



Notice of Public Meeting

The Board of Retirement

of the San Mateo County Employees' Retirement Association will meet on
Tuesday, May 22, 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**
 - 1.1 Appointment by Chair of Ad Hoc Nominating Committee for Board Officers
- 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 April 24, 2018
- 4. Approval of the Consent Agenda***

4.1 Disability Retirements (1) <ul style="list-style-type: none">• Michael Quaid	4.5 Deferred Retirements
4.2 Survivor Death Benefits (1) <ul style="list-style-type: none">• William Dean	4.6 Member Account Refunds
4.3 Service Retirements	4.7 Member Account Rollovers
4.4 Continuances	4.8 Member Account Redeposits
	4.9 Acceptance of Trustees' Reports of Educational Activities
	4.10 Report on Prepayment of Employer Contributions
- 5. Benefit & Actuarial Services**
 - 5.1 Consideration of Agenda Items, if any, Removed from the Consent Agenda
 - 5.2 Approval of Actuarial Assumptions and Direction for Smoothing Methodology for the June 30, 2018 Actuarial Valuation
- 6. Investment Services**
 - 6.1 Report on Preliminary Monthly Portfolio Performance for the Period Ended April 30, 2018
 - 6.2 Report on Quarterly Investment Performance for the Period Ended March 31, 2018
 - 6.3 Report on Real Estate Annual Reviews
 - 6.4 Approval of Change to Private Equity and Private Real Asset Policy Benchmarks
 - 6.5 Approval of Updated Asset Allocation Policy Portfolio
 - 6.6 Report on Opportunity in MLP's and Approval of Process to Select MLP Manager
- 7. Board & Management Support**
 - 7.1 Approval of SamCERA Fiscal Year 2018-19 Budget
 - 7.2 Review of Draft Board Strategy
- 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

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

- C1 Consideration of Disability Items, if any, removed from the Consent Agenda
- 9. Report on Actions Taken in Closed Session**

Notice of Public Meeting

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10. Adjournment in Memory of the Following Deceased Members:

Hahn, Mark	March 9, 2018	Public Works
Gomez, Erma	April 1, 2018	Probation
Matson, Gloria	April 2, 2018	Tax Collector's Office
Gayle, Linford	April 4, 2018	Behavioral Health
Prasad, Angeline	April 5, 2018	Hospital
Li, Nancy	April 12, 2018	Sheriff
Fornes, Keven	April 14, 2018	Information Services
Gloria, Emilia	April 18, 2018	Medical Center
Belding, James	April 25, 2018	Sheriff
Saunders, Daniel	April 25, 2018	Assessor's
Gill, Eva	April 26, 2018	Health Services
Villaluna, Miguel	April 29, 2018	Controller's
Johnson, Frances	May 7, 2018	Social Service



Posted: May 17, 2018

Scott Hood, Chief Executive Officer

(* 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. *Free Parking is available in all lots in the vicinity of the building. A copy of the Board of Retirement's open session agenda packet is available for review at the SamCERA offices and on our website unless the writings are privileged or otherwise exempt from disclosure under the provisions of the California Public Records Act. Office hours are Monday through Thursday 7 a.m. – 6 p.m.*

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

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

May 22, 2018

Agenda Item 1.1

TO: Board of Retirement

FROM: Scott Hood, Chief Executive Officer



SUBJECT: Appointment by Chair of Ad Hoc Nominating Committee for Board Officers

Recommendation

Accept the Chair's report on the appointment of an Ad Hoc Committee to nominate Board officers for the 2018-2019 fiscal year to be presented for election at the July meeting.

Background

In general, at or around the May meeting, the Chair appoints an Ad Hoc Committee to nominate Board officers for the next fiscal year. The election of Board officers takes place at the first meeting in July. Article 1 of the *Regulations of the Board of Retirement* provides for the election of three Board officers: Chair, Vice Chair and Secretary, as follows:

1.1. Election of Chair: At the first regular meeting in July, the Board of Retirement shall elect one of its members chair for a term of one year or until his or her successor is duly elected and qualified. The Chair shall preside at all meetings of the Board, shall appoint all committees and shall perform all duties incidental to that office.

1.2. Election of Vice Chair: At the first regular meeting in July, the Board of Retirement shall elect one of its members vice chair for a term of one year or until his or her successor is duly elected and qualified. In the Chair's absence or inability to act, the Vice Chair shall take the place and perform the duties of that office.

1.3. Election of Secretary: At the first regular meeting in July, the Board of Retirement shall elect one of its members secretary for a term of one year or until his or her successor is duly elected and qualified. The Secretary shall attest to Resolutions and other such documents for the Board. In the Chair's and Vice Chair's absence or inability to act, the Secretary shall take the place and perform the duties of the Chair.

Board officers traditionally serve one-year terms. Also, by tradition, the Board attempts to alternate between appointed and elected trustees in each officer position. In general, the officers tend to move up "through the steps" to eventually become Chair. Exceptions have occurred when a trustee does not serve a full term or does not continue on the Board for an additional term. (See the table below.)

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

SamCERA Board Officer History

	<u>Chair</u>	<u>Vice-Chair</u>	<u>Secretary</u>
2001-02	Bill Cottle	Tom Bryan	Bette Stuart
2002-03	Tom Bryan	Donna Colson	Alma Salas
2003-04	Donna Colson	Alma Salas	Bette Stuart
2004-05	Alma Salas	Ken Lewis	Tom Bryan
2005-06	Ken Lewis	Tom Bryan	Emily Tashman
2006-07	Tom Bryan	Emily Tashman	Bette Stuart
2007-08	Tom Bryan	Emily Tashman	Jim Hooley
2008-09	Emily Tashman	David Wozniak	Sandie Arnott
2009-10	Margaret Jadallah	Al David	Sandie Arnott
2010-11*	Al David	Sandie Arnott	Natalie Kwan Lloyd
2011-12	Al David	Sandie Arnott	Natalie Kwan Lloyd
2012-13	Sandie Arnott	Natalie Kwan Lloyd	Lauryn Agnew
2013-14	Natalie Kwan Lloyd	Lauryn Agnew	Paul Hackleman
2014-15	Lauryn Agnew	Paul Hackleman	Michal Settles
2015-16	Paul Hackleman	Michael Settles	Natalie Kwan Lloyd
2016-17	Paul Hackleman	Mark Battey	Shirley Tourel
2017-2018	Mark Battey	Shirley Tourel	David Spinello

*beginning October 2010

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
APRIL 24, 2018 – SPECIAL BOARD MEETING MINUTES

1804.1 **Call to Order, Roll Call and Miscellaneous Business**

Call to Order: Mr. Mark Battey, Chair, called the Special Meeting of the Board of Retirement to order at 8:32 a.m.

Roll Call:

Present: Sandie, Arnott, Mark Battey, Albert David, Paul Hackleman, Kurt Hoefer, Susan Lee (for David Spinello), Eric Tashman and Shirley Tourel.

Absent: Ben Bowler and David Spinello.

Alternates present: Susan Lee and Alma Salas.

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

Consultants and speakers: Margaret Jadallah and Jeff MacLean (Verus); Sonal Desai and Bill Deakyne (Franklin Templeton); and Tom Iannucci (Cortex Applied Research).

1804.2.1 **Oral Communications from the Board:**

None.

1804.2.2 **Oral Communications from the Public:**

Ms. Elizabeth LeNguyen, SamCERA Retirement Benefits Manager, introduced Raymund Concordia, SamCERA's newest Retirement Analyst, to the Board.

1804.2.3 **Retreat Presentations and Discussions:**

Retreat presentations were heard after agenda item 9.0.

1804.3.0 **Approval of Board Meeting Minutes:** Mr. Battey asked if there were any changes or corrections, or objections, to the meeting minutes from the Board meeting held on March 27, 2018.

Action: Mr. David moved to approve the minutes from the Regular Meeting on March 27, 2018. The motion was seconded by Ms. Lee and carried with a vote of 5-0, with trustees Battey, David, Hoefer, Lee, Tashman, all in favor; none opposed; and Ms. Arnott, Mr. Hackleman and Ms. Tourel abstained.

1804.4.0 **Approval of the Consent Agenda:** Mr. Battey asked if there were any items to be removed for discussion from the Consent Agenda. No items were removed.

Action: Mr. Hackleman moved to approve the Consent Agenda, and the motion was seconded by Ms. Arnott. The motion carried with a vote of 8-0, with trustees Arnott, Battey, David, Hackleman Hoefer, Lee, Tashman and Tourel, all in favor; none opposed.

1804.4.1 **Disability Retirements:** The Board found Honora Miller is (1) permanently incapacitated from the performance of her usual and customary duties as a Program Coordinator II, (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.

1804.4.2 **Survivor Death Benefits:** None.

1804.4.3 **Service Retirements:**

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

<u>Member Name</u>	<u>Effective Retirement Date</u>	<u>Department</u>
Aines, Cheryl	February 15, 2018	Retired G2, starting G3 pension
Boesch, David	January 31, 2018	Deferred County Manager's Office
Garcia, Wilhelmina	February 24, 2018	HOS - Acute Psychiatric
Gayle, Linford	February 12, 2018	Behavioral Health
Huguet, Walter	February 16, 2018	Behavioral Health
Iverson, Rita	February 21, 2018	Deferred from Medical Center
Kearnan, Jeffrey	February 24, 2018	Sheriff's
Lederer, Joseph	February 9, 2018	Aging & Adult Services
Nevarez, Araceli	February 1, 2018	Family Health Services
Ngantian, Eleanor	February 17, 2018	Human Services Agency
O'Brien, Daniel	February 3, 2018	Deferred from ISD
Peyrot, Sheila	February 24, 2018	Courts
Puccetti, Consuelo	February 28, 2018	Deferred from Social Services
Taylor, Marney	November 17, 2017	Public Works
Tippins, Rick	February 24, 2018	Sheriff's
Villanueva, Michael J.	February 21, 2018	Deferred from Probation
Wilmes, Mary	February 28, 2018	Library

1804.4.4 **Continuances:**

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

<u>Survivor's Name</u>	<u>Beneficiary of:</u>
Donegan, Charmion	Donegan, Michael
Glass, Michael	Glass, Sharon
Osburn, Bernadine	Bairfield, Barbara

1804.4.5 **Deferred Retirements:**

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

<u>Member Name</u>	<u>Retirement Plan Type</u>
Ashkinaziy, Elaine	G4, Vested
Hamilton, Nicole	G4, Vested
Meza, Justin M.	G4, Vested– Auto Defer - Code 31700
Travis, Adonis J.	G4, Vested– Auto Defer - Code 31700
Yee, Theresa A.	G4, Vested– Auto Defer - Code 31700

1804.4.6 **Member Account Refunds:**

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

<u>Member Name</u>	<u>Retirement Plan Type</u>
Bermudez, Maria	G7, Non-vested
Catambay, Milagros	G4, Vested
Cordero, Rachel Anne	G7, Non-vested
Dichoso, Jesse	G7, Non-vested
Figuroa-Zepeda, Bertha	G4, Vested
Lara, Monica	G7, Non-vested
McDonald, Tina	G4, Vested
Toschik, Joseph	G4, Vested

1804.4.7 **Member Account Rollovers:**

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

<u>Member Name</u>	<u>Retirement Plan Type</u>
Figuroa-Zepeda, Bertha	G4, Vested

1804.4.8 **Member Account Redeposit:** None.

1804.4.9 **Acceptance of Trustees' Reports of Educational Activities Through Outside Provider:**

The Board accepted the submitted report for the educational activities attended by trustee Lee.

1804.4.10 **Approval to Renew Fiduciary Liability Insurance Policy:**

The Board approved authorizing staff to work with the County's Risk Manager to renew SamCERA's fiduciary liability insurance coverage.

1804.4.11 **Approval of Resolution Authorizing the Change in Law Firms for Tax Counsel Services:**

The Board approved authorizing the SamCERA's CEO to terminate the agreement with Steptoe & Johnson LLP and execute an agreement with Reed Smith LLP for tax counsel services.

1804.5.1 **Consideration of Agenda Items, if any, removed from the Consent Agenda:** None.

1804.6.1 **Preliminary Monthly Portfolio Performance Report for the Period Ended March 31, 2018:**

Mr. Coultrip discussed the preliminary monthly performance report with the Board. He reported that SamCERA's net preliminary return for March 31, 2018 was -0.6%, while the preliminary trailing twelve-month return ending March 31, 2018 was 8.8% net. He also reported that the twelve-month net return is below SamCERA's Plan Benchmark return of 10.1%, but higher than SamCERA's Actuarial Assumed Earnings Rate of 6.75%. This item was informational and for discussion only, no action was taken.

1804.7.1 **Approval of Direction for Voting Delegate at SACRS Spring Conference Business Meeting:**

Mr. Hood discussed the upcoming SACRS Spring 2018 Conference. He noted the slate of officers recommended by the SACRS Nominating Committee and whether SACRS should sponsor proposed bill (SB1270).

Action: Mr. David moved to direct Ms. Arnott, voting delegate, to approve the slate of officers and oppose support of SB1270 and Mr. Hackleman second the motion. The motion carried with a vote of 8-0, with trustees Arnott, Battey, David, Hackleman, Hoefler, Lee, Tashman and Tourel in favor; none opposed.

1804.8.1 **Chief Executive Officer's Report:**

Mr. Hood addressed items in trustees' "Day Of" folder. He mentioned an article from the Daily Post, a flyer regarding Boards and Commissioners recognition event, and the upcoming SACRS' UC Berkeley Public Pension Investment Management Program and Wharton's Alternative Investment Strategies in San Francisco. In addition, Mr. Hood addressed some comments from the Strategic Planning survey regarding staff reviews of Form 700s and the timing of a retiree's first benefit payment. Mr. Hood mentioned agenda items for next month's Board meeting including the formation of the Ad Hoc Nominating Committee, a presentation from Nick Collier, Milliman, Inc. and next fiscal year's budget.

1804.8.2 **Assistant Executive Officer's Report:**

Ms. Smith informed the Board that all the bios and presentations for the day's retreat can be found in the SamCERA folder. She also provided an update on the SamCERA elections and informed those that attended Pension Bridge that she has the education form for them to complete. In addition, she notified the Board that Anne Trujillo has accepted the position of Retirement Executive Secretary position and Natasha Jeong accepted the Retirement Communication Specialist position. Furthermore, she notified

the Board that they will need to provide a \$25 check to SamCERA for their non-recourse fiduciary insurance.

1804.8.3 **Chief Investment Officer's Report:**

Mr. Coultrip reported his attendance at Tennenbaum Capital Partners' (TCP) Investor Day and informed the Board that on Thursday, May 3, BlackRock, D.E. Shaw and QMA will be at the office for their annual manager review. Lastly, he noted that at next month's meeting, a recommendation will be brought to the Board on changing the private equity and private real asset policy benchmark.

1804.8.4 **Chief Legal Counsel's Report:**

Ms. Carlson announced dates and times for Ethics training for those that missed the training at last month's Board meeting.

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

1804.9.0 **Report on Actions Taken in Closed Session:** There was no Closed Session.

The meeting was adjourned for a break at 8:58 a.m. and reconvened at 9:05 a.m.

1804.2.3 **Board/Staff Retreat Presentations:**

High level look at the Global Economy – Sonal Desai, PH.D., Senior Vice President, Portfolio Manager Director of Research Templeton Global Macro Franklin Advisers, Inc., discussed macro imbalances and opportunities pertaining to the pressure for rising US rates, European vulnerabilities, the opportunity in emerging markets and positioning for rising rates.

Mr. Tashman joined the meeting at 9:30 a.m.

The meeting was adjourned for a break at 9:55 a.m. and reconvened at 10:07 a.m.

Deep Dive – Mr. Coultrip and Ms. Jadallah presented SamCERA's Annual Assessment of Portfolio for calendar year 2017. They reviewed SamCERA's total portfolio absolute and relative performance, composite relative performance, total fund drawdown analysis, individual manager performance, risk dashboard, summary of rebalancing activities and total portfolio liquidity profile.

The meeting was adjourned for lunch at 11:35 a.m. and reconvened at 12:05 p.m.

Portfolio Risk and Discussion – Mr. Jeff MacLean, Verus' CEO, provided a Risk Management Education session to the Board. He reviewed SamCERA's portfolio, discussed risk and SamCERA's investment objectives and beliefs and risk parity.

The meeting was adjourned for a break at 1:20 p.m. and reconvened at 1:30 p.m.

Strategic Planning Workshop – Mr. Hood and Mr. Iannucci, Cortex Applied Research President, provided a review of strategic planning orientation overview and presented the results of the Board's strategic planning survey. They discussed a preliminary analysis of the information, current vs. alternative strategies, external and internal review, the next step processes and milestone dates.

1804.10.0 **Adjournment:** Mr. Battey adjourned the meeting at 2:55 p.m. in memory of the deceased members listed below:

Howard, Donald	March 3, 2018	Chope
Taylor, Norma	March 9, 2018	Chope
Rogg, Francine	March 12, 2018	Social Services
Kiliona, Robert	March 16, 2018	Parks
Goth, Theodore	March 17, 2018	Sheriff
Heinaman, Barbara	March 17, 2018	County Manager's Office
Hoffman, Nancy	March 17, 2018	Employment & Training
Brake, Karen	March 18, 2018	Superior Court
Starr, Barbara	March 18, 2018	Library
Armanino, Elaine	March 23, 2018	District Attorney's Office
Howard, Charles	March 23, 2018	Hospital
Kumetat, Harriet	March 25, 2018	Human Services Agency
Harper, Gerald	March 27, 2018	Probation
Seto, Anthony	March 27, 2018	Public Works
McDonald, Bernice	March 30, 2018	Controller's Office

Scott Hood
Chief Executive Officer

Gladys Smith
Assistant Executive Officer

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

May 22, 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

- a) The Board find that **Michael Quaid** is (1) permanently incapacitated from the performance of his usual and customary duties as a Program Counselor II, (2) find that his disability was not the result of an illness arising out of and in the course of his employment and (3) grant his application for a non-service-connected disability retirement.

4.2 Survivor Death Benefits

- a) The Board find that (1) **William Dean's** job as a Human Services Supervisor did not cause or contribute to his death and (2) deny the application for a service-connected death benefit and (3) grant a non-service-connected death benefit under Government Code Section 31781.1 (a) which provides:

(a) If a member of a retirement system established in a county subject to the provisions of Section 31676.1 would have been entitled to retirement in the event of a non-service-connected disability, but dies as the result of an injury or illness prior to retirement, the surviving spouse of the member shall have the right to elect, by written notice filed with the board, to receive and be paid in lieu of the death benefit provided in Sections 31780 and 31781, an "optional death allowance."

