</i>	1.00 – 1.25% <i>6/30/17</i>
10 Year Rate	2.9% <i>6/30/18</i>	2.3% <i>6/30/17</i>
U-3 Unemployment	4.0% <i>6/30/18</i>	4.3% <i>6/30/17</i>
U-6 Unemployment	7.8% <i>6/30/18</i>	8.5% <i>6/30/17</i>

# International economics summary

- The synchronized global growth story of the past year has shifted somewhat as greater performance disparity is visible across global economies. Growth continues to be positive but is more moderate in places.
- Developed market economies are expected to grow less quickly in the coming years while emerging economy growth rates are expected to rise.
- The U.S. implemented a first round of tariffs on Chinese imports on July 6th, which impacted \$34 billion of goods. So far, only a small portion of the discussed tariffs have been enacted.
- In June, Mario Draghi officially announced the end of Europe’s bond buying program. Asset purchases are scheduled to end in December, and it was promised that interest rates will remain unchanged through the summer of

2019. This message was seen by markets as more dovish than expected.

- Fears were raised over Italy’s uncertain role in the EU, following a new coalition of the anti-establishment Five Star Movement and League Party taking over the government. Italian bond yields spiked severely during the move, but have since moderated.
- The Eurozone Composite PMI rose for the first time in five months to 54.8 in June. PMIs in most developed and emerging markets remain above 50, indicating expansion.
- The U.S. dollar appreciated 5% during the quarter. Certain emerging market currencies have devalued sharply, such as the Argentine peso, which is down more than 35% against the USD on the year.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.8% <i>3/31/18</i>	2.8% <i>5/31/18</i>	4.0% <i>6/30/18</i>
Eurozone	2.5% <i>3/31/18</i>	2.0% <i>6/30/18</i>	8.6% <i>3/31/18</i>
Japan	1.1% <i>3/31/18</i>	0.7% <i>5/31/18</i>	2.2% <i>5/31/18</i>
BRICS Nations	5.8% <i>3/31/18</i>	2.5% <i>6/30/18</i>	5.6% <i>3/31/18</i>
Brazil	1.2% <i>3/31/18</i>	4.4% <i>6/30/18</i>	12.8% <i>6/30/18</i>
Russia	1.3% <i>3/31/18</i>	2.3% <i>6/30/18</i>	4.7% <i>5/31/18</i>
India	7.7% <i>3/31/18</i>	5.0% <i>6/30/18</i>	8.8% <i>12/31/17</i>
China	6.8% <i>3/31/18</i>	1.9% <i>6/30/18</i>	3.9% <i>3/31/18</i>

# Equity environment

- We maintain an overweight position to equities through a positive tilt to emerging markets. We do not believe recent price swings reflect any major fundamental change to the trajectory of emerging markets. Equity bull runs in these markets have typically incurred a 10% or larger drawdown sometime during the rally.
- Outside of emerging markets, equities have remained fairly range bound following the February selloff. As corporate earnings rise and prices stay flat, equity valuations have been pushed down to more attractive levels closer in line with the historical average.
- Concerns over global trade contributed to a choppy month for equities, although no major breakthroughs or setbacks occurred. Global equities were up +2.9% on a hedged basis but currency depreciation acted as a drag (+0.5% unhedged).
- The value premium has delivered anomalously poor performance – the worst 10-year return on record (since 1926). However, because performance differences were due to earnings growth disparity rather than moves in valuation, the price difference between value and growth stocks has remained fairly normal. A tactical opportunity to overweight value is not yet apparent - we believe investors should stay the course.
- Equity volatility moved to below-average levels once again, following February’s spike. The VIX averaged 15.3 during Q2.
- Currency volatility has frequently been greater than equity market volatility in recent years, causing return disparity for investors with unhedged international assets. A hedging program could allow investors to significantly reduce or eliminate this uncompensated risk.

	QTD TOTAL RETURN		YTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	3.6%		2.9%		14.5%	
US Small Cap (Russell 2000)	7.8%		7.7%		17.6%	
US Large Value (Russell 1000 Value)	1.0%		-2.0%		6.0%	
US Large Growth (Russell 1000 Growth)	5.8%		7.3%		22.5%	
International Large (MSCI EAFE)	(1.2%)	3.9%	(2.7%)	0.0%	6.8%	7.9%
Eurozone (Euro Stoxx 50)	(2.3%)	3.6%	(3.7%)	0.5%	3.7%	3.7%
U.K. (FTSE 100)	(3.1%)	9.8%	(0.9%)	2.2%	10.2%	9.9%
Japan (NIKKEI 225)	0.2%	4.4%	0.5%	(1.1%)	15.1%	13.2%
Emerging Markets (MSCI Emerging Markets)	(8.0%)	(3.6%)	(6.7%)	(3.0%)	8.2%	9.5%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 6/30/18

# Domestic equity

U.S. equities were range bound over the quarter – the S&P 500 Index posted a positive return of 3.4% and traded within a tight range between 2600 and 2800. The ups and downs of trade negotiations, particularly those between the U.S. and China, impacted equity markets during the quarter. However, considerable uncertainty surrounding the outcome of these negotiations likely helped keep equities from breaking out of their range in either direction.

Strong year-over-year earnings growth is expected to continue for the second quarter. According to FactSet, the bottom-up analyst earnings growth forecast for the S&P 500 is 19.9%. Forward 12-month earnings growth expectations were revised higher throughout the quarter while equity prices leveled out. Given that prices tend to follow earnings, there may be potential upside to prices if the expected high growth is realized. Alternatively, higher discount rates from Fed tightening may offset the impact of strong earnings growth.

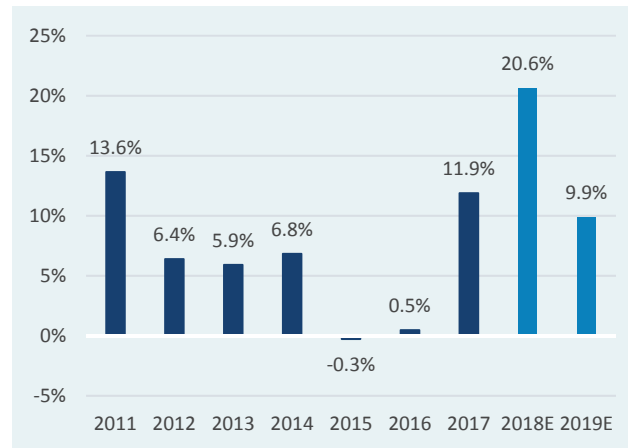
Fundamentals appear unchanged despite falling prices

## U.S. EQUITIES



Source: Russell Investments, as of 6/30/18

## CALENDAR YEAR EARNINGS GROWTH



Source: FactSet, as of 7/6/18

## S&P 500 PRICE & EARNINGS



Source: Bloomberg, as of 6/30/18

# Domestic equity size & style

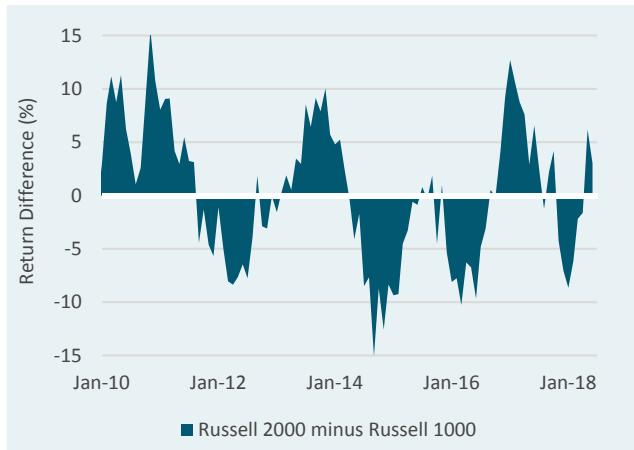
Large cap equities (Russell 1000 3.6%) underperformed small cap (Russell 2000 7.8%) during the quarter. Value stocks continued to lag growth (Russell 1000 Value 1.2% vs. Russell 1000 Growth 5.8%).

Value has delivered anomalously negative returns – the worst 10-year run on record (since 1926). Because performance differences were due to earnings growth disparity rather than moves in valuation, the price difference between value and growth stocks has remained normal. Earnings trends can be somewhat attributed to the global financial crisis where financials lagged considerably, followed by a bull market for

technology stocks (value is concentrated in financials while growth is concentrated in tech). In other words, much of value's underperformance was macroeconomic in nature.

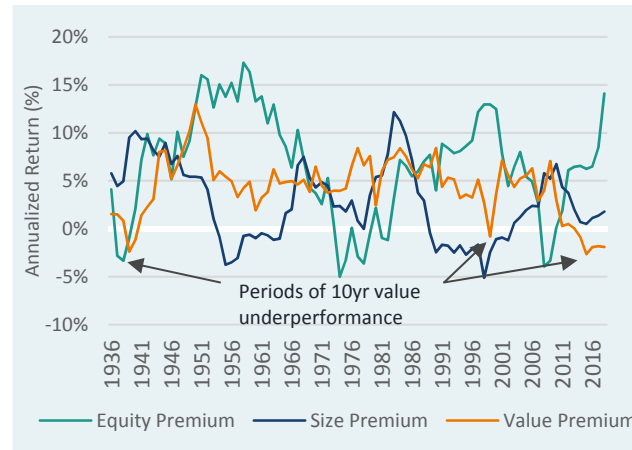
We do not yet see a catalyst for a value comeback, and it is possible that when value bounces back there will not be obvious signals beforehand. Poor recent performance is not always a solid standalone indicator of future reversal. Relative valuations are fairly in line with history, and the economic environment is positive (growth often performs well during later stages of economic cycles). We recommend that value investors stay the course.

**SMALL CAP VS LARGE CAP (YOY)**



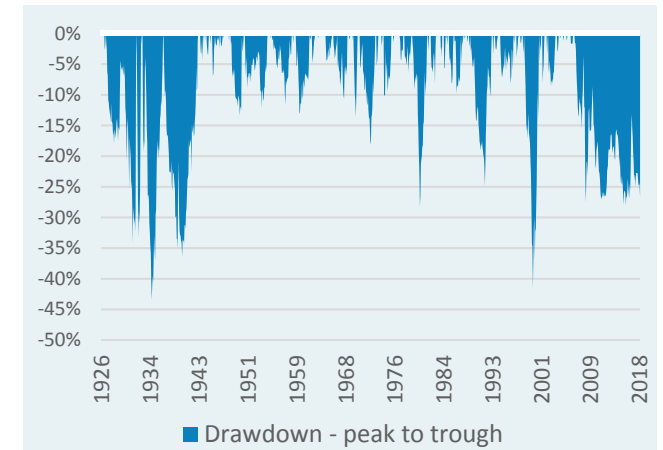
Source: FTSE, as of 6/30/18

**FACTOR PERFORMANCE (10YR ROLLING)**



Source: Kenneth French Library, as of 5/30/18

**VALUE - PEAK TO TROUGH**



Source: Kenneth French Library, as of 5/30/18

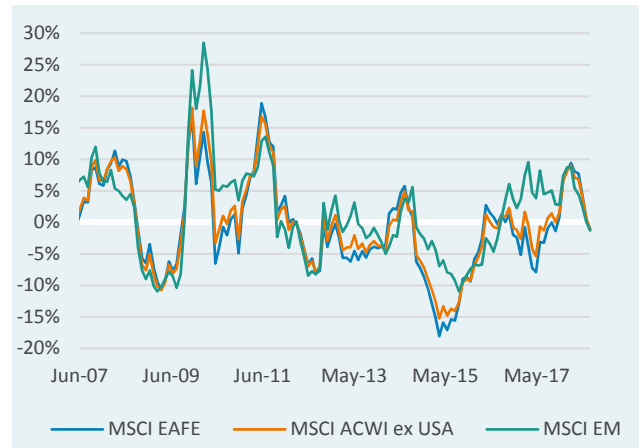
# International developed equity

Unhedged international equities underperformed U.S. equities during Q1 (MSCI EAFE -1.2% vs. S&P 500 +3.4%). On a hedged basis, international equities delivered returns of 3.9%, outpacing the U.S. market. Currency volatility has frequently been greater than equity market volatility in recent years, causing considerable return disparity for investors with unhedged investments in international assets. Equity returns in most markets have been positive year-to-date on an ex-currency basis.

Earnings growth remains strong and will likely be supportive of equity prices going forward. The U.S. has taken back the lead in year-over-year earnings growth, alongside a large boost from U.S. tax reform and a relatively strong economy.

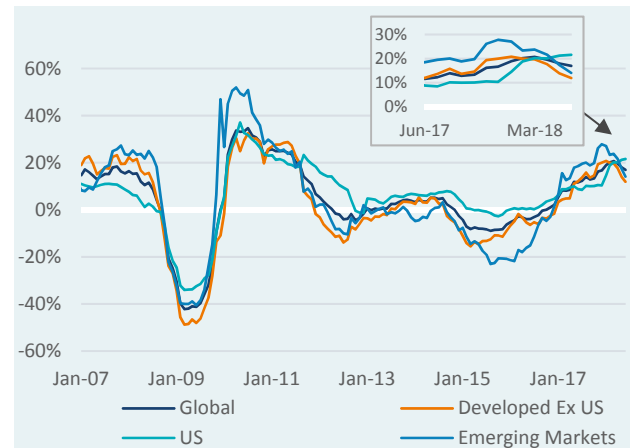
P/E multiples have moved lower as equity prices remain range bound and earnings grow at a brisk pace. Equity valuations are now closer to the longer-term average – a notable change from recent years.

**EFFECT OF CURRENCY (1-YEAR ROLLING)**



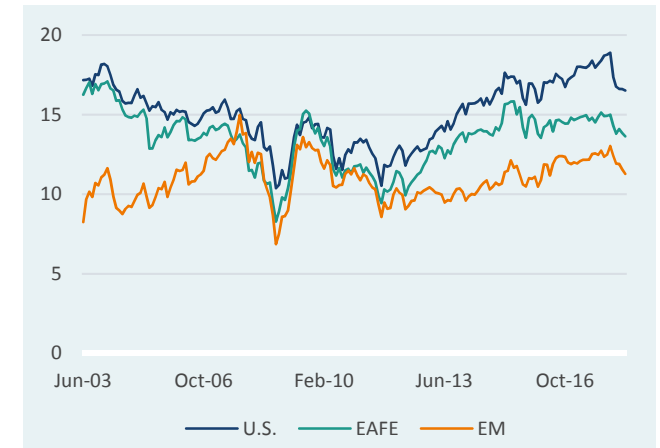
Source: MSCI, as of 6/30/18

**EARNINGS GROWTH (YOY)**



Source: MSCI, as of 6/30/18 – YoY growth in forward earnings

**FORWARD P/E**



Source: MSCI, as of 6/30/18



# Emerging market equity

Emerging market equities delivered losses of -8.0% in Q2, but remain up +8.2% on a year-over-year basis. Currency movement caused -4.4% of losses during the quarter.

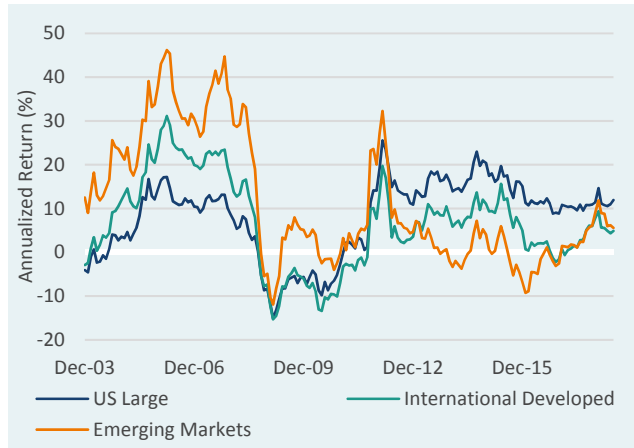
We maintain an overweight position to equities through a positive tilt to emerging markets. Equity bull runs in these markets through history typically incur at least a 10% drawdown sometime during the rally (see next page). Recent price swings were driven by valuation changes rather than by a fundamental change in earnings.

Developed markets are expected to grow less quickly in the coming years while emerging economic growth is expected to rise. A positive growth premium of emerging economies relative to developed economies has historically acted as a tailwind for EM outperformance.

We believe positive emerging economy growth trends, attractive valuations, a strong earnings environment, and depressed currencies should provide an environment of strong equity performance across these markets.

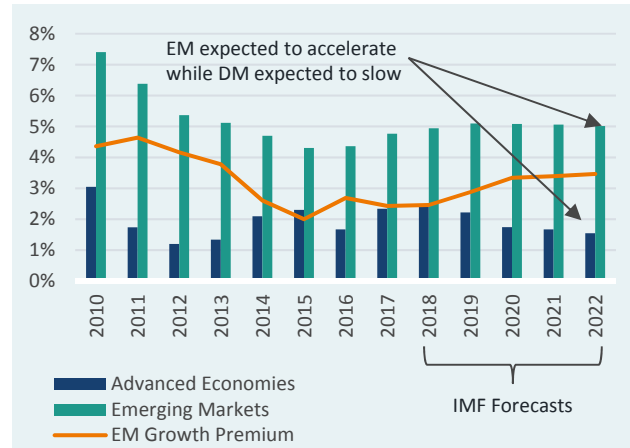
Conditions remain positive for EM equity

**EQUITY PERFORMANCE (3YR ROLLING)**



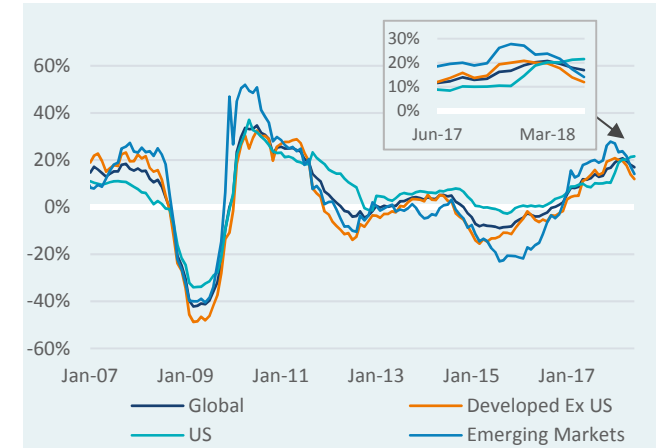
Source: Standard & Poor's, MSCI, as of 6/30/18

**EM GROWTH PREMIUM**



Source: IMF

**EARNINGS GROWTH (YOY)**



Source: MSCI, as of 6/30/18

# Interest rate environment

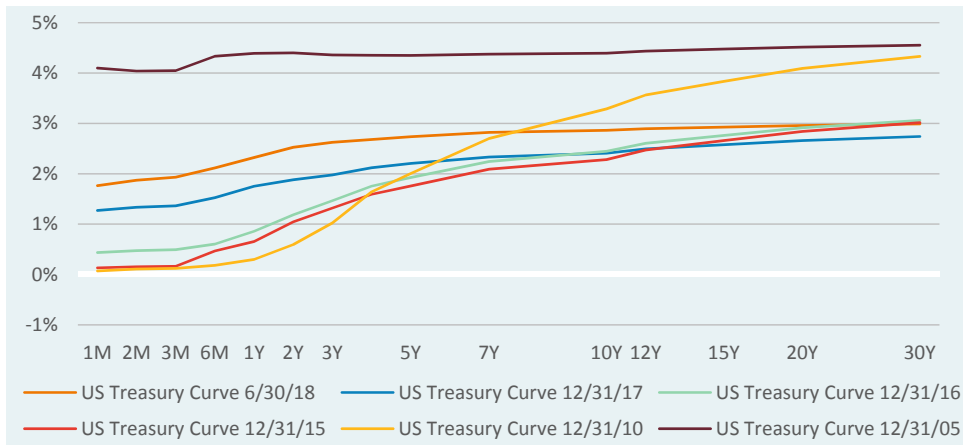
- The Fed raised interest rates in June for the second time this year to a target range of 1.8-2.0%. The balance sheet unwind continued as planned with approximately \$18 billion in Treasuries and \$12 billion in MBS coming off each month during the quarter.
- According to the Fed dot plot, officials are expecting two additional rate hikes this year, while market pricing suggests only one more hike. Quicker than expected Fed tightening would represent a key risk to the economy and asset prices.
- The 10-year U.S. Treasury yield ticked up modestly during the quarter to 2.9% while the short-end of the curve rose further. The spread between the 2- and 10-year yields fell to a cycle low of 33 bps at quarter end. By another measure of curve shape, the 10-year yield minus 3-month yield, the curve remains at a level of steepness closer to the longer-term average (92 bps vs. 184 bps average).
- Historically, an inverted yield curve has preceded recessions, but the timing between inversion and recession has been anywhere from one to three years.
- In June, Mario Draghi officially announced the end of the Eurozone’s bond buying program. The ECB stated that purchases will end in December, and interest rates will remain unchanged through summer of 2019. The markets interpreted this as dovish and yields fell on the news.
- Italian sovereign yields spiked after it appeared the country was headed for new elections later in the year. The 2-year yield jumped 186 bps in one day to 2.8% as risk premiums rose. In the end, a coalition government was formed between the Five Star and League parties and the country avoided going back to the polls.
- Emerging market local and hard yields moved higher, influenced by a general risk-off sentiment towards EM as well as idiosyncratic risks in several vulnerable countries, such as Turkey and Argentina.

Area	Short Term (3M)	10 Year
United States	1.91%	2.86%
Germany	(0.59%)	0.30%
France	(0.63%)	0.67%
Spain	(0.42%)	1.32%
Italy	(0.12%)	2.68%
Greece	1.04%	3.96%
U.K.	0.61%	1.28%
Japan	(0.14%)	0.04%
Australia	1.92%	2.63%
China	3.01%	3.48%
Brazil	6.45%	11.68%
Russia	6.62%	7.81%

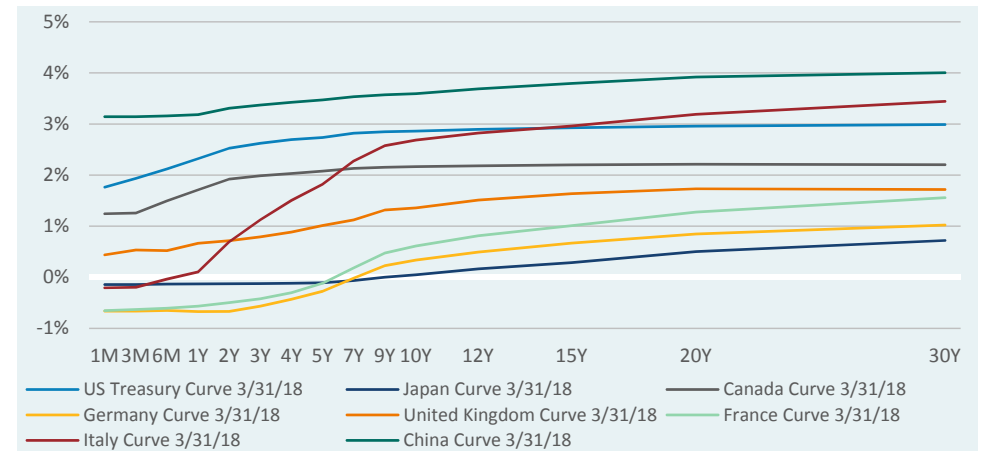
Source: Bloomberg, as of 6/30/18

# Yield environment

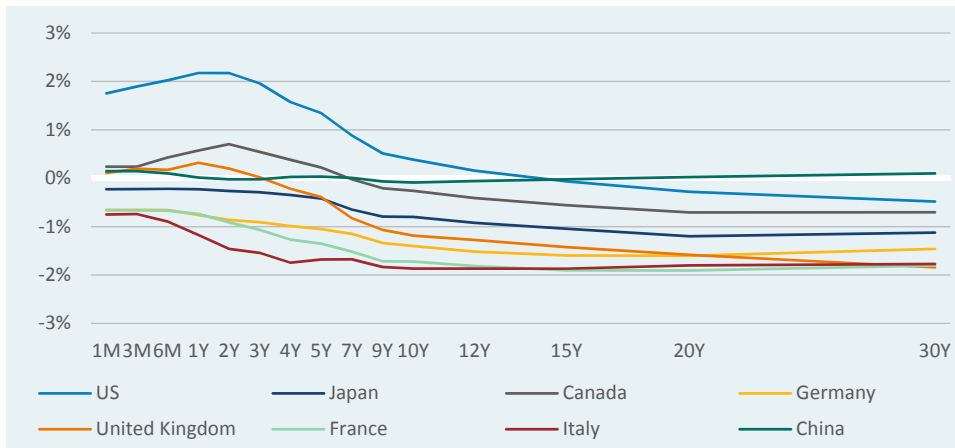
## U.S. YIELD CURVE



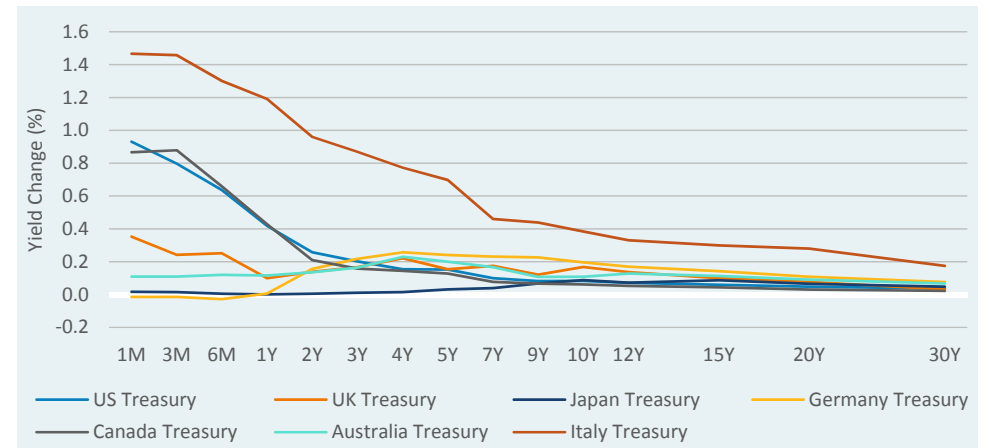
## GLOBAL GOVERNMENT YIELD CURVES



## YIELD CURVE CHANGES OVER LAST FIVE YEARS



## IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/18

# Currency

The U.S. dollar appreciated 5% during the quarter, which erased the positive equity returns of many international markets. Relative strength of the U.S. economy, paired with Federal Reserve tightening, likely helped lead the U.S. dollar higher.

Interest rate differentials between the U.S. and the rest of the developed world have been steadily widening over the past 10 months. The spread between the U.S. 10-year Treasury yield and the yield on a basket of developed sovereign debt rose approximately 80 bps to 2.3% during this

time. Higher relative interest rates has historically been a short-term driver of currencies.

Emerging market currencies fell 9.1% in Q2, based on the JPM EM Currency Index. The performance of most currencies were in line with expectations based on U.S. dollar appreciation against developed market currencies. Several countries with large current account deficits that are heavily reliant on dollar funding, such as Argentina and Turkey, saw their currencies fall sharply. As a whole, emerging market currencies are significantly undervalued based on purchasing power parity.

**The U.S. dollar materially appreciated, reversing a multi-year downtrend**

**U.S. DOLLAR TRADE WEIGHTED INDEX**



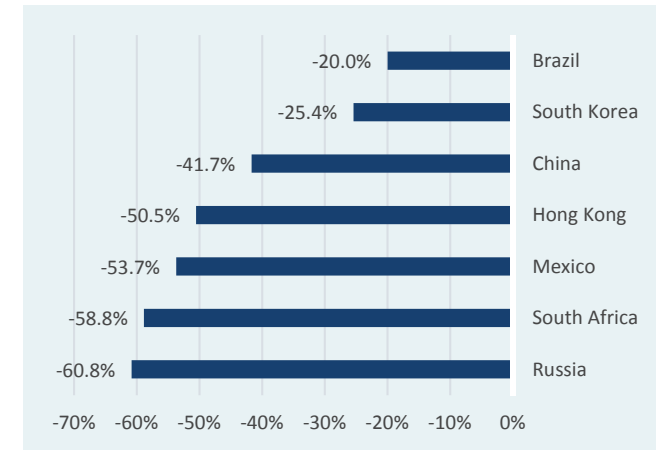
Source: Federal Reserve, as of 6/30/18

**U.S. VS. DEVELOPED INTEREST RATE SPREAD**



Source: Verus, Bloomberg, as of 6/30/18

**PURCHASING POWER PARITY VALUATIONS VS. U.S. DOLLAR (BIG MAC INDEX)**



Source: Bloomberg, as of 6/30/18

- The Total Fund, net of manager fees, returned 0.6% in the second quarter of 2018 and in the ranked 50<sup>th</sup> percentile among other public plans greater than \$1 billion (median of 0.6%). It lagged the policy index return of 0.8%. The Total Fund ex Overlay returned 0.5% for the quarter. The Total Fund one-year return of 6.7% lagged the policy index return of 7.8% and ranked in 92<sup>nd</sup> percentile of its peer universe. The three-year return of 6.5% (57<sup>th</sup> percentile) lagged the median large public plan (6.7%) and the policy index (7.0%).
- Second quarter results were enhanced by the following factors:
  1. D.E. Shaw returned 4.1% vs. 3.6% for the Russell 1000 Index and ranked in the top decile of the large cap core peer group. Both technical and fundamental forecasts contributed to excess return for the quarter while event driven forecasts were mixed.
- Second quarter results were hindered by the following factors:
  1. Western TRU returned -3.1% in the quarter, underperforming both 3-month LIBOR (0.6%) and the Bloomberg Barclays U.S. Aggregate Index (-0.2%). The portfolio's duration positioning and emerging markets exposure were the biggest detractors from performance.
  2. AQR DELTA XN posted a return of -6.1% for the quarter compared to 1.5% for 1-month LIBOR+4% and 0.1% for the All Multistrat median manager. The value factor was a significant driver of underperformance, especially in their equity market neutral and dedicated short strategies.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: June 30, 2018

	3 Mo (%)	Rank*	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>Total Fund**</b>	<b>0.6</b>	<b>50</b>	<b>0.1</b>	<b>75</b>	<b>6.7</b>	<b>92</b>	<b>9.6</b>	<b>83</b>	<b>6.5</b>	<b>57</b>	<b>8.0</b>	<b>41</b>	<b>6.1</b>	<b>48</b>
<i>Policy Index<sup>1</sup></i>	0.8	43	0.1	74	7.8	63	10.1	67	7.0	34	8.2	30	6.8	18
<i>InvestorForce Public DB &gt; \$1B Net Median</i>	0.6		0.6		8.0		10.4		6.7		7.5		6.1	
<b>Total Fund ex Overlay</b>	<b>0.5</b>	<b>53</b>	<b>0.1</b>	<b>75</b>	<b>6.6</b>	<b>93</b>	<b>9.6</b>	<b>81</b>	<b>6.5</b>	<b>57</b>	<b>7.9</b>	<b>44</b>	<b>6.1</b>	<b>50</b>
<i>Policy Index<sup>1</sup></i>	0.8	43	0.1	74	7.8	63	10.1	67	7.0	34	8.2	30	6.8	18
<i>InvestorForce Public DB &gt; \$1B Net Median</i>	0.6		0.6		8.0		10.4		6.7		7.5		6.1	
<b>Public Equity</b>	<b>1.0</b>	<b>55</b>	<b>0.3</b>	<b>71</b>	<b>10.9</b>	<b>72</b>	<b>14.7</b>	<b>73</b>	<b>8.7</b>	<b>60</b>	<b>10.2</b>	<b>63</b>	<b>6.9</b>	<b>69</b>
<i>Blended Public Equity Index<sup>1</sup></i>	1.0	57	0.2	71	11.8	45	15.9	36	9.1	48	10.6	50	7.7	40
<i>InvestorForce All DB Total Eq Net Median</i>	1.2		0.9		11.7		15.4		9.1		10.6		7.5	
<b>US Equity</b>	<b>4.0</b>	<b>35</b>	<b>3.3</b>	<b>46</b>	<b>15.0</b>	<b>40</b>	<b>16.6</b>	<b>52</b>	<b>11.0</b>	<b>51</b>	<b>12.6</b>	<b>58</b>	<b>9.5</b>	<b>69</b>
<i>Blended US Equity Index<sup>1</sup></i>	3.9	47	3.2	53	14.8	47	16.8	44	11.3	42	13.1	37	10.3	25
<i>Russell 3000</i>	3.9	47	3.2	53	14.8	47	16.6	50	11.6	30	13.3	21	10.2	25
<i>InvestorForce All DB US Eq Net Median</i>	3.9		3.3		14.7		16.6		11.0		12.8		9.8	
<b>Large Cap Equity</b>	<b>3.7</b>	<b>32</b>	<b>3.0</b>	<b>37</b>	<b>15.1</b>	<b>36</b>	<b>17.3</b>	<b>35</b>	<b>12.2</b>	<b>23</b>	<b>13.5</b>	<b>31</b>	<b>9.7</b>	<b>49</b>
<i>Russell 1000</i>	3.6	34	2.9	38	14.5	40	16.3	42	11.6	27	13.4	32	10.2	36
<i>eV US Large Cap Equity Net Median</i>	2.6		1.4		12.6		15.3		9.9		12.1		9.6	
<i>BlackRock Russell 1000***</i>	3.6	20	2.9	27	14.5	32	--	--	--	--	--	--	--	--
<i>DE Shaw</i>	4.1	10	3.7	16	17.8	10	18.6	10	13.6	3	14.7	5	--	--
<i>Russell 1000</i>	3.6	20	2.9	27	14.5	32	16.3	35	11.6	18	13.4	25	10.2	25
<i>eV US Large Cap Core Equity Net Median</i>	2.4		1.4		12.9		15.0		10.0		12.3		9.5	
<b>Small Cap Equity</b>	<b>6.8</b>	<b>50</b>	<b>6.0</b>	<b>51</b>	<b>14.6</b>	<b>59</b>	<b>18.2</b>	<b>59</b>	<b>8.6</b>	<b>78</b>	<b>10.4</b>	<b>78</b>	<b>9.2</b>	<b>81</b>
<i>Russell 2000</i>	7.8	39	7.7	40	17.6	43	21.0	37	11.0	45	12.5	47	10.6	53
<i>eV US Small Cap Equity Net Median</i>	6.7		6.1		16.0		19.4		10.6		12.3		10.8	

\* Total Fund and asset class aggregates are ranked in InvestorForce universes. Managers are ranked in eVest (eA) manager universes.

\*\* Includes Parametric Minneapolis manager funded in August 2013.

\*\*\*Funded January 2017.

1. See Appendix for Benchmark History.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: June 30, 2018

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
QMA US Small Cap	6.8	46	6.0	52	14.6	65	--	--	--	--	--	--	--	--
<i>Russell 2000</i>	7.8	35	7.7	38	17.6	36	21.0	26	11.0	47	12.5	57	10.6	52
<i>eV US Small Cap Core Equity Net Median</i>	6.5		6.3		16.1		19.3		10.8		12.8		10.7	
<b>International Equity</b>	<b>-2.3</b>	<b>25</b>	<b>-3.2</b>	<b>37</b>	<b>6.4</b>	<b>61</b>	<b>12.2</b>	<b>83</b>	<b>5.5</b>	<b>43</b>	<b>6.4</b>	<b>50</b>	<b>2.1</b>	<b>81</b>
<i>MSCI ACWI ex US IMI<sup>1</sup></i>	-2.6	33	-3.6	51	7.8	34	14.2	45	5.8	35	6.7	38	3.1	51
<i>MSCI EAFE Gross</i>	-1.0	9	-2.4	21	7.4	40	13.9	51	5.4	45	6.9	31	3.3	43
<i>InvestorForce All DB ex-US Eq Net Median</i>	-3.2		-3.6		7.0		13.9		5.3		6.4		3.1	
<b>Developed Markets</b>	<b>-1.3</b>	<b>39</b>	<b>-2.6</b>	<b>49</b>	<b>6.8</b>	<b>58</b>	<b>12.5</b>	<b>62</b>	<b>5.7</b>	<b>44</b>	<b>6.8</b>	<b>54</b>	<b>2.4</b>	<b>79</b>
<i>MSCI ACWI ex USA Gross</i>	-2.4	67	-3.4	63	7.8	42	14.2	43	5.6	50	6.5	61	3.0	65
<i>InvestorForce All DB Dev Mkt ex-US Eq Net Median</i>	-1.7		-2.6		7.3		13.6		5.5		6.9		3.4	
Baillie Gifford	0.4	38	-0.4	70	9.7	80	14.9	68	7.8	65	8.6	55	--	--
<i>MSCI ACWI ex US<sup>1</sup></i>	-2.4	85	-3.4	92	7.8	92	14.2	81	5.6	90	6.9	90	--	--
<i>MSCI ACWI ex US Growth<sup>1</sup></i>	-1.2	63	-2.0	79	10.3	76	14.0	83	6.9	72	8.0	75	--	--
<i>eV ACWI ex-US Growth Equity Net Median</i>	-0.7		0.5		14.3		16.7		9.0		8.8		5.4	
BlackRock EAFE Index	-0.8	31	-2.4	48	7.3	61	13.8	52	5.3	61	--	--	--	--
<i>MSCI EAFE</i>	-1.2	46	-2.7	55	6.8	65	13.4	58	4.9	66	6.4	77	2.8	86
<i>MSCI EAFE Gross</i>	-1.0	35	-2.4	48	7.4	60	13.9	50	5.4	60	6.9	63	3.3	66
<i>eV EAFE Core Equity Net Median</i>	-1.5		-2.6		8.1		13.9		6.1		7.4		3.8	
Mondrian	-3.5	60	-4.8	46	3.9	60	9.6	76	3.8	59	5.2	66	2.8	63
<i>MSCI ACWI ex USA Value Gross</i>	-3.6	62	-4.9	46	5.3	38	14.4	37	4.1	58	5.3	66	2.6	67
<i>MSCI ACWI ex USA Gross</i>	-2.4	28	-3.4	27	7.8	16	14.2	39	5.6	32	6.5	48	3.0	58
<i>eV ACWI ex-US Value Equity Net Median</i>	-3.2		-5.1		4.5		13.3		4.4		6.4		3.2	
<b>Emerging Markets</b>	<b>-9.5</b>	<b>73</b>	<b>-8.2</b>	<b>68</b>	<b>3.1</b>	<b>72</b>	<b>9.8</b>	<b>85</b>	<b>3.7</b>	<b>81</b>	<b>3.0</b>	<b>79</b>	<b>--</b>	<b>--</b>
<i>MSCI Emerging Markets Gross</i>	-7.9	14	-6.5	16	8.6	14	16.1	28	6.0	31	5.4	18	2.6	7
<i>InvestorForce All DB Emg Mkt Eq Net Median</i>	-9.1		-7.4		5.0		12.8		4.9		4.4		1.9	

1. See Appendix for Benchmark History.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: June 30, 2018

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Parametric Core	-9.5	73	-8.2	72	3.1	80	9.8	88	--	--	--	--	--	--
MSCI Emerging Markets Gross	-7.9	41	-6.5	42	8.6	35	16.1	39	6.0	43	5.4	48	2.6	54
eV Emg Mkts Equity Net Median	-8.5		-7.0		7.2		15.0		5.6		5.1		2.7	
<b>Fixed Income</b>	<b>-0.3</b>	<b>50</b>	<b>-0.7</b>	<b>25</b>	<b>1.0</b>	<b>22</b>	<b>4.0</b>	<b>8</b>	<b>3.5</b>	<b>24</b>	<b>3.7</b>	<b>25</b>	<b>5.3</b>	<b>26</b>
Blended Fixed Income Index <sup>1</sup>	-0.1	34	-1.6	66	0.0	62	1.1	54	2.6	47	2.7	51	4.0	71
InvestorForce All DB Total Fix Inc Net Median	-0.3		-1.2		0.3		1.3		2.5		2.7		4.6	
<b>Core Fixed</b>	<b>-0.6</b>	<b>--</b>	<b>-1.6</b>	<b>--</b>	<b>-0.2</b>	<b>--</b>	<b>1.4</b>	<b>--</b>	<b>2.5</b>	<b>--</b>	<b>3.0</b>	<b>--</b>	<b>4.5</b>	<b>--</b>
BBgBarc US Aggregate TR	-0.2	--	-1.6	--	-0.4	--	-0.4	--	1.7	--	2.3	--	3.7	--
BlackRock Intermediate Govt	0.1	41	-0.6	8	-0.5	63	--	--	--	--	--	--	--	--
BBgBarc US Govt Int TR	0.1	62	-0.7	17	-0.7	69	-1.0	58	0.6	66	1.0	69	2.4	77
eV US Government Fixed Inc Net Median	0.1		-0.8		-0.3		-0.9		1.1		1.4		2.9	
FIAM Bond	0.0	17	-1.4	26	0.2	21	0.6	17	2.4	15	2.9	17	4.7	16
BBgBarc US Aggregate TR	-0.2	42	-1.6	51	-0.4	57	-0.4	69	1.7	63	2.3	63	3.7	79
Western TRU	-3.1	99	-3.8	99	-0.7	80	4.1	1	--	--	--	--	--	--
3-Month Libor Total Return USD	0.6	2	1.1	1	1.8	2	1.4	7	1.1	96	0.8	99	0.7	99
BBgBarc US Aggregate TR	-0.2	42	-1.6	51	-0.4	57	-0.4	69	1.7	63	2.3	63	3.7	79
eV US Core Fixed Inc Net Median	-0.2		-1.6		-0.4		-0.1		1.9		2.4		4.1	
<b>Opportunistic Credit</b>	<b>0.4</b>	<b>--</b>	<b>1.4</b>	<b>--</b>	<b>4.0</b>	<b>--</b>	<b>9.3</b>	<b>--</b>	<b>6.3</b>	<b>--</b>	<b>6.7</b>	<b>--</b>	<b>--</b>	<b>--</b>
BBgBarc BA Intermediate HY <sup>1</sup>	0.0	--	-1.5	--	0.4	--	4.7	--	4.4	--	4.4	--	--	--
Angelo Gordon Opportunistic**	9.5	--	15.4	--	24.8	--	20.6	--	13.2	--	--	--	--	--
Angelo Gordon STAR**	4.8	--	11.7	--	20.3	--	18.6	--	12.1	--	12.5	--	--	--
BBgBarc US Aggregate TR	-0.2	--	-1.6	--	-0.4	--	-0.4	--	1.7	--	2.3	--	3.7	--
Beach Point Select	2.0	3	3.2	3	7.2	4	10.5	5	8.3	1	--	--	--	--
BBgBarc BA Intermediate HY <sup>1</sup>	0.0	91	-1.5	95	0.4	97	4.7	91	4.4	60	4.4	76	--	--
eV US High Yield Fixed Inc Net Median	0.6		-0.1		2.2		6.7		4.6		4.8		7.3	

\*\* Preliminary return as of 6/30/2018.

1. See Appendix for Benchmark History.



Total Fund  
Performance Summary (Net of Fees)

Period Ending: June 30, 2018

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Brigade Capital	1.5	7	2.6	5	4.4	14	10.1	6	6.0	12	4.9	45	--	--
BBgBarc BA Intermediate HY <sup>1</sup>	0.0	91	-1.5	95	0.4	97	4.7	91	4.4	60	4.4	76	--	--
50% Barclays HY/ 50% Bank Loan	0.9	29	1.3	16	3.6	20	6.8	47	4.9	37	4.9	46	--	--
eV US High Yield Fixed Inc Net Median	0.6		-0.1		2.2		6.7		4.6		4.8		7.3	
PIMCO Diversified**	-0.7	99	-1.4	93	--	--	--	--	--	--	--	--	--	--
Blended PIMCO Diversified Index <sup>1</sup>	-1.1	99	-2.4	99	0.2	99	3.2	99	4.3	61	4.6	63	6.6	80
BBgBarc BA Intermediate HY	0.0	91	-1.5	95	0.4	97	4.7	91	4.4	60	4.4	76	--	--
eV US High Yield Fixed Inc Net Median	0.6		-0.1		2.2		6.7		4.6		4.8		7.3	
Franklin Templeton	-4.3	86	-2.4	69	-2.5	96	4.0	37	1.5	88	1.9	70	--	--
BBgBarc Multiverse TR	-2.8	65	-1.6	45	1.3	42	0.0	85	2.8	57	1.7	75	2.8	78
eV All Global Fixed Inc Net Median	-1.7		-1.8		1.0		2.5		3.0		2.8		4.1	
<b>Private Credit</b>	<b>1.3</b>	<b>--</b>	<b>3.2</b>	<b>--</b>	<b>5.9</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
Cliffwater Direct Lending Index	2.2	--	4.4	--	8.6	--	9.5	--	8.2	--	9.2	--	9.5	--
TCP Direct Lending VIII <sup>1</sup>	2.2	3	2.9	4	6.3	4	--	--	--	--	--	--	--	--
White Oak Yield***	0.0	92	3.4	3	3.2	24	--	--	--	--	--	--	--	--
Cliffwater Direct Lending Index	2.2	3	4.4	2	8.6	2	9.5	9	8.2	1	9.2	1	9.5	2
eV US High Yield Fixed Inc Net Median	0.6		-0.1		2.2		6.7		4.6		4.8		7.3	
<b>Risk Parity</b>	<b>-0.2</b>	<b>--</b>	<b>-1.6</b>	<b>--</b>	<b>6.6</b>	<b>--</b>	<b>5.3</b>	<b>--</b>	<b>5.5</b>	<b>--</b>	<b>6.5</b>	<b>--</b>	<b>--</b>	<b>--</b>
Blended Risk Parity Index <sup>1</sup>	1.1	--	0.4	--	7.3	--	9.3	--	7.5	--	8.8	--	--	--
AQR GRP, 10% Volatility	-0.5	--	-1.7	--	7.6	--	6.7	--	4.2	--	5.1	--	--	--
PanAgora	0.0	--	-1.6	--	5.8	--	4.2	--	6.7	--	--	--	--	--
Blended Risk Parity Index <sup>1</sup>	1.1	--	0.4	--	7.3	--	9.3	--	7.5	--	8.8	--	--	--
Blended RP Secondary Index <sup>1</sup>	2.3	--	1.3	--	8.6	--	9.2	--	6.5	--	7.5	--	--	--

\* Preliminary return as of 6/30/2018.

\*\* Funded August 2017.

\*\*\* Funded June 2017.

1. See Appendix for Benchmark History.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: June 30, 2018

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>Alternatives</b>	-1.2	--	-0.5	--	2.6	--	9.6	--	6.1	--	7.0	--	--	--
<i>Blended Alternatives Index</i> <sup>1</sup>	0.9	--	1.6	--	10.0	--	12.0	--	7.7	--	8.2	--	--	--
<b>Private Equity**</b>	2.2	50	7.1	37	9.3	75	18.8	9	13.5	18	16.9	10	--	--
<i>Blended Private Equity Index</i> <sup>1</sup>	0.2	80	0.4	93	13.6	47	17.5	11	13.2	20	15.5	15	12.9	2
<i>InvestorForce All DB Private Eq Net Median</i>	2.2		6.1		13.0		12.3		10.3		11.0		8.1	
<b>Hedge Fund/Absolute Return</b>	-4.6	98	-7.6	99	-3.6	97	0.4	96	2.5	51	4.1	46	--	--
<i>Libor 1 month +4%</i>	1.5	39	2.8	21	5.6	48	5.2	67	4.9	11	4.6	32	--	--
<i>InvestorForce All DB Hedge Funds Net Median</i>	1.3		1.5		5.3		6.3		2.5		3.9		2.7	
AQR DELTA XN	-6.1	92	-9.7	94	-4.9	92	-0.4	83	2.3	61	4.0	61	--	--
Aberdeen Standard GARS	-2.2	76	-4.0	78	-1.9	87	0.9	80	--	--	--	--	--	--
<i>Libor 1 month +4%</i>	1.5	32	2.8	30	5.6	43	5.2	54	4.9	43	4.6	55	--	--
<i>eV Alt All Multi-Strategy Median</i>	0.1		0.3		4.5		5.7		3.7		5.2		6.0	
<b>Inflation Hedge</b>	1.9	--	1.6	--	6.7	--	6.3	--	--	--	--	--	--	--
<i>Blended Inflation Hedge Index</i> <sup>1</sup>	1.4	--	0.9	--	7.2	--	5.7	--	--	--	--	--	--	--
<b>Real Estate</b>	1.7	76	3.9	35	7.8	27	8.0	20	9.0	22	10.7	12	5.0	17
NCREIF ODCE	2.1	41	4.3	8	8.4	5	8.2	19	9.4	12	11.0	5	5.7	9
<i>InvestorForce All DB Real Estate Pub Net Median</i>	1.9		3.5		6.9		6.8		7.8		9.6		4.4	
Invesco	1.8	--	4.1	--	7.9	--	8.1	--	8.9	--	10.6	--	5.0	--
NCREIF ODCE	2.1	--	4.3	--	8.4	--	8.2	--	9.4	--	11.0	--	5.7	--
Invesco US Val IV	1.7	--	4.2	--	11.7	--	10.4	--	--	--	--	--	--	--
NCREIF ODCE	2.1	--	4.3	--	8.4	--	8.2	--	9.4	--	11.0	--	5.7	--
NCREIF CEVA 1Q Lag - NET	2.1	--	5.6	--	11.6	--	10.4	--	12.4	--	--	--	--	--
PGIM RE US Debt Fund***	1.2	--	2.2	--	--	--	--	--	--	--	--	--	--	--
NCREIF ODCE	2.1	--	4.3	--	8.4	--	8.2	--	9.4	--	11.0	--	5.7	--

\*\* Returns are one-quarter lag.

\*\*\* Funded July 2017.

1. See Appendix for Benchmark History.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: June 30, 2018

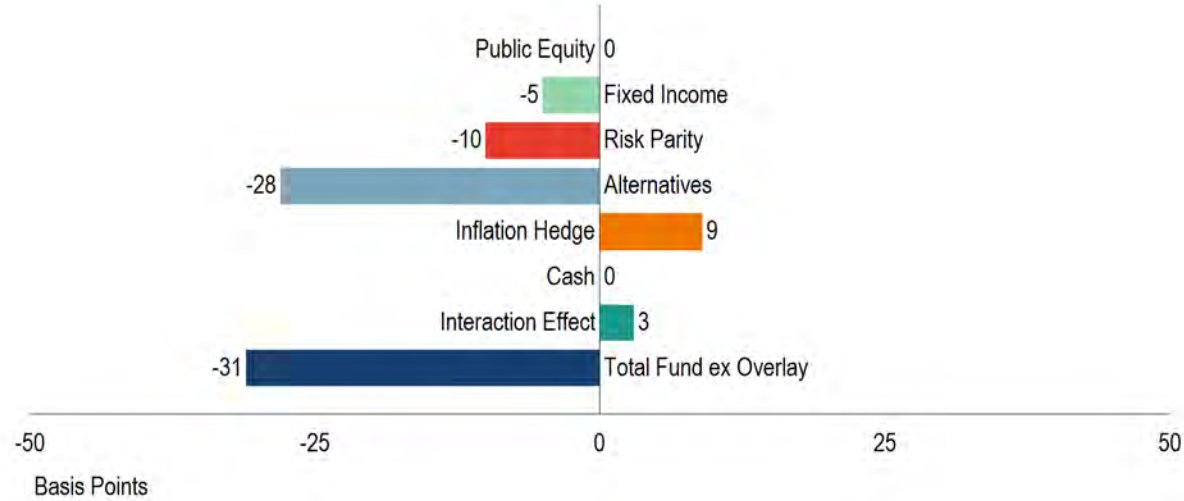
	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>Private Real Asset**</b>	1.6	--	-0.3	--	-5.8	--	-1.6	--	10.2	--	--	--	--	--
<i>Blended Private Real Asset Index<sup>1</sup></i>	-4.0	--	-7.1	--	1.9	--	3.4	--	4.4	--	--	--	--	--
<i>Blended Secondary CA Private RA Index<sup>1</sup></i>	1.6	--	5.5	--	10.7	--	13.3	--	7.9	--	--	--	--	--
<b>Liquid Real Asset</b>	2.7	--	-0.2	--	10.2	--	--	--	--	--	--	--	--	--
<i>Blended Liquid Real Asset Index<sup>1</sup></i>	2.5	--	-0.8	--	8.9	--	6.9	--	6.7	--	--	--	--	--
SSgA Custom Real Asset	2.7	--	-0.2	--	10.2	--	--	--	--	--	--	--	--	--
<i>Blended Liquid Real Asset Index<sup>1</sup></i>	2.5	--	-0.8	--	8.9	--	6.9	--	6.7	--	--	--	--	--
<b>TIPS</b>	0.7	--	0.5	--	2.4	--	1.7	--	1.8	--	1.3	--	--	--
<i>BBgBarc US TIPS TR</i>	0.8	--	0.0	--	2.1	--	0.7	--	1.9	--	1.7	--	3.0	--
Brown Brothers Harriman	0.7	32	0.5	13	2.4	24	1.7	19	1.8	45	1.3	62	--	--
<i>BBgBarc US TIPS TR</i>	0.8	24	0.0	42	2.1	41	0.7	39	1.9	32	1.7	26	3.0	56
<i>eV US TIPS / Inflation Fixed Inc Net Median</i>	0.7	--	-0.1	--	2.0	--	0.7	--	1.8	--	1.5	--	3.1	--
<b>Cash</b>	0.3	--	0.5	--	1.0	--	0.9	--	1.1	--	0.8	--	0.5	--
<i>91 Day T-Bills</i>	0.5	--	0.8	--	1.4	--	1.0	--	0.7	--	0.4	--	0.3	--
General Account	1.1	--	1.5	--	2.7	--	1.9	--	2.0	--	1.4	--	0.9	--
Treasury & LAIF	0.4	--	2.7	--	3.2	--	1.8	--	1.6	--	1.3	--	0.6	--
<i>91 Day T-Bills</i>	0.5	--	0.8	--	1.4	--	1.0	--	0.7	--	0.4	--	0.3	--

\*\* Returns are one-quarter lag.

1. See Appendix for Benchmark History.

Total Fund ex Overlay  
Performance Attribution

Period Ending: June 30, 2018

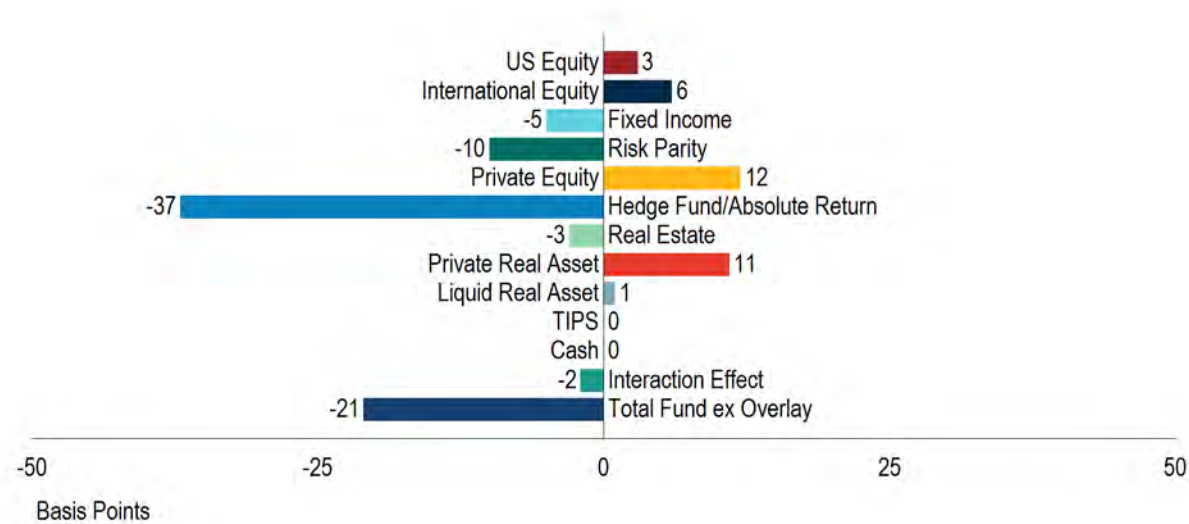


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Public Equity	1.05%	1.04%	0.01%	0.00%	0.00%	0.00%	0.01%
Fixed Income	-0.32%	-0.09%	-0.23%	-0.05%	0.00%	0.00%	-0.04%
Risk Parity	-0.20%	1.12%	-1.32%	-0.10%	0.00%	0.01%	-0.10%
Alternatives	-1.22%	0.87%	-2.08%	-0.28%	0.00%	0.03%	-0.25%
Inflation Hedge	1.91%	1.41%	0.51%	0.09%	0.00%	0.00%	0.08%
Cash	0.32%	0.46%	-0.13%	0.00%	-0.01%	0.00%	-0.01%
<b>Total</b>	<b>0.55%</b>	<b>0.86%</b>	<b>-0.31%</b>	<b>-0.34%</b>	<b>-0.01%</b>	<b>0.03%</b>	<b>-0.31%</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: June 30, 2018

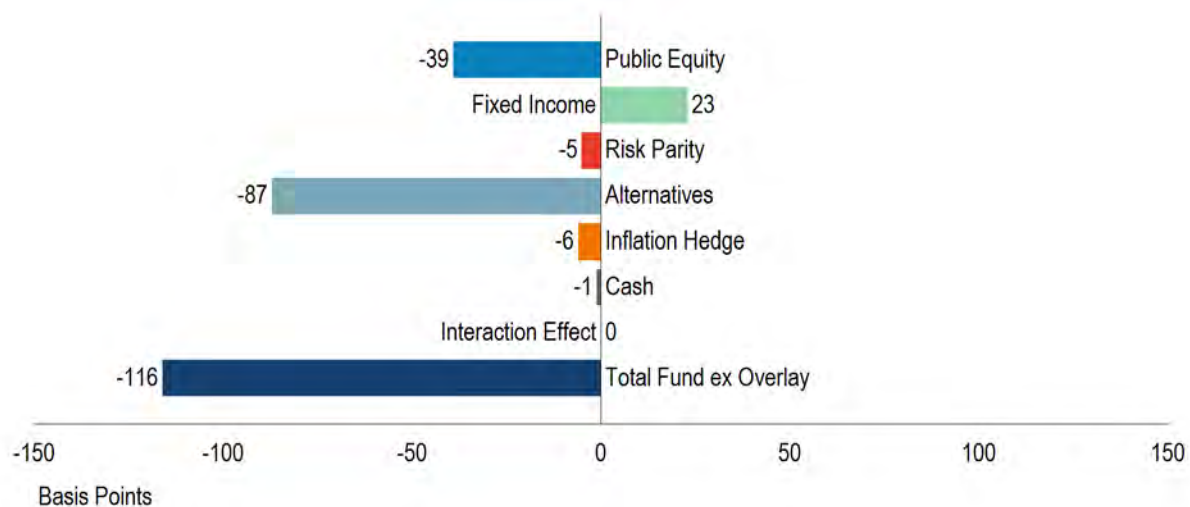


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	4.03%	3.89%	0.14%	0.03%	0.04%	0.00%	0.07%
International Equity	-2.29%	-2.61%	0.33%	0.06%	-0.02%	0.00%	0.04%
Fixed Income	-0.32%	-0.09%	-0.23%	-0.05%	0.00%	0.00%	-0.04%
Risk Parity	-0.20%	1.12%	-1.32%	-0.10%	0.00%	0.01%	-0.10%
Private Equity	2.17%	0.22%	1.95%	0.12%	0.00%	-0.01%	0.11%
Hedge Fund/Absolute Return	-4.63%	1.51%	-6.13%	-0.37%	0.00%	0.01%	-0.36%
Real Estate	1.66%	2.05%	-0.39%	-0.03%	0.00%	0.00%	-0.03%
Private Real Asset	1.64%	-4.02%	5.65%	0.11%	0.03%	-0.03%	0.11%
Liquid Real Asset	2.73%	2.50%	0.23%	0.01%	0.00%	0.00%	0.01%
TIPS	0.74%	0.77%	-0.03%	0.00%	0.00%	0.00%	0.00%
Cash	0.32%	0.46%	-0.13%	0.00%	-0.01%	0.00%	-0.01%
<b>Total</b>	<b>0.55%</b>	<b>0.76%</b>	<b>-0.21%</b>	<b>-0.22%</b>	<b>0.03%</b>	<b>-0.02%</b>	<b>-0.21%</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: June 30, 2018

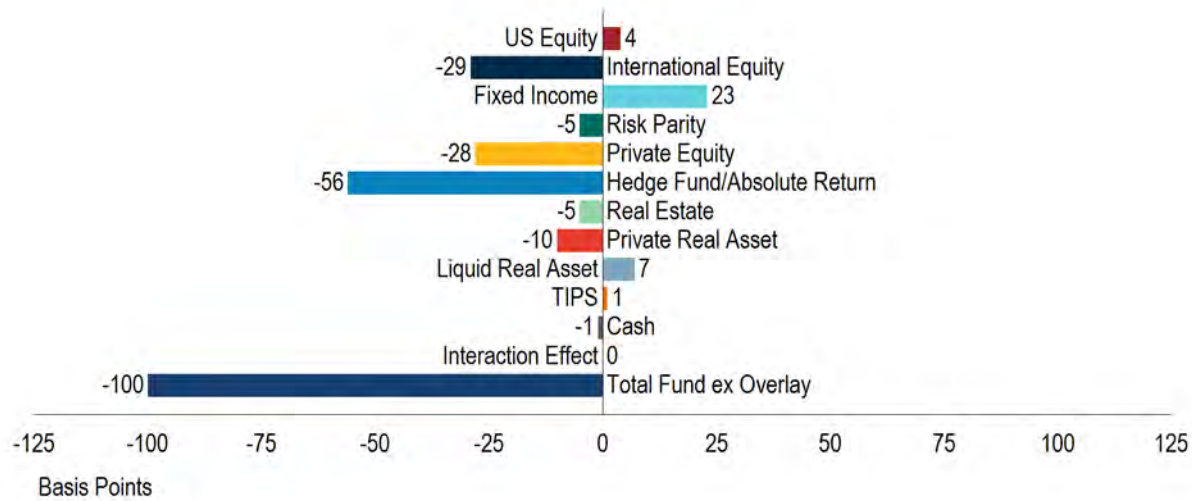


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Public Equity	10.90%	11.83%	-0.93%	-0.39%	0.00%	0.00%	-0.39%
Fixed Income	1.01%	-0.02%	1.03%	0.23%	0.00%	0.00%	0.23%
Risk Parity	6.64%	7.32%	-0.68%	-0.05%	0.00%	0.00%	-0.05%
Alternatives	2.62%	9.97%	-7.35%	-0.87%	0.00%	0.00%	-0.87%
Inflation Hedge	6.68%	7.18%	-0.49%	-0.06%	0.00%	0.00%	-0.06%
Cash	0.98%	1.40%	-0.42%	-0.01%	0.00%	0.00%	-0.01%
<b>Total</b>	<b>6.69%</b>	<b>7.85%</b>	<b>-1.16%</b>	<b>-1.16%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>-1.16%</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: June 30, 2018



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	14.96%	14.78%	0.18%	0.04%	0.00%	0.00%	0.04%
International Equity	6.39%	7.84%	-1.45%	-0.29%	0.00%	0.00%	-0.29%
Fixed Income	1.01%	-0.02%	1.03%	0.23%	0.00%	0.00%	0.23%
Risk Parity	6.64%	7.32%	-0.68%	-0.05%	0.00%	0.00%	-0.05%
Private Equity	9.27%	13.60%	-4.33%	-0.28%	0.00%	0.00%	-0.28%
Hedge Fund/Absolute Return	-3.61%	5.59%	-9.20%	-0.56%	0.00%	0.00%	-0.56%
Real Estate	7.77%	8.44%	-0.68%	-0.05%	0.00%	0.00%	-0.05%
Private Real Asset	-5.82%	1.94%	-7.75%	-0.10%	0.00%	0.00%	-0.10%
Liquid Real Asset	10.17%	8.86%	1.31%	0.07%	0.00%	0.00%	0.07%
TIPS	2.41%	2.11%	0.29%	0.01%	0.00%	0.00%	0.01%
Cash	0.98%	1.40%	-0.42%	-0.01%	0.00%	0.00%	-0.01%
<b>Total</b>	<b>6.69%</b>	<b>7.69%</b>	<b>-1.00%</b>	<b>-1.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>-1.00%</b>

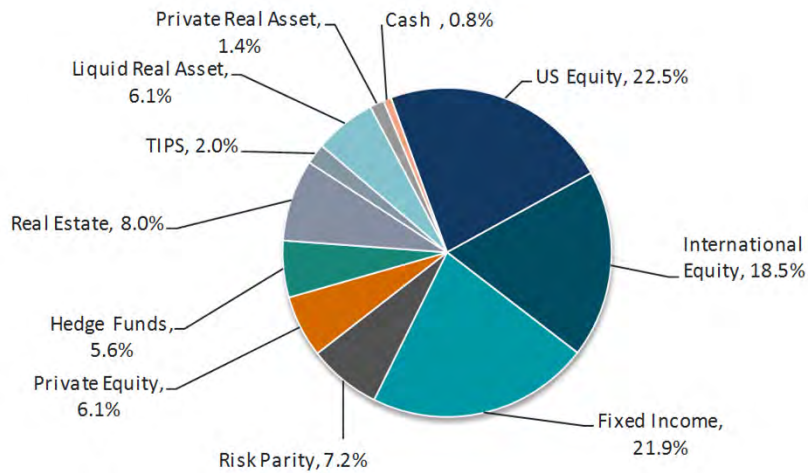
Attribution does not include the impact of the Parametric Minneapolis strategy.  
\* Interaction Effects include Residual Effects.

# Total Fund

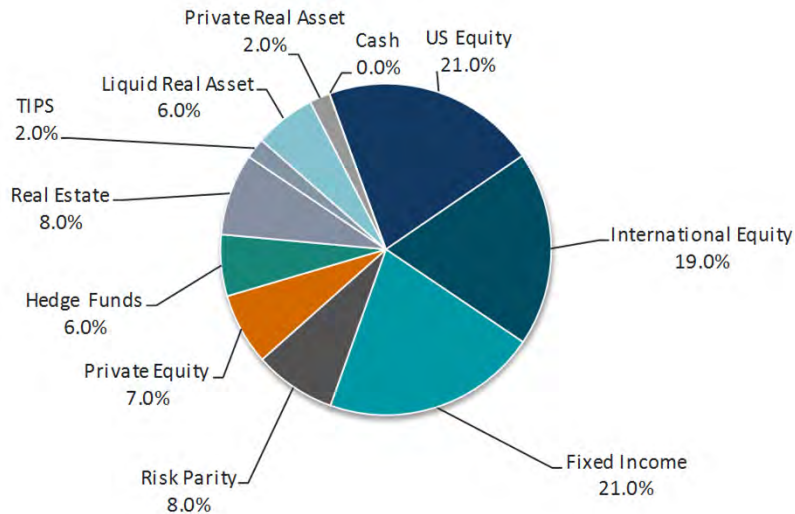
## Asset Allocation Analysis

Period Ending: June 30, 2018

**Current w/Overlay**



**Target**



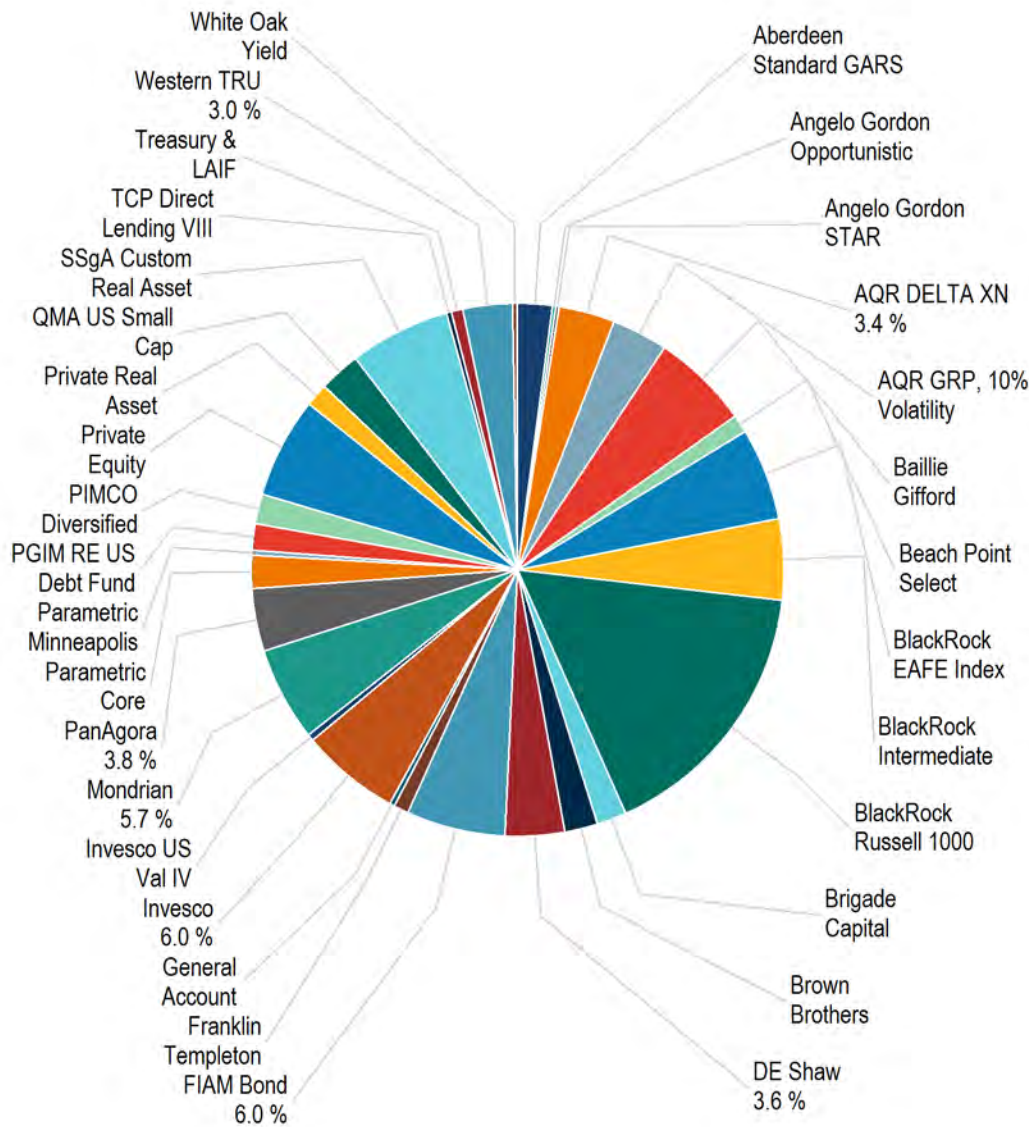
ASSET ALLOCATION	MARKET VALUE	
	W/OVERLAY	W/O OVERLAY
US Equity	979,892,441	22.5%
International Equity	802,247,060	18.5%
Fixed Income	951,040,730	21.9%
Risk Parity	311,126,437	7.2%
Private Equity	265,216,316	6.1%
Hedge Funds	242,487,780	5.6%
Real Estate	349,481,013	8.0%
TIPS	87,884,436	2.0%
Liquid Real Asset	263,283,878	6.1%
Private Real Asset	60,923,620	1.4%
Cash	33,581,421	0.8%
<b>TOTAL</b>	<b>4,347,165,132</b>	<b>100.0%</b>

ASSET ALLOCATION	W/OVERLAY	TARGET	DIFF
US Equity	22.5%	21.0%	1.5%
International Equity	18.5%	19.0%	-0.5%
Fixed Income	21.9%	21.0%	0.9%
Risk Parity	7.2%	8.0%	-0.8%
Private Equity	6.1%	7.0%	-0.9%
Hedge Funds	5.6%	6.0%	-0.4%
Real Estate	8.0%	8.0%	0.0%
TIPS	2.0%	2.0%	0.0%
Liquid Real Asset	6.1%	6.0%	0.1%
Private Real Asset	1.4%	2.0%	-0.6%
Cash	0.8%	0.0%	0.8%
<b>TOTAL</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>



Total Fund  
 Manager Allocation Analysis

Period Ending: June 30, 2018



	Actual	Actual
Aberdeen Standard GARS	\$93,153,328	2%
Angelo Gordon Opportunistic	\$8,364,000	0%
Angelo Gordon STAR	\$7,115,000	0%
AQR DELTA XN	\$149,334,452	3%
AQR GRP, 10% Volatility	\$146,542,711	3%
Baillie Gifford	\$255,036,354	6%
Beach Point Select	\$49,950,983	1%
BlackRock EAFE Index	\$241,931,578	6%
BlackRock Intermediate Govt	\$214,832,349	5%
BlackRock Russell 1000	\$718,797,337	17%
Brigade Capital	\$77,316,071	2%
Brown Brothers Harriman	\$87,884,436	2%
DE Shaw	\$156,868,228	4%
FIAM Bond	\$260,132,045	6%
Franklin Templeton	\$40,054,137	1%
General Account	\$15,190,030	0%
Invesco	\$260,104,438	6%
Invesco US Val IV	\$19,365,633	0%
Mondrian	\$245,977,329	6%
PanAgora	\$164,583,726	4%
Parametric Core	\$88,129,672	2%
Parametric Minneapolis Overlay	\$12,467,647	0%
PGIM RE US Debt Fund	\$70,010,942	2%
PIMCO Diversified	\$79,776,722	2%
Private Equity	\$265,216,316	6%
Private Real Asset	\$60,923,620	1%
QMA US Small Cap	\$106,797,477	2%
SSgA Custom Real Asset	\$263,283,878	6%
TCP Direct Lending VIII	\$12,689,543	0%
Transition 3	\$99	0%
Treasury & LAIF	\$31,679,559	1%
Western TRU	\$128,491,710	3%
White Oak Yield	\$15,163,783	0%
<b>Total</b>	<b>\$4,347,165,132</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	6.5%	57	6.1%	58	1.0	62	-0.4	74	1.0%	40
Policy Index	7.0%	34	6.6%	79	1.0	63	--	--	0.0%	1
InvestorForce Public DB > \$1B Net Median	6.7%	--	5.7%	--	1.0	--	0.0	--	1.1%	--

**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	8.0%	41	6.0%	62	1.3	46	-0.3	72	1.0%	33
Policy Index	8.2%	30	6.4%	79	1.2	54	--	--	0.0%	1
InvestorForce Public DB > \$1B Net Median	7.5%	--	5.7%	--	1.2	--	0.0	--	1.1%	--

**Statistics Summary**

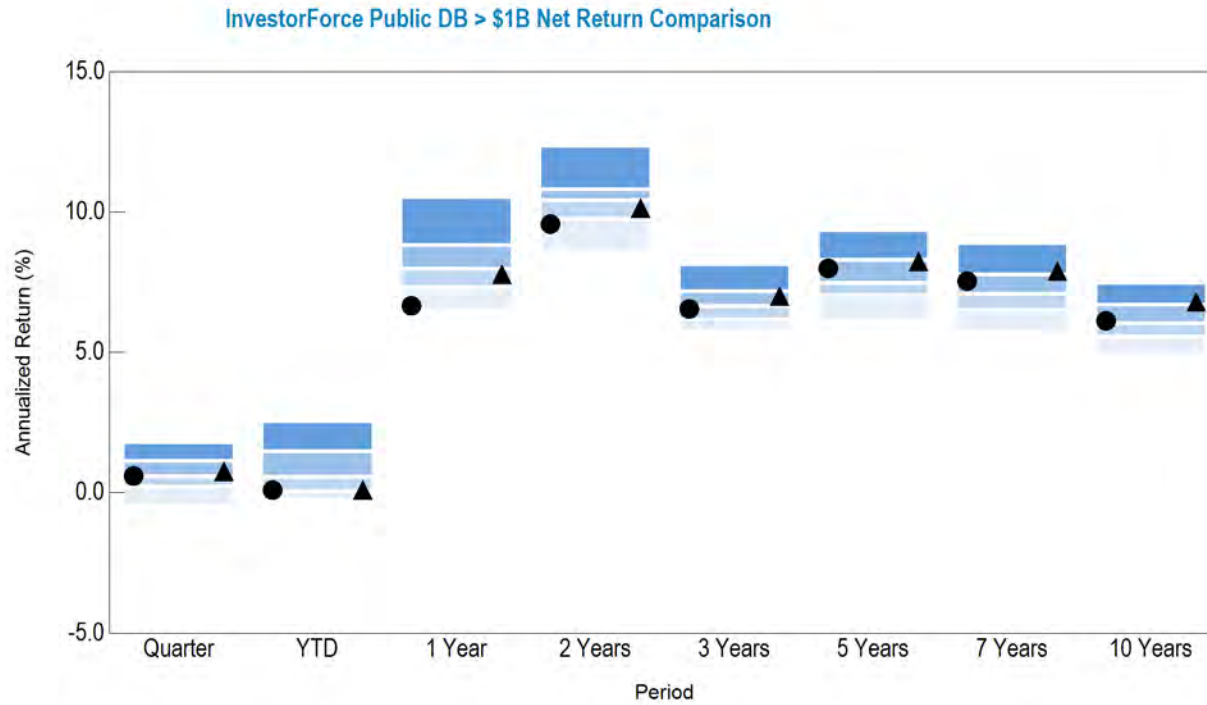
**3 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Cash	1.1%	0.4%	1.0	0.9	0.4%
91 Day T-Bills	0.7%	0.2%	0.0	--	0.0%
General Account	2.0%	0.7%	1.9	2.0	0.6%
91 Day T-Bills	0.7%	0.2%	0.0	--	0.0%
Treasury & LAIF	1.6%	0.9%	1.0	1.0	0.9%
91 Day T-Bills	0.7%	0.2%	0.0	--	0.0%

**Statistics Summary**

**5 Years**

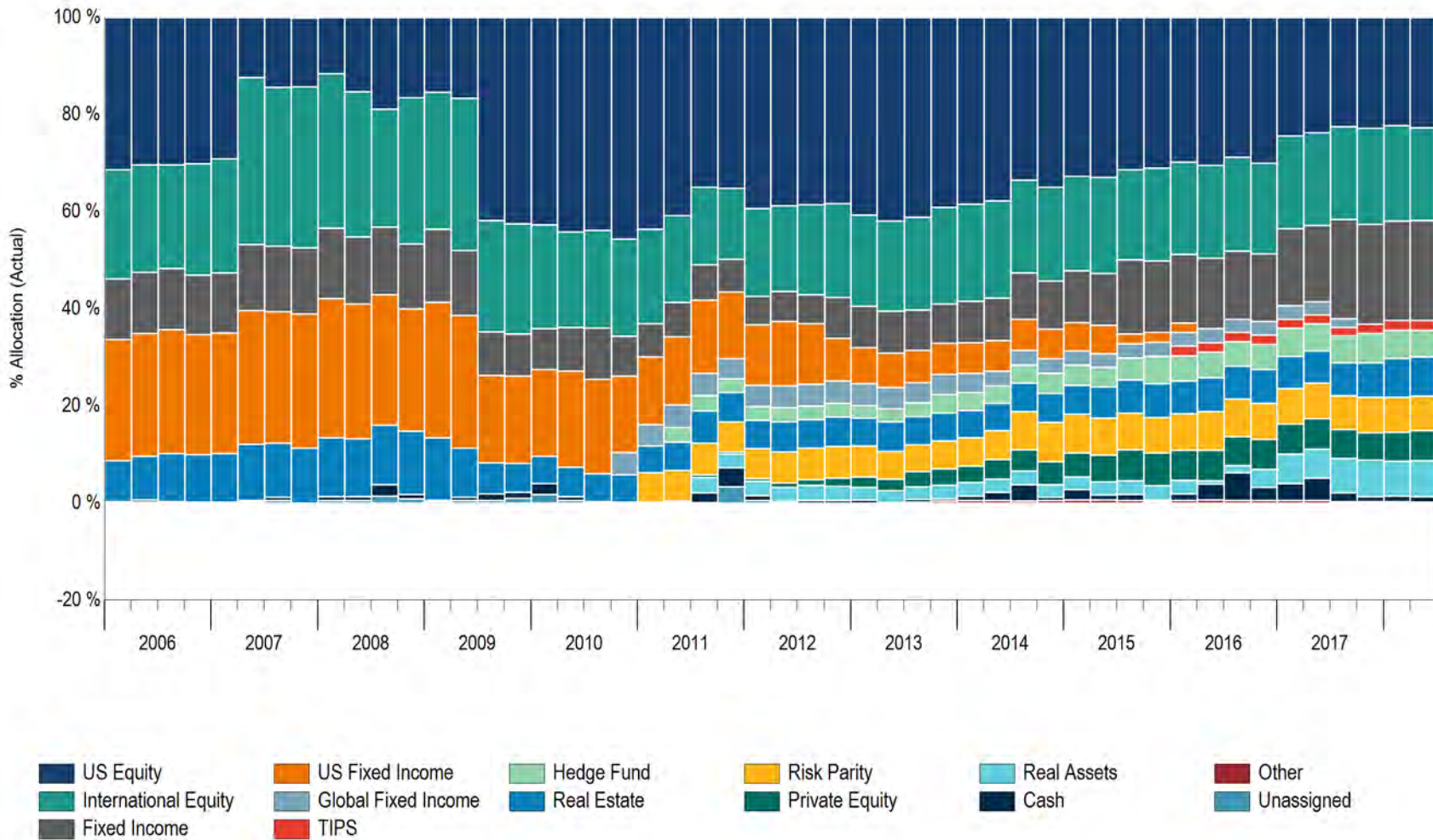
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Cash	0.8%	0.3%	1.3	1.2	0.3%
91 Day T-Bills	0.4%	0.2%	0.0	--	0.0%
General Account	1.4%	0.6%	1.7	1.8	0.5%
91 Day T-Bills	0.4%	0.2%	0.0	--	0.0%
Treasury & LAIF	1.3%	0.8%	1.1	1.2	0.8%
91 Day T-Bills	0.4%	0.2%	0.0	--	0.0%

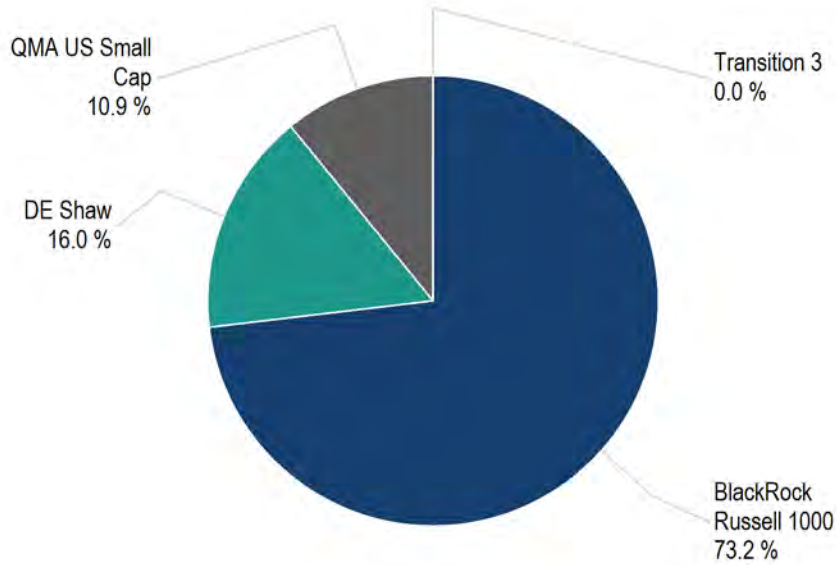


	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>Return (Rank)</b>								
5th Percentile	1.8	2.5	10.5	12.4	8.1	9.3	8.9	7.5
25th Percentile	1.1	1.5	8.8	10.8	7.2	8.3	7.8	6.7
Median	0.6	0.6	8.0	10.4	6.7	7.5	7.1	6.1
75th Percentile	0.2	0.1	7.3	9.8	6.2	7.0	6.5	5.6
95th Percentile	-0.4	-0.2	6.5	8.6	5.8	6.2	5.7	4.9
# of Portfolios	52	51	51	51	51	51	50	45
● Total Fund	0.6 (50)	0.1 (75)	6.7 (92)	9.6 (83)	6.5 (57)	8.0 (41)	7.5 (35)	6.1 (48)
▲ Policy Index	0.8 (43)	0.1 (74)	7.8 (63)	10.1 (67)	7.0 (34)	8.2 (30)	7.9 (20)	6.8 (18)

Total Fund  
Asset Allocation History

Period Ending: June 30, 2018





	Actual \$	Actual %	Manager Contribution to Excess Return %
BlackRock Russell 1000	\$718,797,337	73.2%	0.0%
DE Shaw	\$156,868,228	16.0%	0.1%
QMA US Small Cap	\$106,797,477	10.9%	-0.1%
Transition Account	\$99	0.0%	0.0%
Actual vs. Policy Weight Difference			0.2%
<b>Total</b>	<b>\$982,463,141</b>	<b>100.0%</b>	<b>0.1%</b>



**Statistics Summary**

**3 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	11.0%	10.2%	1.0	-0.4	0.7%
Blended US Equity Index	11.3%	10.4%	1.0	--	0.0%
Russell 3000	11.6%	10.3%	1.1	0.6	0.5%

**Statistics Summary**

**3 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	12.2%	10.1%	1.1	0.5	1.1%
Russell 1000	11.6%	10.2%	1.1	--	0.0%
DE Shaw	13.6%	10.2%	1.3	0.9	2.2%
Russell 1000	11.6%	10.2%	1.1	--	0.0%
Small Cap Equity	8.6%	13.7%	0.6	-0.9	2.7%
Russell 2000	11.0%	14.1%	0.7	--	0.0%



**Statistics Summary**

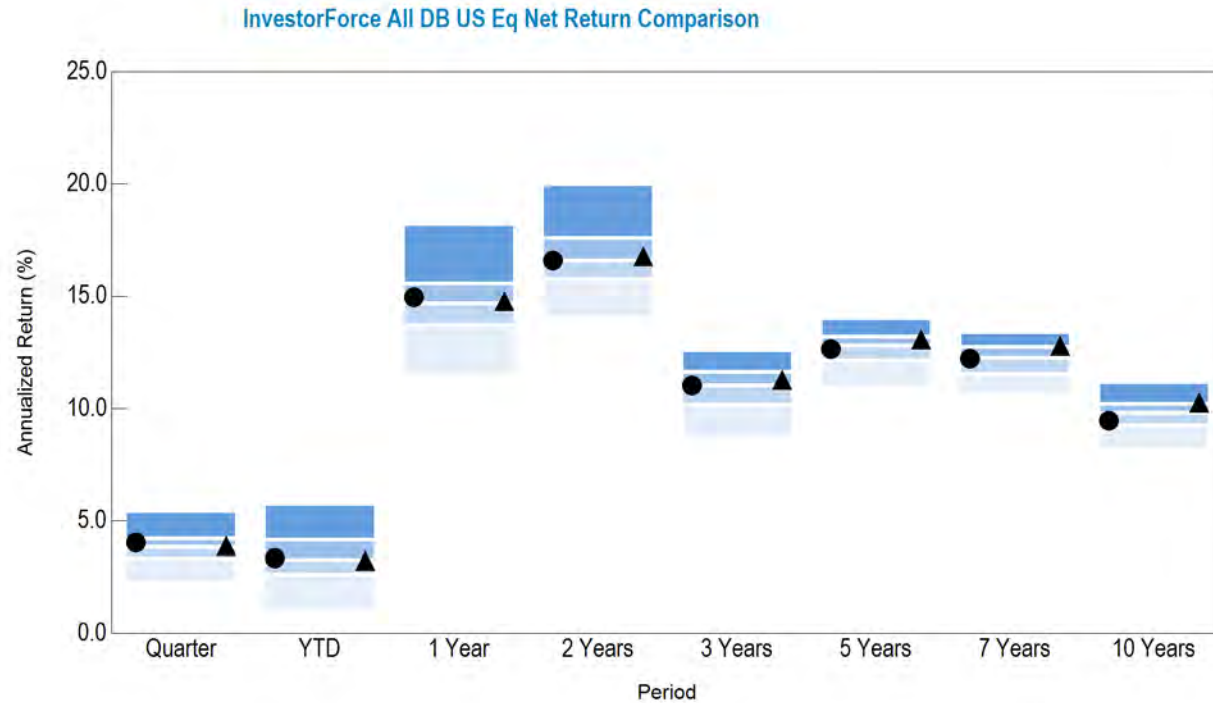
**5 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	12.6%	9.9%	1.2	-0.6	0.8%
Blended US Equity Index	13.1%	10.1%	1.2	--	0.0%
Russell 3000	13.3%	10.0%	1.3	0.3	0.8%

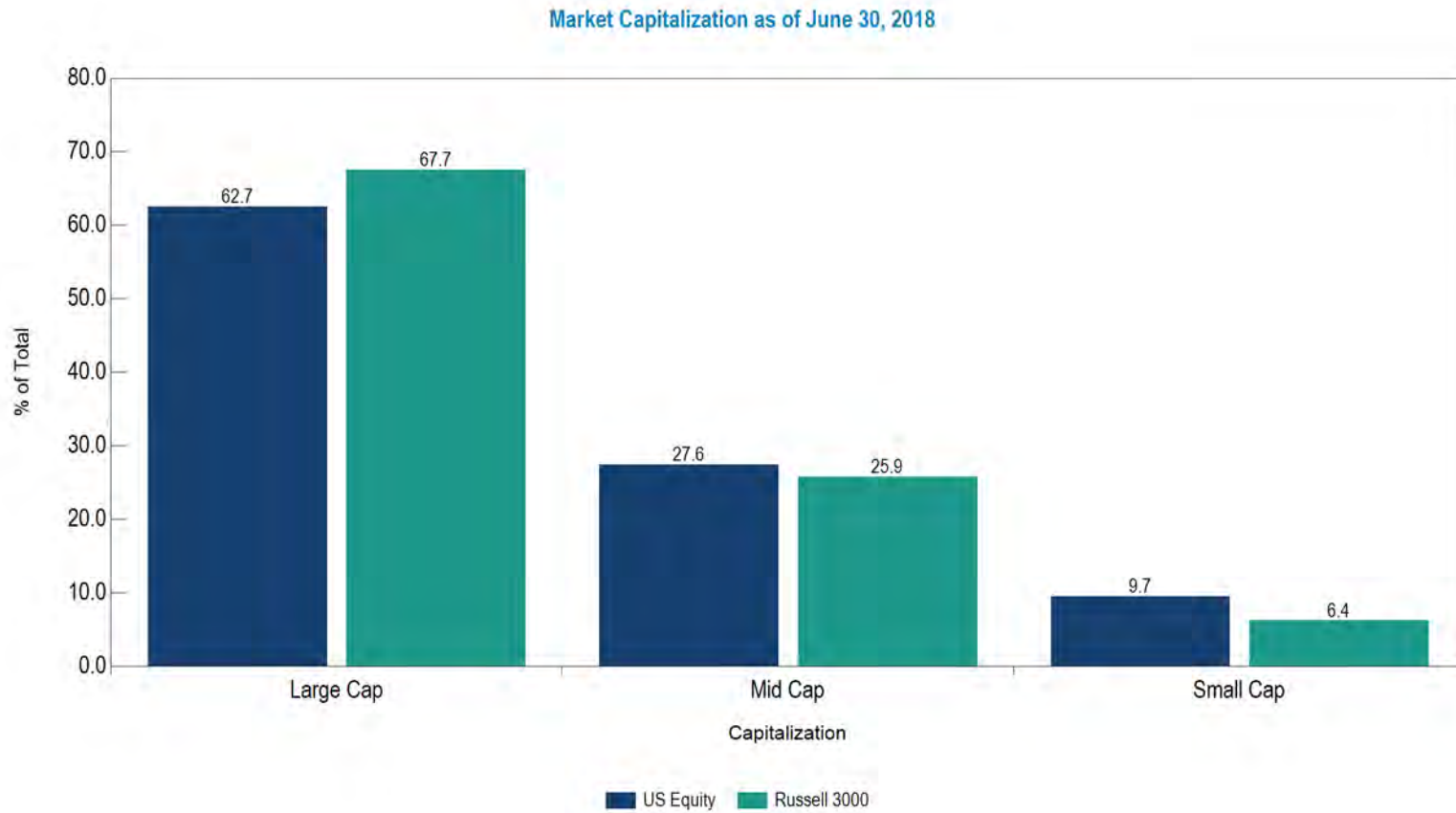
**Statistics Summary**

**5 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	13.5%	9.8%	1.3	0.2	1.0%
Russell 1000	13.4%	9.8%	1.3	--	0.0%
DE Shaw	14.7%	10.0%	1.4	0.6	2.2%
Russell 1000	13.4%	9.8%	1.3	--	0.0%
Small Cap Equity	10.4%	13.4%	0.7	-0.8	2.6%
Russell 2000	12.5%	13.9%	0.9	--	0.0%



	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>Return (Rank)</b>								
5th Percentile	5.4	5.7	18.2	20.0	12.6	14.0	13.4	11.2
25th Percentile	4.2	4.2	15.6	17.6	11.6	13.2	12.8	10.2
Median	3.9	3.3	14.7	16.6	11.0	12.8	12.3	9.8
75th Percentile	3.3	2.6	13.7	15.8	10.2	12.2	11.5	9.3
95th Percentile	2.3	1.0	11.5	14.1	8.7	11.0	10.6	8.2
# of Portfolios	593	591	585	572	565	516	425	341
● US Equity	4.0 (35)	3.3 (46)	15.0 (40)	16.6 (52)	11.0 (51)	12.6 (58)	12.2 (53)	9.5 (69)
▲ Blended US Equity Index	3.9 (47)	3.2 (53)	14.8 (47)	16.8 (44)	11.3 (42)	13.1 (37)	12.8 (25)	10.3 (25)



See appendix for the market capitalization breakpoints.