4.3 Service Retirements

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

Member Name	Effective Retirement Date	Department
Aguilar, Ofelia	March 31, 2018	DAO
Aison, Alexander	March 24, 2018	H.S.A. - ESS
Aison, Catherine	March 24, 2018	H.S.A. - SIU
Armijo, Ronda	March 30, 2018	Probation
Arteaga, Lorenzo	March 27, 2018	Deferred from H.S.A.
Atijera, Esmirna	March 31, 2018	Health Services

Azzopardi, Elaine	March 24, 2018	H.S.A.
Bean, Jerry	March 30, 2018	DPW
Berger, Gaye	March 31, 2018	H.S.A.
Bertolucci, Estelle	March 31, 2018	Recorder's
Bodamer, Shelley	March 10, 2018	Deferred from Community Services
Boeddiker, Edward	March 30, 2018	DPW
Bovell, Marcel	March 24, 2018	Sheriff's
Branch, Karen	March 24, 2018	H.S.A.
Cayago, Arsenio	April 1, 2018	DPW/Hosp
Chang, Cynthia	March 31, 2018	County Counsel
Chapman, Willie	March 31, 2018	ISD
Clements, Eleanor	March 30, 2018	H.S.A. - Finance
Coggins, Corey	March 31, 2018	DPW
Cohen, Tracey	March 17, 2018	HOS - Psychiatric Emergency Svcs
Costa, Joseph	March 30, 2018	DPW
Daniels, Henry	April 1, 2018	Probation
DeFelice, John	March 31, 2018	Probation
DeLuca, Donald	March 30, 2018	DPW
Diaz, Maria C.	October 17, 2017	Deferred from CPS
Dworkin, Diane	March 31, 2018	Health System
English, Starlette	March 6, 2018	Courts
Evans, Elizabeth A.	March 31, 2018	HOS - Nursing
Falls, Lisabeth	March 3, 2018	H.S.A.
Felise, Lynn	April 1, 2018	Courts
Fernando, Mario	March 31, 2018	Probation
Fine, Robert	March 31, 2018	Revenue Services
Fisk, Susan	March 31, 2018	Aging & Adult Services
Flores, Michele	March 31, 2018	Sheriff's
Foong, Joyce	March 31, 2018	Probation

Gerke, Carol	March 16, 2018	Deferred from BHRS
Gilson, Christine	March 31, 2018	H.S.A.
Golding, Ana	March 31, 2018	DPW
Gorman, Helen	March 20, 2018	HOS - Psychiatric Emergency Svcs
Gross, Gloria	March 10, 2018	BHRS
Hart, Luz	March 31, 2018	HOS - Long Term Care
Hoskins, Leonard	March 10, 2018	Sheriff's
Howard, Mark	March 31, 2018	Sheriff's
Hurst, Carol	March 31, 2018	Sheriff's
Hurst, Patricia	March 15, 2018	Deferred from Aging & Adult Serv
Jani, Amna	March 31, 2018	HOS - Medical Clinic
Judilla, Reynalinda	March 31, 2018	County Manager
Justice, Gary	March 24, 2018	Sheriff's
Justice, Jerry	March 24, 2018	Sheriff's
Kanhai, Shimon	March 23, 2018	Probation
Klyver, John	March 31, 2018	Health - BHRS
Kong, Ken	March 31, 2018	H.S.A.
Kramer, Kimberly	March 6, 2018	Assessor's
Kumar, Veena	March 31, 2018	H.S.A.
Ladcani, Michelle	March 31, 2018	ISD
Lai, Tracy	March 31, 2018	Aging & Adult Services
Lau, Yin	April 1, 2018	Assessor's
Leipzig, Gregory	March 31, 2018	Deferred from Mosquito
Lennon, D. Edward	March 31, 2018	Mental Health
Marelich, Mark	March 31, 2018	DPW
Mariucci, Anthony	March 30, 2018	Sheriff's
Matsuura, Wesley	March 28, 2018	Sheriff's
McKague, Eddie	March 30, 2018	Sheriff's
McKowan, Melissa	February 26, 2018	D.A.O.

McMacken, Ines	March 13, 2018	H.S.A.
Molnar, Theresa	April 1, 2018	Probation
Moore, Jermaine	March 31, 2018	Probation
Morales, Teresa	March 31, 2018	Treasurer's
Moran, Patrick	March 31, 2018	Sheriff's
Morino, Jeffrey	March 24, 2018	Probation
Nader, Gerald	March 30, 2018	Sheriff's
Naidu, Tamara	March 31, 2018	HOS - Long Term Care
Nguyen, Kim T	March 31, 2018	H.S.A.
Niapas, Deborah	March 23, 2018	Probation
Nicholson, Darlene	March 31, 2018	H.S.A. - CFS
Olsson, Nancy	March 29, 2018	Deferred from Medical Center
Page, Janice	March 31, 2018	Sheriff's
Parker, Gloria	March 31, 2018	HOS - Outpatient Services
Patel, Pravin	March 31, 2018	H.S.A. - CFS
Pendleton, Donald	March 10, 2018	Agriculture
Perras, Todd	March 31, 2018	Probation
Presnall, Gailen	April 1, 2017	Behavioral Health
Reis, Clifford	March 24, 2018	Aging & Adult Services
Reyes, Armando	March 31, 2018	Courts
Riley, Harold	March 5, 2018	QDRO
Rivera, Angela	March 31, 2018	Tax Collector
Roberts, Romell V	March 26, 2018	Sheriff's
Rodriguez, Jesse Sy	March 31, 2018	DPW
Roldan, Nenita	March 31, 2018	Aging & Adult Services
Rupe, Vicki	March 23, 2018	Child Support Services
Saco, James	March 31, 2018	County Manager's Office
Sanchez, Frances	March 31, 2018	Family Health Services
Shankar, Mohini	March 30, 2018	H.S.A. - C&FS
Sibucan, Wilma	April 1, 2018	HOS - ICU
Silver, Lawrence	March 24, 2018	Probation

Skucas, Deborah	March 31, 2018	Correctional Health
Sol, Miguel	March 31, 2018	Assessor's
Szto, Alicia	March 31, 2018	Coroner's
Thames, Beverly	March 31, 2018	ISD
Toni, Kelli	March 17, 2018	Deferred from Sheriff's
Turk, David	April 1, 2018	Deferred from DAO
Van Steen, Leon	March 31, 2018	ISD
Varner, Sandra	March 31, 2018	Public Safety Commission
Vera, Maria	March 30, 2018	HOS- Environmental Services
Waran, Subidra	March 31, 2018	County Counsel
Warren, Carol	March 31, 2018	Courts
Wilson-Henry, Regina	March 31, 2018	Probation
Wright, Anita	March 24, 2018	H.S.A.
Young, Daniel	March 31, 2018	Sheriff's

4.4 Continuances

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

Survivor's Name	Beneficiary of:
Brake, Michael	Brake, Karen
Franz, Michelle	Heinaman, Barbara
Goth, Eivor	Goth, Theodore
Harper, Laurie	Harper, Gerald
Kraus, Caroline	Cutts, Gordon
Lee, Htoy	Lee, Pah
Roney-Carpenter, Joanne	Finney, Charles (Chuck)

4.5 Deferred Retirements

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

Member Name	Retirement Plan Type
Espana Garces, Mariana	G5, Vested
Kim Amanda	G4, Vested
Pasos Addy K.	G4, Vested- Reciprocity
Vaquerano Rafael E.	G4, Vested
Zabarte Joie	G7, Non-vested - Reciprocity

4.6 Member Account Refunds

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

Member Name	Retirement Plan Type
Hampel, John	G4, Non-vested
Lopez, Stephanie	G7, Non-vested
Mays, Sonia	G7, Non-vested
Mukherjee, Arpita	G7, Non-vested
Rodgers, Shane	G7, Non-vested
Wubneh, Askale	G7, Non-vested

4.7 Member Account Rollovers

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

Member Name	Retirement Plan Type
Chaitow, Michelle	G7, Non-vested
Payan, Melissa	P7, Non-vested

4.8 Member Account Redeposits

None.

4.9 Acceptance of Trustees' Reports of Educational Activities

None.


SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

May 22, 2018

Agenda Item 4.10

TO: Board of Retirement

FROM: Tat-Ling Chow, Finance Officer



SUBJECT: Report on County's Prepayment of Estimated Employer Contributions for Fiscal Year 2018-19

Recommendation

Accept the report on the County's prepayment of estimated employer contributions totaling \$196,465,154 for fiscal year 2018-19.

Background

Milliman Inc. determined the County's contribution rates for fiscal year 2018-19 in its 2017 valuation. These contribution rates were subsequently approved by the Board of Retirement and the Board of Supervisors.

Discussion

Based on the adopted contribution rates, staff estimates that the County's prepayment for fiscal year 2018-19 is approximately \$196 million. The County plans to pay this amount through two semi-annual installments which will be placed into the County Advance Contribution Account in July 2018 and January 2019, respectively.

During fiscal year 2018-19, the County Controller will certify the employee biweekly payroll and the County's bi-weekly required contributions. After validation, staff will transfer the County's statutorily required contribution from the County Advance Contribution Account to the Employer Contribution Account. The remaining balance on the County Advance Contribution Account at the end of each biweekly pay period will receive interest at an assumed interest rate of 6.75% per annum.

If the overall prepayment received is insufficient to satisfy the annual required contributions, the County will pay the amount still owing. If the overall prepayment exceeds the annual required contributions, the excess contributions will be used either as a credit towards the prepayment of the following year and or placed in the County Supplementary Contribution Account as directed by the County.

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

May 22, 2018

Agenda Item 5.2

TO: Board of Retirement

FROM: Scott Hood, Chief Executive Officer



SUBJECT: Economic Assumptions and Smoothing Methodology to be used in the June 30, 2018 Actuarial Valuation

Recommendation

For Milliman Inc.'s June 30, 2018 actuarial valuation:

Approve maintaining the following current economic actuarial assumptions: investment return at 6.75%, inflation at 2.50% and general wage and payroll growth at 3.00%, COLA assumptions of 2.5% for plan 1, 2.4% for plan 2 and 1.9% for plans 4, 5, 6 and 7.

Direct Milliman Inc. to use a modified smoothing methodology that includes a procedure to offset future gains and losses in the current period to further moderate changes in the employer's contribution rates.

Discussion

SamCERA's current economic assumptions were developed, as a result of the 2017 Investigation of Experience study and were adopted by the Board for use in the June 30, 2017 valuation. These assumptions are: investment return at 6.75%, inflation at 2.50%, general wage and payroll growth at 3.00% and COLA assumptions of 2.5% for plan 1, 2.4% for plan 2 and 1.9% for plans 4, 5, 6 and 7. Nick Collier, lead actuary, from Milliman Inc., will be present to discuss the continued use of these economic actuarial assumptions in the June 30, 2018 actuarial valuation.

Our current asset-smoothing method used to calculate the Unfunded Actuarial Assumed Liability (UAAL) and resulting employer contributions, smooths the annual market value returns over a five-year period (10 six-month periods). This method reduces the volatility of employer contributions rates by spreading the annual losses and gains over a longer time period. Nick Collier will discuss a proposed change to the smoothing methodology that would further moderate changes in the employer's contribution rates.

Attachment

Milliman Inc.'s Memo on 2018 Assumptions for Annual Valuation



1301 Fifth Avenue
Suite 3800
Seattle, WA 98101-2605
USA

Tel +1 206 624 7940
Fax +1 206 623 3485

milliman.com

VIA EMAIL ONLY

May 11, 2018

Board of Retirement
San Mateo County Employees' Retirement Association
100 Marine Parkway, Suite 125
Redwood Shores, CA 94065-5208

Re: Assumptions and Methods to be used for June 30, 2018 Actuarial Valuation

Dear Members of the Board:

We will begin work shortly on the June 30, 2018 actuarial valuation for SamCERA. The first step in that process is to have the Board approve the assumptions and methods to be used in the valuation. This letter provides formal documentation of our recommendations. We will be at the May meeting to answer any questions.

Recommendation - Assumptions

Our recommendation is to use the same assumptions as were used for the June 30, 2017 actuarial valuation for the reasons described below; however, we believe additional discussion of the investment return assumption is merited, as Verus' 10-year expected return is somewhat less than the long-term expected return used in the valuation.

- **Demographic assumptions:** Demographic assumptions are used to predict future member behavior and consist of rates of retirement, withdrawal, disability, mortality, and merit salary increases, among others. There have been no material changes in the past year to SamCERA benefits. Therefore, we believe the demographic assumptions used in the June 30, 2017 actuarial valuation remain the best estimate of future experience. These assumptions were recommended based on a three-year study of experience for the period ending April 30, 2017. The next experience study will be performed in 2020.
- **Economic assumptions:** Economic assumptions consist of investment return, price inflation, general wage increases, payroll growth, and COLA increase. SamCERA's investment consultant is forecasting an average return for the next 10 years of approximately 6.0%, which is lower than the current assumption. Expectations for the longer term are somewhat higher. For example, Horizon Actuarial Services does an annual survey of investment consultants which shows long-term expectations are approximately 1% higher. We consider 6.75% reasonable as a long-term investment return assumption, and therefore we are not recommending a change at this time; however, it should be noted that a lower return assumption would also be reasonable.

This work product was prepared solely for SamCERA for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

Recommendation - Methods

Our recommendation is to use the same methods as were used for the June 30, 2017 actuarial valuation, with the following exception:

- **Asset smoothing method:** Under the proposed method, the actuarial asset gains and losses would still be recognized over five years, separated into 10 six-month periods. The difference is there would be accelerated recognition in years where a gain occurs and there is an outstanding deferred loss (and vice-versa). Specifically, under the proposed method the actuarial value of assets would be calculated as follows. Note that the second paragraph reflects the change from the current method.

The assets are valued using a modified five-year smoothed method based on the difference between the expected market value and the actual market value of the assets as of the end of each six-month period (12/31 and 6/30). The expected market value is the prior period's market value increased with the net increase in the cash flow of funds, all increased with interest during the period at the expected investment return rate assumption. The actuarial value of assets are further limited such that they are not greater than 120%, nor less than 80%, of the market value of assets.

In cases where the sum of the prior deferred actuarial gains and losses is an actuarial gain, any current period actuarial loss is offset against the oldest actuarial gain. If any of the current period actuarial loss remains after the initial offset, the remainder is offset against the next oldest gain, and so on. If the sum of prior deferred actuarial gains and losses is an actuarial loss and there is an actuarial gain for the current period, the current period gain is offset against the prior actuarial losses in a similar fashion. For the 2018 valuation, a one-time adjustment was made to offset actuarial gains and losses that occurred prior to 2018.

Actuarial Certification

This letter recommends assumptions to be used in the valuation to provide an estimate of the System's financial condition as of a single date. The valuation can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

Milliman's work is prepared solely for the internal business use of SamCERA. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release.

This work product was prepared solely for SamCERA for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the Plan Sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this letter is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We certify that the assumptions recommended in this letter satisfy the Actuarial Standards of Practice (ASOP), in particular, ASOP No. 27 (Selection of Economic Assumptions for Measuring Pension Obligations) and ASOP No. 35 (Selection of Demographic and Other Non-Economic Assumptions for Measuring Pension Obligations).

We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

We look forward to the opportunity to respond to your questions and comments at your next meeting.

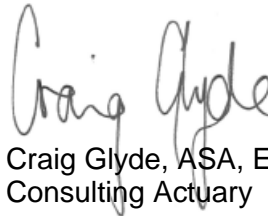
Sincerely,



Nick Collier, ASA, EA, MAAA
Consulting Actuary

NC/CG/nlo

cc: Mr. Scott Hood



Craig Glyde, ASA, EA, MAAA
Consulting Actuary

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

May 22, 2018

Agenda Item 6.1

TO: Board of Retirement

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

SUBJECT: Preliminary Monthly Portfolio Performance Report for the Period Ended April 30, 2018

Recommendation

Accept the preliminary performance report dated April 30, 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 April was 0.6%, bringing the preliminary trailing twelve-month return ending April 2018 to 8% net. The twelve-month net return is below SamCERA's Plan Benchmark return of 9.8% but is higher than SamCERA's Actuarial Assumed Earnings Rate of 6.75%.

April was a positive month for U.S. and developed equity markets, a reversal from the prior two consecutive months of losses, and equity volatility moderated. The broad U.S. equity market (as measured by the Russell 3000 Index) was up 0.4%, while developed international equity (as measured by MSCI EAFE) was up 2.3%. Emerging markets were down by 0.4%.

Real GDP grew at an estimated annual rate of 2.3% in the first quarter, which is higher than consensus estimates, but lower than the prior quarter. However, manufacturing activity continued to show strength, although at a slower pace. The labor market remained healthy as the unemployment rate fell from 4.1% to 3.9% while consumer confidence increased and inflation (using the Federal Reserve's preferred measure) was higher and just slightly below its 2% target.

The general U.S. fixed income market was down 0.7% during the month as credit spreads widened and treasury yields increased. In the latest May meeting, the U.S. Federal Reserve decided to maintain the target range of the federal funds rate (1.5 – 1.75%). The 10-year U.S. Treasury yield was higher during the month and surpassed 3%, with the yield increasing 21 basis points and ending at 2.95% by month-end.

Attachments

Northern Trust Performance Report

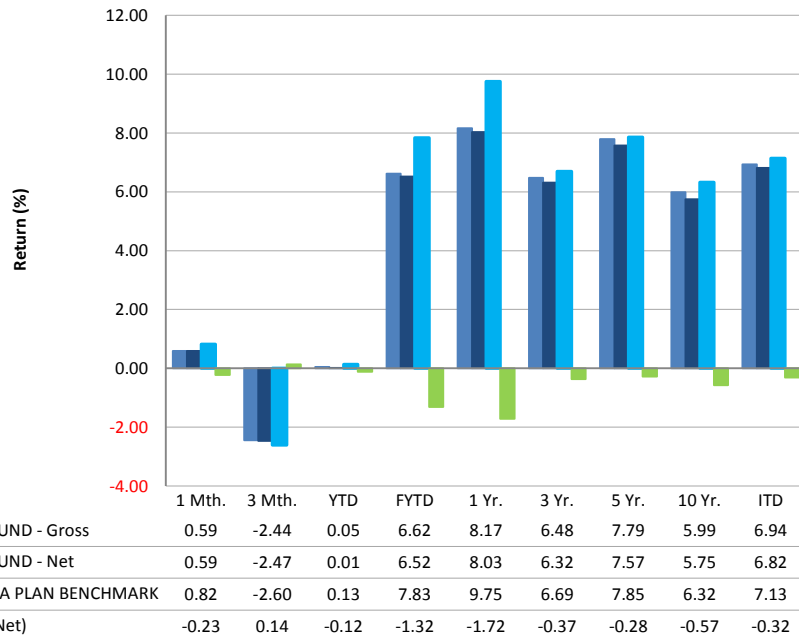
Verus Capital Markets Update

San Mateo County Total Fund Characteristics

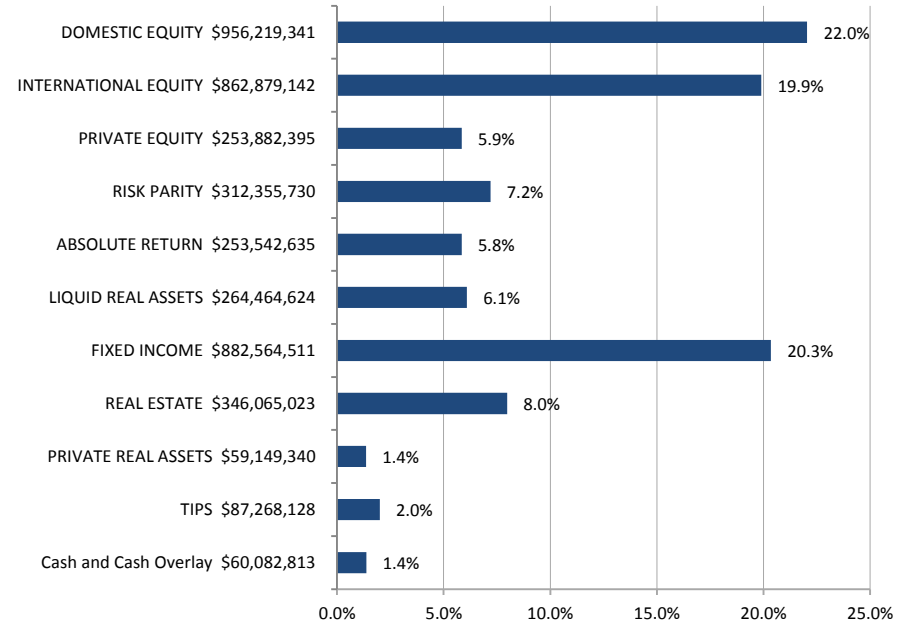


April 30, 2018

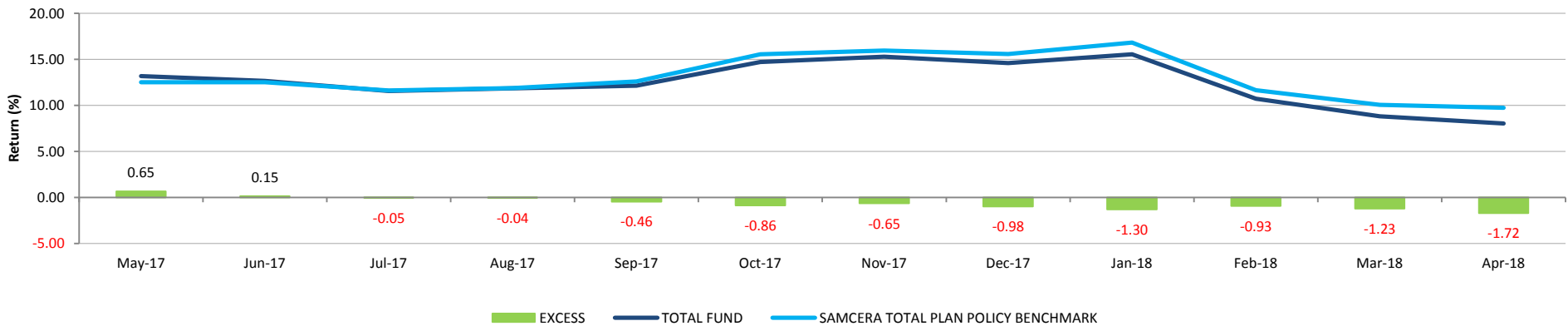
Total Fund Performance



Asset Allocation



Rolling Month End Annual Returns

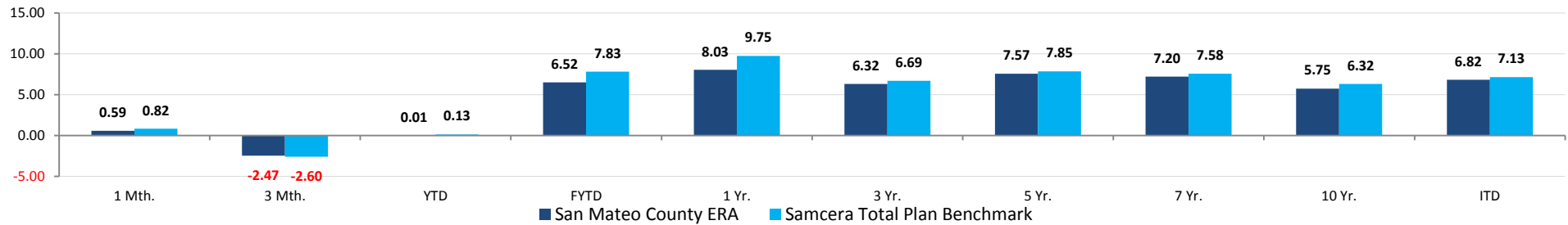


San Mateo County Composite Return Summary



April 30, 2018

Return Comparison



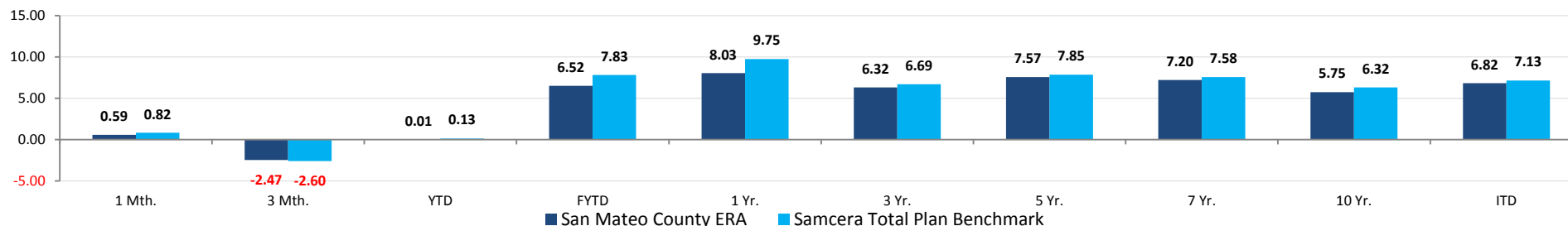
Composite Returns (Net of Manager Fees)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
San Mateo County ERA	4,338,473,681	0.59	-2.47	0.01	6.52	8.03	6.32	7.57	7.20	5.75	6.82
Samcera Total Plan Benchmark		0.82	-2.60	0.13	7.83	9.75	6.69	7.85	7.58	6.32	7.13
Excess		-0.23	0.14	-0.12	-1.32	-1.72	-0.37	-0.28	-0.38	-0.57	-0.32
San Mateo Ex-Clifton Overlay	4,322,991,724	0.59	-2.46	0.04	6.53	8.04	6.25	7.50	7.16	5.67	6.75
Samcera Total Plan Benchmark		0.82	-2.60	0.13	7.83	9.75	6.69	7.85	7.58	6.32	7.13
Excess		-0.23	0.14	-0.09	-1.31	-1.71	-0.44	-0.36	-0.42	-0.66	-0.39
Total Equity	1,819,098,483	0.72	-4.90	0.07	10.70	13.41	8.48	10.23	8.86	6.31	7.92
Samcera Total Equity Benchmark		0.63	-5.18	-0.13	11.12	13.60	9.34	11.06	9.69	7.40	8.47
Excess		0.09	0.28	0.20	-0.42	-0.20	-0.86	-0.83	-0.83	-1.09	-0.55
Fixed Income	882,564,511	-0.50	-0.56	-0.75	1.05	2.04	3.27	2.89	4.31	5.29	5.53
Samcera Fixed Income Benchmark		-0.44	-1.12	-1.90	-0.37	0.57	1.96	1.67	2.90	3.90	4.92
Excess		-0.06	0.56	1.15	1.41	1.47	1.31	1.22	1.42	1.40	0.61
Risk Parity	312,355,730	0.75	-1.52	-1.22	7.06	6.67	3.95	4.12	5.73	--	6.34
Samcera Risk Parity Benchmark		0.39	-3.51	-0.90	5.83	7.71	6.85	8.40	8.45	--	8.63
Excess		0.36	1.99	-0.32	1.23	-1.04	-2.90	-4.28	-2.71	--	-2.29

San Mateo County Composite Return Summary



April 30, 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	507,425,030	-0.35	-1.45	-0.73	3.13	4.01	5.64	4.64	4.68	-8.23	-2.47
Samcera Alternatives Benchmark		0.56	-1.82	1.30	9.41	11.26	7.70	8.17	7.69	6.60	7.70
Excess		-0.91	0.37	-2.03	-6.29	-7.24	-2.06	-3.53	-3.01	-14.83	-10.17
Inflation Hedge	756,947,115	2.18	0.09	1.92	5.98	6.51	--	--	--	--	9.88
SamCERA Inflation Hedge Index		2.41	0.93	2.04	8.83	9.56	--	--	--	--	8.99
Excess		-0.23	-0.83	-0.11	-2.85	-3.05	--	--	--	--	0.89
Cash	44,600,856	0.18	0.31	0.37	0.81	0.96	0.69	0.63	0.63	0.39	1.97
Samcera Cash Benchmark		0.13	0.37	0.49	1.04	1.17	0.57	0.36	0.28	0.34	1.83
Excess		0.05	-0.05	-0.12	-0.23	-0.21	0.12	0.27	0.35	0.05	0.14

San Mateo County Manager Return Summary



April 30, 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	1,819,098,483	0.72	-4.90	0.07	10.70	13.41	8.48	10.23	8.86	6.31	7.92
Samcera Total Equity Benchmark		0.63	-5.18	-0.13	11.12	13.60	9.34	11.06	9.69	7.40	8.47
Excess		0.09	0.28	0.20	-0.42	-0.20	-0.86	-0.83	-0.83	-1.09	-0.55
Domestic Equity	956,219,341	0.01	-5.10	-0.40	10.79	12.62	10.09	12.43	11.12	8.45	8.66
Samcera Dom. Equity Benchmark		0.38	-5.26	-0.27	10.90	13.05	10.06	12.61	11.74	9.20	9.01
Excess		-0.37	0.16	-0.13	-0.12	-0.43	0.02	-0.17	-0.62	-0.75	-0.35
Large Cap Equity	847,081,113	0.00	-5.37	-0.37	11.34	13.55	10.91	13.15	11.79	8.68	9.41
Russell 1000		0.34	-5.54	-0.35	10.97	13.17	10.25	12.84	12.15	9.10	9.71
Excess		-0.34	0.17	-0.01	0.37	0.38	0.65	0.31	-0.36	-0.42	-0.30
Blackrock Russell 1000	696,369,161	0.35	-5.53	-0.34	10.97	13.20	--	--	--	--	15.06
Russell 1000		0.34	-5.54	-0.35	10.97	13.17	--	--	--	--	14.88
Excess		0.01	0.01	0.01	0.00	0.03	--	--	--	--	0.19
DE Shaw Commingled Fund	150,711,952	-1.60	-4.63	-0.45	13.13	15.26	11.78	--	--	--	11.85
Russell 1000		0.34	-5.54	-0.35	10.97	13.17	10.25	--	--	--	9.93
Excess		-1.94	0.91	-0.10	2.16	2.09	1.53	--	--	--	1.91
Small Cap Equity	109,138,228	0.04	-3.25	-0.59	7.41	6.89	5.94	9.09	8.42	7.35	6.55
Russell 2000		0.86	-1.79	0.78	10.05	11.54	9.64	11.74	10.12	9.49	8.09
Excess		-0.82	-1.46	-1.37	-2.64	-4.64	-3.70	-2.65	-1.70	-2.14	-1.54
QMA US Small Cap	109,138,228	0.04	-3.25	-0.59	7.41	6.89	--	--	--	--	14.81
Russell 2000		0.86	-1.79	0.78	10.05	11.54	--	--	--	--	15.39
Excess		-0.82	-1.46	-1.37	-2.64	-4.64	--	--	--	--	-0.58
International Equity	862,879,142	1.53	-4.68	0.59	10.57	14.37	5.64	5.99	4.26	1.79	5.82
MS AC WldxUS IMI Nt		1.53	-4.76	0.45	12.33	16.27	5.50	5.83	4.03	2.64	5.43
Excess		-0.00	0.08	0.14	-1.76	-1.90	0.14	0.16	0.23	-0.85	0.39

San Mateo County Manager Return Summary



April 30, 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	766,642,882	1.88	-4.49	0.63	10.30	14.34	5.71	6.32	4.64	2.21	4.77
MS AC WldxUS IMI Nt		1.53	-4.76	0.45	12.33	16.27	5.50	5.83	4.03	2.64	5.29
Excess		0.34	0.27	0.18	-2.03	-1.93	0.21	0.50	0.61	-0.44	-0.52
Baillie Gifford	254,618,619	0.31	-5.75	-0.45	9.62	15.03	6.75	7.49	--	--	9.13
MSCI ACWI ex US Growth		0.83	-4.94	0.02	12.60	17.81	6.39	6.73	--	--	7.83
Excess		-0.52	-0.81	-0.47	-2.98	-2.78	0.36	0.77	--	--	1.30
Blackrock EAFE Index Fund	250,249,477	2.57	-3.89	0.93	10.96	14.94	5.31	--	--	--	4.63
MSCI EAFE ND		2.28	-4.09	0.72	10.65	14.51	4.94	--	--	--	4.29
Excess		0.29	0.20	0.21	0.31	0.43	0.37	--	--	--	0.34
Mondrian Investment Partners	261,774,786	2.77	-3.82	1.41	10.65	13.30	4.68	5.34	4.45	2.61	6.00
MSCI ACWI ex US Value		2.55	-4.52	1.15	11.96	15.12	4.54	5.08	3.58	2.29	5.87
Excess		0.22	0.70	0.26	-1.31	-1.81	0.13	0.25	0.87	0.32	0.13
Emerging Markets Equity	96,236,260	-1.14	-6.15	0.28	12.67	14.53	4.79	3.13	--	--	3.38
MSCI Emerging Markets ND		-0.44	-6.80	0.97	17.04	21.71	6.00	4.74	--	--	4.34
Excess		-0.70	0.64	-0.69	-4.37	-7.18	-1.21	-1.60	--	--	-0.95
EV Parametric EM	96,236,260	-1.14	-6.15	0.28	12.67	14.53	--	--	--	--	9.75
MSCI Emerging Markets GD		-0.42	-6.74	1.04	17.35	22.14	--	--	--	--	12.47
Excess		-0.72	0.59	-0.75	-4.68	-7.61	--	--	--	--	-2.72
Fixed Income	882,564,511	-0.50	-0.56	-0.75	1.05	2.04	3.27	2.89	4.31	5.29	5.53
Samcera Fixed Income Benchmark		-0.44	-1.12	-1.90	-0.37	0.57	1.96	1.67	2.90	3.90	4.92
Excess		-0.06	0.56	1.15	1.41	1.47	1.31	1.22	1.42	1.40	0.61
Core Fixed Income	602,869,154	-0.68	-1.06	-1.65	-0.16	0.75	2.12	2.44	3.70	4.62	5.25
BB Barclays U.S. Aggregate		-0.74	-1.05	-2.19	-0.98	-0.32	1.07	1.47	2.63	3.57	4.79
Excess		0.07	-0.00	0.55	0.82	1.07	1.05	0.97	1.07	1.05	0.46

San Mateo County Manager Return Summary



April 30, 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	258,420,275	-0.64	-1.01	-1.97	-0.46	0.06	1.70	2.01	3.25	4.62	4.47
BB Barclays U.S. Aggregate		-0.74	-1.05	-2.19	-0.98	-0.32	1.07	1.47	2.63	3.57	4.00
Excess		0.11	0.04	0.22	0.52	0.37	0.63	0.54	0.62	1.04	0.47
Western Total Return	131,066,796	-0.96	-2.36	-1.64	1.91	4.50	--	--	--	--	4.61
BB Barclays U.S. Aggregate		-0.74	-1.05	-2.19	-0.98	-0.32	--	--	--	--	1.40
Excess		-0.21	-1.31	0.55	2.89	4.82	--	--	--	--	3.21
Blackrock Inter Gov	213,382,083	-0.55	-0.30	-1.23	-1.20	-1.04	--	--	--	--	-0.10
BB Barclays U.S. Aggregate		-0.74	-1.05	-2.19	-0.98	-0.32	--	--	--	--	1.00
Excess		0.19	0.76	0.96	-0.22	-0.72	--	--	--	--	-1.10
Opportunistic Credit	279,695,357	-0.10	0.53	1.22	4.20	6.62	6.60	6.67	7.53	--	9.49
BB Barc BA Intermediate HY Ind		0.18	-1.25	-1.31	0.54	1.75	4.03	4.28	5.79	--	7.22
Excess		-0.28	1.79	2.53	3.67	4.87	2.57	2.39	1.74	--	2.27
AG Opportunistic Whole Loan	8,010,394	-0.00	12.72	12.72	17.56	23.50	11.61	--	--	--	7.67
BB Barc BA Intermediate HY Ind		0.18	-1.25	-1.31	0.54	1.75	4.03	--	--	--	4.12
Excess		-0.18	13.97	14.03	17.02	21.74	7.58	--	--	--	3.55
Angelo Gordon	7,220,626	0.00	3.76	3.76	19.17	25.68	12.48	12.66	--	--	11.75
BB Barc BA Intermediate HY Ind		0.18	-1.25	-1.31	0.54	1.75	4.03	4.28	--	--	4.85
Excess		-0.18	5.01	5.07	18.63	23.92	8.45	8.38	--	--	6.90
Beach Point Select Fund	48,968,531	-0.34	1.14	1.24	5.08	6.75	7.71	--	--	--	8.79
BB Barc BA Intermediate HY Ind		0.18	-1.25	-1.31	0.54	1.75	4.03	--	--	--	4.42
Excess		-0.52	2.39	2.56	4.54	5.00	3.68	--	--	--	4.36
Brigade Cap Mngmt	76,148,517	-0.26	-0.66	1.05	2.81	4.33	5.02	4.51	6.09	--	6.88
BB Barc BA Intermediate HY Ind		0.18	-1.25	-1.31	0.54	1.75	4.03	4.28	5.79	--	6.48
Excess		-0.44	0.59	2.36	2.27	2.57	0.99	0.22	0.30	--	0.39