Characteristics

	Portfolio	Russell 3000
Number of Holdings	2,629	3,008
Weighted Avg. Market Cap. (\$B)	153.4	164.7
Median Market Cap. (\$B)	3.0	1.8
Price To Earnings	31.8	22.8
Price To Book	5.7	4.6
Price To Sales	4.1	4.0
Return on Equity (%)	20.9	19.4
Yield (%)	1.7	1.8
Beta (holdings; domestic)	1.1	1.0

Top Holdings

APPLE	3.6%
AMAZON.COM	2.5%
MICROSOFT	2.2%
FACEBOOK CLASS A	1.3%
ALPHABET 'C'	1.3%
ALPHABET A	1.2%
JP MORGAN CHASE & CO.	1.0%
EXXON MOBIL	1.0%
BERKSHIRE HATHAWAY 'B'	1.0%
MERCK & COMPANY	0.9%

Best Performers

	Return %
SOLID BIOSCIENCES (SLDB)	375.1%
INTELSAT (I)	343.1%
CALIFORNIA RESOURCES (CRC)	165.0%
TRANSENTERIX (TRXC)	156.5%
PENN VA. (PVAC)	142.3%
REGENXBIO (RGNX)	140.4%
MADRIGAL PHARMACEUTICALS (MDGL)	139.5%
TRAVELZOO (TZOO)	135.1%
VERASTEM (VSTM)	130.9%
ENERGY XXI GULF COAST (EGC)	130.2%

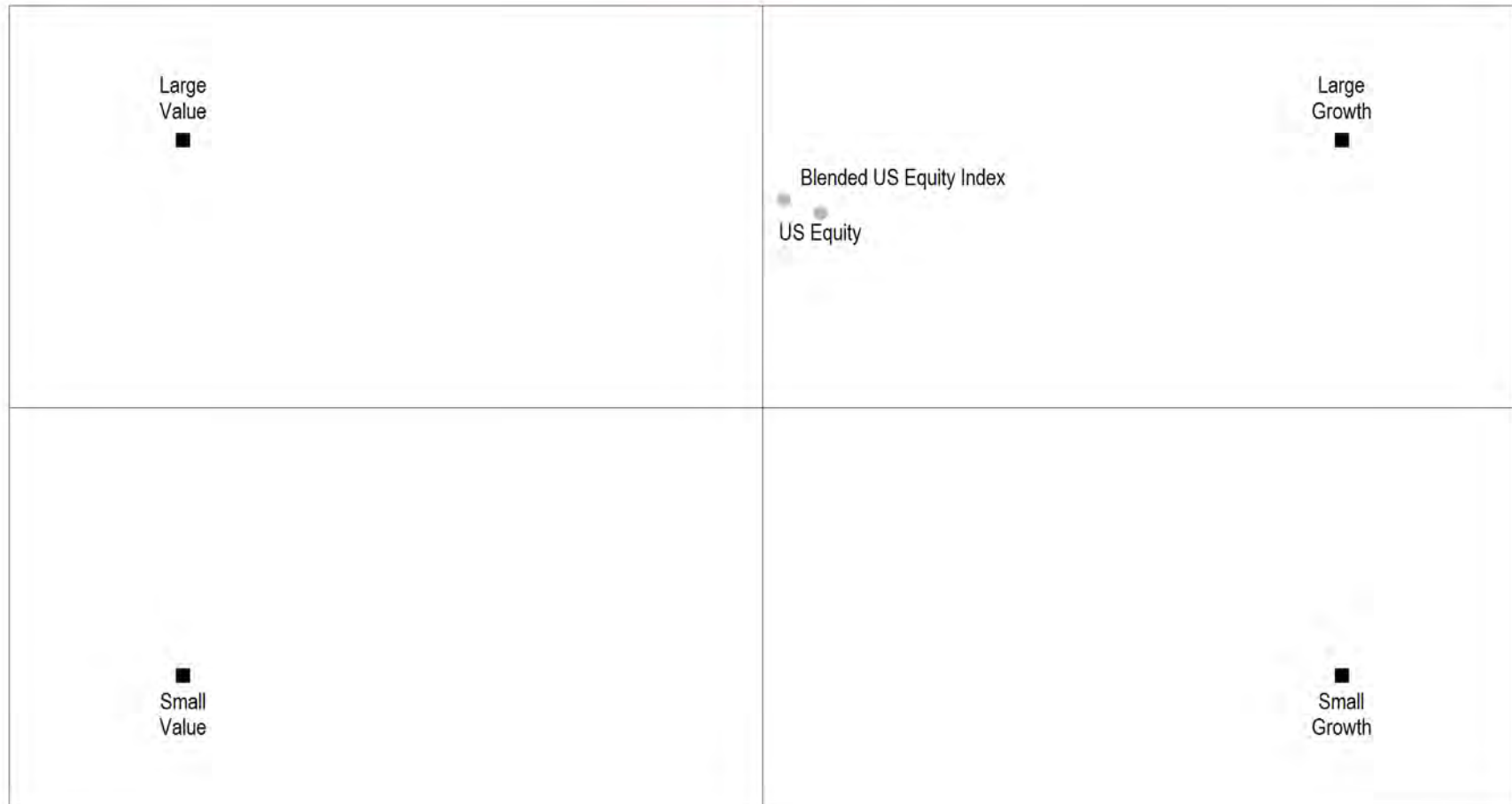
Worst Performers

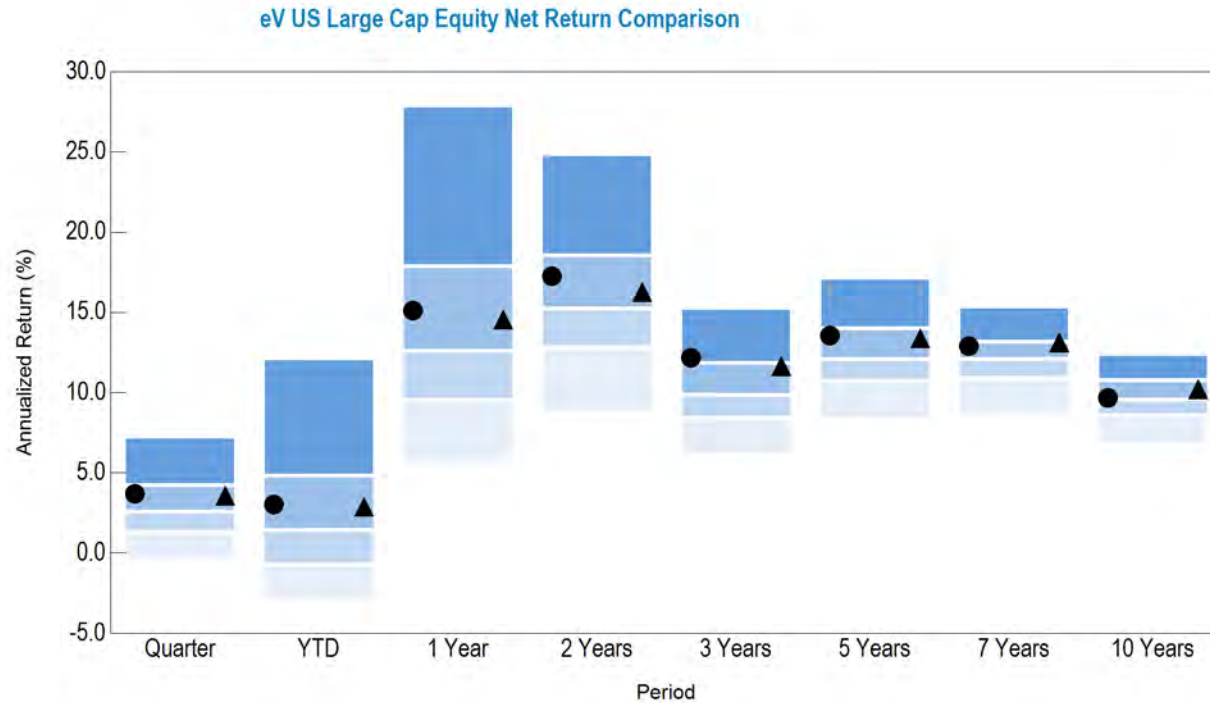
	Return %
ARSANIS (ASNS)	-84.1%
FLEX PHARMA (FLKS)	-81.2%
AQUINOX PHARMACEUTICALS (AQXP)	-81.2%
MENLO THERAPEUTICS (MNLO)	-78.4%
CELLEX THERAPEUTICS (CLDX)	-78.4%
PAIN THERAPEUTICS (PTIE)	-70.9%
WESTMORELAND COAL (WLBA)	-65.9%
JOUNCE THERAPEUTICS (JNCE)	-65.7%
VTV THERAPEUTICS CL A (VTVT)	-62.2%
PROTHENA (PRTA)	-60.3%

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	0.0%	0.0%	0.0%	0.0%	14.4%	14.5%	5.4%	5.5%			
Materials	0.0%	0.0%	0.0%	0.0%	1.6%	2.3%	3.3%	3.1%			
Industrials	0.0%	0.0%	0.0%	0.0%	-1.7%	-2.1%	11.5%	10.9%			
Consumer Discretionary	-0.1%	-0.1%	0.0%	0.0%	7.6%	8.2%	12.0%	12.6%			
Consumer Staples	0.1%	0.1%	0.0%	0.0%	-0.2%	-1.5%	6.2%	6.6%			
Health Care	0.2%	0.2%	0.0%	0.0%	5.7%	4.4%	13.4%	13.6%			
Financials	0.2%	0.2%	0.1%	0.0%	-1.3%	-2.4%	14.4%	15.2%			
Information Technology	0.0%	-0.1%	0.0%	0.0%	6.7%	6.9%	24.5%	24.0%			
Telecommunication Services	0.0%	0.0%	0.0%	0.0%	-0.6%	-0.5%	1.5%	1.8%			
Utilities	0.0%	0.0%	0.0%	0.0%	5.2%	4.5%	2.5%	2.9%			
Real Estate	0.0%	0.0%	0.0%	0.0%	8.2%	8.1%	3.7%	3.7%			
Cash	0.0%	0.0%	0.0%	0.0%	0.5%	--	0.9%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	3.6%	--	0.7%	0.0%			
<b>Portfolio</b>	<b>0.3%</b>	<b>=</b>	<b>0.4%</b>	<b>+</b>	<b>0.0%</b>	<b>+</b>	<b>0.0%</b>	<b>4.2%</b>	<b>3.9%</b>	<b>100.0%</b>	<b>100.0%</b>

U.S. Effective Style Map





	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>Return (Rank)</b>								
5th Percentile	7.2	12.1	27.9	24.9	15.3	17.2	15.3	12.4
25th Percentile	4.2	4.8	17.9	18.6	11.9	14.0	13.2	10.8
Median	2.6	1.4	12.6	15.3	9.9	12.1	12.1	9.6
75th Percentile	1.3	-0.7	9.5	12.9	8.4	10.8	10.9	8.6
95th Percentile	-0.4	-2.9	5.6	8.8	6.1	8.3	8.6	6.8
# of Portfolios	598	598	598	590	576	546	488	435
● Large Cap Equity	3.7 (32)	3.0 (37)	15.1 (36)	17.3 (35)	12.2 (23)	13.5 (31)	12.9 (32)	9.7 (49)
▲ Russell 1000	3.6 (34)	2.9 (38)	14.5 (40)	16.3 (42)	11.6 (27)	13.4 (32)	13.1 (27)	10.2 (36)



Characteristics

	Portfolio	Russell 1000
Number of Holdings	2,540	987
Weighted Avg. Market Cap. (\$B)	171.6	178.4
Median Market Cap. (\$B)	3.6	10.1
Price To Earnings	32.7	23.7
Price To Book	5.9	4.8
Price To Sales	4.2	4.3
Return on Equity (%)	21.6	20.5
Yield (%)	1.8	1.9
Beta (holdings; domestic)	1.0	1.0

Top Holdings

APPLE	4.1%
AMAZON.COM	2.8%
MICROSOFT	2.4%
FACEBOOK CLASS A	1.5%
ALPHABET 'C'	1.4%
ALPHABET A	1.3%
JP MORGAN CHASE & CO.	1.1%
EXXON MOBIL	1.1%
BERKSHIRE HATHAWAY 'B'	1.1%
MERCK & COMPANY	1.0%

Best Performers

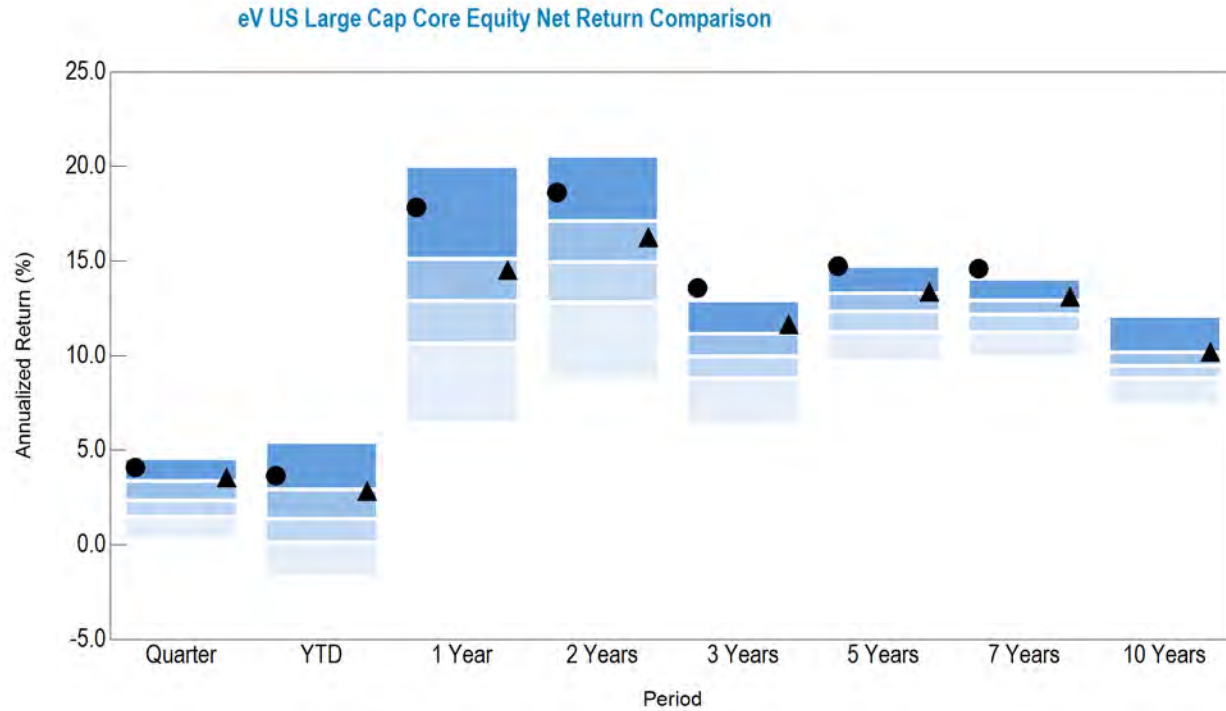
	Return %
SOLID BIOSCIENCES (SLDB)	375.1%
INTELSAT (I)	343.1%
CALIFORNIA RESOURCES (CRC)	165.0%
TRANSENERIX (TRXC)	156.5%
PENN VA. (PVAC)	142.3%
REGENXBIO (RGNX)	140.4%
MADRIGAL PHARMACEUTICALS (MDGL)	139.5%
TRAVELZOO (TZOO)	135.1%
VERASTEM (VSTM)	130.9%
ENERGY XXI GULF COAST (EGC)	130.2%

Worst Performers

	Return %
ARSANIS (ASNS)	-84.1%
FLEX PHARMA (FLKS)	-81.2%
AQUINOX PHARMACEUTICALS (AQXP)	-81.2%
MENLO THERAPEUTICS (MNLO)	-78.4%
CELLEX THERAPEUTICS (CLDX)	-78.4%
PAIN THERAPEUTICS (PTIE)	-70.9%
WESTMORELAND COAL (WLBA)	-65.9%
JOUNCE THERAPEUTICS (JNCE)	-65.7%
VTV THERAPEUTICS CL A (VTVT)	-62.2%
PROTHENA (PRTA)	-60.3%

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%	14.8%	14.1%	5.6%	5.6%			
Materials	0.0%	0.0%	0.0%	0.0%	1.7%	2.2%	3.1%	3.0%			
Industrials	0.0%	0.0%	0.0%	0.0%	-2.5%	-2.7%	10.9%	10.6%			
Consumer Discretionary	-0.1%	-0.1%	0.0%	0.0%	7.3%	8.1%	12.0%	12.7%			
Consumer Staples	0.1%	0.1%	0.0%	0.0%	-1.2%	-1.9%	6.8%	7.0%			
Health Care	0.1%	0.1%	0.0%	0.0%	4.4%	3.9%	13.1%	13.4%			
Financials	0.2%	0.1%	0.1%	0.0%	-2.2%	-3.1%	14.0%	15.0%			
Information Technology	0.0%	0.0%	0.0%	0.0%	6.8%	6.8%	25.3%	24.5%			
Telecommunication Services	0.0%	0.0%	0.0%	0.0%	-1.6%	-0.8%	1.6%	1.9%			
Utilities	0.0%	0.0%	0.0%	0.0%	4.0%	4.2%	2.5%	2.8%			
Real Estate	0.0%	0.0%	0.0%	0.0%	6.8%	7.3%	3.3%	3.5%			
Cash	0.0%	0.0%	0.0%	0.0%	0.5%	--	1.0%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	3.6%	--	0.8%	0.0%			
<b>Portfolio</b>	<b>0.1%</b>	<b>=</b>	<b>0.1%</b>	<b>+</b>	<b>0.0%</b>	<b>+</b>	<b>0.0%</b>	<b>3.7%</b>	<b>3.6%</b>	<b>100.0%</b>	<b>100.0%</b>



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	4.6	5.4	20.0	20.5	12.9	14.7	14.1	12.1
25th Percentile	3.4	3.0	15.1	17.1	11.2	13.3	12.9	10.2
Median	2.4	1.4	12.9	15.0	10.0	12.3	12.2	9.5
75th Percentile	1.5	0.1	10.7	12.8	8.8	11.3	11.3	8.8
95th Percentile	0.3	-1.7	6.4	8.7	6.4	9.7	9.9	7.5
# of Portfolios	187	187	187	184	178	166	148	125
● DE Shaw	4.1 (10)	3.7 (16)	17.8 (10)	18.6 (10)	13.6 (3)	14.7 (5)	14.6 (3)	-- (--)
▲ Russell 1000	3.6 (20)	2.9 (27)	14.5 (32)	16.3 (35)	11.6 (18)	13.4 (25)	13.1 (20)	10.2 (25)

Characteristics

	Portfolio	Russell 1000
Number of Holdings	986	987
Weighted Avg. Market Cap. (\$B)	178.4	178.4
Median Market Cap. (\$B)	10.1	10.1
Price To Earnings	33.1	23.7
Price To Book	5.9	4.8
Price To Sales	4.3	4.3
Return on Equity (%)	21.3	20.5
Yield (%)	1.9	1.9
Beta (holdings; domestic)	1.0	1.0

Top Holdings

APPLE	3.5%
MICROSOFT	2.9%
AMAZON.COM	2.7%
FACEBOOK CLASS A	1.8%
BERKSHIRE HATHAWAY 'B'	1.4%
JP MORGAN CHASE & CO.	1.4%
EXXON MOBIL	1.4%
ALPHABET 'C'	1.3%
ALPHABET A	1.3%
JOHNSON & JOHNSON	1.3%

Best Performers

	Return %
SAREPTA THERAPEUTICS (SRPT)	78.4%
WAYFAIR CL.A (W)	75.9%
CHESAPEAKE ENERGY (CHK)	73.5%
ENDO INTERNATIONAL (ENDP)	58.8%
PANDORA MEDIA (P)	56.7%
WHITING PETROLEUM (WLL)	55.8%
TWITTER (TWTR)	50.5%
ADVANCED MICRO DEVC. (AMD)	49.2%
OPKO HEALTH (OPK)	48.3%
EXACT SCIS. (EXAS)	48.3%

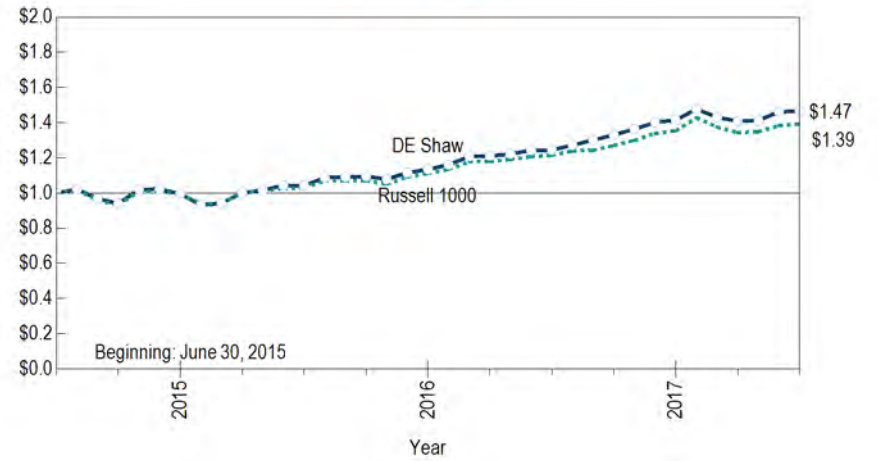
Worst Performers

	Return %
NEKTAR THERAPEUTICS (NKTR)	-54.0%
ACADIA PHARMACEUTICALS (ACAD)	-32.0%
FEDERATED INVRS.'B' (FII)	-29.4%
ALKERMES (ALKS)	-29.0%
COMMSCOPE HOLDING CO. (COMM)	-26.9%
AMERICAN AIRLINES GROUP (AAL)	-26.8%
PROASSURANCE (PRA)	-26.4%
ARCONIC (ARNC)	-25.9%
COPA HOLDINGS S A (CPA)	-25.9%
FIRST SOLAR (FSLR)	-25.8%

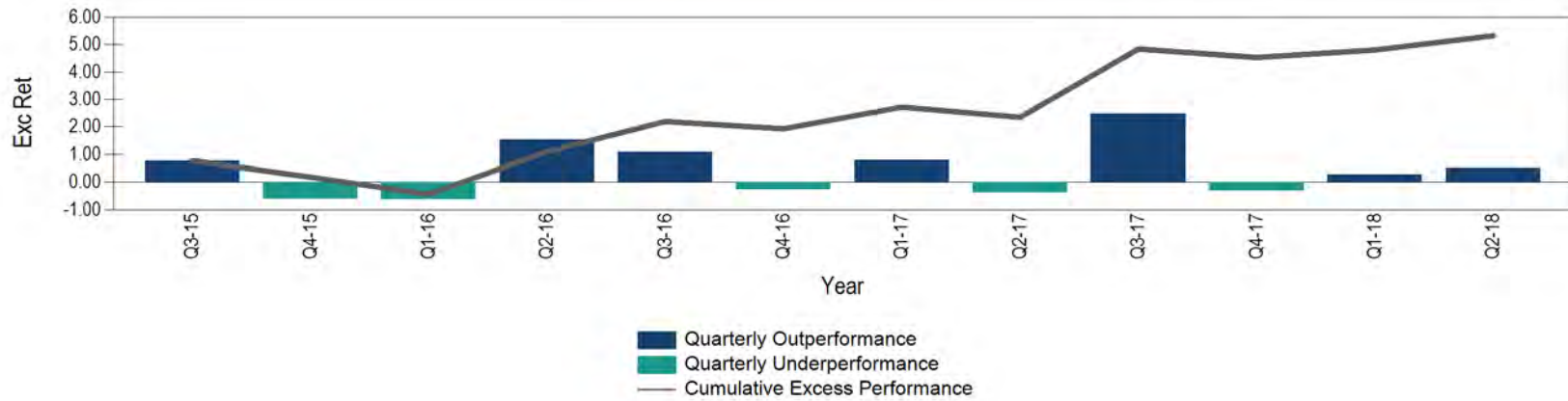
U.S. Effective Style Map

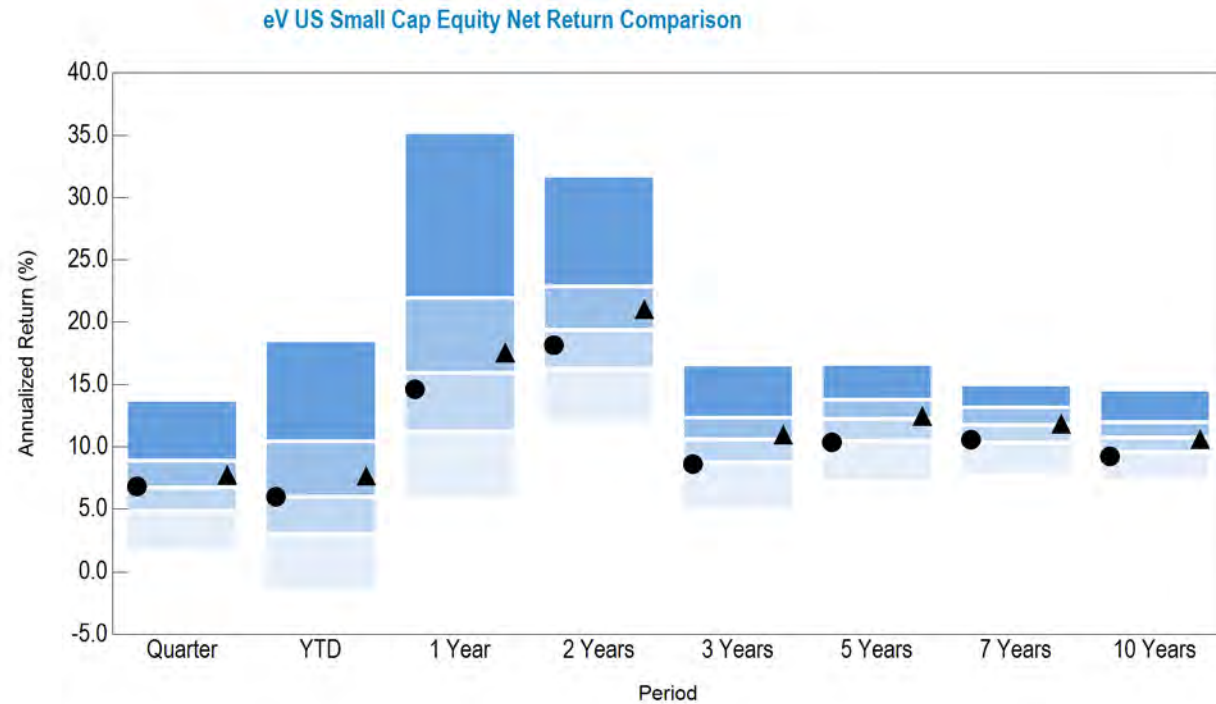


Growth of a Dollar



Quarterly and Cumulative Excess Performance





	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>Return (Rank)</b>								
5th Percentile	13.8	18.5	35.3	31.7	16.6	16.7	15.0	14.6
25th Percentile	8.9	10.5	22.0	22.9	12.4	13.8	13.2	12.0
Median	6.7	6.1	16.0	19.4	10.6	12.3	11.8	10.8
75th Percentile	4.9	3.0	11.3	16.3	8.8	10.5	10.4	9.6
95th Percentile	1.6	-1.5	5.8	12.0	4.9	7.2	7.8	7.3
# of Portfolios	410	410	408	402	391	368	342	304
● Small Cap Equity	6.8 (50)	6.0 (51)	14.6 (59)	18.2 (59)	8.6 (78)	10.4 (78)	10.6 (73)	9.2 (81)
▲ Russell 2000	7.8 (39)	7.7 (40)	17.6 (43)	21.0 (37)	11.0 (45)	12.5 (47)	11.8 (50)	10.6 (53)

**Characteristics**

	Portfolio	Russell 2000
Number of Holdings	377	2,021
Weighted Avg. Market Cap. (\$B)	2.3	2.2
Median Market Cap. (\$B)	1.3	0.9
Price To Earnings	23.9	17.4
Price To Book	3.6	3.0
Price To Sales	2.6	3.0
Return on Equity (%)	15.1	8.6
Yield (%)	1.2	1.1
Beta (holdings; domestic)	1.2	1.2

**Top Holdings**

FIBROGEN	1.0%
HAEMONETICS	1.0%
TEXAS ROADHOUSE	0.9%
INOGEN	0.9%
GEO GROUP	0.8%
INSPERITY	0.8%
GREEN DOT CLASS A	0.8%
ENANTA PHARMACEUTICALS	0.8%
BLUCORA	0.8%
COTIVITI HOLDINGS	0.8%

**Best Performers**

	Return %
TRAVELZOO (TZOO)	135.1%
CLEAN ENERGY FUELS (CLNE)	123.6%
J JILL (JILL)	111.3%
STAAR SURGICAL (STAA)	109.5%
EGAIN (EGAN)	89.9%
MEDIFAST (MED)	71.9%
ENOVA INTERNATIONAL (ENVA)	65.8%
TURNING POINT BRANDS (TPB)	64.3%
DRIVE SHACK (DS)	61.5%
W&T OFFSHORE (WTI)	61.4%

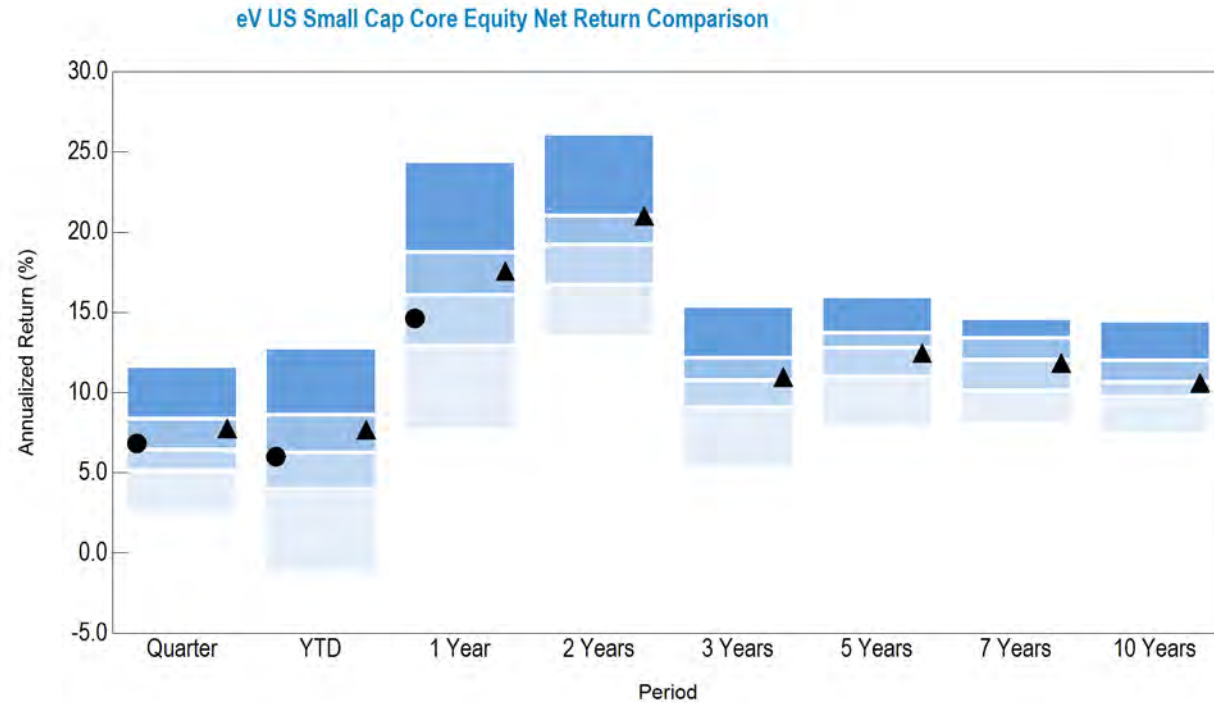
**Worst Performers**

	Return %
CASA SYSTEMS (CASA)	-44.3%
AVON PRODUCTS (AVP)	-43.0%
CLEARWATER PAPER (CLW)	-40.9%
BIGLARI HOLDINGS 'B' (BH)	-36.6%
SMART GLOBAL HOLDINGS (SGH)	-36.1%
TITAN MACHINERY (TITN)	-34.0%
HFF CLASS A (HF)	-30.9%
CONCERT PHARMACEUTICALS (CNCE)	-26.5%
SANGAMO THERAPEUTICS (SGMO)	-25.3%
FTS INTERNATIONAL (FTSI)	-22.6%

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	-0.4%	-0.4%	0.0%	0.0%	10.4%	21.4%	3.5%	3.4%			
Materials	-0.1%	-0.1%	0.0%	0.0%	1.3%	3.6%	5.0%	4.4%			
Industrials	-0.2%	-0.2%	0.0%	0.0%	2.1%	3.1%	15.9%	15.3%			
Consumer Discretionary	0.1%	0.1%	0.0%	0.0%	10.5%	9.5%	12.7%	12.2%			
Consumer Staples	0.2%	0.3%	0.0%	-0.1%	26.2%	12.1%	1.8%	2.4%			
Health Care	0.6%	0.7%	0.0%	0.0%	13.5%	9.3%	15.7%	16.6%			
Financials	0.1%	0.0%	0.0%	0.0%	4.3%	4.1%	17.1%	18.1%			
Information Technology	-0.4%	-0.3%	0.0%	0.0%	5.5%	7.5%	18.3%	17.4%			
Telecommunication Services	0.0%	0.0%	0.0%	0.0%	11.9%	11.1%	0.9%	0.6%			
Utilities	0.1%	0.2%	0.0%	0.0%	13.4%	8.4%	2.5%	3.2%			
Real Estate	0.0%	0.0%	0.0%	0.0%	13.8%	13.2%	6.2%	6.4%			
Cash	0.0%	0.0%	0.0%	0.0%	0.5%	--	0.4%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
<b>Portfolio</b>	<b>0.1%</b>	<b>=</b>	<b>0.4%</b>	<b>+</b>	<b>-0.1%</b>	<b>+</b>	<b>-0.2%</b>	<b>7.7%</b>	<b>7.6%</b>	<b>100.0%</b>	<b>100.0%</b>





	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>5th Percentile</b>	11.6	12.8	24.4	26.1	15.4	16.0	14.6	14.5
<b>25th Percentile</b>	8.4	8.6	18.8	21.1	12.2	13.8	13.4	12.0
<b>Median</b>	6.5	6.3	16.1	19.3	10.8	12.8	12.1	10.7
<b>75th Percentile</b>	5.2	4.0	12.9	16.8	9.1	11.0	10.2	9.8
<b>95th Percentile</b>	2.4	-1.2	7.7	13.5	5.3	7.8	8.1	7.5
<b># of Portfolios</b>	107	107	105	103	103	98	87	72
<b>● QMA US Small Cap</b>	6.8 (46)	6.0 (52)	14.6 (65)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
<b>▲ Russell 2000</b>	7.8 (35)	7.7 (38)	17.6 (36)	21.0 (26)	11.0 (47)	12.5 (57)	11.8 (55)	10.6 (52)

Characteristics

	Portfolio	Russell 2000
Number of Holdings	377	2,021
Weighted Avg. Market Cap. (\$B)	2.3	2.2
Median Market Cap. (\$B)	1.3	0.9
Price To Earnings	23.9	17.4
Price To Book	3.6	3.0
Price To Sales	2.6	3.0
Return on Equity (%)	15.1	8.6
Yield (%)	1.2	1.1
Beta (holdings; domestic)	1.2	1.2

Top Holdings

FIBROGEN	1.0%
HAEMONETICS	1.0%
TEXAS ROADHOUSE	0.9%
INOGEN	0.9%
GEO GROUP	0.8%
INSPERITY	0.8%
GREEN DOT CLASS A	0.8%
ENANTA PHARMACEUTICALS	0.8%
BLUCORA	0.8%
COTIVITI HOLDINGS	0.8%

Best Performers

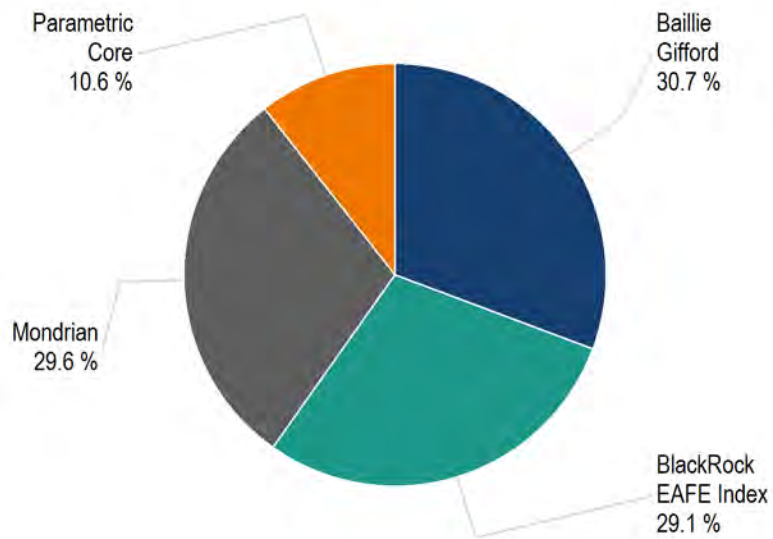
	Return %
TRAVELZOO (TZOO)	135.1%
CLEAN ENERGY FUELS (CLNE)	123.6%
J JILL (JILL)	111.3%
STAAR SURGICAL (STAA)	109.5%
EGAIN (EGAN)	89.9%
MEDIFAST (MED)	71.9%
ENOVA INTERNATIONAL (ENVA)	65.8%
TURNING POINT BRANDS (TPB)	64.3%
DRIVE SHACK (DS)	61.5%
W&T OFFSHORE (WTI)	61.4%

Worst Performers

	Return %
CASA SYSTEMS (CASA)	-44.3%
AVON PRODUCTS (AVP)	-43.0%
CLEARWATER PAPER (CLW)	-40.9%
BIGLARI HOLDINGS 'B' (BH)	-36.6%
SMART GLOBAL HOLDINGS (SGH)	-36.1%
TITAN MACHINERY (TITN)	-34.0%
HFF CLASS A (HF)	-30.9%
CONCERT PHARMACEUTICALS (CNCE)	-26.5%
SANGAMO THERAPEUTICS (SGMO)	-25.3%
FTS INTERNATIONAL (FTSI)	-22.6%

**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	-0.4%	-0.4%	0.0%	0.0%	10.4%	21.4%	3.5%	3.4%			
Materials	-0.1%	-0.1%	0.0%	0.0%	1.3%	3.6%	5.0%	4.4%			
Industrials	-0.2%	-0.2%	0.0%	0.0%	2.1%	3.1%	15.9%	15.3%			
Consumer Discretionary	0.1%	0.1%	0.0%	0.0%	10.5%	9.5%	12.7%	12.2%			
Consumer Staples	0.2%	0.3%	0.0%	-0.1%	26.2%	12.1%	1.8%	2.4%			
Health Care	0.6%	0.7%	0.0%	0.0%	13.5%	9.3%	15.7%	16.6%			
Financials	0.1%	0.0%	0.0%	0.0%	4.3%	4.1%	17.1%	18.1%			
Information Technology	-0.4%	-0.3%	0.0%	0.0%	5.5%	7.5%	18.3%	17.4%			
Telecommunication Services	0.0%	0.0%	0.0%	0.0%	11.9%	11.1%	0.9%	0.6%			
Utilities	0.1%	0.2%	0.0%	0.0%	13.4%	8.4%	2.5%	3.2%			
Real Estate	0.0%	0.0%	0.0%	0.0%	13.8%	13.2%	6.2%	6.4%			
Cash	0.0%	0.0%	0.0%	0.0%	0.5%	--	0.4%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
<b>Portfolio</b>	<b>0.1%</b>	<b>=</b>	<b>0.4%</b>	<b>+</b>	<b>-0.1%</b>	<b>+</b>	<b>-0.2%</b>	<b>7.7%</b>	<b>7.6%</b>	<b>100.0%</b>	<b>100.0%</b>



	Actual \$	Actual %	Manager Contribution to Excess Return %
Baillie Gifford	\$255,036,354	30.7%	0.8%
BlackRock EAFE Index	\$241,931,578	29.1%	0.1%
Mondrian	\$245,977,329	29.6%	0.0%
Parametric Core	\$88,129,672	10.6%	-0.2%
Actual vs. Policy Weight Difference			-0.4%
<b>Total</b>	<b>\$831,074,932</b>	<b>100.0%</b>	<b>0.3%</b>

**Statistics Summary**

**3 Years**

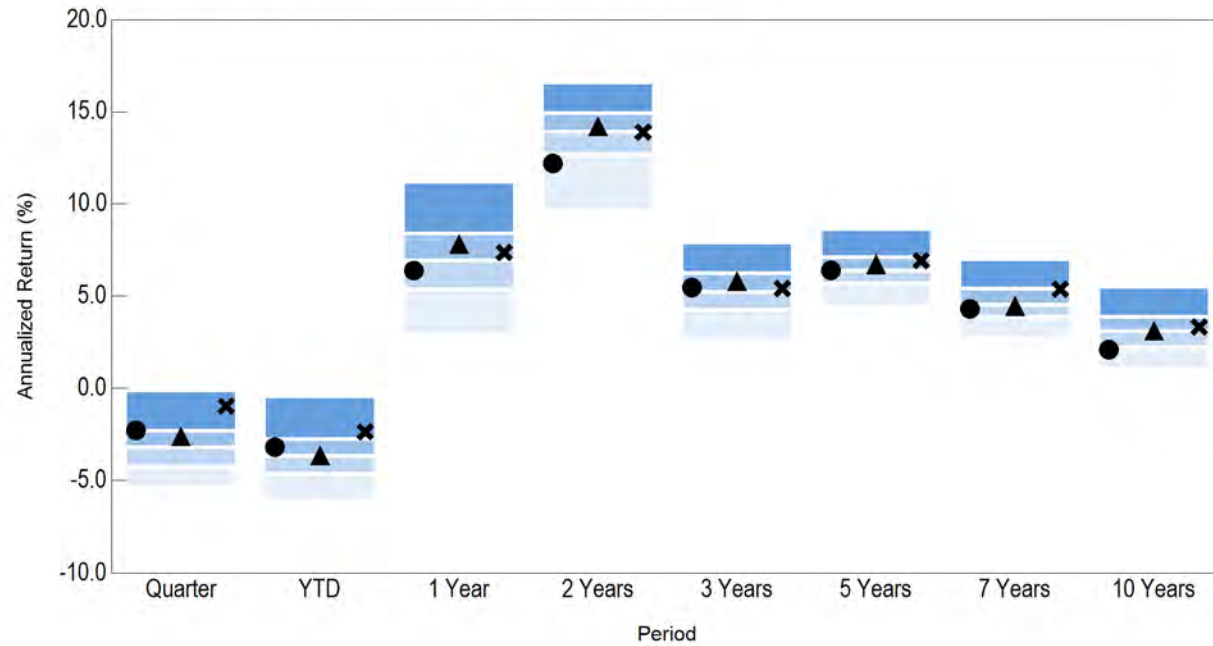
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	5.5%	12.0%	0.4	-0.2	1.7%
MSCI ACWI ex US IMI	5.8%	12.1%	0.4	--	0.0%
Developed Markets	5.7%	12.0%	0.4	0.1	2.2%
MSCI ACWI ex USA Gross	5.6%	12.2%	0.4	--	0.0%
Baillie Gifford	7.8%	13.3%	0.5	0.5	4.3%
MSCI ACWI ex US	5.6%	12.2%	0.4	--	0.0%
BlackRock EAFE Index	5.3%	12.1%	0.4	1.8	0.2%
MSCI EAFE	4.9%	12.1%	0.3	--	0.0%
Mondrian	3.8%	11.9%	0.3	-0.1	4.8%
MSCI ACWI ex USA Value Gross	4.1%	13.1%	0.3	--	0.0%
Emerging Markets	3.7%	14.7%	0.2	-0.6	3.9%
MSCI Emerging Markets Gross	6.0%	16.0%	0.3	--	0.0%

Statistics Summary

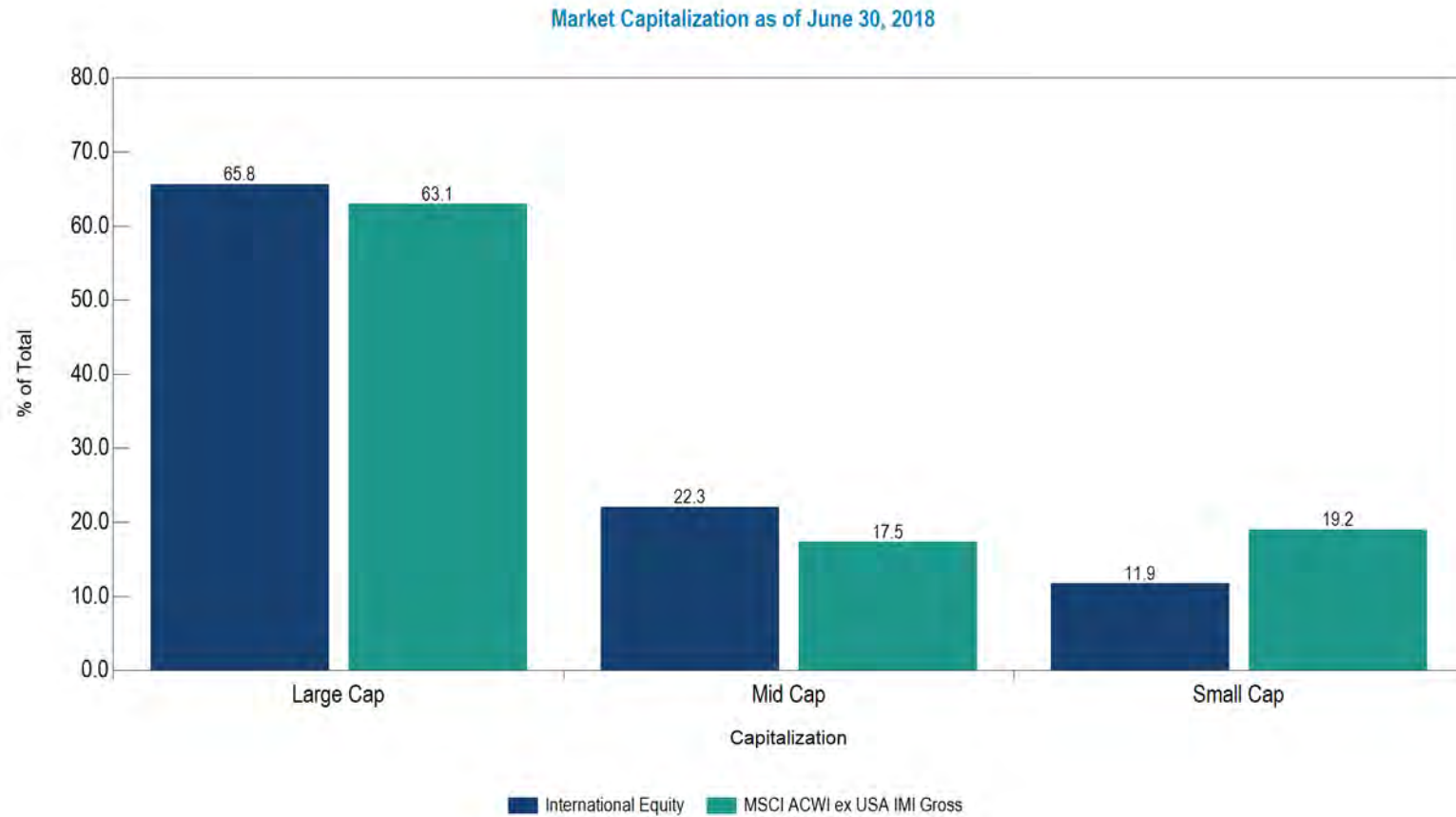
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	6.4%	11.4%	0.5	-0.2	1.6%
MSCI ACWI ex US IMI	6.7%	11.5%	0.5	--	0.0%
Developed Markets	6.8%	11.4%	0.6	0.2	2.0%
MSCI ACWI ex USA Gross	6.5%	11.7%	0.5	--	0.0%
Baillie Gifford	8.6%	12.4%	0.7	0.4	4.0%
MSCI ACWI ex US	6.9%	11.8%	0.6	--	0.0%
Mondrian	5.2%	11.4%	0.4	0.0	4.5%
MSCI ACWI ex USA Value Gross	5.3%	12.5%	0.4	--	0.0%
Emerging Markets	3.0%	13.6%	0.2	-0.6	3.9%
MSCI Emerging Markets Gross	5.4%	14.9%	0.3	--	0.0%

InvestorForce All DB ex-US Eq Net Return Comparison



	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>Return (Rank)</b>								
5th Percentile	-0.1	-0.4	11.2	16.6	7.9	8.6	7.0	5.5
25th Percentile	-2.3	-2.7	8.4	14.9	6.3	7.1	5.4	3.9
Median	-3.2	-3.6	7.0	13.9	5.3	6.4	4.6	3.1
75th Percentile	-4.2	-4.6	5.4	12.7	4.3	5.7	3.9	2.3
95th Percentile	-5.4	-6.1	3.0	9.7	2.7	4.5	2.8	1.0
# of Portfolios	411	407	405	394	387	347	290	227
● International Equity	-2.3 (25)	-3.2 (37)	6.4 (61)	12.2 (83)	5.5 (43)	6.4 (50)	4.3 (61)	2.1 (81)
▲ MSCI ACWI ex US IMI	-2.6 (33)	-3.6 (51)	7.8 (34)	14.2 (45)	5.8 (35)	6.7 (38)	4.5 (53)	3.1 (51)
✕ MSCI EAFE Gross	-1.0 (9)	-2.4 (21)	7.4 (40)	13.9 (51)	5.4 (45)	6.9 (31)	5.4 (26)	3.3 (43)



See appendix for the market capitalization breakpoints.



Characteristics

	Portfolio	MSCI ACWI ex USA IMI Gross
Number of Holdings	2,197	6,472
Weighted Avg. Market Cap. (\$B)	48.2	54.5
Median Market Cap. (\$B)	6.5	1.6
Price To Earnings	23.4	19.0
Price To Book	3.7	2.6
Price To Sales	3.1	2.4
Return on Equity (%)	17.8	15.3
Yield (%)	2.9	2.9
Beta (holdings; global)	1.0	1.0

Top Holdings

UNITED OVERSEAS BANK	1.3%
BP	1.1%
NASPERS	1.0%
SANOFI	1.0%
TESCO	0.9%
ALIBABA GROUP HLDG.SPN. ADR 1:1	0.9%
ENEL	0.9%
HARGREAVES LANSDOWN	0.8%
GLAXOSMITHKLINE	0.8%
SHISEIDO	0.8%

Best Performers

	Return %
ALTICE EUROPE (H:ATC)	160.7%
CAPITA (UKIR:CPI)	71.2%
INDAH KIAT PULP & PAPER (ID:IKP)	62.5%
UNI-PRESIDENT CHINA HDG. (K:UNIP)	51.5%
GS ENGR. & CON. (KO:LCV)	48.6%
SJM HOLDINGS (K:SJMH)	45.2%
SES FDR (LX:SES)	43.3%
GZH.BYSH.PHMHD.CO. 'H' (K:GUP)	43.0%
BUKIT ASAM (ID:TBB)	42.3%
TEVA PHARM.INDS.ADR 1:1 (TEVA)	42.3%

Worst Performers

	Return %
FOLLI FOLLIE (G:DUTY)	-71.2%
MY EG SERVICES (L:MYEG)	-68.1%
STEINHOFF INTL.HOLDING (R:SNHJ)	-66.2%
UNITED COMPANY RUSAL (K:RUSA)	-56.8%
CTI.ELETR BRAS- ELETROBRAS SR.B PN (BR:EL6)	-51.4%
HOUSING DEV.&INFR. (IN:IHD)	-48.8%
VIA VAREJO UNITS (BR:VVU)	-46.9%
PETKIM PETROKIMYA HLDG. (TK:PET)	-45.8%
OSRAM LICHT (D:OSR)	-44.5%
ULTRAPAR PARTICIPOES ON (BR:U3G)	-44.0%

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%	0.0%	-0.1%	0.0%	7.2%	7.7%	5.5%	6.2%			
Materials	0.1%	0.1%	-0.1%	0.1%	0.0%	-0.8%	5.9%	8.4%			
Industrials	-0.1%	-0.1%	0.0%	0.0%	-3.7%	-2.9%	13.3%	12.9%			
Consumer Discretionary	-0.2%	0.0%	0.0%	-0.2%	-3.6%	-3.0%	14.6%	11.9%			
Consumer Staples	0.0%	0.1%	0.0%	-0.1%	0.3%	-0.4%	10.5%	9.0%			
Health Care	-0.1%	-0.1%	0.0%	0.0%	0.0%	1.2%	8.6%	7.7%			
Financials	0.5%	0.3%	0.1%	0.1%	-5.6%	-6.9%	18.6%	21.4%			
Information Technology	0.4%	0.4%	0.0%	0.0%	0.9%	-2.6%	11.1%	11.8%			
Telecommunication Services	-0.1%	0.0%	0.0%	-0.1%	-6.2%	-5.6%	4.7%	3.5%			
Utilities	-0.1%	0.0%	0.0%	-0.1%	-2.7%	-1.4%	4.0%	3.0%			
Real Estate	0.1%	0.0%	0.0%	0.1%	-3.6%	-2.4%	2.2%	4.1%			
Cash	0.0%	0.0%	0.0%	0.0%	0.5%	--	1.0%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	-5.9%	--	0.0%	0.0%			
<b>Portfolio</b>	<b>0.4%</b>	<b>=</b>	<b>0.5%</b>	<b>+</b>	<b>0.0%</b>	<b>+</b>	<b>-0.2%</b>	<b>-2.0%</b>	<b>-2.4%</b>	<b>100.0%</b>	<b>100.0%</b>

Int'l Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

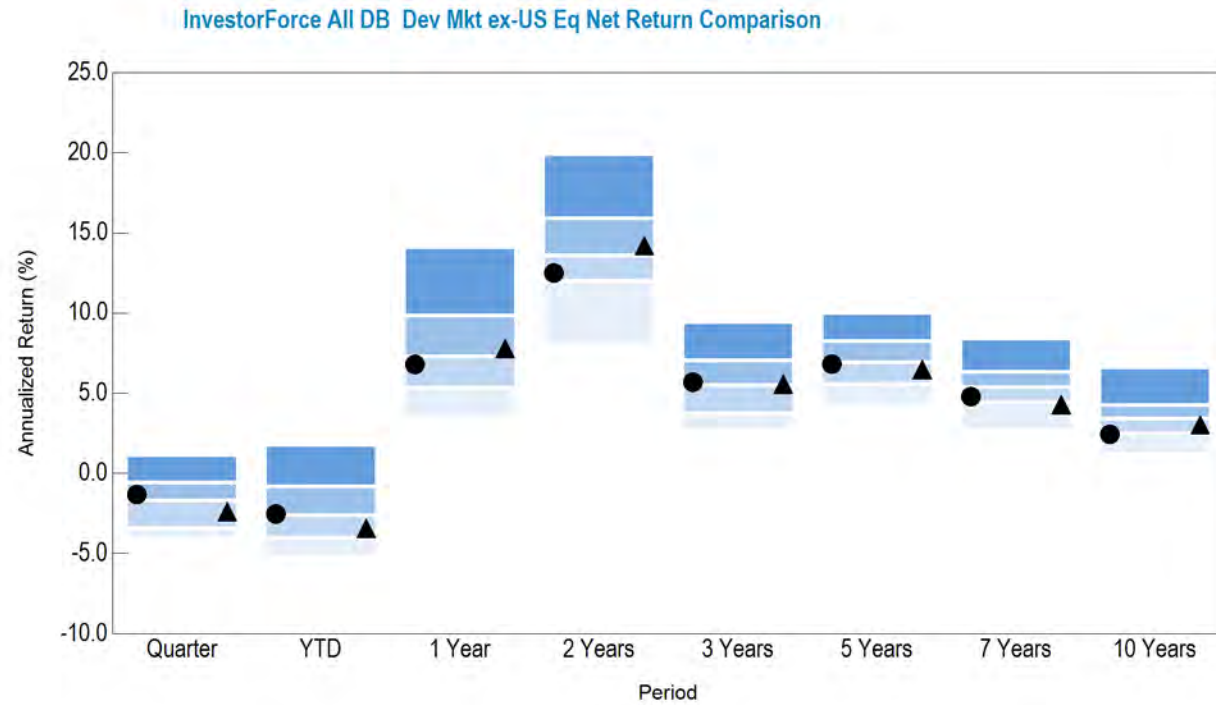
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	-10.4%	-8.4%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Belgium	-6.0%	-5.9%	0.3%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	-4.1%	-3.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Denmark	-4.2%	-4.5%	1.7%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Finland	2.2%	1.3%	0.6%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
France	-1.7%	0.1%	5.0%	6.8%	-0.1%	-0.1%	0.1%	0.0%	-0.1%
Germany	-3.6%	-3.7%	7.4%	6.3%	0.0%	0.0%	-0.1%	0.0%	-0.1%
Greece*	-5.2%	-3.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Hungary*	-12.8%	-14.4%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Ireland	0.0%	3.1%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Italy	-2.9%	-6.3%	2.1%	1.9%	0.1%	0.0%	0.0%	0.0%	0.1%
Luxembourg	12.1%	-2.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	4.0%	-0.7%	2.7%	2.4%	0.1%	0.0%	0.0%	0.0%	0.1%
Norway	3.0%	5.9%	0.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	-11.0%	-11.9%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Portugal	-15.4%	1.5%	0.5%	0.1%	0.0%	0.0%	0.0%	-0.1%	-0.1%
Russia*	-7.6%	-6.0%	1.2%	0.8%	-0.1%	0.0%	0.0%	0.0%	0.0%
Spain	-1.9%	-4.0%	2.7%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Sweden	-1.1%	-2.3%	3.2%	2.1%	0.0%	0.0%	-0.1%	0.0%	0.0%
Switzerland	-2.8%	-2.2%	4.8%	5.1%	0.0%	0.0%	0.0%	0.0%	0.0%
United Kingdom	5.6%	2.8%	13.5%	12.0%	0.4%	0.1%	-0.1%	0.0%	0.4%

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	3.4%	4.9%	3.8%	4.5%	-0.1%	0.0%	0.0%	0.0%	-0.1%
China*	-0.7%	-3.2%	4.2%	7.2%	0.2%	0.2%	0.0%	-0.1%	0.3%
Hong Kong	-2.4%	-1.7%	4.0%	2.3%	0.0%	-0.1%	0.0%	0.0%	-0.1%
India*	0.1%	-2.0%	2.9%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Indonesia*	-14.2%	-12.0%	0.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	-2.0%	-3.0%	16.1%	17.6%	0.2%	0.0%	0.1%	0.0%	0.2%
Korea*	-8.0%	-9.4%	2.7%	3.8%	0.0%	0.1%	0.1%	0.0%	0.2%
Malaysia*	-9.1%	-10.7%	1.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	5.8%	1.6%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Pakistan*	-13.6%	-14.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Philippines*	-12.6%	-11.8%	0.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	-5.5%	-8.0%	3.0%	1.0%	0.0%	-0.1%	-0.1%	0.0%	-0.1%
Taiwan*	-8.6%	-5.3%	2.7%	3.1%	-0.2%	0.0%	0.1%	0.0%	-0.1%
Thailand*	-9.2%	-15.4%	0.6%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Americas</b>									
Brazil*	-21.3%	-26.2%	2.3%	1.8%	0.0%	-0.1%	0.0%	0.0%	0.0%
Canada	7.4%	5.0%	0.9%	6.1%	0.1%	-0.3%	0.1%	-0.1%	-0.1%
Chile*	-11.2%	-11.2%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Colombia*	3.4%	5.5%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Mexico*	-1.9%	-3.9%	1.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	-0.7%	-4.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
United States	-0.7%	3.4%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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*	-7.0%	-7.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Israel	13.8%	6.4%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Kuwait**	2.4%	-0.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	4.7%	3.7%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	-10.0%	-6.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	-5.6%	-12.2%	2.3%	1.7%	0.1%	0.0%	-0.1%	0.0%	0.1%
Turkey*	-25.6%	-25.4%	0.5%	0.3%	0.0%	0.0%	0.0%	0.0%	-0.1%
United Arab Emirates*	1.7%	-3.4%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Totals</b>									
Americas	-8.2%	-2.4%	6.1%	9.2%	-0.5%	0.0%	0.1%	0.2%	-0.2%
Europe	-0.1%	-1.0%	46.8%	44.2%	0.4%	0.1%	-0.2%	0.0%	0.3%
Asia/Pacific	-2.9%	-3.4%	42.4%	44.0%	0.1%	0.0%	0.1%	0.0%	0.3%
Other	-6.2%	-9.2%	3.8%	2.7%	0.1%	0.0%	-0.1%	0.0%	0.0%
Cash	0.5%	--	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>-2.0%</b>	<b>-2.4%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.2%</b>	<b>0.1%</b>	<b>-0.1%</b>	<b>0.2%</b>	<b>0.4%</b>
<b>Totals</b>									
Developed	-0.4%	-0.6%	73.8%	75.0%	0.2%	0.0%	0.0%	0.0%	0.2%
Emerging*	-7.0%	-7.8%	25.0%	25.0%	0.3%	0.0%	-0.1%	0.0%	0.2%
Frontier**	0.6%	--	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.5%	--	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>Return (Rank)</b>								
5th Percentile	1.1	1.8	14.1	19.9	9.4	10.0	8.4	6.6
25th Percentile	-0.6	-0.8	9.9	15.9	7.1	8.3	6.3	4.3
Median	-1.7	-2.6	7.3	13.6	5.5	6.9	5.4	3.4
75th Percentile	-3.4	-4.0	5.3	12.0	3.8	5.6	4.4	2.5
95th Percentile	-4.0	-5.2	3.4	8.0	2.7	4.3	2.7	1.2
# of Portfolios	149	148	146	139	138	118	92	70
● Developed Markets	-1.3 (39)	-2.6 (49)	6.8 (58)	12.5 (62)	5.7 (44)	6.8 (54)	4.8 (69)	2.4 (79)
▲ MSCI ACWI ex USA Gross	-2.4 (67)	-3.4 (63)	7.8 (42)	14.2 (43)	5.6 (50)	6.5 (61)	4.3 (76)	3.0 (65)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	1,049	2,154
Weighted Avg. Market Cap. (\$B)	51.2	63.2
Median Market Cap. (\$B)	11.8	7.9
Price To Earnings	23.5	19.0
Price To Book	3.7	2.5
Price To Sales	3.1	2.4
Return on Equity (%)	17.8	15.4
Yield (%)	2.9	3.0
Beta (holdings; global)	1.0	1.0

Top Holdings

UNITED OVERSEAS BANK	1.5%
BP	1.2%
SANOFI	1.1%
NASPERS	1.0%
TESCO	1.0%
ENEL	1.0%
HARGREAVES LANSDOWN	0.9%
GLAXOSMITHKLINE	0.9%
SHISEIDO	0.9%
ALIBABA GROUP HLDG.SPN. ADR 1:1	0.9%

Best Performers

	Return %
ALTICE EUROPE (H:ATC)	160.7%
CAPITA (UKIR:CPI)	71.2%
SJM HOLDINGS (K:SJMH)	45.2%
SES FDR (LX:SES)	43.3%
TEVA PHARM.INDS.ADR 1:1 (TEVA)	42.3%
AKER BP (N:AKEP)	37.7%
WIRECARD (D:WDI)	36.9%
CHINA BLUE CHEMICAL 'H' (K:CHBC)	36.1%
START TODAY (J:STRT)	35.6%
UBISOFT ENTM. (F:UBI)	30.2%

Worst Performers

	Return %
OSRAM LICHT (D:OSR)	-44.5%
KROTON EDUCACIONAL ON (BR:KRO)	-40.2%
VENTURE CORPORATION (T:VEMA)	-37.2%
ITAUSA INVESTIMENTOS ITAU PN (BR:IS4)	-36.7%
KINGSTON FINANCIAL GROUP (K:STIM)	-36.2%
SURUGA BANK (J:SURB)	-35.2%
PANDORA (DK:PND)	-34.8%
HYPERMARCAS ON (BR:HYP)	-33.7%
ITAU UNIBANCO BANCO HLDG.ADR 1:1 (ITUB)	-33.4%
METRO (OTC) (MTTWF)	-31.8%

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	0.0%	0.2%	-0.2%	0.0%	10.1%	7.5%	5.0%	6.7%			
Materials	0.2%	0.2%	-0.1%	0.0%	1.8%	-0.3%	5.2%	8.0%			
Industrials	-0.2%	-0.1%	0.0%	-0.1%	-3.0%	-2.5%	13.8%	11.8%			
Consumer Discretionary	-0.2%	0.0%	0.0%	-0.2%	-3.2%	-3.0%	15.3%	11.3%			
Consumer Staples	0.1%	0.2%	0.0%	-0.1%	1.1%	-0.4%	10.6%	9.4%			
Health Care	-0.1%	-0.1%	0.0%	0.0%	0.6%	1.6%	8.9%	7.7%			
Financials	0.7%	0.4%	0.2%	0.1%	-5.3%	-7.0%	18.9%	23.2%			
Information Technology	0.5%	0.6%	0.0%	0.0%	1.5%	-2.8%	11.6%	11.8%			
Telecommunication Services	0.0%	0.0%	0.0%	0.0%	-4.7%	-5.8%	4.2%	3.9%			
Utilities	0.0%	0.0%	0.0%	0.0%	-1.4%	-1.1%	3.7%	3.0%			
Real Estate	0.1%	0.1%	0.0%	0.0%	-1.1%	-2.6%	1.9%	3.1%			
Cash	0.0%	0.0%	0.0%	0.0%	0.5%	--	1.1%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
<b>Portfolio</b>	<b>1.1%</b>	<b>=</b>	<b>1.5%</b>	<b>+</b>	<b>0.0%</b>	<b>+</b>	<b>-0.3%</b>	<b>-1.2%</b>	<b>-2.4%</b>	<b>100.0%</b>	<b>100.0%</b>



Developed Markets Performance Attribution vs. MSCI ACWI ex USA Gross

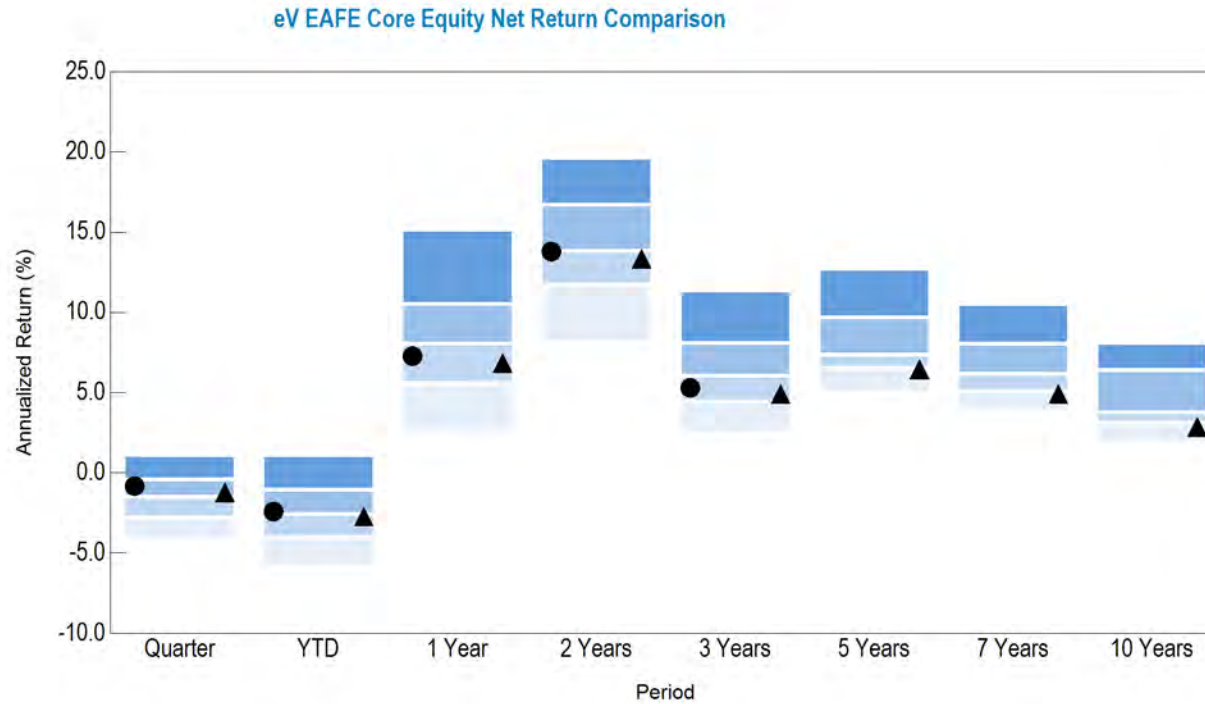
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	-10.4%	-10.3%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Belgium	-6.0%	-5.9%	0.4%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	--	-3.1%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Denmark	-4.2%	-6.9%	1.9%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Finland	2.2%	2.2%	0.7%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
France	-1.7%	0.4%	5.6%	7.5%	-0.2%	-0.1%	0.1%	0.0%	-0.1%
Germany	-3.6%	-3.6%	8.3%	6.6%	0.0%	0.0%	-0.1%	0.0%	-0.1%
Greece*	--	-2.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	-14.4%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	0.0%	1.9%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Italy	-2.9%	-6.8%	2.4%	1.7%	0.1%	0.0%	0.0%	0.0%	0.0%
Luxembourg	13.1%	-2.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	4.0%	-0.3%	3.0%	2.5%	0.1%	0.0%	0.0%	0.0%	0.1%
Norway	3.0%	3.0%	0.2%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	--	-11.6%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	-15.4%	2.3%	0.5%	0.1%	0.0%	0.0%	0.0%	-0.1%	-0.1%
Russia*	-6.4%	-5.7%	0.6%	0.9%	-0.1%	0.0%	0.1%	0.0%	0.0%
Spain	-1.9%	-4.1%	3.1%	2.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Sweden	-1.1%	-3.3%	3.6%	1.8%	0.0%	0.0%	-0.1%	0.0%	0.0%
Switzerland	-2.8%	-2.2%	5.3%	5.4%	0.0%	0.0%	0.0%	0.0%	0.0%
United Kingdom	5.7%	2.9%	15.1%	11.9%	0.3%	0.2%	-0.2%	0.1%	0.4%

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	3.4%	5.3%	4.3%	4.5%	-0.1%	0.0%	0.0%	0.0%	-0.1%
China*	-0.1%	-3.2%	3.9%	7.6%	0.3%	0.2%	0.0%	-0.1%	0.3%
Hong Kong	-2.9%	-1.3%	3.7%	2.5%	0.0%	0.0%	0.0%	0.0%	-0.1%
India*	1.4%	-0.4%	2.4%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Indonesia*	-22.0%	-12.2%	0.1%	0.5%	-0.1%	0.0%	0.0%	0.0%	0.0%
Japan	-2.0%	-3.0%	18.1%	16.8%	0.2%	0.0%	-0.1%	0.0%	0.1%
Korea*	-7.8%	-9.3%	2.2%	3.8%	0.0%	0.1%	0.1%	0.0%	0.2%
Malaysia*	-8.7%	-11.6%	0.8%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	5.8%	5.8%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Pakistan*	--	-20.5%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	-14.2%	-11.1%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	-5.4%	-7.2%	3.3%	0.9%	0.0%	-0.1%	-0.1%	0.0%	-0.2%
Taiwan*	-10.6%	-6.0%	2.2%	2.9%	-0.2%	0.0%	0.1%	0.1%	0.0%
Thailand*	-8.1%	-14.9%	0.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Americas</b>									
Brazil*	-19.0%	-26.5%	1.7%	1.9%	0.1%	0.0%	0.1%	0.0%	0.2%
Canada	7.4%	4.8%	1.0%	6.1%	0.1%	-0.2%	0.1%	-0.1%	-0.1%
Chile*	--	-10.8%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	6.8%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	3.1%	-3.4%	0.4%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%
Peru*	1.0%	-3.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
United States	0.4%	3.4%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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*	--	-7.5%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	13.8%	10.8%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	6.7%	4.4%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	-10.0%	-6.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	-1.0%	-11.3%	1.7%	1.7%	0.2%	0.0%	0.0%	0.0%	0.2%
Turkey*	-29.5%	-25.9%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
United Arab Emirates*	5.6%	-3.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Totals</b>									
Americas	-5.8%	-2.8%	4.1%	9.3%	-0.2%	0.0%	0.2%	0.1%	0.1%
Europe	0.1%	-1.1%	51.0%	44.8%	0.6%	0.1%	-0.4%	0.1%	0.4%
Asia/Pacific	-2.4%	-3.2%	41.5%	43.3%	0.3%	0.0%	0.1%	0.0%	0.4%
Other	-1.8%	-8.7%	2.3%	2.6%	0.2%	0.0%	0.0%	0.0%	0.2%
Cash	0.5%	--	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>-1.2%</b>	<b>-2.4%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.9%</b>	<b>0.2%</b>	<b>-0.1%</b>	<b>0.2%</b>	<b>1.1%</b>
<b>Totals</b>									
Developed	-0.4%	-0.5%	81.8%	74.5%	0.3%	0.1%	-0.5%	0.0%	-0.1%
Emerging*	-5.4%	-7.7%	17.0%	25.5%	0.6%	0.5%	0.4%	-0.2%	1.2%
Frontier**	-10.0%	--	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.5%	--	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
<b>5th Percentile</b>	1.1	1.1	15.1	19.6	11.3	12.7	10.5	8.1
<b>25th Percentile</b>	-0.4	-1.0	10.5	16.7	8.1	9.7	8.1	6.4
<b>Median</b>	-1.5	-2.6	8.1	13.9	6.1	7.4	6.2	3.8
<b>75th Percentile</b>	-2.8	-4.0	5.6	11.8	4.5	6.6	5.1	3.1
<b>95th Percentile</b>	-4.2	-5.8	2.5	8.1	2.5	5.0	3.8	1.9
<b># of Portfolios</b>	137	137	136	134	127	109	94	81
<b>● BlackRock EAFE Index</b>	-0.8 (31)	-2.4 (48)	7.3 (61)	13.8 (52)	5.3 (61)	-- (--)	-- (--)	-- (--)
<b>▲ MSCI EAFE</b>	-1.2 (46)	-2.7 (55)	6.8 (65)	13.4 (58)	4.9 (66)	6.4 (77)	4.9 (80)	2.8 (86)