San Mateo County Manager Return Summary



April 30, 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	5,773,724	0.00	2.46	3.89	3.23	3.23	--	--	--	--	--
BB Barc BA Intermediate HY Ind		0.18	-1.25	-1.31	0.54	1.75	--	--	--	--	--
Excess		-0.18	3.71	5.20	2.69	1.47	--	--	--	--	--
SAMCERA-PIMCO Div. Income Fund	80,180,638	-0.23	-0.49	-0.93	--	--	--	--	--	--	0.85
BB Barc BA Intermediate HY Ind		0.18	-1.25	-1.31	--	--	--	--	--	--	-0.34
Excess		-0.41	0.76	0.38	--	--	--	--	--	--	1.19
TCP Direct Lending VIII	11,264,820	-0.00	-0.00	1.64	6.49	8.95	--	--	--	--	--
BB Barc BA Intermediate HY Ind		0.18	-1.25	-1.31	0.54	1.75	--	--	--	--	--
Excess		-0.18	1.25	2.95	5.95	7.20	--	--	--	--	--
Franklin Templeton	42,128,107	0.63	1.06	2.65	2.43	1.78	2.79	1.89	3.71	--	4.47
BB Barclays Multiverse Index		-1.55	-1.49	-0.28	2.68	4.18	2.47	1.09	1.53	--	2.06
Excess		2.18	2.55	2.93	-0.26	-2.41	0.33	0.80	2.18	--	2.40
Risk Parity	312,355,730	0.75	-1.52	-1.22	7.06	6.67	3.95	4.12	5.73	--	6.34
Samcera Risk Parity Benchmark		0.39	-3.51	-0.90	5.83	7.71	6.85	8.40	8.45	--	8.63
Excess		0.36	1.99	-0.32	1.23	-1.04	-2.90	-4.28	-2.71	--	-2.29
AQR Global Risk III	147,707,127	1.54	-1.54	-0.88	8.44	8.45	3.07	2.73	4.72	--	5.35
Samcera Risk Parity Benchmark		0.39	-3.51	-0.90	5.83	7.71	6.85	8.40	8.45	--	8.63
Excess		1.15	1.97	0.02	2.61	0.74	-3.78	-5.67	-3.72	--	-3.28
Panagora	164,648,603	0.06	-1.50	-1.53	5.85	5.12	4.77	--	--	--	6.33
Samcera Risk Parity Benchmark		0.39	-3.51	-0.90	5.83	7.71	6.85	--	--	--	6.93
Excess		-0.34	2.01	-0.63	0.02	-2.59	-2.09	--	--	--	-0.60
Alternatives	507,425,030	-0.35	-1.45	-0.73	3.13	4.01	5.64	4.64	4.68	-8.23	-2.47
Samcera Alternatives Benchmark		0.56	-1.82	1.30	9.41	11.26	7.70	8.17	7.69	6.60	7.70
Excess		-0.91	0.37	-2.03	-6.29	-7.24	-2.06	-3.53	-3.01	-14.83	-10.17

San Mateo County Manager Return Summary



April 30, 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	253,882,395	-0.46	2.00	2.12	5.68	7.67	12.16	14.11	8.53	--	-20.47
Samcera PE Benchmark		0.63	-4.55	0.72	13.64	16.40	13.48	16.05	15.27	--	16.91
Excess		-1.09	6.55	1.40	-7.96	-8.74	-1.32	-1.94	-6.74	--	-37.38
Absolute Return	253,542,635	-0.23	-4.67	-3.39	0.78	0.52	4.01	4.94	--	--	4.41
Samcera LIBOR + 4%		0.48	1.39	1.86	4.50	5.35	4.74	4.52	--	--	4.44
Excess		-0.71	-6.06	-5.25	-3.71	-4.83	-0.73	0.42	--	--	-0.03
AQR Delta XN	158,617,186	-0.18	-5.29	-4.09	1.05	0.55	4.27	5.09	--	--	4.52
Samcera LIBOR + 4%		0.48	1.39	1.86	4.50	5.35	4.74	4.52	--	--	4.44
Excess		-0.66	-6.68	-5.95	-3.45	-4.80	-0.48	0.58	--	--	0.08
SamCERA-Aberdeen Std GARS	94,925,449	-0.32	-3.60	-2.20	-0.02	0.24	--	--	--	--	-0.36
Samcera LIBOR + 4%		0.48	1.39	1.86	4.50	5.35	--	--	--	--	4.83
Excess		-0.80	-5.00	-4.06	-4.52	-5.11	--	--	--	--	-5.20
Inflation Hedge	756,947,115	2.18	0.09	1.92	5.98	6.51	--	--	--	--	9.88
SamCERA Inflation Hedge Index		2.41	0.93	2.04	8.83	9.56	--	--	--	--	8.99
Excess		-0.23	-0.83	-0.11	-2.85	-3.05	--	--	--	--	0.89
TIPS	87,268,128	0.07	0.24	-0.21	1.73	0.67	--	--	--	--	1.77
BBG Barclays US TIPS		-0.06	0.01	-0.85	1.27	0.27	--	--	--	--	1.12
Excess		0.13	0.23	0.63	0.45	0.41	--	--	--	--	0.64
Brown Brothers Harriman	87,268,128	0.07	0.24	-0.21	1.73	0.67	1.30	-0.72	1.92	--	2.47
BBG Barclays US TIPS		-0.06	0.01	-0.85	1.27	0.27	1.04	-0.12	2.13	--	2.74
Excess		0.13	0.23	0.63	0.45	0.41	0.26	-0.59	-0.21	--	-0.26
Real Estate	346,065,023	1.87	1.99	3.95	5.70	7.49	--	--	--	--	9.03
Samcera NCREIF ODCE EW (gross)		2.17	4.37	4.37	8.63	10.48	--	--	--	--	9.15
Excess		-0.30	-2.37	-0.42	-2.92	-2.99	--	--	--	--	-0.12

San Mateo County Manager Return Summary



April 30, 2018

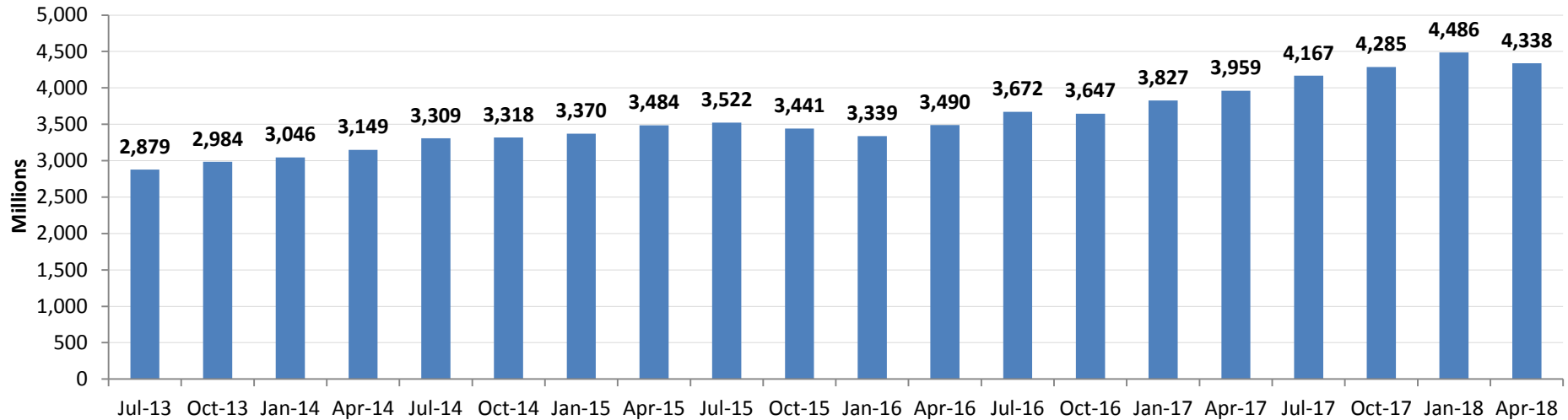
Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
Invesco Core Real Estate	257,493,645	2.38	2.38	4.61	6.05	7.95	10.09	11.38	11.54	5.04	7.91
Samcera NCREIF ODCE EW (gross)		2.17	4.37	4.37	8.63	10.48	11.04	11.95	12.16	5.15	7.93
Excess		0.21	-1.99	0.24	-2.58	-2.54	-0.96	-0.57	-0.62	-0.11	-0.02
Invesco US Val IV	18,605,214	0.00	0.00	1.84	9.03	9.03	--	--	--	--	11.66
Samcera NCREIF ODCE EW (gross)		2.17	4.37	4.37	8.63	10.48	--	--	--	--	10.45
Excess		-2.17	-4.37	-2.53	0.41	-1.45	--	--	--	--	1.21
PGIM Real Estate US Debt Fund	69,966,164	0.54	1.63	1.65	1.76	--	--	--	--	--	1.76
Samcera NCREIF ODCE EW (gross)		2.17	4.37	4.37	8.63	--	--	--	--	--	8.63
Excess		-1.63	-2.74	-2.72	-6.87	--	--	--	--	--	-6.87
Liquid Real Assets	264,464,624	3.24	-2.36	0.25	10.94	11.15	--	--	--	--	--
SamCera Custom Real Asset Index		3.26	-2.26	0.36	10.90	11.02	--	--	--	--	--
Excess		-0.02	-0.10	-0.11	0.04	0.13	--	--	--	--	--
SSGA CST REAL ASSET NL	264,464,624	3.24	-2.36	0.25	10.94	11.15	--	--	--	--	--
SamCera Custom Real Asset Index		3.26	-2.26	0.36	10.90	11.02	--	--	--	--	--
Excess		-0.02	-0.10	-0.11	0.04	0.13	--	--	--	--	--
Private Real Assets	59,149,340	2.48	1.55	2.28	-5.80	-7.94	--	--	--	--	18.29
SamCera Custom Real Asset Inde		3.26	-2.26	0.36	10.90	11.02	--	--	--	--	12.74
Excess		-0.78	3.82	1.92	-16.70	-18.96	--	--	--	--	5.55
Cash	44,600,856	0.18	0.31	0.37	0.81	0.96	0.69	0.63	0.63	0.39	1.97
Samcera Cash Benchmark		0.13	0.37	0.49	1.04	1.17	0.57	0.36	0.28	0.34	1.83
Excess		0.05	-0.05	-0.12	-0.23	-0.21	0.12	0.27	0.35	0.05	0.14
SamCera General Account	15,172,434	0.16	0.41	0.54	1.17	1.35	0.81	0.53	0.46	0.54	1.98
County Treasury Pool	29,417,346	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.38	0.14	2.57
San Mateo County ERA	4,338,473,681	0.59	-2.47	0.01	6.52	8.03	6.32	7.57	7.20	5.75	6.82
Samcera Total Plan Benchmark		0.82	-2.60	0.13	7.83	9.75	6.69	7.85	7.58	6.32	7.13
Excess		-0.23	0.14	-0.12	-1.32	-1.72	-0.37	-0.28	-0.38	-0.57	-0.32

April 30, 2018

Record of Asset Growth

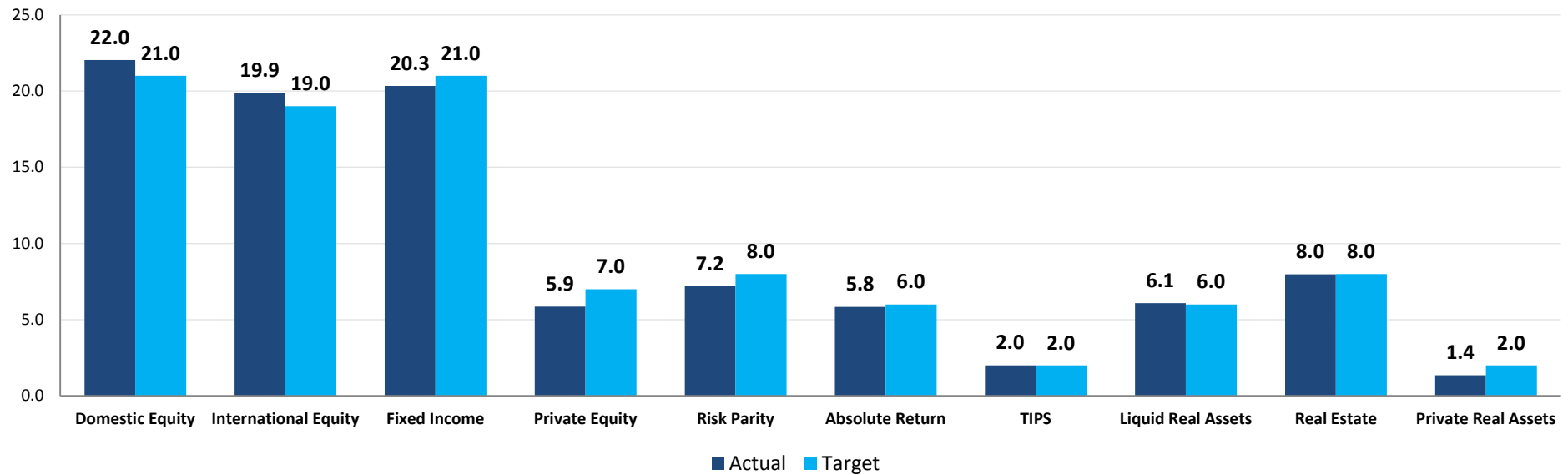
	Three Months	One Year
TOTAL FUND		
Beginning Market Value	4,486,140,230	3,959,027,184
Contributions	14,114,177	261,507,837
Withdrawals	-51,576,057	-212,395,876
Income Received	10,411,236	35,845,708
Gain/Loss	-120,141,808	292,515,660
Ending Market Value	4,338,473,681	4,338,473,681

Net Asset Values Over Time (\$000)



April 30, 2018

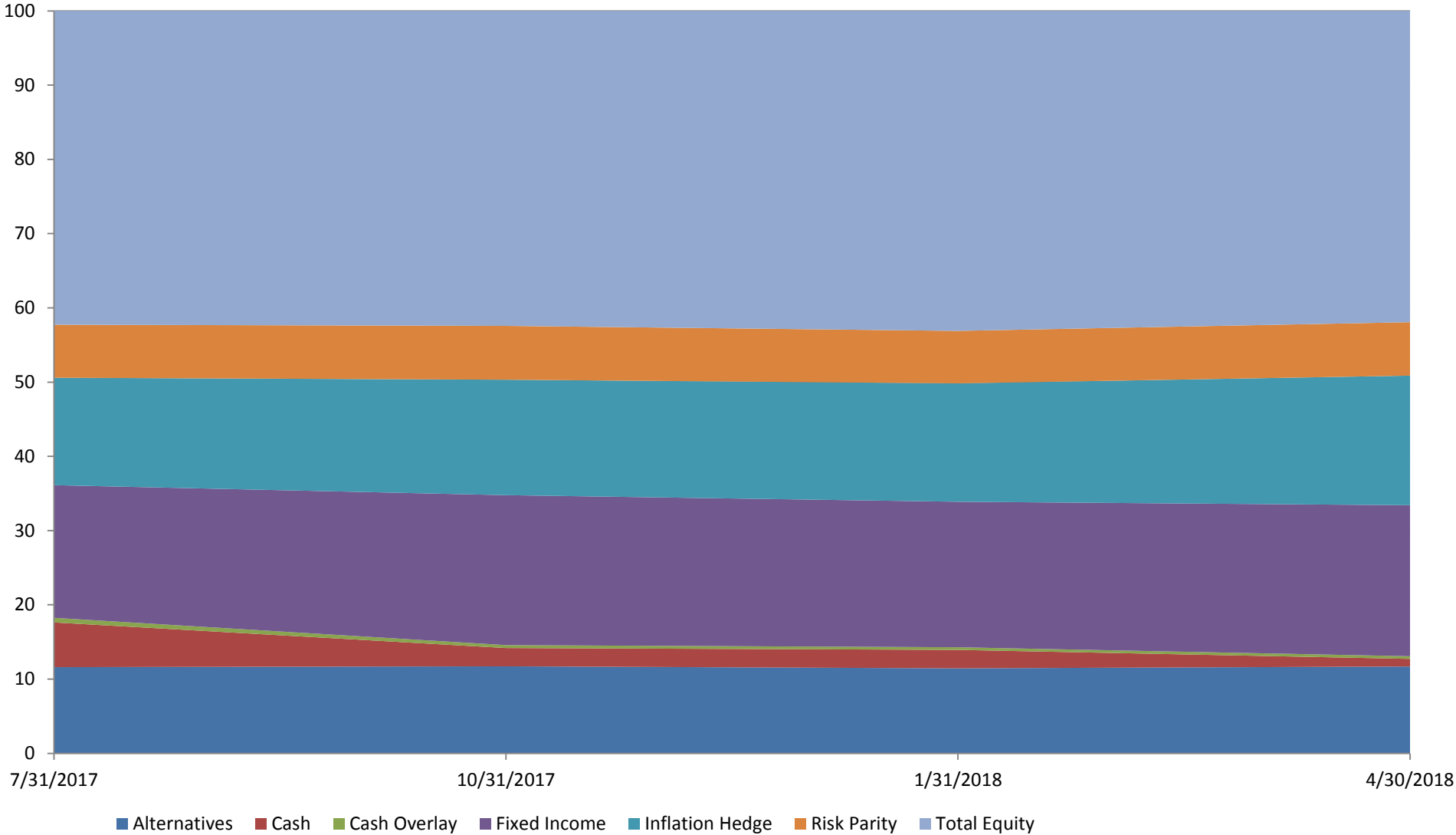
Actual vs Target Weights



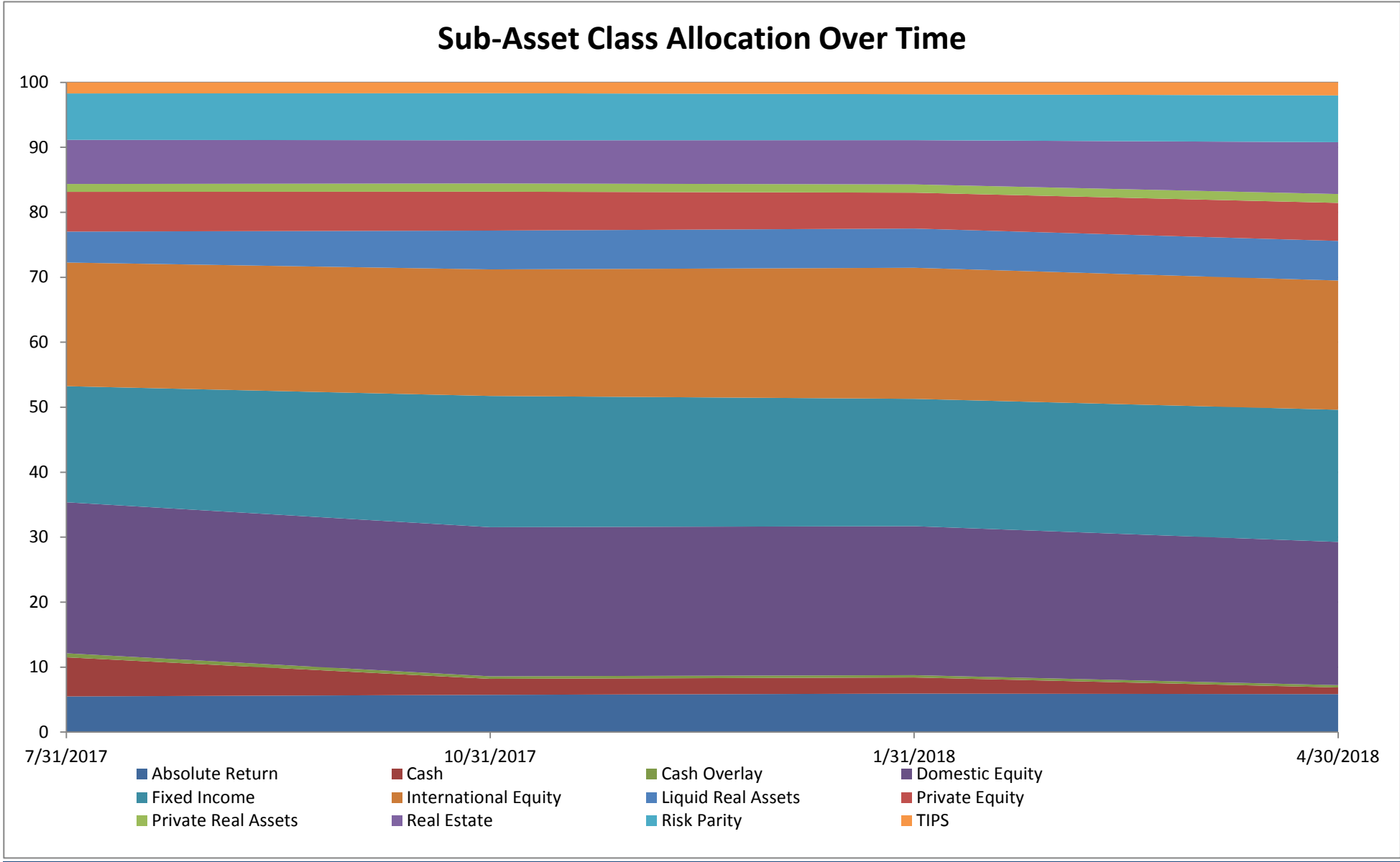
	Min	Actual	Target	Deviation	Max
Domestic Equity	19.0	22.0	21.0	1.0	23.0
International Equity	17.0	19.9	19.0	0.9	21.0
Fixed Income	19.0	20.3	21.0	-0.7	23.0
Private Equity	5.0	5.9	7.0	-1.1	9.0
Risk Parity	6.0	7.2	8.0	-0.8	10.0
Absolute Return	4.0	5.8	6.0	-0.2	8.0
TIPS	0.0	2.0	2.0	0.0	4.0
Liquid Real Assets	4.0	6.1	6.0	0.1	8.0
Real Estate	6.0	8.0	8.0	0.0	10.0
Private Real Assets	0.0	1.4	2.0	-0.6	4.0