Characteristics

	Portfolio	MSCI EAFE
Number of Holdings	929	926
Weighted Avg. Market Cap. (\$B)	56.2	56.3
Median Market Cap. (\$B)	10.9	10.9
Price To Earnings	20.4	18.9
Price To Book	3.0	2.5
Price To Sales	2.5	2.3
Return on Equity (%)	15.9	14.4
Yield (%)	3.1	3.1
Beta (holdings: global)	1.0	1.0

Top Holdings

NESTLE 'R'	1.6%
HSBC HOLDINGS	1.3%
NOVARTIS 'R'	1.2%
ROYAL DUTCH SHELL A	1.1%
ROCHE HOLDING	1.1%
BP	1.1%
TOTAL	1.0%
TOYOTA MOTOR	1.0%
ROYAL DUTCH SHELL B	0.9%
BRITISH AMERICAN TOBACCO	0.8%

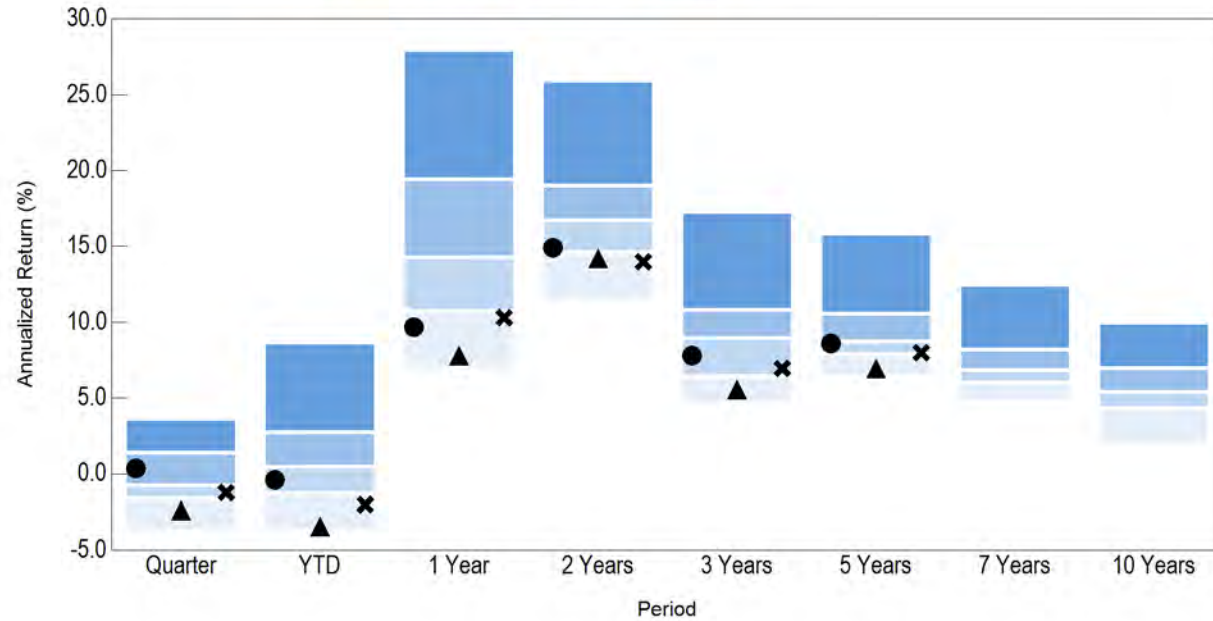
Best Performers

	Return %
ALTICE EUROPE (H:ATC)	160.7%
CAPITA (UKIR:CPI)	71.2%
SJM HOLDINGS (K:SJMH)	45.2%
SES FDR (LX:SES)	43.3%
TEVA PHARM.INDS.ADR 1:1 (TEVA)	42.3%
AKER BP (N:AKEP)	37.7%
WIRECARD (D:WDI)	36.9%
START TODAY (J:STRT)	35.6%
UBISOFT ENTM. (F:UBI)	30.2%
LUNDIN PETROLEUM (W:LUPE)	29.7%

Worst Performers

	Return %
OSRAM LIGHT (D:OSR)	-44.5%
VENTURE CORPORATION (T:VEMA)	-37.2%
KINGSTON FINANCIAL GROUP (K:STIM)	-36.2%
SURUGA BANK (J:SURB)	-35.2%
PANDORA (DK:PND)	-34.8%
METRO (OTC) (MTTWF)	-31.8%
MIXI (J:MIXI)	-31.5%
AMP (A:AMPX)	-31.3%
THK (J:THAK)	-30.7%
TELENET GROUP HOLDING (B:TNET)	-30.0%

eV ACWI ex-US Growth Equity Net Return Comparison



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.6	8.6	27.9	25.9	17.3	15.8	12.5	10.0
25th Percentile	1.4	2.8	19.5	19.1	10.8	10.6	8.2	7.0
Median	-0.7	0.5	14.3	16.7	9.0	8.8	6.9	5.4
75th Percentile	-1.6	-1.2	10.8	14.6	6.5	7.9	6.1	4.4
95th Percentile	-3.7	-3.7	6.9	11.5	4.7	6.5	4.8	2.0
# of Portfolios	69	69	69	69	66	54	50	43
● Baillie Gifford	0.4 (38)	-0.4 (70)	9.7 (80)	14.9 (68)	7.8 (65)	8.6 (55)	-- (--)	-- (--)
▲ MSCI ACWI ex US	-2.4 (85)	-3.4 (92)	7.8 (92)	14.2 (81)	5.6 (90)	6.9 (90)	-- (--)	-- (--)
✕ MSCI ACWI ex US Growth	-1.2 (63)	-2.0 (79)	10.3 (76)	14.0 (83)	6.9 (72)	8.0 (75)	-- (--)	-- (--)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	88	2,154
Weighted Avg. Market Cap. (\$B)	46.0	63.2
Median Market Cap. (\$B)	13.9	7.9
Price To Earnings	35.0	19.0
Price To Book	6.7	2.5
Price To Sales	4.8	2.4
Return on Equity (%)	25.5	15.4
Yield (%)	1.6	3.0
Beta (holdings; global)	1.1	1.0

Top Holdings

NASPERS	2.9%
ALIBABA GROUP HLDG.SPN. ADR 1:1	2.7%
HARGREAVES LANSDOWN	2.7%
TAIWAN SEMICON.SPN.ADR 1:5	2.6%
SHISEIDO	2.5%
COCHLEAR	2.3%
INDITEX	2.1%
RIGHTMOVE	2.1%
ZALANDO	2.1%
NOVOZYMES	1.9%

Best Performers

	Return %
KAKAKU.COM (J:KAKA)	29.0%
SHISEIDO (J:SHDO)	24.2%
BURBERRY GROUP (UKIR:BRBY)	21.6%
KINGSPAN GROUP (UKIR:KRX)	18.3%
SHOPIFY 'A' (NYS) (SHOP)	17.1%
INTERTEK GROUP (UKIR:ITRK)	16.5%
RIGHTMOVE (UKIR:RMV)	15.9%
HOMESERVE (UKIR:HSV)	14.6%
AUTO TRADER GROUP (UKIR:AUTO)	14.3%
JOHNSON MATTHEY (UKIR:JMAT)	13.7%

Worst Performers

	Return %
SURUGA BANK (J:SURB)	-35.2%
DISTRIBUIDORA INTNAC.DE ALIMENTACION (E:DIA)	-31.3%
RAIA DROGASIL ON (BR:DR3)	-23.1%
ASOS (UKIR:ASC)	-17.5%
JERONIMO MARTINS (P:JMT)	-17.1%
BRAMBLES (A:BXBX)	-14.3%
TAIWAN SEMICON.SPN.ADR 1:5 (TSM)	-13.4%
PUREGOLD PRICE CLUB (PH:PUR)	-13.1%
HON HAI PREC.GDR (UKIR:HHPD)	-12.7%
JUPITER FUND MANAGEMENT (UKIR:JUP)	-11.0%

**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	-0.3%	0.5%	-0.7%	-0.2%	12.6%	7.5%	0.4%	6.7%			
Materials	0.3%	0.5%	-0.1%	0.0%	5.4%	-0.1%	4.5%	8.0%			
Industrials	0.1%	0.2%	0.0%	-0.1%	-0.5%	-2.5%	15.0%	11.8%			
Consumer Discretionary	0.3%	0.5%	0.0%	-0.2%	0.6%	-3.1%	19.3%	11.4%			
Consumer Staples	-0.2%	0.0%	0.1%	-0.3%	-0.9%	-0.4%	15.2%	9.4%			
Health Care	0.0%	0.0%	0.0%	0.1%	2.3%	1.7%	7.2%	7.7%			
Financials	1.4%	1.2%	0.3%	-0.1%	-1.8%	-7.0%	16.9%	23.2%			
Information Technology	0.8%	0.6%	-0.1%	0.3%	2.8%	-2.8%	19.5%	11.8%			
Telecommunication Services	0.3%	0.1%	0.1%	0.1%	-3.7%	-5.8%	0.8%	3.9%			
Utilities	0.1%	--	0.0%	--	--	-1.1%	0.0%	3.0%			
Real Estate	0.1%	--	0.0%	--	--	-2.5%	0.0%	3.2%			
Cash	0.0%	0.0%	0.0%	0.0%	0.5%	--	1.2%	0.0%			
<b>Portfolio</b>	<b>3.0%</b>	<b>=</b>	<b>3.6%</b>	<b>+</b>	<b>-0.4%</b>	<b>+</b>	<b>-0.2%</b>	<b>0.6%</b>	<b>-2.4%</b>	<b>100.0%</b>	<b>100.0%</b>



**Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross**

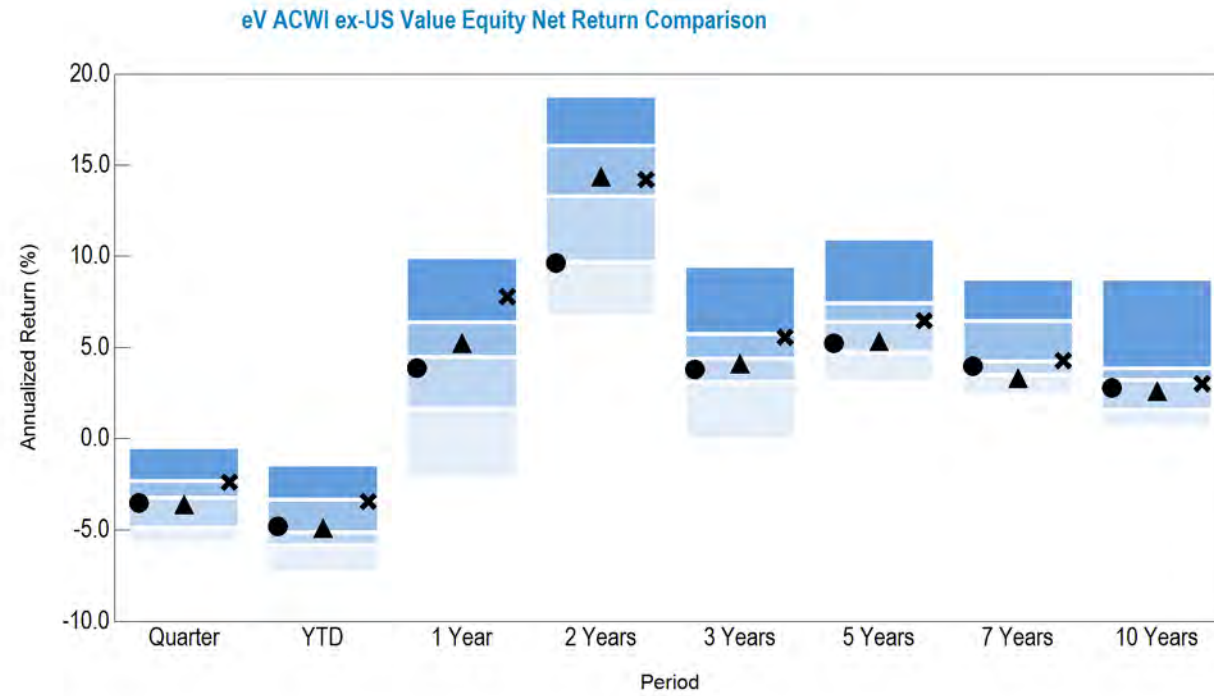
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>Europe</b>									
Austria	--	-10.3%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Belgium	--	-6.0%	0.0%	0.8%	--	0.0%	0.0%	--	0.1%
Czech Republic*	--	-3.1%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Denmark	-2.9%	-6.8%	2.9%	1.3%	0.1%	-0.1%	-0.1%	0.1%	0.0%
Finland	2.3%	2.2%	1.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
France	-4.4%	0.3%	1.6%	7.5%	-0.4%	-0.2%	0.3%	0.3%	0.0%
Germany	-1.0%	-3.4%	6.9%	6.6%	0.2%	0.0%	0.0%	0.0%	0.1%
Greece*	--	-2.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	-14.4%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	--	1.9%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Italy	--	-6.7%	0.0%	1.7%	--	0.1%	0.1%	--	0.2%
Netherlands	1.5%	-1.0%	1.5%	2.5%	0.1%	0.0%	0.0%	0.0%	0.1%
Norway	--	3.0%	0.0%	0.5%	--	0.0%	0.0%	--	0.0%
Poland*	--	-11.6%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	-17.1%	2.1%	1.4%	0.1%	0.0%	0.1%	-0.1%	-0.2%	-0.3%
Russia*	3.0%	-5.7%	0.3%	0.9%	0.0%	0.0%	0.1%	0.0%	0.1%
Spain	1.4%	-4.0%	2.4%	2.2%	0.1%	0.0%	0.0%	0.0%	0.1%
Sweden	-6.4%	-3.3%	4.9%	1.8%	-0.1%	0.0%	-0.2%	-0.1%	-0.3%
Switzerland	-1.3%	-2.2%	3.7%	5.4%	0.1%	0.0%	0.1%	0.0%	0.1%
United Kingdom	8.1%	2.9%	13.1%	11.9%	0.7%	0.1%	-0.1%	0.0%	0.7%

**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	3.0%	5.3%	5.6%	4.5%	-0.1%	0.0%	0.0%	0.0%	-0.1%
China*	2.6%	-3.2%	8.5%	7.6%	0.4%	-0.1%	0.0%	0.1%	0.4%
Hong Kong	4.4%	-1.3%	1.8%	2.5%	0.1%	0.0%	0.0%	0.0%	0.1%
India*	6.8%	-0.3%	3.7%	2.1%	0.1%	0.0%	0.0%	0.1%	0.2%
Indonesia*	--	-12.2%	0.0%	0.5%	--	0.1%	0.0%	--	0.1%
Japan	3.1%	-2.9%	17.0%	16.7%	1.0%	0.0%	0.0%	0.0%	1.0%
Korea*	-7.6%	-9.2%	2.9%	3.8%	0.0%	0.1%	0.1%	0.0%	0.2%
Malaysia*	-6.8%	-11.5%	1.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	--	5.7%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Pakistan*	--	-20.5%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	-13.1%	-11.1%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	-5.0%	-7.2%	3.9%	0.9%	0.0%	-0.2%	-0.1%	0.0%	-0.2%
Taiwan*	-13.2%	-6.0%	3.9%	3.0%	-0.3%	0.0%	0.1%	-0.1%	-0.3%
Thailand*	--	-14.9%	0.0%	0.6%	--	0.1%	0.0%	--	0.1%
<b>Americas</b>									
Brazil*	-23.1%	-26.5%	1.4%	1.9%	0.1%	0.1%	0.1%	0.0%	0.2%
Canada	13.8%	4.9%	2.0%	6.1%	0.5%	-0.2%	0.1%	-0.3%	0.1%
Chile*	--	-11.0%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	6.9%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	5.9%	-3.4%	0.6%	0.7%	0.1%	0.0%	0.0%	0.0%	0.1%
Peru*	--	-3.2%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
United States	2.2%	3.4%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%

**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*	--	-7.5%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	--	10.8%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Qatar*	--	4.4%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
South Africa*	0.5%	-11.3%	4.3%	1.7%	0.2%	0.0%	-0.4%	0.3%	0.2%
Turkey*	--	-25.9%	0.0%	0.2%	--	0.0%	0.0%	--	0.1%
United Arab Emirates*	--	-3.0%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
<b>Totals</b>									
Americas	0.8%	-2.8%	6.1%	9.2%	0.2%	0.0%	0.2%	-0.1%	0.4%
Europe	0.8%	-1.1%	39.7%	44.8%	1.0%	-0.1%	0.2%	-0.2%	0.9%
Asia/Pacific	0.3%	-3.2%	48.7%	43.3%	1.3%	-0.1%	0.1%	0.2%	1.5%
Other	0.5%	-8.7%	4.3%	2.6%	0.4%	0.0%	-0.4%	0.2%	0.2%
Cash	0.5%	--	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>0.6%</b>	<b>-2.4%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>2.8%</b>	<b>-0.2%</b>	<b>0.2%</b>	<b>0.2%</b>	<b>3.0%</b>
<b>Totals</b>									
Developed	1.8%	-0.5%	71.8%	74.5%	1.7%	-0.1%	0.1%	-0.1%	1.7%
Emerging*	-2.5%	-7.7%	27.1%	25.5%	1.2%	-0.1%	0.0%	0.1%	1.3%
Cash	0.5%	--	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-0.5	-1.4	9.9	18.8	9.5	11.0	8.8	8.7
25th Percentile	-2.3	-3.3	6.4	16.1	5.8	7.4	6.5	3.9
Median	-3.2	-5.1	4.5	13.3	4.4	6.4	4.3	3.2
75th Percentile	-4.9	-5.8	1.7	9.7	3.1	4.8	3.5	1.6
95th Percentile	-5.8	-7.3	-2.2	6.7	-0.1	3.2	2.4	0.7
# of Portfolios	37	37	37	37	33	28	20	16
● Mondrian	-3.5 (60)	-4.8 (46)	3.9 (60)	9.6 (76)	3.8 (59)	5.2 (66)	4.0 (58)	2.8 (63)
▲ MSCI ACWI ex USA Value Gross	-3.6 (62)	-4.9 (46)	5.3 (38)	14.4 (37)	4.1 (58)	5.3 (66)	3.3 (78)	2.6 (67)
✕ MSCI ACWI ex USA Gross	-2.4 (28)	-3.4 (27)	7.8 (16)	14.2 (39)	5.6 (32)	6.5 (48)	4.3 (50)	3.0 (58)

Characteristics

	Portfolio	MSCI ACWI ex USA Value Gross
Number of Holdings	129	1,267
Weighted Avg. Market Cap. (\$B)	51.6	57.6
Median Market Cap. (\$B)	18.6	7.0
Price To Earnings	15.1	13.9
Price To Book	1.8	1.5
Price To Sales	1.7	1.7
Return on Equity (%)	12.2	11.7
Yield (%)	4.1	4.1
Beta (holdings: global)	0.9	1.0

Top Holdings

TESCO	2.7%
SANOFI	2.6%
ENEL	2.6%
BP	2.5%
ENI	2.5%
UNITED OVERSEAS BANK	2.4%
TELIA COMPANY	2.2%
CK HUTCHISON HOLDINGS	2.2%
HONDA MOTOR	2.2%
IBERDROLA	2.2%

Best Performers

	Return %
CHINA BLUE CHEMICAL 'H' (K:CHBC)	36.1%
ERICSSON 'B' (W:SL@G)	22.5%
TESCO (UKIR:TSCO)	18.3%
SUZANO PAPEL E CELULOSE ON (BR:SUZ)	17.0%
LUPIN (IN:LUP)	16.9%
QATAR NATIONAL BANK (QA:QNB)	16.5%
BP (UKIR:BP.)	15.1%
ROYAL DUTCH SHELL B (UKIR:RDSB)	13.6%
INFOSYS (IN:INE)	12.7%
WOOD GROUP (JOHN) (UKIR:WG.)	12.6%

Worst Performers

	Return %
KROTON EDUCACIONAL ON (BR:KRO)	-40.2%
ITAUSA INVESTIMENTOS ITAU PN (BR:IS4)	-36.7%
HYPERMARCAS ON (BR:HYP)	-33.7%
ITAU UNIBANCO BANCO HLDG.ADR 1:1 (ITUB)	-33.4%
CIELO ON (BR:VIS)	-31.0%
TKI.GARANTI BKSJ. (TK:GAR)	-30.9%
CMPH.COCS. RODOVIARIAS ON (BR:CCR)	-28.9%
TURKIYE HALK BANKASI (TK:HLB)	-28.5%
KOREA ZINC (KO:KRZ)	-22.9%
BANK RAKYAT INDONESIA (ID:BRI)	-22.0%

**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	0.3%	0.4%	-0.1%	0.0%	9.9%	6.9%	9.1%	10.9%			
Materials	0.2%	0.3%	-0.2%	0.1%	2.9%	-1.0%	3.1%	7.4%			
Industrials	-0.6%	-0.3%	0.0%	-0.3%	-6.0%	-3.0%	11.9%	8.3%			
Consumer Discretionary	-0.7%	-0.2%	-0.2%	-0.4%	-9.0%	-6.7%	14.1%	9.6%			
Consumer Staples	0.5%	0.3%	0.2%	0.0%	9.7%	1.7%	5.6%	3.3%			
Health Care	-0.2%	-0.2%	0.3%	-0.4%	-1.8%	1.7%	9.4%	5.2%			
Financials	1.8%	0.3%	0.8%	0.7%	-6.7%	-7.5%	19.0%	36.1%			
Information Technology	0.3%	0.4%	-0.1%	0.1%	3.4%	-6.0%	8.5%	3.7%			
Telecommunication Services	-0.2%	0.0%	-0.1%	-0.1%	-5.9%	-5.5%	7.9%	6.2%			
Utilities	-0.1%	0.0%	0.1%	-0.2%	-1.6%	-1.3%	7.8%	4.8%			
Real Estate	0.1%	0.1%	0.0%	0.0%	-1.0%	-2.0%	2.5%	4.5%			
Cash	0.0%	0.0%	0.0%	0.0%	0.5%	--	1.1%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
<b>Portfolio</b>	<b>1.4%</b>	<b>=</b>	<b>1.1%</b>	<b>+</b>	<b>0.8%</b>	<b>+</b>	<b>-0.5%</b>	<b>-2.1%</b>	<b>-3.5%</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	--	-9.4%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Belgium	--	-7.7%	0.0%	0.5%	--	0.0%	0.0%	--	0.0%
Czech Republic*	--	-2.2%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Denmark	-3.4%	-14.6%	1.0%	0.3%	0.0%	-0.1%	0.0%	0.1%	0.0%
Finland	--	1.5%	0.0%	0.8%	--	0.0%	0.0%	--	0.0%
France	-5.0%	-2.9%	4.9%	7.3%	-0.2%	0.0%	0.1%	0.1%	0.0%
Germany	-5.6%	-6.7%	8.6%	6.2%	0.1%	-0.1%	-0.1%	0.0%	-0.1%
Greece*	--	-2.4%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	-13.4%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	--	-9.5%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Italy	-0.8%	-8.3%	4.7%	2.7%	0.2%	-0.1%	-0.1%	0.2%	0.2%
Netherlands	7.5%	-6.8%	3.2%	1.4%	0.2%	-0.1%	-0.1%	0.3%	0.3%
Norway	--	4.8%	0.0%	0.7%	--	-0.1%	0.0%	--	0.0%
Poland*	--	-11.8%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	--	8.4%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Russia*	-7.2%	-4.2%	1.4%	0.9%	-0.1%	0.0%	0.1%	-0.1%	-0.1%
Spain	-2.3%	-6.8%	3.5%	3.4%	0.2%	0.0%	0.0%	0.0%	0.1%
Sweden	8.4%	-7.1%	3.3%	1.1%	0.2%	0.0%	-0.2%	0.4%	0.3%
Switzerland	-4.9%	-4.9%	4.8%	4.8%	0.0%	0.0%	0.0%	0.0%	0.0%
United Kingdom	6.4%	4.2%	17.3%	13.7%	0.3%	0.3%	-0.3%	0.1%	0.5%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross

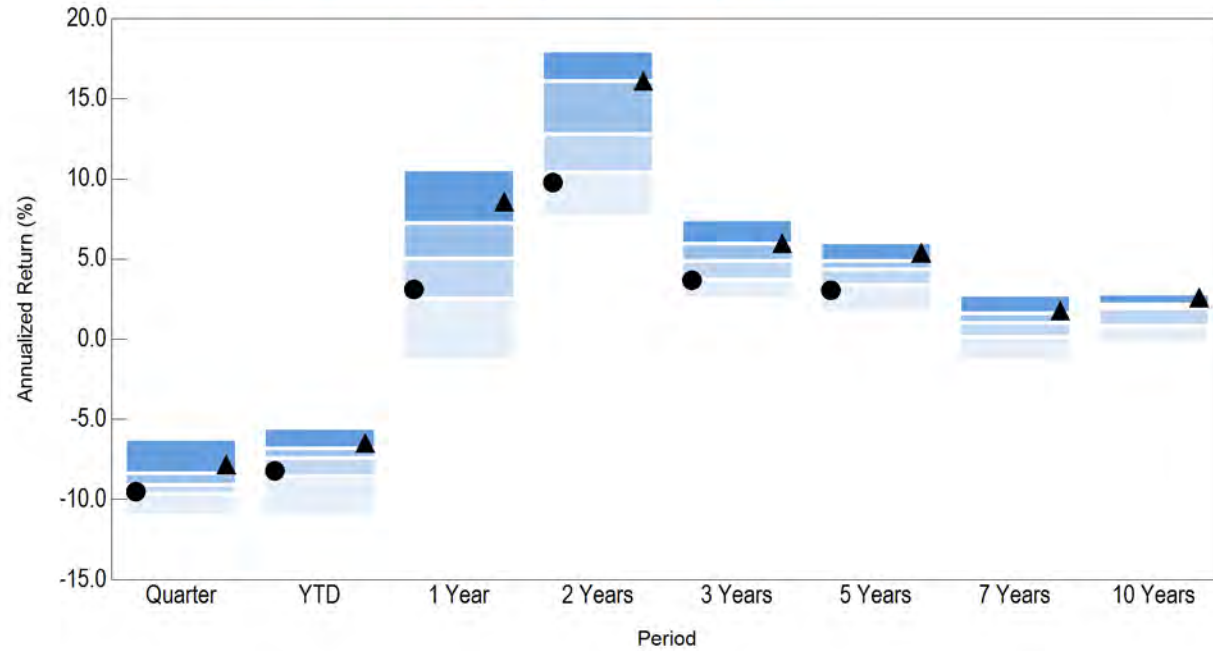
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
<b>AsiaPacific</b>									
Australia	-2.6%	-0.3%	0.9%	4.2%	-0.1%	-0.1%	0.1%	0.1%	0.0%
China*	-7.4%	-4.4%	3.1%	7.6%	-0.1%	0.2%	0.0%	0.1%	0.1%
Hong Kong	-7.4%	-1.1%	4.7%	2.4%	-0.2%	-0.1%	0.0%	-0.1%	-0.4%
India*	-4.2%	-1.8%	3.5%	2.0%	-0.1%	0.0%	-0.1%	0.0%	-0.1%
Indonesia*	-22.0%	-15.1%	0.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	-6.9%	-3.1%	13.1%	16.7%	-0.7%	0.0%	0.2%	0.1%	-0.3%
Korea*	-7.9%	-10.3%	3.6%	3.7%	0.1%	0.0%	0.0%	0.0%	0.1%
Malaysia*	-10.3%	-13.2%	1.3%	0.6%	0.0%	-0.1%	0.0%	0.0%	-0.1%
New Zealand	--	5.9%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Pakistan*	--	-18.8%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	-16.0%	-14.3%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	-5.5%	-9.4%	4.4%	0.9%	0.0%	-0.2%	-0.1%	0.1%	-0.2%
Taiwan*	-6.5%	-3.5%	2.5%	3.0%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Thailand*	-8.1%	-14.9%	0.7%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Americas</b>									
Brazil*	-17.4%	-24.9%	3.6%	2.1%	0.1%	-0.2%	0.0%	0.1%	-0.1%
Canada	-4.6%	4.4%	1.1%	6.1%	-0.6%	-0.3%	0.1%	0.5%	-0.3%
Chile*	--	-11.0%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	6.5%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	-0.3%	-3.6%	0.5%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	1.0%	-2.1%	0.3%	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*	--	-4.8%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	--	18.2%	0.0%	0.3%	--	-0.1%	0.0%	--	-0.1%
Qatar*	6.7%	5.2%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	-10.0%	-3.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	-9.0%	-18.3%	0.8%	1.8%	0.2%	0.1%	0.1%	-0.1%	0.3%
Turkey*	-29.5%	-26.2%	0.6%	0.2%	0.0%	-0.1%	0.0%	0.0%	-0.1%
United Arab Emirates*	5.6%	-0.8%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Totals</b>									
Americas	-12.4%	-3.3%	5.5%	9.5%	-0.7%	0.0%	0.1%	0.3%	-0.3%
Europe	0.8%	-2.4%	52.8%	45.0%	1.5%	0.2%	-0.5%	0.3%	1.4%
Asia/Pacific	-6.9%	-4.2%	38.4%	42.8%	-1.1%	0.1%	0.1%	0.1%	-0.8%
Other	-8.7%	-12.0%	2.2%	2.8%	0.0%	0.0%	0.1%	0.0%	0.1%
Cash	0.5%	--	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>-3.1%</b>	<b>-3.5%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>-0.3%</b>	<b>0.2%</b>	<b>-0.2%</b>	<b>0.7%</b>	<b>0.4%</b>
<b>Totals</b>									
Developed	-1.4%	-1.7%	75.5%	74.4%	0.5%	0.0%	-0.3%	0.0%	0.2%
Emerging*	-8.8%	-8.7%	23.3%	25.6%	0.0%	0.1%	0.1%	0.0%	0.2%
Frontier**	-10.0%	--	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.5%	--	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

InvestorForce All DB Emg Mkt Eq Net Return Comparison



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-6.2	-5.6	10.6	18.0	7.5	6.0	2.8	2.8
25th Percentile	-8.4	-6.8	7.3	16.2	6.0	4.9	1.6	2.2
Median	-9.1	-7.4	5.0	12.8	4.9	4.4	1.0	1.9
75th Percentile	-9.6	-8.5	2.5	10.4	3.7	3.4	0.2	0.9
95th Percentile	-10.9	-10.9	-1.3	7.7	2.6	1.7	-1.3	-0.3
# of Portfolios	92	91	89	85	81	66	44	15
● Emerging Markets	-9.5 (73)	-8.2 (68)	3.1 (72)	9.8 (85)	3.7 (81)	3.0 (79)	-- (--)	-- (--)
▲ MSCI Emerging Markets Gross	-7.9 (14)	-6.5 (16)	8.6 (14)	16.1 (28)	6.0 (31)	5.4 (18)	1.8 (21)	2.6 (7)



	Quarter		YTD		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
<b>Return (Rank)</b>																
5th Percentile	-4.2	-2.4	14.1	20.2	9.9	8.9	5.0	6.6								
25th Percentile	-6.9	-5.6	9.9	17.2	7.6	6.6	3.6	4.0								
Median	-8.5	-7.0	7.2	15.0	5.6	5.1	2.3	2.7								
75th Percentile	-9.6	-8.5	3.7	11.2	4.0	3.9	1.3	2.0								
95th Percentile	-11.3	-11.2	-1.6	7.1	1.5	1.6	-0.4	0.9								
# of Portfolios	191	191	190	186	177	148	106	67								
● Parametric Core	-9.5 (73)	-8.2 (72)	3.1 (80)	9.8 (88)	-- (--)	-- (--)	-- (--)	-- (--)								
▲ MSCI Emerging Markets Gross	-7.9 (41)	-6.5 (42)	8.6 (35)	16.1 (39)	6.0 (43)	5.4 (48)	1.8 (67)	2.6 (54)								

Characteristics

	Portfolio	MSCI Emerging Markets Gross
Number of Holdings	1,222	1,138
Weighted Avg. Market Cap. (\$B)	21.8	87.8
Median Market Cap. (\$B)	3.0	5.5
Price To Earnings	22.2	19.4
Price To Book	2.9	2.6
Price To Sales	3.0	2.5
Return on Equity (%)	17.3	18.7
Yield (%)	3.2	2.5
Beta (holdings; global)	0.9	1.0

Top Holdings

AMERICA MOVIL SAB DE CV SPN.ADR 'L' 1:20	1.0%
SBERBANK OF RUSSIA	0.9%
CHINA MOBILE	0.9%
CREDICORP	0.8%
NASPERS	0.8%
LUKOIL OAO SPN.ADR 1:1	0.7%
OAO GAZPROM SPN.ADR 1:2	0.6%
GPO FINANCE BANORTE	0.6%
MTN GROUP	0.6%
GRUPO TELEVISIA SPN.ADR 1:5	0.6%

Best Performers

	Return %
INDAH KIAT PULP & PAPER (ID:IKP)	62.5%
UNI-PRESIDENT CHINA HDG. (K:UNIP)	51.5%
GS ENGR. & CON. (KO:LCV)	48.6%
GZH.BYSH.PHMHD.CO. 'H' (K:GUP)	43.0%
BUKIT ASAM (ID:TBB)	42.3%
VALE INDONESIA (ID:ICO)	39.1%
CHINA BLUE CHEMICAL 'H' (K:CHBC)	36.1%
CD PROJECT RED (PO:CDR)	35.3%
SAMSUNG ELTO.MECHANICS (KO:SEM)	34.6%
HLB (KO:KPI)	33.0%

Worst Performers

	Return %
FOLLI FOLLIE (G:DUTY)	-71.2%
MY EG SERVICES (L:MYEG)	-68.1%
STEINHOFF INTL.HOLDING (R:SNHJ)	-66.2%
UNITED COMPANY RUSAL (K:RUSA)	-56.8%
CTI.ELETR BRAS- ELETROBRAS SR.B PN (BR:EL6)	-51.4%
HOUSING DEV.&INFR. (IN:IHD)	-48.8%
VIA VAREJO UNITS (BR:VVU)	-46.9%
PETKIM PETROKIMYA HLDG. (TK:PET)	-45.8%
ULTRAPAR PARTICIPOES ON (BR:U3G)	-44.0%
MATAHARI PUTRA PRIMA (ID:MPP)	-43.3%

**Parametric Core Performance Attribution vs. MSCI Emerging Markets Gross**

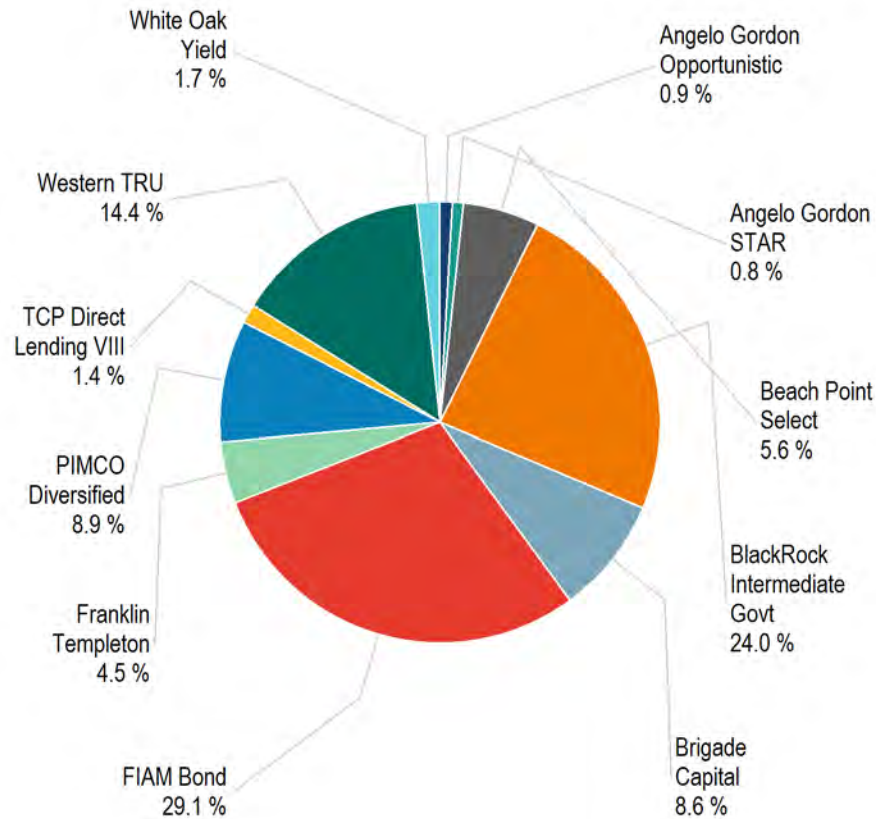
	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.0%	-0.1%	0.1%	0.0%	-4.6%	-4.5%	9.7%	7.2%			
Materials	-0.2%	-0.3%	0.3%	-0.2%	-6.5%	-5.3%	12.1%	7.3%			
Industrials	-0.4%	0.0%	-0.2%	-0.3%	-12.1%	-11.3%	9.7%	5.1%			
Consumer Discretionary	-0.2%	-0.3%	0.0%	0.1%	-9.4%	-6.9%	9.0%	9.6%			
Consumer Staples	-0.2%	-0.1%	0.1%	-0.2%	-6.9%	-6.0%	10.0%	6.5%			
Health Care	-0.2%	0.0%	0.1%	-0.2%	-6.6%	-4.3%	6.0%	2.8%			
Financials	1.2%	0.8%	0.4%	0.1%	-9.3%	-12.4%	15.9%	24.1%			
Information Technology	0.2%	-0.3%	-0.1%	0.7%	-7.6%	-5.0%	7.2%	27.5%			
Telecommunication Services	-0.5%	-0.1%	-0.1%	-0.3%	-12.3%	-9.4%	8.6%	4.6%			
Utilities	-0.2%	0.0%	0.0%	-0.2%	-8.7%	-7.5%	6.3%	2.5%			
Real Estate	-0.2%	0.0%	-0.1%	-0.1%	-10.9%	-10.7%	5.2%	2.8%			
Cash	0.0%	0.0%	0.0%	0.0%	0.5%	--	0.2%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	-5.9%	--	0.0%	0.0%			
<b>Portfolio</b>	<b>-0.8%</b>	<b>=</b>	<b>-0.5%</b>	<b>+</b>	<b>0.5%</b>	<b>+</b>	<b>-0.7%</b>	<b>-8.6%</b>	<b>-7.7%</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>									
Czech Republic*	-4.1%	-3.1%	0.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Greece*	-5.2%	-2.0%	1.4%	0.3%	0.0%	0.1%	-0.1%	0.0%	0.0%
Hungary*	-12.8%	-14.4%	0.8%	0.3%	0.0%	0.0%	-0.1%	0.0%	0.0%
Luxembourg	7.1%	-7.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	-9.8%	-1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	-11.0%	-11.6%	3.1%	1.2%	0.0%	0.0%	-0.2%	0.0%	-0.1%
Russia*	-8.5%	-5.7%	6.2%	3.6%	-0.2%	0.1%	0.0%	-0.2%	-0.2%
United Kingdom	-9.1%	2.9%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>AsiaPacific</b>									
China*	-3.6%	-3.2%	6.0%	30.0%	-0.1%	0.0%	0.0%	0.1%	0.0%
Hong Kong	0.1%	-1.2%	6.8%	0.0%	0.0%	0.1%	0.0%	0.1%	0.2%
India*	-3.6%	-0.4%	6.7%	8.2%	-0.4%	-0.1%	0.2%	0.1%	-0.3%
Indonesia*	-11.6%	-12.2%	3.2%	2.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%
Korea*	-8.7%	-9.3%	7.0%	15.0%	0.1%	0.2%	0.3%	0.0%	0.5%
Malaysia*	-9.8%	-11.6%	3.7%	2.5%	0.0%	-0.1%	0.0%	0.0%	0.0%
Pakistan*	-13.6%	-20.5%	1.6%	0.1%	0.0%	-0.2%	-0.1%	0.1%	-0.2%
Philippines*	-11.7%	-11.1%	3.4%	1.0%	0.0%	-0.1%	0.0%	0.0%	-0.2%
Singapore	-13.3%	-7.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Taiwan*	-3.8%	-6.0%	7.2%	11.6%	0.3%	-0.1%	0.2%	-0.1%	0.3%
Thailand*	-9.8%	-14.9%	3.5%	2.5%	0.1%	-0.1%	-0.1%	0.1%	0.1%
<b>Americas</b>									
Brazil*	-25.8%	-26.5%	7.3%	7.4%	-0.1%	0.0%	0.2%	0.0%	0.1%
Chile*	-11.2%	-10.8%	3.5%	1.2%	0.0%	0.0%	-0.1%	0.0%	-0.2%
Colombia*	3.4%	6.8%	1.7%	0.4%	0.0%	0.2%	-0.1%	-0.1%	0.1%
Mexico*	-4.2%	-3.4%	6.8%	2.9%	-0.1%	0.3%	-0.1%	-0.1%	-0.1%
Peru*	-1.7%	-3.2%	1.5%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
United States	-6.1%	3.4%	1.3%	0.0%	0.0%	0.1%	0.0%	-0.1%	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*	-7.0%	-7.5%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Kuwait**	2.4%	-0.7%	1.6%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%
Qatar*	3.2%	4.4%	1.7%	0.5%	0.0%	0.1%	0.0%	0.0%	0.1%
South Africa*	-14.7%	-11.3%	6.9%	6.8%	-0.3%	0.0%	0.0%	0.0%	-0.2%
Turkey*	-23.7%	-25.9%	3.3%	1.0%	0.0%	-0.3%	-0.3%	0.1%	-0.5%
United Arab Emirates*	-1.7%	-3.0%	1.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Totals</b>									
Americas	-11.8%	-17.6%	22.1%	12.4%	0.3%	-0.5%	-0.1%	0.2%	-0.1%
Europe	-8.7%	-7.2%	12.6%	5.6%	-0.2%	0.3%	-0.3%	-0.2%	-0.5%
Asia/Pacific	-6.2%	-5.7%	49.3%	72.9%	-0.1%	0.0%	0.4%	0.0%	0.3%
Other	-11.4%	-11.3%	15.8%	9.1%	-0.3%	0.2%	-0.3%	-0.2%	-0.6%
Cash	0.5%	--	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>-8.5%</b>	<b>-7.7%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>-0.3%</b>	<b>0.0%</b>	<b>-0.3%</b>	<b>-0.2%</b>	<b>-0.8%</b>
<b>Totals</b>									
Developed	-1.4%	--	8.7%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%
Emerging*	-9.5%	-7.7%	89.5%	100.0%	-0.9%	0.0%	-0.3%	0.1%	-1.1%
Frontier**	2.4%	--	1.6%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Cash	0.5%	--	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



	Actual \$	Actual %	Manager Contribution to Excess Return %
Angelo Gordon Opportunistic	\$8,364,000	0.9%	0.1%
Angelo Gordon STAR	\$7,115,000	0.8%	0.0%
Beach Point Select	\$49,950,983	5.6%	0.1%
BlackRock Intermediate Govt	\$214,832,349	24.0%	0.0%
Brigade Capital	\$77,316,071	8.6%	0.1%
FIAM Bond	\$260,132,045	29.1%	0.0%
Franklin Templeton	\$40,054,137	4.5%	-0.1%
PIMCO Diversified	\$79,776,722	8.9%	0.0%
TCP Direct Lending VIII	\$12,689,543	1.4%	0.0%
Western Asset TRU	\$128,491,710	14.4%	-0.5%
White Oak Yield	\$15,163,783	1.7%	0.0%
Actual vs. Policy Weight Difference			-0.1%
<b>Total</b>	<b>\$893,886,343</b>	<b>100.0%</b>	<b>-0.2%</b>



Statistics Summary

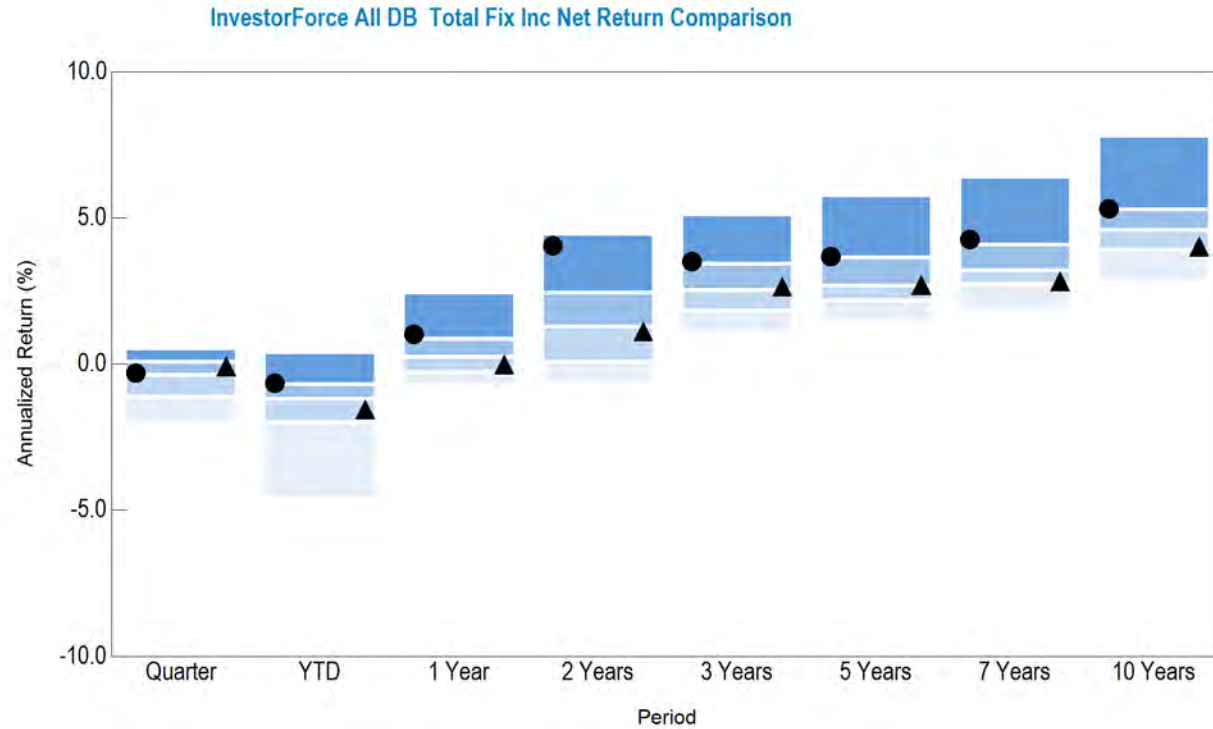
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	3.5%	2.8%	1.0	0.4	2.1%
Blended Fixed Income Index	2.6%	2.7%	0.7	--	0.0%
Core Fixed	2.5%	2.6%	0.7	0.4	1.8%
BBgBarc US Aggregate TR	1.7%	2.6%	0.4	--	0.0%
FIAM Bond	2.4%	2.8%	0.6	0.7	0.9%
BBgBarc US Aggregate TR	1.7%	2.6%	0.4	--	0.0%
Opportunistic Credit	6.3%	3.8%	1.5	0.7	2.9%
BBgBarc BA Intermediate HY	4.4%	4.2%	0.9	--	0.0%
Angelo Gordon Opportunistic	13.2%	8.7%	1.4	1.3	9.0%
BBgBarc US Aggregate TR	1.7%	2.6%	0.4	--	0.0%
Angelo Gordon STAR	12.1%	7.0%	1.6	1.4	7.5%
BBgBarc US Aggregate TR	1.7%	2.6%	0.4	--	0.0%
Beach Point Select	8.3%	3.8%	2.0	1.6	2.5%
BBgBarc BA Intermediate HY	4.4%	4.2%	0.9	--	0.0%
Brigade Capital	6.0%	7.0%	0.8	0.4	4.4%
BBgBarc BA Intermediate HY	4.4%	4.2%	0.9	--	0.0%
Franklin Templeton	1.5%	6.7%	0.1	-0.2	8.4%
BBgBarc Multiverse TR	2.8%	4.8%	0.4	--	0.0%

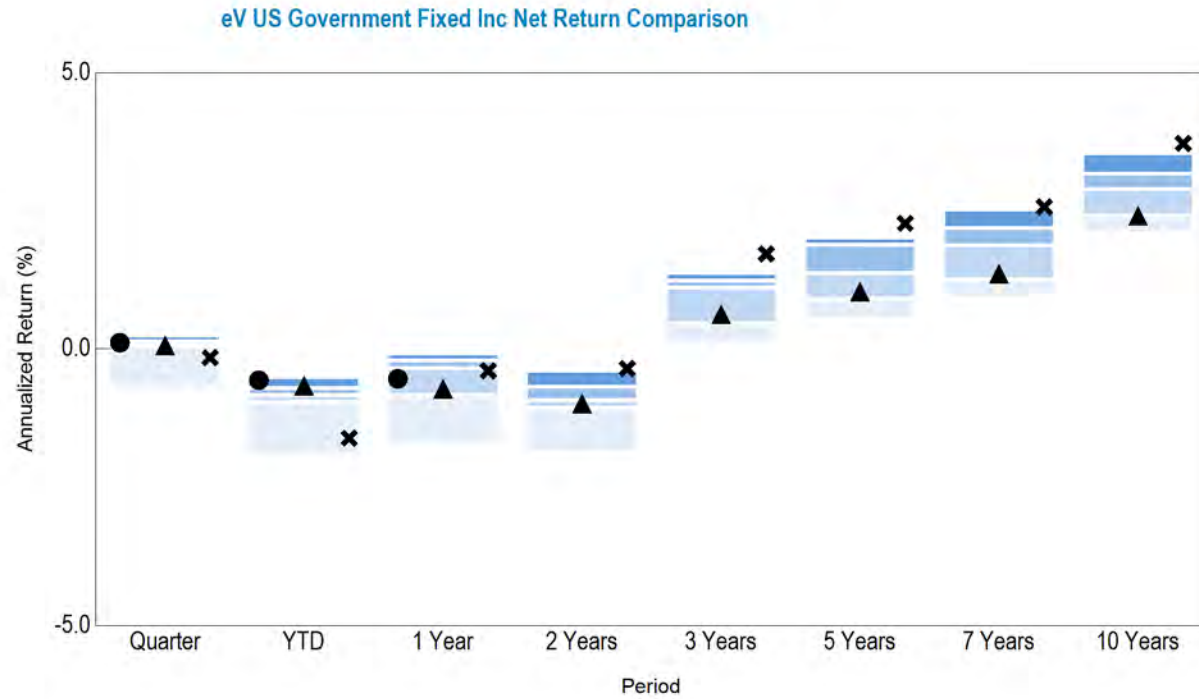
Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	3.7%	2.7%	1.2	0.5	1.8%
Blended Fixed Income Index	2.7%	2.8%	0.8	--	0.0%
Core Fixed	3.0%	2.7%	0.9	0.5	1.4%
BBgBarc US Aggregate TR	2.3%	2.7%	0.7	--	0.0%
FIAM Bond	2.9%	2.8%	0.9	0.9	0.7%
BBgBarc US Aggregate TR	2.3%	2.7%	0.7	--	0.0%
Opportunistic Credit	6.7%	3.5%	1.8	0.7	3.4%
BBgBarc BA Intermediate HY	4.4%	4.1%	1.0	--	0.0%
Angelo Gordon STAR	12.5%	6.5%	1.8	1.4	7.3%
BBgBarc US Aggregate TR	2.3%	2.7%	0.7	--	0.0%
Brigade Capital	4.9%	6.0%	0.7	0.1	3.9%
BBgBarc BA Intermediate HY	4.4%	4.1%	1.0	--	0.0%
Franklin Templeton	1.9%	6.0%	0.2	0.0	7.1%
BBgBarc Multiverse TR	1.7%	4.5%	0.3	--	0.0%



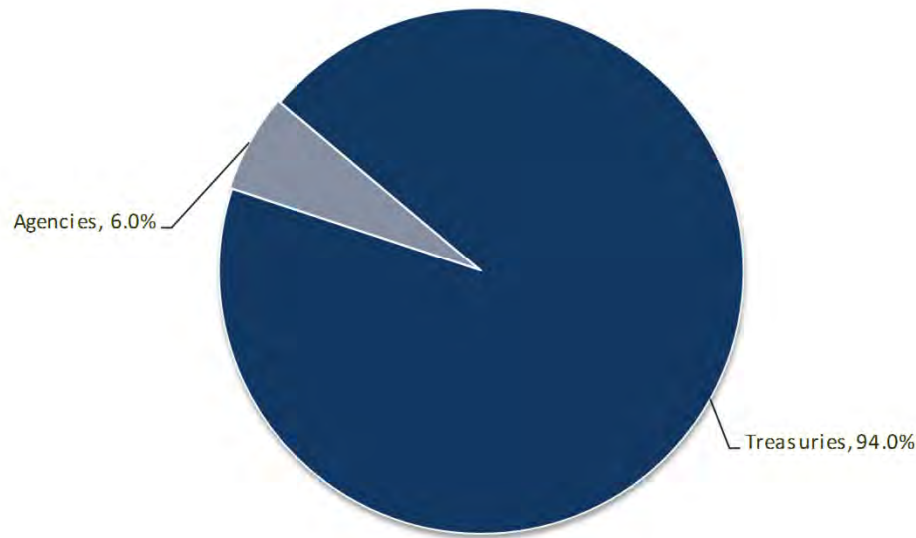
	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	0.5	0.4	2.4	4.5	5.1	5.8	6.4	7.8
25th Percentile	0.1	-0.7	0.9	2.4	3.4	3.7	4.1	5.3
Median	-0.3	-1.2	0.3	1.3	2.5	2.7	3.2	4.6
75th Percentile	-1.1	-2.0	-0.3	0.1	1.8	2.2	2.8	3.9
95th Percentile	-2.0	-4.6	-0.7	-0.6	1.1	1.5	1.8	2.8
# of Portfolios	301	301	297	291	285	264	231	188
● Fixed Income	-0.3 (50)	-0.7 (25)	1.0 (22)	4.0 (8)	3.5 (24)	3.7 (25)	4.3 (24)	5.3 (26)
▲ Blended Fixed Income Index	-0.1 (34)	-1.6 (66)	0.0 (62)	1.1 (54)	2.6 (47)	2.7 (51)	2.8 (71)	4.0 (71)



	Return (Rank)															
5th Percentile	0.2	-0.5	-0.1	-0.4	1.4	2.0	2.5	3.5								
25th Percentile	0.1	-0.7	-0.2	-0.7	1.2	1.9	2.2	3.2								
Median	0.1	-0.8	-0.3	-0.9	1.1	1.4	1.9	2.9								
75th Percentile	0.1	-0.9	-0.8	-1.1	0.5	0.9	1.3	2.4								
95th Percentile	-0.7	-1.9	-1.7	-1.9	0.1	0.5	0.9	2.1								
# of Portfolios	11	11	11	11	11	11	11	11								
● BlackRock Intermediate Govt	0.1 (41)	-0.6 (8)	-0.5 (63)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)								
▲ BBgBarc US Govt Int TR	0.1 (62)	-0.7 (17)	-0.7 (69)	-1.0 (58)	0.6 (66)	1.0 (69)	1.4 (69)	2.4 (77)								
✕ BBgBarc US Aggregate TR	-0.2 (91)	-1.6 (93)	-0.4 (55)	-0.4 (3)	1.7 (1)	2.3 (1)	2.6 (4)	3.7 (1)								

BlackRock Intermediate Govt Market Duration Pool  
 Bond Sector Allocation

Period Ending: June 30, 2018



Sector	Account Weight	BBgBarc Intermediate	
		Govt Weight	Difference
Treasuries	94.0%	95.8%	-1.8%
Agencies	6.0%	4.2%	1.8%
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	0.0%	0.0%	0.0%
<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: June 30, 2018

Portfolio Characteristics		
		Portfolio
Total Number of Securities		332
Total Market Value	\$	214,832,349
Current Coupon		2.13
Yield to Maturity		2.66
Average Life		4.01
Duration		3.73
Quality		AA+

BBgBarc Intermediate Govt	
	2.03
	2.66
	4.04
	3.76
	AA+

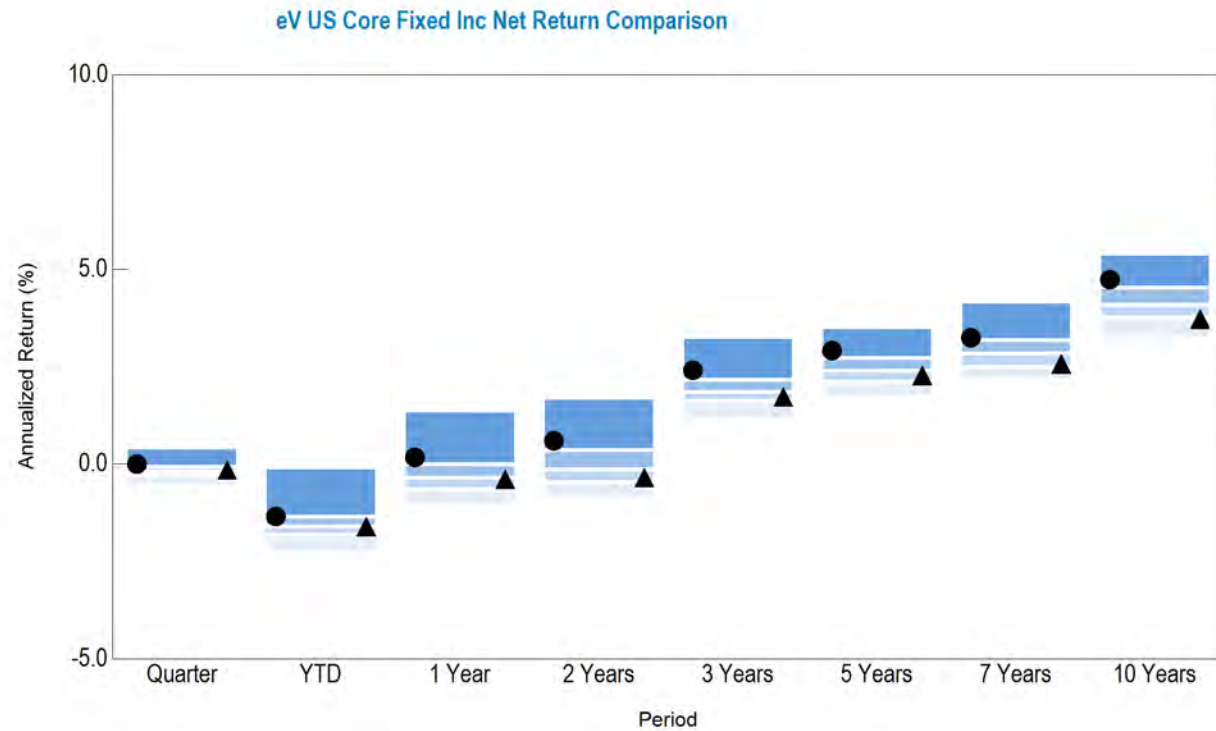
Yield to Maturity	
Range	% Held
0.0 - 5.0	100.0
5.0 - 7.0	0.0
7.0 - 9.0	0.0
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	0.0
Unclassified	0.0

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	19.4
2.0 - 4.0	43.0
4.0 - 6.0	20.8
6.0 - 8.0	15.9
8.0+	0.9
Unclassified	0.0

Quality	
Range	% Held
Govt (10)	0.0
Aaa (10)	99.0
Aa (9)	1.1
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

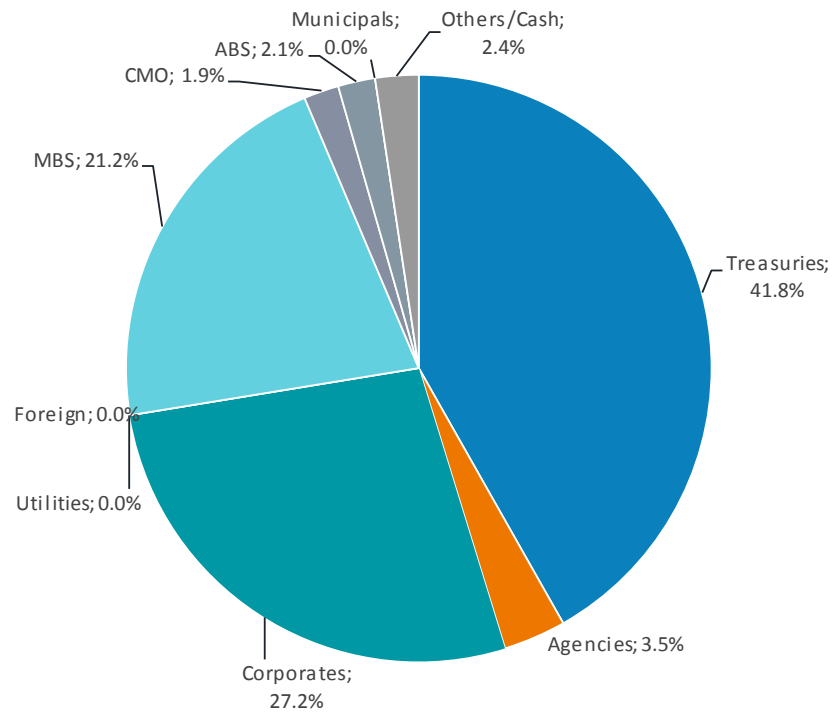


	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	0.4	-0.1	1.4	1.7	3.3	3.5	4.2	5.4
25th Percentile	-0.1	-1.3	0.0	0.4	2.2	2.7	3.2	4.5
Median	-0.2	-1.6	-0.4	-0.1	1.9	2.4	2.8	4.1
75th Percentile	-0.3	-1.8	-0.6	-0.5	1.6	2.1	2.5	3.8
95th Percentile	-0.6	-2.3	-1.1	-0.9	1.1	1.7	2.2	3.2
# of Portfolios	145	144	142	138	136	134	127	114
● FIAM Bond	0.0 (17)	-1.4 (26)	0.2 (21)	0.6 (17)	2.4 (15)	2.9 (17)	3.2 (24)	4.7 (16)
▲ BBgBarc US Aggregate TR	-0.2 (42)	-1.6 (51)	-0.4 (57)	-0.4 (69)	1.7 (63)	2.3 (63)	2.6 (71)	3.7 (79)

# FIAM Bond Market Duration Pool

## Bond Sector Allocation

Period Ending: June 30, 2018



Sector	Account Weight	BBgBarc Aggregate Weight	Difference
Treasuries	41.8%	37.4%	4.4%
Agencies	3.5%	6.8%	-3.3%
Corporates	27.2%	25.2%	2.0%
Utilities	0.0%	0.0%	0.0%
Foreign	0.0%	0.0%	0.0%
MBS	21.2%	28.1%	-7.0%
CMO	1.9%	0.0%	1.9%
ABS	2.1%	2.4%	-0.4%
Municipals	0.0%	0.0%	0.0%
Others/Cash	2.4%	0.0%	2.4%
<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: June 30, 2018

Portfolio Characteristics		
		Portfolio
Total Number of Securities		865
Total Market Value	\$	260,132,045
Current Coupon		3.07
Yield to Maturity		3.51
Average Life		8.92
Duration		6.20
Quality		AA

BBgBarc Aggregate	
Current Coupon	3.16
Yield to Maturity	3.28
Average Life	8.11
Duration	5.95
Quality	AA

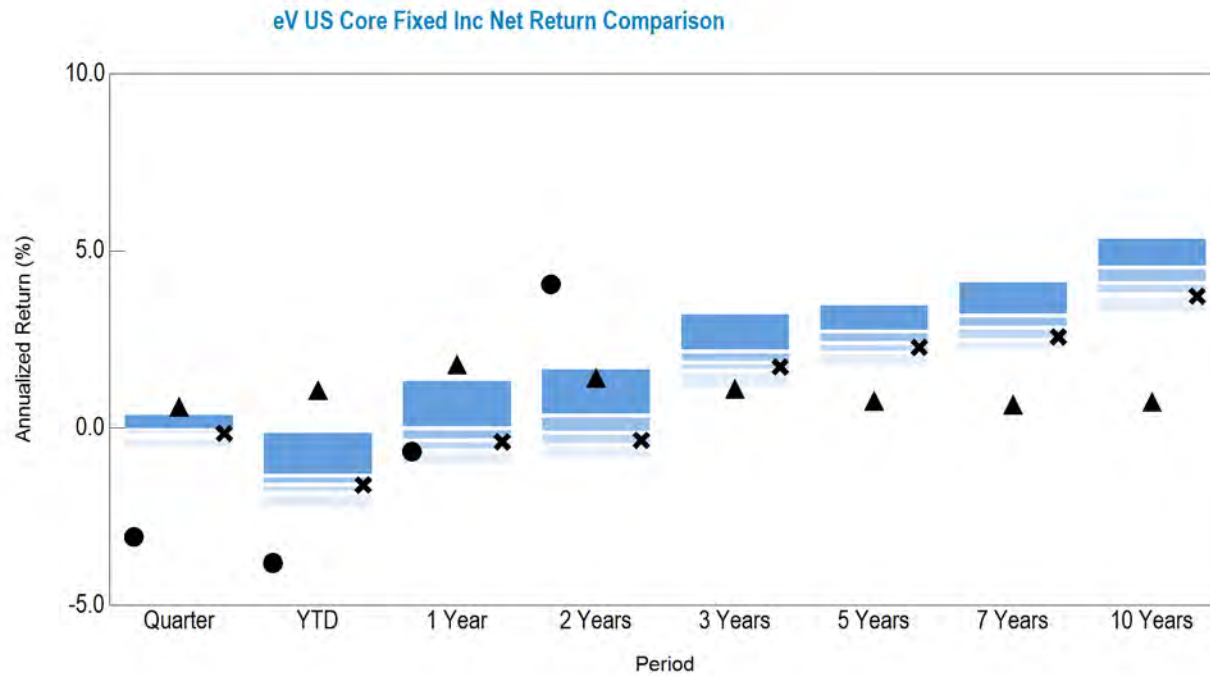
Yield to Maturity	
Range	% Held
0.0 - 5.0	101.0
5.0 - 7.0	5.1
7.0 - 9.0	1.0
9.0 - 11.0	0.1
11.0 - 13.0	0.0
13.0+	-7.1
Unclassified	0.0

Average Life	
Range	% Held
0.0 - 1.0	1.5
1.0 - 3.0	10.9
3.0 - 5.0	26.9
5.0 - 10.0	48.4
10.0 - 20.0	3.1
20.0+	9.3
Unclassified	0.0

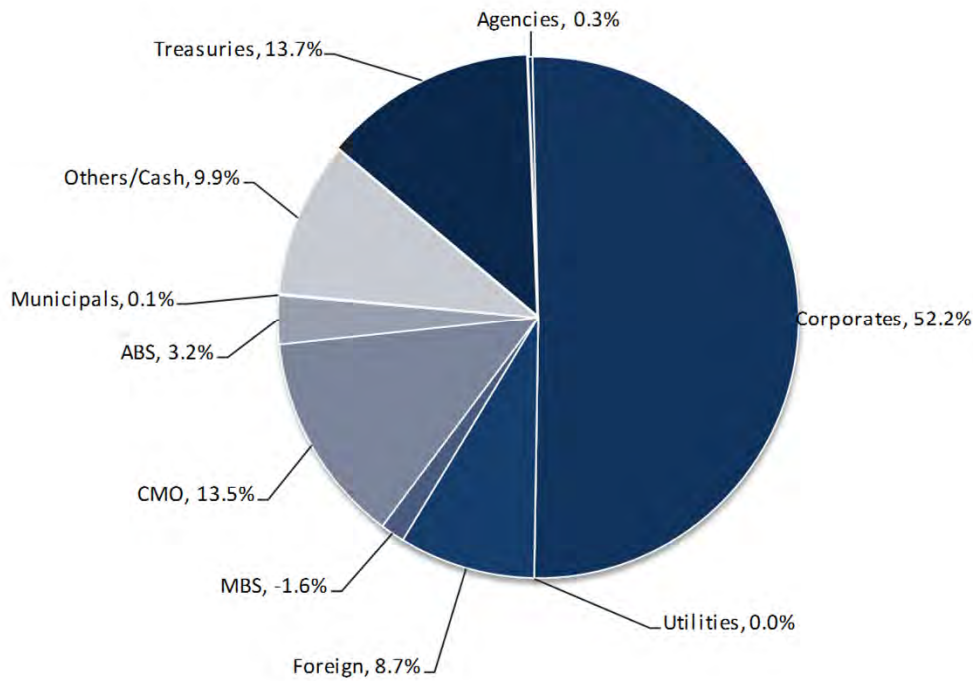
Duration	
Range	% Held
0.0 - 1.0	1.5
1.0 - 3.0	10.1
3.0 - 5.0	41.9
5.0 - 7.0	29.2
7.0 - 10.0	4.9
10.0+	12.4
Unclassified	0.0

Quality	
Range	% Held
Govt (10)	70.4
Aaa (10)	0.7
Aa (9)	1.5
A (8)	12.3
Baa (7)	17.8
Below Baa (6-1)	1.2
Other	-3.9

Coupon	
Range	% Held
0.0 - 5.0	85.4
5.0 - 7.0	7.9
7.0 - 9.0	1.4
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	5.3
Unclassified	0.0



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	0.4	-0.1	1.4	1.7	3.3	3.5	4.2	5.4
25th Percentile	-0.1	-1.3	0.0	0.4	2.2	2.7	3.2	4.5
Median	-0.2	-1.6	-0.4	-0.1	1.9	2.4	2.8	4.1
75th Percentile	-0.3	-1.8	-0.6	-0.5	1.6	2.1	2.5	3.8
95th Percentile	-0.6	-2.3	-1.1	-0.9	1.1	1.7	2.2	3.2
# of Portfolios	145	144	142	138	136	134	127	114
● Western TRU	-3.1 (99)	-3.8 (99)	-0.7 (80)	4.1 (1)	-- (--)	-- (--)	-- (--)	-- (--)
▲ 3-Month Libor Total Return USD	0.6 (2)	1.1 (1)	1.8 (2)	1.4 (7)	1.1 (96)	0.8 (99)	0.7 (99)	0.7 (99)
✕ BBgBarc US Aggregate TR	-0.2 (42)	-1.6 (51)	-0.4 (57)	-0.4 (69)	1.7 (63)	2.3 (63)	2.6 (71)	3.7 (79)



Sector	Account Weight	BBgBarc Aggregate	
		Weight	Difference
Treasuries	13.7%	37.4%	-23.7%
Agencies	0.3%	6.8%	-6.5%
Corporates	52.2%	25.2%	27.0%
Utilities	0.0%	0.0%	0.0%
Foreign	8.7%	0.0%	8.7%
MBS	-1.6%	28.1%	-29.8%
CMO	13.5%	0.0%	13.5%
ABS	3.2%	2.4%	0.7%
Municipals	0.1%	0.0%	0.1%
Others/Cash	9.9%	0.0%	9.9%
<b>TOTAL</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

Portfolio Characteristics		Portfolio	BBgBarc Aggregate
Total Number of Securities		5,474	
Total Market Value	\$	128,491,710	
Current Coupon		4.69	3.16
Yield to Maturity		5.32	3.28
Average Life		6.64	8.11
Duration		3.65	5.95
Quality		A-	AA

Yield to Maturity	
Range	% Held
0.0 - 5.0	50.7
5.0 - 7.0	27.1
7.0 - 9.0	16.2
9.0 - 11.0	5.1
11.0 - 13.0	0.3
13.0+	-0.6
Unclassified	1.2

Average Life	
Range	% Held
0.0 - 1.0	19.8
1.0 - 3.0	23.0
3.0 - 5.0	18.7
5.0 - 10.0	19.7
10.0 - 20.0	8.0
20.0+	10.9
Unclassified	0.0

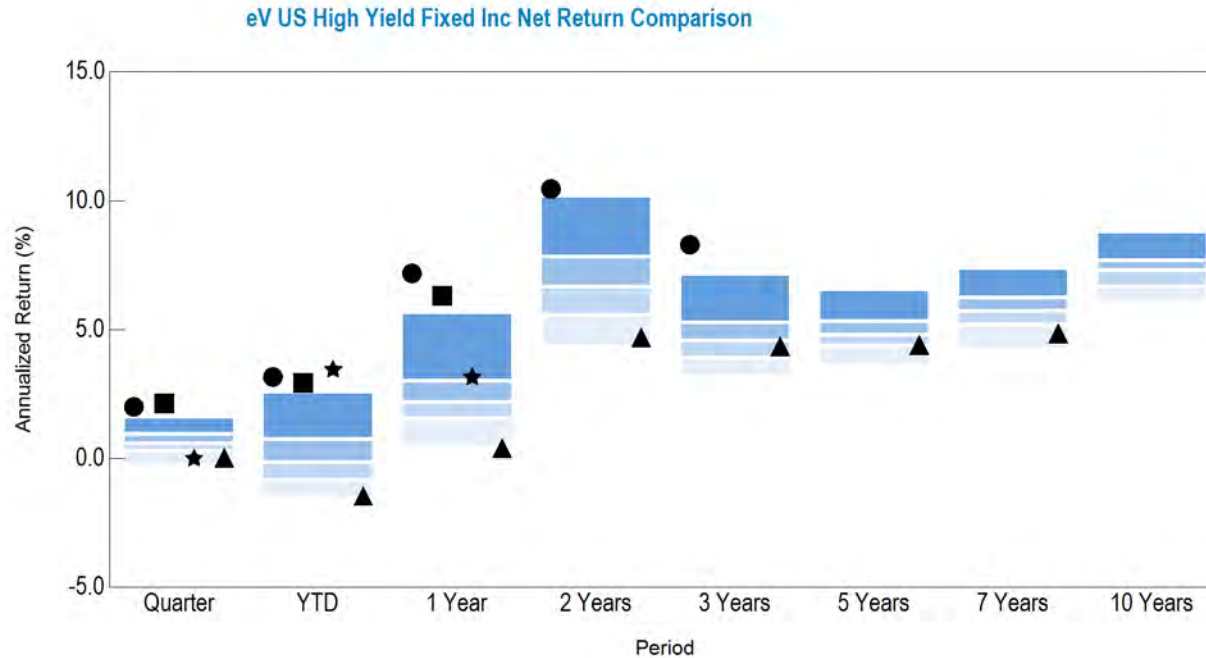
Duration	
Range	% Held
< 1.0	39.1
1.0 - 3.0	17.9
3.0 - 5.0	18.4
5.0 - 7.0	10.5
7.0 - 10.0	3.5
10.0+	10.5
Unclassified	0.0

\*Unclassified includes negative YTM

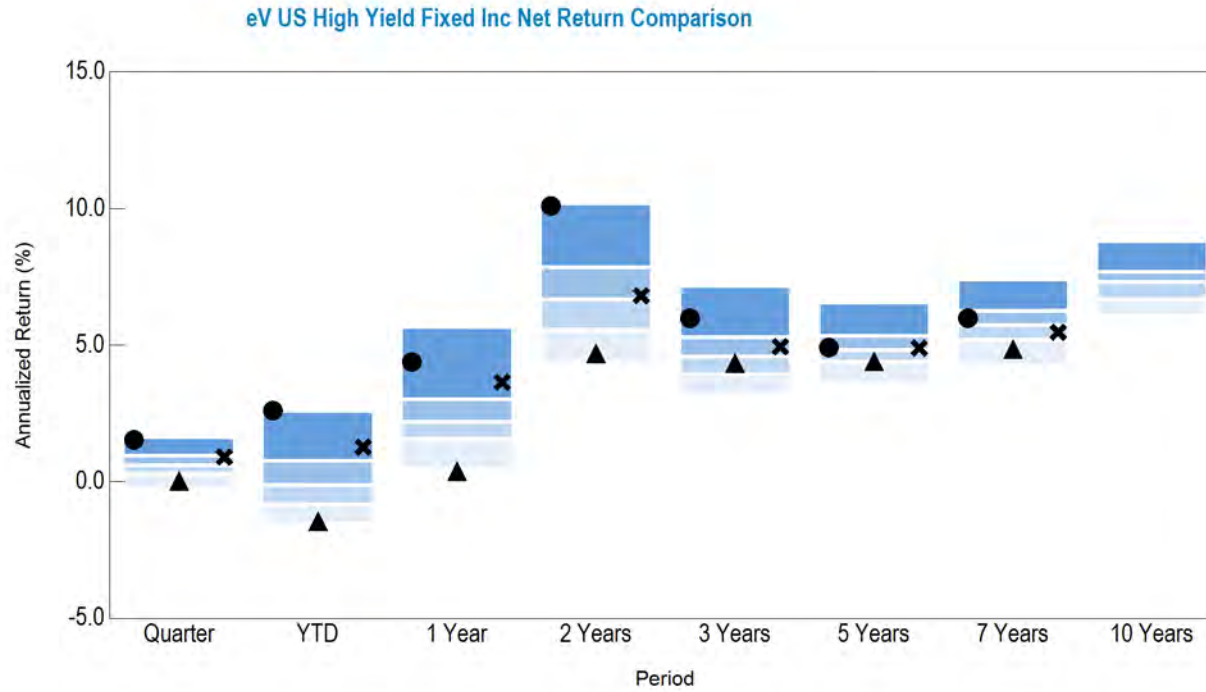
Quality	
Range	% Held
Govt* (10)	5.2
Aaa (10)	16.2
Aa (9)	3.4
A (8)	11.6
Baa (7)	12.8
Below Baa (6-1)	46.2
Other	4.7

Coupon	
Range	% Held
0.0 - 5.0	49.6
5.0 - 7.0	27.0
7.0 - 9.0	8.8
9.0 - 10.0	9.5
10.0+	5.2
Unclassified	0.0

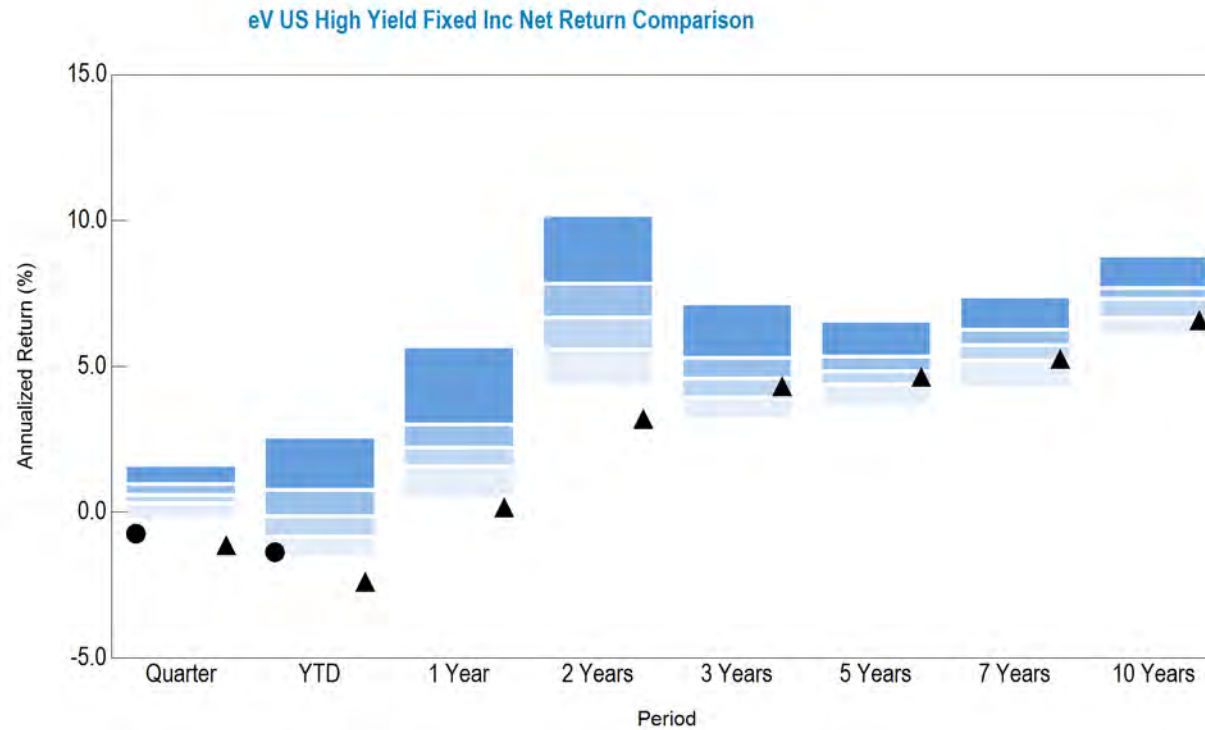
\*Govt is specifically U.S Govt securities



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.6	2.6	5.7	10.2	7.2	6.6	7.4	8.8
25th Percentile	1.0	0.8	3.0	7.9	5.3	5.4	6.3	7.7
Median	0.6	-0.1	2.2	6.7	4.6	4.8	5.8	7.3
75th Percentile	0.3	-0.8	1.6	5.6	3.9	4.4	5.2	6.7
95th Percentile	-0.2	-1.5	0.5	4.4	3.2	3.6	4.3	6.1
# of Portfolios	133	131	130	127	124	105	92	71
● Beach Point Select	2.0 (3)	3.2 (3)	7.2 (4)	10.5 (5)	8.3 (1)	-- (--)	-- (--)	-- (--)
■ TCP Direct Lending VIII	2.2 (3)	2.9 (4)	6.3 (4)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
★ White Oak Yield	0.0 (92)	3.4 (3)	3.2 (24)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
▲ BBgBarc BA Intermediate HY	0.0 (91)	-1.5 (95)	0.4 (97)	4.7 (91)	4.4 (60)	4.4 (76)	4.9 (89)	-- (--)

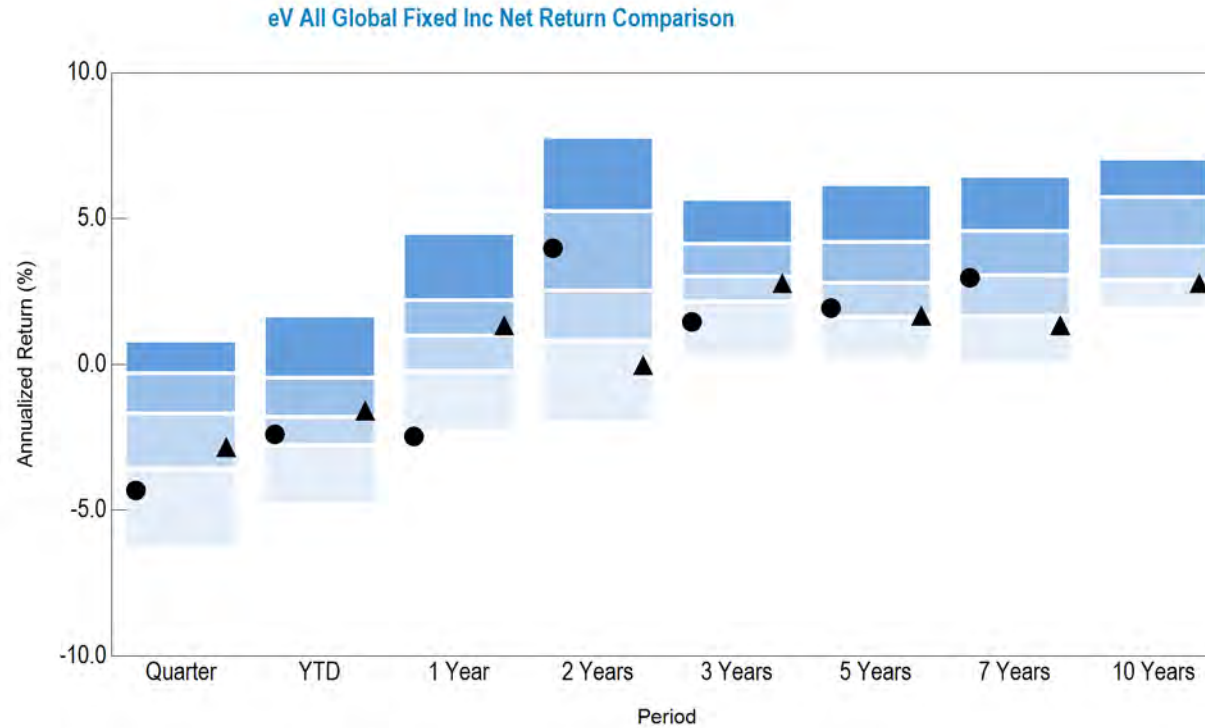


	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.6	2.6	5.7	10.2	7.2	6.6	7.4	8.8
25th Percentile	1.0	0.8	3.0	7.9	5.3	5.4	6.3	7.7
Median	0.6	-0.1	2.2	6.7	4.6	4.8	5.8	7.3
75th Percentile	0.3	-0.8	1.6	5.6	3.9	4.4	5.2	6.7
95th Percentile	-0.2	-1.5	0.5	4.4	3.2	3.6	4.3	6.1
# of Portfolios	133	131	130	127	124	105	92	71
● Brigade Capital	1.5 (7)	2.6 (5)	4.4 (14)	10.1 (6)	6.0 (12)	4.9 (45)	6.0 (36)	-- (--)
▲ BBgBarc BA Intermediate HY	0.0 (91)	-1.5 (95)	0.4 (97)	4.7 (91)	4.4 (60)	4.4 (76)	4.9 (89)	-- (--)
✕ 50% Barclays HY/ 50% Bank Loan	0.9 (29)	1.3 (16)	3.6 (20)	6.8 (47)	4.9 (37)	4.9 (46)	5.5 (65)	-- (--)



	Return (Rank)															
	Quarter		YTD		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	1.6	2.6	5.7	10.2	7.2	6.6	7.4	8.8								
25th Percentile	1.0	0.8	3.0	7.9	5.3	5.4	6.3	7.7								
Median	0.6	-0.1	2.2	6.7	4.6	4.8	5.8	7.3								
75th Percentile	0.3	-0.8	1.6	5.6	3.9	4.4	5.2	6.7								
95th Percentile	-0.2	-1.5	0.5	4.4	3.2	3.6	4.3	6.1								
# of Portfolios	133	131	130	127	124	105	92	71								
● PIMCO Diversified	-0.7	(99)	-1.4	(93)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ Blended PIMCO Diversified Index	-1.1	(99)	-2.4	(99)	0.2	(99)	3.2	(99)	4.3	(61)	4.6	(63)	5.3	(73)	6.6	(80)



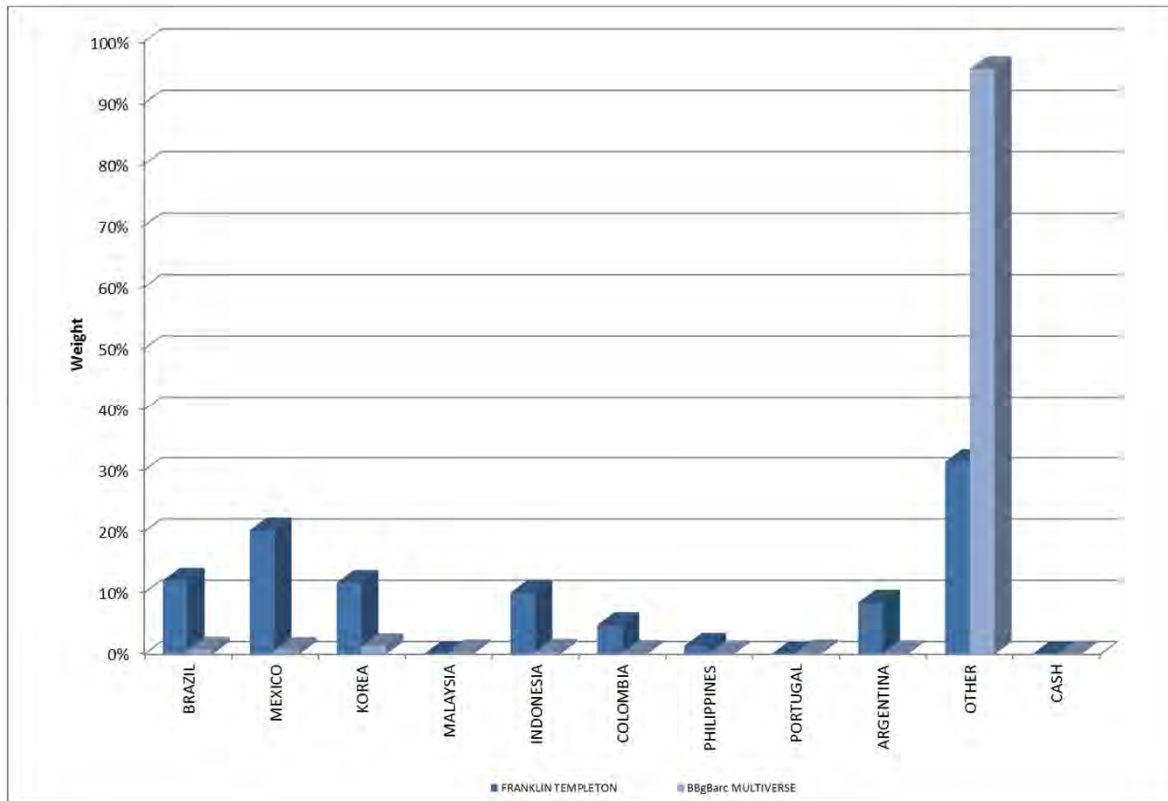


	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	0.8	1.7	4.5	7.8	5.7	6.2	6.5	7.1
25th Percentile	-0.3	-0.4	2.2	5.3	4.1	4.2	4.6	5.7
Median	-1.7	-1.8	1.0	2.5	3.0	2.8	3.1	4.1
75th Percentile	-3.5	-2.7	-0.2	0.8	2.2	1.6	1.7	2.9
95th Percentile	-6.3	-4.8	-2.3	-2.0	0.2	0.2	0.0	1.9
# of Portfolios	228	227	227	220	208	190	148	102
● Franklin Templeton	-4.3 (86)	-2.4 (69)	-2.5 (96)	4.0 (37)	1.5 (88)	1.9 (70)	3.0 (53)	-- (--)
▲ BBgBarc Multiverse TR	-2.8 (65)	-1.6 (45)	1.3 (42)	0.0 (85)	2.8 (57)	1.7 (75)	1.3 (78)	2.8 (78)



Franklin Templeton  
Portfolio Country Weights

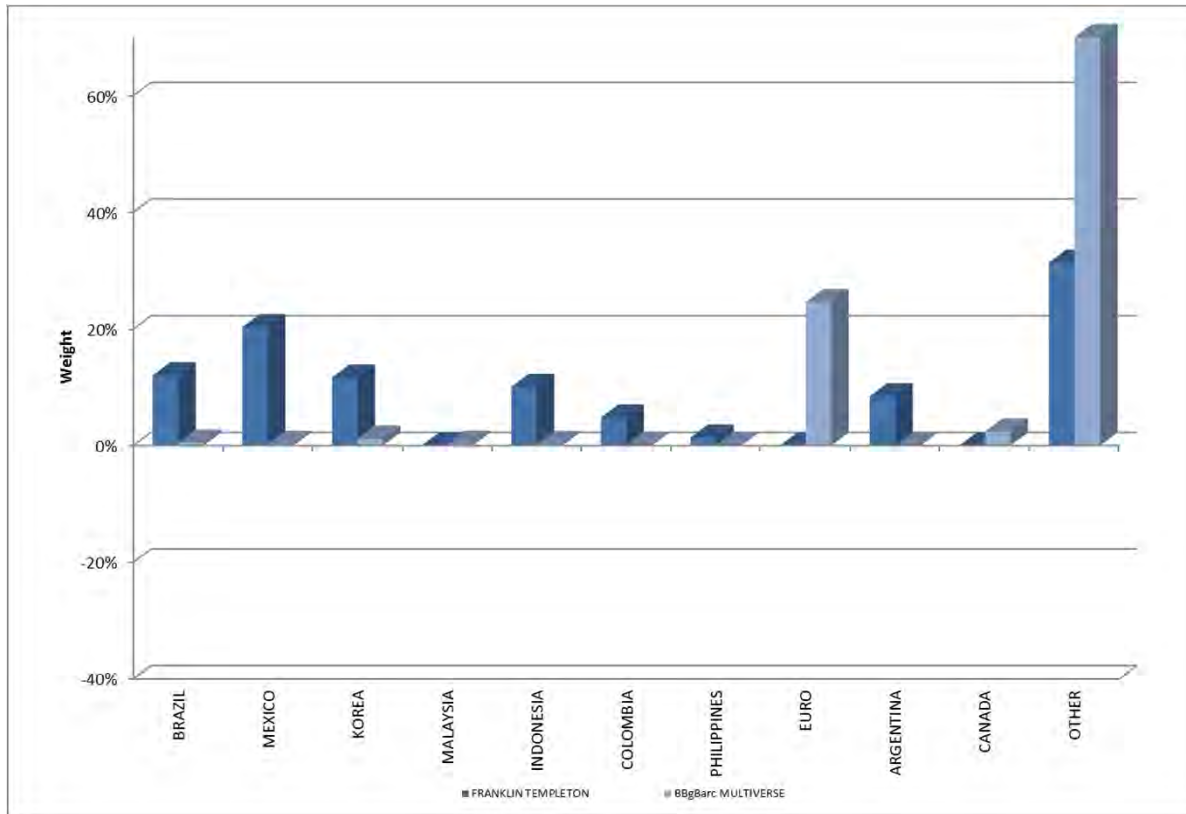
Period Ending: June 30, 2018



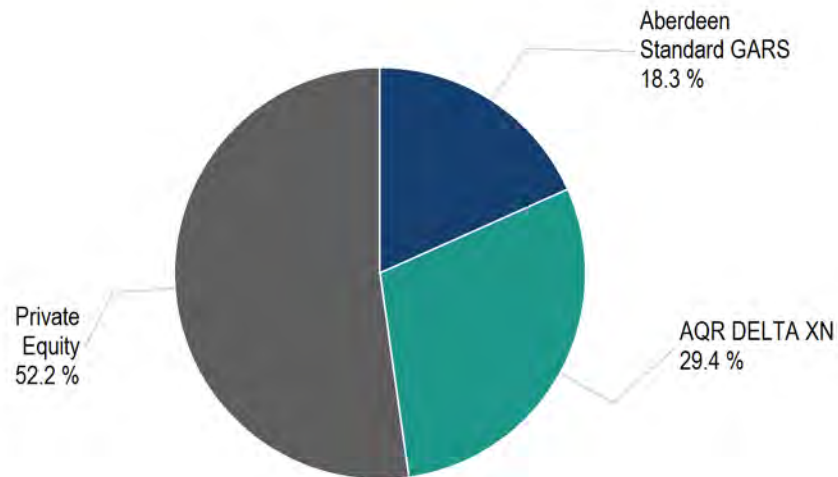
COUNTRY	MARKET VALUE	FRANKLIN TEMPLETON	BgBarc MULTIVERSE	DIFF
BRAZIL	\$ 4,822	12.0%	0.7%	+11.3%
MEXICO	\$ 8,104	20.2%	0.7%	+19.5%
KOREA	\$ 4,670	11.7%	1.3%	+10.3%
MALAYSIA	\$ -	0.0%	0.3%	-0.3%
INDONESIA	\$ 4,029	10.1%	0.4%	+9.6%
COLOMBIA	\$ 1,915	4.8%	0.2%	+4.6%
PHILIPPINES	\$ 550	1.4%	0.2%	+1.2%
PORTUGAL	\$ -	0.0%	0.4%	-0.4%
ARGENTINA	\$ 3,381	8.4%	0.2%	+8.3%
OTHER	\$ 12,583	31.4%	95.6%	-64.2%
CASH	\$ -	0.0%	0.0%	0.0%
	\$ 40,054	100.0%	100.0%	0.0%

Franklin Templeton  
Portfolio Currency Exposures

Period Ending: June 30, 2018



CURRENCY	MARKET VALUE	FRANKLIN TEMPLETON	BBgBarc MULTIVERSE	DIFF
BRAZIL	\$ 4,822	12.0%	0.5%	+11.6%
MEXICO	\$ 8,130	20.3%	0.3%	+20.0%
KOREA	\$ 4,668	11.7%	1.2%	+10.5%
MALAYSIA	\$ -	0.0%	0.3%	-0.3%
INDONESIA	\$ 4,029	10.1%	0.2%	+9.8%
COLOMBIA	\$ 1,915	4.8%	0.1%	+4.7%
PHILIPPINES	\$ 550	1.4%	0.1%	+1.3%
EURO	\$ 1	0.0%	24.6%	-24.6%
ARGENTINA	\$ 3,381	8.4%	0.0%	+8.4%
CANADA	\$ -	0.0%	2.4%	-2.4%
OTHER	\$ 12,558	31.4%	70.4%	-39.0%
	\$ 40,054	100.0%	100.0%	0.0%



	Actual \$	Actual %	Manager Contribution to Excess Return %
Aberdeen Standard GARS	\$93,153,328	18.3%	-0.7%
AQR DELTA XN	\$149,334,452	29.4%	-2.4%
Private Equity	\$265,216,316	52.2%	1.0%
Actual vs. Policy Weight Difference			0.0%
<b>Total</b>	<b>\$507,704,096</b>	<b>100.0%</b>	<b>-2.1%</b>

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	6.1%	5.2%	1.0	-0.3	6.0%
Blended Alternatives Index	7.7%	5.7%	1.2	--	0.0%
Private Equity	13.5%	8.4%	1.5	0.0	11.8%
Blended Private Equity Index	13.2%	10.7%	1.2	--	0.0%
Hedge Fund/Absolute Return	2.5%	4.7%	0.4	-0.5	4.8%
Libor 1 month +4%	4.9%	0.2%	23.0	--	0.0%
AQR DELTA XN	2.3%	5.7%	0.3	-0.5	5.8%
Libor 1 month +4%	4.9%	0.2%	23.0	--	0.0%

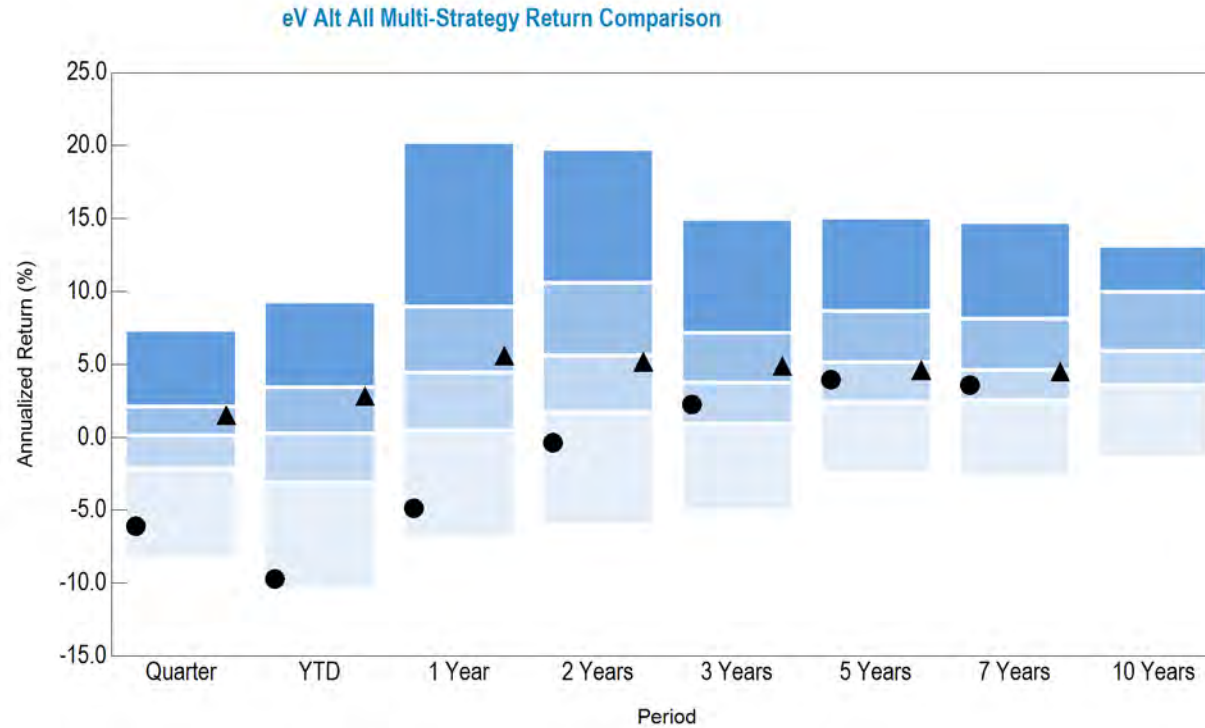
**Statistics Summary**

**5 Years**

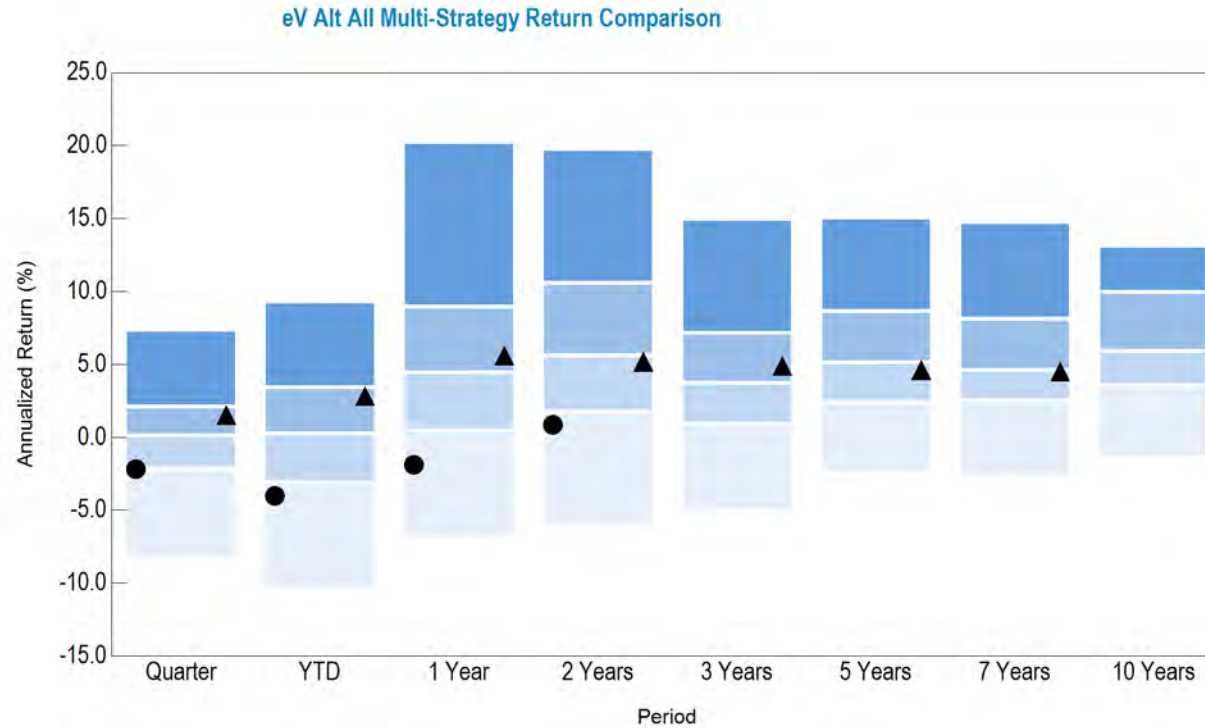
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	7.0%	4.9%	1.3	-0.2	6.1%
Blended Alternatives Index	8.2%	5.7%	1.4	--	0.0%
Private Equity	16.9%	9.3%	1.8	0.1	12.9%
Blended Private Equity Index	15.5%	10.2%	1.5	--	0.0%
Hedge Fund/Absolute Return	4.1%	5.0%	0.7	-0.1	5.1%
Libor 1 month +4%	4.6%	0.2%	23.1	--	0.0%
AQR DELTA XN	4.0%	5.6%	0.6	-0.1	5.7%
Libor 1 month +4%	4.6%	0.2%	23.1	--	0.0%



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.1	4.1	8.5	10.2	5.7	6.6	6.0	4.6
25th Percentile	2.2	2.5	7.1	7.8	3.6	4.8	4.6	3.3
Median	1.3	1.5	5.3	6.3	2.5	3.9	3.9	2.7
75th Percentile	0.1	0.2	2.9	4.5	0.9	2.5	2.6	1.8
95th Percentile	-2.4	-3.3	-2.0	0.4	-2.3	0.5	1.5	0.8
# of Portfolios	222	221	221	215	207	194	166	96
● Hedge Fund/Absolute Return	-4.6 (98)	-7.6 (99)	-3.6 (97)	0.4 (96)	2.5 (51)	4.1 (46)	3.7 (56)	-- (--)
▲ Libor 1 month +4%	1.5 (39)	2.8 (21)	5.6 (48)	5.2 (67)	4.9 (11)	4.6 (32)	4.5 (30)	-- (--)

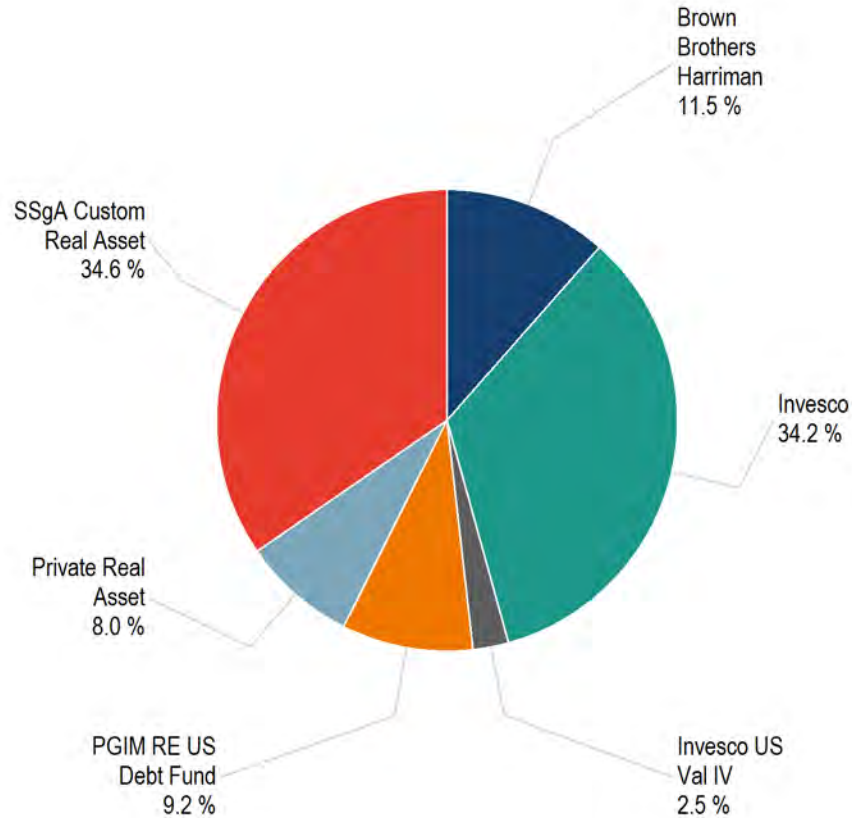


	Return (Rank)							
5th Percentile	7.4	9.3	20.3	19.8	14.9	15.0	14.8	13.1
25th Percentile	2.1	3.5	9.0	10.6	7.2	8.7	8.1	10.0
Median	0.1	0.3	4.5	5.7	3.7	5.2	4.7	6.0
75th Percentile	-2.1	-3.0	0.5	1.8	1.0	2.4	2.6	3.6
95th Percentile	-8.3	-10.4	-6.9	-6.0	-5.0	-2.4	-2.8	-1.4
# of Portfolios	306	305	296	274	255	206	166	106
● AQR DELTA XN	-6.1 (92)	-9.7 (94)	-4.9 (92)	-0.4 (83)	2.3 (61)	4.0 (61)	3.6 (63)	-- (--)
▲ Libor 1 month +4%	1.5 (32)	2.8 (30)	5.6 (43)	5.2 (54)	4.9 (43)	4.6 (55)	4.5 (54)	-- (--)



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	7.4	9.3	20.3	19.8	14.9	15.0	14.8	13.1
25th Percentile	2.1	3.5	9.0	10.6	7.2	8.7	8.1	10.0
Median	0.1	0.3	4.5	5.7	3.7	5.2	4.7	6.0
75th Percentile	-2.1	-3.0	0.5	1.8	1.0	2.4	2.6	3.6
95th Percentile	-8.3	-10.4	-6.9	-6.0	-5.0	-2.4	-2.8	-1.4
# of Portfolios	306	305	296	274	255	206	166	106
● Aberdeen Standard GARS	-2.2 (76)	-4.0 (78)	-1.9 (87)	0.9 (80)	-- (--)	-- (--)	-- (--)	-- (--)
▲ Libor 1 month +4%	1.5 (32)	2.8 (30)	5.6 (43)	5.2 (54)	4.9 (43)	4.6 (55)	4.5 (54)	-- (--)





	Actual \$	Actual %	Manager Contribution to Excess Return %
Brown Brother Harriman	\$87,884,436	11.5%	0.0%
Invesco	\$260,104,438	34.2%	-0.1%
Invesco US Val IV	\$19,365,633	2.5%	0.0%
PGIM RE US Debt Fund	\$70,010,942	9.2%	-0.1%
Private Real Asset	\$60,923,620	8.0%	0.4%
SSGA Custom Real Asset	\$263,283,878	34.6%	0.1%
Actual vs. Policy Weight Difference			0.2%
<b>Total</b>	<b>\$761,572,946</b>	<b>100.0%</b>	<b>0.5%</b>

Statistics Summary

3 Years

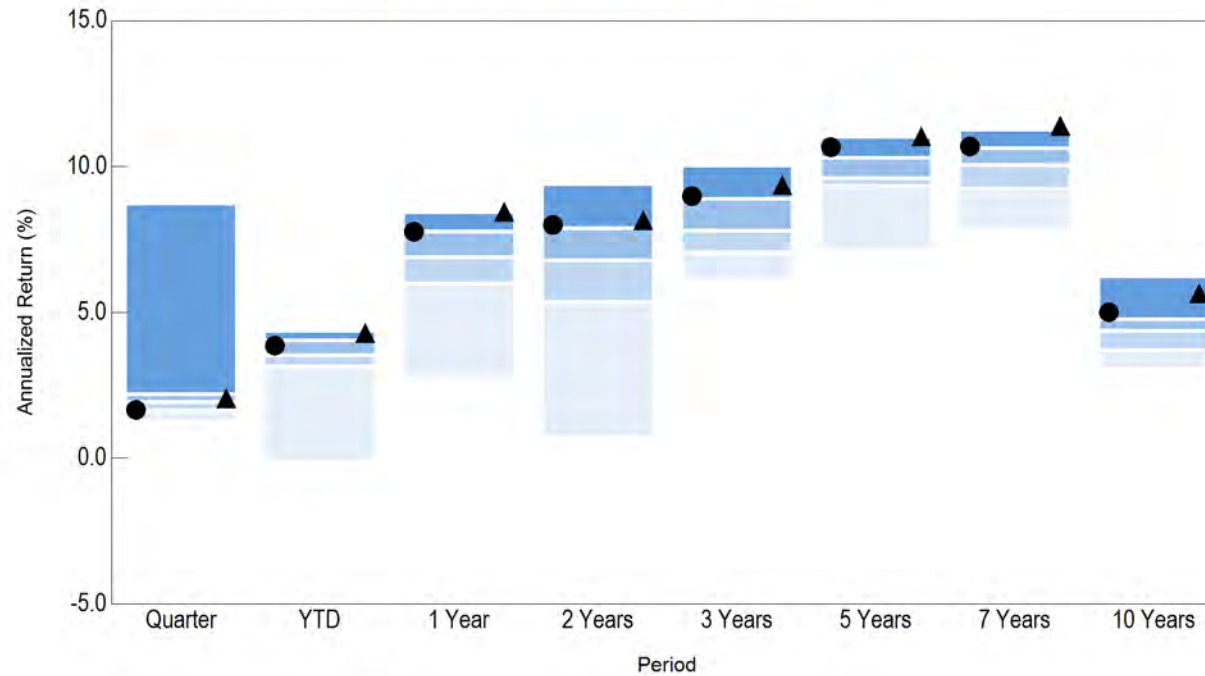
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Real Estate	8.98%	3.83%	2.16	-0.31	1.21%
NCREIF ODCE	9.36%	3.93%	2.20	--	0.00%
Invesco	8.91%	3.80%	2.16	-0.34	1.30%
NCREIF ODCE	9.36%	3.93%	2.20	--	0.00%
Private Real Asset	10.18%	26.88%	0.35	0.21	27.38%
Blended Private Real Asset Index	4.43%	6.42%	0.58	--	0.00%
TIPS	1.84%	2.20%	0.52	-0.07	1.20%
BBgBarc US TIPS TR	1.93%	2.95%	0.42	--	0.00%
Brown Brothers Harriman	1.84%	2.20%	0.52	-0.07	1.20%
BBgBarc US TIPS TR	1.93%	2.95%	0.42	--	0.00%

Statistics Summary

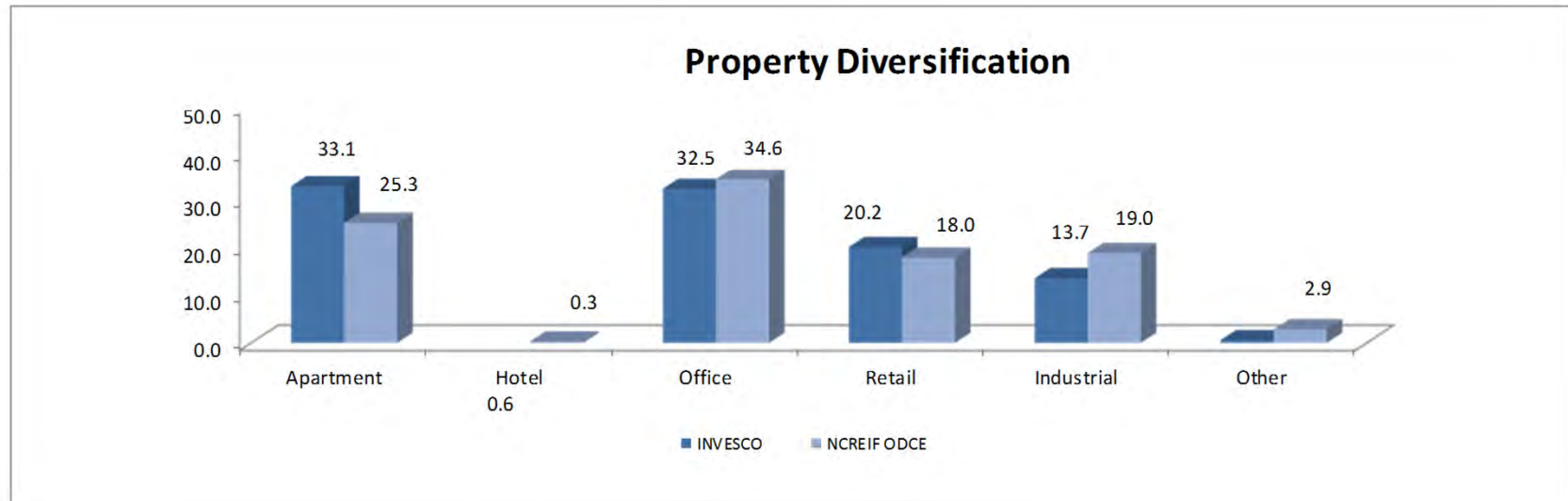
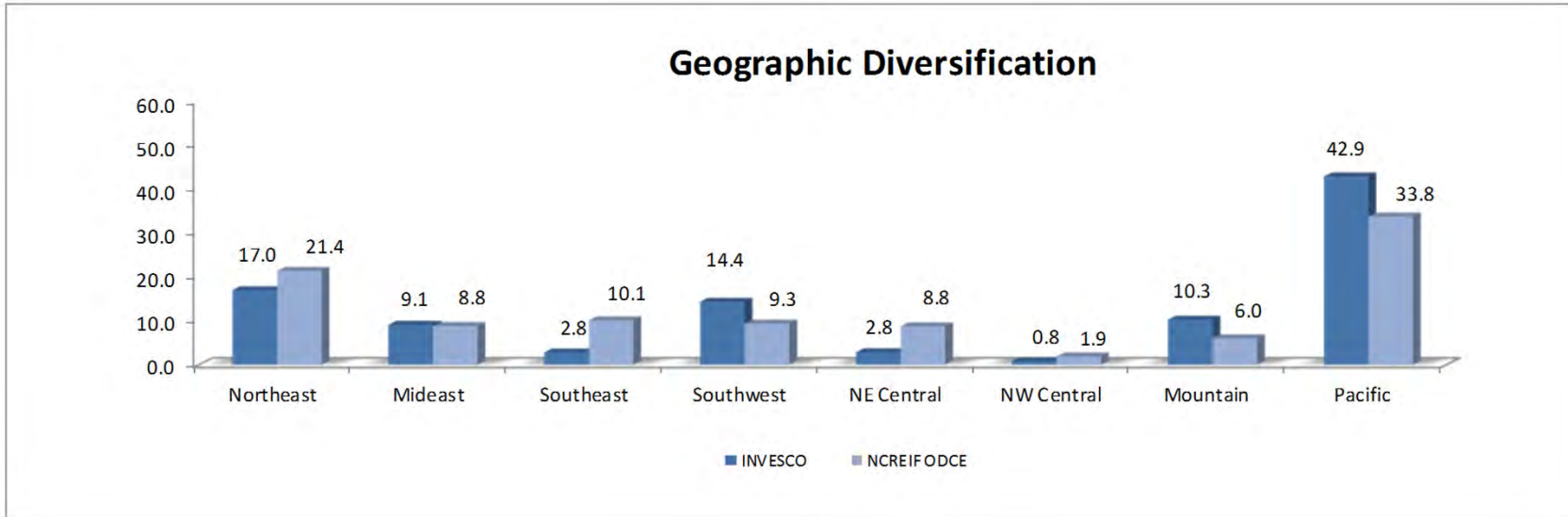
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error Rank
Real Estate	10.67%	4.63%	2.21	-0.27	27
NCREIF ODCE	11.03%	4.59%	2.31	--	1
Invesco	10.62%	4.62%	2.21	-0.29	--
NCREIF ODCE	11.03%	4.59%	2.31	--	--
TIPS	1.33%	2.74%	0.33	-0.26	--
BBgBarc US TIPS TR	1.68%	3.68%	0.34	--	--
Brown Brothers Harriman	1.33%	2.74%	0.33	-0.26	67
BBgBarc US TIPS TR	1.68%	3.68%	0.34	--	1

InvestorForce All DB Real Estate Pub Net Return Comparison



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	8.7	4.3	8.4	9.4	10.0	11.0	11.3	6.2
25th Percentile	2.2	4.1	7.8	7.9	8.9	10.3	10.6	4.8
Median	1.9	3.5	6.9	6.8	7.8	9.6	10.1	4.4
75th Percentile	1.7	3.2	6.0	5.4	7.1	9.3	9.3	3.7
95th Percentile	1.3	-0.1	2.8	0.7	6.1	7.1	7.9	3.1
# of Portfolios	71	71	70	68	66	61	51	41
● Real Estate	1.7 (76)	3.9 (35)	7.8 (27)	8.0 (20)	9.0 (22)	10.7 (12)	10.7 (24)	5.0 (17)
▲ NCREIF ODCE	2.1 (41)	4.3 (8)	8.4 (5)	8.2 (19)	9.4 (12)	11.0 (5)	11.4 (4)	5.7 (9)





INVESCO Core Real Estate  
Real Estate Valuation Analysis

Period Ending: June 30, 2018

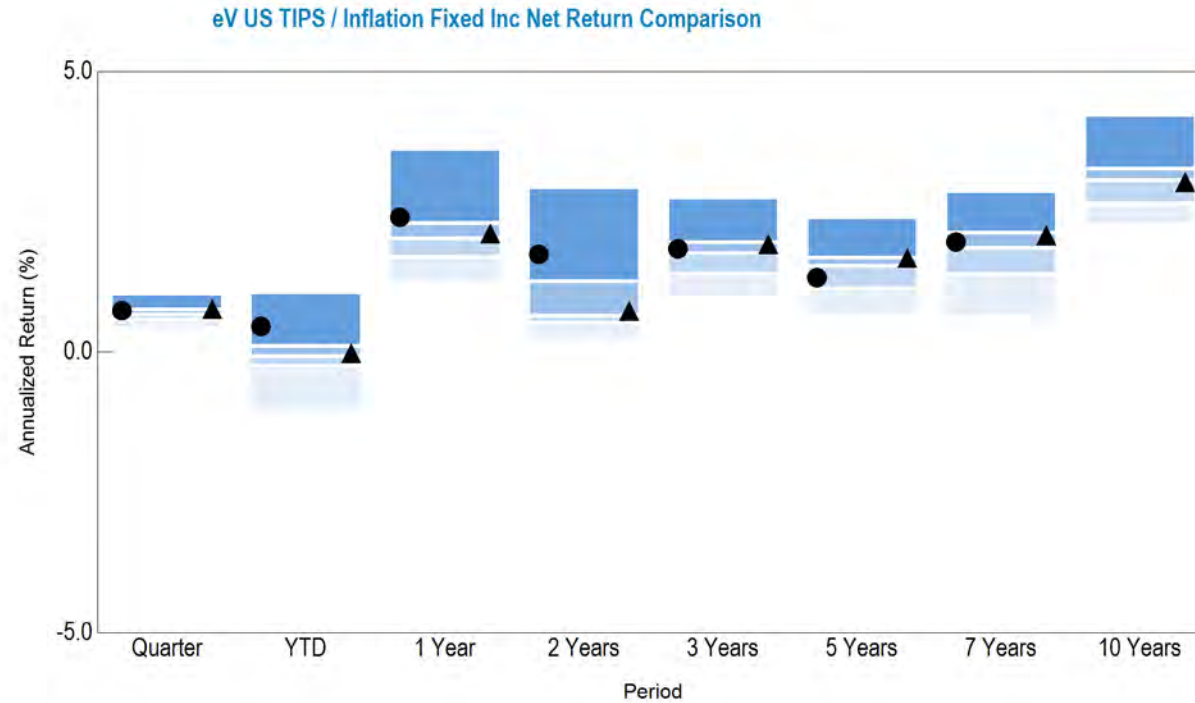
Property Name	MSA	Prior Quarter Carry Value	Current Quarter Carry Value	Net Market Value	Date Added to Fund	Last Valuation Date	SamCERA ownership as of 06/30/2018 2.74%
<b>APARTMENTS</b>							
Stoneridge Apartments	Pleasanton, CA	\$238,000,000	\$239,000,000	\$239,000,000	4Q06	June-18	\$6,538,200
Instrata Pentagon City	Arlington, VA	\$152,000,000	\$152,000,000	\$152,000,000	3Q10	June-18	\$4,158,186
Ladd Tower	Portland, OR	\$133,000,000	\$132,000,000	\$75,671,472	4Q10	June-18	\$2,070,106
Legacy Fountain Plaza	San Jose, CA	\$158,969,725	\$159,972,508	\$159,972,508	1Q11	June-18	\$4,376,286
Instrata Gramercy (fka The Elektra)	New York, NY	\$172,500,000	\$171,000,000	\$98,874,543	1Q11	June-18	\$2,704,860
Instrata Brooklyn Heights (fka 75 Clinton Street)	Brooklyn, NY	\$68,500,000	\$68,300,000	\$68,300,000	1Q12	June-18	\$1,868,448
The Artisan Laguna Beach	Orange County, CA	\$164,000,000	\$164,000,000	\$103,040,889	3Q12	June-18	\$2,818,837
The GoodWynn	Atlanta, GA	\$98,200,000	\$98,600,000	\$98,600,000	4Q12	June-18	\$2,697,350
Instrata Hell's Kitchen	New York, NY	\$194,000,000	\$194,000,000	\$194,000,000	1Q13	June-18	\$5,307,158
Sunset Vine Tower	Los Angeles, CA	\$102,000,000	\$102,000,000	\$102,000,000	2Q13	June-18	\$2,790,362
Instrata Ashton Uptown	Dallas, TX	\$122,000,000	\$123,000,000	\$66,373,204	4Q13	June-18	\$1,815,738
206 Bell	Seattle, WA	\$48,500,000	\$48,500,000	\$48,500,000	4Q13	June-18	\$1,326,790
Cadence Union Station	Denver, CO	\$90,600,000	\$90,700,000	\$53,935,269	1Q14	June-18	\$1,475,479
Joseph Arnold Lofts	Seattle, WA	\$71,300,000	\$71,400,000	\$37,488,135	2Q14	June-18	\$1,025,544
Verve	Denver, CO	\$108,000,000	\$108,000,000	\$108,000,000	3Q14	June-18	\$2,954,500
Broadstone Little Italy	San Diego CA	\$121,000,000	\$121,000,000	\$68,314,106	3Q14	June-18	\$1,868,834
33 Tehama	San Francisco, CA	\$290,440,459	\$297,123,440	\$182,814,458	3Q14	June-18	\$5,001,161
The Parker	Portland, OR	\$66,000,000	\$63,700,000	\$32,651,641	1Q15	June-18	\$893,234
Legacy West Apartments	Plano, TX	\$114,944,403	\$108,382,915	\$53,136,495	1Q15	June-18	\$1,453,628
The Royce	Irvine, CA	\$179,275,326	\$191,803,121	\$105,897,604	2Q15	June-18	\$2,896,986
Wheaton 121	Wheaton, IL	\$77,100,000	\$77,100,000	\$77,100,000	2Q15	June-18	\$2,109,185
Jefferson Marketplace	Washington, DC	\$154,000,000	\$155,000,000	\$85,280,610	4Q15	June-18	\$2,332,978
Retreat at Park Meadows	Littleton, CO	\$147,000,000	\$148,000,000	\$148,000,000	4Q15	June-18	\$4,048,760
North Water Apartments	Chicago, IL	\$265,000,000	\$265,000,000	\$265,000,000	1Q16	June-18	\$7,249,469
2270 Broadway	Oakland, CA	\$27,925,453	\$28,165,174	\$28,165,174	1Q16	June-18	\$770,500
Runway at Playa Vista Apartments	Playa Vista, CA	\$163,770,000	\$163,770,000	\$100,302,500	1Q16	June-18	\$2,743,924
Clayton Lane Apartments	Denver, CO	\$37,489,843	\$37,963,551	\$37,963,551	1Q16	June-18	\$1,038,549
Biscayne 27	Miami, FL	\$57,823,573	\$68,022,592	\$50,762,861	2Q16	June-18	\$1,388,694
Flats 8300	Washington DC	\$236,000,000	\$242,000,000	\$242,000,000	2Q16	June-18	\$6,620,270
407 1st Ave	New York, NY	\$196,800,000	\$197,000,000	\$197,000,000	4Q16	June-18	\$5,389,228
5250 Park	Miami, FL	\$18,295,297	\$26,131,258	\$19,829,586	2Q17	June-18	\$542,468
The Mason	Pleasanton, CA	\$100,000,000	\$100,000,000	\$100,000,000	3Q17	June-18	\$2,735,649
		<b>\$4,174,434,079</b>	<b>\$4,212,634,557</b>	<b>\$3,399,974,606</b>			<b>\$93,011,357</b>
<b>INDUSTRIAL</b>							
Arjons Industrial Park	San Diego CA	\$42,100,000	\$45,300,000	\$45,300,000	2Q04	June-18	\$1,239,249
Gateway Business Park	Dallas TX	\$13,300,000	\$13,500,000	\$13,500,000	2Q04	June-18	\$369,313
Hayward Industrial	Oakland CA	\$192,400,000	\$195,800,000	\$195,800,000	3Q04-3Q07	June-18	\$5,356,400
Oakesdale Commerce Center	Seattle - Belle - Eve WA	\$58,100,000	\$61,300,000	\$61,300,000	1Q06	June-18	\$1,676,953
South Bay Industrial	Los Angeles, CA	\$58,000,000	\$58,400,000	\$58,400,000	4Q06	June-18	\$1,597,619
Steeplechase Portfolio	Capitol Heights, MD	\$99,500,000	\$105,500,000	\$105,500,000	1Q11	June-18	\$2,886,109
Airport Trade Center Portfolio	Dallas, TX	\$131,200,000	\$135,500,000	\$135,500,000	1Q11	June-18	\$3,706,804
IE Logistics	San Bernardino, CA	\$151,000,000	\$150,000,000	\$150,000,000	3Q11	June-18	\$4,103,473
Railhead Industrial	Dallas, TX	\$65,300,000	\$66,200,000	\$66,200,000	4Q11	June-18	\$1,810,999
Empire Gateway aka Chino South Logistics Center	Chino, CA	\$280,000,000	\$282,000,000	\$282,000,000	4Q12	June-18	\$7,714,529
SFO Logistics Center	San Francisco, CA	\$147,000,000	\$163,000,000	\$163,000,000	4Q13	June-18	\$4,459,107
Miami Industrial Portfolio	Various, FL	\$84,011,472	\$85,466,334	\$58,843,771	1Q16	June-18	\$1,609,759
Miami Industrial Portfolio - Fedex	Hollywood, FL	\$42,600,000	\$43,700,000	\$29,403,041	1Q16	June-18	\$804,364
OMP Burbank	Los Angeles, CA	\$74,360,605	\$72,305,480	\$72,305,480	2Q16	June-18	\$1,978,024
Pacific Commons	Freemont, CA	\$150,062,415	\$154,973,874	\$138,025,289	1Q17	June-18	\$3,775,887
Gateway 80 Business Park	Fairfield, CA	\$100,000,000	\$106,600,000	\$106,600,000	1Q18	June-18	\$2,916,201
		<b>\$1,688,934,492</b>	<b>\$1,739,545,687</b>	<b>\$1,681,677,581</b>			<b>\$46,004,789</b>



INVESCO Core Real Estate  
Real Estate Valuation Analysis

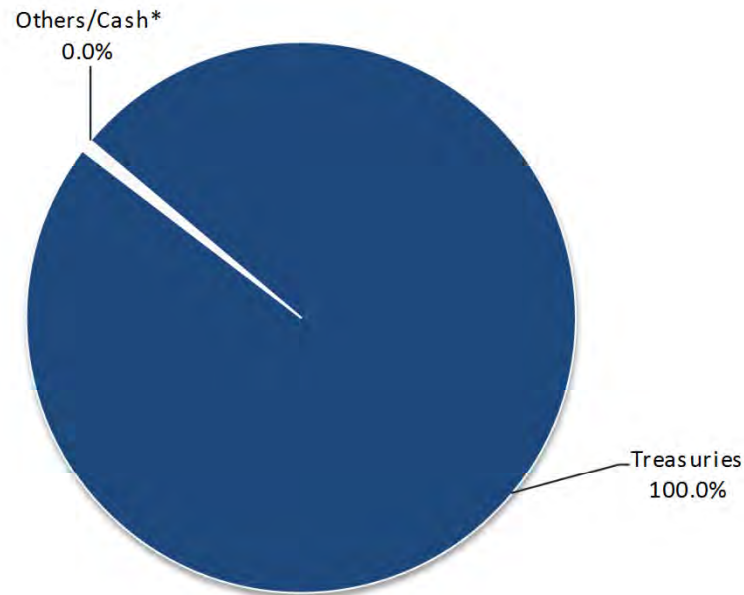
Period Ending: June 30, 2018

OFFICE							
55 Cambridge Parkway	Boston MA - NH	\$306,000,000	\$308,000,000	\$308,000,000	4Q06	June-18	\$8,425,798
1111 Pennsylvania Avenue	Washington, D.C.	\$343,000,000	\$345,000,000	\$345,000,000	4Q10	June-18	\$9,437,988
1800 Larimer	Denver, CO	\$329,000,000	\$330,000,000	\$330,000,000	1Q11	June-18	\$9,027,640
Hillview Office	San Jose, CA	\$79,100,000	\$79,600,000	\$79,600,000	3Q12	June-18	\$2,177,576
Williams Tower	Houston, TX	\$598,000,000	\$600,000,000	\$417,619,393	1Q13	June-18	\$11,424,599
Westlake Park Place	Westlake Village, CA	\$109,000,000	\$109,000,000	\$109,000,000	4Q13	June-18	\$2,981,857
101 Second	San Francisco, CA	\$415,000,000	\$416,000,000	\$416,000,000	1Q14	June-18	\$11,380,298
Energy Crossing II	Houston, TX	\$104,000,000	\$104,000,000	\$104,000,000	2Q14	June-18	\$2,845,075
1776 Wilson Blvd.	Arlington, VA	\$90,100,000	\$89,500,000	\$89,500,000	3Q14	June-18	\$2,448,405
631 Howard	San Francisco, CA	\$94,000,000	\$95,600,000	\$95,600,000	3Q14	June-18	\$2,615,280
Barton Oaks	Austin, TX	\$92,900,000	\$94,200,000	\$94,200,000	3Q14	June-18	\$2,576,981
Hercules East and South Campus	Los Angeles, CA	\$181,123,239	\$182,150,051	\$182,150,051	3Q14	June-18	\$4,982,985
The Reserve	Playa Vista, CA	\$379,040,898	\$383,747,471	\$383,747,471	1Q15	June-18	\$10,497,982
Fort Point Portfolio	Boston, MA	\$245,357,819	\$247,336,511	\$247,336,511	2Q15	June-18	\$6,766,258
Summit IV	Aliso Viejo, CA	\$116,000,000	\$116,000,000	\$78,355,097	2Q15	June-18	\$2,143,520
1101 Westlake	Seattle, WA	\$128,000,000	\$136,000,000	\$136,000,000	3Q15	June-18	\$3,720,482
PearlWest	Boulder, CO	\$121,000,000	\$127,000,000	\$127,000,000	4Q16	June-18	\$3,474,274
The Mark 302	Santa Monica, CA	\$49,898,678	\$50,528,109	\$50,528,109	1Q18	June-18	\$1,382,272
430 West 15th Street	New York NY	\$0	\$158,500,000	\$158,500,000	2Q18	Acq 2Q18	\$4,336,003
The Quad	New York NY	\$0	\$71,566,306	\$71,566,306	2Q18	Acq 2Q18	\$1,957,803
		<b>\$3,877,840,529</b>	<b>\$4,141,259,446</b>	<b>\$3,866,131,538</b>			<b>\$105,763,773</b>
RETAIL							
Chandler Pavilion	Phoenix - Mesa AZ	\$23,900,000	\$26,400,000	\$26,400,000	2Q04	June-18	\$722,211
Cityline at Tenley	Washington, D.C.	\$65,000,000	\$61,000,000	\$61,000,000	4Q05	June-18	\$1,668,746
Ridgehaven Shopping Center	Minnetonka, MN	\$42,300,000	\$42,500,000	\$42,500,000	4Q05	June-18	\$1,162,651
The Beacon Garage (units)	San Francisco, CA	\$36,215,385	\$36,249,909	\$36,249,909	1Q06	June-18	\$991,670
The Beacon Office (210 King)	San Francisco, CA	\$25,500,000	\$28,500,000	\$28,500,000	1Q15	June-18	\$779,660
Hawthorne Plaza	Overland Park, KS	\$51,900,000	\$53,425,000	\$53,425,000	4Q07	June-18	\$1,461,520
The Loop	Boston MA - NH	\$89,000,000	\$83,000,000	\$83,000,000	1Q08	June-18	\$2,270,588
Westbank Market	Austin, TX	\$62,900,000	\$63,000,000	\$63,000,000	3Q10	June-18	\$1,723,459
910 Lincoln Road	Miami, FL	\$34,700,000	\$35,100,000	\$35,100,000	4Q10	June-18	\$1,723,459
Lake Pointe Village	Houston, TX	\$83,850,000	\$86,950,000	\$86,950,000	4Q11	June-18	\$960,213
Safeway Kapahulu	Hawaii	\$94,900,000	\$95,100,000	\$59,225,251	4Q11	June-18	\$1,620,195
Safeway Burlingame	San Francisco, CA	\$58,800,000	\$58,600,000	\$36,104,134	4Q11	June-18	\$987,682
Shamrock Plaza	Oakland, CA	\$40,600,000	\$40,700,000	\$24,595,759	4Q11	June-18	\$672,854
Pavilions Marketplace	West Hollywood, CA	\$70,200,000	\$70,600,000	\$46,150,855	1Q12	June-18	\$1,262,525
130 Prince	New York, NY	\$217,000,000	\$218,000,000	\$218,000,000	2Q12	June-18	\$5,963,714
Safeway Pleasanton	Pleasanton, CA	\$83,000,000	\$82,600,000	\$82,600,000	4Q12	June-18	\$2,259,646
Liberty Wharf	Boston, MA	\$97,200,000	\$97,300,000	\$67,708,931	4Q12	June-18	\$1,852,278
Shops at Legacy	Plano, TX	\$117,561,046	\$115,588,287	\$115,588,287	3Q13	June-18	\$3,162,089
Pasadena Commons	Pasadena, CA	\$61,900,000	\$61,900,000	\$61,900,000	4Q14	June-18	\$1,693,366
Rush Street Retail	Chicago, IL	\$16,900,000	\$16,900,000	\$16,900,000	4Q14	June-18	\$462,325
Legacy West Retail	Plano, TX	\$198,740,004	\$193,969,026	\$120,163,116	1Q15	June-18	\$3,287,241
Legacy West Land	Plano, TX	\$917,929	\$917,929	\$917,929	2Q17	June-18	\$25,111
131-137 Spring Street	New York, NY	\$228,000,000	\$224,000,000	\$111,200,000	3Q15	June-18	\$3,042,041
Runway at Playa Vista - Retail	Playa Vista, CA	\$127,200,000	\$127,200,000	\$64,792,500	1Q16	June-18	\$1,772,495
139 Spring	New York, NY	\$126,924,800	\$126,924,800	\$126,924,800	1Q16	June-18	\$3,472,216
Clayton Lane	Denver, CO	\$145,484,260	\$146,689,047	\$101,067,741	1Q16	June-18	\$2,764,858
4th & Colorado	Santa Monica, CA	\$13,280,000	\$13,280,000	\$13,280,000	1Q16	June-18	\$363,294
Legacy West - Block H	Plano, TX	\$5,188,070	\$6,713,845	\$6,713,845	4Q17	June-18	\$183,667
Shops at Crystals	Las Vegas, NV	\$292,750,000	\$293,750,000	\$157,833,913	2Q16	June-18	\$4,317,781
		<b>\$2,580,496,109</b>	<b>\$2,575,607,934</b>	<b>\$2,016,542,062</b>			<b>\$54,510,317</b>
Other							
Baranof - Walden Park	San Marcos, TX	\$10,860,901	\$9,664,361	\$9,664,361	1Q18	June-18	\$264,383
Baranof - Ranch Road 620	San Marcos, TX	\$9,020,071	\$8,928,029	\$8,928,029	1Q18	June-18	\$244,240
Baranof - Glenwood Avenue	Raleigh, NC	\$9,059,741	\$9,112,112	\$9,112,112	1Q18	June-18	\$249,275
Baranof - Fishers Landing Vancouver	Vancouver, WA	\$15,249,371	\$15,370,937	\$15,370,937	1Q18	June-18	\$420,495
US Storage	Compton, CA	\$7,992,682	\$8,679,384	\$8,679,384	4Q17	June-18	\$237,437
		<b>\$71,744,211</b>	<b>\$72,648,253</b>	<b>\$72,648,253</b>			<b>\$1,987,401</b>
<b>Portfolio Total</b>		<b>\$12,393,449,420</b>	<b>\$12,741,695,877</b>	<b>\$11,036,974,040</b>			<b>\$301,277,637</b>



	Return (Rank)							
	Quarter	YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.0	1.1	3.6	2.9	2.8	2.4	2.9	4.2
25th Percentile	0.8	0.1	2.3	1.3	2.0	1.7	2.1	3.3
Median	0.7	-0.1	2.0	0.7	1.8	1.5	1.9	3.1
75th Percentile	0.6	-0.2	1.7	0.5	1.4	1.1	1.4	2.7
95th Percentile	0.4	-1.1	1.2	0.2	1.0	0.7	0.6	2.3
# of Portfolios	22	21	21	21	21	18	17	11
● Brown Brothers Harriman	0.7 (32)	0.5 (13)	2.4 (24)	1.7 (19)	1.8 (45)	1.3 (62)	2.0 (39)	-- (--)
▲ BBgBarc US TIPS TR	0.8 (24)	0.0 (42)	2.1 (41)	0.7 (39)	1.9 (32)	1.7 (26)	2.1 (29)	3.0 (56)





Sector	Account Weight	BBgBarc TIPS	
		Index	Difference
Treasuries	100.0%	100.0%	0.0%
Agencies	0.0%	0.0%	0.0%
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*	0.0%	0.0%	0.0%
<b>TOTAL</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>

\* May include Derivatives, Futures, Swaps, Credit Default Swaps, Total Return Swaps or Currency Contracts.

Portfolio Characteristics		
		Portfolio
Total Number of Securities		10
Total Market Value	\$	87,884,436
Current Coupon		1.14
Yield to Maturity		0.64
Average Life		
Duration		5.86
Quality		AAA

BBgBarc TIPS	
Total Number of Securities	39
Total Market Value	N/A
Current Coupon	0.78
Yield to Maturity	0.67
Average Life	
Duration	7.58
Quality	AAA

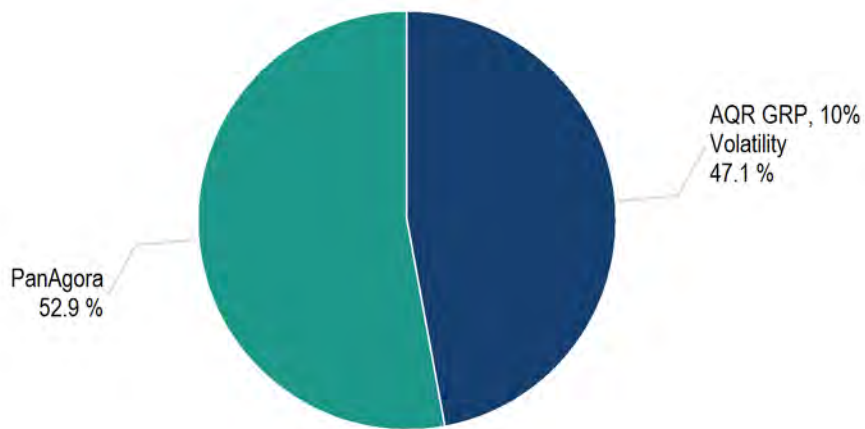
Yield to Maturity	
Range	% Held
0.0 - 5.0	100.0
5.0 - 7.0	0.0
7.0 - 9.0	0.0
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	0.0
Unclassified	0.0

Average Life	
Range	% Held
0.0 - 3.0	13.6
3.0 - 5.0	14.9
5.0 - 10.0	58.2
10.0 - 15.0	5.6
15.0+	7.7
Unclassified	0.0

Duration	
Range	% Held
0.0 - 3.0	13.6
3.0 - 5.0	29.9
5.0 - 10.0	43.3
10.0 - 15.0	5.6
15.0+	7.7
Unclassified	0.0

Quality	
Range	% Held
Govt (10)	100.0
Aaa (10)	0.0
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 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	0.0
Unclassified	0.0



	Actual \$	Actual %	Manager Contribution to Excess Return %
AQR GRP, 10% Volatility	\$146,542,711	47.1%	-0.7%
PanAgora	\$164,583,726	52.9%	-0.6%
Actual vs. Policy Weight Difference			0.0%
<b>Total</b>	<b>\$311,126,437</b>	<b>100.0%</b>	<b>-1.3%</b>

**Statistics Summary**

**3 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Risk Parity	5.5%	7.5%	0.6	-0.3	6.0%
Blended Risk Parity Index	7.5%	6.1%	1.1	--	0.0%
AQR GRP, 10% Volatility	4.2%	7.4%	0.5	-0.6	5.7%
Blended Risk Parity Index	7.5%	6.1%	1.1	--	0.0%
PanAgora	6.7%	8.0%	0.7	-0.1	6.7%
Blended Risk Parity Index	7.5%	6.1%	1.1	--	0.0%

**Statistics Summary**

**5 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Risk Parity	6.5%	7.7%	0.8	-0.4	6.0%
Blended Risk Parity Index	8.8%	6.0%	1.4	--	0.0%
AQR GRP, 10% Volatility	5.1%	7.7%	0.6	-0.6	5.9%
Blended Risk Parity Index	8.8%	6.0%	1.4	--	0.0%

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: June 30, 2018

	3 Mo (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
<b>Total Fund</b>	<b>0.6</b>	<b>0.2</b>	<b>6.9</b>	<b>9.8</b>	<b>6.8</b>	<b>8.3</b>	<b>6.4</b>
<i>Policy Index</i>	0.8	0.1	7.8	10.1	7.0	8.2	6.8
<b>Total Fund ex Overlay</b>	<b>0.6</b>	<b>0.2</b>	<b>6.8</b>	<b>9.8</b>	<b>6.7</b>	<b>8.2</b>	<b>6.4</b>
<i>Policy Index</i>	0.8	0.1	7.8	10.1	7.0	8.2	6.8
<b>Public Equity</b>	<b>1.1</b>	<b>0.4</b>	<b>11.2</b>	<b>15.0</b>	<b>9.1</b>	<b>10.6</b>	<b>7.3</b>
<i>Blended Public Equity Index</i>	1.0	0.2	11.8	15.9	9.1	10.6	7.7
<b>US Equity</b>	<b>4.1</b>	<b>3.4</b>	<b>15.3</b>	<b>16.9</b>	<b>11.3</b>	<b>13.0</b>	<b>9.8</b>
<i>Blended US Equity Index</i>	3.9	3.2	14.8	16.8	11.3	13.1	10.3
<i>Russell 3000</i>	3.9	3.2	14.8	16.6	11.6	13.3	10.2
<b>Large Cap Equity</b>	<b>3.7</b>	<b>3.1</b>	<b>15.3</b>	<b>17.5</b>	<b>12.4</b>	<b>13.8</b>	<b>9.9</b>
<i>Russell 1000</i>	3.6	2.9	14.5	16.3	11.6	13.4	10.2
<i>BlackRock Russell 1000</i>	3.6	2.9	14.6	--	--	--	--
<i>DE Shaw</i>	4.3	4.0	19.1	19.6	14.5	15.5	--
<i>Russell 1000</i>	3.6	2.9	14.5	16.3	11.6	13.4	10.2
<b>Small Cap Equity</b>	<b>7.0</b>	<b>6.4</b>	<b>15.4</b>	<b>18.9</b>	<b>9.4</b>	<b>11.1</b>	<b>10.0</b>
<i>Russell 2000</i>	7.8	7.7	17.6	21.0	11.0	12.5	10.6
<i>QMA US Small Cap</i>	7.0	6.4	15.4	--	--	--	--
<i>Russell 2000</i>	7.8	7.7	17.6	21.0	11.0	12.5	10.6
<b>International Equity</b>	<b>-2.2</b>	<b>-3.0</b>	<b>6.7</b>	<b>12.6</b>	<b>5.9</b>	<b>6.8</b>	<b>2.5</b>
<i>MSCI ACWI ex US IMI</i>	-2.6	-3.6	7.8	14.2	5.8	6.7	3.1
<i>MSCI EAFE Gross</i>	-1.0	-2.4	7.4	13.9	5.4	6.9	3.3
<b>Developed Markets</b>	<b>-1.3</b>	<b>-2.4</b>	<b>7.1</b>	<b>12.9</b>	<b>6.1</b>	<b>7.2</b>	<b>2.8</b>
<i>MSCI ACWI ex USA Gross</i>	-2.4	-3.4	7.8	14.2	5.6	6.5	3.0
<i>Baillie Gifford</i>	0.5	-0.2	10.2	15.4	8.3	9.1	--
<i>MSCI ACWI ex US</i>	-2.4	-3.4	7.8	14.2	5.6	6.9	--
<i>MSCI ACWI ex US Growth</i>	-1.2	-2.0	10.3	14.0	6.9	8.0	--
<i>BlackRock EAFE Index</i>	-0.8	-2.4	7.3	13.8	5.3	--	--
<i>MSCI EAFE</i>	-1.2	-2.7	6.8	13.4	4.9	6.4	2.8
<i>MSCI EAFE Gross</i>	-1.0	-2.4	7.4	13.9	5.4	6.9	3.3

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: June 30, 2018

	3 Mo (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Mondrian	-3.4	-4.6	4.3	10.0	4.2	5.6	3.1
<i>MSCI ACWI ex USA Value Gross</i>	-3.6	-4.9	5.3	14.4	4.1	5.3	2.6
<i>MSCI ACWI ex USA Gross</i>	-2.4	-3.4	7.8	14.2	5.6	6.5	3.0
<b>Emerging Markets</b>	<b>-9.5</b>	<b>-8.1</b>	<b>3.4</b>	<b>10.1</b>	<b>4.1</b>	<b>3.6</b>	<b>--</b>
<i>MSCI Emerging Markets Gross</i>	-7.9	-6.5	8.6	16.1	6.0	5.4	2.6
Parametric Core	-9.5	-8.1	3.4	10.1	--	--	--
<i>MSCI Emerging Markets Gross</i>	-7.9	-6.5	8.6	16.1	6.0	5.4	2.6
<b>Fixed Income</b>	<b>-0.3</b>	<b>-0.6</b>	<b>1.1</b>	<b>4.3</b>	<b>3.8</b>	<b>4.0</b>	<b>5.6</b>
<i>Blended Fixed Income Index</i>	-0.1	-1.6	0.0	1.1	2.6	2.7	4.0
<b>Core Fixed</b>	<b>-0.6</b>	<b>-1.5</b>	<b>0.0</b>	<b>1.6</b>	<b>2.7</b>	<b>3.2</b>	<b>4.8</b>
<i>BBgBarc US Aggregate TR</i>	-0.2	-1.6	-0.4	-0.4	1.7	2.3	3.7
BlackRock Intermediate Govt	0.1	-0.5	-0.5	--	--	--	--
<i>BBgBarc US Govt Int TR</i>	0.1	-0.7	-0.7	-1.0	0.6	1.0	2.4
FIAM Bond	0.0	-1.3	0.3	0.7	2.5	3.0	4.9
<i>BBgBarc US Aggregate TR</i>	-0.2	-1.6	-0.4	-0.4	1.7	2.3	3.7
Western TRU	-2.9	-3.6	-0.1	4.8	--	--	--
3-Month Libor Total Return USD	0.6	1.1	1.8	1.4	1.1	0.8	0.7
<i>BBgBarc US Aggregate TR</i>	-0.2	-1.6	-0.4	-0.4	1.7	2.3	3.7
<b>Opportunistic Credit</b>	<b>0.4</b>	<b>1.4</b>	<b>4.0</b>	<b>9.6</b>	<b>6.9</b>	<b>7.4</b>	<b>--</b>
<i>BBgBarc BA Intermediate HY</i>	0.0	-1.5	0.4	4.7	4.4	4.4	--
Angelo Gordon Opportunistic	9.5	15.4	24.8	20.9	13.8	--	--
Angelo Gordon STAR	4.8	11.7	20.3	19.2	13.0	13.6	--
<i>BBgBarc US Aggregate TR</i>	-0.2	-1.6	-0.4	-0.4	1.7	2.3	3.7
Beach Point Select	2.0	3.2	7.2	10.7	8.8	--	--
<i>BBgBarc BA Intermediate HY</i>	0.0	-1.5	0.4	4.7	4.4	4.4	--
Brigade Capital	1.5	2.6	4.4	10.3	6.4	5.5	--
<i>BBgBarc BA Intermediate HY</i>	0.0	-1.5	0.4	4.7	4.4	4.4	--
50% Barclays HY/ 50% Bank Loan	0.9	1.3	3.6	6.8	4.9	4.9	--

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: June 30, 2018

	3 Mo (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
PIMCO Diversified	-0.7	-1.4	--	--	--	--	--
<i>Blended PIMCO Diversified Index</i>	-1.1	-2.4	0.2	3.2	4.3	4.6	6.6
<i>BBgBarc BA Intermediate HY</i>	0.0	-1.5	0.4	4.7	4.4	4.4	--
Franklin Templeton	-4.3	-2.4	-2.5	4.0	1.5	2.0	--
<i>BBgBarc Multiverse TR</i>	-2.8	-1.6	1.3	0.0	2.8	1.7	2.8
<b>Private Credit</b>	<b>1.3</b>	<b>3.2</b>	<b>5.9</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>Cliffwater Direct Lending Index</i>	2.2	4.4	8.6	9.5	8.2	9.2	9.5
TCP Direct Lending VIII	2.2	2.9	6.3	--	--	--	--
White Oak Yield	0.0	3.4	3.2	--	--	--	--
<i>Cliffwater Direct Lending Index</i>	2.2	4.4	8.6	9.5	8.2	9.2	9.5
<b>Risk Parity</b>	<b>-0.2</b>	<b>-1.6</b>	<b>6.6</b>	<b>5.3</b>	<b>5.5</b>	<b>6.5</b>	<b>--</b>
<i>Blended Risk Parity Index</i>	1.1	0.4	7.3	9.3	7.5	8.8	--
AQR GRP, 10% Volatility	-0.5	-1.7	7.6	6.7	4.2	5.1	--
PanAgora	0.0	-1.6	5.8	4.2	6.7	--	--
<i>Blended Risk Parity Index</i>	1.1	0.4	7.3	9.3	7.5	8.8	--
<i>Blended RP Secondary Index</i>	2.3	1.3	8.6	9.2	6.5	7.5	--
<b>Alternatives</b>	<b>-1.2</b>	<b>-0.5</b>	<b>2.6</b>	<b>9.6</b>	<b>6.1</b>	<b>7.1</b>	<b>--</b>
<i>Blended Alternatives Index</i>	0.9	1.6	10.0	12.0	7.7	8.2	--
<b>Private Equity</b>	<b>2.2</b>	<b>7.1</b>	<b>9.3</b>	<b>18.8</b>	<b>13.5</b>	<b>16.9</b>	<b>--</b>
<i>Blended Private Equity Index</i>	0.2	0.4	13.6	17.5	13.2	15.5	12.9
<b>Hedge Fund/Absolute Return</b>	<b>-4.6</b>	<b>-7.6</b>	<b>-3.6</b>	<b>0.4</b>	<b>2.5</b>	<b>4.1</b>	<b>--</b>
<i>Libor 1 month +4%</i>	1.5	2.8	5.6	5.2	4.9	4.6	--
AQR DELTA XN	-6.1	-9.7	-4.9	-0.4	2.3	4.0	--
Aberdeen Standard GARS	-2.2	-4.0	-1.9	0.9	--	--	--
<i>Libor 1 month +4%</i>	1.5	2.8	5.6	5.2	4.9	4.6	--
<b>Inflation Hedge</b>	<b>2.0</b>	<b>1.7</b>	<b>7.0</b>	<b>6.6</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>Blended Inflation Hedge Index</i>	1.4	0.9	7.2	5.7	--	--	--
<b>Real Estate</b>	<b>1.8</b>	<b>4.1</b>	<b>8.2</b>	<b>8.4</b>	<b>9.4</b>	<b>11.1</b>	<b>5.4</b>
NCREIF ODCE	2.1	4.3	8.4	8.2	9.4	11.0	5.7

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: June 30, 2018

	3 Mo (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Invesco	1.9	4.3	8.3	8.4	9.3	11.0	5.4
NCREIF ODCE	2.1	4.3	8.4	8.2	9.4	11.0	5.7
Invesco US Val IV	2.0	4.7	12.8	11.5	--	--	--
NCREIF ODCE	2.1	4.3	8.4	8.2	9.4	11.0	5.7
NCREIF CEVA 1Q Lag - NET	2.1	5.6	11.6	10.4	12.4	--	--
PGIM RE US Debt Fund	1.4	2.5	--	--	--	--	--
NCREIF ODCE	2.1	4.3	8.4	8.2	9.4	11.0	5.7
<b>Private Real Asset</b>	<b>1.6</b>	<b>-0.3</b>	<b>-5.8</b>	<b>-1.6</b>	<b>11.1</b>	<b>--</b>	<b>--</b>
Blended Private Real Asset Index	-4.0	-7.1	1.9	3.4	4.4	--	--
Blended Secondary CA Private RA Index	1.6	5.5	10.7	13.3	7.9	--	--
<b>Liquid Real Asset</b>	<b>2.8</b>	<b>-0.2</b>	<b>10.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
Blended Liquid Real Asset Index	2.5	-0.8	8.9	6.9	6.7	--	--
SSgA Custom Real Asset	2.8	-0.2	10.4	--	--	--	--
Blended Liquid Real Asset Index	2.5	-0.8	8.9	6.9	6.7	--	--
<b>TIPS</b>	<b>0.8</b>	<b>0.5</b>	<b>2.6</b>	<b>1.9</b>	<b>2.0</b>	<b>1.5</b>	<b>--</b>
BBgBarc US TIPS TR	0.8	0.0	2.1	0.7	1.9	1.7	3.0
Brown Brothers Harriman	0.8	0.5	2.6	1.9	2.0	1.5	--
BBgBarc US TIPS TR	0.8	0.0	2.1	0.7	1.9	1.7	3.0
<b>Cash</b>	<b>0.3</b>	<b>0.5</b>	<b>1.0</b>	<b>0.9</b>	<b>1.1</b>	<b>0.8</b>	<b>0.5</b>
91 Day T-Bills	0.5	0.8	1.4	1.0	0.7	0.4	0.3
General Account	1.1	1.5	2.7	1.9	2.0	1.4	0.9
Treasury & LAIF	0.4	2.7	3.2	1.8	1.6	1.3	0.6
91 Day T-Bills	0.5	0.8	1.4	1.0	0.7	0.4	0.3



### **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 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 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).

## **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 begins 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.

## **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 – 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.

## **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.

## **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).

## **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.

## **Pyramis Global Advisors – Select International Small Cap**

Pyramis Select International Small Cap is a core strategy. The approach is designed to leverage Pyramis/Fidelity’s proprietary resources to add value exclusively via stock selection. To that end the portfolio is constructed to be regionally neutral, with only modest deviations from the benchmark’s country and sector weights. The investment process involves three basic stages. The first stage is the security level research conducted by the analysts. The second stage is stock selection from within the pool of names that are highly ranked by the analysts. The third step is portfolio construction and risk management. The essential differentiating feature of this strategy is the breadth of coverage that is made possible by the large staff of analysts. Analysts actively conduct regular fundamental research on, and give a formal rating of 1-5, 1200-1300 international small cap companies. While there is no single firm-wide approach to security research, analysts are expected to establish an upside target for any given stock and assign a formal rating. The decision making structure is quite efficient, with portfolio manager Rob Feldman making all the buy and sell decisions. His role, as he puts it, is to be an intelligent user of the analysts’ research. He selects the 1- and 2-rated stocks that he thinks are compelling and additive to his portfolio, and he sells names when they are downgraded by the analysts. There are approximately 200 holdings in the portfolio. Country and sector weights are within 3 percentage points of the benchmark and position sizes are within 2 percentage points of the benchmark. Turnover tends to be in the 60%-80% range.