April 30, 2018

Asset Allocation over Time



April 30, 2018



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**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

APRIL 2018
Capital Markets Update

Market commentary

ECONOMIC CLIMATE

- U.S. real GDP grew by 2.9% YoY in the first quarter (2.3% quarterly annualized rate, consensus estimate 2.0%), marking the best rate of growth since 2015. While there did not appear to be an immediate flow through from fiscal stimulus in Q1, the expectations for Q2 GDP growth has been revised upward from 2.7% to 3.1%.
- The April employment report disappointed slightly for the second straight month – nonfarm payrolls added 168,000 jobs, below expectations of 190,000.
- The unemployment rate fell from 4.1% to 3.9%, the lowest level in 18 years. Part of this move was influenced by a 0.1% net drop in the participation rate to 62.8%.
- U.S. inflation moved higher in March – core CPI rose from 1.8% to 2.1% YoY. Much of the increase was driven by a low base effect caused by a drop in wireless communication prices one year ago.

DOMESTIC EQUITIES

- U.S. equities were range bound in April and volatility trended down from the elevated levels experienced in the previous two months. The S&P 500 Index returned 0.4% during the month with an annualized volatility of 17.2%.
- A strong Q1 earnings season thus far has yet to provide the boost to equity prices that many expected. According to FactSet, the Q1 YoY blended earnings growth rate for the S&P 500 is 24.2% after more than 75% of the index has reported.

DOMESTIC FIXED INCOME

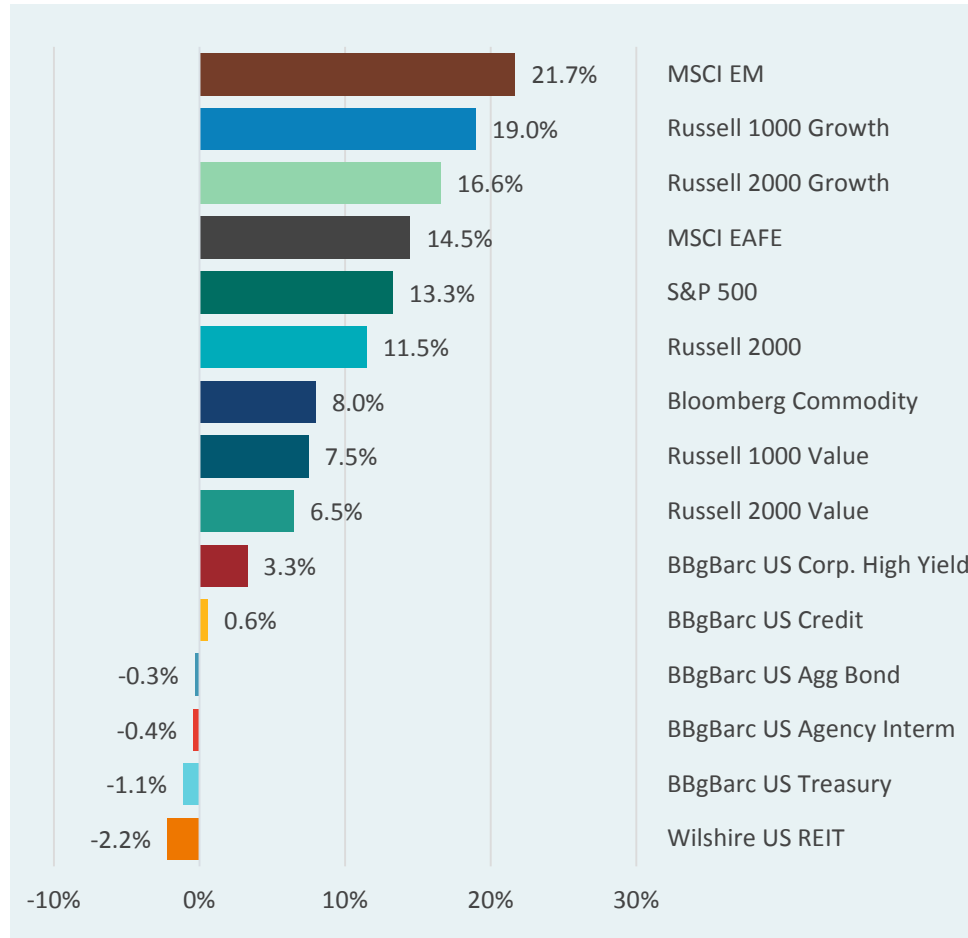
- The Fed kept interest rates unchanged at its April meeting, as expected. Forward guidance from officials was unchanged from previous statements.
- Treasury yields moved higher on the long-end of the curve, driven by real yields. The 10-year yield briefly topped 3.0%, before finishing the month up 22 bps at 2.95%.
- The broad fixed income market posted negative performance as Treasury yields rose and investment grade spreads slightly widened. The U.S. Aggregate Bond Index returned -0.7%.

INTERNATIONAL MARKETS

- Partly in response to findings of intellectual property theft by the U.S. Trade Commission, the White House announced plans enact tariffs on \$50 billion worth of Chinese imports. China responded by targeting tariffs on \$50 billion of U.S. goods, leading to concerns of a trade war between the two biggest economies in the world.
- Eurozone Q1 GDP grew by 2.5% YoY, meeting expectations and calming fears of a slowdown after a series of economic data misses in the first quarter.
- Eurozone inflation remained well below the 2% central bank target after core CPI rose only 0.7% YoY in April.
- The U.S. dollar experienced broad strength during the month, appreciating against both developed and emerging market currencies.

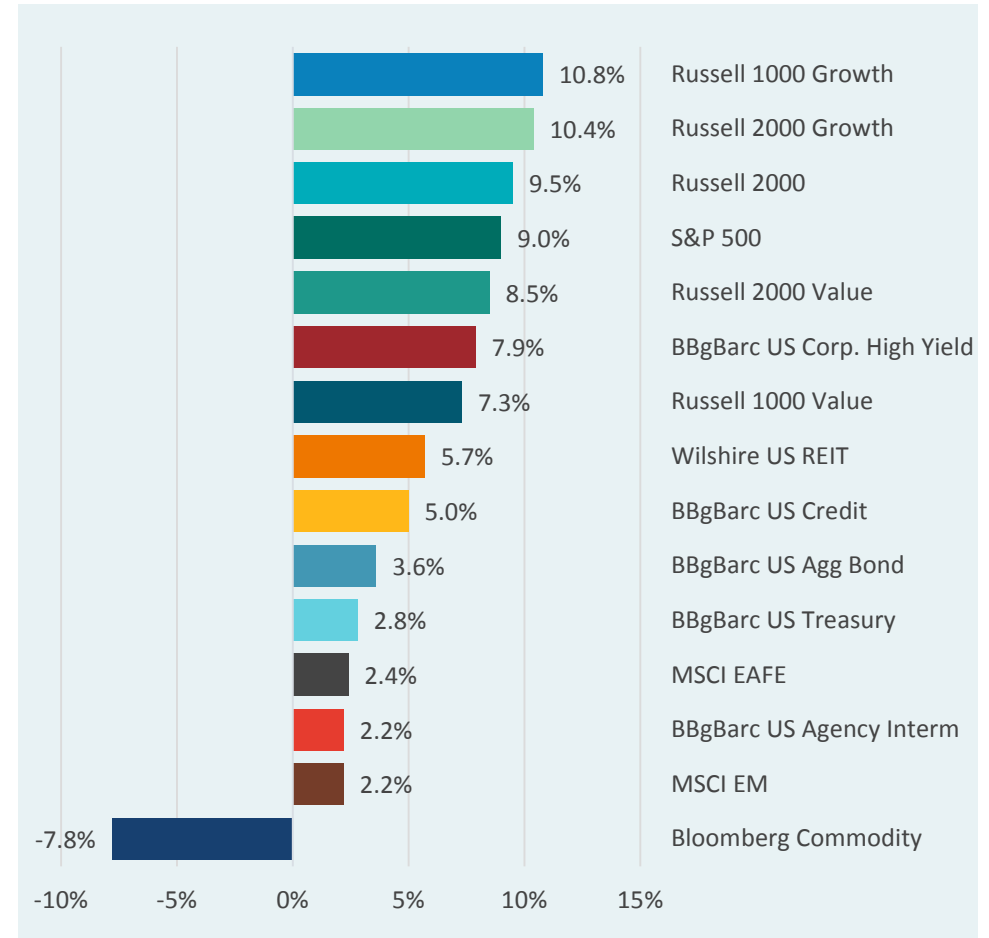
Major asset class returns

ONE YEAR ENDING APRIL



Source: Morningstar, as of 4/30/18

TEN YEARS ENDING APRIL



Source: Morningstar, as of 4/30/18

U.S. large cap equities

- The S&P 500 Index (+0.4%) posted a small gain in April after falling in each of the previous two months. The index was range bound between 2600 and 2700 throughout the month as earnings failed to provide a market catalyst in either direction.
- Over 75% of companies in the S&P 500 have reported Q1 earnings thus far and the results have been generally positive. According to FactSet, the blended YoY earnings growth rate is 24.2%. In aggregate, firms have reported a positive 8.2% earnings surprise.
- Companies have not been rewarded for earnings beats this quarter relative to the past five years. The average one-day price change for firms with a positive earnings surprise has been -0.3%, well below the five-year average of +1.1%
- Equity volatility trended down to more normal levels during the month. The VIX Index fell from 20.0 to 15.4, below the average of 19.3 since 1990.

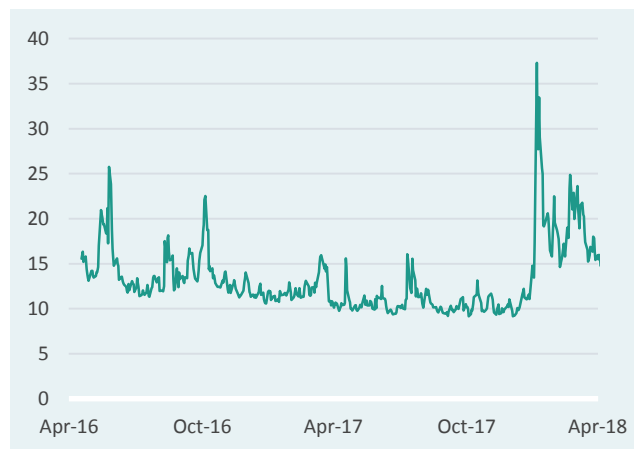
U.S. equities were range bound

S&P 500 PRICE INDEX



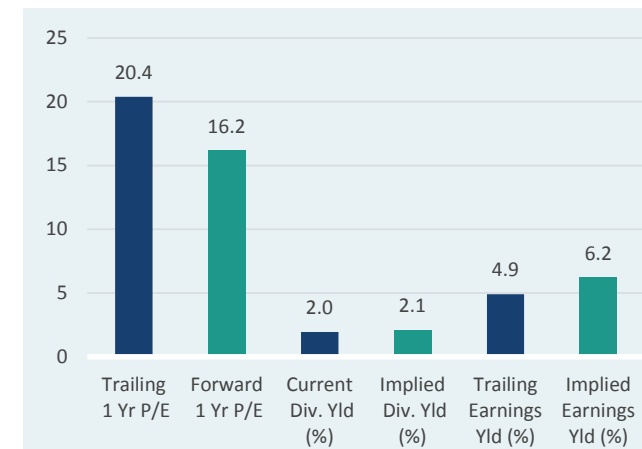
Source: Bloomberg, as of 4/30/18

IMPLIED VOLATILITY (VIX INDEX)



Source: CBOE, as of 4/30/18

S&P 500 VALUATION SNAPSHOT



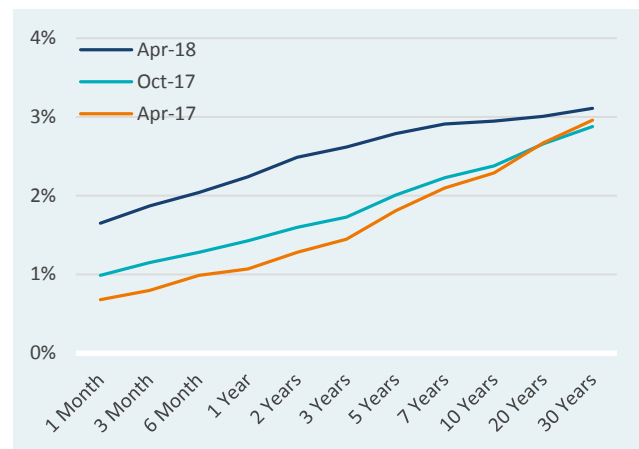
Source: Bloomberg, as of 4/30/18

Fixed income

- The 10-year Treasury yield closed above 3% for the first time since the end of 2013 on April 25th before closing the month at 2.95%. An increase in expected Treasury issuance, Fed balance sheet reduction, and slowing international central bank Treasury purchases may provide support for higher long-term yields.
- Short-term yields kept pace with increases on the longer end of the curve – the term premium for a 10-year note relative to a 2-year note was only 46 bps at the end of April.
- U.S. credit spreads tightened to near expansion lows in the middle of the month before rising to end the month only slightly lower. The option-adjusted spread for the BBgBarc Corporate High Yield Index fell 16 bps to 3.4%.
- An increase in breakeven inflation rates was an important component of the move in Treasury yields during the month. The 10-year breakeven inflation rate was up 12 bps to 2.18%.

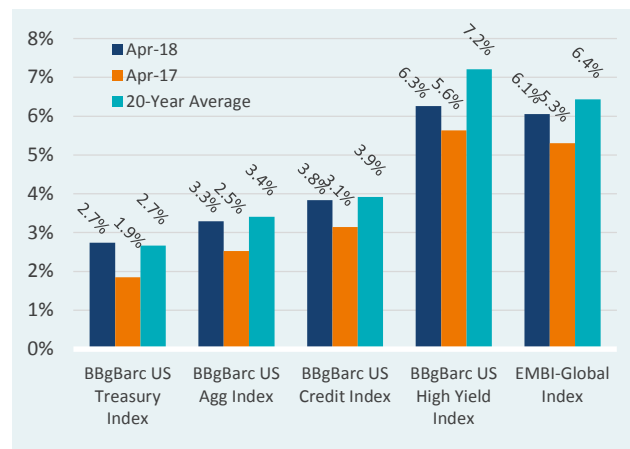
Long-term Treasury yields rose in April

U.S. TREASURY YIELD CURVE



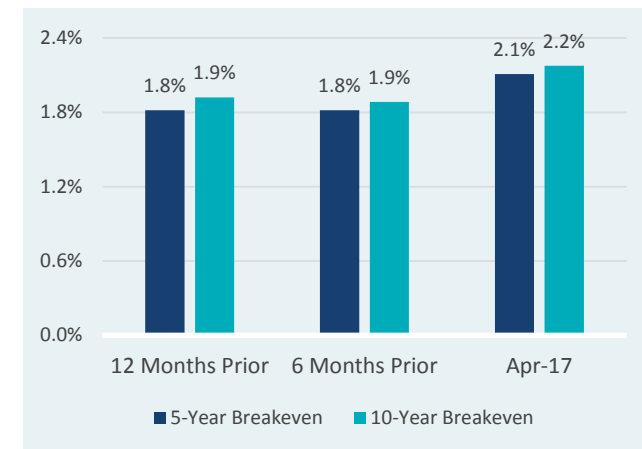
Source: Bloomberg, as of 4/30/18

NOMINAL YIELDS



Source: Morningstar, as of 4/30/18

BREAKEVEN INFLATION RATES



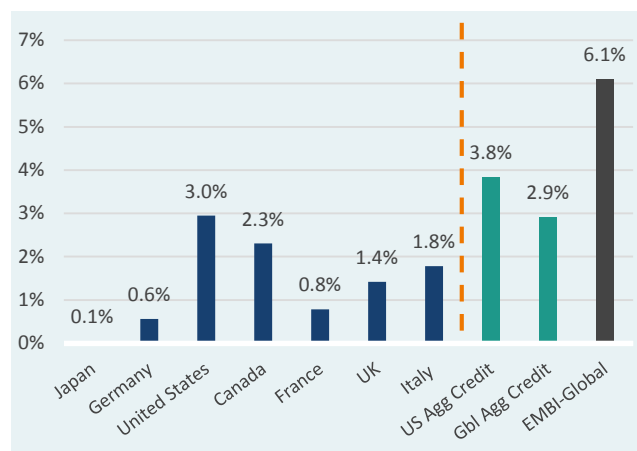
Source: Bloomberg, as of 4/30/18

Global markets

- Concerns over trade remained in the headlines after the White House announced \$50 billion in potential tariffs on Chinese imports. China responded by announcing its own tariffs on U.S. goods also worth \$50 billion. Negotiations between the two countries are ongoing and there is much uncertainty as to what policies, if any, will actually be implemented.
- Global sovereign yields traded higher along with the upward move in Treasury yields. The 10-year German bund yield rose 6 bps to 0.56%.
- European Central Bank officials stated they would wait until July before announcing how and when the bank will end its bond-buying program in order to further judge a possible slowdown in economic activity. A slower pace of economic recovery combined with below target inflation may be used as reasons to delay ending asset purchases.
- The U.S. dollar experienced broad based strength towards the end of the month, nearly erasing year-to-date losses on the Dollar Spot Index.