## **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: June 30, 2018

Total Plan Policy Index	As of																	
	4/1/18	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%	0.0%	8.0%	10.0%	10.0%
60/40 MSCI World/BBgBarc Global Aggregate (RP)	8.0%	8.0%	8.0%	8.0%	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%
60/40 Russell 3000/BBgBarc US Aggregate (RP)	0.0%	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%	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%	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%	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%	0.0%	3.5%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Multiverse	0.0%	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%	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%	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%	0.0%	5.0%	9.0%	9.0%
CPI + 5% (RA)	0.0%	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	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blended Private Real Asset	2.0%	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%	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%	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	0.0%	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%	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%	0.0%	20.0%	20.0%	20.0%
NCREIF ODCE	8.0%	8.0%	7.0%	7.0%	7.0%	7.0%	7.0%	6.0%	6.0%	5.0%	5.0%	5.0%	6.0%	0.0%	0.0%	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%	0.0%	6.0%	6.0%	0.0%	0.0%	0.0%
Russell 1000	0.0%	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%	0.0%	5.0%	5.0%	0.0%
Russell 2000	0.0%	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%	21.0%	23.0%	26.0%	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)	0.0%	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)	7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	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%	0.0%	5.0%
	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%	100.0%	100.0%



Total Equity Benchmark	As of:										
	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%	34.0%	0.0%	23.1%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	45.2%	40.4%	41.7%	41.7%	40.0%	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%	32.3%	33.3%	33.3%
Russell 1000	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%	8.0%	8.4%	0.0%
Russell 2000	0.0%	0.0%	0.0%	8.3%	12.0%	13.2%	13.5%	15.4%	24.2%	25.0%	25.0%
Russell 3000	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%	8.4%
	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:			
	10/1/17	1/1/14	6/1/00	1/1/96
MSCI ACWI ex US	0.0%	0.0%	100.0%	0.0%
MSCI ACWI ex US IMI	0.0%	100.0%	0.0%	0.0%
MSCI ACWI ex US IMI (Net)	100.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	100.0%
	100.0%	100.0%	100.0%	100.0%

Fixed Income Benchmark	As of:											
	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	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	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%	7.3%	0.0%	0.0%	0.0%
BBgBarc Credit BAA	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%	14.3%	15.8%	16.7%	15.0%	18.8%	20.0%	20.5%	0.0%	0.0%	0.0%	0.0%
BBgBarc TIPS	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%	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%

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%

RP Secondary Benchmark	As of:	
	1/1/17	10/1/10
BBgBarc Aggregate	40.0%	0.0%
BBgBarc Global Aggregate	0.0%	40.0%
MSCI World	0.0%	60.0%
Russell 3000	60.0%	0.0%
	100.0%	100.0%

# Policy Index and Benchmark History

Period Ending: June 30, 2018

Alternatives Benchmark	As of:				
	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%	30.0%
Bloomberg Commodity	0.0%	0.0%	17.7%	18.8%	15.0%
CPI + 5% (RA)	0.0%	0.0%	11.8%	12.5%	0.0%
Libor +4% (HF)	46.2%	41.7%	29.4%	25.0%	15.0%
Russell 3000 +3% (PE)	53.8%	58.3%	41.2%	43.8%	40.0%
Russell 3000 +3% 1Q Lag (PE)	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>

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%
	<b>100.0%</b>	<b>100.0%</b>

Hedge Fund Benchmark	As of:
	10/1/10
Libor +4%	100.0%
	<b>100.0%</b>

Inflation Hedge	As of:			
	4/1/18	2/1/17	10/1/16	4/1/16
BBgBarc TIPS	11.11%	12.50%	14.3%	14.3%
Bloomberg Commodity	0.00%	0.00%	0.0%	21.4%
CPI + 5% (RA)	0.00%	0.00%	0.0%	14.3%
Blended Liquid Real Asset	33.34%	0.00%	0.0%	0.0%
Blended Private Real Asset	11.11%	43.75%	35.7%	0.0%
NCREIF ODCE	44.44%	43.75%	50.0%	50.0%
	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Liquid 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%
	<b>100.0%</b>	<b>100.0%</b>

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%
	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

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%
	<b>100.0%</b>

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%
	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

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>	



**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:	0.05% per annum
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**BlackRock-Russell 1000 Index Fund**

First \$250 million:	0.02% per annum
Thereafter:	0.015% per annum

**BlackRock-Intermediate Govt Bond Index Fund**

On All Assets:	0.04% per annum
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**Brown Brothers Harriman**

On All Assets:	0.15% per annum
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**Clifton Group**

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	

**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

**Parametric**

On All Assets:	0.30% per annum
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**PIMCO Diversified**

On All Assets:	0.75% per annum
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**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
DE Shaw	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	--	--	--
TCP Direct Lending VIII	Cliffwater Direct Lending Index	--	--	--
White Oak Yield	Cliffwater Direct Lending Index	--	--	--
Private Equity	Blended Private Equity Index	✓	--	✓
AQR DELTA XN	Libor 1 month +4%	✗	✗	✗
Aberdeen Standard GARS	Libor 1 month +4%	--	--	--
SSgA Custom Real Asset	Blended Liquid Real Asset Index	--	--	--

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

Name	Primary Benchmark	Rule 1	Rule 2	Rule 3
DE Shaw	Russell 1000	✓	✓	✓
QMA US Small Cap	Russell 2000	--	--	--
Baillie Gifford	MSCI ACWI ex US	✓	✓	✓
Mondrian	MSCI ACWI ex USA Value Gross	✓	FB	✓
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	✓	✓	FB
PIMCO Diversified	Blended PIMCO Diversified Index	--	--	--
Franklin Templeton	BBgBarc Multiverse TR	--	--	--
TCP Direct Lending VIII	Cliffwater Direct Lending Index	--	--	--
White Oak Yield	Cliffwater Direct Lending Index	--	--	--
Private Equity	Blended Private Equity Index	✓	--	✓
AQR DELTA XN	Libor 1 month +4%	FB	FB	FB
Aberdeen Standard GARS	Libor 1 month +4%	--	--	--
SSgA Custom Real Asset	Blended Liquid Real Asset Index	--	--	--

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: June 30, 2018

	Apr	May	June	2nd Qtr. 2018	Difference	1st Qtr. 2018	Difference	4th Qtr. 2017	Difference	3rd Qtr. 2017	Difference	2nd Qtr. 2017	Difference
Verus	0.35%	2.55%	0.65%	3.59%		-0.69%		6.58%		4.49%		3.07%	
BlackRock Russell 1000	0.35%	2.55%	0.65%	3.59%	0.00%	-0.69%	0.00%	6.59%	0.00%	4.49%	0.00%	3.07%	0.00%
Russell 1000 Index	0.34%	2.55%	0.65%	3.57%		-1.19%		4.90%		4.48%		3.07%	
Verus	0.35%	3.71%	0.22%	4.31%		-0.32%		6.38%		7.60%		2.79%	
D.E. Shaw	0.36%	3.71%	0.23%	4.32%	-0.01%	-0.31%	-0.01%	6.39%	-0.01%	7.60%	0.00%	2.79%	0.00%
Russell 1000 Index	0.34%	2.55%	0.65%	3.57%		-1.19%		4.90%		4.48%		3.07%	
Verus	0.03%	6.14%	0.76%	6.98%		-0.51%		2.34%		5.94%		1.82%	
QMA US Small Cap (Net)	0.03%	6.14%	0.76%	6.98%	0.00%	-0.51%	0.00%	2.34%	0.00%	5.95%	-0.01%	1.82%	0.00%
Russell 2000 Index	0.86%	6.07%	0.72%	7.75%		-0.08%		3.34%		5.67%		2.46%	
Verus	0.31%	0.41%	-0.36%	0.36%		-0.75%		4.95%		5.14%		8.83%	
Baillie Gifford (Net)	0.27%	0.50%	-0.42%	0.35%	0.00%	-0.74%	-0.01%	4.92%	0.03%	5.12%	0.02%	8.80%	0.03%
MSCI ACWI ex US	1.68%	-2.21%	-1.84%	-2.39%		-1.08%		5.06%		6.25%		5.99%	
MSCI ACWI ex US Growth	0.83%	-0.49%	-1.56%	-1.23%		-0.80%		5.81%		6.39%		7.74%	
Verus	2.57%	-2.14%	-1.21%	-0.83%		-1.59%		4.26%		5.47%		6.32%	
BlackRock EAFE Equity	2.57%	-2.14%	-1.21%	-0.83%	0.00%	-1.59%	0.00%	4.26%	0.00%	5.47%	0.00%	6.32%	0.00%
MSCI EAFE (Net)	2.28%	-2.25%	-1.22%	-1.24%		-1.53%		4.23%		5.40%		6.12%	
MSCI EAFE (Gross)	2.39%	-2.11%	-1.19%	-0.97%		-1.41%		4.27%		5.47%		6.37%	
Verus	2.77%	-4.19%	-1.92%	-3.43%		-1.24%		4.06%		5.05%		4.26%	
Mondrian(Net)	2.76%	-4.20%	-1.90%	-3.43%	0.00%	-1.22%	-0.02%	4.02%	0.04%	5.08%	-0.03%	4.29%	-0.03%
MSCI ACWI -ex US Value Index	2.55%	-3.95%	-2.12%	-3.59%		-1.36%		4.31%		6.11%		4.33%	
MSCI ACWI -ex US	1.68%	-2.21%	-1.84%	-2.39%		-1.08%		5.06%		6.25%		5.99%	
Verus	-1.14%	-5.06%	-3.55%	-9.47%		1.51%		5.24%		6.91%		3.44%	
Parametric Core	-1.12%	-5.04%	-3.54%	-9.42%	-0.05%	1.56%	-0.05%	5.30%	-0.06%	6.96%	-0.05%	3.47%	-0.03%
MSCI EM Market Index	-0.42%	-3.52%	-4.09%	-7.86%		1.47%		7.50%		8.04%		6.38%	

Manager Performance Comparison (Gross of Fees)

Period Ending: June 30, 2018

	Apr	May	June	2nd Qtr. 2018	Difference	1st Qtr. 2018	Difference	4th Qtr. 2017	Difference	3rd Qtr. 2017	Difference	2nd Qtr. 2017	Difference
Verus	-0.55%	0.66%	0.02%	0.12%		-0.67%		-0.36%		0.40%		0.73%	
BlackRock Intermediate Govt	-0.55%	0.66%	0.02%	0.12%	0.00%	-0.67%	0.00%	-0.35%	-0.01%	0.41%	-0.01%	0.73%	0.00%
BBgBarc US Govt Int Index	-0.57%	0.65%	-0.01%	0.06%		-0.73%		-0.41%		0.85%		1.45%	
Verus	-0.64%	0.57%	0.09%	0.02%		-1.31%		0.47%		1.13%		1.36%	
FIAM Bond	-0.64%	0.57%	0.09%	0.02%	0.00%	-1.31%	0.00%	0.48%	-0.01%	1.13%	0.00%	1.36%	0.00%
BBgBarc US Aggregate Index	-0.74%	0.71%	-0.12%	-0.16%		-1.46%		0.39%		0.85%		1.45%	
Verus	-0.96%	-1.19%	-0.79%	-2.90%		-0.69%		1.51%		2.09%		3.54%	
Western TRU	-0.96%	-1.19%	-0.79%	-2.90%	0.00%	-0.69%	0.00%	1.51%	0.00%	2.09%	0.00%	3.54%	0.00%
3-Month Libor Total Return USD Index	0.20%	0.20%	0.19%	0.59%		0.46%		0.39%		0.34%		0.31%	
BBgBarc US Aggregate Index	-0.74%	0.71%	-0.12%	-0.16%		-1.46%		0.39%		0.85%		1.45%	
Verus (Net)				9.49%		5.70%		11.05%		-0.59%		4.18%	
Angelo Gordon Opportunistic				9.49%	0.00%	5.70%	0.00%	11.05%	0.00%	-0.59%	0.00%	4.18%	0.00%
BBgBarc US Aggregate Index				-0.16%		-1.46%		0.39%		0.85%		1.45%	
Verus (Net)				4.83%		7.54%		3.13%		4.96%		6.13%	
Angelo Gordon STAR Fund (Net)				4.83%	0.00%	7.54%	0.00%	3.13%	0.00%	4.96%	0.00%	6.13%	0.00%
BBgBarc US Aggregate Index				-0.16%		-1.46%		0.39%		0.85%		1.45%	
Verus	0.85%	0.57%	0.58%	2.01%		1.14%		1.79%		2.07%		1.95%	
Beach Point Select (Net)	0.85%	0.57%	0.58%	2.01%	0.00%	1.14%	0.00%	1.79%	0.00%	2.07%	0.00%	1.95%	0.00%
BBgBarc BA Intermediate HY	0.18%	-0.26%	0.12%	0.04%		-1.49%		0.15%		1.72%		2.50%	
Verus	0.41%	0.39%	0.73%	1.53%		1.05%		0.33%		1.40%		1.83%	
Brigade Capital (Net)	0.41%	0.39%	0.75%	1.56%	-0.03%	1.03%	0.02%	0.28%	0.05%	1.44%	-0.04%	1.77%	0.06%
BBgBarc BA Intermediate HY	0.18%	-0.26%	0.12%	0.04%		-1.49%		0.15%		1.72%		2.50%	
50% BBgBarc HY/ 50% Bank Loan	0.57%	0.08%	0.25%	0.91%		0.36%		0.82%		1.52%		1.46%	
Verus	-0.23%	-0.21%	-0.30%	-0.73%		-0.64%		0.82%					
PIMCO Diversified	-0.23%	-0.21%	-0.30%	-0.73%	0.00%	-0.64%	0.00%	0.82%	0.00%				
Blended PIMCO Diversified Index	-0.43%	-0.35%	-0.36%	-1.13%		-1.26%		0.75%					
BBgBarc BA Intermediate HY	0.18%	-0.26%	0.12%	0.04%		-1.49%		0.15%					
Verus	0.63%	-3.43%	-1.55%	-4.32%		2.01%		-1.31%		1.25%		-0.98%	
Franklin Templeton Investments	0.63%	-3.43%	-1.55%	-4.32%	0.00%	2.01%	0.00%	-1.32%	0.01%	1.25%	0.00%	-0.98%	0.00%
BBgBarc Multiverse Index	-1.55%	-0.85%	-0.46%	-2.83%		1.29%		1.06%		1.88%		2.64%	
Verus				2.15%		1.46%		4.67%		2.69%		2.65%	
TCP Direct Lending VIII				2.15%	0.00%	1.46%	0.00%	4.67%	0.00%	2.69%	0.00%	2.65%	0.00%
Cliffwater Direct Lending Index				2.18%		2.02%		1.97%		1.72%		2.50%	



Manager Performance Comparison (Gross of Fees)

Period Ending: June 30, 2018

	Apr	May	June	2nd Qtr. 2018	Difference	1st Qtr. 2018	Difference	4th Qtr. 2017	Difference	3rd Qtr. 2017	Difference	2nd Qtr. 2017	Difference
Verus				0.00%		2.17%		0.51%		-4.64%			
White Oak Yield				0.00%	0.00%	2.17%	0.00%	0.51%	0.00%	-4.64%	0.00%		
Cliffwater Direct Lending Index				2.18%		2.02%		1.97%		1.72%			
Verus	0.34%	0.58%	-1.36%	-0.45%		-1.21%		4.72%		4.47%		1.46%	
AQR GRP, 10% Volatility (Net)	0.34%	0.58%	-1.36%	-0.45%	0.00%	-1.21%	0.00%	4.72%	0.00%	4.47%	0.00%	1.46%	0.00%
60% R3000/ 40% BBgBarc Agg	0.54%	0.53%	0.05%	1.12%		-0.67%		3.61%		3.21%		2.39%	
60% MSCI World/ 40% BBgBarc Glb	-0.07%	1.98%	0.34%	2.26%		-0.91%		3.93%		3.08%		2.80%	
Verus	0.06%	1.19%	-1.22%	0.02%		-1.58%		4.38%		2.98%		1.60%	
PanAgora (Net)	0.06%	1.19%	-1.22%	0.02%	0.00%	-1.58%	0.00%	4.38%	0.00%	2.98%	0.00%	1.60%	0.00%
60% R3000/ 40% BBgBarc Agg	0.54%	0.53%	0.05%	1.12%		-0.67%		3.61%		3.21%		2.39%	
60% MSCI World/ 40% BBgBarc Glb	-0.07%	1.98%	0.34%	2.26%		-0.91%		3.93%		3.08%		2.80%	
Verus	-0.18%	-2.39%	-3.62%	-6.09%		-3.86%		1.33%		3.99%		-1.19%	
AQR DELTA XN (Net)	-0.18%	-2.39%	-3.62%	-6.09%	0.00%	-3.86%	0.00%	1.33%	0.00%	3.99%	0.00%	-1.19%	0.00%
Labor + 4%	0.50%	0.50%	0.50%	1.51%		1.29%		1.46%		1.22%		1.29%	
Verus	-0.32%	-1.68%	-0.19%	-2.18%		-1.88%		1.87%		0.34%		0.81%	
Aberdeen Standard GARS (Net)	-0.32%	-1.68%	-0.19%	-2.18%	0.00%	-1.88%	0.00%	1.87%	0.00%	0.34%	0.00%	0.81%	0.00%
Labor + 4%	0.50%	0.50%	0.50%	1.51%		1.29%		1.46%		1.22%		1.29%	
Verus				1.86%		2.42%		2.29%		1.48%		1.88%	
INVESCO Real Estate				1.85%	0.01%	2.46%	-0.04%	2.26%	0.00%	1.46%	0.02%	1.88%	0.00%
NCREIF NFI ODCE Index				2.05%		2.20%		2.07%		1.87%		1.70%	
Verus				1.97%		2.67%		2.09%		5.56%		1.85%	
Invesco US Val IV				1.97%	0.00%	2.67%	0.00%	2.09%	0.00%	5.56%	0.00%	1.85%	0.00%
NCREIF NFI ODCE Index				2.05%		2.20%		2.07%		1.87%		1.70%	
NCREIF CEVA 1Q Lag - NET				2.13%		3.41%		3.00%		2.61%		1.36%	
Verus (net)				1.25%		1.09%		2.52%					
PGIM RE US Debt Fund (net)				1.25%	0.00%	1.09%	0.00%	2.52%	0.00%				
NCREIF NFI ODCE Index				2.05%		2.20%		2.07%					
Verus	0.07%	0.34%	0.37%	0.78%		-0.25%		1.25%		0.76%		-0.58%	
Brown Brothers Harriman	0.08%	0.34%	0.36%	0.78%	0.00%	-0.27%	0.02%	1.26%	0.00%	0.76%	0.00%	-0.60%	0.02%
BBgBarc U.S Tips	-0.06%	0.43%	0.40%	0.77%		-0.79%		1.26%		0.86%		-0.40%	

**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
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 - adjusted market 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
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

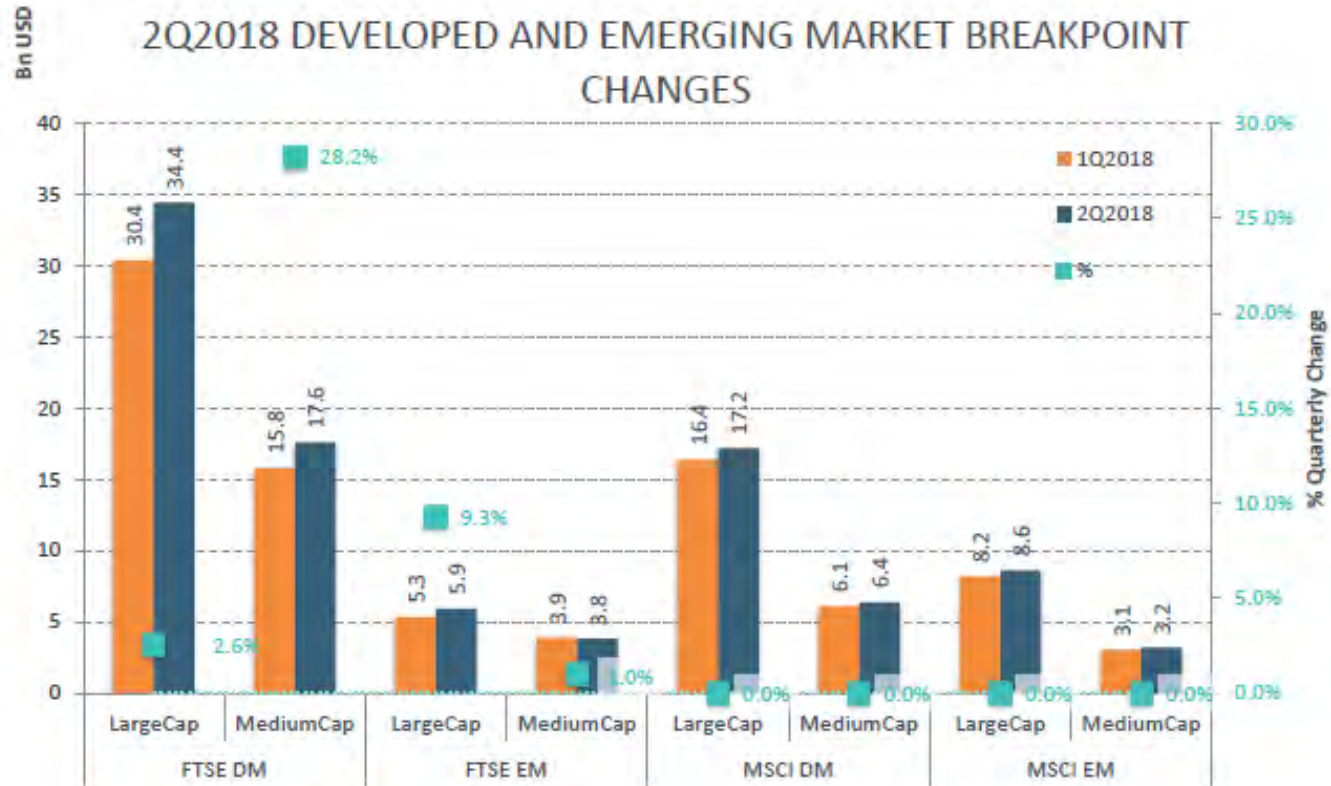
Period Ending: June 30, 2018

As Of	Large Cap	Medium Large Cap	Medium Cap	Medium Small Cap	Small Cap
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
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

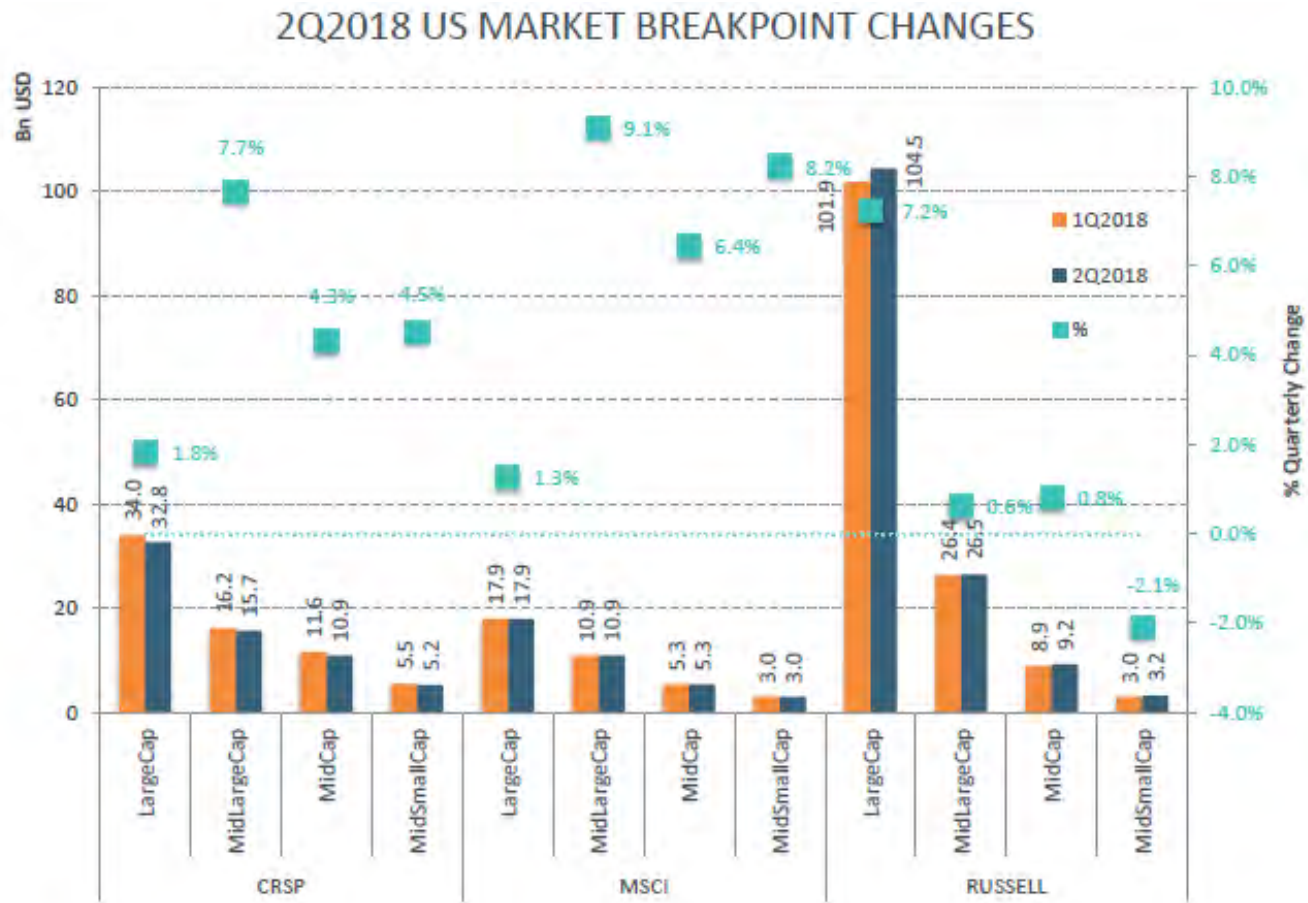
Numbers are billions USD



**BREAKPOINT TRENDS**



*MSCI is releasing market capitalization breakpoints less frequently than FTSE, hence the market capitalization breakpoints are longer in effect. This could result in no change.*



*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**

3<sup>RD</sup> QUARTER 2018  
Investment Landscape



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VERUSINVESTMENTS.COM

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

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Appendix 43

# 2<sup>nd</sup> quarter summary

## THE ECONOMIC CLIMATE

- U.S. economic data generally surprised to the upside in Q2, leading to a strong quarterly GDP growth estimate of 3.4%. Economic growth in the second and third quarters will likely see the biggest boost from fiscal stimulus. The U.S. is currently outshining other developed economies. [p. 7, 18](#)
- The synchronized global growth story of the past year has shifted somewhat as economies have displayed more disparate performance. The change has not been too dramatic – growth continues to be positive, but at a more moderate pace. [p. 17](#)

## PORTFOLIO IMPACTS

- Emerging market equity and local debt delivered losses of 8.0% and 10.4% in Q2 (MSCI Emerging Markets Index, JPM GBI-EM Global Diversified). Much of the losses were due to currency movement. We believe emerging market assets offer attractive value – recent movements appear to have been driven by a shift in short-term sentiment and currency depreciation. [p. 27, 34](#)
- The U.S. implemented a first round of tariffs on Chinese imports on July 6<sup>th</sup>, which impacted \$34 billion worth of goods. So far, only a small portion of the discussed tariffs have been enacted. [p. 8, 9](#)

## THE INVESTMENT CLIMATE

- Strong corporate earnings growth is expected again in the second quarter. According to FactSet, the bottom-up analyst forecast for the S&P 500 is 20.0% YoY. [p. 31](#)
- Short-term U.S. Treasury yields rose, resulting in a flatter yield curve. The spread between the 10- and 2-year yield was 27 bps, a new cycle low. [p. 23](#)
- Fears were raised over Italy's role in the European Union after a coalition of the anti-establishment Five Star Movement and League Party formed a new government. Italian sovereign bond yields spiked severely during the move, but have since moderated somewhat. [p. 19](#)

## ASSET ALLOCATION ISSUES

- Following the February selloff equity markets have been range bound. As corporate earnings rise further equity valuations have been pushed down to more attractive levels closer to the long-term historical average. [p. 31, 37](#)
- While we believe trade negotiations and geopolitical uncertainty are potential causes for concern, the backdrop of positive global growth and strong corporate earnings may allow for healthy risk-asset performance. [p. 18, 31](#)

A neutral to mild risk overweight may be warranted in today's environment

# What drove the market in Q2?

## “Trade tariff worries keep stocks under pressure”

### TOTAL PROPOSED GOODS SUBJECT TO U.S. TARIFFS (\$BILLIONS)

Jan	Feb	Mar	Apr	May	Jun
10	10	106	206	481	881

Article Source: Financial Times, June 21<sup>st</sup>, 2018

## “Economic growth in U.S. leaves world behind”

### U.S. Q2 GDP CONSENSUS EXPECTATION (%)

Jan	Feb	Mar	Apr	May	Jun
2.6	2.7	3.0	3.1	3.1	3.4

Article Source: WSJ, June 14<sup>th</sup>, 2018

## “Rising dollar sparks tumult in emerging markets”

### MSCI EMERGING MARKETS MONTHLY CURRENCY IMPACT

Jan	Feb	Mar	Apr	May	Jun
1.6%	-0.7%	0.0%	-1.6%	-1.3%	-1.7%

Article Source: WSJ, May 21<sup>st</sup>, 2018

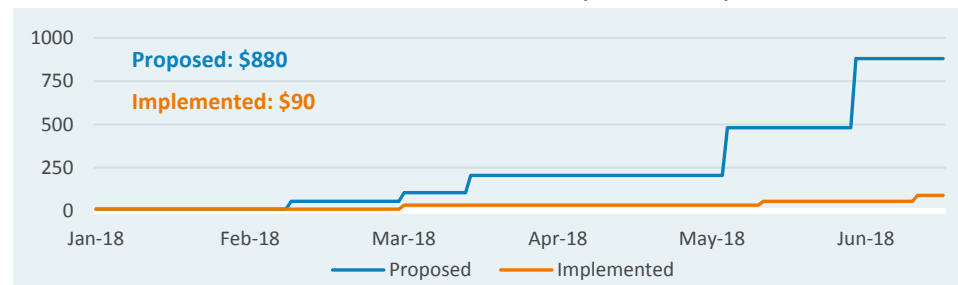
## “Investors are getting worried about an inverted yield curve”

### U.S. 10- MINUS 2-YEAR YIELD SPREAD (BPS)

Jan	Feb	Mar	Apr	May	Jun
56	61	47	46	42	33

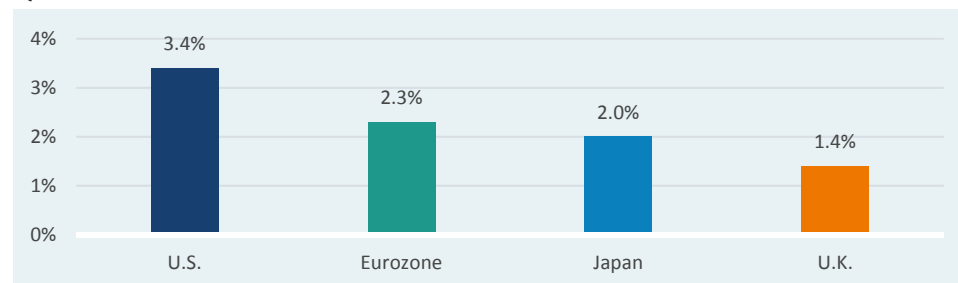
Article Source: Bloomberg, April 18<sup>th</sup>, 2018

## PROPOSED VS. IMPLEMENTED U.S. TARIFFS (\$BILLIONS)



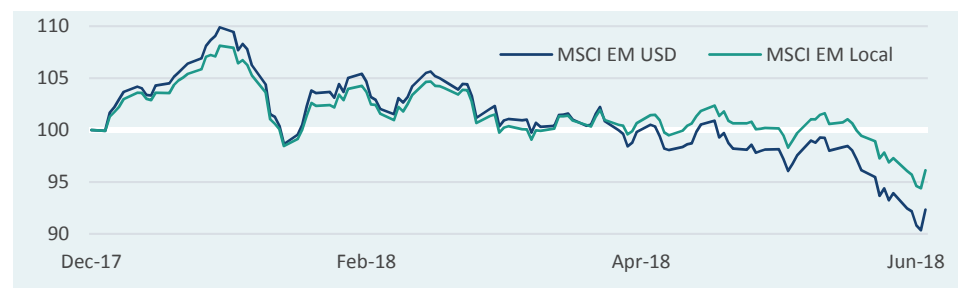
Source: Verus, as of 7/6/18

## Q2 GDP EXPECTATIONS



Source: Bloomberg, as of 7/11/18

## MSCI EMERGING MARKETS USD VS. LOCAL



Source: Bloomberg, as of 6/30/18

# Economic environment

# U.S. economics summary

- GDP growth was 2.8% year-over-year in the first quarter (2.0% quarterly annualized rate). The slightly slower pace of expansion was influenced by more conservative consumer spending than in previous quarters.
- The rate of inflation picked up moderately throughout the quarter. Core CPI rose 2.3% over the past year, reaching the upper end of its range during the current cycle. The year-over-year rate was impacted by a low base effect – the 3-month annualized core inflation rate was only 1.7%.
- Job gains during the quarter were strong, despite traditional employment measures indicating a tight labor market. Additions to nonfarm payrolls averaged 211,000 per month and the U-3 unemployment rate fell slightly from 4.1% to 4.0%.
- The broadest measure of labor market health, the ratio of employed individuals to the total population, indicates there may still be room for further improvement. More narrow indicators, such as the U-3 unemployment rate, may be overstating labor market tightness.
- The back and forth on trade between the U.S. and much of the rest of the world intensified. The White House has threatened to enact tariffs on up to \$550 billion of Chinese goods over unfair trade practices and intellectual property theft. To this point, tariffs have only been implemented on around \$40 billion of Chinese goods.
- The Fed raised interest rates for a second time this year in June to a target rate of 1.8% to 2.0%. Two more rate hikes are expected by the end of the year based on the Fed dot plot.

	Most Recent	12 Months Prior
GDP (YoY)	2.8% <i>3/31/18</i>	2.0% <i>3/31/17</i>
Inflation (CPI YoY, Core)	2.3% <i>6/30/18</i>	1.7% <i>6/30/17</i>
Expected Inflation (5yr-5yr forward)	2.2% <i>6/30/18</i>	1.8% <i>6/30/17</i>
Fed Funds Target Range	1.75 – 2.00% <i>6/30/18</i>	1.00 – 1.25% <i>6/30/17</i>
10 Year Rate	2.9% <i>6/30/18</i>	2.3% <i>6/30/17</i>
U-3 Unemployment	4.0% <i>6/30/18</i>	4.3% <i>6/30/17</i>
U-6 Unemployment	7.8% <i>6/30/18</i>	8.5% <i>6/30/17</i>

# GDP growth

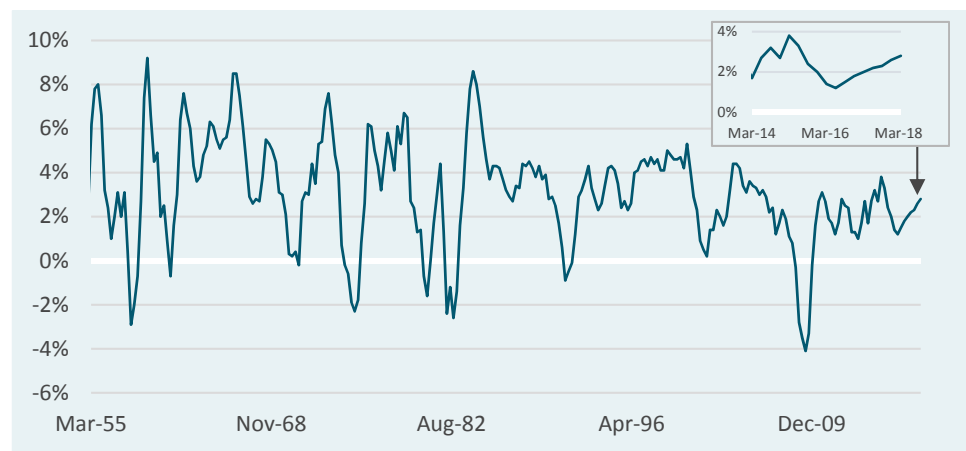
Real GDP growth rose 2.8% from the previous year in the first quarter (2.0% quarterly annualized rate). After a strong fourth quarter, consumers were more conservative with their purchases. Consumer spending contributed only 0.6% to the first quarter growth rate, compared to a 2.8% contribution in the previous quarter. Corporate capital investment was the biggest contributor to growth at 1.2%.

Strong growth is expected throughout the rest of the year as the benefits of fiscal stimulus begin to flow through to the economy. According to the Bloomberg consensus estimate,

real GDP growth is expected to be 3.4% in the second quarter. The big question is whether the economic benefits from fiscal stimulus are a one-off or whether they will have a more lasting impact on the economy that will help counter the headwind from monetary tightening.

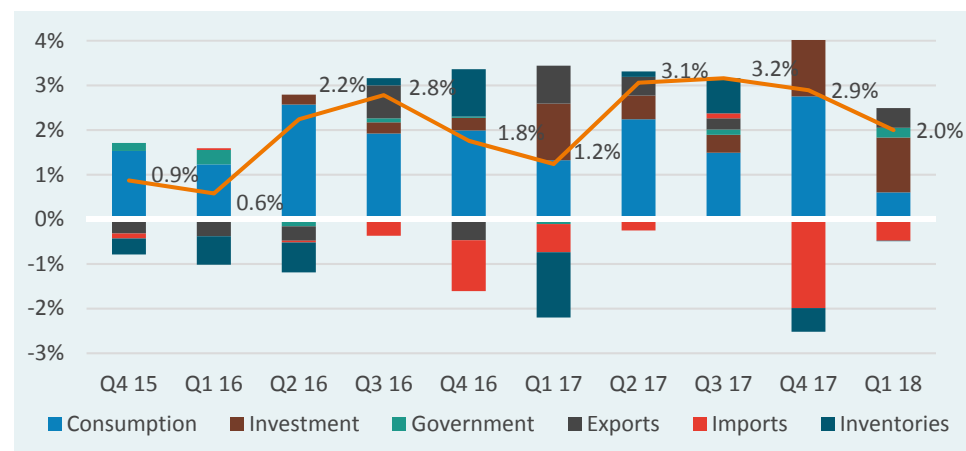
While much of the tax cut windfall has been returned to shareholders via share buybacks there has been a meaningful pick up in corporate fixed investment to more normal levels, which may help sustain growth in the coming quarters.

**U.S. REAL GDP GROWTH (YOY)**



Source: Bloomberg, as of 3/31/18

**U.S. GDP COMPONENTS**



Source: Bloomberg, annualized quarterly rate, as of 3/31/18

# Global trade

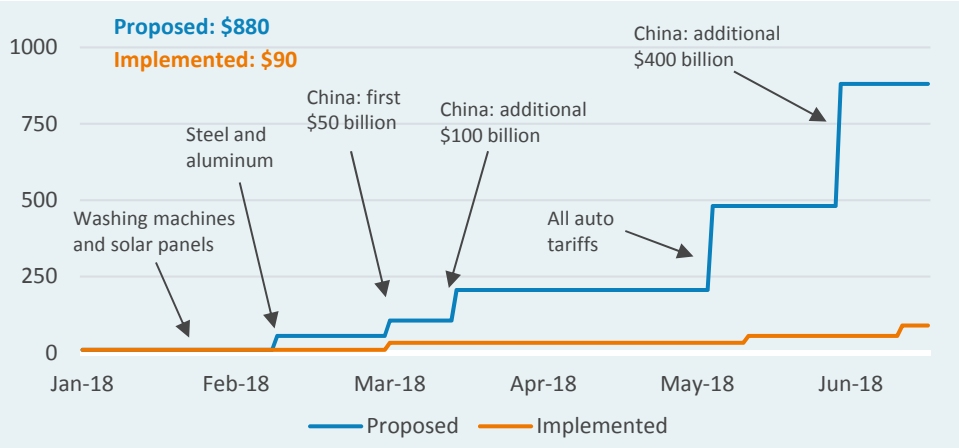
The war of words over trade between the U.S. and much of the rest of the world intensified in recent months, particularly with China. A first round of 10% tariffs on \$34 billion of Chinese goods was implemented on July 6<sup>th</sup>.

Thus far, there has been a large discrepancy between tariffs that have been proposed and tariffs that have been implemented. The U.S. has only enacted tariffs on \$90 billion of global imports. In comparison, the White House has proposed placing tariffs on a total of \$880 billion of imported goods. It is important to remember that tariffs are an avoidable tax on corporations conducting business in the U.S. Assuming a 10%

tariff rate on all proposed goods would result in a maximum tax of \$88 billion, a relatively small amount when thinking about the U.S. economy as a whole.

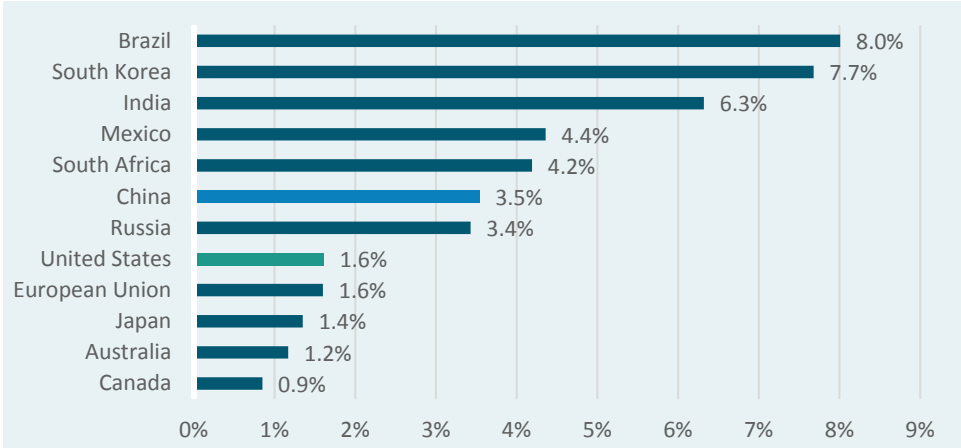
Tariffs in place so far are likely to have a minimal impact on the global economy. We believe that financial markets may be more sensitive to an escalation in the trade conflict than the actual economic impact. Much of the discussion on trade has ignored the fact that the U.S. has upheld less protectionist trade policies than many of its trading partners. While the trade conflict creates potential market downside risks, it also creates potential benefits if the end result is freer trade.

### PROPOSED VS. IMPLEMENTED U.S. TARIFFS (\$BILLIONS)



Source: Verus, as of 7/6/18

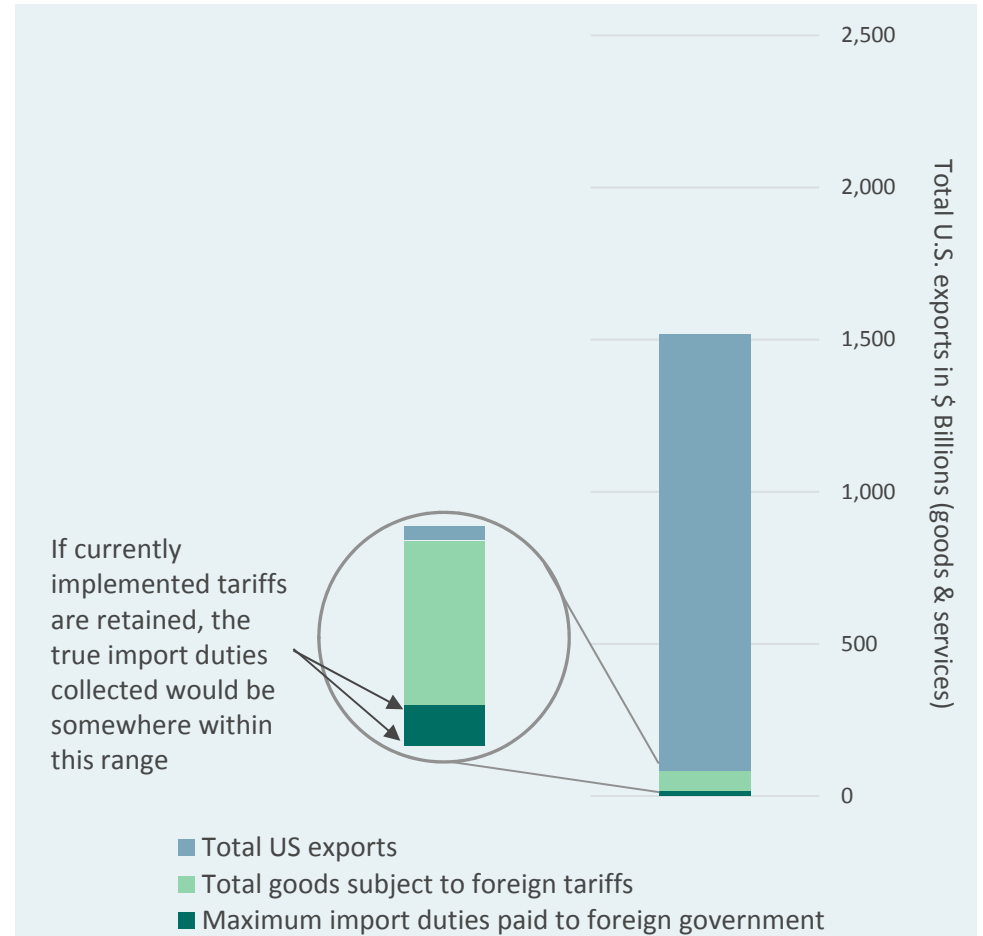
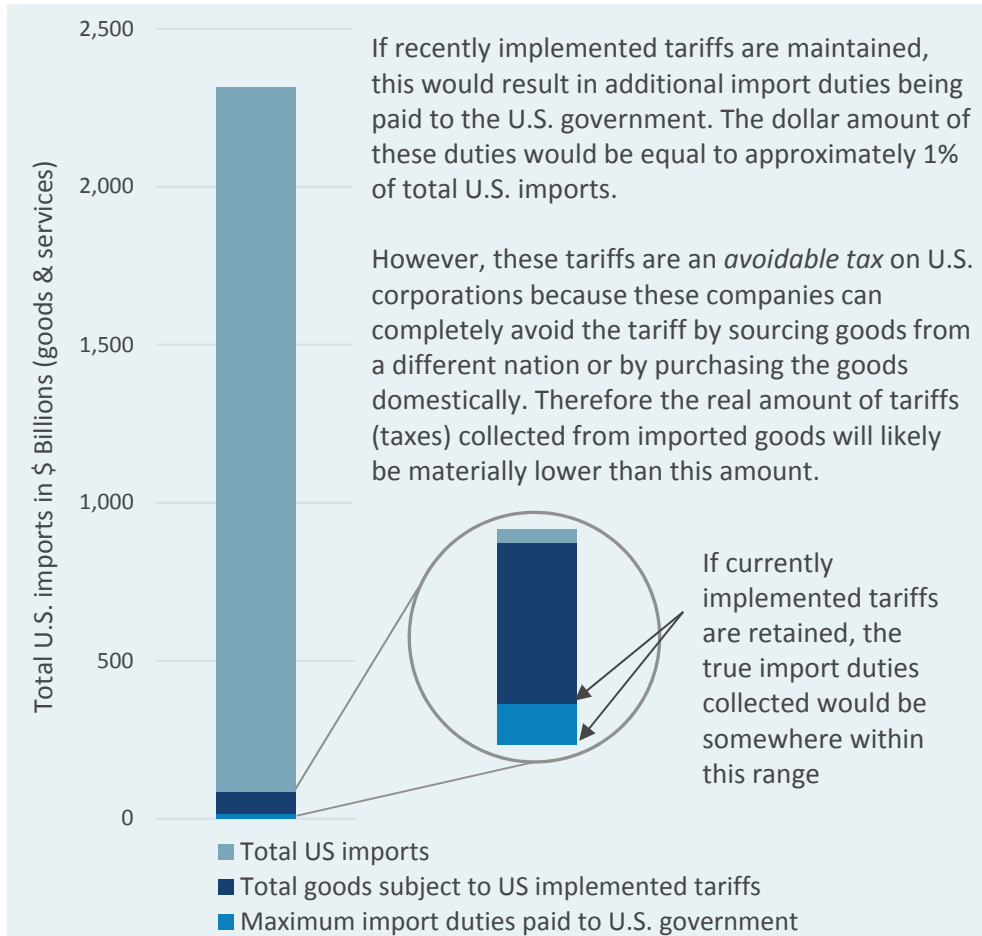
### AVERAGE TARIFF RATE



Source: WTO, 2016

# Putting tariffs into perspective

Tariff duties are better thought of as an avoidable tax. The impact of recently enacted tariffs is small, especially once substitution effects are accounted for.



Source: U.S. Census Bureau, Verus

Analysis conservatively assumes a 25% tariff rate for an estimated \$90 billion of tariffs on both imports and exports, both goods and services are included



# Inflation

The year-over-year core CPI inflation rate was 2.3% in June, up from 2.1% three months prior. The increase in the yearly rate slightly overstates the size of the move because it was impacted by a low base effect – the annualized 3-month core inflation rate was only 1.7%.

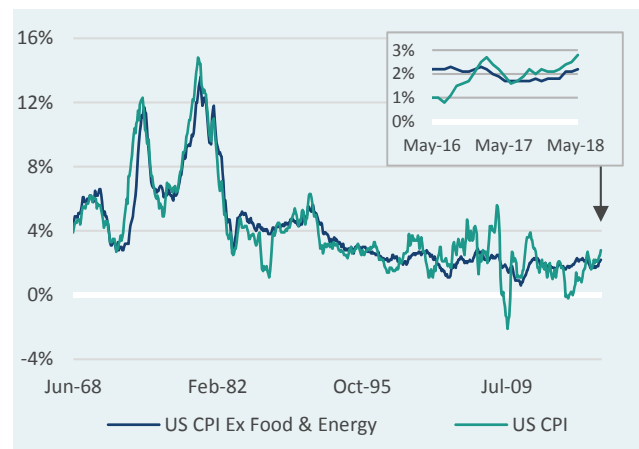
While investors' concerns over inflation have bubbled up occasionally throughout the year, we have yet to see a material increase in price levels. Consumer price inflation

has been held back by a lack of wage growth as well as structural factors such as globalization and automation which have weighed down the prices of goods.

The Fed's response to inflation data is potentially more important to investors than actual changes in inflation, barring an unforeseen shock to the upside. To this point, the central bank appears to be tolerant of inflation slightly higher than the stated 2% target.

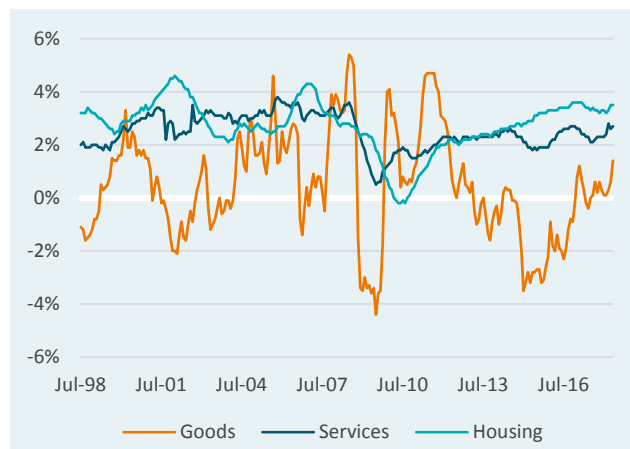
Core inflation remained modest

U.S. CPI (YOY)



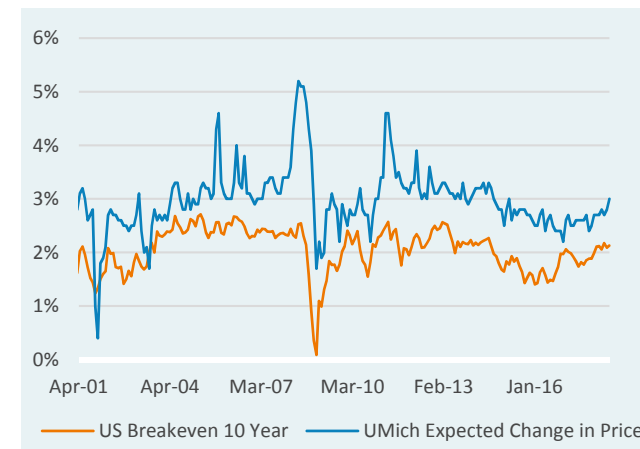
Source: FRED, as of 5/31/18

INFLATION BY PRODUCT TYPE (YOY)



Source: Bloomberg, as of 5/31/18

INFLATION EXPECTATIONS



Source: Bloomberg, as of 6/30/18

# Labor market

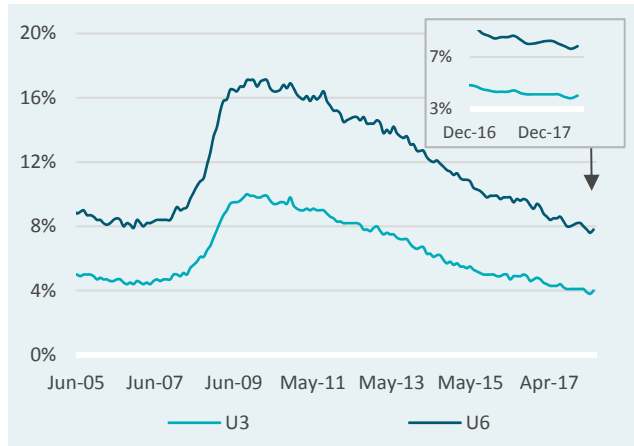
Conditions in the U.S. labor market tightened further in Q2 as unemployment moved from 4.1% to 4.0%. The unemployment rate that includes discouraged and part time workers fell from 8.0% to 7.8%. Despite these headline readings, we believe there may be considerable slack in the U.S. labor force which is not captured in traditional unemployment measures. This suggests further labor market gains in the U.S. expansion may be reflected in higher participation rates rather than solely through a decline in the unemployment rate.

Perhaps the greatest question mark in today's labor market is the degree to which long-term unemployed workers decide to resume their job search. This decision to return to work may be influenced by greater job prospects that come hand-in-hand with a strong economy, or may be influenced purely by necessity (many Americans are not adequately prepared for retirement).

Traditional unemployment metrics may understate labor market slack

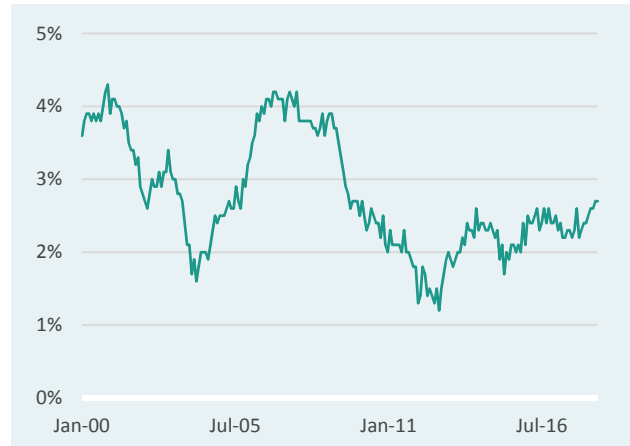
Average hourly earnings growth ticked up to 2.7%, continuing a mild positive trend since the bottom of the U.S. recession.

UNEMPLOYMENT RATE



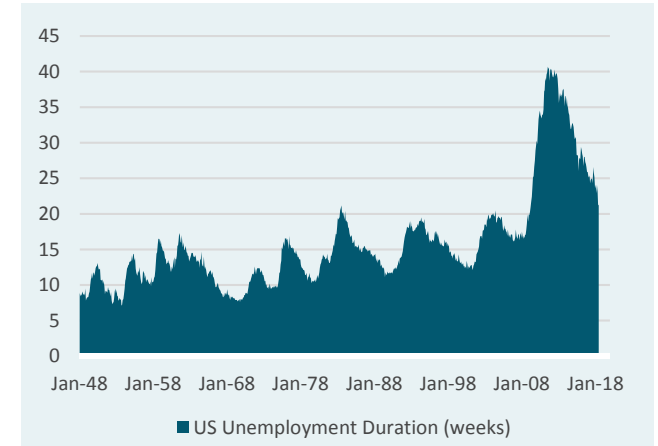
Source: FRED, as of 6/30/18

AVERAGE HOURLY EARNINGS (YOY)



Source: Bloomberg, as 5/31/18

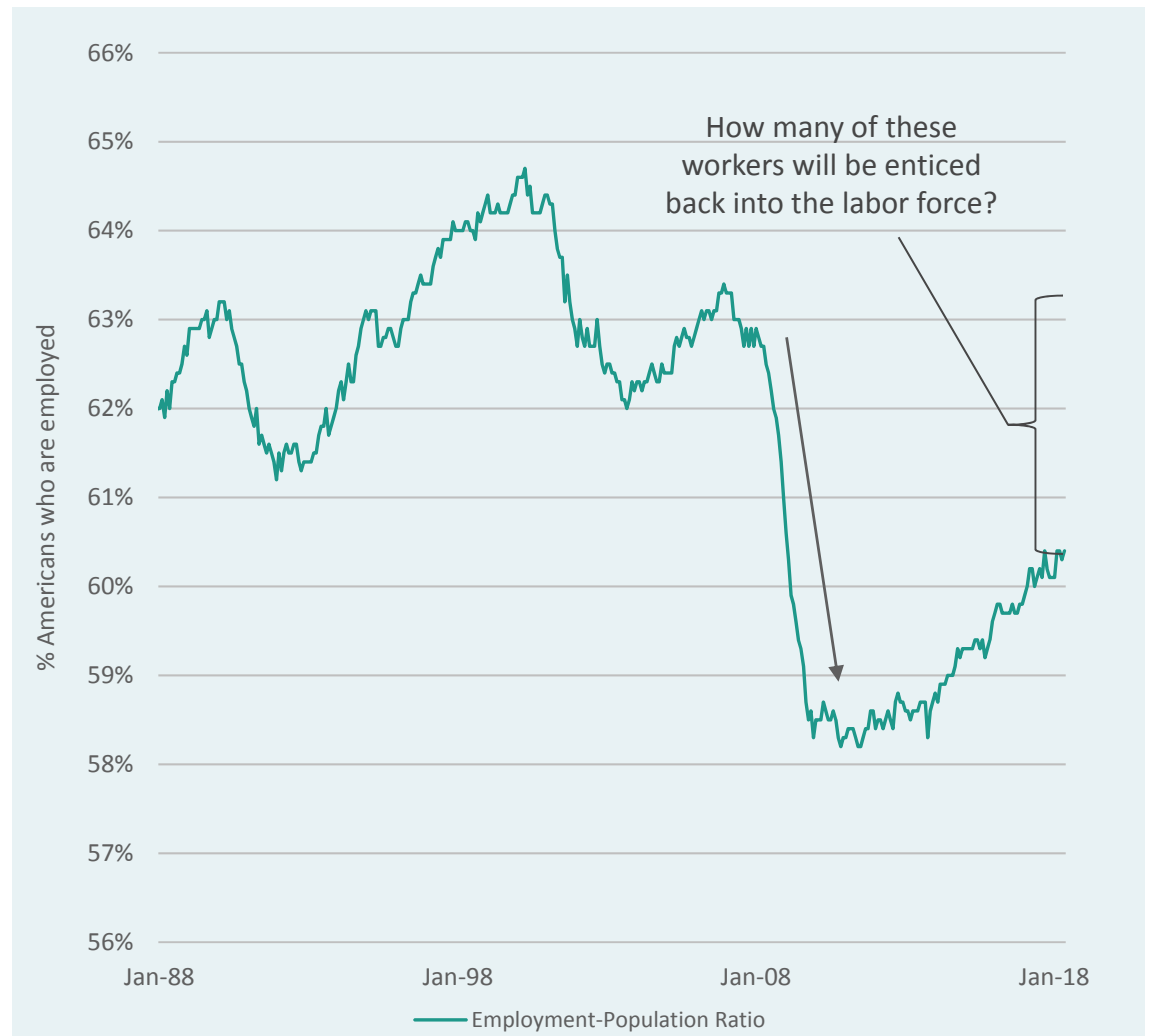
UNEMPLOYMENT DURATION



Source: FRED, as of 6/30/18

# How tight is the job market?

- According to the most frequently touted measures of unemployment, the U.S. job market is at the strongest level seen in nearly 50 years. But looking at unemployment through a different lens – the number of Americans employed – paints a very different picture. A significant portion of America remains unemployed relative to 10 years ago.
- During past U.S. economic downturns, between 2% and 3% of Americans lost their jobs, though most or all of those jobs were recovered throughout the subsequent economic recovery. In comparison, 5% of Americans exited the workforce during the latest recession, and less than half of these lost jobs have been regained.
- Some of this shortfall has been fueled by demographic shifts, and some by workers giving up and permanently leaving the workforce. But the remainder of the shortfall is comprised of very discouraged workers who will eventually seek employment. If it turns out that this third category is large, the current U.S. job market may not be as tight as commonly believed, which implies more potential upside to the U.S. economic expansion.



Source: FRED, Verus, as of 6/30/18

# The consumer

Economic conditions such as low unemployment, moderate wage gains, and restrained inflation remain broadly supportive of the U.S. consumer. Personal spending growth was 4.6% year-over-year in May, in line with the conservative spending habits seen throughout this expansion.

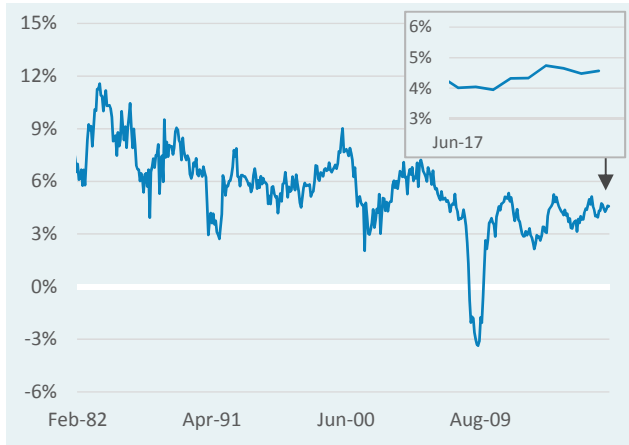
Consumers have also been timid with credit use during the current cycle. Households deleveraged following the financial crisis primarily through less mortgage debt, although this trend has flattened out more recently. Despite this

deleveraging, household debt levels are still high relative to history at 91.5% of disposable income.

Given the more conservative use of credit, dissaving has been an important driver of consumer spending. The personal savings rate was only 3.2% in May, near historical lows. Low interest rates and high asset prices likely helped push down the savings rate. If these conditions were to moderate, it would lead to a more normal balance between spending and savings.

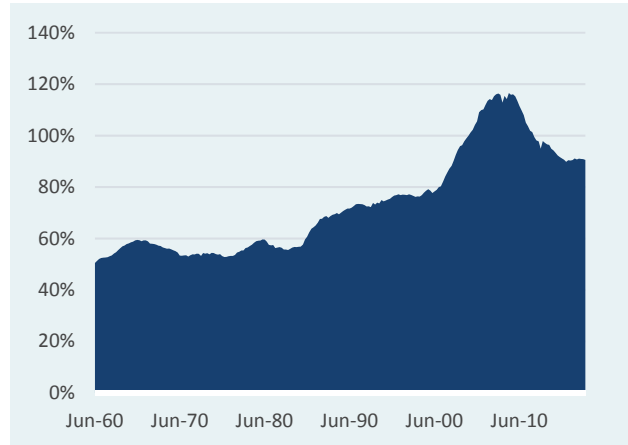
Economic conditions are still supportive of consumer spending

**CONSUMER SPENDING GROWTH (YOY)**



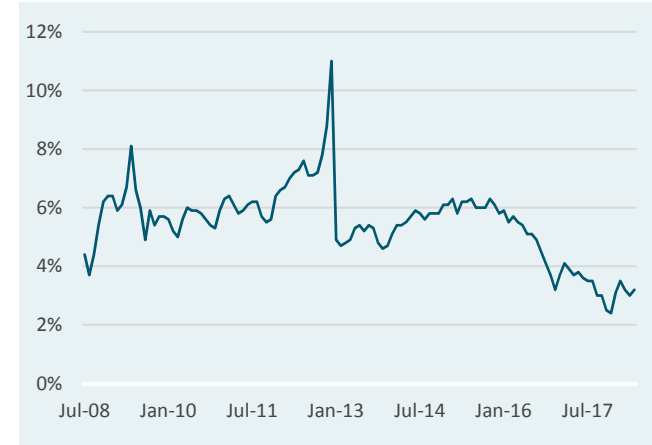
Source: Bloomberg, as of 5/31/18

**HOUSEHOLD DEBT (% OF DISPOSABLE INCOME)**



Source: Bloomberg, as of 3/31/18

**PERSONAL SAVINGS RATE**



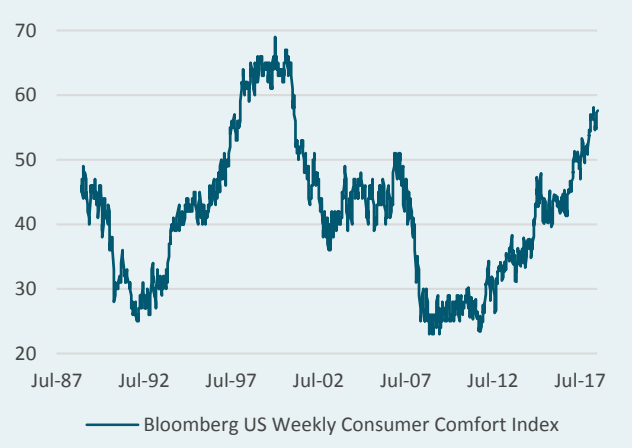
Source: FRED, as of 5/31/18

# Sentiment

Consumer and business sentiment readings are impressively high. The Bloomberg U.S. Weekly Consumer Confidence Index is in the 90<sup>th</sup> percentile, since 1985. The University of Michigan Consumer Sentiment Survey is in the 87<sup>th</sup> percentile, since 1978. Survey respondents provided favorable views on jobs and wages, and broadly expect modest gains in U.S. employment. Cited concerns included rising inflation, higher energy prices, and the economic risks posed by tariffs.

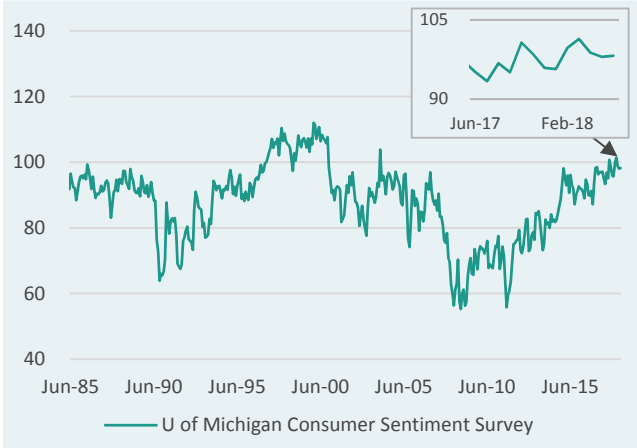
The NFIB Small Business Optimism Index was 107.2 at the end of the quarter – its 6<sup>th</sup> highest reading in survey history. NFIB noted that “small business owners continue to report astounding optimism as they celebrate strong sales, the creation of jobs, and more profits.” Business owners are concerned about the inability to find qualified employees for open positions, consistent with the historically high number of unfilled job openings reported by the Bureau of Labor Services.

**CONSUMER COMFORT INDEX**



Source: Bloomberg, as of 6/30/18 (see Appendix)

**CONSUMER SENTIMENT**



Source: University of Michigan, as of 6/30/18 (see Appendix)

**NFIB SMALL BUSINESS OPTIMISM INDEX**



Source: NFIB, as of 6/30/18 (see Appendix)

# Housing

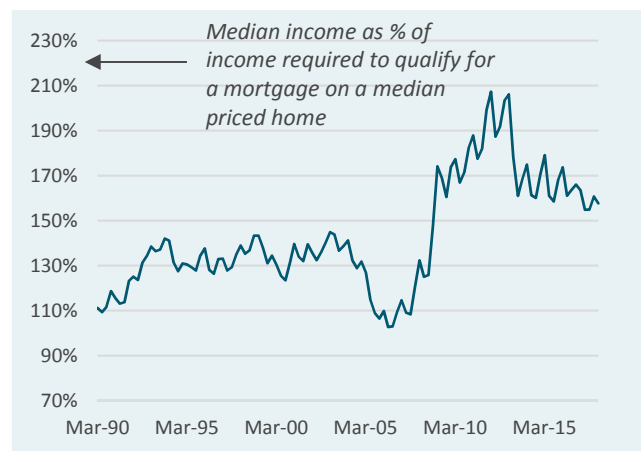
Single-family home prices have risen steadily thus far this year. As of April, the Case-Shiller National Home Price Index was up 6.4% from the previous year, and was 8.8% above the pre-crisis peak. Since the housing market bottomed in February of 2012, home prices have jumped by nearly 50% while personal incomes were up only 24% during the same period. Despite the outsized gain in home prices, demand for single-family housing has been strong, aided by low mortgage interest rates. Rising mortgage rates may make it difficult for many potential home buyers to enter the market at current prices. However, mortgage rates are still low and home affordability is high

relative to history – the median income is over 1.5 times the amount required to qualify for a mortgage on a median priced home.

The homeownership rate rose in 2017 for the first time in 13 years. This rate bottomed at 62.9% in the middle of 2016 and sits at 64.2% as of the end of the March. The rise in homeownership has been driven by younger, first time owners (i.e. Millennials). Mortgage lending standards have moderated after years of very tight standards following the financial crisis, which has helped younger buyers enter the market.

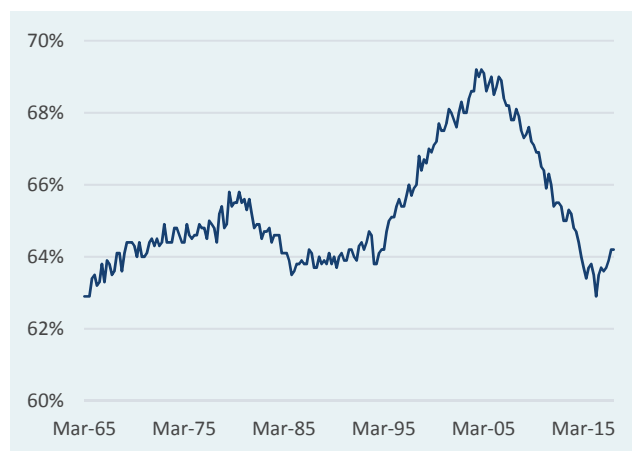
Home ownership rose for the first time in 13 years

**HOUSING AFFORDABILITY INDEX**



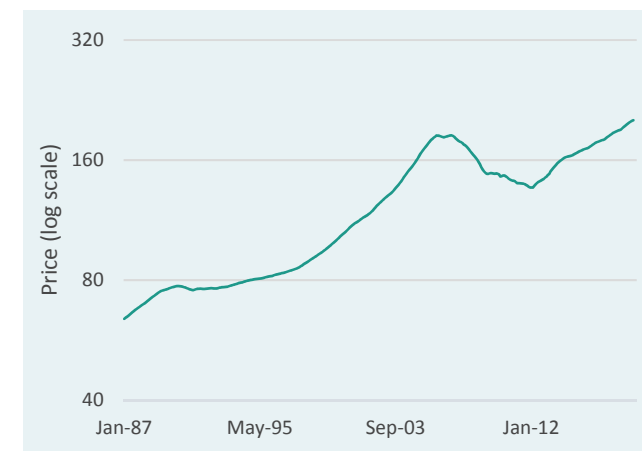
Source: Bloomberg, as of 3/31/18

**HOME OWNERSHIP RATE**



Source: FRED, as of 3/31/18

**U.S. HOME PRICE INDEX**



Source: Case-Shiller National Home Price Index, as of 4/30/18

# International economics summary

- The synchronized global growth story of the past year has shifted somewhat as greater performance disparity is visible across global economies. Growth continues to be positive but is more moderate in places.
- Developed market economies are expected to grow less quickly in the coming years while emerging economy growth rates are expected to rise.
- The U.S. implemented a first round of tariffs on Chinese imports on July 6th, which impacted \$34 billion of goods. So far, only a small portion of the discussed tariffs have been enacted.
- In June, Mario Draghi officially announced the end of Europe's bond buying program. Asset purchases are scheduled to end in December, and it was promised that interest rates will remain unchanged through the summer of 2019. This message was seen by markets as more dovish than expected.
- Fears were raised over Italy's uncertain role in the EU, following a new coalition of the anti-establishment Five Star Movement and League Party taking over the government. Italian bond yields spiked severely during the move, but have since moderated.
- The Eurozone Composite PMI rose for the first time in five months to 54.8 in June. PMIs in most developed and emerging markets remain above 50, indicating expansion.
- The U.S. dollar appreciated 5% during the quarter. Certain emerging market currencies have devalued sharply, such as the Argentine peso, which is down more than 35% against the USD on the year.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.8% <i>3/31/18</i>	2.8% <i>5/31/18</i>	4.0% <i>6/30/18</i>
Eurozone	2.5% <i>3/31/18</i>	2.0% <i>6/30/18</i>	8.6% <i>3/31/18</i>
Japan	1.1% <i>3/31/18</i>	0.7% <i>5/31/18</i>	2.2% <i>5/31/18</i>
BRICS Nations	5.8% <i>3/31/18</i>	2.5% <i>6/30/18</i>	5.6% <i>3/31/18</i>
Brazil	1.2% <i>3/31/18</i>	4.4% <i>6/30/18</i>	12.8% <i>6/30/18</i>
Russia	1.3% <i>3/31/18</i>	2.3% <i>6/30/18</i>	4.7% <i>5/31/18</i>
India	7.7% <i>3/31/18</i>	5.0% <i>6/30/18</i>	8.8% <i>12/31/17</i>
China	6.8% <i>3/31/18</i>	1.9% <i>6/30/18</i>	3.9% <i>3/31/18</i>

# International economics

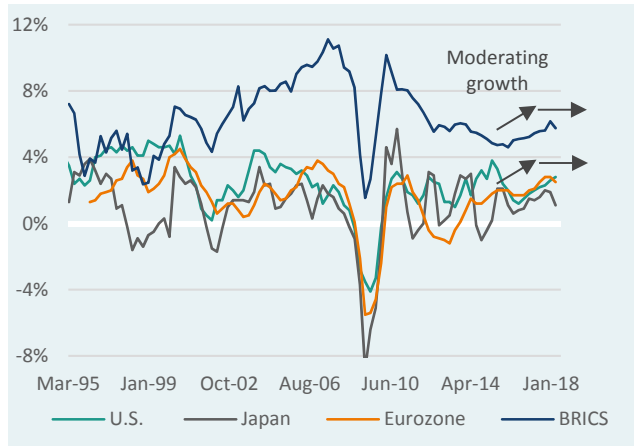
The synchronized global growth story of the past year has shifted as economies display more disparate economic performance. The change has not been too dramatic - growth continues to be positive but more moderate in places. Since 2016 we have been discussing political and economic risks which exist in Europe. These fears were confirmed in recent quarters as Eurozone economies missed expectations in a variety of areas including GDP growth, retail sales, and industrial production – casting some doubt over the European recovery story.

The Eurozone and Japan exhibited inflation well below central bank targets in the second quarter, while the U.S. delivered a moderate rise. Overall, inflation conditions remain benign which has allowed (or necessitated) easier central bank policy.

Labor markets tightened broadly, in line with an environment of positive economic expansion. However, joblessness remains stubbornly high in some Eurozone countries such as Italy, Spain, and Greece.

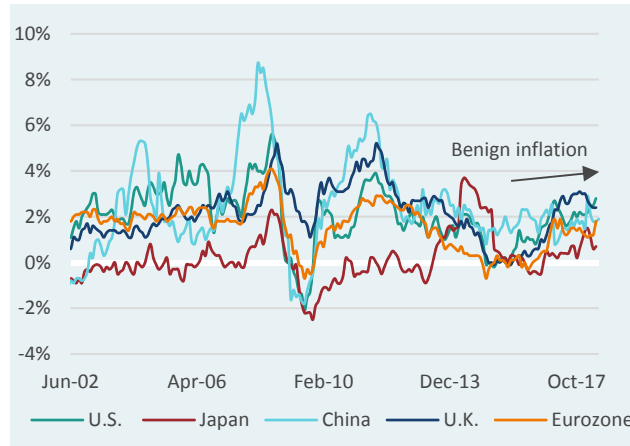
Synchronized global growth has moderated

**REAL GDP GROWTH (YOY)**



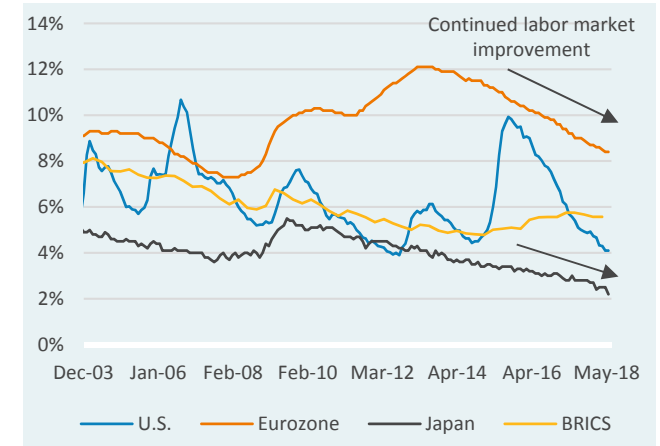
Source: Bloomberg, as of 3/31/18

**INFLATION (CPI YOY)**



Source: Bloomberg, as of 5/31/18

**UNEMPLOYMENT RATE**



Source: Bloomberg, as of 5/31/18 or most recent release

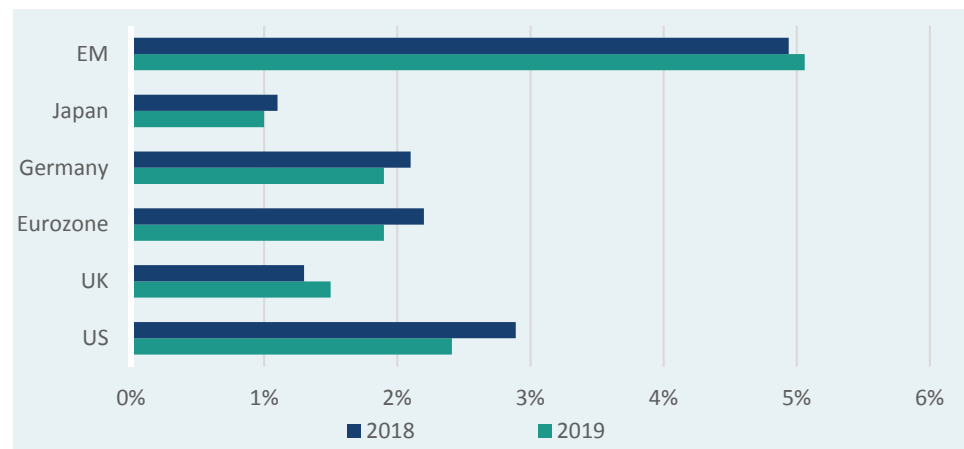


# GDP growth expectations

Economic growth expectations for the rest of 2018 and 2019 have begun to show widening differentials between the U.S. and the rest of the developed world. GDP expectations for the U.S. have been revised upward over the past six months partly due to an expected boost from fiscal stimulus, while growth expectations for other developed countries have been revised slightly lower. This disparity has led to skepticism regarding the story of accelerating synchronized global growth which economies experienced towards the second half of 2017.

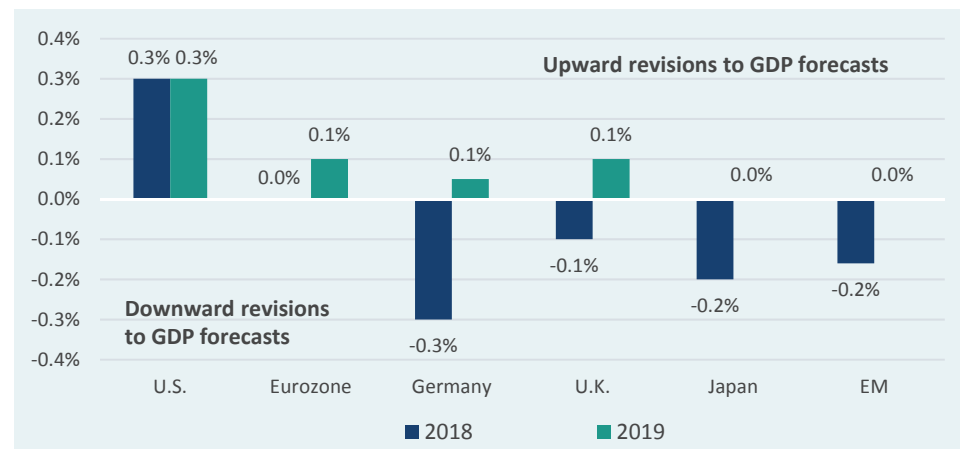
In 2019, growth is expected to moderate in every major developed country as risks develop further, such as tighter monetary conditions. Achieving the right balance of monetary tightening at this stage of the economic cycle becomes increasingly difficult, and the risk of a policy mistake is greater. However, cyclical conditions in most economies (i.e. moderate inflation, wage gains) may allow central banks to be patient, extending the cycle even further. Emerging market economy growth premiums are expected to increase – these markets are earlier in their economic and monetary policy cycles than developed markets.

**GDP GROWTH EXPECTATIONS (%)**



Source: Bloomberg, as of 7/5/18

**YTD NET CHANGES IN GDP EXPECTATIONS**



Source: Bloomberg, as of 7/5/18

# Political shakeup in Italy

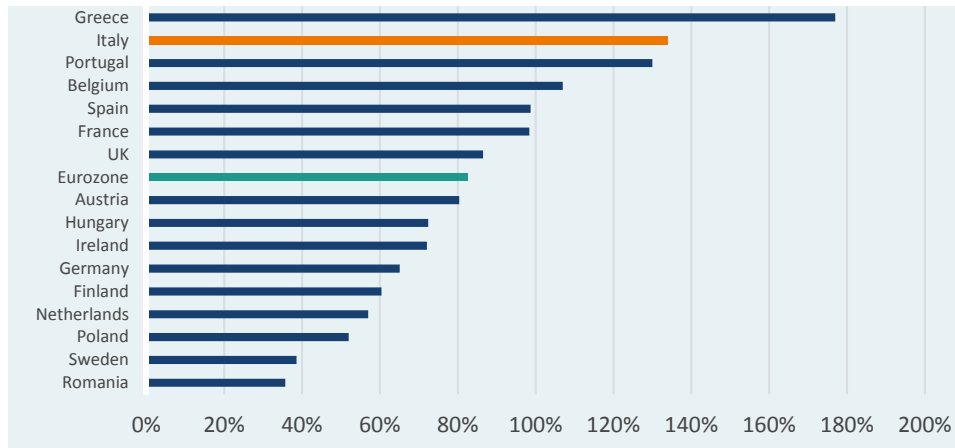
Fears were raised over Italy's possible exit from the Eurozone following a coalition of the anti-establishment Five Star Movement and League Party. Italian bond yields spiked severely during the move, but have since moderated.

The greatest immediate risk seems to be coalition talks of significant spending increases. Per the Maastricht Treaty – the founding document of the European Union (EU) – member nation fiscal budgets are limited to a debt-to-GDP level of 60% and a budget deficit of 3% of GDP. Italy's debt-to-GDP is over 130%, while for now the country is running a more reasonable budget deficit of 1.6%. If Italy forges ahead

with fiscal stimulus, this may result in further conflict with Maastricht Treaty guidelines and may place the new emboldened leaders head-to-head with the EU.

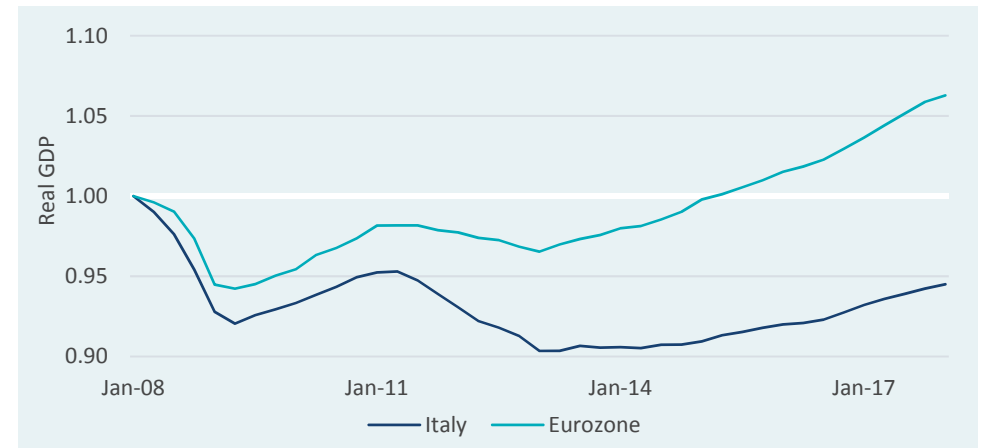
The political events in Italy tie into a broader European trend – the growing power and influence of populism. Populist movements have been fueled by severe economic disparity between some Eurozone economies as well as controversial EU policies relating open borders and immigration. This populist trend will likely pose an ongoing threat to the stability of European economies and the EU as a whole.

## DEBT-TO-GDP



Source: ec.europa.eu, as of 2017 Q3

## EUROZONE VS. ITALY REAL GDP



Source: Bloomberg, as of 3/31/18

# Fixed income rates & credit

# Interest rate environment

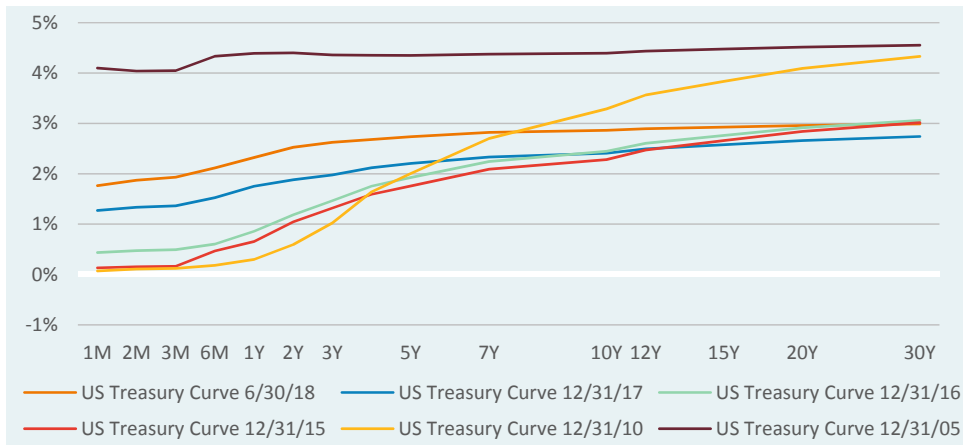
- The Fed raised interest rates in June for the second time this year to a target range of 1.8-2.0%. The balance sheet unwind continued as planned with approximately \$18 billion in Treasuries and \$12 billion in MBS coming off each month during the quarter.
- According to the Fed dot plot, officials are expecting two additional rate hikes this year, while market pricing suggests only one more hike. Quicker than expected Fed tightening would represent a key risk to the economy and asset prices.
- The 10-year U.S. Treasury yield ticked up modestly during the quarter to 2.9% while the short-end of the curve rose further. The spread between the 2- and 10-year yields fell to a cycle low of 33 bps at quarter end. By another measure of curve shape, the 10-year yield minus 3-month yield, the curve remains at a level of steepness closer to the longer-term average (92 bps vs. 184 bps average).
- Historically, an inverted yield curve has preceded recessions, but the timing between inversion and recession has been anywhere from one to three years.
- In June, Mario Draghi officially announced the end of the Eurozone's bond buying program. The ECB stated that purchases will end in December, and interest rates will remain unchanged through summer of 2019. The markets interpreted this as dovish and yields fell on the news.
- Italian sovereign yields spiked after it appeared the country was headed for new elections later in the year. The 2-year yield jumped 186 bps in one day to 2.8% as risk premiums rose. In the end, a coalition government was formed between the Five Star and League parties and the country avoided going back to the polls.
- Emerging market local and hard yields moved higher, influenced by a general risk-off sentiment towards EM as well as idiosyncratic risks in several vulnerable countries, such as Turkey and Argentina.

Area	Short Term (3M)	10 Year
United States	1.91%	2.86%
Germany	(0.59%)	0.30%
France	(0.63%)	0.67%
Spain	(0.42%)	1.32%
Italy	(0.12%)	2.68%
Greece	1.04%	3.96%
U.K.	0.61%	1.28%
Japan	(0.14%)	0.04%
Australia	1.92%	2.63%
China	3.01%	3.48%
Brazil	6.45%	11.68%
Russia	6.62%	7.81%

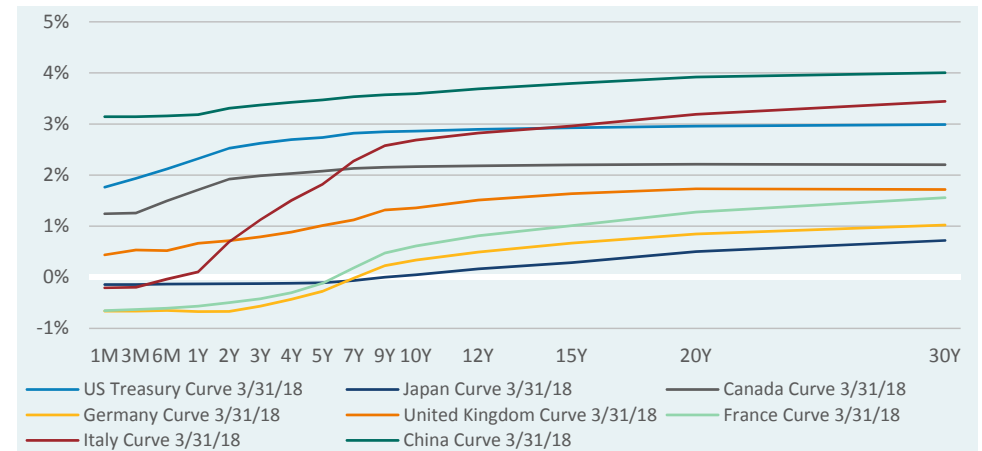
Source: Bloomberg, as of 6/30/18

# Yield environment

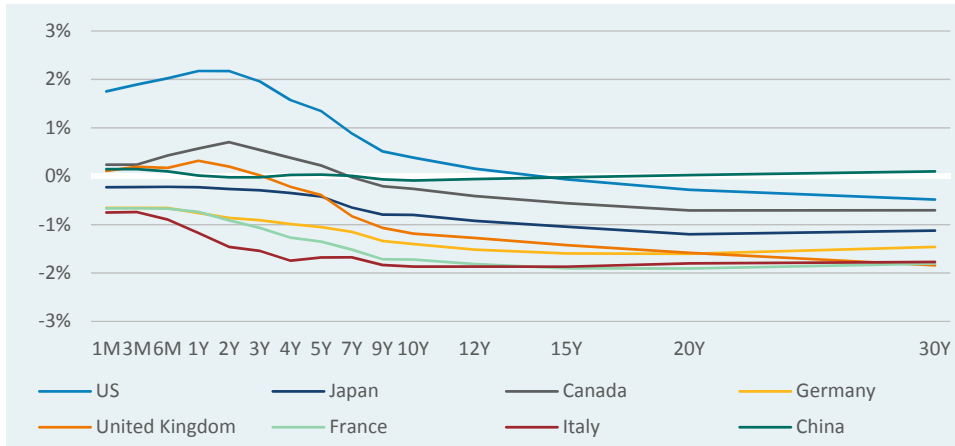
## U.S. YIELD CURVE



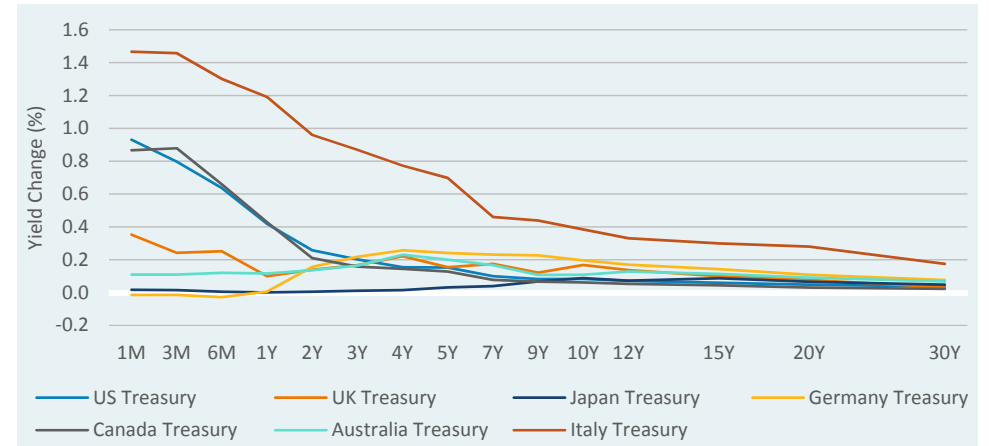
## GLOBAL GOVERNMENT YIELD CURVES



## YIELD CURVE CHANGES OVER LAST FIVE YEARS

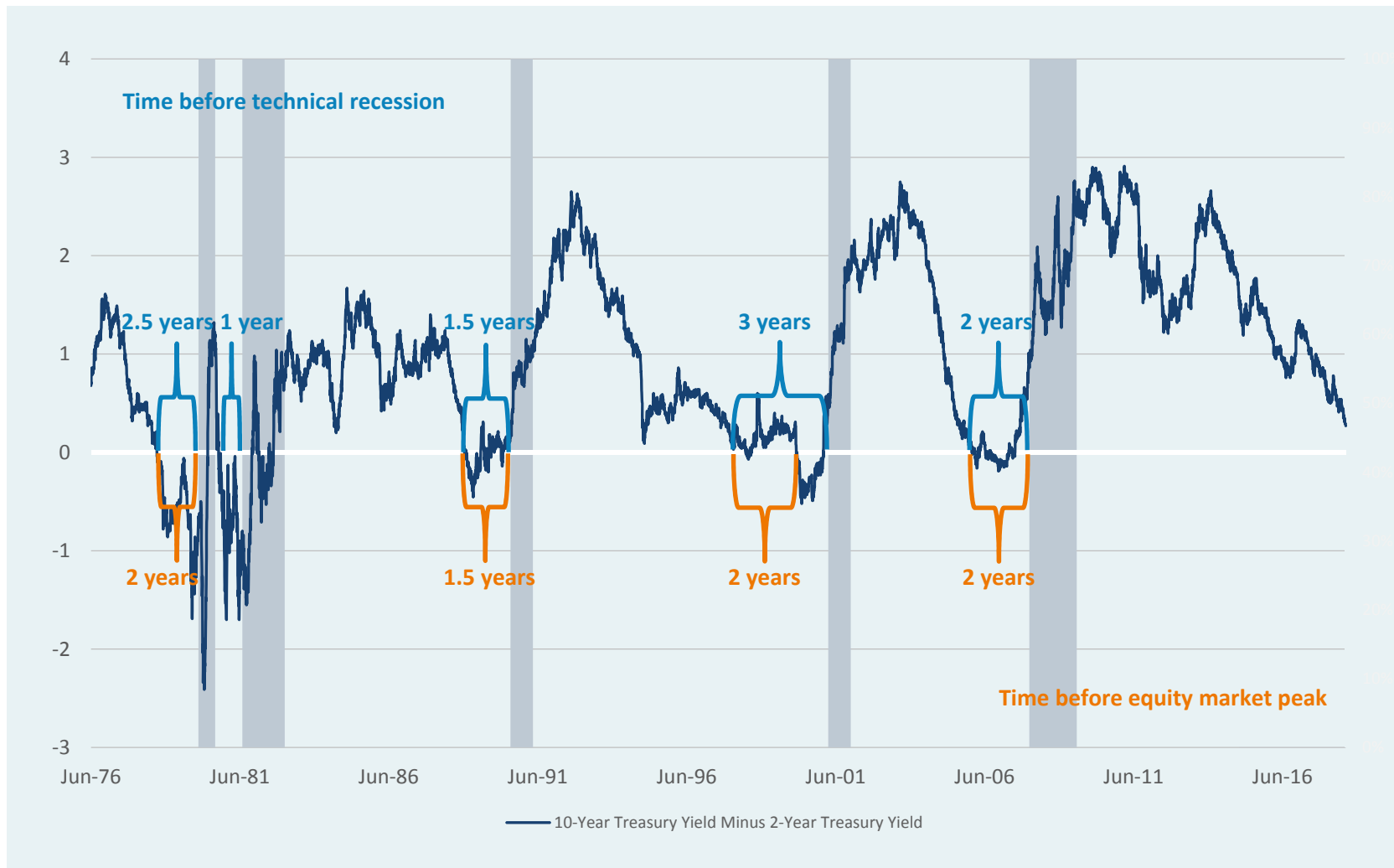


## IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/18

# What does an inverted curve indicate?



Yield curve inversions often occur during the late-cycle

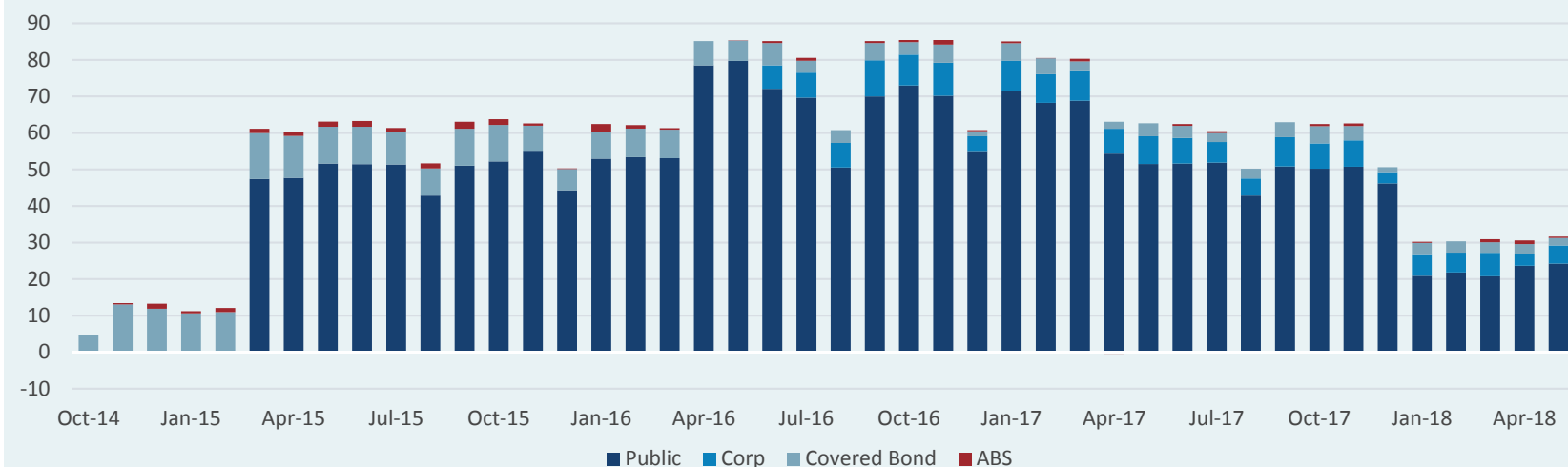
Recession and equity market peaks typically do not occur immediately after an inversion

Source: FRED, Verus – time that passed between initial yield curve inversion and the next technical recession, and time that passed between initial yield curve inversion and next equity market peak

Note: There was not a clear equity market peak during the early 1980's expansion. A "time before equity market peak" was therefore not calculated.

# ECB bond buying program

MONTHLY ASSET PURCHASES (EUROS BILLIONS)



European Central Bank bond purchases are expected to end in December

These purchases have acted as a major support to bond prices in recent years

Country	Debt Purchased by ECB	% of Total Sovereign Purchases	% of Total Country Debt
Germany	€ 485.6	26.6%	23.2%
France	€ 396.7	21.8%	17.9%
Italy	€ 344.8	18.9%	15.0%
Spain	€ 244.4	13.4%	21.4%
Netherlands	€ 108.5	5.9%	26.1%
Belgium	€ 69.2	3.8%	15.3%
Austria	€ 54.9	3.0%	18.9%
Portugal	€ 33.7	1.8%	13.9%

# Credit environment

Credit spreads in both leveraged loans and high yield have widened slightly since the beginning of the year, but are still sitting well below their historical averages. Loans outperformed high yield bonds during eight of the past nine months. LIBOR has steadily risen since 2016, surpassing the LIBOR floors which exist in senior loans, causing them to be fully floating-rate instruments.

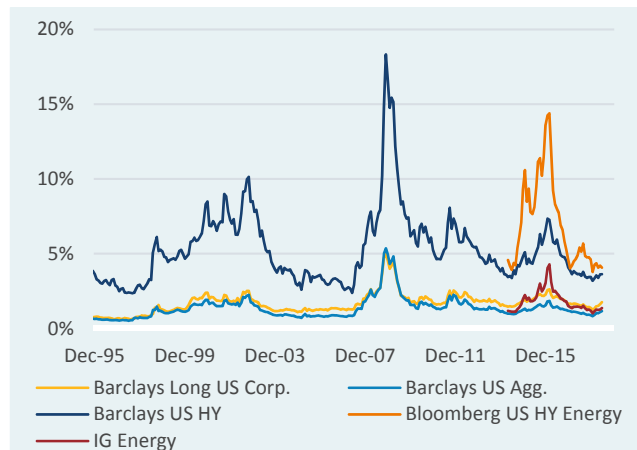
U.S. high yield option-adjusted spreads widened slightly in the second quarter to 3.6% – the asset class generated a

1.0% total return. Tight credit spreads in both high yield bonds and loans have been driven by strong corporate fundamentals, manageable debt maturities and general macroeconomic improvement. Credit spreads have historically been a good indicator of future performance relative to Treasuries.

Based on low interest rates and tight spreads, we recommend an underweight to U.S. investment and high yield credit.

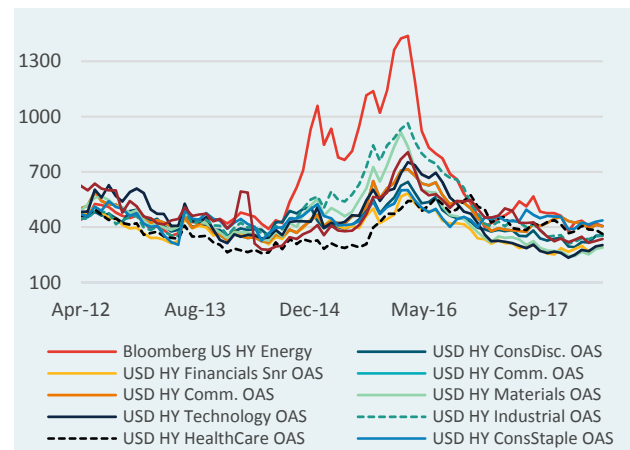
Credit spreads are tight across the capital structure

## SPREADS



Source: Barclays, Bloomberg, as of 6/30/18

## HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 6/30/18

Market	Credit Spread (6/30/18)	Credit Spread (1 Year Ago)
Long US Corporate	1.8%	1.6%
US Aggregate	1.2%	1.0%
US High Yield	3.6%	3.6%
US Bank Loans	3.5%	3.7%

Source: Barclays, Credit Suisse, Bloomberg, as of 6/30/18



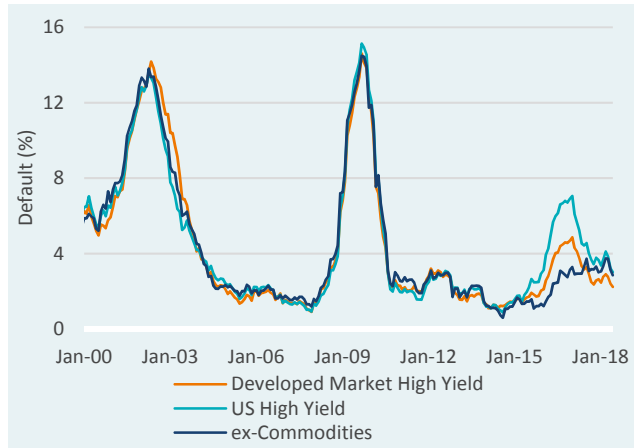
# Issuance and default

Default activity has been low and stable in the U.S. and international credit markets. The par-weighted U.S. default rate remains below its long-term average of 3.0-3.5% and is currently at 2.0%. In the second quarter, \$1.5 billion of defaults occurred - the lowest quarterly total since Q4 2013.

Senior loan and high yield markets are recovering from a wave of defaults seen in 2015-2016, generated from energy and metals/mining sectors. Recovery rates for high yield bonds have vastly improved since that time.

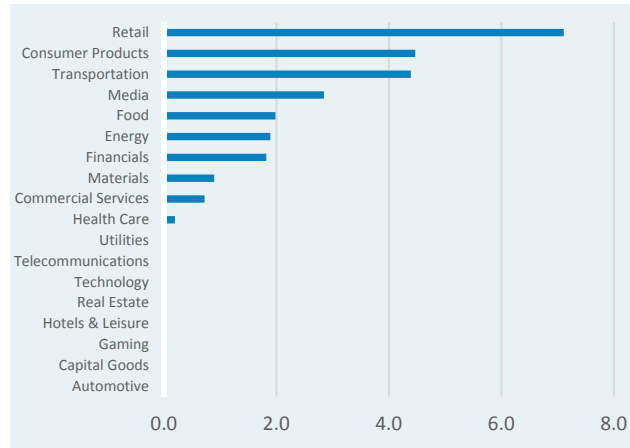
Issuance in high yield bonds totaled \$126 billion compared with \$176 billion across the first half of 2017. Similarly, issuance in leveraged loans totaled \$501 billion, compared with over \$577 billion in the first half of 2017. New issue spreads continue to compress with strong demand supported by significant retail and institutional inflows into both high yield and senior loan asset classes, as well as CLO formation.

**HY DEFAULT TRENDS (ROLLING 1 YEAR)**



Source: BofA Merrill Lynch, as of 6/30/18

**HY SECTOR DEFAULTS (LAST 12 MONTHS)**



Source: BofA Merrill Lynch, as of 6/30/18 – par weighted

**GLOBAL ISSUANCE (BILLIONS)**



Source: Bloomberg, BofA Merrill Lynch, as of 6/30/18

# Emerging market debt

Emerging market debt experienced a difficult quarter, particularly in local currency bonds. The JPM EMBI Index (hard) and JPM GBI-EM Index (local) returned -3.5% and -10.4%, respectively. Much of the negative performance in local debt was driven by currency depreciation and rising risk premiums in several vulnerable countries. Excluding Venezuela, there has not yet been any defaults, delayed payments or credit downgrades in this space – Argentina narrowly avoided defaulting after securing a \$50 billion bailout from the IMF.

Currency movement in local debt accounted for approximately 80% of the losses in the second quarter. While many currencies

moved due to broad strengthening of the U.S. dollar, several countries with high external debt loads and current account deficits, including Brazil, Argentina, and Turkey, saw their currencies depreciate sharply.

Outside of a few countries, we believe the economic backdrop remains positive for emerging market debt. Most markets have come a considerable way in trimming external debt over the past few years which has made them less reliant on dollar funding. The recent sell-off has created value opportunities that might be taken advantage of – active management is preferred in this asset class.

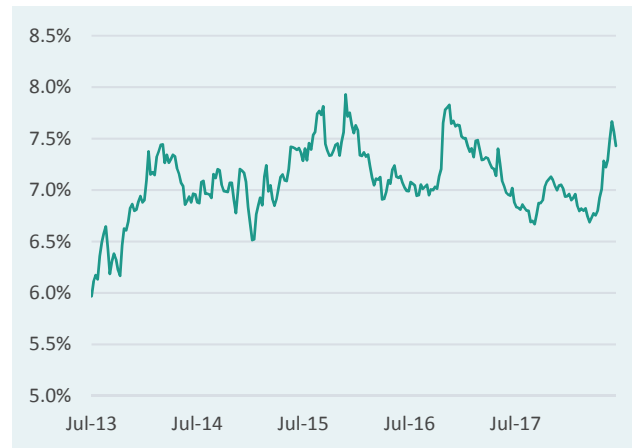
We maintain a positive outlook on emerging market debt

EMD HARD YIELDS



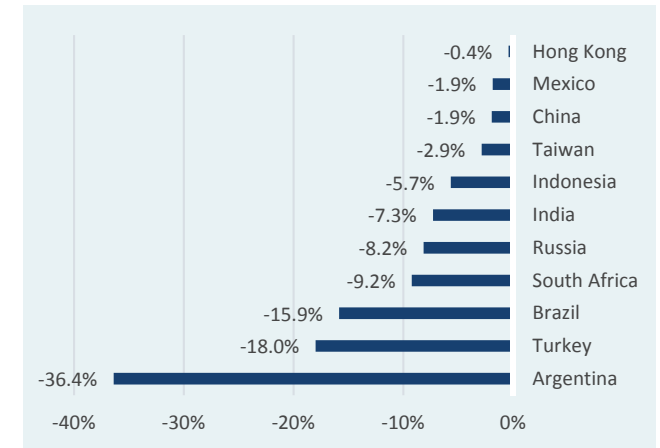
Source: Bloomberg, as of 6/30/18

EMD LOCAL YIELDS



Source: Bloomberg, as of 6/30/18

YTD CURRENCY LOSSES VS USD



Source: Bloomberg, as of 6/30/18

# Equity

# Equity environment

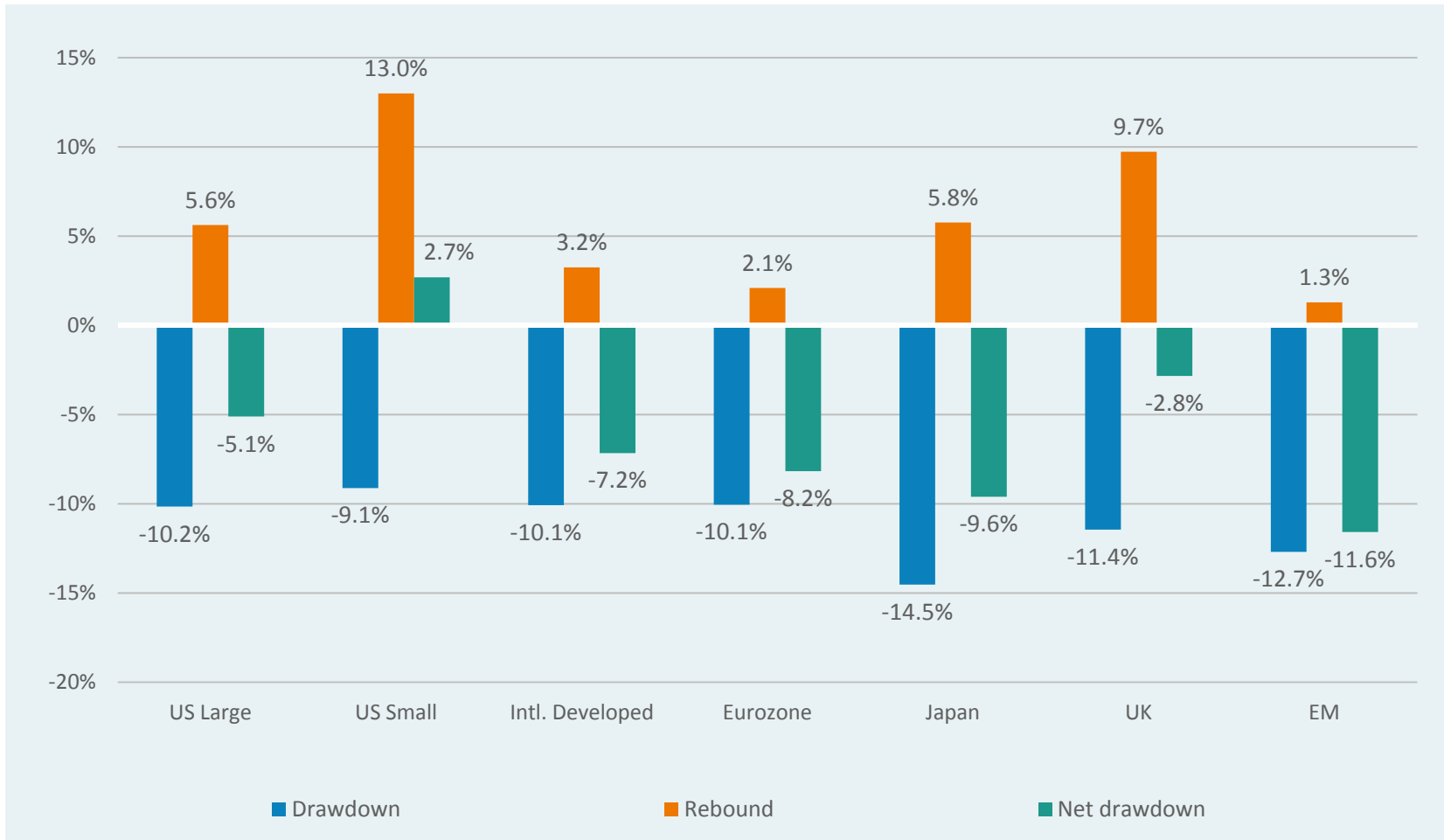
- We maintain an overweight position to equities through a positive tilt to emerging markets. We do not believe recent price swings reflect any major fundamental change to the trajectory of emerging markets. Equity bull runs in these markets have typically incurred a 10% or larger drawdown sometime during the rally.
- Outside of emerging markets, equities have remained fairly range bound following the February selloff. As corporate earnings rise and prices stay flat, equity valuations have been pushed down to more attractive levels closer in line with the historical average.
- Concerns over global trade contributed to a choppy month for equities, although no major breakthroughs or setbacks occurred. Global equities were up +2.9% on a hedged basis but currency depreciation acted as a drag (+0.5% unhedged).
- The value premium has delivered anomalously poor performance – the worst 10-year return on record (since 1926). However, because performance differences were due to earnings growth disparity rather than moves in valuation, the price difference between value and growth stocks has remained fairly normal. A tactical opportunity to overweight value is not yet apparent - we believe investors should stay the course.
- Equity volatility moved to below-average levels once again, following February's spike. The VIX averaged 15.3 during Q2.
- Currency volatility has frequently been greater than equity market volatility in recent years, causing return disparity for investors with unhedged international assets. A hedging program could allow investors to significantly reduce or eliminate this uncompensated risk.

	QTD TOTAL RETURN		YTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	3.6%		2.9%		14.5%	
US Small Cap (Russell 2000)	7.8%		7.7%		17.6%	
US Large Value (Russell 1000 Value)	1.0%		-2.0%		6.0%	
US Large Growth (Russell 1000 Growth)	5.8%		7.3%		22.5%	
International Large (MSCI EAFE)	(1.2%)	3.9%	(2.7%)	0.0%	6.8%	7.9%
Eurozone (Euro Stoxx 50)	(2.3%)	3.6%	(3.7%)	0.5%	3.7%	3.7%
U.K. (FTSE 100)	(3.1%)	9.8%	(0.9%)	2.2%	10.2%	9.9%
Japan (NIKKEI 225)	0.2%	4.4%	0.5%	(1.1%)	15.1%	13.2%
Emerging Markets (MSCI Emerging Markets)	(8.0%)	(3.6%)	(6.7%)	(3.0%)	8.2%	9.5%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 6/30/18

# 2018 peak to trough

## PEAK TO TROUGH



Most equity markets remain range bound since the February selloff

U.S. small caps have fully recovered while E.M. has stayed depressed

2018 peak to trough, local returns, as of 7/2/18 – the trough (market bottom) date for each market is as follows: US Large (2/8), US Small (2/8), Intl. Dev. (3/26), Eurozone (3/23), Japan (3/23), UK (3/26), EM (6/28)

# Domestic equity

U.S. equities were range bound over the quarter – the S&P 500 Index posted a positive return of 3.4% and traded within a tight range between 2600 and 2800. The ups and downs of trade negotiations, particularly those between the U.S. and China, impacted equity markets during the quarter. However, considerable uncertainty surrounding the outcome of these negotiations likely helped keep equities from breaking out of their range in either direction.

Strong year-over-year earnings growth is expected to continue for the second quarter. According to FactSet, the bottom-up analyst earnings growth forecast for the S&P 500 is 19.9%. Forward 12-month earnings growth expectations were revised higher throughout the quarter while equity prices leveled out. Given that prices tend to follow earnings, there may be potential upside to prices if the expected high growth is realized. Alternatively, higher discount rates from Fed tightening may offset the impact of strong earnings growth.

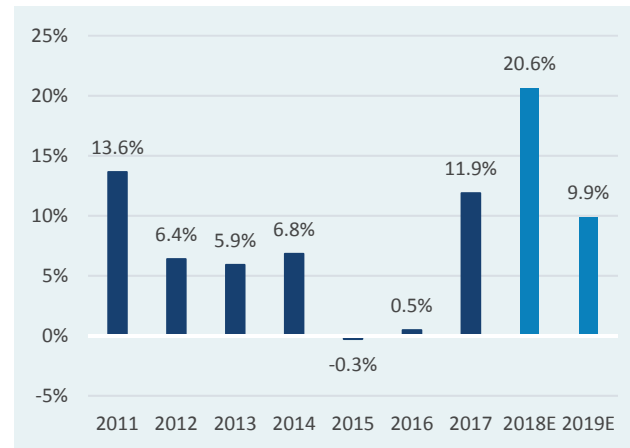
**Fundamentals appear unchanged despite falling prices**

## U.S. EQUITIES



Source: Russell Investments, as of 6/30/18

## CALENDAR YEAR EARNINGS GROWTH



Source: FactSet, as of 7/6/18

## S&P 500 PRICE & EARNINGS



Source: Bloomberg, as of 6/30/18

# Domestic equity size & style

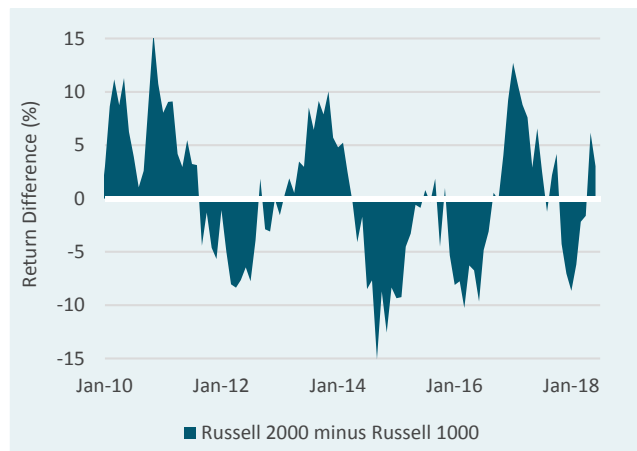
Large cap equities (Russell 1000 3.6%) underperformed small cap (Russell 2000 7.8%) during the quarter. Value stocks continued to lag growth (Russell 1000 Value 1.2% vs. Russell 1000 Growth 5.8%).

Value has delivered anomalously negative returns – the worst 10-year run on record (since 1926). Because performance differences were due to earnings growth disparity rather than moves in valuation, the price difference between value and growth stocks has remained normal. Earnings trends can be somewhat attributed to the global financial crisis where financials lagged considerably, followed by a bull market for

technology stocks (value is concentrated in financials while growth is concentrated in tech). In other words, much of value's underperformance was macroeconomic in nature.

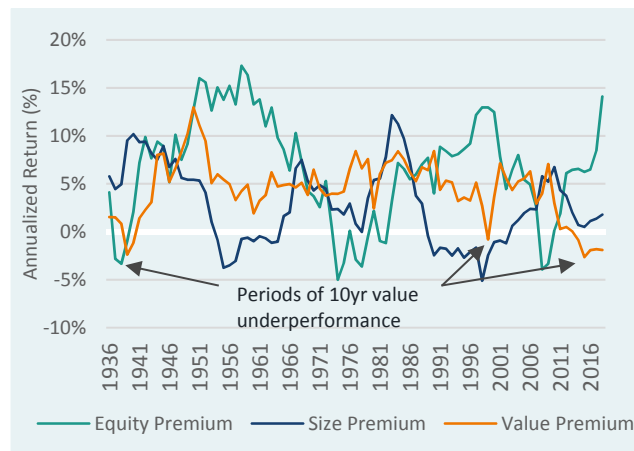
We do not yet see a catalyst for a value comeback, and it is possible that when value bounces back there will not be obvious signals beforehand. Poor recent performance is not always a solid standalone indicator of future reversal. Relative valuations are fairly in line with history, and the economic environment is positive (growth often performs well during later stages of economic cycles). We recommend that value investors stay the course.

**SMALL CAP VS LARGE CAP (YOY)**



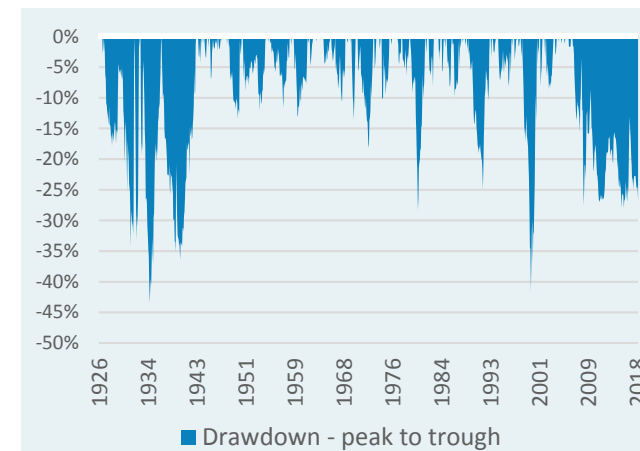
Source: FTSE, as of 6/30/18

**FACTOR PERFORMANCE (10YR ROLLING)**



Source: Kenneth French Library, as of 5/30/18

**VALUE - PEAK TO TROUGH**



Source: Kenneth French Library, as of 5/30/18

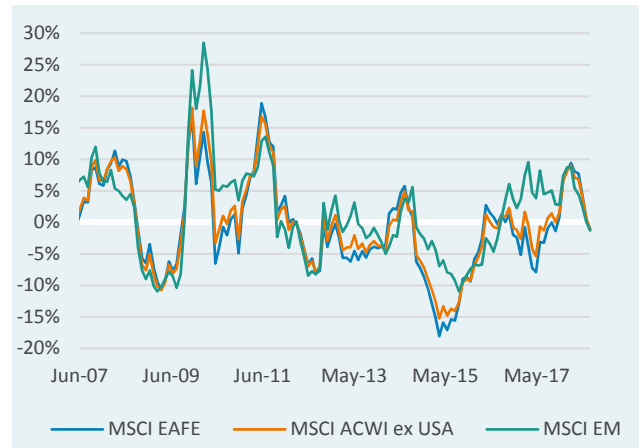
# International developed equity

Unhedged international equities underperformed U.S. equities during Q1 (MSCI EAFE -1.2% vs. S&P 500 +3.4%). On a hedged basis, international equities delivered returns of 3.9%, outpacing the U.S. market. Currency volatility has frequently been greater than equity market volatility in recent years, causing considerable return disparity for investors with unhedged investments in international assets. Equity returns in most markets have been positive year-to-date on an ex-currency basis.

Earnings growth remains strong and will likely be supportive of equity prices going forward. The U.S. has taken back the lead in year-over-year earnings growth, alongside a large boost from U.S. tax reform and a relatively strong economy.

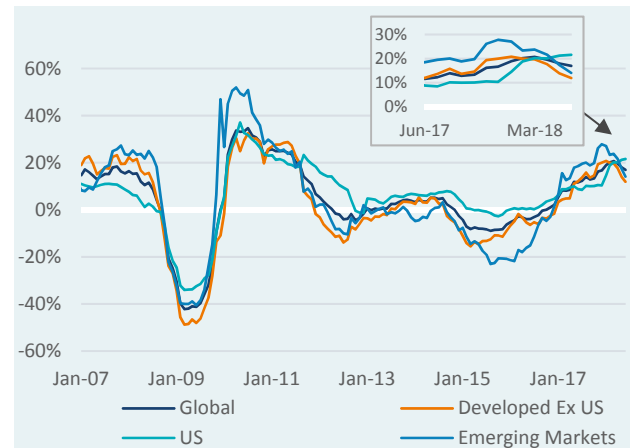
P/E multiples have moved lower as equity prices remain range bound and earnings grow at a brisk pace. Equity valuations are now closer to the longer-term average – a notable change from recent years.

**EFFECT OF CURRENCY (1-YEAR ROLLING)**



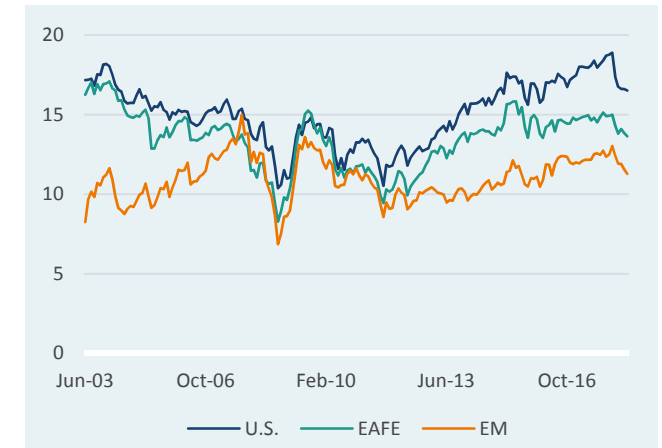
Source: MSCI, as of 6/30/18

**EARNINGS GROWTH (YOY)**



Source: MSCI, as of 6/30/18 – YoY growth in forward earnings

**FORWARD P/E**



Source: MSCI, as of 6/30/18



# Emerging market equity

Emerging market equities delivered losses of -8.0% in Q2, but remain up +8.2% on a year-over-year basis. Currency movement caused -4.4% of losses during the quarter.

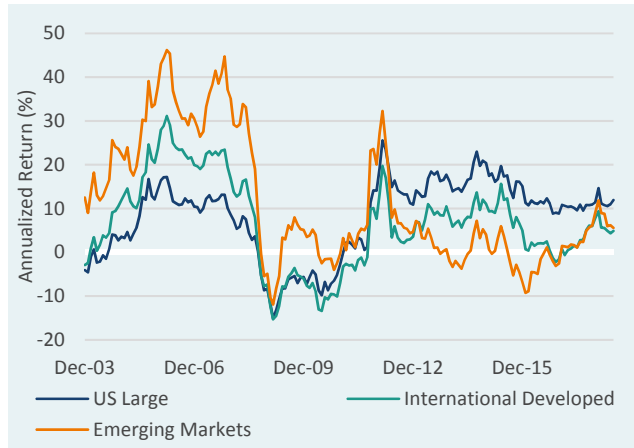
We maintain an overweight position to equities through a positive tilt to emerging markets. Equity bull runs in these markets through history typically incur at least a 10% drawdown sometime during the rally (see next page). Recent price swings were driven by valuation changes rather than by a fundamental change in earnings.

Developed markets are expected to grow less quickly in the coming years while emerging economic growth is expected to rise. A positive growth premium of emerging economies relative to developed economies has historically acted as a tailwind for EM outperformance.

We believe positive emerging economy growth trends, attractive valuations, a strong earnings environment, and depressed currencies should provide an environment of strong equity performance across these markets.

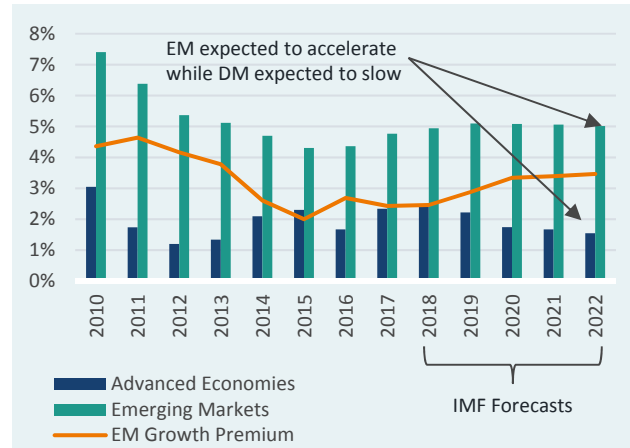
Conditions remain positive for EM equity

**EQUITY PERFORMANCE (3YR ROLLING)**



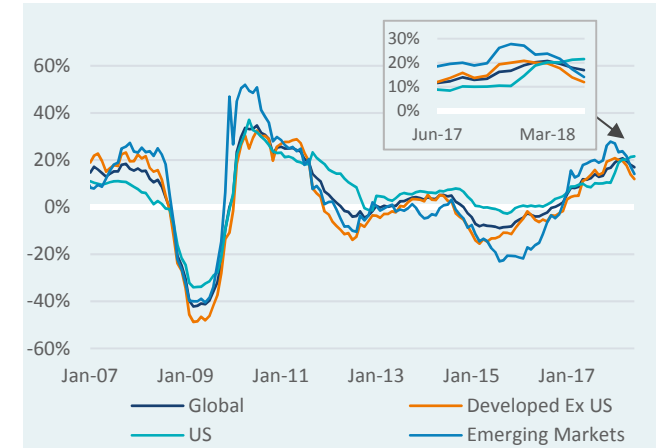
Source: Standard & Poor's, MSCI, as of 6/30/18

**EM GROWTH PREMIUM**



Source: IMF

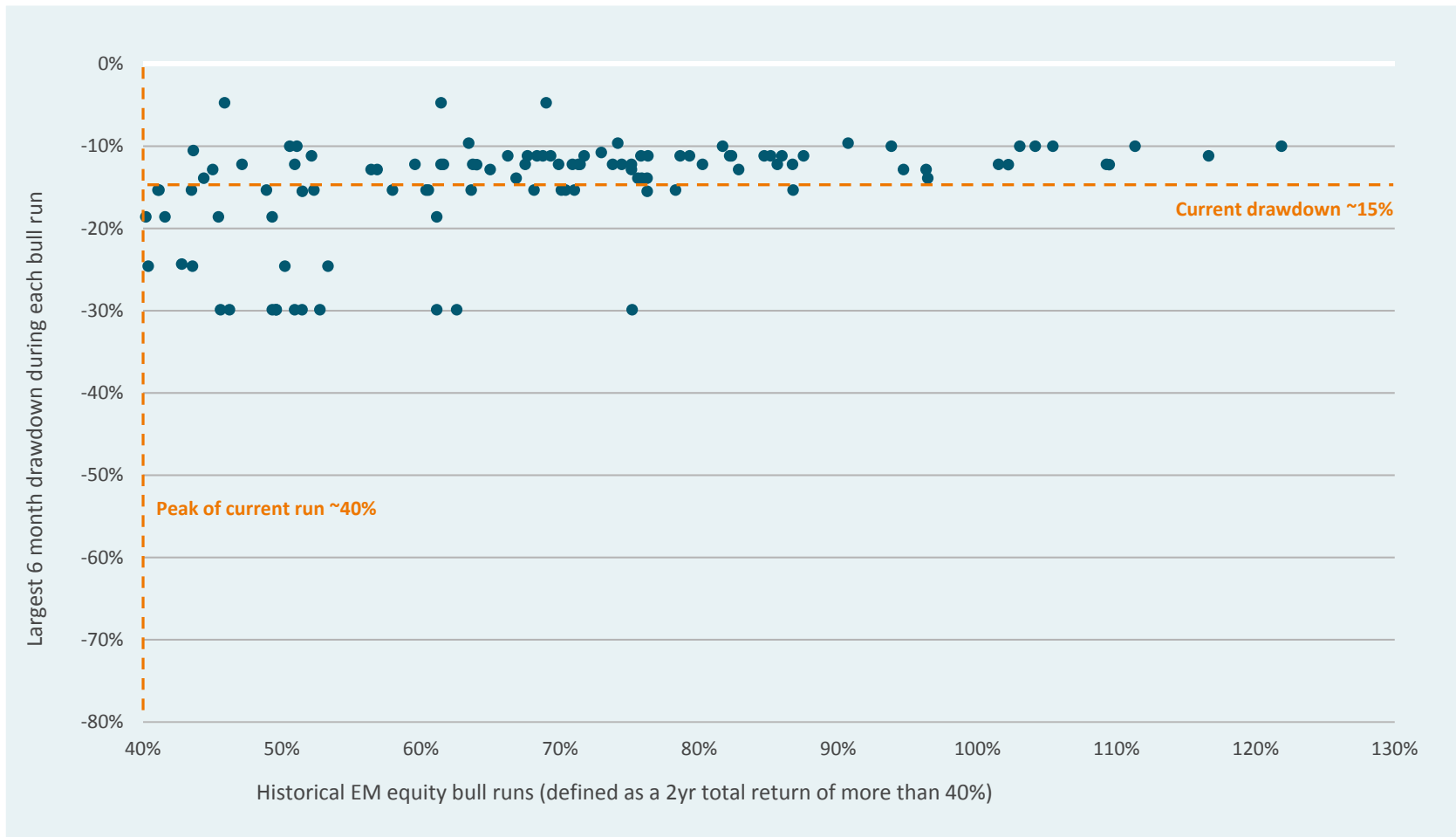
**EARNINGS GROWTH (YOY)**



Source: MSCI, as of 6/30/18

# Emerging market volatility

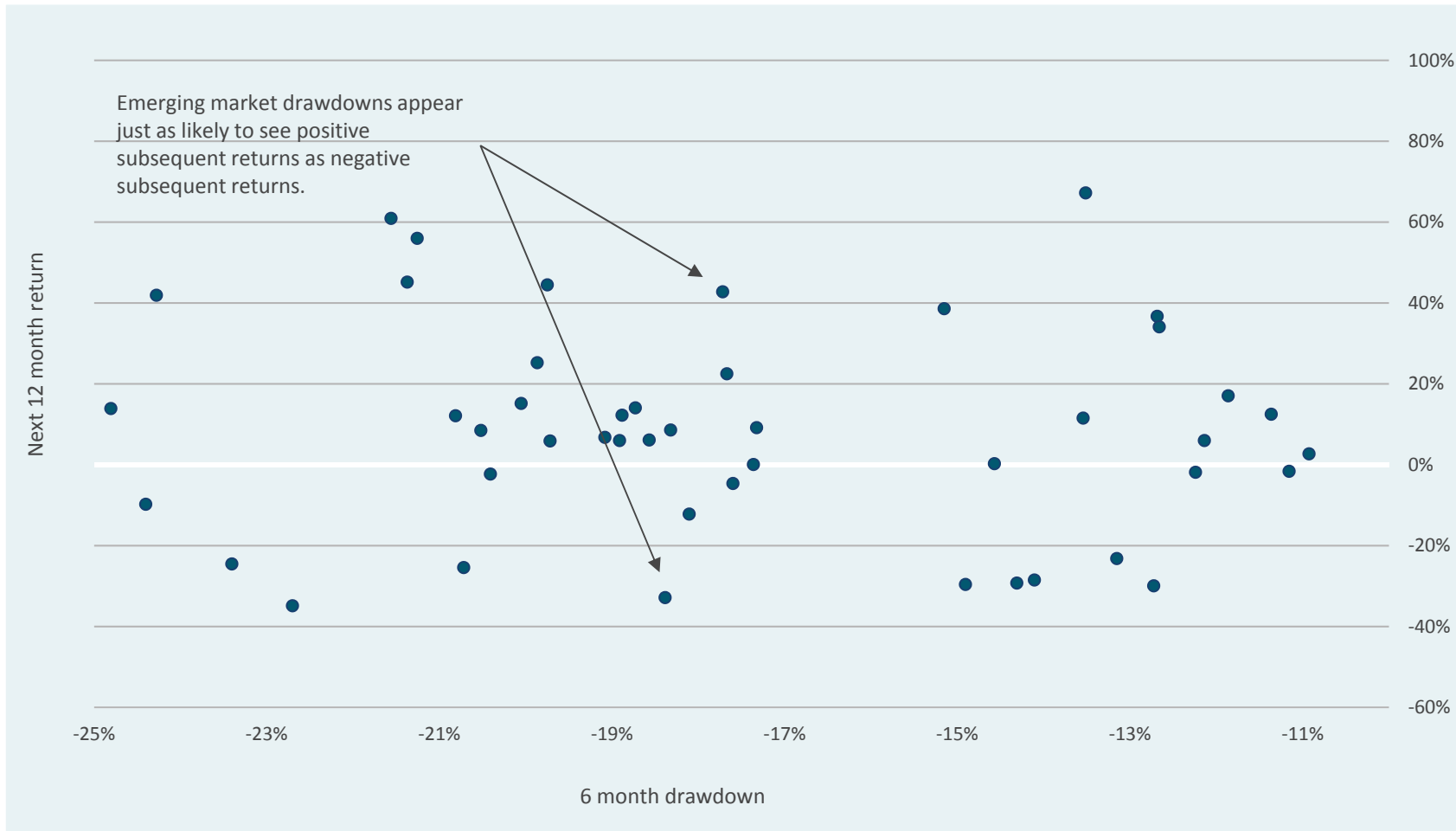
Drawdowns of 10% or more are typical during EM bull runs



The average drawdown experienced during all 2 year periods of 40%+ returns was -14.8%

# Emerging market volatility

The recent drawdown does not imply heightened risk of further losses



Source: MSCI, Verus

# Equity valuations

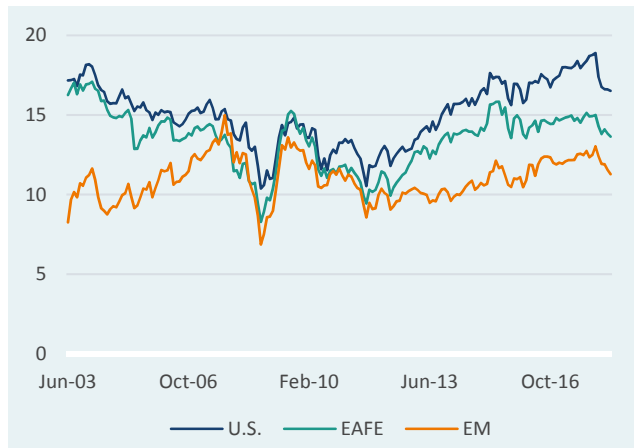
Equity valuations have moved lower year-to-date as prices fell and earnings increased at a strong pace. U.S. equity valuations have fallen the most as domestic earnings growth recently took the lead year-over-year against other markets.

The trailing P/E ratio of the S&P 500 is notably high, but as we have seen throughout the expansion more expensive markets may deliver consistent outperformance if fundamentally driven by robust earnings. On a forward P/E basis, the U.S. is now only slightly rich relative to valuations of the past 15 years (16.5 today vs. an average of 15.1). Price is an important component of equity investing, but higher prices may be indicative of

greater future earnings, which suggests investors cannot rely on price alone when forming expectations.

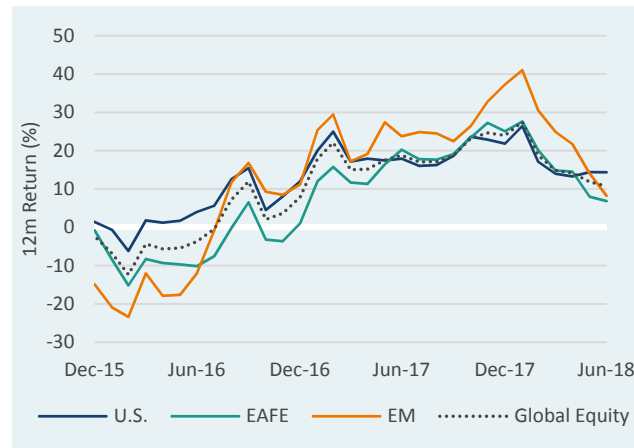
When examining equity markets through our *carry, value, trend,* and *macro* lens, *carry* has improved through lower prices (higher dividend and earnings yields), *value* has improved through lower equity multiples (range bound prices with rising earnings has pushed multiples downward), *trend* has flattened on a short-term basis but remains positive on a 12-month basis, and the *macro* environment has moderated a bit (notable weakness in Europe but strength in the U.S.)

## FORWARD P/E RATIOS



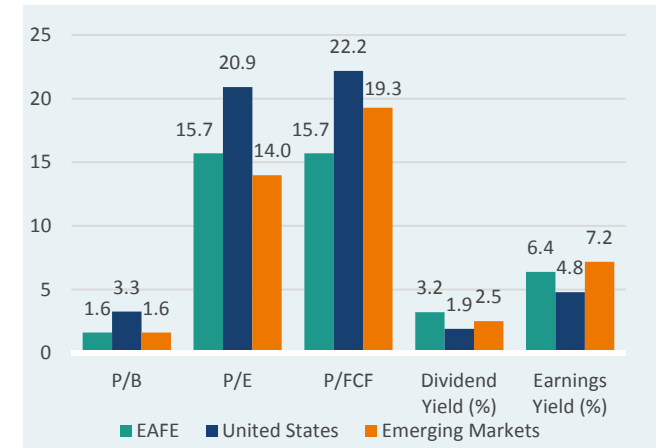
Source: MSCI, as of 6/30/18

## MOMENTUM (1YR)



Source: Standard & Poor's, MSCI, as of 6/30/18

## VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, as of 6/30/18 - trailing P/E

# Equity volatility

U.S. equity volatility retreated in the second quarter after a period of elevated risk following the February volatility spike. The VIX Index of implied volatility declined steadily throughout the quarter and averaged 15.3, compared to an average of 17.4 in the first quarter.

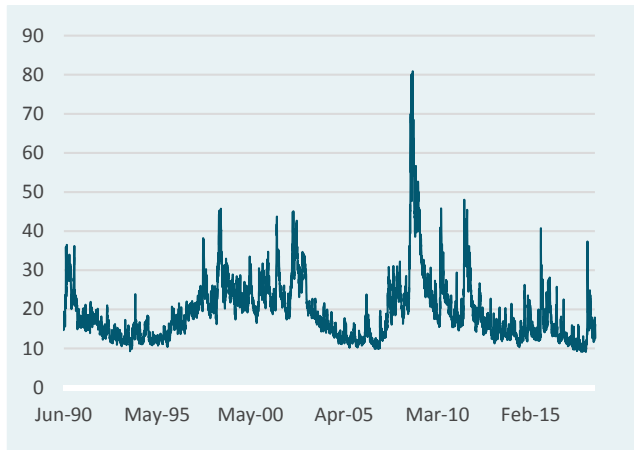
Realized volatility was below average in domestic and international equity markets in the second quarter, despite the concerns over a global trade war. Emerging markets experienced the greatest volatility, although the annualized standard deviation of daily returns in Q2 were

only 13.4% (MSCI Emerging Markets). International developed markets (MSCI EAFE) had a standard deviation of only 9.0%.

The implied volatility curve (i.e. skew), which looks at the differences in implied volatility at various option strike prices, has recently steepened. A steeper volatility curve means that investors are paying a higher premium for equity downside protection.

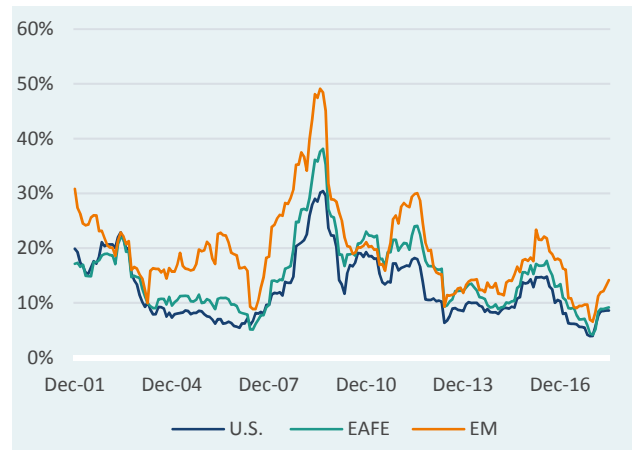
Equity volatility subsided back to below average levels

U.S. IMPLIED VOLATILITY (VIX)



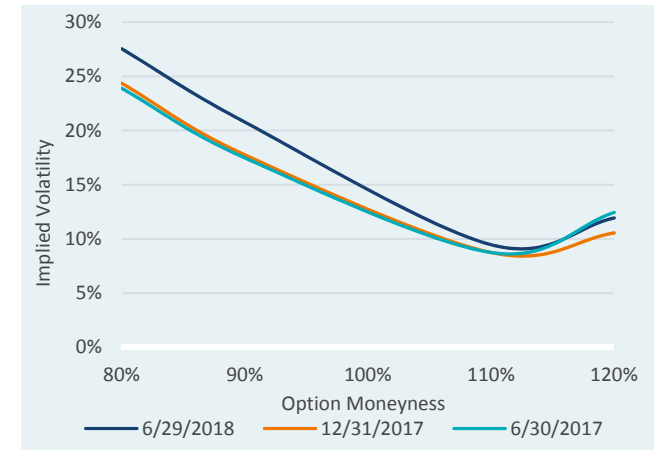
Source: CBOE, as of 6/30/18

REALIZED 1-YEAR ROLLING VOLATILITY



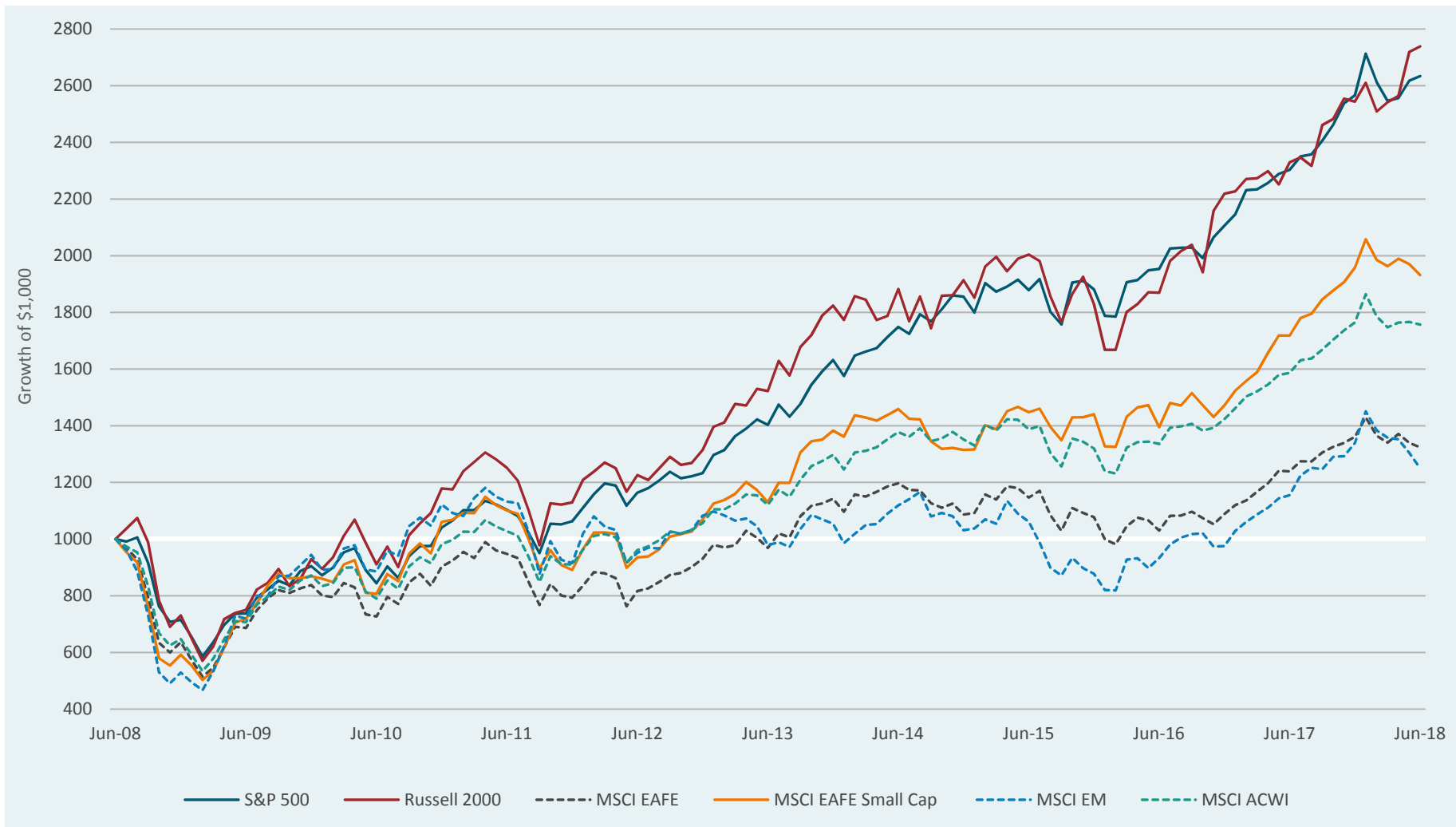
Source: Bloomberg, as of 6/30/18

U.S. IMPLIED VOLATILITY CURVE



Source: Bloomberg, as of 6/30/18

# Long-term equity performance



Source: Morningstar, as of 6/30/18

# Other assets

# Currency

The U.S. dollar appreciated 5% during the quarter, which erased the positive equity returns of many international markets. Relative strength of the U.S. economy, paired with Federal Reserve tightening, likely helped lead the U.S. dollar higher.

Interest rate differentials between the U.S. and the rest of the developed world have been steadily widening over the past 10 months. The spread between the U.S. 10-year Treasury yield and the yield on a basket of developed sovereign debt rose approximately 80 bps to 2.3% during this

time. Higher relative interest rates has historically been a short-term driver of currencies.

Emerging market currencies fell 9.1% in Q2, based on the JPM EM Currency Index. The performance of most currencies were in line with expectations based on U.S. dollar appreciation against developed market currencies. Several countries with large current account deficits that are heavily reliant on dollar funding, such as Argentina and Turkey, saw their currencies fall sharply. As a whole, emerging market currencies are significantly undervalued based on purchasing power parity.

**The U.S. dollar materially appreciated, reversing a multi-year downtrend**

**U.S. DOLLAR TRADE WEIGHTED INDEX**



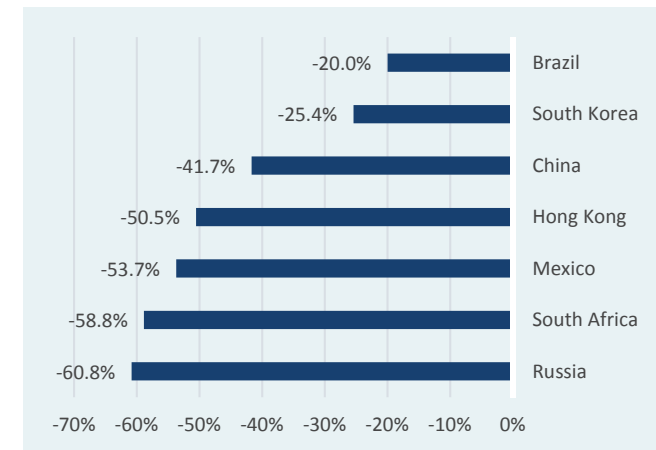
Source: Federal Reserve, as of 6/30/18

**U.S. VS. DEVELOPED INTEREST RATE SPREAD**



Source: Verus, Bloomberg, as of 6/30/18

**PURCHASING POWER PARITY VALUATIONS VS. U.S. DOLLAR (BIG MAC INDEX)**



Source: Bloomberg, as of 6/30/18



# Alternative beta

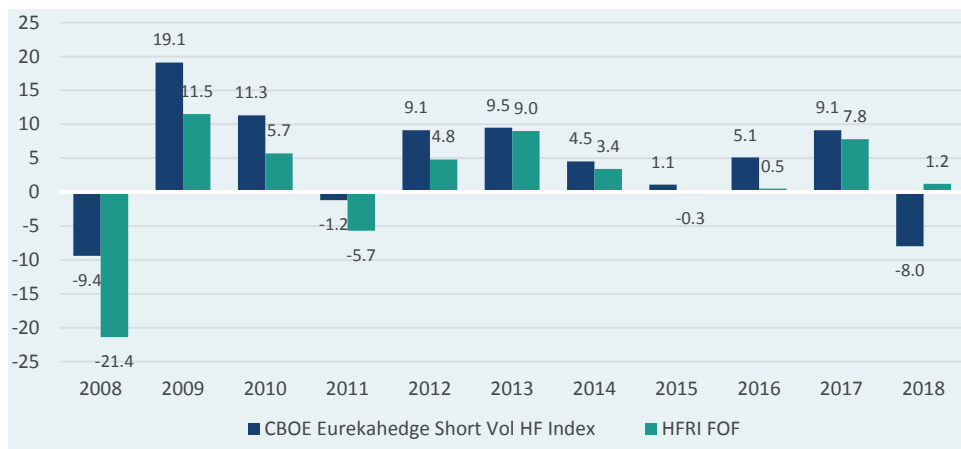
Alternative beta strategies have posted losses in Q2 and year-to-date. Equity value exposures accounted for the largest component of strategy losses in Q2 and year-to-date. Short volatility, a strong performing strategy over the past 10 years, also suffered a severe drawdown in Q1 and affected returns.

Correlation characteristics often benefit strategies with diversified factor exposure (some factors provide losses while others provide gains), but several factors including momentum and carry have not counterbalanced losses in value as they have often done historically.

We do not believe that alternative beta strategies are “broken” per se, but instead have reflected coinciding factor drawdowns as well as muted equity market returns more broadly.

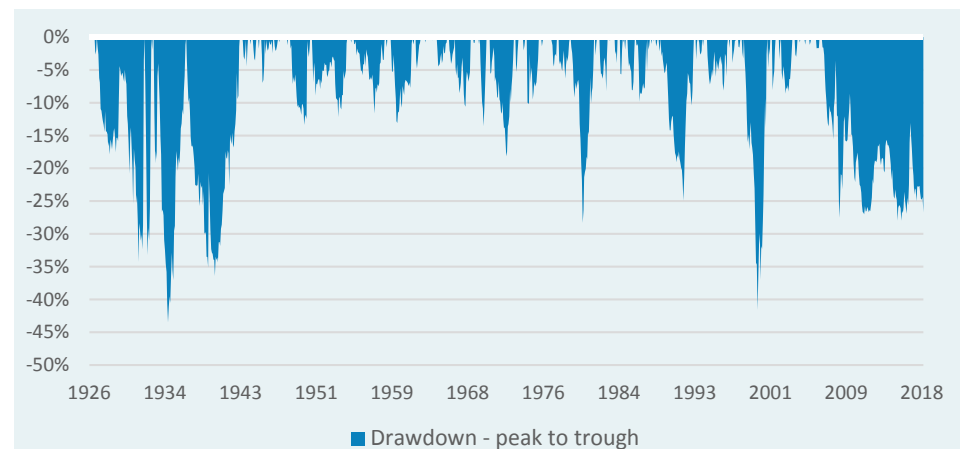
Attribution analyses on the Alt Beta strategies we follow confirm that recent performance is in line with 8-12% target volatility levels of each strategy. We are closely monitoring these funds through an environment of heightened volatility and are continuing discussions with managers. These losses are significant but are within the range we would expect, given the underlying factor exposure.

## SHORT VOLATILITY PERFORMANCE



Source: CBOE, HFRI, as of 6/30/18

## VALUE – PEAK TO TROUGH



Source: Kenneth French Library, Verus, as of May 2018 – shows value factor peak to trough drawdowns through time

# 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	YTD	5-Year	10-Year
Small 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	9.7	16.4	11.8
Small 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	7.7	13.6	11.2
Large 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	7.3	13.4	10.6
Small 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	5.4	12.5	10.2
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	2.9	11.2	9.9
Real Estate	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	1.7	10.3	8.5
Hedge Funds of Funds	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	1.2	10.0	6.1
Cash	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	0.8	6.4	4.8
Commodities	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	0.0	6.3	3.7
60/40 Global Portfolio	-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	-0.8	5.0	2.8
US Bonds	-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	5.1	-1.6	3.6	2.3
Large Cap Value	-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	-1.7	2.3	1.5
International Equity	-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	-2.7	0.4	0.4
Emerging Markets Equity	-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	-6.7	-6.4	-9.0

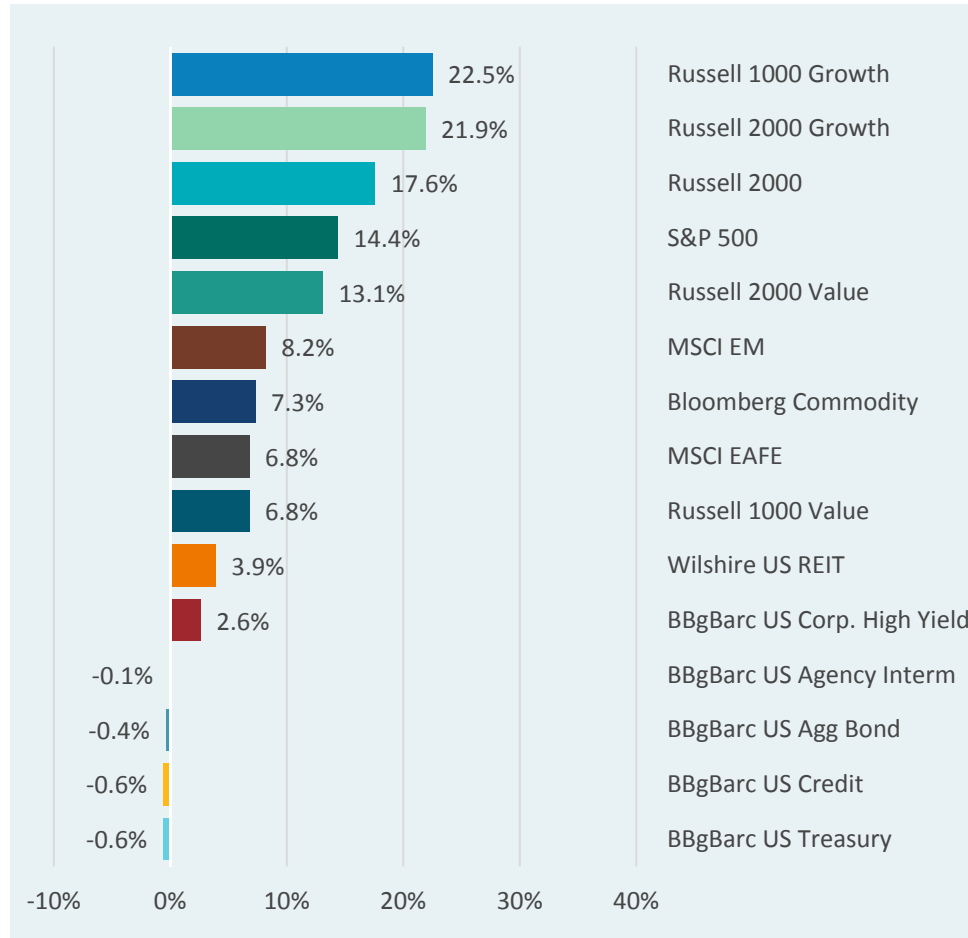
BEST  
↑  
↓  
WORST

 Large Cap Equity	 Small Cap Growth	 Commodities
 Large Cap Value	 International Equity	 Real Estate
 Large Cap Growth	 Emerging Markets Equity	 Hedge Funds of Funds
 Small Cap Equity	 US Bonds	 60% MSCI ACWI/40% BBgBarc Global Bond
 Small Cap Value	 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 3/31/18.

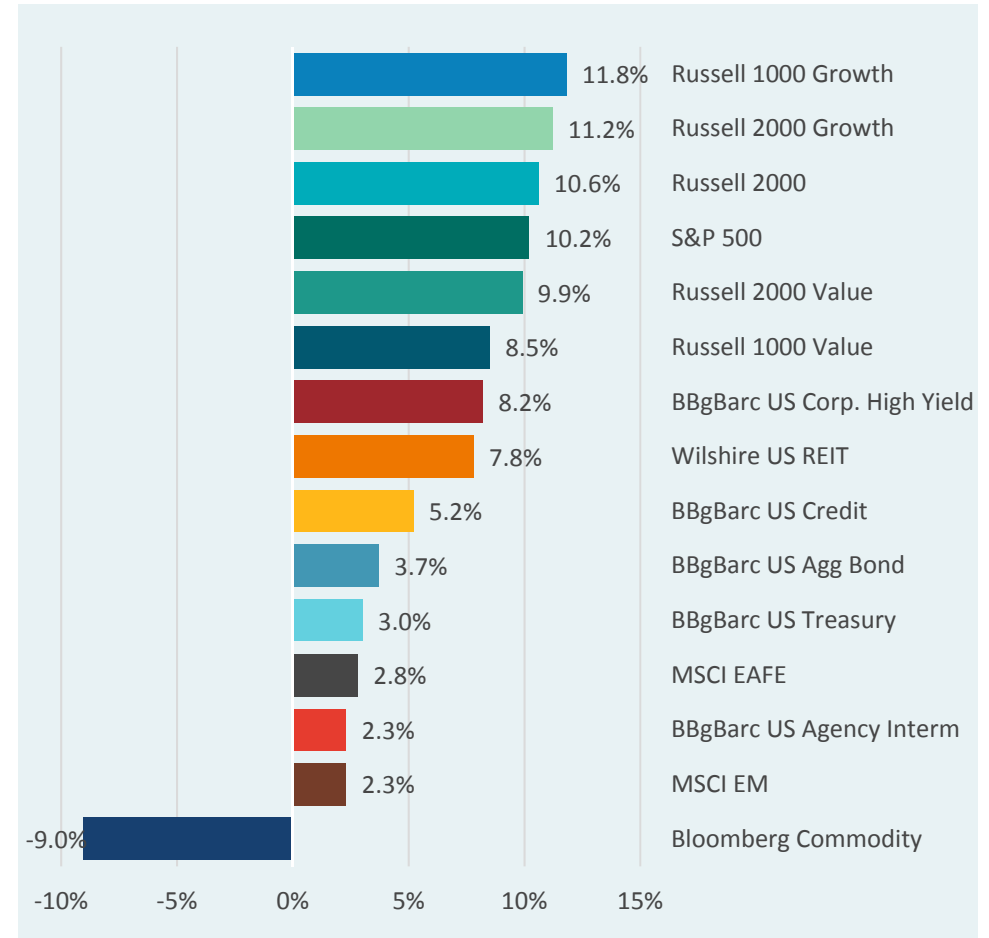
# Major asset class returns

ONE YEAR ENDING JUNE



Source: Morningstar, as of 6/30/18

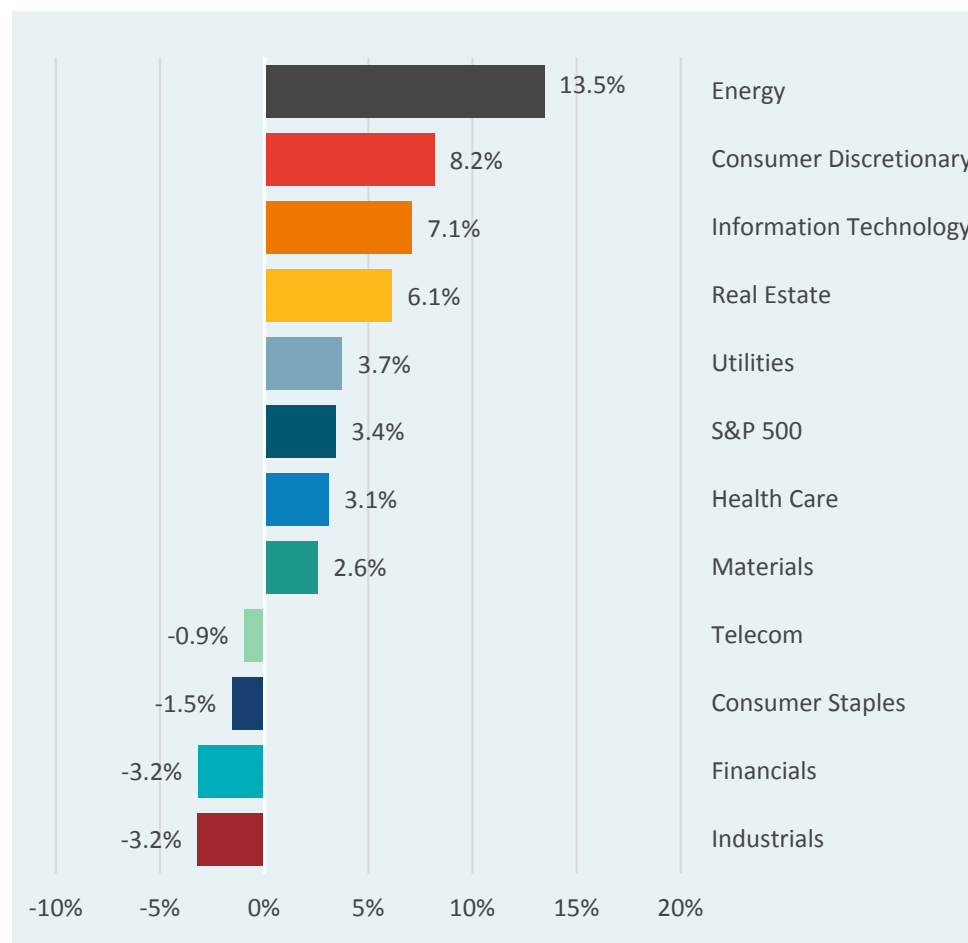
TEN YEARS ENDING JUNE



Source: Morningstar, as of 6/30/18

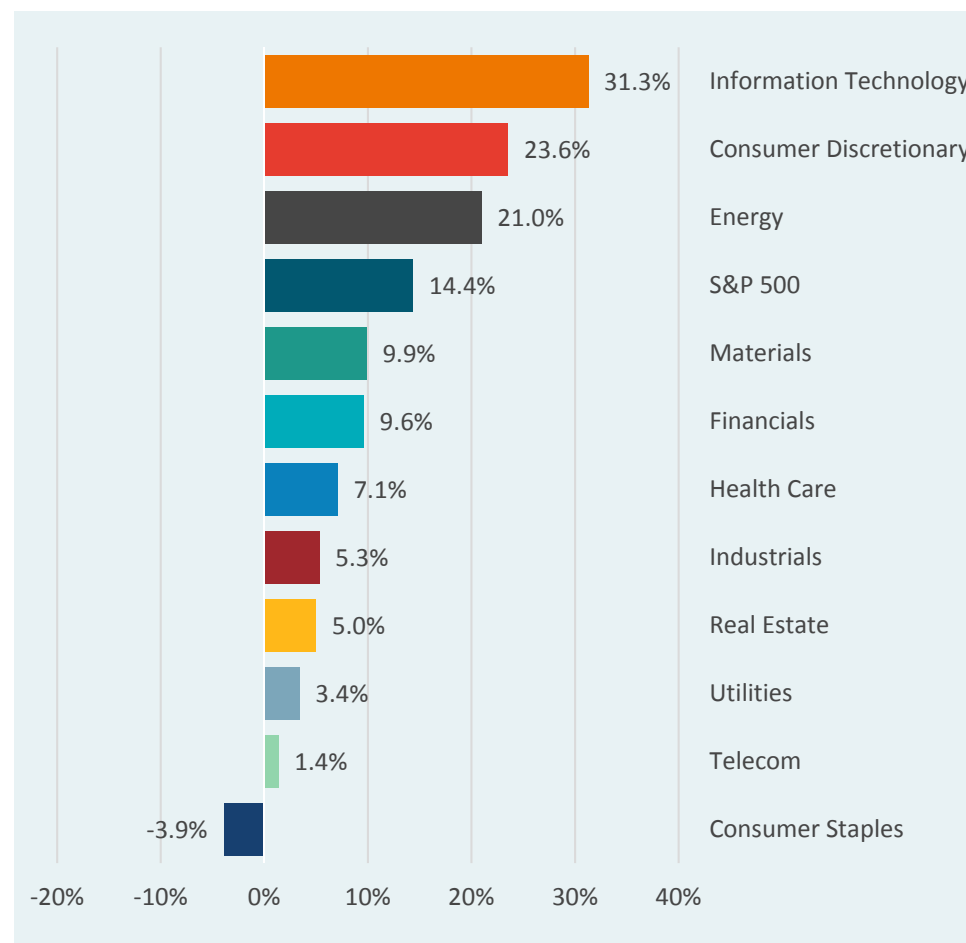
# S&P 500 sector returns

## 2<sup>ND</sup> QUARTER



Source: Morningstar, as of 6/30/18

## ONE YEAR ENDING JUNE



Source: Morningstar, as of 6/30/18

# Detailed index returns

## DOMESTIC EQUITY

	June	Q2	YTD	1 Year	3 Year	5 Year	10 Year
<b>Core Index</b>							
S&P 500	0.6	3.4	2.6	14.4	11.9	13.4	10.2
S&P 500 Equal Weighted	0.9	2.8	1.8	12.0	10.5	12.8	11.6
DJ Industrial Average	(0.5)	1.3	(0.7)	16.3	14.1	13.0	10.8
Russell Top 200	0.6	3.9	3.1	15.4	12.5	13.8	10.2
Russell 1000	0.6	3.6	2.9	14.5	11.6	13.4	10.2
Russell 2000	0.7	7.8	7.7	17.6	11.0	12.5	10.6
Russell 3000	0.7	3.9	3.2	14.8	11.6	13.3	10.2
Russell Mid Cap	0.7	2.8	2.3	12.3	9.6	12.2	10.2
<b>Style Index</b>							
Russell 1000 Growth	1.0	5.8	7.3	22.5	15.0	16.4	11.8
Russell 1000 Value	0.2	1.2	(1.7)	6.8	8.3	10.3	8.5
Russell 2000 Growth	0.8	7.2	9.7	21.9	10.6	13.6	11.2
Russell 2000 Value	0.6	8.3	5.4	13.1	11.2	11.2	9.9

## INTERNATIONAL EQUITY

<b>Broad Index</b>							
MSCI ACWI	(0.5)	0.5	(0.4)	10.7	8.2	9.4	5.8
MSCI ACWI ex US	(1.9)	(2.6)	(3.8)	7.3	5.1	6.0	2.5
MSCI EAFE	(1.2)	(1.2)	(2.7)	6.8	4.9	6.4	2.8
MSCI EM	(4.2)	(8.0)	(6.7)	8.2	5.6	5.0	2.3
MSCI EAFE Small Cap	(1.9)	(1.6)	(1.3)	12.4	10.1	11.3	6.8
<b>Style Index</b>							
MSCI EAFE Growth	(1.2)	0.1	(0.9)	9.4	6.4	7.4	3.5
MSCI EAFE Value	(1.3)	(2.6)	(4.6)	4.3	3.3	5.4	2.2
<b>Regional Index</b>							
MSCI UK	(1.0)	2.9	(1.0)	10.0	3.1	4.9	2.7
MSCI Japan	(2.5)	(2.8)	(2.0)	10.5	6.2	7.4	3.5
MSCI Euro	(0.7)	(2.8)	(3.2)	5.0	5.3	7.1	1.1
MSCI EM Asia	(4.7)	(5.8)	(5.1)	10.1	7.3	8.3	5.6
MSCI EM Latin American	(3.1)	(17.8)	(11.2)	(0.2)	2.0	(2.4)	(3.7)

## FIXED INCOME

	June	Q2	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
BBgBarc US TIPS	0.4	0.8	(0.0)	2.1	1.9	1.7	3.0
BBgBarc US Treasury Bills	0.2	0.5	0.8	1.3	0.7	0.4	0.4
BBgBarc US Agg Bond	(0.1)	(0.2)	(1.6)	(0.4)	1.7	2.3	3.7
<b>Duration</b>							
BBgBarc US Treasury 1-3 Yr	0.0	0.2	0.1	0.0	0.4	0.6	1.3
BBgBarc US Treasury Long	0.2	0.3	(3.0)	(0.1)	3.4	4.5	6.1
BBgBarc US Treasury	0.0	0.1	(1.1)	(0.6)	1.0	1.5	3.0
<b>Issuer</b>							
BBgBarc US MBS	0.0	0.2	(1.0)	0.1	1.5	2.3	3.5
BBgBarc US Corp. High Yield	0.4	1.0	0.2	2.6	5.5	5.5	8.2
BBgBarc US Agency Interm	0.0	0.2	(0.2)	(0.1)	0.8	1.1	2.3
BBgBarc US Credit	(0.5)	(0.9)	(3.0)	(0.6)	2.9	3.4	5.2

## OTHER

<b>Index</b>							
Bloomberg Commodity	(3.5)	0.4	(0.0)	7.3	(4.5)	(6.4)	(9.0)
Wilshire US REIT	4.5	9.7	1.5	3.9	7.8	8.4	7.8
CS Leveraged Loans	0.2	1.0	2.3	4.5	4.2	4.1	5.0
Alerian MLP	(1.5)	11.8	(0.6)	(4.6)	(5.9)	(4.1)	6.5
<b>Regional Index</b>							
JPM EMBI Global Div	(1.2)	(3.5)	(5.2)	(1.6)	4.6	5.1	6.7
JPM GBI-EM Global Div	(2.9)	(10.4)	(6.4)	(2.3)	2.0	(1.4)	2.6
<b>Hedge Funds</b>							
HFRI Composite	(0.1)	0.8	1.2	5.2	2.6	4.2	3.5
HFRI FOF Composite	(0.2)	0.9	1.2	5.6	2.1	3.6	1.5
<b>Currency (Spot)</b>							
Euro	0.0	(5.1)	(2.8)	2.4	1.6	(2.1)	(3.0)
Pound	(0.8)	(5.9)	(2.4)	1.6	(5.7)	(2.7)	(4.0)
Yen	(1.9)	(4.0)	1.7	1.4	(3.4)	(2.2)	(0.3)

Source: Morningstar, as of 6/30/18

# 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/>)

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# Glossary

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**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.