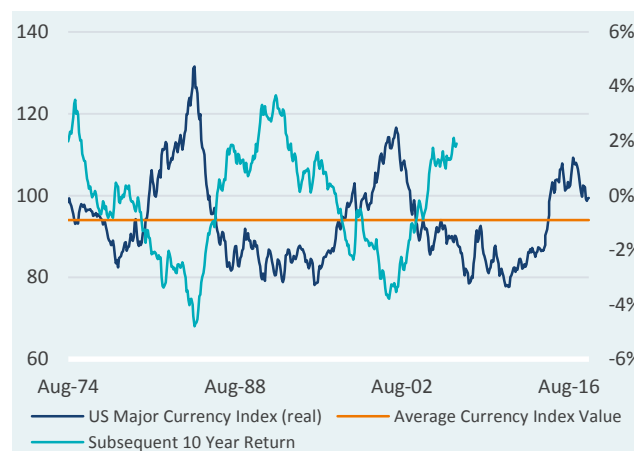
Trade continued to be at the forefront of market news

GLOBAL SOVEREIGN 10-YEAR YIELDS



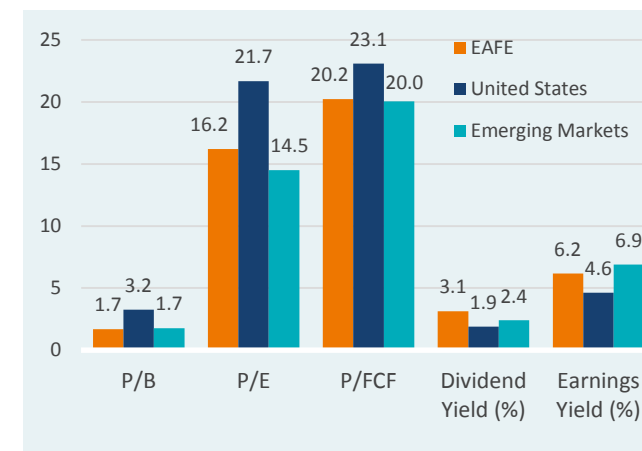
Source: Bloomberg, as of 4/30/18

U.S. DOLLAR MAJOR CURRENCY INDEX



Source: Federal Reserve, as of 4/30/18

MSCI VALUATION METRICS (3-MONTH AVG)



Source: Bloomberg, as of 4/30/18

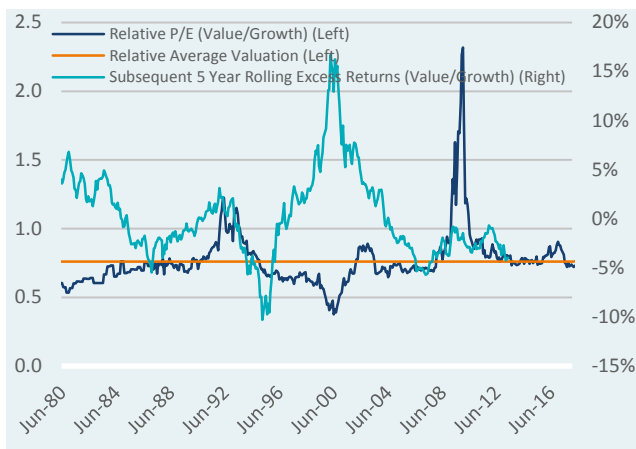
Domestic equity size and style

- Small cap equities outperformed large cap equities in April – the Russell 2000 Index and Russell 1000 Index returned 0.9% and 0.3%, respectively. Small caps have posted better relative performance for two straight months.
- The trailing annualized volatility of the Russell 2000 (19.8%) was slightly lower than the Russell 1000 (20.6%) during the month – historically, small cap equities have exhibited higher volatility than large cap equities.

- The Russell 1000 Value Index and the Russell 1000 Growth Index both returned 0.3% in April. Growth equities have significantly outperformed over the past year, but relative valuations are in line with the historical average.
- One of the reasons the outperformance of growth stocks has not led to stretched relative valuations is due to differences in earnings growth. Much of the equity earnings growth over the past year has been driven by growth companies, most notably in tech.

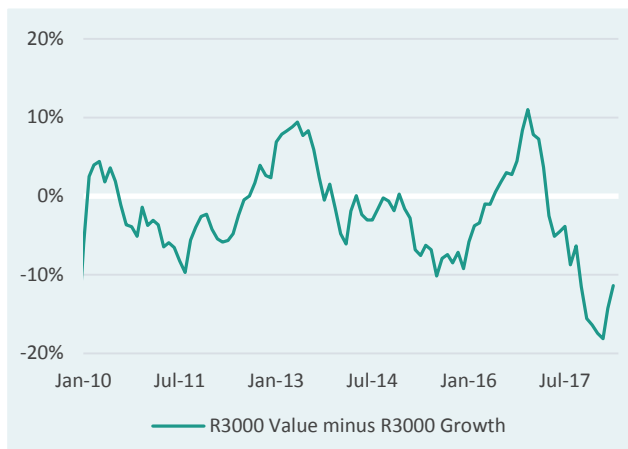
Small cap equities outperformed

VALUE VS. GROWTH RELATIVE VALUATIONS



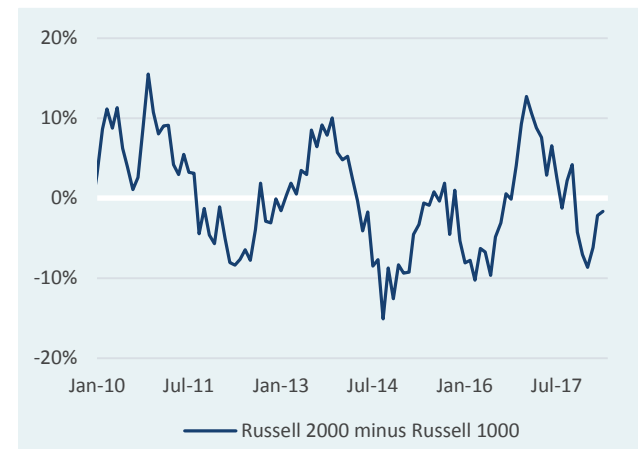
Source: Russell, Bloomberg, as of 4/30/18

VALUE VS. GROWTH 1-YR ROLLING RELATIVE PERFORMANCE



Source: FTSE, as of 4/30/18

SMALL VS. LARGE 1-YR ROLLING RELATIVE PERFORMANCE



Source: FTSE, as of 4/30/18

Commodities

- The Bloomberg Commodity Index returned 2.6% in April, its best monthly return of the year. Gains were driven by energy and industrial metals.
- Positive momentum in oil prices continued with WTI reaching \$68.57 per barrel at month-end, the highest price since 2014. Geopolitical tensions in the Middle East and President Trump’s looming decision on the Iran nuclear deal likely influenced oil prices.

- The increase in oil spot prices and a continued supply-demand rebalancing have led to a fully backwardated futures curve. A backwardated curve results in a positive roll yield for investors in futures-based commodity strategies.
- Aluminum prices jumped 13.6% during the month following U.S. sanctions on Rusal, the world’s second biggest aluminum producer. The sanctions prohibit transactions with the company within the U.S.

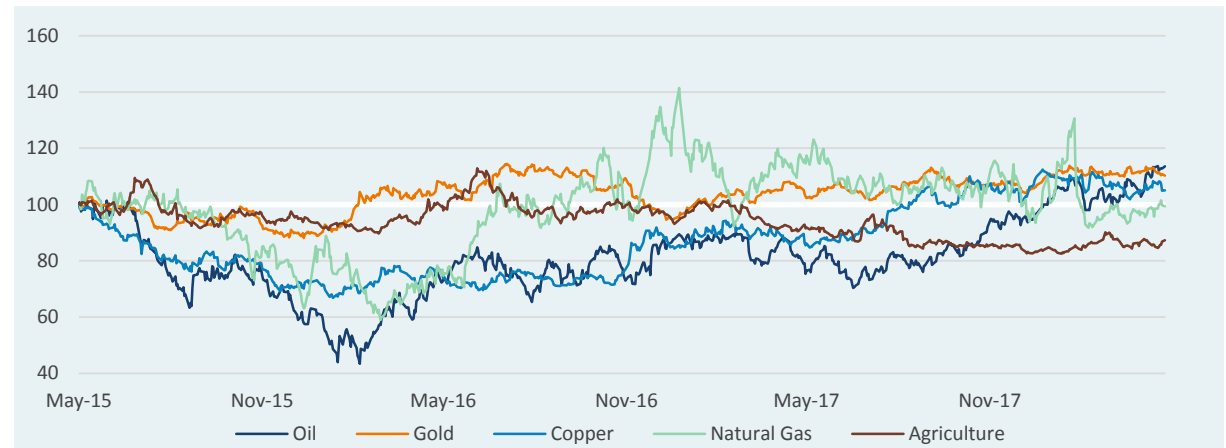
Oil prices climbed to the highest level since 2014

INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	2.6	2.6	2.2	8.0	(4.2)	(7.3)	(7.8)
Bloomberg Agriculture	1.4	1.4	4.6	(2.9)	(4.0)	(8.3)	(5.0)
Bloomberg Energy	5.0	5.0	6.9	19.0	(11.4)	(15.2)	(18.8)
Bloomberg Grains	3.0	3.0	10.3	0.1	(5.6)	(10.3)	(6.8)
Bloomberg Industrial Metals	3.5	3.5	(2.9)	20.8	2.6	0.2	(4.6)
Bloomberg Livestock	0.4	0.4	(9.7)	(10.7)	(7.1)	(3.2)	(5.9)
Bloomberg Petroleum	7.0	7.0	12.0	41.5	(6.9)	(11.7)	(12.6)
Bloomberg Precious Metals	(0.2)	(0.2)	(0.8)	0.9	2.1	(4.2)	2.6
Bloomberg Softs	(0.6)	(0.6)	(10.6)	(17.0)	(5.8)	(9.4)	(4.2)

Source: Morningstar, as of 4/30/18

COMMODITY PERFORMANCE



Source: Bloomberg, as of 4/30/18

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	2.4	15.1	10.8
Commodities	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	2.2	13.1	10.4
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	1.8	12.8	9.5
Real Estate	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	1.7	11.7	9.1
Emerging Markets 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	1.0	10.5	8.5
Small Cap Equity	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	0.8	10.4	7.3
International Equity	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	0.7	10.0	6.1
Hedge Funds of Funds	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	0.6	5.9	4.4
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	0.5	5.7	3.6
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	-0.1	4.7	2.4
Large Cap Equity	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	5.1	-0.4	3.3	2.2
Small 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	-1.0	1.5	1.5
US Bonds	-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	-2.2	0.3	0.3
Large Cap Value	-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	-2.5	-7.3	-7.8

WORST

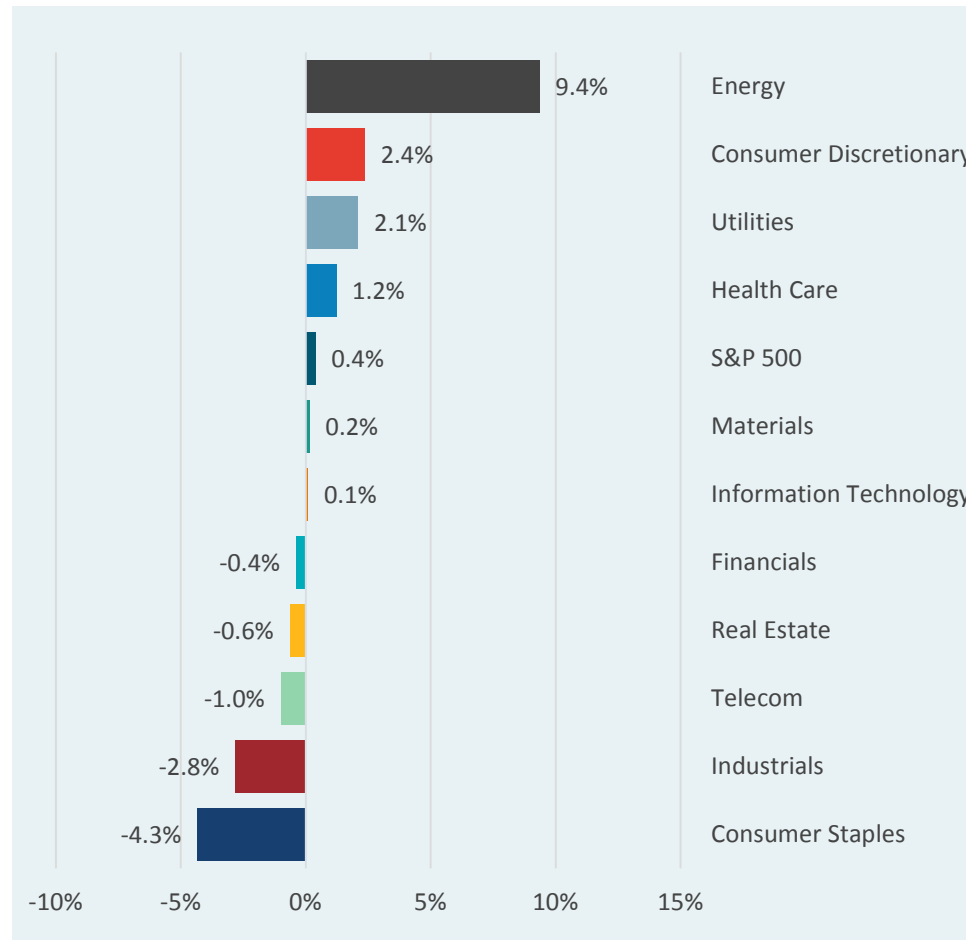
BEST

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

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 3/31/18.

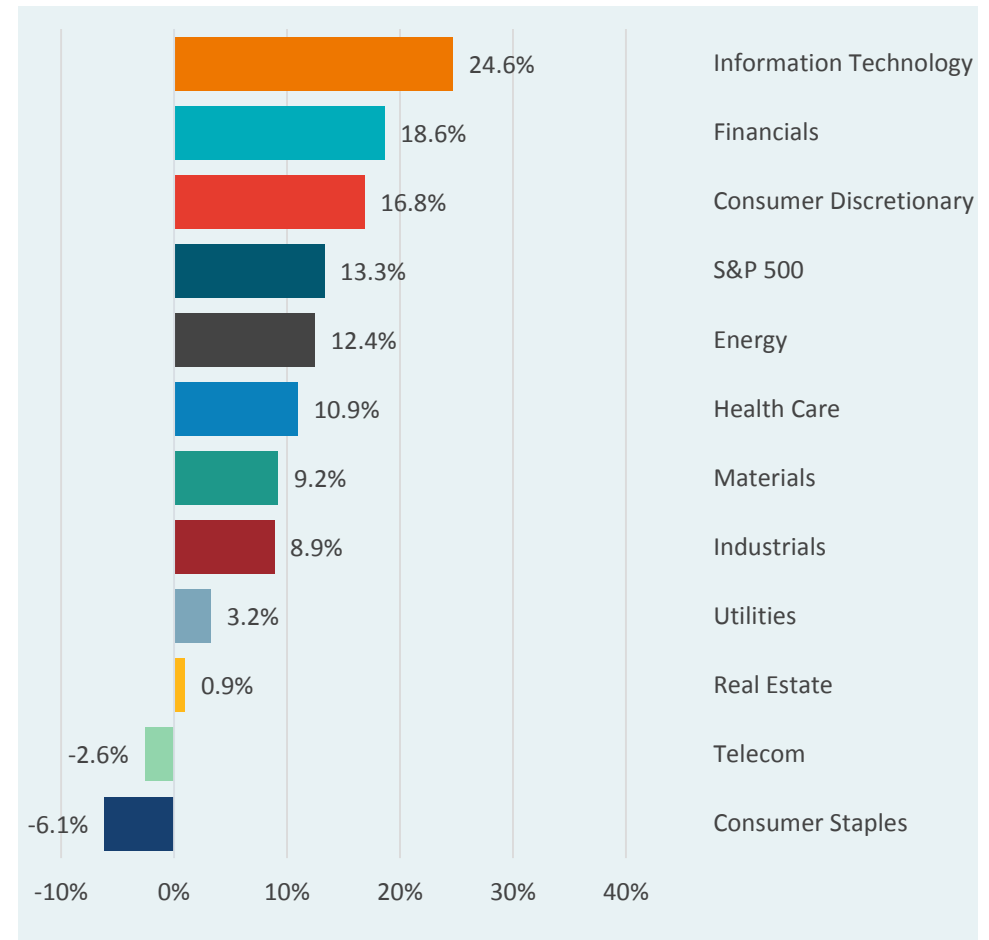
S&P 500 sector returns

QTD



Source: Morningstar, as of 4/30/18

ONE YEAR ENDING APRIL



Source: Morningstar, as of 4/30/18

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	0.4	0.4	(0.4)	13.3	10.6	13.0	9.0
S&P 500 Equal Weighted	0.4	0.4	(0.6)	11.4	9.1	12.6	10.5
DJ Industrial Average	0.3	0.3	(1.6)	18.1	13.4	13.0	9.4
Russell Top 200	0.5	0.5	(0.3)	14.0	11.1	13.3	9.0
Russell 1000	0.3	0.3	(0.4)	13.2	10.3	12.8	9.1
Russell 2000	0.9	0.9	0.8	11.5	9.6	11.7	9.5
Russell 3000	0.4	0.4	(0.3)	13.0	10.2	12.8	9.1
Russell Mid Cap	(0.2)	(0.2)	(0.6)	11.2	8.3	11.8	9.5
Style Index							
Russell 1000 Growth	0.3	0.3	1.8	19.0	12.8	15.1	10.8
Russell 1000 Value	0.3	0.3	(2.5)	7.5	7.7	10.5	7.3
Russell 2000 Growth	0.1	0.1	2.4	16.6	9.9	13.1	10.4
Russell 2000 Value	1.7	1.7	(1.0)	6.5	9.3	10.4	8.5

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	1.0	1.0	(0.0)	14.2	7.4	8.8	5.1
MSCI ACWI ex US	1.6	1.6	0.4	15.9	5.0	5.5	2.3
MSCI EAFE	2.3	2.3	0.7	14.5	4.9	5.9	2.4
MSCI EM	(0.4)	(0.4)	1.0	21.7	6.0	4.7	2.2
MSCI EAFE Small Cap	1.4	1.4	1.6	20.0	11.1	10.6	6.4
Style Index							
MSCI EAFE Growth	1.5	1.5	0.4	15.8	6.0	6.6	3.1
MSCI EAFE Value	3.1	3.1	1.0	13.3	3.8	5.1	1.7
Regional Index							
MSCI UK	4.8	4.8	0.8	14.9	2.4	4.2	2.1
MSCI Japan	0.7	0.7	1.5	19.2	7.4	7.2	3.4
MSCI Euro	3.3	3.3	2.9	15.3	5.9	7.5	0.6
MSCI EM Asia	0.1	0.1	0.9	24.5	7.0	8.1	4.4
MSCI EM Latin American	(1.3)	(1.3)	6.7	17.8	6.1	(2.1)	(1.8)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	(0.1)	(0.1)	(0.8)	0.3	1.0	(0.1)	3.1
BBgBarc US Treasury Bills	0.1	0.1	0.5	1.1	0.6	0.4	0.4
BBgBarc US Agg Bond	(0.7)	(0.7)	(2.2)	(0.3)	1.1	1.5	3.6
Duration							
BBgBarc US Treasury 1-3 Yr	(0.2)	(0.2)	(0.3)	(0.3)	0.3	0.5	1.2
BBgBarc US Treasury Long	(1.9)	(1.9)	(5.2)	(0.0)	0.8	2.1	5.8
BBgBarc US Treasury	(0.8)	(0.8)	(2.0)	(1.1)	0.4	0.7	2.8
Issuer							
BBgBarc US MBS	(0.5)	(0.5)	(1.7)	(0.4)	0.9	1.6	3.4
BBgBarc US Corp. High Yield	0.7	0.7	(0.2)	3.3	5.0	4.8	7.9
BBgBarc US Agency Interm	(0.3)	(0.3)	(0.7)	(0.4)	0.6	0.8	2.2
BBgBarc US Credit	(0.9)	(0.9)	(3.0)	0.6	2.0	2.3	5.0

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	2.6	2.6	2.2	8.0	(4.2)	(7.3)	(7.8)
Wilshire US REIT	1.4	1.4	(6.2)	(2.2)	3.5	5.1	5.7
CS Leveraged Loans	0.5	0.5	2.1	4.7	4.2	4.1	5.1
Regional Index							
JPM EMBI Global Div	(1.5)	(1.5)	(3.2)	1.3	4.7	3.8	6.8
JPM GBI-EM Global Div	(3.0)	(3.0)	1.4	8.4	3.4	(1.9)	3.3
Hedge Funds							
HFRI Composite	(0.1)	(0.1)	0.4	4.5	2.1	3.7	3.6
HFRI FOF Composite	0.3	0.3	0.6	5.3	1.9	3.3	1.5
Currency (Spot)							
Euro	(1.8)	(1.8)	0.6	11.0	2.5	(1.7)	(2.5)
Pound	(1.8)	(1.8)	1.8	6.5	(3.6)	(2.4)	(3.6)
Yen	(2.8)	(2.8)	2.9	1.9	3.0	(2.3)	(0.5)

Source: Morningstar, HFR, as of 4/30/18

Notices & disclosures

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SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

May 22, 2018

Agenda Item 6.2

TO: Board of Retirement

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

SUBJECT: Report on Quarterly Investment Performance Report for the Period Ended March 31, 2018

Recommendation

Accept Verus Advisory's quarterly performance report for the period ended March 31, 2018.

Discussion

The 1st quarter net total return for the SamCERA portfolio was -0.5%, which was 20 bps higher than the -0.7% policy benchmark return. As can be seen on Page 19 and 20, private equity and fixed income were the main sources of relative outperformance, while hedge funds / absolute return and risk parity were the main detractors of relative performance during the quarter.

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

Attachment

Verus Quarterly Performance Report Ending 03/31/2018



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: MARCH 31, 2018

Investment Performance Review for

San Mateo County Employees' Retirement Association

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VERUSINVESTMENTS.COM

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

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1st quarter summary

THE ECONOMIC CLIMATE

- The U.S. economy is expected to grow at around 2.2% in Q1. Economists expect a slightly quicker rate of growth throughout the year. We believe that this *middle-of-the-road* expansion – characterized as not too fast and not too slow – may allow the U.S. economy to continue expanding for longer than expected.
- The U.S. has enacted a 25% tariff on steel and a 10% tariff on aluminum, which went into effect on March 23rd. The U.S. also engaged with China over allegations of asymmetrical trade policies and intellectual property theft.

PORTFOLIO IMPACTS

- Global economic growth has improved – low inflation, strong employment, and accommodative foreign central bank policies have been supportive of equity prices. In the U.S., monetary tightening has yet to have a major impact on equities.
- Concerns over increasing trade protectionism weighed on financial markets. The tariffs placed on steel and aluminum are not likely to have a material impact on asset prices, but escalating tensions and retaliatory measures could have a negative impact on global growth.

THE INVESTMENT CLIMATE

- Excitement and optimism over tax cuts helped lead equities higher to begin the year. However, markets stumbled in February – falling roughly 10%. Equities recovered much of the losses throughout the quarter, but then fell back to their lows at the end of March.
- 2018 is expected to be a banner year for U.S. corporate profits. Earnings for the calendar year are forecast to grow 17.3%, with 7.3% revenue growth. These 2018 expectations may already be priced in.
- February’s market correction appeared isolated to the equity markets. “Risk-off” selling that often accompanies market drawdowns was not apparent – credit spreads, U.S. Treasuries, and gold, reacted minimally.

ASSET ALLOCATION ISSUES

- Upward price momentum in equities has diminished following the February market correction. Investor sentiment is less positive, but the global economic and earnings backdrop remains intact. We believe a neutral or mild risk overweight is warranted in this environment.
- Equity volatility spiked in February, ending the period of extreme calm that investors experienced since the beginning of 2017. The VIX Index averaged 20.7 during the last two months of the quarter.

Changing market dynamics suggest a neutral or mild risk overweight may be warranted

U.S. economics summary

- Economic growth remained near expansion highs in the fourth quarter. U.S. real GDP growth was 2.6% from the previous year. Consumer spending and investment pushed the economy ahead, while falling exports were a drag on growth.
- The U.S. enacted a 25% tariff on steel and 10% tariff on aluminum, which went into effect March 23rd. The U.S. has engaged with China over allegations of asymmetrical trade policies and intellectual property theft, creating concerns over the risks of a trade war.
- Additions to U.S. payrolls averaged 202,000 per month in the first quarter, above the expansion average.
- In recent years, the U.S. has seen discouraged and part-time workers drawn back to full-time employment. This effect can be

quantified by the shrinking difference between U-6 and U-3 unemployment figures. The difference between these two measures fell to 3.9%, matching expansion lows.

- Core CPI inflation moved from 1.8% to 2.1% YoY during the quarter, the highest rate in more than a year. Prices jumped in March primarily due to the low base effect from an unexpected drop in wireless telecom prices one year ago.
- The Fed raised interest rates on March 21st to 1.50-1.75%. Comments made during the March meeting suggest the FOMC expects continued moderate economic activity, spending, and business investment. Unsurprisingly, the Committee stated that the U.S. inflation rate is expected to stabilize at the 2% target over the near-term.

	Most Recent	12 Months Prior
GDP (YoY)	2.6% <i>12/31/17</i>	1.8% <i>12/31/16</i>
Inflation (CPI YoY, Core)	2.1% <i>3/31/18</i>	2.0% <i>3/31/17</i>
Expected Inflation (5yr-5yr forward)	2.2% <i>3/31/18</i>	2.2% <i>3/31/17</i>
Fed Funds Target Range	1.50 – 1.75% <i>3/31/18</i>	0.75 – 1.00% <i>3/31/17</i>
10 Year Rate	2.8% <i>3/31/18</i>	2.4% <i>3/31/17</i>
U-3 Unemployment	4.1% <i>3/31/18</i>	4.5% <i>3/31/17</i>
U-6 Unemployment	8.0% <i>3/31/18</i>	8.8% <i>3/31/17</i>

International economics summary

- International economic growth was strong across countries in the fourth quarter, but a combination of recent economic data coming in below expectations and trade concerns created risks to the synchronized global growth narrative.
- The U.S. implemented 25% and 10% tariffs on steel and aluminum imports, respectively. When the tariffs were initially announced the White House pushed for all countries to be subject to them. However, many countries, such as Canada and Mexico, were given exemptions to allow for ongoing negotiations.
- In April, concerns over trade shifted to escalating tensions between the U.S. and China.
- The Eurozone experienced above-trend growth in the fourth quarter at 2.7% YoY, driven by contributions from household spending and fixed capital investment.
- Economic data out of the Eurozone consistently missed expectations in the first quarter. Industrial production was particularly disappointing – the year-over-year rate fell from 5.2% in December to 2.9% in February.
- Global PMIs remained above 50, indicating expansion in the manufacturing sector, although several countries experienced a decline. The Eurozone PMI fell from 60.8 to 56.6 during the quarter.
- The populist Five Star Movement performed better than expected in the Italian general election in March, winning the most seats of any party. However, no party won a majority in Parliament, resulting in the need to form a coalition government. Increasing support for populist governments (i.e. Hungary and Poland) across Europe remains a risk to investors.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.5% <i>12/31/17</i>	2.4% <i>3/31/18</i>	4.1% <i>3/31/18</i>
Western Europe	2.5% <i>12/31/17</i>	1.3% <i>3/31/18</i>	7.4% <i>12/31/17</i>
Japan	2.0% <i>12/31/17</i>	1.5% <i>2/28/18</i>	2.5% <i>2/28/18</i>
BRICS Nations	6.2% <i>12/31/17</i>	2.6% <i>3/31/18</i>	5.6% <i>12/31/17</i>
Brazil	2.1% <i>12/31/17</i>	2.7% <i>3/31/18</i>	12.4% <i>3/31/18</i>
Russia	0.9% <i>12/31/17</i>	2.4% <i>3/31/18</i>	5.0% <i>2/28/18</i>
India	7.2% <i>12/31/17</i>	4.4% <i>2/28/18</i>	8.8% <i>12/31/17</i>
China	6.8% <i>12/31/17</i>	2.1% <i>3/31/18</i>	3.9% <i>12/31/17</i>

Equity environment

- We maintain an overweight position to equities primarily due to enthusiasm for emerging markets. Though the February market correction dampened investor excitement, it is helpful to remind ourselves that 10% equity drawdowns are fairly common.
- Upward price momentum in equities has diminished following the February market correction. Investor sentiment is less positive, but the global economic and earnings backdrop remains intact.
- 2018 is expected to be a banner year for U.S. corporate profits. Earnings for the year are forecast to grow 17.3%, with revenue growth of 7.3% according to Factset - a rare and impressive year for U.S. businesses. A continuation of this trend would be supportive of equity performance.
- Equity valuations (price-to-earnings multiples) fell to more attractive levels in Q1 due to the combination of lower equity prices and strong earnings growth.
- Equity volatility has remained extremely low since the beginning of 2017. However, the equity drawdown and volatility spike in February appears to have ended this period of calm. Investors might expect a more normal volatility environment going forward.
- Currency movement has contributed to volatility and great return disparity for investors with unhedged investments in international assets. A hedging program could allow investors to reduce or eliminate uncompensated currency risk.

	QTD TOTAL RETURN		YTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	(2.0%)		(2.0%)		12.4%	
US Small Cap (Russell 2000)	(1.1%)		(1.1%)		10.5%	
US Large Value (Russell 1000 Value)	(4.0%)		(4.0%)		5.6%	
US Large Growth (Russell 1000 Growth)	(0.1%)		(0.1%)		19.3%	
International Large (MSCI EAFE)	(1.6%)	(3.8%)	(1.6%)	(3.8%)	14.4%	7.1%
Eurozone (Euro Stoxx 50)	(0.5%)	(3.2%)	(0.5%)	(3.2%)	18.0%	0.3%
U.K. (FTSE 100)	(3.8%)	(6.9%)	(3.8%)	(6.9%)	11.9%	1.2%
Japan (NIKKEI 225)	0.6%	(5.3%)	0.6%	(5.3%)	20.9%	15.2%
Emerging Markets (MSCI Emerging Markets)	1.2%	0.4%	1.2%	0.4%	23.1%	20.4%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 3/31/18

Domestic equity

U.S. equities delivered a loss in Q1 (Russell 1000 -2.0%) - a change of pace from steady and strong gains in 2017. Equity indexes around the world fell between 8-12% in early February as the recent bull run was interrupted. Since the selloff, most markets have been rangebound but relatively flat overall. Volatility seems to have returned to the markets as sizable day-to-day swings have been the norm.

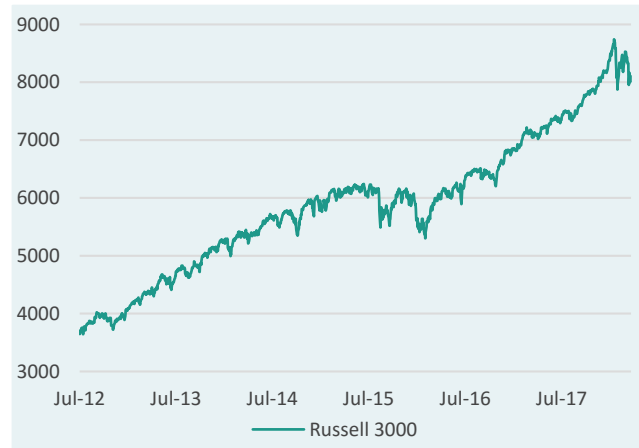
While large price movements tend to naturally cause

investor fear, it is not apparent that the attractive macro picture has changed – i.e. positive economic growth, very strong earnings gains, and healthy sentiment. Equity prices typically follow growth and corporate profit trends over the medium and long-term term, which likely provides some support against larger downside equity movement.

However, the February selloff has dampened recent positive upward price momentum. Momentum is now more neutral as market prices flatten out.

Fundamentals appear unchanged despite falling prices

U.S. EQUITIES



Source: Russell Investments, as of 3/31/18

EARNINGS GROWTH



Source: S&P 500, as of 3/31/18

S&P 500 PRICE & EARNINGS



Source: Bloomberg, as of 3/31/18

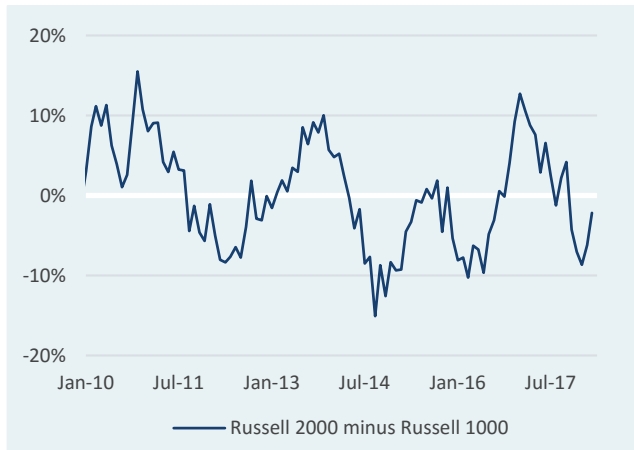
Domestic equity size & style

Large cap equities (Russell 1000 -2.0%) lagged small cap equities (Russell 2000 -1.1%) during the quarter. Value stocks delivered exceptionally poor performance in Q1 (Russell 1000 Value -4.0% vs. Russell 1000 Growth -0.1%), dragged down by the energy and materials sectors, which are heavily tilted towards value. Despite a sell-off in mega-cap tech stocks in March due mainly to company-specific issues, such as a data breach at Facebook and President Trump targeting Amazon over its relationship with the U.S. Postal Service, tech was still the best performing sector in the first quarter.

Traditional style factors – small cap and value in particular – have hit a rough patch since the 2008-2009 global financial crisis. It may be helpful to remember that these periods do occur. In fact, there are multiple points in history where the equity small-cap and value premiums delivered negative returns over more than a 10 year period.

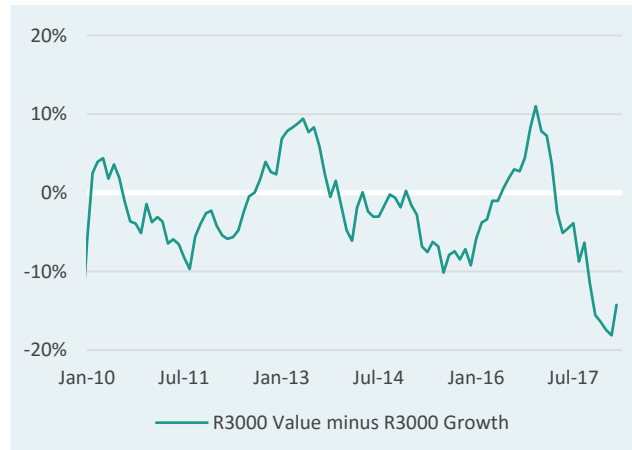
In U.S. equities, value has continued to underperform in recent years, while momentum delivered outperformance alongside the bull market rally.

SMALL CAP VS LARGE CAP (YOY)



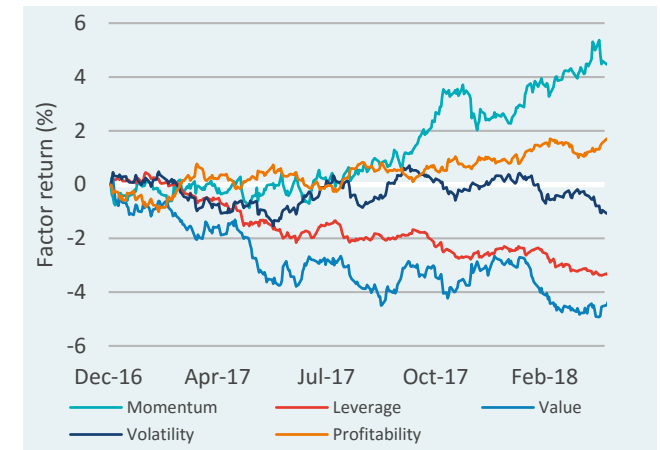
Source: FTSE, as of 3/31/18

VALUE VS GROWTH (YOY)



Source: FTSE, as of 3/31/18

BLOOMBERG FACTOR PERFORMANCE



Source: Bloomberg, as of 3/31/18

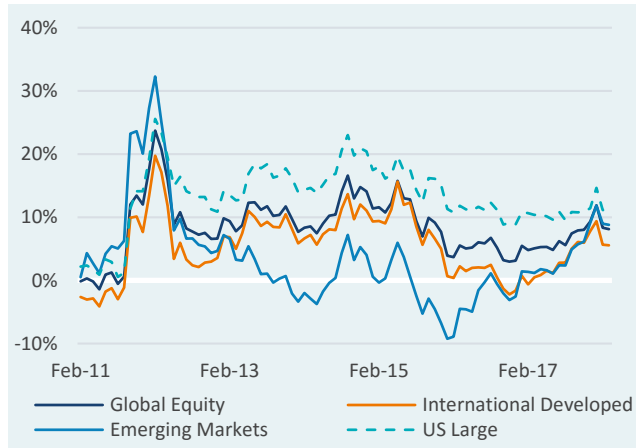
International developed equity

Unhedged International equities were in line with U.S. equities during Q1, delivering slightly negative performance. The MSCI EAFE Index returned -1.5%. Positive currency returns masked underperformance of local developed market equities. On a hedged basis, the MSCI EAFE Index posted a -3.8% return. Looking forward, accelerating corporate earnings, and more attractive valuations following the February fall in equity prices, may be supportive for another positive year in 2018. Forward one year earnings growth is expected to be around 15%.