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

August 28, 2018

Agenda Item 6.3

**TO:** Board of Retirement

**FROM:** Doris Ng, Investment Analyst



**SUBJECT:** Report on Fixed Income Manager Annual Reviews

**Recommendation**

Accept the reports on the annual review of SamCERA's global and core bond managers.

**Background**

On August 2<sup>nd</sup>, SamCERA staff and consultant held annual review meetings in SamCERA's office for our global bond manager, Franklin Templeton and two core bond managers, Western Asset Management and Fidelity Institutional Asset Management.

Each meeting lasted approximately 1.5 hours, and consisted of a firm/organizational update, investment process review, performance review and attribution, and current positioning/market outlook.

**Discussion**

The Franklin Templeton Global Multi-Sector Plus bond strategy, which is a global unconstrained bond mandate managed in an opportunistic fashion using a top-down fundamental framework, was reviewed first. In 2018, the firm made two acquisitions, one of which is a global equity firm named Edinburgh Partners.

Fidelity Institutional Asset Management's Broad Market Duration product, which is a commingled pool that focuses on U.S. Treasuries, agencies, investment grade corporate bonds, mortgage-backed and asset-backed securities, was reviewed next.

Lastly, Western Asset Management's Total Return Unconstrained (TRU) strategy, which is an unconstrained core product with broad latitude in duration (-3 to +8 years) and asset allocation and may hold up to 50% in high yield, was reviewed. There were two announced retirements, one related to a portfolio manager on the Broad Market investment team and another related to the Chief Risk Officer, who are expected to retire in March 2019 and December 2018, respectively. The transition plans for both retirements have been underway and not expected to have a material impact on the strategy.

There were no significant concerns identified during the portfolio reviews. Attached you will find meeting notes from Verus summarizing the findings from these annual reviews.

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

**Attachments**

- A. Franklin Templeton Annual Review Meeting Notes
- B. Western Asset Management Annual Review Meeting Notes
- C. Fidelity Institutional Asset Management Core Bond Annual Review Meeting Notes

Date of meeting: 8/2/18

Location: SamCERA

Manager Representative(s)

Bill Deakyne (Client Relations),  
Richard Herbert (Institutional PM Global Macro)

Verus Representative(s)

Margaret Jadallah

Account Assets

\$40 million (6/30/18)

Client Representative(s)

Mike Coultrip (CIO), Doris Ng (Analyst), Lilibeth Dames  
(Analyst), Robert Raw (Trustee)

## Product Description

Franklin Templeton (FT) manages the Global Multisector Plus global bond mandate in an unconstrained fashion using a top-down fundamental framework. FT believes that 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 ultimately 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. Through its research, FT seeks to identify specific interest rates, currencies and credit exposures that reflect the most attractive investment opportunities, independent of the benchmark. The contribution of the different sources of alpha can vary according to various market environments. However, in aggregate, the risk allocated to each of these areas has typically ranged from 20% to 60% of the risk budget. The Global Multisector Plus approach allows for meaningful amounts of emerging markets and active currency management. The portfolio must maintain at least 50% investment grade exposure.

The format of SamCERA's investment in this strategy was changed from a separate account to a commingled vehicle in June 2014. As a result of SamCERA's fixed income manager structure review in 2017, SamCERA redeemed \$70 million from FT to reduce tracking error in the fixed income composite.

## Meeting Notes

### Organization

As of June 30, 2018, Franklin Templeton managed \$724 billion, of which approximately \$103 billion was in global bond mandates. The Global Macro team, led by Michael Hasenstab, managed \$37 billion in the Global Multisector Plus style employed in the SamCERA portfolio at 6/30/18.

In 2018, Franklin Templeton (FT) acquired private lending firm Random Forest Capital and, more notably international/global equity firm Edinburgh Partners based in Edinburgh, Scotland. Dr. Sandy Nairn, CEO of Edinburgh Partners, has been appointed Chairman of the Templeton Global Equity Group (TGEG). TGEG and Edinburgh Partners will remain distinct businesses, with their differentiated value approaches. Dr. Nairn used to work at Templeton prior to founding Edinburgh. On January 13, 2018, Dr. Mark Mobius, Executive Chairman of the Templeton Emerging Markets Group (TEMG), retired from the firm after transitioning leadership of the team to CIO and Head of Equities Stephen Dover over a multi-year period. FT also made senior promotions in 2017 to enhance development of the firm's multi-asset solutions and data science capabilities.

## Investment Team

Franklin Templeton's Global Macro team consists of 21 investment professionals, including 7 Ph.D.'s who comprise the senior investment management and research team. The Global Macro team is represented by a diverse set of professionals from 13 different countries who speak 18 different languages. The team utilizes additional inputs from FT's broader Fixed Income Group consisting of a team of more than 150 global fixed income investment professionals located in offices around the world.

The Global Macro group is structured into regional/country and sector research teams, quantitative analysts and separate and segregated risk analysts. Christine Zhu, Director of Portfolio Construction, is co-portfolio manager for Global Multisector Plus and plays an important role in separate account management. The team has had two departures from the more junior team of research associates over the past year. This was explained as typical because for more senior research roles a Ph.D. is required.

## Investment Strategy

Franklin Templeton (FT) manages the global bond mandate in an unconstrained fashion using a top-down, fundamental framework. As stated above, FT focuses on fundamental research to identify long-term opportunities, using short-term market inefficiencies to build positions. 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 industries countries (G-13) as well as emerging markets, which results in broad targets for duration, currencies and the developed/emerging market mix. Credit, while not currently a meaningful part of the portfolio, is part of the investable universe as well.

The investment process integrates inputs from multiple sources within the Global Macro team and the broader FT fixed income team. Global Macro research teams meet weekly and gather local market intelligence from fixed income colleagues from around the globe as part of their due diligence. Analysts pitch their ideas to the portfolio managers, and lead portfolio manager Michael Hasenstab must sign off on them before they are purchased. The risk team assesses the impact any trade will have on the risk of the portfolio. The portfolio is not managed to be similar to the benchmark, and there is little focus on tracking error. But the team is attentive to other multiple risks, such as political and liquidity risk. Franklin models the VaR of the portfolio as well as conditional VaR, which considers tail risks.

The investment philosophy focuses on getting the country selection decision right as the primary driver of portfolio performance. On average and over longer periods of time, risk allocation should be approximately equal across interest rate, currency and credit alpha sources. However, currency decisions continue to dominate the current portfolio's risk allocation with about 2/3 of the portfolio's risk coming from currency decisions. The portfolio is sized such that liquid positions (Mexico) offset illiquid positions (Argentina).

## Performance & Positioning

The SamCERA portfolio has performed below the Bloomberg Barclays Multiverse Index YTD 2018 as of 6/30/18 (-2.4% v. -1.6%) and the year ended 6/30/18 (-2.5% v. 1.3%). The portfolio's short duration (avg. duration -0.2 years) and maturity (avg. maturity 3.7 years) positioning is much shorter than that of the Bloomberg Barclays Multiverse Index (6.9 yr. avg. duration and 8.7 yr. avg. maturity). Their defensive duration positioning is based on a belief that interest rates will continue to rise, while the U.S. dollar continues to strengthen. Dr. Hasenstab has close relationships with key decision makers worldwide (ex., central bankers and policy makers) which helps in developing long term, high conviction viewpoints for the portfolio. The risk profile of the strategy is still tilted towards currencies. They

expect the euro to weaken against the U.S. dollar and are positioned as such. The portfolio has minimal geographic exposure to the U.S. market while having substantial exposure from a currency standpoint. Outside of the U.S. dollar, the biggest currency exposures are to the Mexican Peso and the Brazilian Real.

The second quarter was tough for them, primarily because of their Latin American bond and currency exposures. The portfolio holds longer duration Argentina and Brazil debt, where the portfolio managers have determined that the countries are working towards true governmental reform while offering very attractive yields. The Global Macro team believes that Argentina represents an unusually large value opportunity with yields of 22%, akin to their bet in Ireland during the GFC that they exited successfully in 2016 after locking in yields that started at 15% and narrowed to 1% over time.

Franklin Templeton considers this strategy a diversifier to other traditional fixed income approaches.

*Date of meeting:*  
8/2/2018

*Location: SamCERA  
Office*

Manager Representative(s)

Mark Lindbloom (Portfolio Manager)  
Frances Coombes (Client Service)

Verus Representative(s)

Margaret Jadallah

Account Assets

\$128 million (6/30/18)

Client Representative(s)

Mike Coultrip (CIO), Doris Ng  
(Analyst), Lilibeth Dames (Analyst)

## Product Description

Western Asset's Total Return Unconstrained (TRU) strategy seeks to provide bond-like risk and return over the long term within a benchmark agnostic framework. This allows for asset allocation based purely on fundamental, long term value. 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 an unconstrained bond mandate without having to adhere to the benchmark construction. The portfolio must have at least 50% of its holdings in investment-grade securities. This strategy can be appropriate in all market environments, but may be particularly attractive in rising rate environment, as the flexibility offered by this strategy allows for defensive positioning 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.

Western Asset uses a team approach to portfolio management with duration, term structure, and sector allocation decisions developed by U.S. Broad Strategy Committee. The TRU bond portfolio managers are members of this committee which meets weekly to formulate the firm's macroeconomic outlook and broad investment strategies in terms of the strength of the economy, direction of interest rates and shape of the yield curve. This top down viewpoint is then applied in constructing the TRU portfolio.

## Meeting Notes

### Organization

The Firm's total AUM were \$420 billion as of June 30, 2018. There have been no major organizational changes at Western since the last SamCERA review. Western designated Michael Buchanan deputy CIO in March 2015 to prepare for formal CIO succession in the future. Chief Risk Officer Kenneth Winston will be retiring from the firm in December 2018 and has been transitioning his responsibilities to Ahmet Kocagil who has been with Western for two years. Ahmet worked at PIMCO and BlackRock in a similar capacity prior to joining Western.

### Investment Team

There have been no leadership or investment team changes to the strategy since the last SamCERA review. Western TRU is led by Mark Lindbloom and S. Kenneth Leech, each with 40 years of experience. Mark Lindbloom leads the U.S. Broad Strategy team of five senior portfolio managers, and subsets of the senior PMs have been assigned to

specific products to promote better client communication. In preparation for Portfolio Manager Carl Eichstaedt's upcoming retirement in March 2019, the firm has transitioned him off of most client relationships. All in, Western Asset has 129 investment professionals in seven offices who contribute to the investment outlook and process.

### Investment Strategy

The investment philosophy of Western Asset is long-term fundamental value investing, using multiple diversified strategies. Western Asset combines a top-down macroeconomic view with bottom-up fundamental research and relative value analysis. Portfolio management is directed by the U.S. Broad Strategy Committee which sets macro and sector investment themes. The Committee meets weekly to establish a U.S. investment outlook over a 6-9 month time horizon, which provides guidance to the portfolio managers.

Western Asset believes it can identify and capitalize on markets and securities that are priced below fundamental fair value. The Firm does this through disciplined and rigorous analysis, comparing prices to the fundamental fair values estimated by its macroeconomic and credit research teams around the globe. The TRU portfolio emphasizes the team's highest conviction ideas. The greater the difference between the firm's view of fair value and market pricing, the bigger the potential value opportunity. The greater the degree of confidence in its view of fundamentals, the greater the emphasis of the strategies in the portfolio.

Western Asset seeks diversified sources of returns. Western Asset's objective is to meet or exceed its investors' performance objectives within their tolerances for risk with TRU investing opportunistically in larger, more liquid sectors of the fixed income market. The Firm seeks to diversify investments and add value across interest rate duration, yield curve, sector allocation, security selection, country and currency strategies.

### Performance & Positioning

For the year ended June 30, 2018, the portfolio returned -0.7% vs. -0.4% for the Bloomberg Barclays U.S. Aggregate Index and 1.8% for 3-month LIBOR. Western TRU's duration positioning and emerging markets positions were the biggest causes for underperformance. Duration was the largest detractor as U.S. interest rates increased across the curve. Emerging markets were the second largest detractor as both USD sovereign and local currency yields rose given trade concerns and a stronger U.S. dollar. The firm continues to believe that real yields in emerging markets more than compensate for current risk and volatility in the markets. Structured securities (CMBS, non-agency MBS, ABS) and bank loans were additive to portfolio performance.

TRU portfolio duration is 3.65 years and has ranged between -1 and 6 years over the past year. Western does not believe that inflation will become problematic in the near term and is comfortable taking on some duration risk, primarily through its exposure to long U.S. Treasuries. It is important to note that the TRU approach allows for flexibility in all regards, including the duration decision. This should not be viewed strictly as a bear market strategy.



*Date of meeting: 8/2/2018*

*Location: SamCERA Office*

Manager Representative(s)

Beau Coash (Institutional PM)  
Arthur Greenwood (Relationship Manager)

Verus Representative(s)

Margaret Jadallah

Account Assets

\$260 million (6/30/18)

Client Representative(s)

Mike Coultrip (CIO), Doris Ng (Analyst), Lilibeth Dames (Analyst), Robert Raw (Trustee)

## Product Description

Fidelity's Broad Market Duration (BMD) investment strategy seeks to achieve absolute and risk-adjusted returns in excess of the Bloomberg Barclays U.S. Aggregate Index, focusing its investments in U.S. 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 U.S. 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 Fidelity uses the same analytical framework to assess both index and portfolio risk. Tracking error should range between 1.00 - 1.50% per annum over the benchmark, and stringent portfolio construction risk control rules are strictly adhered to.

## Meeting Notes

### Organization

Since Fidelity's last review, Robin Foley was named co-CIO of bonds with Jamie Pagliocco in October 2017, succeeding Christine Thompson who retired at the end of 2017. Also in October 2017, Mike Durbin, previously head of Fidelity Institutional Investments and Technology Solutions, succeeded Jeff Lagarce as president of Fidelity Institutional. Lagarce transitioned into a senior advisory role, reporting to Abigail Johnson. Durbin was chosen for both his understanding of client needs and technology solutions.

### Investment Team

There were no investment team changes specific to BMD in the past year. Ford O'Neil, Jeff Moore, Celso Munoz and Michael Plage are the portfolio managers responsible for the Broad Market Duration strategy. Institutional portfolio manager Beau Coash commented on the compensation structure within the team that allows analysts to maintain a career as analysts if they choose not to become portfolio managers. In this way, FIAM can develop insights and differentiated viewpoints on industry credits.

## Investment Strategy

Fidelity' Broad Market Duration uses bottom-up issuer and sector selections as its primary sources of alpha. Because Fidelity recognizes that macroeconomic forces have often overwhelmed underlying fundamentals for extended period of time, the BMD team incorporates inputs from both global macro and quantitative analyst teams to guide decisions. Risk management is also a priority and serves as the framework in managing this strategy.

Credit analysts cover approximately 2–3 industries across 30–50 names, resulting in a high degree of specialization and focus. Analysts provide their own credit rating for each issuer they cover as well as a numerically ranked (1-strong buy, 6-strong sell) relative value rank for each issuer and sector they cover. This quantitative ranking is incorporated into the portfolio management and risk monitoring systems. Analysts also provide qualitative assessments to portfolio managers. In meetings with the portfolio manager and traders, analysts propose their security recommendations, discuss industry trends, and provide updates on company-specific situations. Outputs from these meetings can include formal ratings changes to both fundamental outlooks and relative value.

While the investment process is rooted in a bottom-up, fundamental approach, FIAM incorporates macroeconomic variables that can influence credit, liquidity and valuation perspectives into their bottom-up process. These global macro perspectives serve a twofold function: (1) they facilitate the risk management process and (2) they represent potential sources of alpha.

## Performance & Positioning

As of June 30, 2018, the SamCERA BMD account's trailing 12-month gross return outperformed the Bloomberg Barclays U.S. Aggregate benchmark by 69 bps (0.29% versus -0.40% for the Bloomberg Barclays U.S. Aggregate Index). The portfolio's sector underweight to and security selection within industrials was a large factor in YTD performance as was FIAM's out-of-benchmark TIPS exposure. For calendar year 2017, FIAM added value in investment and high yield corporates, sovereigns and emerging market debt. The portfolio has historically been overweight spread products and been underweight Treasuries. As of June 30, 2018, the SamCERA portfolio is 3 percent underweight to U.S. Treasuries and 8 percent overweight to TIPS.

Overall, the portfolio remains modestly overweight to risk assets, and the team believes that inflation remains contained. Within corporates, they view their industrials as fairly valued now and are trimming the sector. Conversely, they are overweight financials and are focusing their exposure to short and intermediate duration bonds. In general, they have little in long credit. Mortgages are viewed as less attractive than other sectors. Their limited exposure is to mortgages with low balances and high rates which tend not to pay down. Portfolio duration is close to the benchmark. In general, the team is positioning the portfolio with the view that we are late in the market cycle.

As of June 30, 2018, 45% of portfolio securities are excluded from the benchmark. FIAM views non-index bonds as another opportunity set to add value. Non-benchmark securities are subject to the same scrutiny with relation to liquidity, quality, etc.

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

August 28, 2018

Agenda Item 6.4

**TO:** Board of Retirement

**FROM:** Lilibeth Dames, Investment Analyst *Lilibeth Dames*

**SUBJECT:** Presentation of Private Asset Semi-Annual Performance Reports as of December 31, 2017

**Recommendation**

Accept and review Verus' semi-annual private equity and private real assets performance reports as of December 31, 2017.

**Background**

The Board of Retirement approved the implementation of SamCERA's private equity program in August 2010. The Board subsequently approved the implementation of SamCERA's private real asset program in October 2013. Verus provides a semi-annual private equity and private real asset performance report as of June 30<sup>th</sup> and December 31<sup>st</sup> each year.

**Discussion**

As of December 31, 2017, SamCERA's private equity portfolio had a total market value of \$255.7 million (5.9% of SamCERA's total fund). SamCERA's current target allocation for Private Equity is 7.0%, however, our new long-term target allocation is 6.0%. For the six-month period from July 1, 2017 through December 31, 2017, SamCERA committed to one new fund for a total of \$15 million. This brought the sum of private equity funds in the portfolio to twenty-two with \$365.5 million in committed capital across fifteen private equity managers.

As of December 31, 2017, SamCERA's private real assets portfolio had a total market value of \$58.6 million (1.4% of SamCERA's total fund). SamCERA's current target asset allocation to private real assets is 2.0%. Our new long-term target allocation is 4.0%. For the six-month period from July 1, 2017 through December 31, 2017, SamCERA committed to one new fund for a total of \$19.8 million. As of December 31, 2017, there were eight private asset funds in the portfolio with \$129.8 million in committed capital across seven private real asset managers.

Faraz Shooshani will review the performance reports with the Board and be available for questions.

**Attachments**

- A. Verus Semi-Annual Private Equity Performance Report for Period Ending 12/31/2017
- B. Verus Semi-Annual Private Real Assets Performance Report for Period Ending 12/31/2017



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: DECEMBER 31, 2017**

Private Equity Review

**San Mateo County Employees' Retirement Association**

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SAN FRANCISCO 415-362-3484

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- PE Portfolio Diversification by Industry
- PE Portfolio Diversification by Vintage Year

*Past performance is no guarantee of future results. This document is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and is not intended for 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. This document may include or imply estimates, outlooks, projections and other "forward-looking statements." No assurance can be given that future results described or implied by any forward looking information will be achieved. Investing entails risks, including possible loss of principal. Verus Advisory Inc. and Verus Investors, LLC ("Verus") file a single form ADV under the United States Investment Advisors Act of 1940, as amended.*



**DEBT RELATED**

**HY and leveraged loan issuance was up.** 2017 US high yield issuance of \$281.0 billion<sup>1</sup> was up 23.1% from 2016 and leveraged loan volume of \$1.4 trillion<sup>1</sup> was up 60.0% versus 2016 and higher than the previous high-point (\$1.1 trillion) recorded in 2013. The growth was driven largely by robust refinancing activity.

**Spreads tightened across the board.** Reflecting a red hot credit market, US HY Credit Index tightened by 107 bps or 22.3%<sup>2</sup> versus the same period last year. BB, B and CCC index tightened by 45 bps, 81 bps and 125 bps respectively, a 14.4%<sup>2</sup>, 15.9%<sup>2</sup> and 9.4%<sup>2</sup> decrease versus the same period last year.

**LBO debt terms loosen.** US total leverage (Debt / EBITDA) for 1H17 at 5.7x<sup>3</sup> up 4.4% from last year. Interest coverage (EBITDA / Cash Interest) of 2017 was flat at 3.06x<sup>3</sup>.

**GLOBAL**

**PE dry powder continues its surge.** At the end of 2017, global total PE dry powder was at \$1.15 trillion<sup>4</sup>, up 9.8% from 2016. US total PE was up by 11.8% to \$648.6 billion<sup>4</sup>; Europe was down by 1.5% to \$259.6 billion<sup>4</sup>; Asia was up by 27.6% to \$204.5 billion<sup>4</sup>; and the Rest of the World total PE was down by 14.3% to \$36.6 billion<sup>4</sup>.

**Investment activity was up.** During 2017, global PE firms invested in \$529.5 billion<sup>6&15</sup> worth of deals, up 9.5% from prior year and closed on 15,335 transactions<sup>6&15</sup>, down 5.4% from prior year.

**US BUYOUTS**

**Dry powder increased.** At the end of 2017, US buyout dry powder was \$368.3 billion<sup>4</sup>, up by 20.7% from 2016.

**Fundraising strengthened.** In 2017, US buyout firms across all buyout strategies raised \$176.4 billion<sup>5</sup>, up 46.8% from prior year.

**Investment activity declined.** During 2017, US buyout firms invested in \$174.8 billion<sup>6</sup> worth of deals, down 7.9% from prior year and closed on 2,284 transactions<sup>6</sup>, up 6.9% from prior year.

**LBO price multiples hit a new peak.** As of December 31, 2017, US LBO purchase price multiples (Enterprise Value / EBITDA) were at 10.6x<sup>7</sup>, a 5.9% increase from prior year. This was above the peak of 10.0x<sup>7</sup> in 2015.

**Exit activity decreased.** During 2017, US buyout firms exited 778 companies<sup>6</sup>, representing \$141.5 billion<sup>6</sup> in total transaction value. This represented a 2.5% decrease in the number of exits and a 24.6% decrease in total transaction value compared to prior year.

#### US VENTURE CAPITAL

**Dry powder increased.** At the end of 2017, US VC dry powder was at \$93.1 billion<sup>4</sup>, up 5.9% from the same period last year.

**Fundraising was down.** US VC firms raised \$30.2 billion<sup>5</sup> in 2017, an 11.6% decrease from the same period last year. 222 funds<sup>5</sup> closed in 2017, a 0.9% increase from the same period last year. The average US VC fund size decreased by 12.4% at \$136.0 million<sup>5</sup> versus the same period last year.

**Increase in investment activity.** US VC firms deployed \$77.0 billion<sup>15</sup> in capital for 2017, a 26.0% increase from prior year. The number of rounds closed at 4,302<sup>15</sup>, a 13.4% increase from prior year. The average investment per deal increased slightly to \$17.9 million<sup>15</sup>, an 11.1% increase from prior year.

**All stages valuations were up.** Compared to 2016, the average pre-money valuations increased across all stages in 2017: up 8.3% at \$6.5 million for Seed stage, 9.0% at \$17.0 million Series A, 5.6% at \$45.0 million Series B, 23.4% at \$103.8 million Series C, and 90.9% at \$255.3 million Series D<sup>9</sup>. Over the past 5 years, the average pre-money valuations of Seed stage, Series A, Series B, Series C and Series D investments were up 68.4%, 131.3%, 101.2%, 105.0% and 206.2%, respectively<sup>9</sup>.

**Exit activity increased.** US VC firms exited 676 companies<sup>15</sup> in 2017, up 3.0% from the same period last year, representing \$51.7 billion<sup>15</sup> in transaction value up 13.2% from the same period last year.

## EX US

**Ex US dry powder grew but less than dry powder in the US.** PE dry powder outside the US grew to \$500.7 billion<sup>4</sup> for 2017, a 7.3% increase versus the same period last year. However, dry powder outside the US was still less than dry powder in the US (\$648.6 billion<sup>4</sup>) by 22.8%.

**Europe buyout and VC dry powders were up.** In 2017, Europe buyout dry power was \$184.1 billion<sup>4</sup>, up by 0.8% from last year. Same time, VC dry powder in Europe grew to \$23.1 billion<sup>4</sup>, a 17.3% increase from prior year.

**Dry powder of buyout, VC and growth equity in Asia increased significantly.** At the end of 2017, Asia buyout dry power was \$55.8 billion<sup>4</sup>, up by 10.9% from last year. VC dry powder in Asia increased to \$56.9 billion<sup>4</sup>, up by 22.4% from prior year. Growth equity dry powder grew to \$72.8 billion<sup>4</sup>, a 69.3% increase from 2016.

**Fundraising outside of US was up.** For 2017, Ex US fundraising was up 15.3% to \$181.3 billion<sup>5</sup> compared to prior year. The increase was led by Asian funds which raised \$63.9 billion<sup>5</sup>, up 65.37% from prior year. The increase was offset by a decrease in funds in Europe which raised \$108.2 billion<sup>5</sup>, down 1.4% from prior year. Fundraising in the Rest of the World was up 6.8% to \$9.2 billion<sup>5</sup> compared to prior year.

**Investments activity was up.** Both buyout and venture capital firms increased the number of deals and aggregate deal volume in 2017.

**Europe buyout and VC investment activities increased.** In 2017, Europe buyout firms transacted on \$98.1 billion<sup>6</sup> in aggregate value, up by 12.0% from last year. VC investment activity was up from \$12.1 billion prior year to \$17.7 billion<sup>15</sup>, an increase of 46.0%.

**Asia buyout and VC investment activities were up.** In 2017, Asia buyout firms closed on \$62.5 billion<sup>6</sup> in aggregate value, up by 165.0% from last year's \$23.6 billion<sup>6</sup>. VC investment activity was also up from \$52.1 billion prior year to \$75.2 billion<sup>15</sup>, an increase of 44.3%.

**Global purchase price multiples increased slightly.** As of December 31, 2017, global median purchase price multiples (Enterprise Value / EBITDA) was 11.0x<sup>1</sup>, a 12.6% increase from prior year. This was driven by a 5.9% increase in US purchase multiples at 10.6x<sup>7</sup>, a 1.7% increase in purchase price multiples in Europe at 9.9x<sup>12</sup>, and a 33.5% increase in the rest of the world at 11.1x<sup>12</sup>.

**Leverage multiples in Europe moved up.** European LBO leverage multiples (Debt / EBITDA) have averaged 5.3x<sup>11</sup> in 2017, an increase of 6.4% from prior year and a 13.3% decrease from the peak (6.1x<sup>11</sup>) in 2007. European LBO Loan volume at \$78.6 billion<sup>12</sup> is up 56.0% versus prior year, an decrease of 42.9% versus the peak of \$137.7 billion<sup>12</sup> in 2007.

**Exit activity stronger in Europe.** Unlike the U.S. which recorded \$184.8 billion<sup>8</sup> in exits for 2017, a decrease of 16.6% from prior year, exits in Europe amounted to \$147.76 billion<sup>13</sup>, a 19.7% increase from prior year.



## Outlook

**PE allocations likely to increase.** A recent survey of institutional investors conducted on December 31, 2017 indicated that 53%<sup>14</sup> intend to increase their allocation for private equity compared to 48%<sup>14</sup> during the same period last year. 43%<sup>14</sup> intend to maintain their allocation for private equity compared to 46%<sup>14</sup> during the same period last year.

**Institutional investors most interested in investing in North America and like small- to mid-market buyouts.** Based on the survey conducted on December 31, 2017, Institutional investors view North America as the most attractive location to invest in the current economic climate with 69%<sup>14</sup> choosing it as their preferred investment destination. This compares favorably versus Europe (51%<sup>14</sup>) and Asia (32%<sup>14</sup>). In the same survey, 49%<sup>14</sup> of institutional investors also cited the small to mid-market buyout strategy as presenting the best opportunities in the current financial climate. Growth strategy was mentioned next with 28%<sup>14</sup> of institutional investors believing it presented the best opportunities.

## Notes

1. *Leveraged Loan Monthly Thomson Reuters LPC*
2. *Guggenheim High-Yield Bank Loan Outlook*
3. *LCD's Leveraged Buyout Review*
4. *Preqin Dry powder by Geography (Preqin Website) Dry powder includes Buyout, Distressed PE, Growth, Mezzanine, Other, Real Estate and Venture Strategies.*
5. *Preqin Private Equity Fundraising*
6. *Preqin Private Equity-Backed Buyout Deals and Exits Factsheet*
7. *US LBO Review*
8. *Pitchbook's PE and VC Exits*
9. *PitchBook's VC Valuations*
10. *PitchBook's VC Exits*
11. *LCD European Leveraged Buyout Review*
12. *European Leveraged Lending Review*
  - a. *Ex US Multiples were estimated utilizing a number of sources including Preqin Private Equity-Backed Buyout Deals and Exits Factsheet, LCD's Leveraged*
  - b. *Buyout Review, Europe Leverage Lending Review and Leveraged Loan Monthly Thomson Reuters LPC.*
13. *Annual US PE Breakdown*
14. *Preqin Investor Outlook: Alternative Assets, Data Pack*
15. *Preqin Venture Capital Deals and Exits*

Investment Type	Policy Target	Policy Range	Market Value %	Market Value \$(000)	Unfunded Commitment \$(000)	Market Value + Unfunded \$(000)
<b>SamCERA - Total Plan</b>			<b>100.0%</b>	<b>4,312,554</b>		
Buyout (60% +/- 20%)	4.2%	2.8%-5.6%	3.8%	161,880	75,113	236,993
Venture Capital (20%, 0%-30%)	1.4%	0.0%-2.1%	1.6%	69,146	12,472	81,618
Debt-Related/Special Situations (20% +/- 10%)	1.4%	0.7%-2.1%	0.6%	24,703	56,256	80,959
<b>Total Private Equity</b>	<b>7.0%</b>	<b>6%-10%</b>	<b>6.0%</b>	<b>255,729</b>	<b>143,841</b>	<b>399,570</b>

### Portfolio Summary

- As of December 31, 2017, the Private Equity Portfolio had a total market value of \$255.7 million, with \$161.9 million in Buyout, \$69.1 million in Venture Capital, and \$24.7 million in Debt-Related/Special Situations. Total market value is the current reported value of investments, excluding the remaining amount of unfunded commitments.
- SamCERA has contributed \$253.6 million toward its Private Equity commitments. Unfunded commitments total \$163.8 million.
- The portfolio exposure at 6.0% is at the lower end of its target range. All sub-asset classes are within the policy range while commitments continue to be made to new managers at a slower pace.

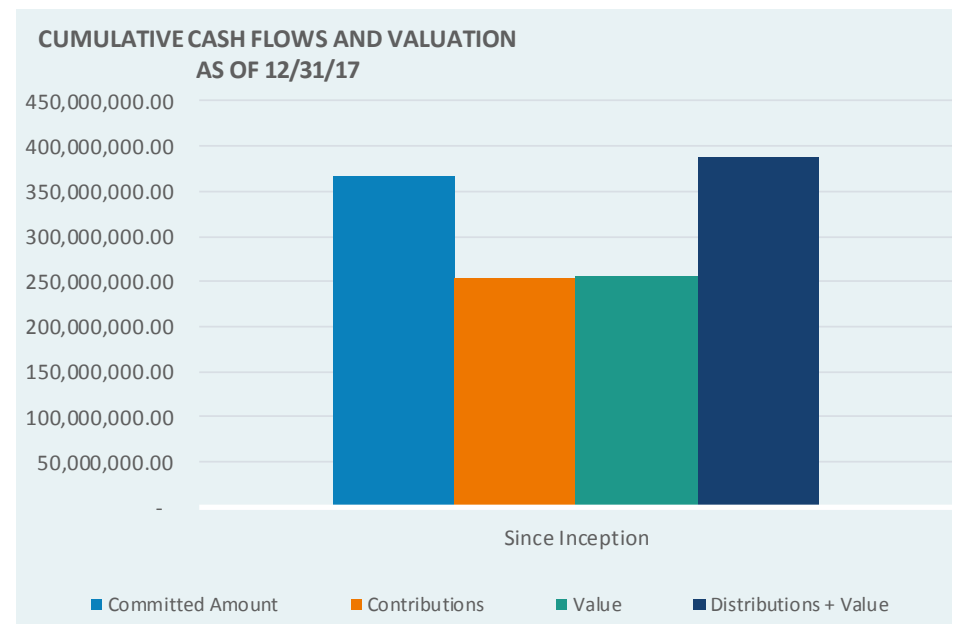
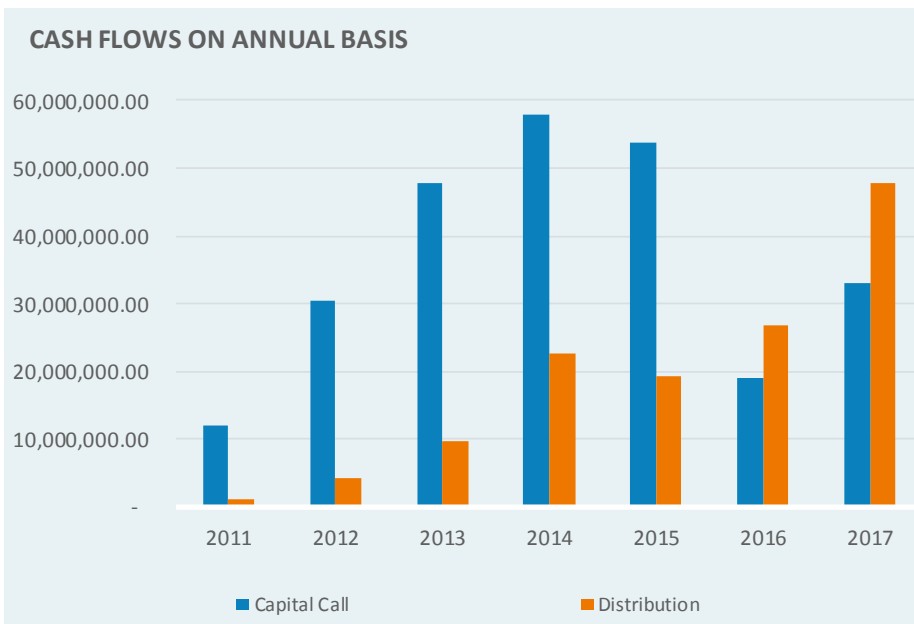
### Portfolio Activity

- SamCERA committed \$15.0 million to Bernhard Capital Partners II in November 2017.

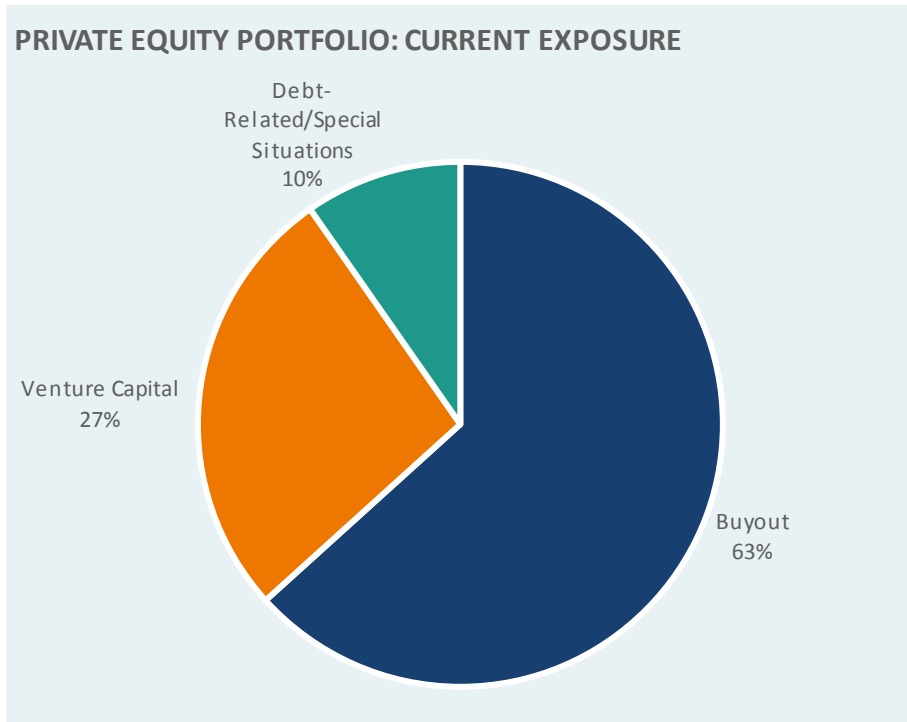
**Performance**

- The Private Equity portfolio’s performance, as measured by net IRR, is 17.34%. Capital weighted average investment age of the portfolio is 3.27 years.
- The portfolio is currently valued at \$255.7 million. Together with \$131.4 million in realized distributions, the Total Value at \$387.1 million is approximately \$133.5 million above \$253.6 million total capital contributions, resulting in a total value multiple of 1.53x and a distribution multiple of 0.52x.
- Attribution of returns:
  - Buyouts up \$78.91 million / +50.4% versus cost (Sycamore and ABRY VII

- leading), with 47.0% of called capital realized and distributed;
- Venture Capital up \$39.63 million / +85.9% versus cost (General Catalyst VI, Third Rock III, Emergence Capital III, and NEA 14 leading), with 36.0% of called capital realized and distributed; and
- Debt-related/Special Situations up \$16.34 million / +33.4% versus cost (ABRY Advanced Securities II and III leading), with 82.9% of called capital realized and distributed.
- Within Private Equity, the current allocation of invested capital is 63.3% to Buyout, 27.0% to Venture Capital, and 9.7% to Debt-Related/Special Situations.



Investment Type	Commitment	Reported Value	Current Exposure as % of Private Equity
Buyout	212,000,000	161,879,538	63.3%
Venture Capital	59,000,000	69,145,824	27.0%
Debt-Related/Special Situations	94,500,000	24,703,251	9.7%
<b>Total Private Equity</b>	<b>365,500,000</b>	<b>255,728,613</b>	<b>100.0%</b>

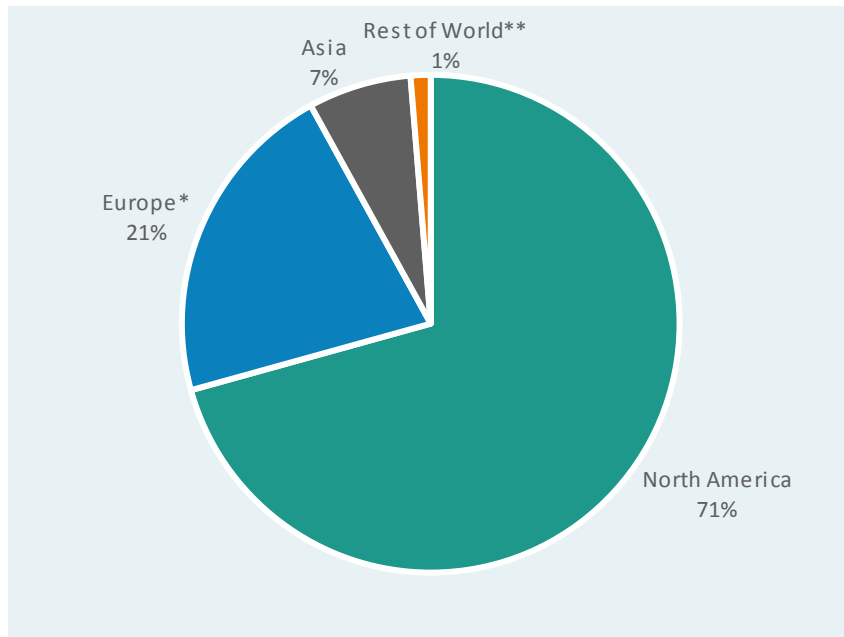


# Geography

## Portfolio Diversification

Period Ending: December 31, 2017

Geography	Current Exposure
North America	168,385,311
Europe*	50,762,616
Asia	15,995,734
Rest of World**	3,034,575
<b>Total Private Equity</b>	<b>238,178,236</b>



Based on the value of portfolio companies as of December 31, 2017, if provided by the partnerships. Differences between reported value and the total portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed geography breakdown.

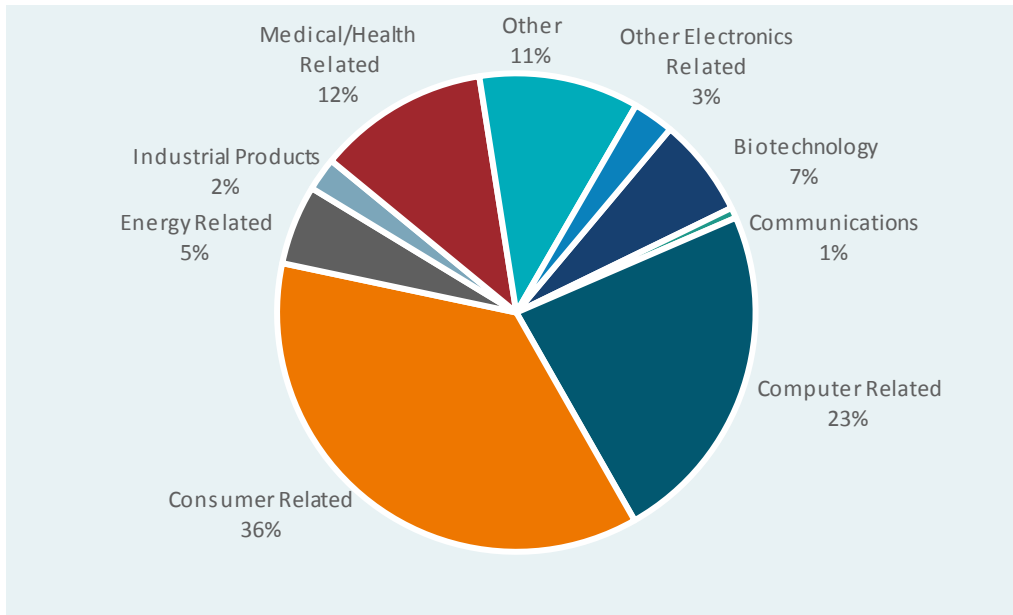
\* Europe includes 100% market value from Cevian II.

\*\* Rest of World includes Chile and Australia.

# Industry Portfolio Diversification

Period Ending: December 31, 2017

Industry	Current Exposure
Biotechnology	13,339,433
Communications	1,424,640
Computer Related	46,423,803
Consumer Related	72,938,953
Energy Related	10,732,125
Industrial Products	4,484,603
Medical/Health Related	23,124,200
Other	21,590,673
Other Electronics Related	5,525,909
<b>Total Private Equity</b>	<b>199,584,340</b>

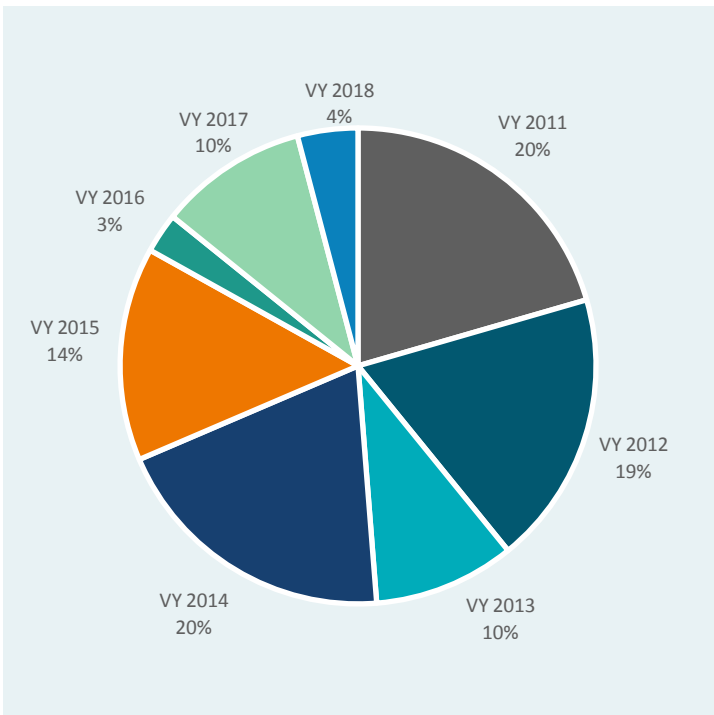


Based on the value of portfolio companies as of December 31, 2017, if provided by the partnerships. Differences between reported value and the total portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed geography breakdown.

# Vintage Year Portfolio Diversification

Period Ending: December 31, 2017

Vintage Year	Commitment as of 12/31/17	% of Portfolio Commitment	Reported Value as of 12/31/17
2011	75,000,000	20.5%	43,942,997
2012	68,000,000	18.6%	81,260,059
2013	35,000,000	9.6%	52,010,288
2014	72,500,000	19.8%	49,346,556
2015	53,000,000	14.5%	25,767,713
2016	10,000,000	2.7%	687,851
2017	37,000,000	10.1%	2,713,149
2018	15,000,000	4.1%	0
<b>Total Private Equity</b>	<b>365,500,000</b>	<b>100%</b>	<b>255,728,612</b>



- As of December 31, 2017, the Private Equity Portfolio is at the lower end of its target allocation, with exposures within target diversification bands.





**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: DECEMBER 31, 2017**

Real Assets Review

**San Mateo County Employees' Retirement Association**

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## Observations from our latest real asset outlook

### **Inflation fears keeping the market on edge, so far data shows a benign inflationary environment**

In February, wage inflation data emerged which appeared to signal long-awaited inflation numbers were rising which contributed to a market sell-off and spike in volatility. As markets settled and more data came through, inflation concerns subsided, though market volatility remained above recent historical levels. In April, Core CPI numbers were released which showed inflation moving higher and reaching the Fed's target rate of 2.0%. While the inflation rate is now at target levels, the risk to the upside and the Fed's response to that potential outcome will likely be a factor in driving market volatility.

### **Higher interest rates putting pressure on income-oriented investments**

In the second half of 2017, REITs, MLPs and other liquid yield-oriented investments faced selling pressure as expectations for rising interest rates were priced into select markets. The selling pressure has continued in 2018, with REITs and MLPs in particular down 7.3% and 3.9% YTD through April, respectively.

### **Stable prices across commodities with a tailwind coming from Capex cuts from mining and energy companies potentially driving prices higher in the next 2-3 years**

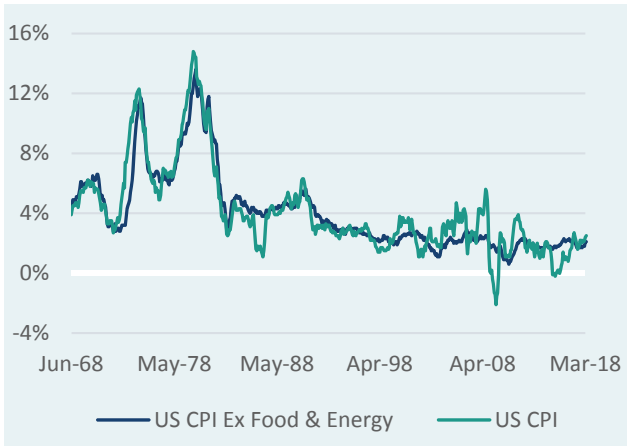
For long-time commodity investors, the recent recovery in prices shouldn't be a big surprise. As the old saying goes, "the cure the low commodity prices, is low commodity prices". In practice, commodity producers are forced to curtail spending in response to low prices which will reduce future supply, that creates a potential shortage, driving prices higher until producers are once again incentivized to spend again. Not all commodities are in the same supply position but several industrial metals and oil appear to have supply/demand levels that favor higher prices going forward.

### **Tactical opportunities in MLPs**

We recently became bullish on MLPs after a lengthy bearish attitude towards the asset class. We have a separate presentation on the midstream energy opportunity but we touch on a few of the reasons we believe the asset class looks attractive in this Outlook.

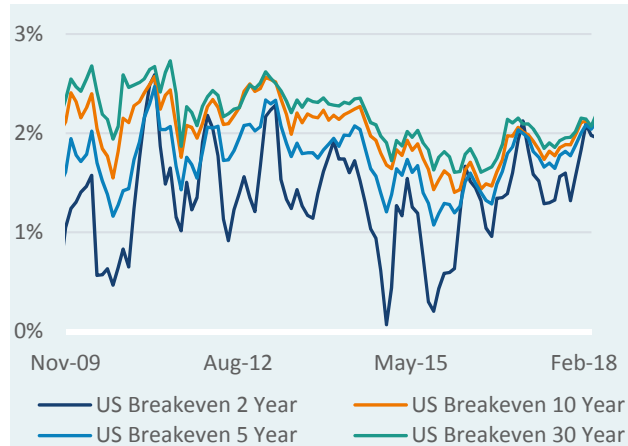
- Core CPI remained at 2.1% in April and March, up from 1.8% in February, surpassing the Fed's long-term target of 2.0%.
- Headline CPI hit 2.4% in March, moving higher in the first quarter of this year but still at levels below that seen in typical late-cycle periods. The Fed appears eager to get out in front of any inflationary pressure and thus, the risk of inflation moving higher than market expectations appears less probable than the risk of disinflation coming from the next market downturn.
- In most late-stage business cycles, real assets are often the best performing asset classes due to rising inflation. This cycle appears unique for a number of secular reasons (globalization, automation, etc.) but there is always some probability that we are wrong and that this cycle resembles history in which case it will be advantageous to have exposure to assets which perform well when inflation exceeds expectations.

**U.S. CPI (YOY)**



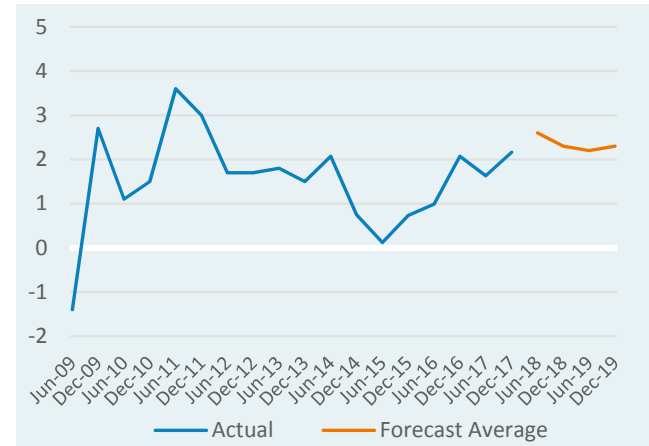
Source: FRED, as of 3/31/18

**U.S. TIPS BREAKEVEN RATES**



Source: FRED, as of 3/31/18

**INFLATION EXPECTATIONS**



Source: Wall Street Journal, 4/1/18

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
<b>Private Real Estate</b>	Fundamentals remain strong with declining vacancies, increasing NOI growth and moderate new supply. Valuations are getting expensive, especially for high quality core assets in gateway markets. Returns have moderated to normal levels and income has become a larger portion of total returns.	<ul style="list-style-type: none"> <li>— New supply could increase ahead of current projections and outpace demand.</li> <li>— A sharp rise in interest rates could lead to increased cap rates, hurting values.</li> <li>— A general economic slowdown may drastically impact demand for real estate.</li> </ul>	We remain broadly favorable on real estate given continued strong fundamentals, modest new supply and favorable interest rate environment. Given we are potentially late in the cycle, we would recommend remaining cautious with the use of leverage, excess illiquidity, lower quality assets or strategies with a long time horizon to execute such as complex distress or construction.	<b>Positive</b>
<b>REITs</b>	REITs have benefitted from the overall strength of the real estate market, however REITs have underperformed broader equities in recent periods. REITs have been hurt by an increase in interest rates and increased economic growth expectations led to a rotation away from yield-oriented assets.	<ul style="list-style-type: none"> <li>— Rising interest rates can have a negative effect on REITs and all yield-sensitive assets over short time periods.</li> <li>— REITs are sensitive to economic decline and general equity market volatility.</li> </ul>	While we are broadly favorable on real estate, we remain neutral on REITs given current valuations appear fair. REITs can provide liquid exposure to real estate with the following caveats: high sensitivity to equity market volatility over shorter holding periods, higher leverage and higher exposures to non-core sectors such as hotels, self-storage, for-rent residential, etc.	<b>Neutral</b>
<b>Commodities</b>	Commodities futures have had lackluster performance over the last decade. An upward sloping futures curve for most of the last decade has created a headwind for the asset class. In most commodities, contango continues to create a headwind to commodity performance. More recently, oil prices have traded in backwardation along points in the curve though roll yields remain anemic.	<ul style="list-style-type: none"> <li>— Supply responses surprising the market to the upside.</li> <li>— Global growth slowing down, reducing demand for energy and industrial metals.</li> </ul>	Commodity futures continue to face headwinds as futures trade in contango across most commodities. The uptick in interest rates has helped margin returns and prices have stabilized across metals and energy but we expect the asset class to generate low returns going forward.	<b>Neutral</b>
<b>TIPS</b>	Low nominal interest rates combined with low to moderate inflation has led to a depressed return environment for TIPS.	<ul style="list-style-type: none"> <li>— Decreasing inflation expectations or rising nominal interest rates would be a headwind to TIPS. Continued low rates create a high cost of carry.</li> </ul>	While inflation expectations have been trending modestly upward, low current yields and modest inflation expectations has led to other real assets offering higher total return potential than TIPS.	<b>Negative</b>

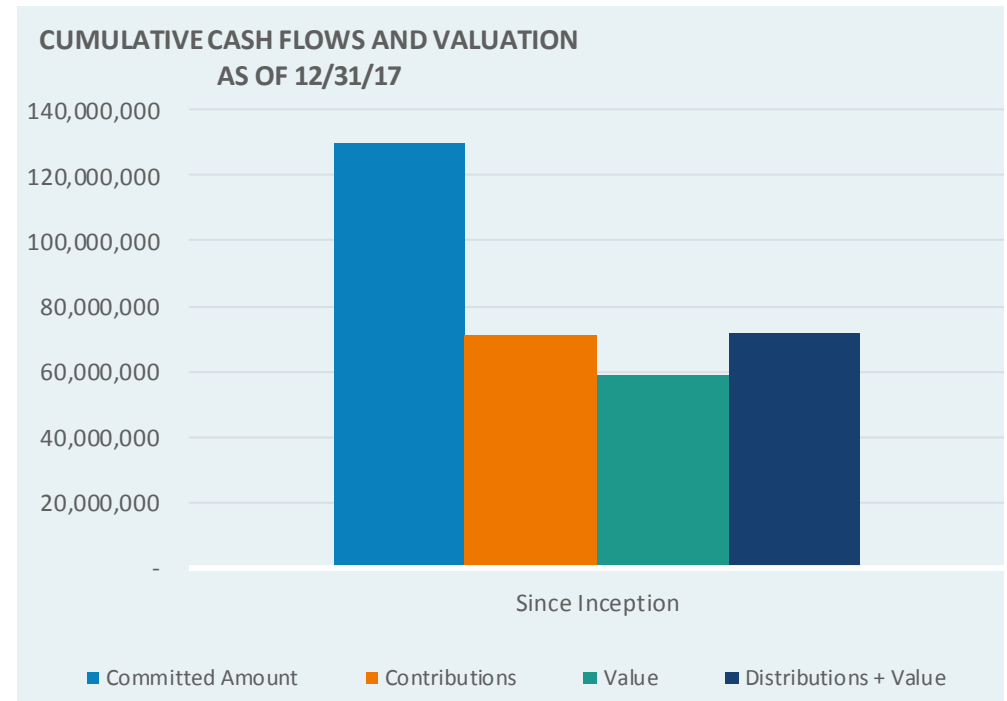
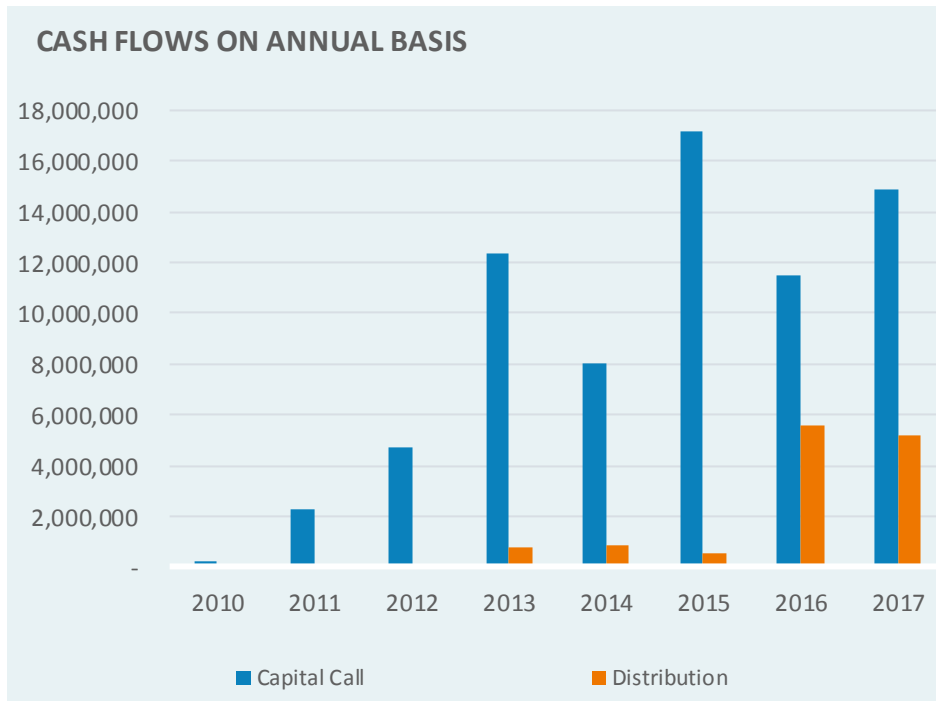


Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
<b>Infrastructure</b>	With interest rates rising, we saw yield-oriented assets sell-off in late 2017 and continue to exhibit weakness in 2018. While we welcome the revaluation, most infrastructure markets, especially core transactions, continue to trade at high valuations. In our last outlook we highlighted the interest rate concerns and our view that better opportunities exist in value-add infrastructure and specific sectors like power. Our views have not changed.	<ul style="list-style-type: none"> <li>— Rising interest rates in the U.S. market and abroad will remain a headwind to yield-oriented infrastructure.</li> <li>— Fund raising was strong in 2017 for global infrastructure funds, creating additional competition for managers to deploy capital.</li> </ul>	We remain less favorable on core infrastructure given valuation concerns. We do think opportunities exist within pockets of the value-add universe. We generally like teams with a particular sector expertise and with a strong development track record and pipeline.	<b>Neutral</b>
<b>Private Natural Resources</b>	As expected, the market was able to work-through much of the supply overhand in the oil market. Prices have stabilized around \$60/bbl which appears high enough to induce on-shore US and parts of Canada to grow production but is too low for oil majors and national oil companies to commit substantial capital to large off-shore projects. With recent tensions flaring up in the Middle East, oil prices could shock to the upside.	<ul style="list-style-type: none"> <li>— A significant amount of dry powder has been raised in the private markets, creating a competitive environment for deals in prime on-shore US acreage locations.</li> <li>— Demand growth below expectations resulting in lower prices for longer.</li> <li>— Breakdown of OPEC could induce member countries to discontinue the supply cuts and flood the market with oil .</li> </ul>	We think there are opportunities to invest in onshore US/Canada and achieve attractive returns but it's hard today to buy large tracts of prime acreage and generate healthy returns. We believe private energy funds where there are dual performance fee structures face a considerable headwind to delivering 20%+ IRRs that investors expect for taking drilling risk. Could see a healthy M&A market develop as oil majors look for production growth.	<b>Positive</b>
<b>Midstream Energy / MLPs</b>	MLPs have faced heavy selling pressure in 2017 and in 2018. Valuations are reaching trough levels not seen since the GFC. Cash flows within midstream energy are recovering and balance sheets are healthier today than they were going into the oil collapse. We believe there is a compelling tactical opportunity within midstream energy for investors that can be patient and manage tax issues that come with holding MLPs.	<ul style="list-style-type: none"> <li>— Falling oil/gas prices could curtail drilling programs and reduce production volumes which would hurt MLP cash flows.</li> <li>— Regulatory risk is low and though recent headlines around the Federal Energy Regulatory Commission (FERC) rules changing cost pass-throughs created selling pressure the end result was de minimis for most MLPs.</li> </ul>	MLPs are currently providing a healthy 8+% dividend yield and distribution growth has recovered to a range of 4-6%. MLPs are offering a compelling entry point that we have not seen since the GFC.	<b>Positive</b>

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
<b>Timberland</b>	<p>Timber markets in North America continue to face challenges from a slow recovery in housing, low interest rates and unfavorable transaction market. Our outlook on timber has been negative for several years due to the headwinds the asset class has faced. More recently, our view has shifted on a strong recovery in housing starts, timber supply issues out of Canada and low levels of capital competing within the timber industry. While we still believe that returns are unlikely to achieve double digit rates seen in the late 90's/early 2000's, some investors may find high single-digit returns acceptable within the asset class.</p>	<ul style="list-style-type: none"> <li>— Despite several years of disappointing returns within timber, we don't see returns reaching beyond single-digits on a go-forward basis. Competitive timber from South America has driven prices for certain softwood products lower and favorable hardwood markets in the Pacific Northwest remain difficult to access.</li> <li>— Markets outside the U.S. tend to face currency and political risk which has resulted in disappointing returns for many investors.</li> </ul>	<p>For most investors, high single-digit expected returns for timberland in the U.S. is too low for the illiquidity and risk assumed within the asset class. However, the unique return drivers and potential for higher than expected prices in softwood lumber may be attractive for some investors with sufficient liquidity and a low cost of capital.</p>	<b>Neutral/ Negative</b>
<b>Farmland</b>	<p>Farmland prices in the Midwest leveled off after 2014 but remain too expensive for the income and return potential. We are selectively looking at permanent crop deals but broadly they trade well above historical valuations. Prices across most crops have fallen over the last year as record supply has outstripped demand.</p>	<ul style="list-style-type: none"> <li>— Similar to timber markets, we have concerns around valuations and the risk/return proposition for farmland investments.</li> <li>— The income potential within farmland is more attractive than timber and the global growth in food is a more compelling macro trend than pulp and paper but we remain bearish on the sector, in general.</li> </ul>	<p>Currently viewed as expensive. Selectively looking at agriculture business investments where crop and land are a component of the return.</p>	<b>Negative</b>

**Performance**

- The portfolio is currently valued at \$58.6 million. Together with \$13.0 million in realized distributions, the Total Value at \$71.6 million is approximately \$0.4 million above \$71.1 million total capital contributions, resulting in a total value multiple of 1.01x and a net IRR of 0.26%. Capital weighted average investment age of the portfolio is 2.68 years.
- SamCERA funded a liquid real asset pool in 2016 that seeks to proxy many of the risk exposures targeted in private real assets. SSgA is managing the pool in a mix of passive exposures to infrastructure, natural resource equities and commodities.
- Within Private Real Assets, the current allocation of invested capital is 12.9% to Agriculture, 35.3% to Energy, 14.5% to Mining, and 37.3% to Infrastructure. The Portfolio is expected to be diversified over a period of 3 to 5 years.





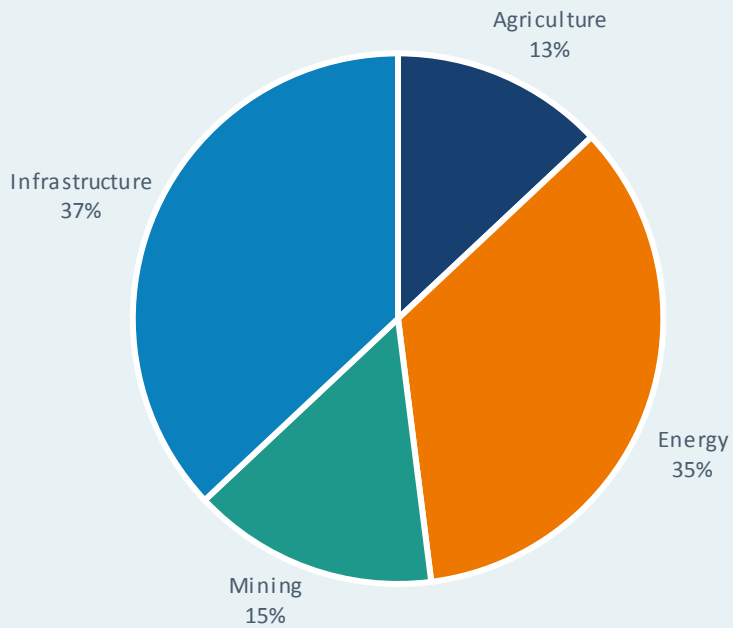
# Strategy

## Portfolio Diversification

Period Ending: December 31, 2017

Investment Type	Commitment	Current Exposure	Current Exposure as % of Portfolio
Agriculture	15,000,000	7,560,792	12.9%
Energy	49,800,000	20,680,901	35.3%
Mining	30,000,000	8,503,240	14.5%
Infrastructure	35,000,000	21,865,279	37.3%
<b>Total Portfolio</b>	<b>129,800,000</b>	<b>58,610,212</b>	<b>100.0%</b>

REAL ASSETS PORTFOLIO: CURRENT EXPOSURE

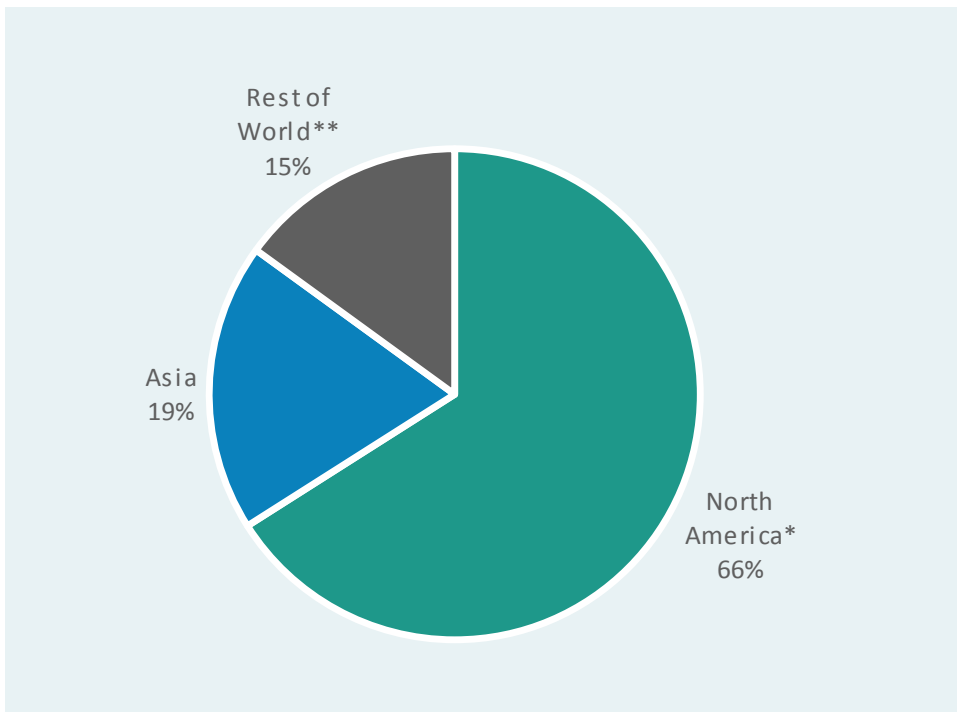


# Geography

## Portfolio Diversification

Period Ending: December 31, 2017

Geography	Reported Fair Value
North America*	38,636,036
Asia	11,077,217
Rest of World**	8,896,958
<b>Total Portfolio</b>	<b>58,610,212</b>



Based on invested capital as of December 31, 2017, if provided by the partnerships. The portfolio is expected to be US-biased given the mandate to hedge domestic inflation.

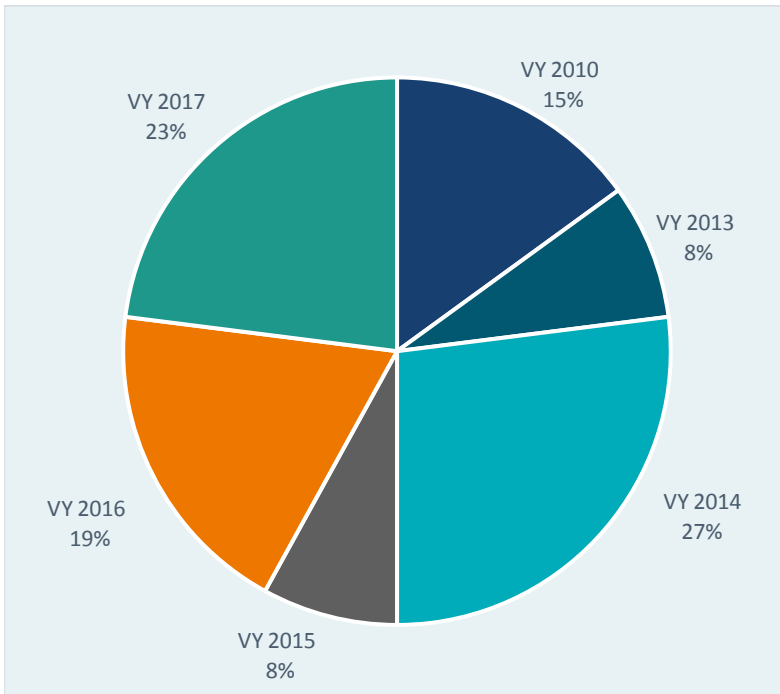
\* North America includes 100% market value from Sheridan II-B.

\*\* Rest of World includes Australia, Chile, and Senegal.

# Vintage Year Portfolio Diversification

Period Ending: December 31, 2017

Vintage Year	Commitment as of 12/31/17	% of Portfolio Commitment	Reported Value as of 12/31/17
2010	20,000,000	15.4%	9,289,000
2013	10,000,000	7.7%	7,827,156
2014	35,000,000	27.0%	14,477,573
2015	10,000,000	7.7%	13,467,983
2016	25,000,000	19.3%	8,397,296
2017	29,800,000	23.0%	5,151,204
<b>Total Portfolio</b>	<b>129,800,000</b>	<b>100%</b>	<b>58,610,212</b>



The portfolio is increasingly diversified by vintage year with larger capital commitments expected over the next 2-3 years.

- SamCERA committed to Quantum Energy VII in September 2017 which will be the Plan's first upstream energy investment since EnCap in 2013.
- Verus and Staff are in the final stages of due diligence on an global infrastructure fund which will mark our third infrastructure investment in the Private Real Assets portfolio.
- Looking forward, we expect to increase exposure to infrastructure as a way to balance out the risk associated with commodity-linked investments. Opportunities in power and sector-focused infrastructure funds appear promising in the 2018 pipeline.

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

August 28, 2018

Agenda Item 6.5

**TO:** Board of Retirement

**FROM:** Lilibeth Dames, Investment Analyst *Lilibeth Dames*

**SUBJECT:** Report on Government Code Section 7514.7 Annual Disclosure For 2017

**Recommendation**

Accept the Report on Government Code Section 7514.7 Annual Disclosure for 2017.

**Background**

Government Code Section 7514.7 became effective on January 1, 2017 and requires public pension funds in California to annually disclose certain information regarding its alternative investments. Staff has prepared SamCERA's first required disclosure report which covers calendar year 2017.

**Discussion**

Since 2007, SamCERA has been required, if requested under the Public Records Act to provide to the requestor, the following information regarding its alternative investments:

1. The name, address, and vintage year of each alternative investment vehicle.
2. The dollar amount of the commitment made to each alternative investment vehicle by the public investment fund since inception.
3. The dollar amount of cash contributions made by the public investment fund to each alternative investment vehicle since inception.
4. The dollar amount, on a fiscal year end basis, of cash distributions received by the public investment fund from each alternative investment vehicle.
5. The dollar amount, on a fiscal year end basis, of cash distributions received by the public investment fund plus remaining value of partnership assets attributable to the public investment fund's investment in each alternative investment vehicle.
6. The net internal rate of return of each alternative investment vehicle since inception.
7. The investment multiple of each alternative investment vehicle since inception.
8. The dollar amount of the total management fees and costs paid on an annual fiscal yearend basis, by the public investment fund to each alternative investment vehicle.
9. The dollar amount of cash profit received by public investment funds from each alternative investment vehicle on a fiscal year end basis.

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

Under section 7514.7, SamCERA is now required to disclose the above information annually to the Board at a public meeting. The first two pages of the report, which will be included in the Board's day-of folder, will reflect this data for all of our alternative investments.

In addition, we are now required to disclose the following information for the seven alternative investment contracts we entered into on or after January 1, 2017. Although we are also required to make disclosures for existing alternative investments in which a new capital commitment was made, SamCERA made no such additional capital commitments in 2017. However, we undertook reasonable efforts to obtain the information listed below from all of our existing alternative investments to include in our disclosure.

The third page of the report will reflect the following data for the applicable alternative investments:

1. The fees and expenses that the public investment fund pays directly to the alternative investment vehicle, the fund manager, or related parties.
2. The public investment fund's pro rata share of fees and expenses not included in paragraph 1 that are paid from the alternative investment vehicle to the fund manager or related parties. The public investment fund may independently calculate this information based on information contractually required to be provided by the alternative investment vehicle to the public investment fund. If the public investment fund independently calculates this information, then the alternative investment vehicle shall not be required to provide the information identified in this paragraph.
3. The public investment fund's pro rata share of carried interest distributed to the fund manager or related parties.
4. The public investment fund's pro rata share of aggregate fees and expenses paid by all of the portfolio companies held within the alternative investment vehicle to the fund manager or related parties.
5. The gross and net rate of return of each alternative investment vehicle, since inception, in which the public investment fund participates.

Not all of our funds had data to report for each of the listed categories due to the maturity of the specific fund. For example, our new funds did not have any carried interest to report at this early stage. We anticipate that future annual reports for these funds will contain more information as the funds mature.

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

August 28, 2018

Agenda Item 6.6

**TO:** Board of Retirement

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



**SUBJECT:** Approval of Currency Hedging Recommendation

**Recommendation**

Approve the recommendation to implement a 50% developed market currency hedge utilizing Parametric (SamCERA's current overlay manager) and legging in at 10% quarterly tranches to mitigate timing impacts.

**Background**

In May, the Board approved an updated target asset allocation policy as part of the annual asset allocation review. One of the changes in the new policy is utilizing a 50% currency hedge for developed international equity as a way to dampen expected portfolio volatility.

**Discussion**

Margaret Jadallah from Verus will present this agenda item. She will provide an overview on currency risk, discuss currency hedging, and summarize important considerations in setting up a hedging program.

Verus and Staff recommend utilizing Parametric (SamCERA's current overlay manager) to manage the 50% developed market currency hedge program and legging in at 10% quarterly tranches to mitigate timing impacts.

**Attachment**

Verus Currency Hedging Presentation



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



AUGUST 28, 2018

Currency Hedging

**SamCERA**



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# Overview

# What is currency risk?

## Denomination currency risk

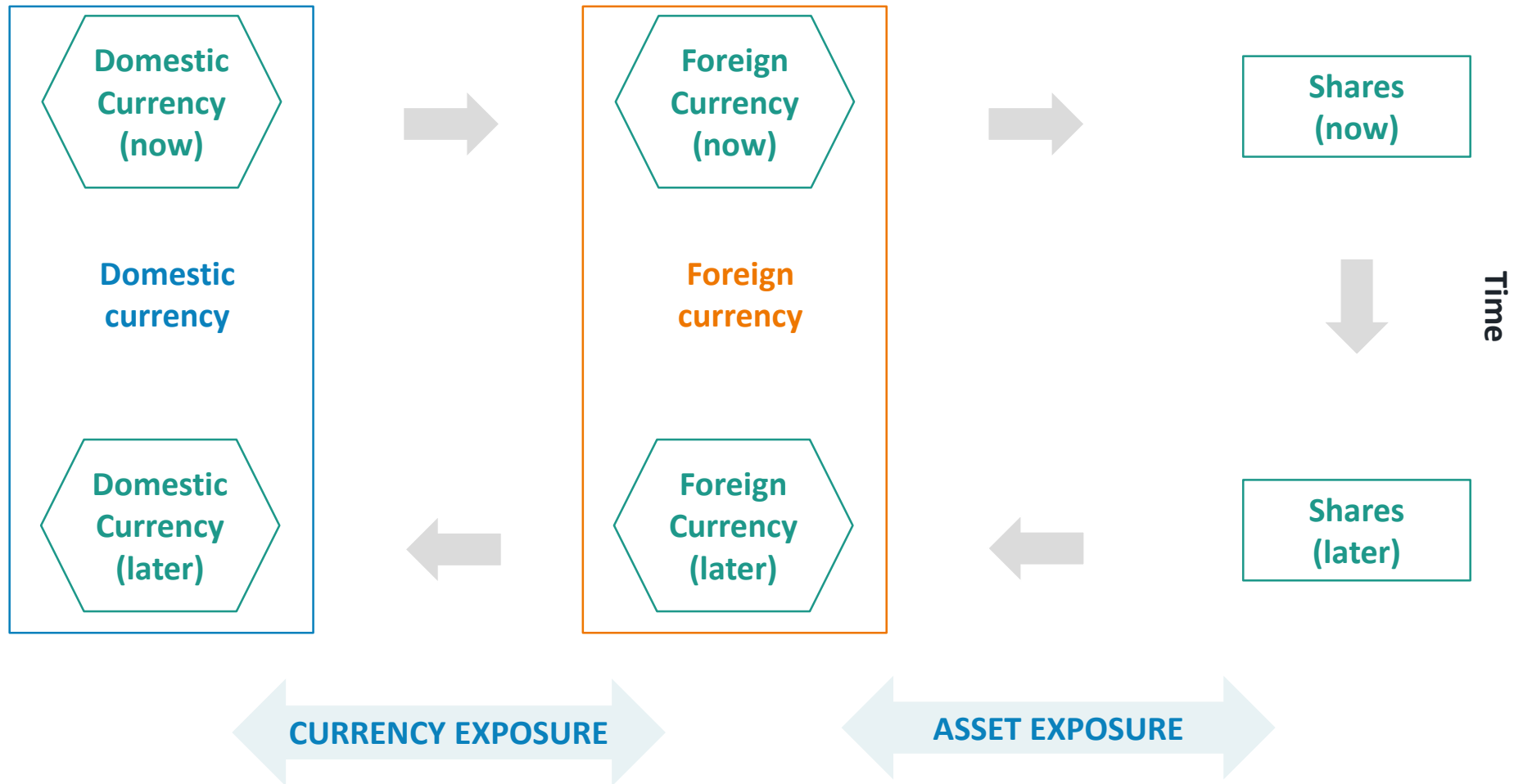
- The risk that the exchange rate between the currency in which an asset is denominated and the investor's domestic currency will change during the time in which the investor holds the asset
- Such an exchange rate movement would make the apparent price of the asset change, for good or ill, simply due to exchange rate movements
- This risk affects the PRICE of the security as observed by a foreign buyer

## Internal corporate currency risk

- The exposure that all corporates have to a wide range of currency exposures
- Assets owned, staff employed, revenues earned and costs incurred may all be priced in currencies other than the investor's domestic currency
- The corporate treasurer will typically own this problem, and will structure the business and transactions to avoid negative implications where possible
- This risk affects the VALUE of the security in its own currency of listing

This presentation focuses on denomination currency risk

# Denomination currency risk

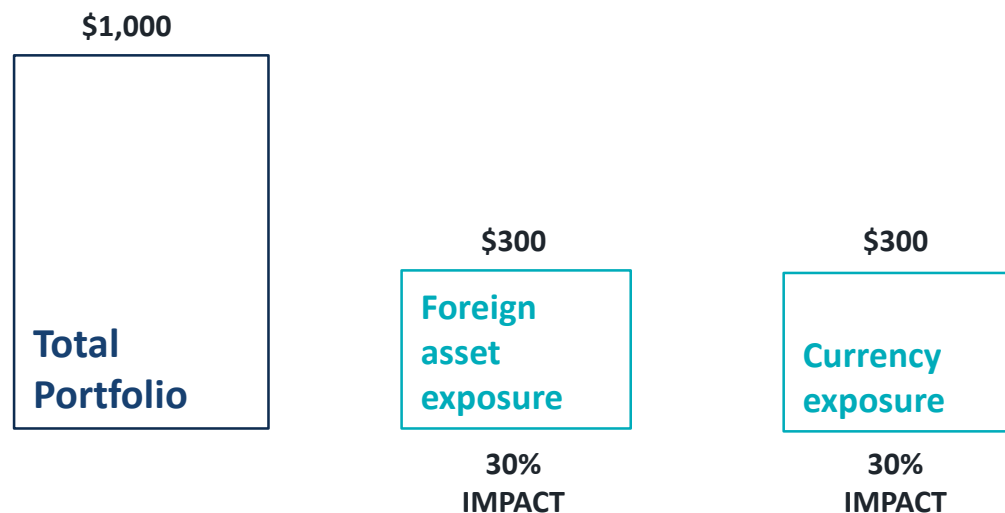


# Foreign currency exposure

Non-U.S. dollar denominated assets should be thought of as two distinct exposures that have different return drivers

- The foreign asset in local currency terms
- An equal exposure to the foreign currency

Movements in foreign exchange rates have the same impact on the total portfolio return as movements in asset prices

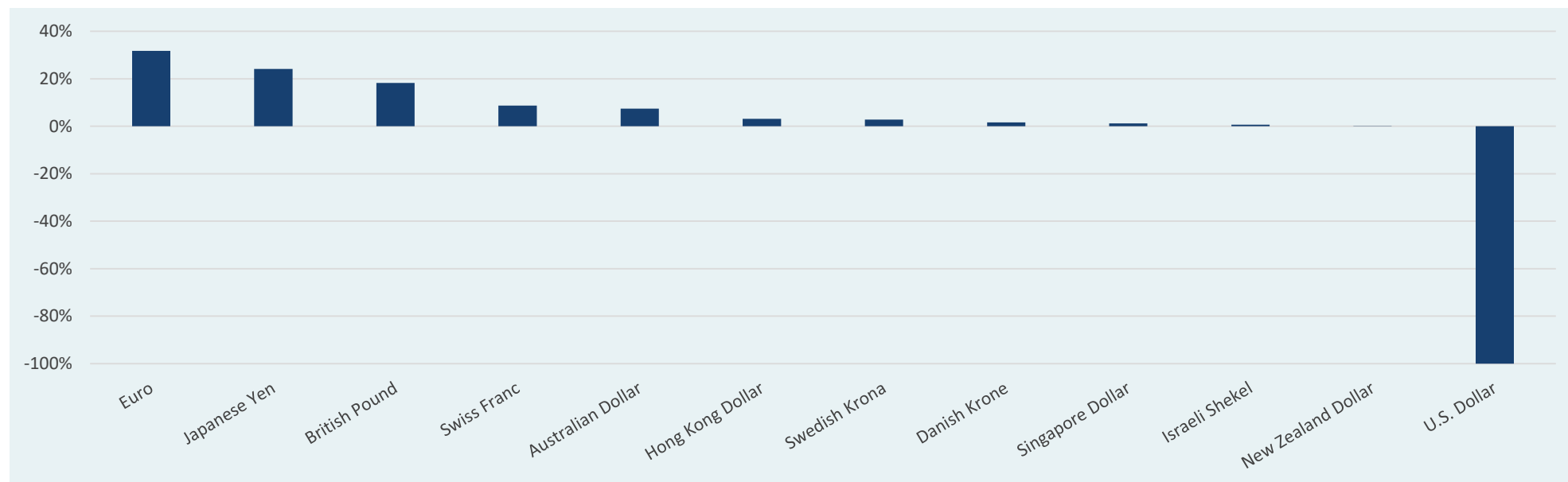


# Embedded currency portfolio

There are two important points about the currency exposure caused by foreign asset ownership (embedded currency)

- The long positions are naively determined by the market capitalization of the portfolio, and not based on insight into the currency market
- These positions are 100% funded by a short position to the U.S. dollar

## EMBEDDED CURRENCY PORTFOLIO EXAMPLE



Based on the MSCI EAFE Index

# U.S. dollar movements

U.S. DOLLAR TRADE WEIGHTED INDEX

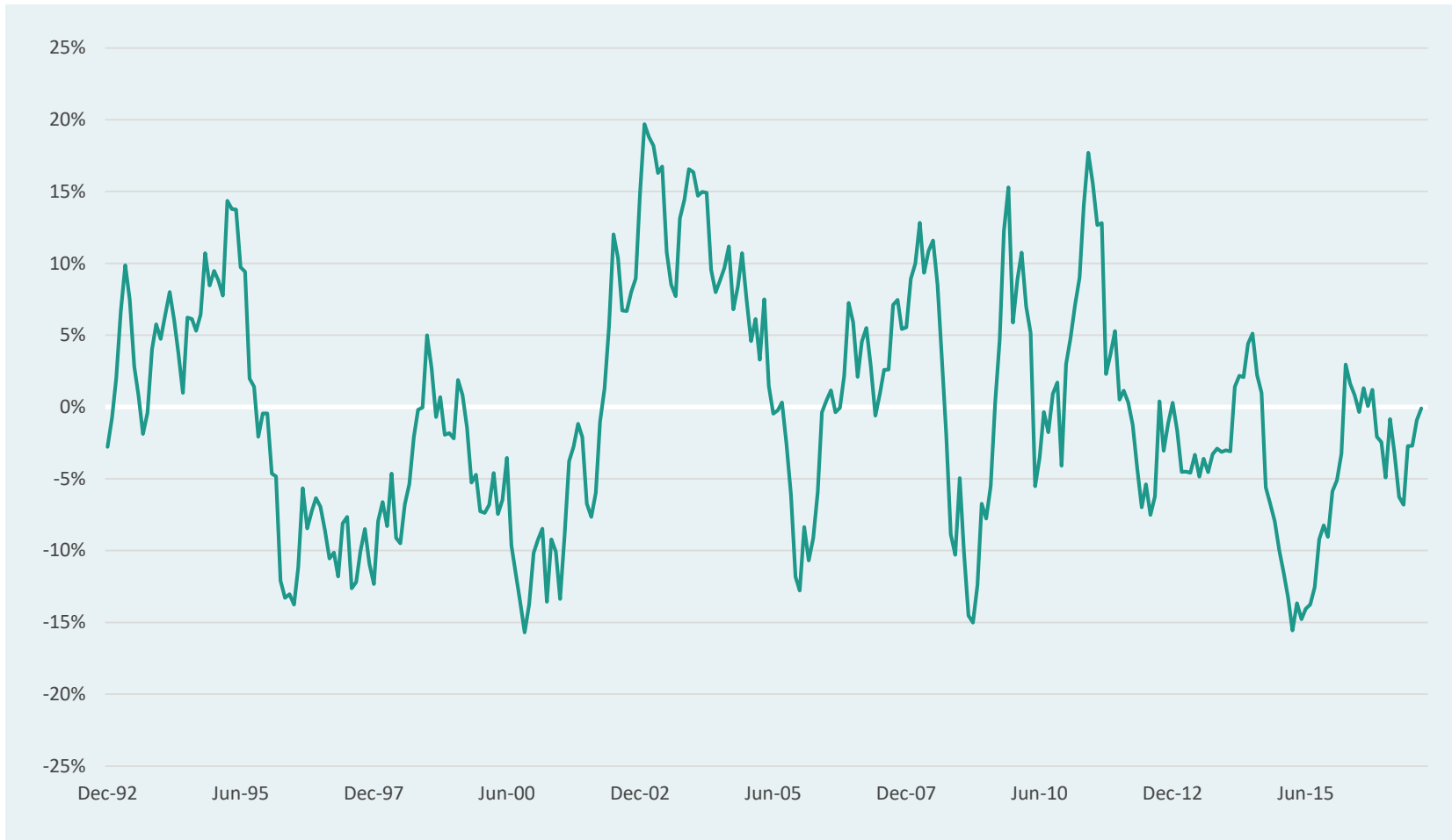


Volatility in the U.S. dollar can cause big swings in the performance of embedded currency

Source: FRED, as of 8/31/17

# Impact of embedded currency

## EMBEDDED CURRENCY 1 YEAR ROLLING PERFORMANCE



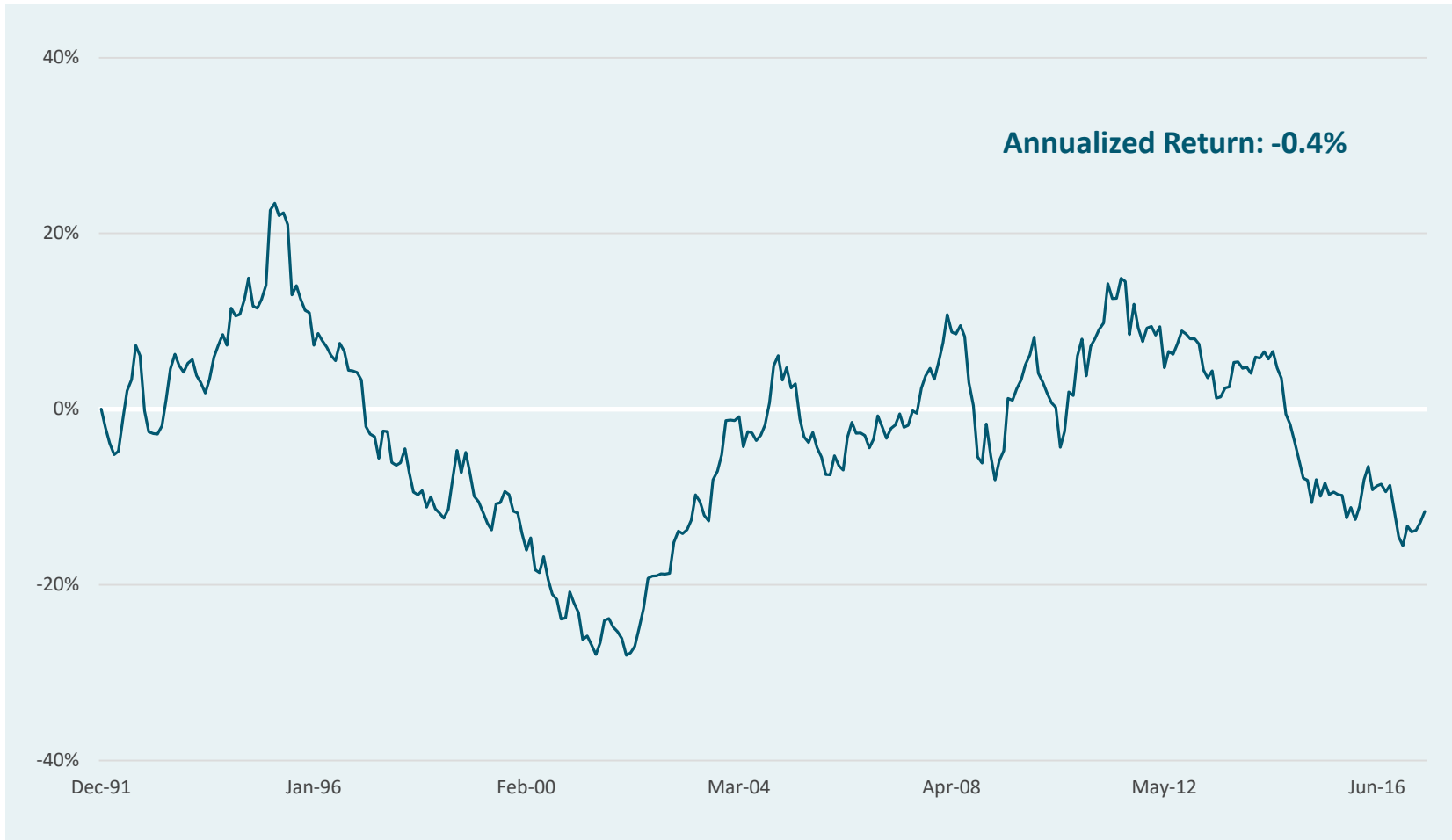
Embedded currency returns can have a big impact on portfolios over short-term periods

Source: Verus, MSCI, as of 8/31/17, based on the MSCI EAFE Index



# Long-term impact

## EMBEDDED CURRENCY CUMULATIVE PERFORMANCE



Embedded currency returns are less meaningful over the long run.

Source: Verus, MSCI, as of 8/31/17, based on the MSCI EAFE Index

# Embedded currency volatility

EMBEDDED CURRENCY 5-YEAR ROLLING RISK



Embedded currency has delivered significant volatility compared to a hedged portfolio

Source: Verus, MSCI, as of 8/31/17, based on the MSCI EAFE Index

# Uncompensated risk

**There is no evidence to support the idea that a naively constructed currency portfolio (embedded currency) should demand a risk premium**

- While impossible to forecast, it is reasonable to expect a long-term return of zero from the **embedded currency exposure**
- This is not the case for risk – embedded currency exposure has historically added volatility to portfolios
- This experience suggests that embedded currency represents a source of uncompensated risk

This is in line with SamCERA's IPS – "SamCERA should not pursue investments that will not adequately compensate it for the risks that those investments bring."

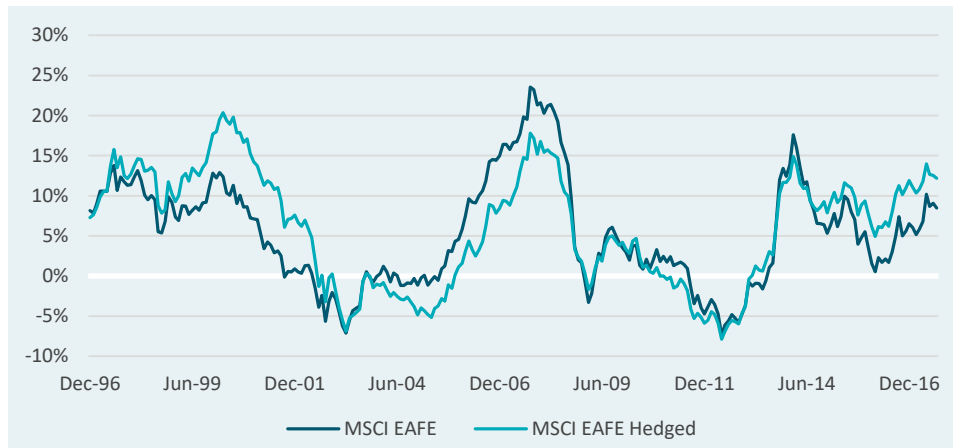
# Currency hedging

# Fixed hedge

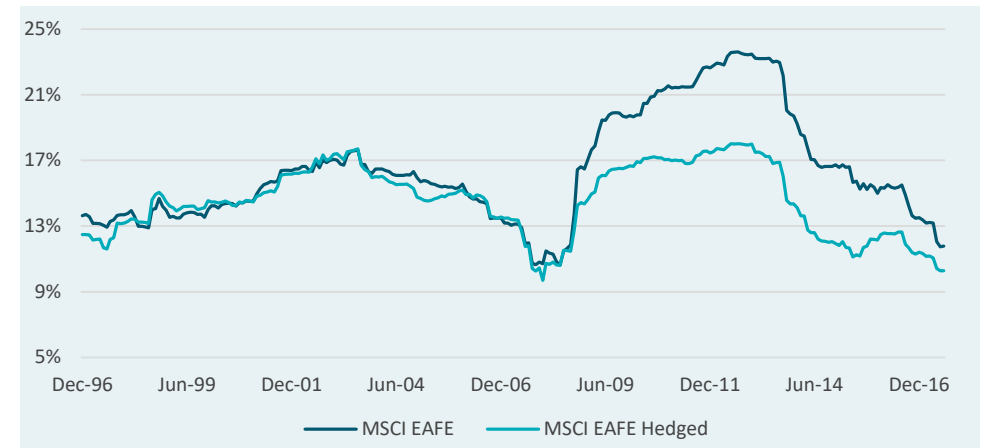
**A fixed hedge can remove all or part of the exposure to currencies other than the investor's domestic currency**

- The main goal is to get rid of, or reduce an uncompensated risk, allowing risk to be taken elsewhere to return the portfolio to the accepted risk target
- A hedged benchmark has outperformed in some periods, and underperformed in others, but the long-term return has been similar
- Peer risk will result
- This approach involves cash flows, with higher cash outflows needed in dollar weakness environments
- The hedging can be performed by a single central hedging manager in a highly cost effective manner

## 5-YEAR ROLLING RISK

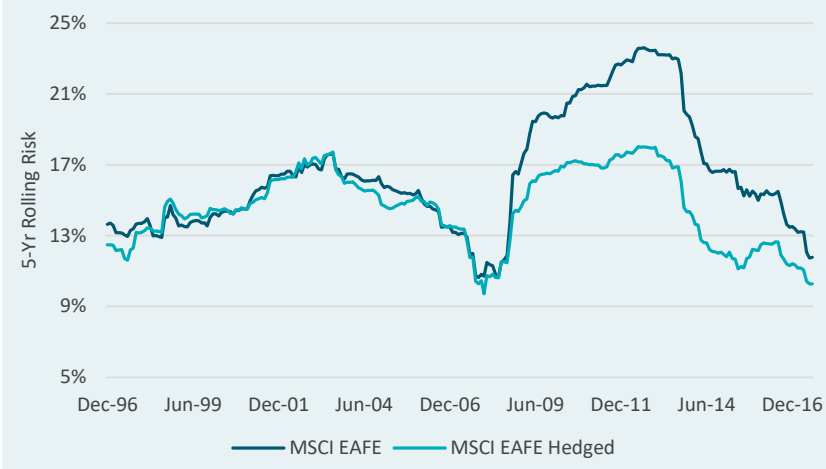
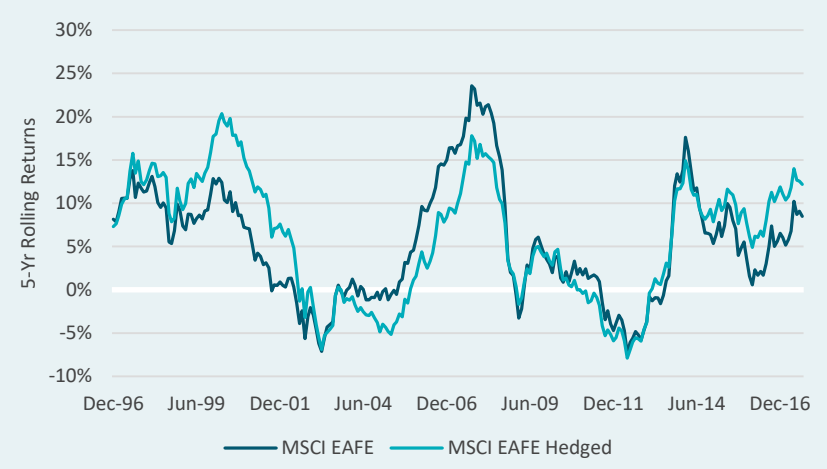


## 5-YEAR ROLLING PERFORMANCE

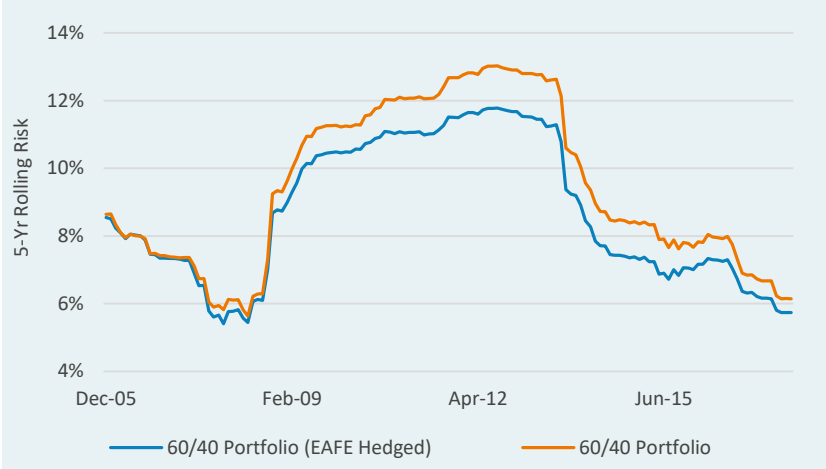
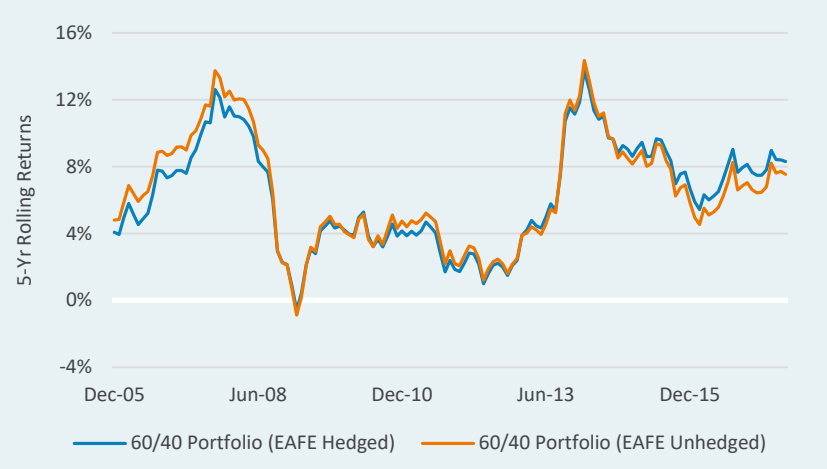


Source: MSCI, MPI, as of 8/31/17

# Fully hedged vs. unhedged

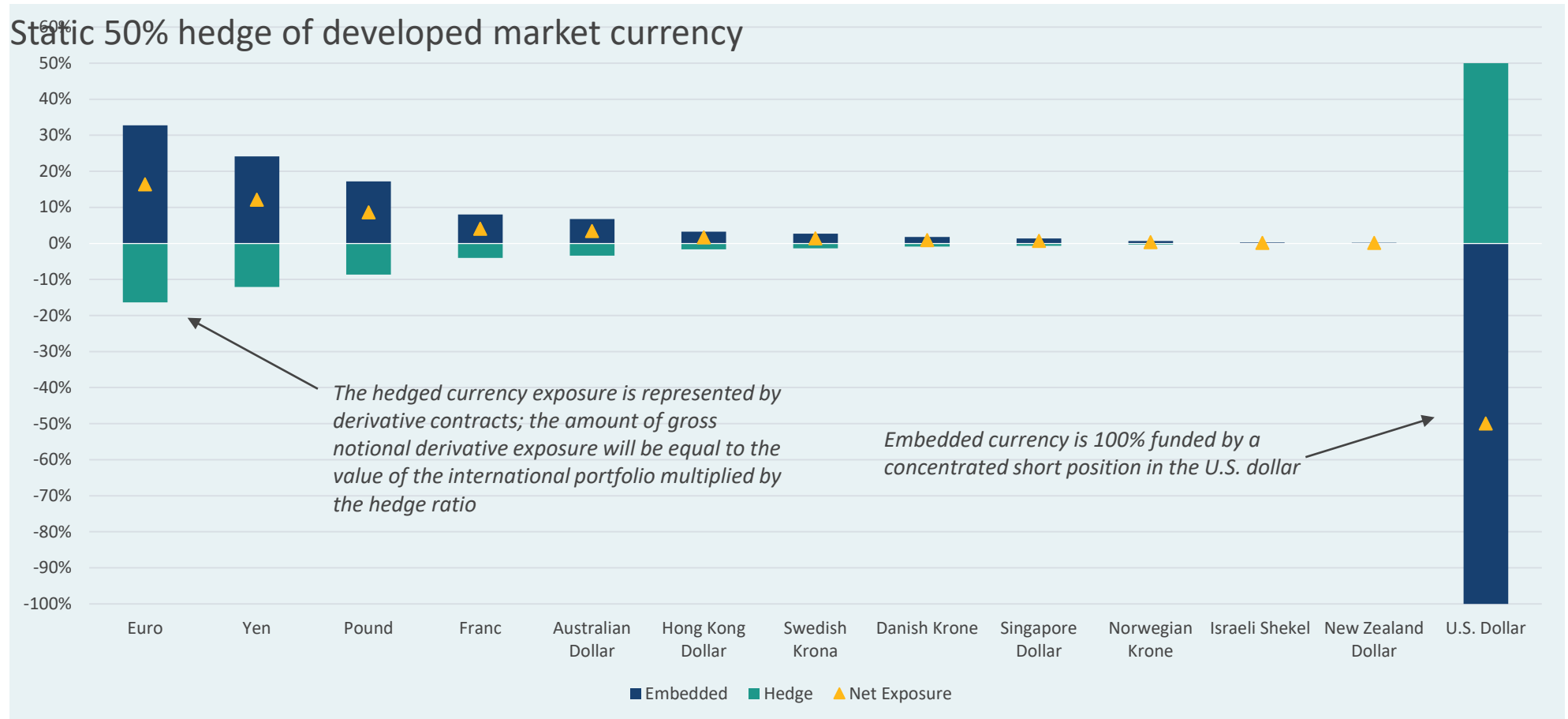


Currency exposure results in increased portfolio risk



Source: MSCI, MPI, as of 8/31/17

# Incorporating currency hedging



Source: MSCI, as of 12/5/17, based on the MSCI EAFE Index

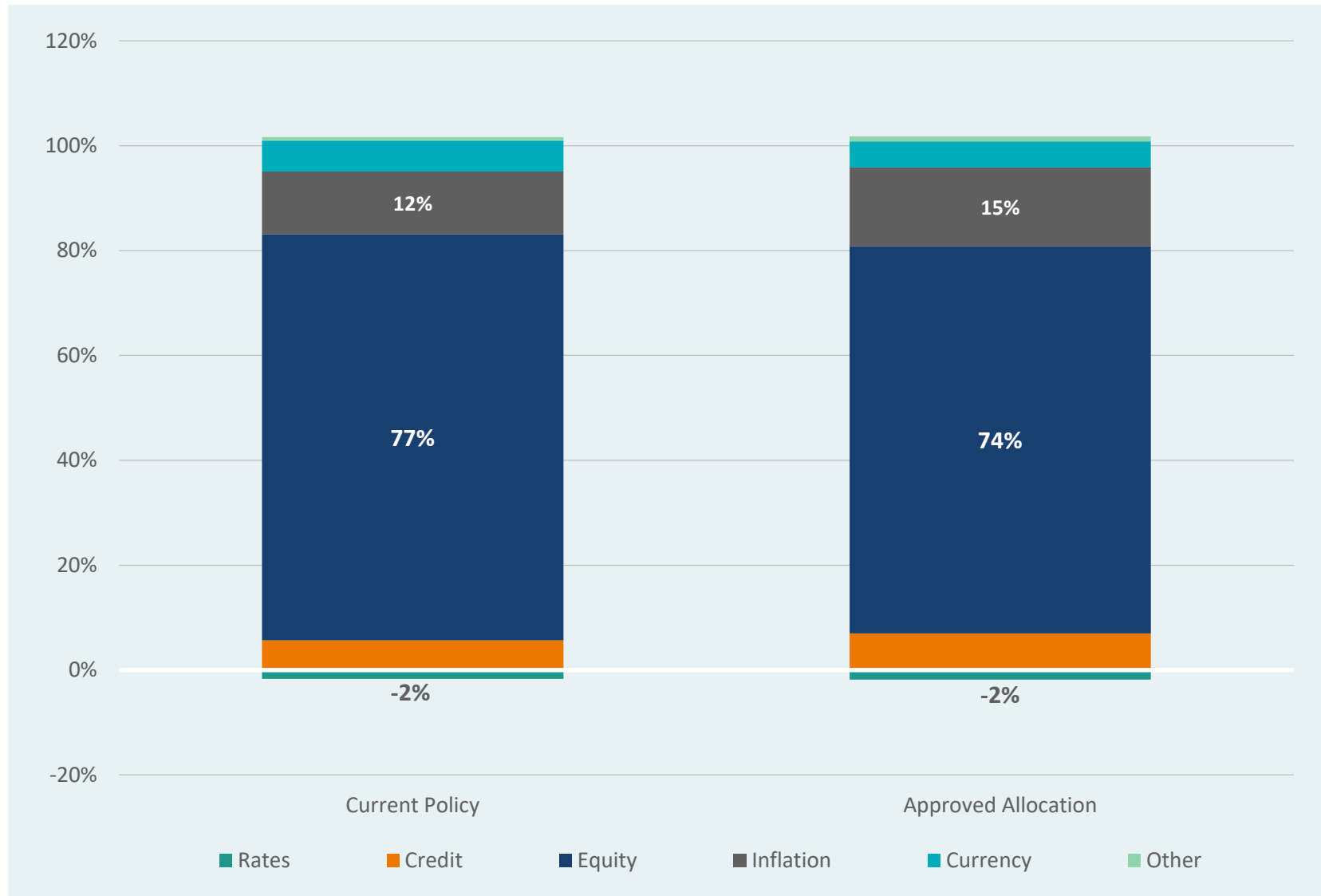
# SamCERA Allocations

	SamCERA Current Policy	SamCERA Approved Allocation	Return (g)	Standard Deviation	Sharpe Ratio
US Large	19.0	11.0	4.5	15.7	0.15
US Small	2.0	2.0	4.4	21.5	0.10
Low Volatility	0.0	6.0	4.1	12.7	0.15
International Developed	15.0	7.0	8.6	18.1	0.35
Intl Developed Hedged	0.0	7.0	8.6	16.2	0.46
Emerging Markets	4.0	4.0	7.3	26.6	0.19
High Yield Corp. Credit	7.0	9.0	3.7	11.6	0.13
Private Equity	7.0	6.0	6.4	25.8	0.16
<b>Total Growth</b>	<b>54</b>	<b>52</b>			
Core Fixed Income	14.0	14.0	2.9	6.4	0.11
Hedge Fund	6.0	6.0	4.0	7.9	0.23
<b>Total Diversifying</b>	<b>20</b>	<b>20</b>			
Commodities	4.0	5.0	4.3	15.9	0.13
Core Real Estate	8.0	10.0	6.0	12.7	0.30
Infrastructure	4.0	5.0	7.1	18.9	0.26
US TIPS	2.0	0.0	2.6	5.5	0.07
<b>Total Inflation</b>	<b>18</b>	<b>20</b>			
Risk Parity	8.0	8.0	7.2	10.0	0.50
<b>Total Multi-Asset</b>	<b>8</b>	<b>8</b>			
<b>Total Allocation</b>	<b>100</b>	<b>100</b>			

	SamCERA Current Policy	SamCERA Approved Allocation
<b>Mean Variance Analysis</b>		
<b>Forecast 10 Year Return</b>	<b>6.0</b>	<b>6.0</b>
Standard Deviation	11.0	10.4
Return/Std. Deviation	0.5	0.6
1st percentile ret. 1 year	-22.1	-19.6
Sharpe Ratio	0.39	0.40



# Risk Decomposition



# Important considerations

# Factors to consider

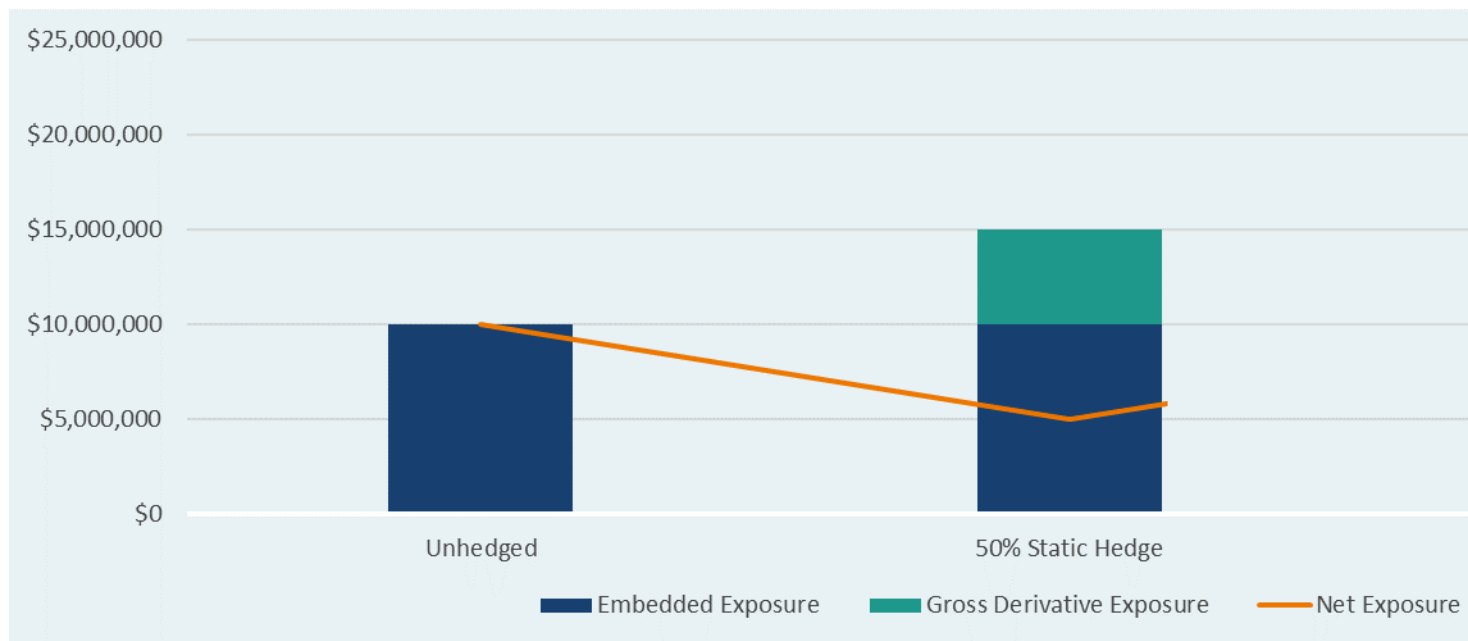
There are a number of factors investors need to consider in deciding to hedge currency risk:

- **Use of derivatives** – Intentional currency investing involves the use of derivative contracts. While currency futures have some non-derivative characteristics, investors with sensitivity to derivatives may likely have sensitivity to future use.
- **Liquidity needs** – Liquidity considerations are involved. The nature of the exposures implemented may have liquidity consequences, and investors should be sure that their liquidity risk profile is matched to the proposed solution.
- **Complexity** – Additional complexity is likely involved. This means that board time must be spent in the lead up to adoption, and perhaps even on an ongoing basis (in particular where new members join the board).
- **Peer risk** – A carefully thought out, intentional currency approach will most likely involve peer risk since most international portfolios are unhedged. Weighing the sensitivity of the board to peer risk relative to the benefits of the possible investment outcomes concerned is an important part of adopting any approach.

# Leverage and margin

The Plan will likely have to supply capital upfront (initial margin) when entering a futures contract on developed market currencies and during the life of the contract (variation margin). Some investors may consider this as leverage in the portfolio. However, it is important to consider the net currency exposure.

## CURRENCY EXPOSURE FOR A HYPOTHETICAL \$10 MILLION PORTFOLIO



Source: Verus, for illustrative purposes only

# Hedge the benchmark or actual exposures?

## **Most currency managers recommend hedging benchmark exposures:**

- Does not disrupt active manager decisions based on currency
- Risk reduction is still achieved
- Easier to implement

## **Basis Risk**

- Hedging to the benchmark can result in basis risk
- Basis risk occurs when there are differences between the actual and benchmark exposures
- If the differences are deemed to be large enough, currency managers can hedge actual exposures

# Timing

**Some investors have expressed concern with the recent strength in the U.S. dollar over the past few years, and are expecting a reversal in the medium-term trend. This expectation is being used as a reason to leave the embedded currency exposure unchanged. While not illogical, we disagree currency hedging as a valid strategy for several reasons.**

- Predicting currency movements is extremely difficult
- One of the primary goals of a currency program is risk reduction over the long-term
- Risk can be taken elsewhere in the portfolio to possibly enhance returns
- The embedded currency portfolio is an inefficient way to manage risk
  - Are expectations of U.S. dollar movements uniform across currency pairs?

# Conclusion

# Currency hedging in SamCERA portfolio

## Why hedge currency risk?

- Risk reduction with limited return impact (positive or negative) over the long run
- Mitigate second largest source of portfolio risk; can apply risk budget elsewhere
- Aligned with SamCERA's ongoing goal of reducing volatility where appropriate

## Considerations

- Introduces peer risk
- Mechanics of hedging adds complexity to the SamCERA portfolio
- Timing of hedging is suboptimal but very difficult to predict

Recommendation – SamCERA should implement 50% hedge to international equity exposure as approved by Board but allocate in tranches to mitigate timing impacts.



# SamCERA portfolio Implementation

## Parametric

- Current overlay manager
- Would require ~\$50 million in a margin account which would be collateralized via the overlay
- The approximate notional value of the hedge will be \$315 million
- The strategy would contain 6 contracts (Yen, Pound, Euro, Canadian Dollar, Australian Dollar, and Swiss Franc)
- SamCERA can leg ( at 10% intervals) over time in order to avoid short term volatility on the total notional value

# Appendix

# Methodology

## CORE INPUTS

- We use a fundamental building block approach based on several inputs, including historical data and academic research to create asset class return forecasts.
- For most asset classes, we use the long-term historical volatility after adjusting for autocorrelation.
- Correlations between asset classes are calculated based on the last 10 years. For illiquid assets, such as private equity and private real estate, we use BarraOne correlation estimates.

Asset	Return Methodology	Volatility Methodology*
Inflation	25% weight to the University of Michigan Survey 5-10 year ahead inflation expectation and the Survey of Professional Forecasters (Fed Survey), and the remaining 50% to the market's expectation for inflation as observed through the TIPS breakeven rate	-
Cash	Real yield estimate + inflation forecast	Long-term volatility
Bonds	Nominal bonds: current yield; Real bonds: real yield + inflation forecast	Long-term volatility
International Bonds	Current yield + implied currency effect	Long-term volatility
Credit	Current option-adjusted spread + U.S. 10-year Treasury – effective default rate	Long-term volatility
International Credit	Current option-adjusted spread + foreign 10-year Treasury – effective default rate + implied currency effect	Long-term volatility
Private Credit	Bank loan forecast + 2% illiquidity premium	Long-term volatility
Equity	Current yield + real earnings growth (historical average) + inflation on earnings (inflation forecast) + expected P/E change	Long-term volatility
Intl Developed Equity**	Current yield + real earnings growth (historical average) + inflation on earnings (intl. inflation forecast) + expected P/E change + implied currency effect	Long-term volatility
Private Equity	US large cap domestic equity forecast * 1.85 beta adjustment	1.2 * Long-term volatility of U.S. small cap
Commodities	Collateral return (cash) + spot return (inflation forecast) + roll return (assumed to be zero)	Long-term volatility
Hedge Funds	Return coming from traditional betas + 15-year historical idiosyncratic return	Long-term volatility
Hedge Funds (FoF)	Return coming from traditional betas + 15-year historical idiosyncratic return – 1% expected fund of funds management fee	Long-term volatility
Core Real Estate	Cap rate + real income growth – capex + inflation forecast	65% of REIT volatility
REITs	Core real estate	Long-term volatility
Value-Add Real Estate	Core real estate + 2%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Opportunistic Real Estate	Core real estate + 4%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Infrastructure	Current yield + real income growth + inflation on earnings (inflation forecast)	Long-term volatility
Risk Parity	Expected Sharpe Ratio * target volatility + cash rate	Target volatility

\*Long-term historical volatility data is adjusted for autocorrelation (see Appendix)

\*\*We use local inflation for international developed equity markets. When using local inflation rates, expected returns are adjusted for the implied currency effect based on currency forward contract rates (see Appendix)

# 10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)
		Geometric	Arithmetic					
<b>Equities</b>								
U.S. Large	S&P 500	4.5%	5.6%	15.7%	0.15	0.22	0.50	0.56
U.S. Small	Russell 2000	4.4%	6.5%	21.5%	0.10	0.20	0.36	0.44
International Developed	MSCI EAFE	8.6%	10.1%	18.1%	0.35	0.44	0.11	0.2
International Developed Hedged	MSCI EAFE Hedged	8.6%	9.8%	16.2%	0.40	0.47	0.21	0.28
International Small	MSCI EAFE Small Cap	7.9%	10.2%	22.7%	0.25	0.35	0.24	0.33
International Small Hedged	MSCI EAFE Small Cap Hedged	7.9%	9.7%	20.1%	0.28	0.37	0.36	0.43
Emerging Markets	MSCI EM	7.3%	10.4%	26.6%	0.19	0.31	0.17	0.28
Global Equity	MSCI ACWI	6.3%	7.7%	17.5%	0.23	0.31	0.27	0.35
Private Equity	Cambridge Private Equity	6.4%	9.3%	25.8%	0.16	0.28	0.93	0.92
<b>Fixed Income</b>								
Cash	30 Day T-Bills	2.2%	2.2%	1.2%	-	-	-	-
U.S. TIPS	BBgBarc U.S. TIPS 5 - 10	2.6%	2.7%	5.5%	0.07	0.09	0.57	0.59
U.S. Treasury	BBgBarc Treasury 7-10 Year	2.4%	2.6%	6.8%	0.03	0.06	0.68	0.70
Global Sovereign ex U.S.	BBgBarc Global Treasury ex U.S.	2.7%	3.2%	9.9%	0.05	0.10	0.30	0.33
Global Sovereign ex U.S. Hedged	BBgBarc Global Treasury ex U.S. Hedged	2.7%	2.8%	3.3%	0.15	0.18	1.23	1.22
Core Fixed Income	BBgBarc U.S. Aggregate Bond	2.9%	3.1%	6.4%	0.11	0.14	1.09	1.08
Core Plus Fixed Income	BBgBarc U.S. Corporate IG	3.3%	3.6%	8.4%	0.13	0.17	0.81	0.81
Short-Term Gov't/Credit	BBgBarc U.S. Gov't/Credit 1 - 3 year	2.5%	2.6%	3.7%	0.08	0.11	1.36	1.34
Short-Term Credit	BBgBarc Credit 1-3 Year	2.4%	2.5%	3.7%	0.05	0.08	1.05	1.05
Long-Term Credit	BBgBarc Long U.S. Corporate	3.5%	3.9%	9.4%	0.14	0.18	0.64	0.67
High Yield Corp. Credit	BBgBarc U.S. Corporate High Yield	3.7%	4.3%	11.6%	0.13	0.18	0.64	0.67
Bank Loans	S&P/LSTA	4.9%	5.4%	10.5%	0.26	0.30	0.48	0.51
Global Credit	BBgBarc Global Credit	1.7%	2.0%	7.6%	-0.07	-0.03	0.59	0.61
Global Credit Hedged	BBgBarc Global Credit Hedged	1.7%	1.8%	5.0%	-0.10	-0.08	1.01	1.00
Emerging Markets Debt (Hard)	JPM EMBI Global Diversified	5.1%	5.9%	12.8%	0.23	0.29	0.74	0.76
Emerging Markets Debt (Local)	JPM GBI EM Global Diversified	5.8%	6.5%	12.1%	0.30	0.36	0.31	0.37
Private Credit	Bank Loans + 200 bps	6.9%	7.5%	10.5%	0.45	0.50	-	-
<b>Other</b>								
Commodities	Bloomberg Commodity	4.3%	5.5%	15.9%	0.13	0.21	-0.33	-0.25
Hedge Funds	HFRI Fund of Funds	4.0%	4.8%	7.9%	0.23	0.33	0.21	0.23
Hedge Fund of Funds	HFRI Fund of Funds	3.0%	3.8%	7.9%	0.10	0.20	0.21	0.23
Hedge Funds - Equity Hedge	HFRI Equity Hedge	4.2%	5.5%	11.1%	0.18	0.30	0.36	0.39
Hedge Funds - Event Driven	HFRI Event Driven	4.5%	5.6%	9.9%	0.22	0.34	0.55	0.57
Hedge Funds - Relative Value	HFRI Relative Value	3.9%	4.5%	6.8%	0.25	0.34	0.89	0.89
Hedge Funds - Macro	HFRI Macro	3.3%	4.7%	8.5%	0.12	0.29	0.43	0.44
Core Real Estate	NCREIF Property	6.0%	6.7%	12.7%	0.30	0.35	0.77	0.75
Value-Add Real Estate	NCREIF Property + 200bps	8.0%	9.7%	19.5%	0.30	0.38	-	-
Opportunistic Real Estate	NCREIF Property + 400bps	10.0%	12.9%	26.0%	0.30	0.41	-	-
REITs	Wilshire REIT	6.0%	7.7%	19.5%	0.19	0.28	0.16	0.28
Infrastructure	S&P Global Infrastructure	7.1%	8.7%	18.9%	0.26	0.34	0.27	0.34
Risk Parity	Risk Parity	7.2%	7.7%	10.0%	0.50	0.55	-	-
Currency Beta	Russell Conscious Currency	2.2%	2.3%	4.4%	0.00	0.02	0.23	0.24
Inflation		2.1%	-	-	-	-	-	-

Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.

# Range of likely 10 year outcomes

10 YEAR RETURN 90% CONFIDENCE INTERVAL



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

August 28, 2018

Agenda Item 7.1

**TO:** Board of Retirement

**FROM:** Scott Hood, Chief Executive Officer



**SUBJECT:** Board of Retirement's Response to 2017-18 Grand Jury Report

**Recommendation**

Approve the Board of Retirement's response to the applicable findings and recommendations contained in the San Mateo County 2017-18 Grand Jury Report entitled "County Pension Costs-Hard Choices Paying Off."

**Background**

On July 17, 2018, the Grand Jury filed its report on the status of the County of San Mateo's pension obligations and whether appropriate steps are being taken to manage them. The Board is statutorily required to submit its responses to the findings and recommendations pertaining to matters under the control of the Board within ninety days. The Board's response is due no later than October 16, 2018.

**Discussion**

The Grand Jury made several findings regarding SamCERA's funded status and assumed rate of return. It also made recommendations of the steps that need to be taken by the Board and or the County to address the unfunded liability. Only one recommendation was directed to the Board. Each finding along with the proposed response, and the response to the recommendation, are set forth in the attached document.

**Attachment**

Responses of the San Mateo County Employees' Retirement Association Board of Retirement to Findings and Recommendations of the San Mateo County Civil Grand Jury in its Report: "County Pension Costs-Hard Choices Paying Off"

**RESPONSES OF THE SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
BOARD OF RETIREMENT TO FINDINGS AND RECOMMENDATIONS OF THE SAN MATEO COUNTY  
2017-18 GRAND JURY REPORT ENTITLED "COUNTY PENSION COSTS-HARD CHOICES PAYING OFF".**

The Board of Retirement commends the Grand Jury on its thorough and accurate report on the status of the County of San Mateo's pension obligations and whether appropriate steps are being taken to manage them.

**FINDINGS**

**F1. As of June 30, 2017, SamCERA's Funded Ratio (Total Plan Assets/Total Plan Liabilities) was 84.3 percent. By comparison, the average Funded Ratio of cities in San Mateo County was 70.5 percent and the average of CalPERS agencies statewide was just 68 percent.**

Board of Retirement Response to F1:

Agree that the Total Plan Assets/Total Plan Liabilities for the SamCERA Retirement Fund was 84.3 percent. The remainder of this finding contains facts of which the Board of Retirement does not have direct knowledge to independently verify and as such the Board of Retirement submits no response to the remainder of finding.

**F2. As of June 30, 2017, SamCERA had a significant system-wide Unfunded Liability of \$743 million, while the County portion constituted a significant Unfunded Liability of \$707.1 million.**

Board of Retirement Response to F2:

Agree to the fact in this finding that as of June 30, 2017, the Unfunded Liability of the Retirement Fund was \$743 million, however the term "significant" is subjective and as such the Board of Retirement submits no response to that portion of the finding. As for the \$707.1 million, the Board of Retirement does not have direct knowledge of this fact to independently verify and as such the Board of Retirement submits no response to that portion of the finding.

**F3. In FY 2016-2017, the County's Normal Cost payments to SamCERA were \$51 million, while its payments to SamCERA of principal and interest on the Unfunded Liability ("Amortization Cost") came to \$108 million. In addition, the County made supplemental payments to SamCERA of nearly \$34 million to pay down the Unfunded Liability. The County's total payments of \$192 million represented about 18 percent of total General Fund spending and 39 percent of its total covered payroll costs in FY 2016-2017.**

Board of Retirement Response to F3:

Agree that in FY 2016-2017, the County's Normal Cost payments to SamCERA were \$51 million, its payments to SamCERA of principal and interest on the Unfunded Liability ("Amortization Cost") came to \$108 million and that it made supplemental payments to SamCERA of nearly \$34 million to pay down

the Unfunded Liability. The remainder of this finding is directed toward the County of San Mateo and as such the Board of Retirement submits no response to the remainder of finding.

**F4. The County's payment of Amortization Cost diverts money that could otherwise be used to pay for public services that it provides.**

Board of Retirement Response to F4:

This finding is not directed to the Board of Retirement, and as such the Board of Retirement submits no response to this finding.

**F5. In 2013, the County approved a Memorandum of Understanding (MOU) with SamCERA that would result in the County eliminating its Unfunded Liability by FY 2022-2023, if actuarial assumptions are met. The County's participation is not mandatory, but it has implemented the MOU on schedule. Currently, SamCERA projects that the County will eliminate its Unfunded Liability on schedule.**

Board of Retirement Response to F5:

Agree with the finding, with exception to the phrase that the MOU would result in the County "eliminating its Unfunded Liability." It should instead read "reduce its Unfunded Liability." In 2012, the County approved an MOU with SamCERA that provides for the County to make supplemental contributions to "reduce the County's long-term costs of contribution to the System by accelerating the reduction of the UAAL." The MOU further provides that the County understands that "the cumulative effect of depositing supplement funding amounts above the County's Statutory Contribution Rate (SCR), in accordance with this MOU will accelerate the reduction of the County's SCR over what the County's SCR would have been had the County not deposited such supplemental funding."

**F6. The MOU provides that the County will make annual supplemental contributions totaling \$140 million over the 10-year term of the MOU to pay down its Unfunded Liability. Further, the County will maintain a high payroll contribution rate (later determined to be 37.4 percent), even as Annual Required Contributions (ARC) are expected to fall, as the Unfunded Liability declines. Maintaining a contribution rate that is higher than needed to pay the ARC generates additional supplemental contributions.**

Board of Retirement Response to F6:

Agree.

**F7. The MOU provides that SamCERA will place supplemental contributions from the County into a Supplemental Contributions Account, such that the funds apply to the benefit of the County's plan, rather than the SamCERA system as a whole.**

Board of Retirement Response to F7:

Agree.

**F8. The County anticipates savings of over \$304 million in interest expense as a result of paying down its Unfunded Liability ahead of the schedule provided in the Amortization Period. The County further**



**anticipates that, once the Unfunded Liability is paid off, it will save up to \$100 million per year in Amortization Costs and supplemental contributions. However, if the County commits these expected savings to other budgetary purposes, it will be more difficult for the County to meet Unfunded Liabilities in future years, if SamCERA's current actuarial assumptions prove to be too optimistic.**

Board of Retirement Response to F8:

This finding is not directed to the Board of Retirement, and as such the Board of Retirement submits no response to this finding.

**F9. In 2003 and 2005, the County adopted enhanced pension benefit formulas that were applied retroactively to all employees. Since neither the County nor its employees had made Normal Cost contributions to pay for the enhanced benefits, the County's Unfunded Liability immediately increased. In 2011, the County reversed its previous action and returned to the original benefit formula. However, this only applied to new hires. In 2013, SamCERA implemented new reduced pension formulas required under the California Public Employees' Pension Reform Act.**

Board of Retirement Response to F9:

Agree.

**F10. Since 2014, the County has eliminated its prior practice of paying a portion of the employees' share of Normal Cost, known as the "employer pickup."**

Board of Retirement Response to F10:

Agree with the finding that the County has eliminated its prior practice of paying a portion of the employees' share of Normal Cost, known as the "employer pickup;" however, the date is incorrect. The elimination of "pick-ups" occurred through labor negotiations with the various unions. The County commenced the elimination in November 2014 and completed it in July 2016, with a few County members receiving pick ups until July 2018.

**F11. Since 2014, the County has changed its prior practice of paying the entire cost of annual COLA increases for retirees. It now requires that all employees pay 50 percent of the future cost of this benefit as part of their payroll deduction for Normal Costs.**

Board of Retirement Response to F11:

Agree, except the finding should read "Since 2015" instead of "Since 2014."

**F12. During the FY 2007-2017 period, the County kept salary increases to an average annual rate of 2.87 percent, well below the rates of increase assumed by SamCERA. This resulted in a cumulative reduction in Unfunded Liability of \$154.7 million. However, in the most recent years within the period, FY 2014-2017, the trend showed an increase in Unfunded Liability attributable to salary increases that exceeded SamCERA's assumptions.**

Board of Retirement Response to F12:

Agree.

**F13. In 2010, the County had 5,327 current employee members of SamCERA. By 2013, this had declined to 4,650 current members before rising back up to 5,080 in 2017.**

Board of Retirement Response to F13:

Agree.

**F14. SamCERA uses a 15-year layered Amortization Period to determine payments on the Unfunded Liability. That is a shorter period than used by some other pension systems, such as CalPERS. It results in higher employer contributions during the Amortization Period but will ultimately reduce the total interest expense.**

Board of Retirement Response to F14:

Agree.

**F15. SamCERA conducts Triennial Experience Studies to monitor its demographic actuarial assumptions, including member life-expectancy. Economic assumptions, including the assumed Return on Investment of its plan assets are reviewed annually.**

Board of Retirement Response to F15:

Agree.

**F16. Based on its latest Triennial Experience Study in 2017, SamCERA has made a change in the mortality assumption that predicts how long members are currently living and adds a projection scale that reflects the gradual year-to-year improvement in mortality that is expected to occur in the future. The new mortality assumption results in a significant increase of Normal Cost contributions equal to 2.19 percent of payroll.**

Board of Retirement Response to F16:

Agree that the Board of Retirement adopted a new methodology for setting its mortality assumption and this resulted in an increase to the Normal Cost contributions of 2.19 percent of payroll. However, the term “significant” is subjective and as such the Board of Retirement submits no response to that portion of the finding.

**F17. SamCERA has lowered its assumed Return on Investment (ROI) on plan assets in a series of steps since 2005. The assumed ROI for FY 2017-18 is 6.75 percent. That is more conservative than most other public pension systems, such as CalPERS, which is currently at 7.5 percent. (The CalPERS Board has since approved lowering the ROI in steps to 7.0 percent by FY 2020-2021).**

Board of Retirement Response to F17:

Agree.

**F18. Historically, ROI is the biggest source of funding for SamCERA’s pension benefits, comprising approximately 57 percent of total revenues. Contributions by the County provided 29 percent and**

**contributions by employees provided 14 percent of total revenues. As assumed ROI is lowered, Normal Cost increases, so contributions by the County and employees must be increased.**

Board of Retirement Response to F18:  
Agree.

**F19. SamCERA has changed its allocation of assets in different types of investments over time. It has gradually reduced the share of investments in public equities (public stocks) to just 43 percent (as of June 30, 2017) and has diversified its portfolio by increasing the share invested in other asset categories.**

Board of Retirement Response to F19:  
Agree.

**F20. An independent 2018 analysis by Roeder Financial ranks SamCERA third best among California pension plans, based on “funding assumptions.” Since the only plans ranked higher than SamCERA were the CalPERS – Legislative (closed) and CalPERS Judges System II, 1, 3 plans, SamCERA has the highest ranking among its peer public pension plans for public agencies.**

Board of Retirement Response to F20:  
Agree.

**F21. ROI can be estimated but not guaranteed. Financial markets have proven to be highly volatile. This makes long-term financial planning difficult.**

Board of Retirement Response to F21:  
Agree.

## **RECOMMENDATIONS**

**R4. The Grand Jury recommends that the SamCERA Board of Retirement continue to conduct Triennial Experience Studies to address potential demographic changes and continue to conduct annual economic analyses to assess its economic assumptions, including Return on Investment.**

Board of Retirement Response to R4:  
The recommendation will be implemented. SamCERA will continue to have its actuary perform its Triennial Experience Study, in accordance with Government Code section Government Code 31453, which provides, in part:

“An actuarial valuation shall be made within one year after the date on which any system established under this chapter becomes effective, and thereafter at intervals not to exceed three years. The valuation shall be conducted under the supervision of an actuary and shall cover the mortality, service, and compensation experience of the members and beneficiaries, and shall evaluate the assets and liabilities of the retirement fund....”

SamCERA will also continue to have an actuarial audit performed by its auditing actuary to ensure completeness and soundness of the recommended assumptions and findings contained in the Triennial Experience Study. Additionally, SamCERA will continue to have an annual valuation performed by its actuary to determine if adjustments are needed prior to the Triennial Experience Study.

DRAFT

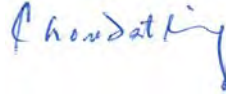
**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
Board of Retirement**

August 28, 2018

Agenda Item 7.2

**TO:** Board of Retirement

**FROM:** Tat-Ling Chow, Finance Officer



Chezelle Milan, Senior Accountant



Lilibeth Dames, Investment Analyst



**SUBJECT:** Report on Preliminary Financial Statements for the Fiscal Year Ended June 30, 2018

**Recommendation**

Accept the Preliminary Financial Statements for the Fiscal Year Ended June 30, 2018.

**Background**

The preliminary financial statements provide financial information on SamCERA's financial position as of June 30, 2018, and its operating results for the fiscal year ended June 30, 2018.

The *Statement of Fiduciary Net Position* (balance sheet) provides a snapshot of the account balance as of June 30, 2018. 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 fiscal year ended June 30, 2018. "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 member benefits, member refunds, administrative and other expenses.

**Summary**

SamCERA's financial position improved modestly over the fiscal year just ended. Its net position increased \$342 million, or 8%, to \$4.4 billion, fueled mainly by an appreciation of investments.

**Statement of Fiduciary Net Position**

The following table shows SamCERA's preliminary Statement of Fiduciary Net Position as of June 30, 2018. Its assets and liabilities as of June 30, 2018, were compared to those as of June 30, 2017, to reflect changes over the fiscal year. Significant changes are discussed on the following pages.

**Statement of Fiduciary Net Position**

	Preliminary	Actual	Increase (Decrease)	
	June 30, 2018	June 30, 2017	Amount	Percentage
<b>ASSETS:</b>				
Cash and Cash Equivalents	\$ 53,055,577	\$ 192,194,061	\$ (139,138,484)	-72%
Cash Management Overlay	12,984,127	25,207,998	(12,223,871)	-48%
Securities Lending Cash Collateral	1,486,415	-	1,486,415	N/A
Subtotal - Cash and Other Cash Related Activities	<u>67,526,119</u>	<u>217,402,059</u>	<u>(149,875,940)</u>	-69%
Receivables				
Contributions	9,399,535	8,622,173	777,362	9%
Due from Broker for Investments Sold	1,162,242	8,273,972	(7,111,730)	-86%
Investment Income	5,930,254	8,406,749	(2,476,495)	-29%
Securities Lending Income	10,453	-	10,453	N/A
Other Receivable	164,909	95,657	69,252	72%
Subtotal - Receivables	<u>16,667,393</u>	<u>25,398,551</u>	<u>(8,731,158)</u>	-34%
Prepaid Expense	7,669	7,669	-	0%
Investments at Fair Value				
Equity	1,808,923,187	1,714,975,800	93,947,387	5%
Fixed Income	896,133,219	741,361,558	154,771,661	21%
Alternatives	518,870,510	480,730,879	38,139,631	8%
Risk Parity	311,126,425	291,757,142	19,369,283	7%
Inflation Hedge	761,213,584	573,336,864	187,876,720	33%
Subtotal - Investment at Fair Value	<u>4,296,266,925</u>	<u>3,802,162,243</u>	<u>494,104,682</u>	13%
Fixed Assets	6,803,554	7,629,373	(825,819)	-11%
<b>TOTAL ASSETS</b>	<u><b>4,387,271,660</b></u>	<u><b>4,052,599,895</b></u>	<u><b>334,671,765</b></u>	<b>8%</b>
<b>LIABILITIES:</b>				
Payable - Investment Management Fees	1,663,178	1,822,557	(159,379)	-9%
Due to Broker for Investments Purchased	2,385,586	9,416,634	(7,031,048)	-75%
Securities Lending Cash Collateral - Due to Borrowers	1,488,689	-	1,488,689	N/A
Other	1,314,767	2,658,714	(1,343,947)	-51%
<b>TOTAL LIABILITIES</b>	<u><b>6,852,220</b></u>	<u><b>13,897,905</b></u>	<u><b>(7,045,685)</b></u>	-51%
<b>NET POSITION RESTRICTED FOR PENSIONS</b>	<u><b>\$ 4,380,419,440</b></u>	<u><b>\$ 4,038,701,990</b></u>	<u><b>\$ 341,717,450</b></u>	<b>8%</b>

**Assets.** SamCERA's total assets increased \$335 million, or 8%, due primarily to the following:

- Cash and cash equivalents decreased \$139 million, or -72%. At the last fiscal year-end, SamCERA accumulated a significant amount of cash from the County supplemental contribution and asset allocation changes, ensuring sufficient cash was available to fund new planned investments in fiscal year 2017-18.
- Cash management overlay decreased \$12 million, or -48%. Cash held in the cash management overlay account was driven by operational needs. Less cash was kept in this account to match diminishing needs.
- Securities lending cash collateral increased \$1.5 million. SamCERA resumed its securities lending activities in July of 2017 and, in exchange, secured cash collateral from securities loaned out.

- Receivables overall decreased \$9 million, or -34%. Most of the investments sold were completed and settled before the fiscal year-end. As a result, outstanding receivables were considerably less than last year's.
- Investments overall increased \$494 million, or 13%. SamCERA implemented phase two of the new asset allocation policy, increasing its allocation in fixed income equities by \$150 million and inflation hedge funds by \$160 million. The remaining increase came mainly from the appreciation of investments.

**Liabilities.** SamCERA's total liabilities decreased \$7 million, or -51%. The total amount due to investment brokers declined by \$7 million as most of the investment purchase transactions were completed and settled before the fiscal year-end. As a result, outstanding liabilities were comparatively lower than last year's.

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

SamCERA's preliminary Statement of Changes in Fiduciary Net Position (income statement) for the fiscal year ended June 30, 2018, is presented on page 4. Additions to and deductions from the Retirement Fund for the fiscal year were compared to those of the prior fiscal year.

**Additions.** Total additions to the Retirement Fund during the year were \$558 million, which was \$139 million lower than last year. Significant changes are discussed below.

- Employer contributions were \$14.7 million, or 9%, higher than last year. In its 2016 actuarial valuation, SamCERA adopted a new economic assumption changing the assumed rate of investment return from 7.25% to 7.00%, effective July 1, 2017. This change triggered a modest increase in employer contributions during fiscal year 2017-18.
- Employer Supplemental Contributions were \$6 million, or 18%, lower than last year. To accelerate the payoff of unfunded liabilities, employers may make supplemental contributions to the Retirement Fund. The County decreased its supplemental contributions by \$6 million, to \$27.6 million this year from \$33.6 million last year.
- Interest and dividends were \$5 million, or 14%, higher than last year. The increase in interest was twofold, with \$3 million from a new fixed income manager and \$1.5 million from a hedge fund manager.
- Net appreciation in investments was \$150 million, or 34%, lower than last year. The return from the investment portfolio dropped to 6.7% this year from 12.6% last year, this resulted mainly from underperformance in public equities (primarily international equities) and alternatives (with primary impact from absolute return and secondary impact from private equity).
- Investment expense was \$6 million, or 18%, higher than last year. Throughout the year, performance fees moved higher as certain portfolio performance improved. Investment fees to certain managers also went up as assets under management increased.

**Deductions.** Total deductions from the Retirement Fund during the fiscal year was approximately \$216 million, which was \$16 million, or 8%, higher than last year. The increase was due mainly to an increase in the number of retirees with a relatively higher final average compensation, thus a higher benefit.

**Statement of Changes in Fiduciary Net Position**

	<u>Preliminary</u>	<u>Actual</u>	<u>Increase (Decrease)</u>	
	<u>2018</u>	<u>2017</u>	<u>Amount</u>	<u>Percentage</u>
<b>ADDITIONS:</b>				
Contributions				
Employee Contribution	\$ 64,198,692	\$ 62,160,101	\$ 2,038,591	3%
Employer Contribution	179,609,195	164,877,135	14,732,060	9%
Employer Supplemental Contribution - DSCA	-	250,000	(250,000)	-100%
Employer Supplemental Contribution - CSCA	27,630,129	33,600,000	(5,969,871)	-18%
Subtotal - Contributions	<u>271,438,016</u>	<u>260,887,236</u>	<u>10,550,780</u>	4%
Investment Income				
Interest and Dividends	43,659,894	38,445,658	5,214,236	14%
Net Appreciation (Depreciation) in fair value of investments	282,644,001	431,845,614	(149,201,613)	-35%
Less: Investment Expense	<u>(39,665,182)</u>	<u>(33,688,058)</u>	<u>(5,977,124)</u>	18%
Subtotal - Investment Income	<u>286,638,713</u>	<u>436,603,214</u>	<u>(149,964,501)</u>	-34%
Securities Lending Income				
Earnings	61,027	80,152	(19,125)	-24%
Less: Securities Lending Expenses	<u>(17,698)</u>	<u>(34,881)</u>	<u>17,183</u>	-49%
Subtotal - Securities Lending Income	<u>43,329</u>	<u>45,271</u>	<u>(1,942)</u>	-4%
Other Additions				
	<u>27,540</u>	<u>27,221</u>	<u>319</u>	1%
<b>Total Additions</b>	<b><u>558,147,598</u></b>	<b><u>697,562,942</u></b>	<b><u>(139,415,344)</u></b>	<b>-20%</b>
<b>DEDUCTIONS:</b>				
Benefits				
Service Retirement Allowance	179,880,342	166,975,634	12,904,708	8%
Disability Retirement Allowance	23,872,145	22,689,813	1,182,332	5%
Survivor, Death and Other Benefits	976,386	698,946	277,440	40%
Subtotal - Benefits	<u>204,728,873</u>	<u>190,364,393</u>	<u>14,364,480</u>	8%
Refund of Member Contributions	4,408,764	2,875,887	1,532,877	53%
Administrative Expense	7,292,511	6,979,335	313,176	4%
Other Expense	-	29,834	(29,834)	-100%
<b>Total Deductions</b>	<b><u>216,430,148</u></b>	<b><u>200,249,449</u></b>	<b><u>16,180,699</u></b>	<b>8%</b>
<b>Net Income</b>	<b>341,717,450</b>	<b>497,313,493</b>	<b>(155,596,043)</b>	<b>-31%</b>
<b>NET POSITION RESTRICTED FOR PENSIONS:</b>				
Beginning of year	<u>4,038,701,990</u>	<u>3,541,388,497</u>	<u>497,313,493</u>	14%
<b>End of Year</b>	<b><u>4,380,419,440</u></b>	<b><u>4,038,701,990</u></b>	<b><u>341,717,450</u></b>	<b>8%</b>



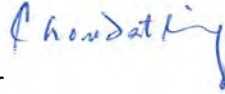
**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
Board of Retirement**

August 28, 2018

Agenda Item 7.3

**TO:** Board of Retirement

**FROM:** Tat-Ling Chow, Finance Officer



Lilibeth Dames, Investment Analyst



Tariq Ali, Chief Technology Officer



**SUBJECT:** Preliminary Report on Budget-to-Actual for the Fiscal Year Ended June 30, 2018

**Recommendation**

Accept the Preliminary Report on Budget-to-Actual for the fiscal year ended June 30, 2018.

**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). The administrative budget 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. (Government Code §31596.1).

**Discussion**

The annual actual versus budget comparison indicates that SamCERA's actual spending during fiscal year 2017-18 matched closely with its budget.

**Administrative Budget.** About 88% of the administrative budget (or \$6 million) was used during the fiscal year. This is a good indicator that expenses were properly managed and under control. The following table summarizes all administrative expenses with explanations for why the actual results of certain items significantly differ from the projected outcomes.

*Salaries and Benefits* – Total expenses were \$4.6 million, which was closely in line with expectations. A minor surplus was left due to the timing of filling the Communication Specialist and Executive Secretary positions.

	<u>Budget</u> <u>FY 2017-18</u>	<u>Actual</u> <u>FY 2017-18</u>	<u>% of Budget</u> <u>Used</u>	<u>Under (Above)</u> <u>Budget</u>	<u>% of Budget</u> <u>Remaining</u>
<b>Salaries and Benefits</b>					
Salaries	\$ 3,393,192	\$ 3,040,874	90%	\$ 352,318	10%
Benefits	1,660,579	1,594,350	96%	66,229	4%
<b>Total Salaries and Benefits</b>	<b>5,053,771</b>	<b>4,635,224</b>	<b>92%</b>	<b>418,547</b>	<b>8%</b>
<b>Services and Supplies</b>					
Board Expenses	10,000	6,500	65%	3,500	35%
Insurance	80,000	57,631	72%	22,369	28%
Medical record and hearing service	75,000	12,340	16%	62,660	84%
Member Education	61,000	48,929	80%	12,071	20%
Education and Conference	119,880	95,105	79%	24,775	21%
Transportation and Lodging	138,705	53,612	39%	85,093	61%
Property and Equipment	36,000	15,353	43%	20,647	57%
General Office Supplies	45,000	20,583	46%	24,417	54%
Postage and Printing	40,000	21,118	53%	18,882	47%
Leased Facilities	525,000	476,638	91%	48,362	9%
County Services	384,821	327,333	85%	57,488	15%
Audit Services	52,500	46,814	89%	5,686	11%
Other Administration	15,000	31,322	209%	(16,322)	-109%
<b>Total Services and Supplies</b>	<b>1,582,906</b>	<b>1,213,278</b>	<b>77%</b>	<b>369,628</b>	<b>23%</b>
<b>Total</b>	<b>\$ 6,636,677</b>	<b>\$ 5,848,502</b>	<b>88%</b>	<b>\$ 788,175</b>	<b>12%</b>

- Insurance expenses were modestly lower than projected. SamCERA engaged a new insurance provider for the required fiduciary insurance. The annual premium paid to the new insurance provider was less expensive than the former provider.
- Medical record and hearing service expenses were significantly lower than anticipated. Among all the members applying for disability retirement, only two members required an independent medical evaluation per SamCERA’s medical advisor’s recommendation. In addition, only a handful of members pursued a formal hearing for their disability cases.
- “Education and Conference” and “Transportation and Lodging” expenses were considerably lower than anticipated. Board members did not attend certain conferences as initially expected, which reduced spending on conference and related travel expenses.
- Property and Equipment expenses were substantially lower than expected. This budget item included an estimate to cover unforeseen needs for office equipment. The amount set aside for this purpose was not fully depleted.
- General office supplies expenses were lower than anticipated as the demand for office supplies was far less than anticipated.
- Postage and Printing expenses continued to shrink. The decline was due to SamCERA’s persistent efforts to communicate with its members and business partners electronically, whenever possible. In addition, most of the printing and mailing jobs were performed in-house rather than relying on outside service providers as a measure to keep operating costs down.

- Other Administration expenses were remarkably higher than expected. SamCERA hired a consulting company to host a strategic planning workshop with the Board of Retirement. The objective was to ensure well-crafted strategies are set to continually help SamCERA achieve ongoing success in the years to come. The consulting services were authorized after the budget was approved last fiscal year and thus, not included in the budget.

**Technology Expenses.** About 37% of the budgeted expenses were used during the fiscal year. Below is a summary of all technology expenses along with explanations for the significant variances.

	<u>Budget</u> <u>FY 2017-18</u>	<u>Actual</u> <u>FY 2017-18</u>	<u>% of Budget</u> <u>Used</u>	<u>Under</u> <u>Budget</u>	<u>% of Budget</u> <u>Remaining</u>
Computer Equipment and Software	\$ 150,000	\$ 25,060	17%	\$ 124,940	83%
Software License Maintenance - IT Infrastructure	430,340	344,887	80%	85,453	20%
Electronic Content Management	500,000	-	0%	500,000	100%
Server - IT Infrastructure	200,000	20,580	10%	179,420	90%
Contract IT Services - IT Infrastructure	203,000	221,840	109%	(18,840)	-9%
County's ISD Support	150,000	-	0%	150,000	100%
Technology Research and Development	34,000	7,287	21%	26,713	79%
<b>Total</b>	<b><u>\$ 1,667,340</u></b>	<b><u>\$ 619,654</u></b>	<b>37%</b>	<b><u>\$ 1,047,686</u></b>	<b>63%</b>

<sup>(1)</sup> Depreciation expense is a noncash expense and therefore is not included in the adopted budget. It is reported on the income statement of the accounting period.

- “Computer Equipment and Software”, “Server – IT Infrastructure”, “ISD Support”, and “Technology Research and Development” outlays were substantially lower than budgeted. The amounts budgeted in these areas were mostly earmarked for unexpected expenses. Throughout the year, the need for unplanned purchases or services was sparse.
- Software License Maintenance expenses were below the amount budgeted. Due to limited resources in the IT team, the Virtual Private Network (VPN) project, which allows remote users to securely access enterprise applications and other resources, was deferred.
- “Electronic Content Management” project was deferred to the next fiscal year. Among numerous IT projects, priorities were given to time-pressing activities that were critical to the business operation.
- Contract IT Services expenses exceeded the amount budgeted. SamCERA encountered an increase in contracted services at year-end as the actual technical support from Vitech (vendor of the Pension Administration System) turned out higher than originally estimated.

**Professional Services Expenses.** For the year ended June 30, 2018, the actual professional service expenses totaled \$25 million, or 52.3 basis points (or one hundredth of one percent) of the total fund. Overall expenses were closely in line with projection. Below is a summary of professional services expenses incurred during the fiscal year.

<b>Investment Management &amp; Other Professional Services</b>				
<b>Service</b>	<b>Actual Fee (bps)</b>	<b>Projected Fee FY 17-18</b>	<b>Actual Fee FY 17-18</b>	<b>% of Projected Fee Remaining</b>
Investment Management	50.1	\$ 23,815,317	\$21,793,990	8%
Other Professional Services	2.2	1,070,000	954,323	11%
<b>TOTAL</b>	<b>52.3</b>	<b>\$ 24,885,317</b>	<b>\$22,748,313</b>	<b>9%</b>

Investment management fees are driven by contractual agreements and based on assets under management, the amount of capital committed, and/or investment performance.

<b>Investment Management Services</b>				
<b>Investment</b>	<b>Actual Fee (bps)</b>	<b>Projected Fee FY 17-18</b>	<b>Actual Fee FY 17-18</b>	<b>% of Projected Fee Remaining</b>
Total Public Equity	54.3	\$ 5,261,036	\$ 4,842,760	8%
Total Fixed Income	83.1	3,224,190	3,953,549	-23%
Total Risk Parity	74.2	1,043,286	1,154,016	-11%
Total Alternative Assets	290.3	10,816,617	7,370,195	32%
Total Inflation Hedge	114.5	3,285,188	4,358,679	-33%
Total Cash Overlay	N/A	185,000	114,791	38%
<b>TOTAL</b>	<b>50.1</b>	<b>\$ 23,815,317</b>	<b>\$21,793,990</b>	<b>8%</b>

Key variances include the following:

- The management fees for “Fixed Income” and “Inflation Hedge” exceeded projection, due primarily to the implementation of new asset allocation policy to reduce reliance on U.S. equities and increase investment in inflation hedge and other diversifying assets. The objective of this new target policy is to produce the most efficient risk-adjusted return as possible.
- The management fee for “Risk Parity” was slightly above budget due to underestimation of projected assets under management during the fiscal year.
- The management fees for “Alternative Assets” and “Cash Overlay” were considerably below budget due to overestimation of projected assets under management during the fiscal year.

Other professional service charges are primarily based on contractual agreements. Actuarial consulting and audit fees were modestly lower than expected due to overestimation of service fees.

<b>Other Professional Services</b>					
<b>Contractor</b>	<b>Service</b>	<b>Actual Fee (bps)</b>	<b>Projected Fee FY 17-18</b>	<b>Actual Fee FY 17-18</b>	<b>% of Projected Fee Remaining</b>
Milliman Inc.	Actuarial Consulting	0.5	\$ 125,000	\$ 100,996	19%
Segal Consulting	Actuarial Audit	0.3	95,000	60,000	37%
Verus Investments	Investment Consulting	2.2	500,000	468,952	6%
Northern Trust	Custodian	1.5	350,000	324,375	7%
	<b>TOTAL</b>	<b>2.2</b>	<b>\$ 1,070,000</b>	<b>\$ 954,323</b>	<b>11%</b>

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

August 28, 2018

Agenda Item 7.4

**TO:** Board of Retirement

**FROM:** Scott Hood, Chief Executive Officer



**SUBJECT:** Procedure for Felony Forfeitures

**Recommendation**

Adopt a resolution approving "Board of Retirement Procedure for Felony Forfeitures."

**Background**

Under the California Public Employees' Pension Reform Act of 2013 (PEPRA), members who have been convicted after January 1, 2013 of a felony, as described below, must forfeit certain accrued rights and benefits in the public retirement system that they are a member of at the time the felony is committed retroactive to the date of the first commission the crime and shall not accrue further benefits. (Govt. Code sections 7522.72 and 7522.74.) In general, these statutes require the forfeiture after the conviction any felony crime (state or federal) for conduct:

- Arising out of or in the performance of his or her official duties, or
- In pursuit of the office or appointment, or
- In connection with obtaining salary, disability retirement, service retirement, or other benefits.

Elected public officers may be subject to a felony forfeiture based on different conduct. The employer is required to notify SamCERA within 90 days of an employee's conviction.

**Discussion**

The proposed procedure reflects the way staff has handled felony forfeiture matters. This process provides the member with notice, a right to be heard and right to appeal staff level decisions prior to any forfeiture action. Input from the member and employer can be given as to whether there should be a forfeiture, and if so, the amount of contributions and benefits effected by the forfeiture. Several steps allow this continuing input, and includes, if timely requested, the matter being brought to the Board and the Superior Court.

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

**Attachment**

Resolution approving "Board of Retirement Procedure for Felony Forfeitures."

# SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

## BOARD OF RETIREMENT PROCEDURE FOR FELONY FORFEITURES

### I. PURPOSE

Under the California Public Employees' Pension Reform Act of 2013 (PEPRA), members (also referred to as employees herein) who have been convicted on or after January 1, 2013, by a state or federal trial court of any felony under the law for conduct arising out of or in the performance of his or her official duties, must forfeit all accrued rights and benefits in any public retirement system in which they are a member at the time the felony is committed, retroactive to the first commission date of the crime and shall not accrue further benefits in that public retirement system, effective on the date of the conviction. (Govt. Code sections 7522.72 and 7522.74.) These statutes require the forfeiture after the conviction any felony crime for conduct:

- Arising out of or in the performance of his or her official duties, or
- In pursuit of the office or appointment, or
- In connection with obtaining salary, disability retirement, service retirement, or other benefits.
- Elected public officers convicted of certain felonies may be subject to a felony forfeiture based on different conduct.

The employee and the prosecuting agency are required by law to notify the employer within 60 days of the felony conviction. The employer is required by law to notify SamCERA within 90 days of an employee's conviction.

### II. FELONY FORFEITURE PROCESS

#### A. Notifying SamCERA of Felony Conviction and Providing Information.

The employer is required by law to notify SamCERA within 90 days of an employee's conviction. (Govt. Code sections 7522.72(f) and 7522.74(f).) Upon notifying SamCERA of the felony conviction, the employer will need to provide the following information, with a copy sent to the member:

1. Name of Member and Social Security number and/or employee ID.
2. Date of conviction which is the date that the member pleads guilty, or when the judge (or jury) decides the case.
3. Date of the earliest of the commission of the felony as reflected in the court proceeding.
4. Name of the court(s) in which the case was heard.

## **SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

5. Name and contact information for the prosecuting attorney.
6. Description of the felony charges for which the member was convicted.
7. Copy of court documents related to member's conviction/guilty plea.
8. Information relating to whether the felony offense for which the conviction was entered was committed during the conduct or performance of the member's job duties.

### **B. Review of Information.**

Staff will review the charges and determine what additional information is needed from the employer, the member and or the prosecuting agency to make the required determinations. Staff is not limited to the criminal record in gathering the information it believes is appropriate. Staff may request the Board to exercise its subpoena power under Govt. Code section 31535.

### **C. Notice of Initial Determination.**

After staff's initial review, staff will send a Notice of Initial Determination to the member and the employer as to the applicability of the felony forfeiture law to the facts. The Notice will include:

1. A copy of this Procedure.
2. A statement on applicability of the felony forfeiture law and, if applicable, a statement of the impact of the forfeiture on the member's benefits and the applicable proposed actions as set forth in below:
3. For those members who are retired:
  - (a) The Notice will state that the amount of member contributions to be refunded to the member without interest. If there has been an overpayment, the contribution refund, without interest, will be an offset to the overpayment and the refund amount will only be those the contributions exceed the amount of the overpayment (see Govt. Code section 7522.72(d)(1).) For purposes of this Procedure, "overpayment" includes compounded interest on the principal amount of any such overpayment at SamCERA's actuarial assumed rate(s) of interest in effect during the forfeiture period.
  - (b) Staff will review the member's account to determine the member's service credits and final average salary ("FAS") as if the



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member deferred as of the date of the first commission of the subject felony. Staff will then determine whether the member had sufficient service credit to retire as of the date of first commission of the subject felony.

- (i) If the member did not have sufficient service credit to retire as of the date of first commission of the subject felony, the Notice will state that the retirement will be rescinded, and the member placed into a deferred status until the member has sufficient eligible service to qualify for retirement.
- (ii) If the member did have sufficient eligible service credit to retire as of the date of first commission of the felony, the Notice will state the recalculated retirement allowance reflecting the changes to service credits, age factor and final average salary.

4. For those members who are active or deferred:

- (a) Staff will determine the amount of contributions paid, interest accrued on said contributions and service credit earned from the date of first commission of the subject felony to the date of conviction.
- (b) The Notice will list the amount of service credit and funds to be removed from the member's account and the amount of interest on those contributions to be forfeited.
- (c) The Notice will state that for non-forfeited funds remaining in the account, interest will continue to accrue.
- (d) The Notice will list the date that the member will be deemed to be a deferred member for all purposes, including but not limited to retirement eligibility. This date will be the date of first commission of the subject felony.

5. The Notice of Initial Determination shall list the deadline to respond which shall be no less than three weeks from the date of the Notice.

### **D. Response to Initial Determination**

Prior to the deadline stated in the Notice of the Initial Determination, both the member and the employer may provide additional input regarding the applicability to the felony

## **SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

forfeiture provisions and/or the impact of the forfeiture as described in the Notice. Such additional information from the member or employer shall be shared by SamCERA with the employer or member, as applicable. After the member and or employer have submitted any additional information or comments, staff's initial determination may be amended or not. Staff will notify the member and the employer if the Initial Determination will be amended or not. Any amended Initial Determination will be sent to the employee and employer for information only. The Initial Determination and all supporting documents will be given to the Chief Executive Officer for review.

### **E. Chief Executive Officer Determination**

After the review of the materials, the Chief Executive Officer or the Chief Executive Officer's designee, will send a written decision to the member and the employer that will, among other items, state his or her determination on the following:

1. Whether or not the felony conviction arose out of or in the performance of official duties, or in pursuit of the office or appointment, or in connection with obtaining salary, disability retirement, service retirement, or other benefits, or was otherwise subject to forfeiture. If the determination is that the member's account is subject to forfeiture, the Notice will state:
2. The first date of commission of the felony and date of conviction.
3. The amount of service credit, contributions and interest to be forfeited by the active, retired or deferred member.
4. For a retired member, the amount of any overpayments, the monthly adjustment going forward and the manner and time in which SamCERA will recover any overpaid benefits due from the member and the effective date of the changes.
5. Any additional proposed actions to be taken as set forth in Section C (3) and (4) above.
6. Ability to challenge the Chief Executive Officer's determination by bringing the matter to the Board of Retirement and the deadline to submit that written challenge.

### **F. Challenging the Chief Executive Officer's Determination**

The member may challenge the Chief Executive Officer's decision by submitting a written challenge no later than 30 days from the date of the Chief Executive Officer's Notice of Determination.

## **SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

1. If the Chief Executive Officer's decision is not timely challenged, it will be deemed final and binding.
2. A timely challenge will be heard by the Board of Retirement. Notice of the date and time of the hearing by the Board of Retirement will be provided to the member along with any instructions regarding the submission of documents and other evidence as necessary.
3. The matter will be placed on the Board of Retirement's regular public agenda for its review, findings and decision. In making its determination, the Board may appoint a hearing officer to make findings and recommendations in accordance with Govt. Code section 31533.

### **G. Appeal of the Action of the Board.**

If the member is dissatisfied with the Board's action, the member may obtain judicial review by filing a petition for a writ of mandate in accordance with the Code of Civil Procedure within 90 days of the date of the written notice of the Board's action. If a petition for writ of mandate is not timely filed, the Board's action shall be deemed final and binding.

### **III. ACTIONS TAKEN AFTER A DECISION TO FORFEIT IS FINAL**

SamCERA will notify the Court and District Attorney at least three business days prior to the release of the forfeited funds to the member. (Govt. Code sections 7522.72(d)(2) and 7522.74(d)(2).)

The corresponding employer contributions will stay in the employer's advance reserve account and will be taken into consideration at the end of the fiscal year as part of the reconciliation process used for employer contributions.

If there is a reversal of the conviction by an appellate court decision, the member has the option to redeposit the contributions from the forfeited period. (Govt. Code sections 7522.72(h) and 7522.74(h).)

**SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

**RESOLUTION 2018-\_\_**

**RESOLUTION APPROVING BOARD OF RETIREMENT  
PROCEDURE FOR FELONY FORFEITURES**

**WHEREAS**, under the California Public Employees' Pension Reform Act of 2013 (PEPRA), members of SamCERA who have been convicted after January 1, 2013 of a felony, as described Govt. Code sections 7522.72 and 7522.74, must forfeit certain accrued rights and benefits in SamCERA if they are a member at the time the felony is committed retroactive to the first commission date of the crime and shall not accrue further benefits; and

**WHEREAS**, this Board desires to adopt a procedure that provides the member with notice, a right to be heard and right to appeal staff level decisions prior to any forfeiture action; and

**WHEREAS**, this Board and read the attached "Board of Retirement Procedure for Felony Forfeitures" and desires to adopt such procedure;

**THEREFORE BE IT RESOLVED**, that the Board hereby adopts the attached "Board of Retirement Procedure for Felony Forfeitures."

\* \* \* \* \*

*Regularly passed and adopted, by the San Mateo County Employees' Retirement Association, Board of Retirement, on August 28, 2018.*

*Ayes, Trustees:*

*Noes, Trustees:*

*Absent, Trustees:*

*Abstain, Trustees:*

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*Board Secretary  
SamCERA*