Along with the U.S., most developed markets also experienced an approximate 10% drawdown in February, but were not as quick to recover. Most regional benchmarks finished the quarter still 7-10% below recent peaks.

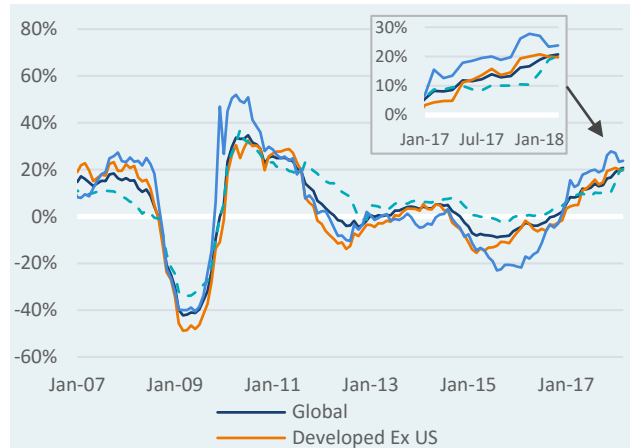
Trailing P/E ratios for the EAFE Index have moved to below average, providing a possible value opportunity. However, downside risks to these markets, including political issues and reliance on central bank support may be a justification for low valuations.

EQUITY PERFORMANCE (3-YEAR ROLLING)



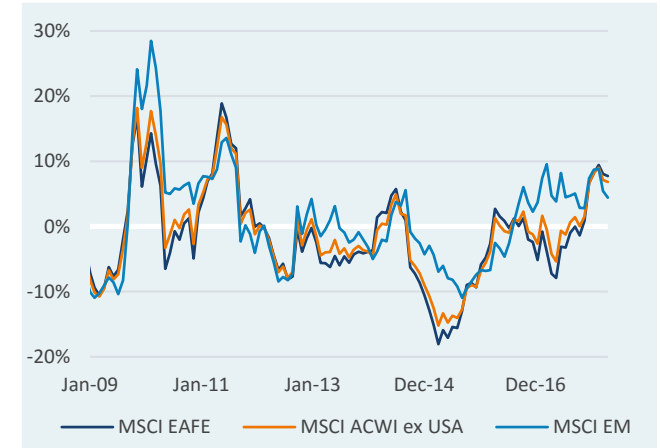
Source: Bloomberg, as of 3/31/18

EARNINGS GROWTH (YOY)



Source: MSCI, as of 3/31/18 – YoY growth in forward earnings

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 3/31/18

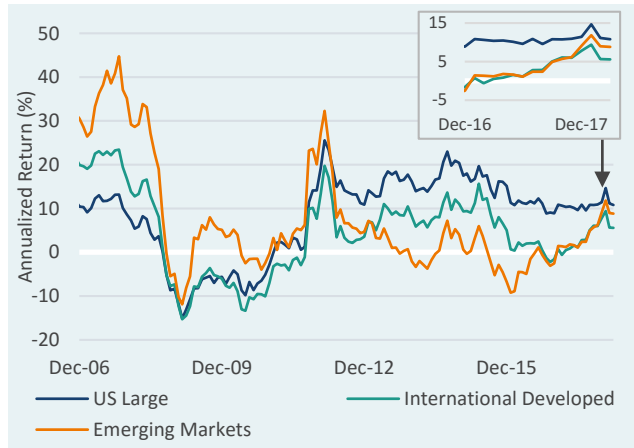
Emerging market equity

We maintain an overweight to emerging market equities. Emerging market equities have exhibited more modest valuations relative to developed markets such as the U.S., while these economies in aggregate continue to outpace developed economies by a wide margin. Furthermore, emerging market currencies remain depressed relative to history. Cheaper valuations, much stronger economic growth, and a currency tailwind may bode well for future performance.

Emerging economies have led the way over the past year in terms of economic growth, earnings, and equity performance. Emerging market equities have delivered positive performance year-to-date despite the February sell-off (MSCI Emerging Markets +1.2%) while developed markets were in negative territory to end the first quarter.

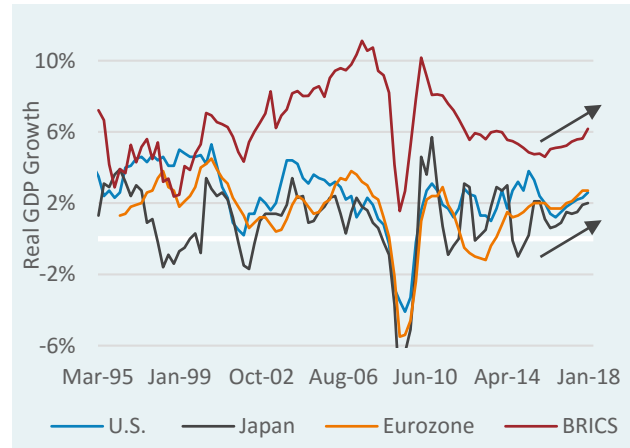
Coordinated global growth has helped propel emerging market equities forward

EQUITY PERFORMANCE (3YR ROLLING)



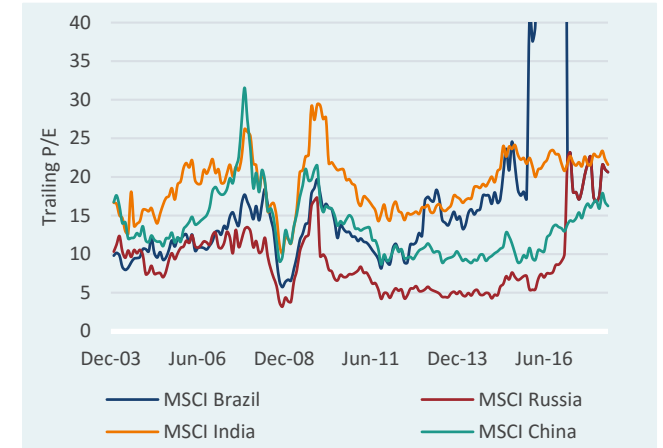
Source: Standard & Poor's, MSCI, as of 3/31/18

ECONOMIC MOMENTUM



Source: Bloomberg, as of 12/31/18

BRIC VALUATIONS



Source: MSCI, as of 3/31/18

Interest rate environment

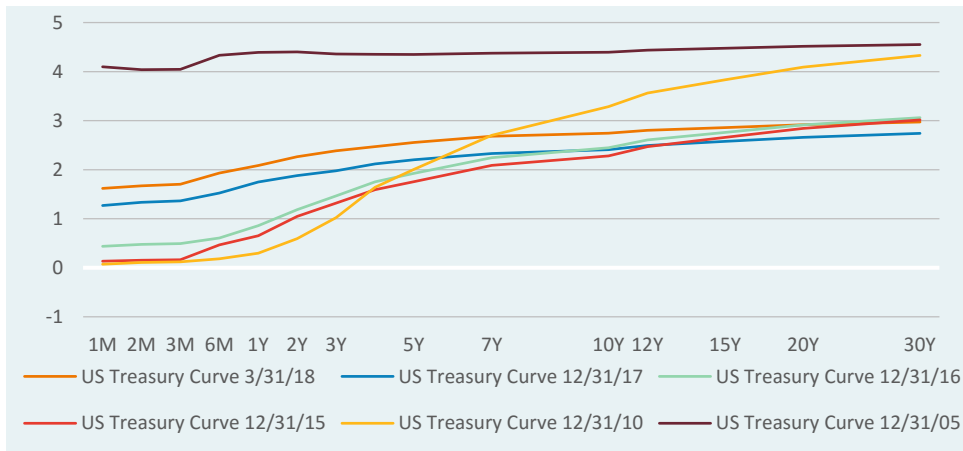
- The Fed raised interest rates by 25 bps to a target range of 1.50% - 1.75% in March, as expected. In his first public comments since taking over as Fed chairman, Jerome Powell’s views appeared to support a continuation of gradual monetary tightening.
- According to the Fed dot plot, officials are expecting two additional rate hikes this year, on par with market pricing.
- Long-term Treasury yields rose at the beginning of the year, likely influenced by increasing growth and inflation expectations. The 10-year yield peaked at 2.95% in late February, up 55 bps from year-end. Yields failed to hold these levels, however, and finished the quarter at 2.74%.
- Short-term borrowing costs continued to rise during the quarter, especially in debt tied to Libor. The 3-month USD Libor rate moved steadily higher from 1.7% to 2.3%. Much of this increase was likely mechanical due to record high Treasury bill issuance and repatriation of foreign profits.
- Sovereign yields in developed Europe also ticked up in January, coinciding with yield increases in U.S. Treasuries, but came back down in the last two months of the quarter. German 10-year yields peaked at a two year high of 0.77% in early February before finishing the quarter at 0.50%.
- Developed international central banks remain accommodative compared to the Fed, but they have increasingly hinted towards policy normalization. The ECB is likely next in line to begin monetary tightening by ending asset purchases and raising rates sometime next year. The BOJ has yet to provide any details on ending its stimulus program, but officials have noted internal discussions have begun.

Area	Short Term (3M)	10 Year
United States	1.70%	2.74%
Germany	(0.75%)	0.50%
France	(0.58%)	0.72%
Spain	(0.50%)	1.16%
Italy	(0.43%)	1.79%
Greece	1.31%	4.32%
U.K.	0.49%	1.35%
Japan	(0.17%)	0.04%
Australia	2.03%	2.60%
China	3.12%	3.77%
Brazil	6.31%	9.50%
Russia	6.01%	7.16%

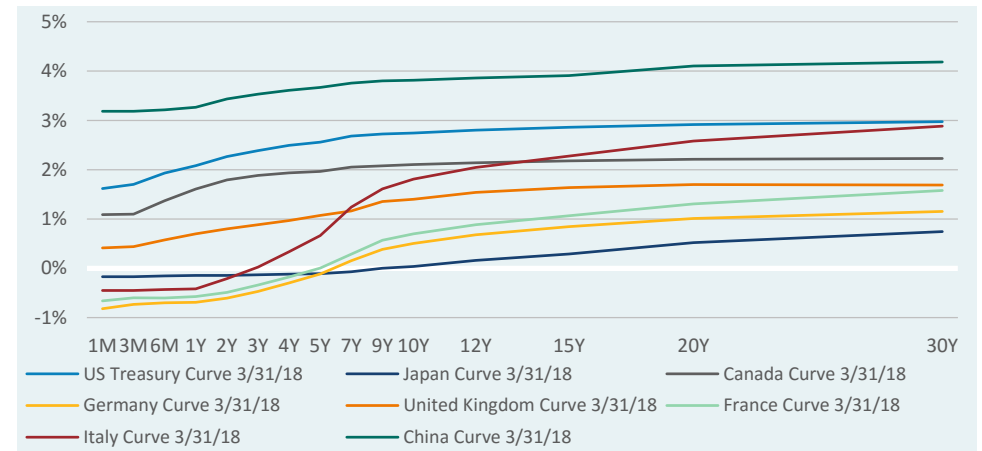
Source: Bloomberg, as of 3/31/18

Yield environment

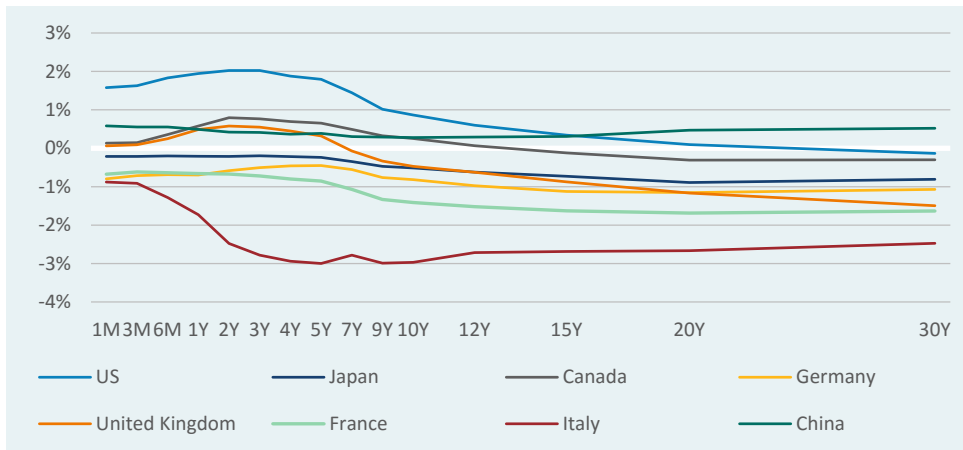
U.S. YIELD CURVE



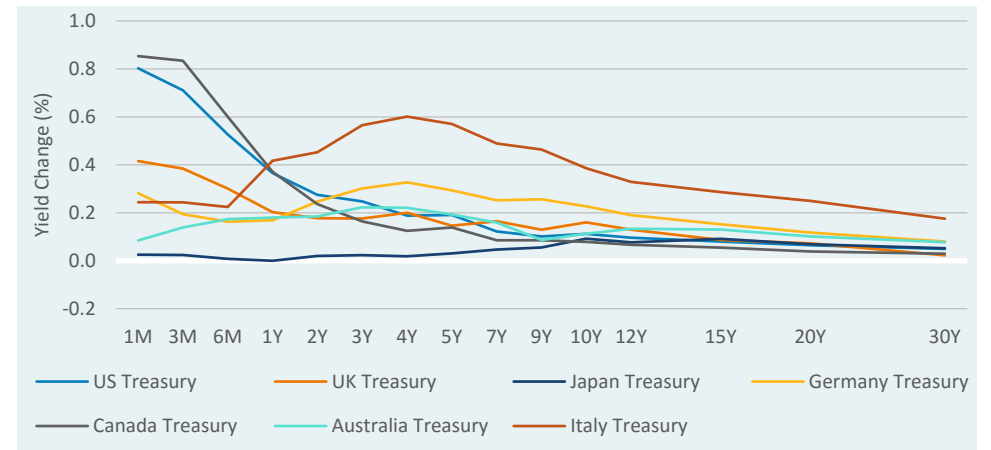
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 3/31/18

Currency

The U.S. dollar declined further to begin the quarter, but recovered slightly over the past two months. The broad U.S. trade weighted index fell 1.9% in the first quarter. This index was down 8.5% since peaking at the end of 2016.

Dollar depreciation has occurred despite widening short-term interest rate differentials between the U.S. and the rest of the developed world. Typically, higher interest rate differentials result in currency appreciation as investors take advantage of the yield, at least in the short-term.

Based on purchasing power parity (PPP), the dollar is overvalued against the currencies with the biggest weights in international equity benchmarks: the euro, yen, and pound.

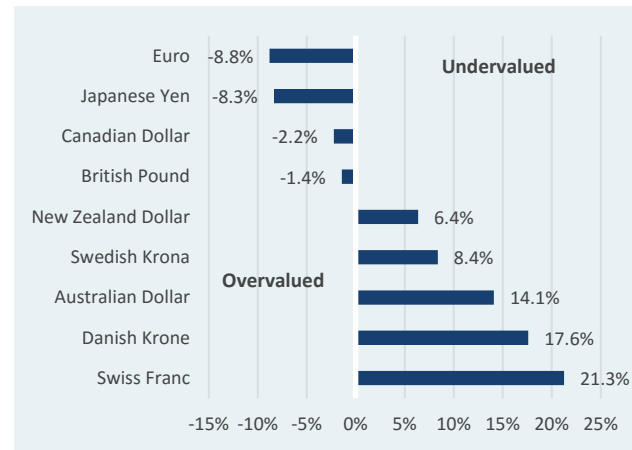
Unhedged foreign currency exposure added to equity returns over the past year, especially in developed markets. Although currency exposure has been positive lately, it has historically tended to experience large swings that add volatility to portfolios.

U.S. DOLLAR TRADE WEIGHTED INDEX



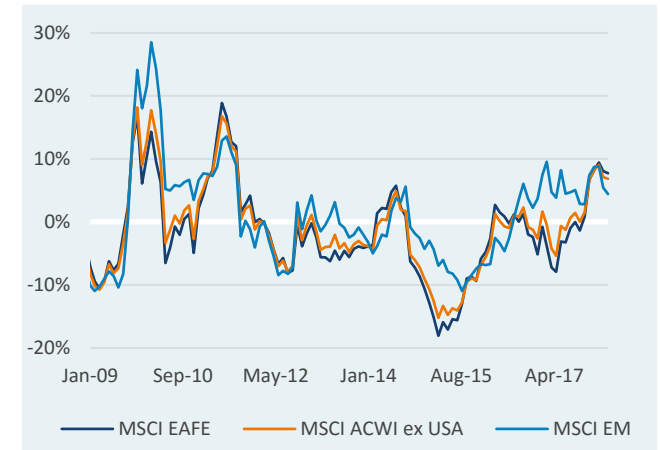
Source: Federal Reserve, as of 3/28/18

CURRENCY VALUATIONS VS USD (PPP)



Source: OECD, as of 3/31/2018 (see appendix)

EFFECT OF CURRENCY (1-YR ROLLING)



Source: MSCI, as of 3/31/18

- The Total Fund, net of manager fees, returned -0.5% in the first quarter of 2018 and ranked 79th percentile among other public plans greater than \$1 billion (median of -0.1%). It beat the policy index return of -0.7%. The Total Fund ex Overlay was -0.5% for the quarter. The Total Fund one-year return of 8.8% lagged the policy index, 10.0%, and ranked in 93rd percentile of its peer universe. The three-year return of 6.5% (50th percentile) was in line with the median among large public plans (6.5%).
- First quarter results were enhanced by the following factors:
 1. Brigade Capital gained 1.1% beating the Bloomberg Barclays Intermediate High Yield index (-1.5%). The outperformance came from a strong January, with positive stock selection in both high yield and leveraged loans.
- First quarter results were hindered by the following factors:
 1. QMA lost -0.8% in the quarter underperforming the Russell 2000 (-0.1%). QMA's value factor, which was a headwind in 2017, continued to cause underperformance in the first quarter of 2018.

Total Fund Performance Summary (Net of Fees)

Period Ending: March 31, 2018

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Total Fund **	-0.5	79	6.1	93	8.8	93	10.4	71	6.5	50	7.8	37	6.0	48
<i>Policy Index¹</i>	-0.7	90	7.0	57	10.0	52	11.0	46	6.9	31	8.1	27	6.6	15
<i>Allocation Index</i>	-0.5	81	7.0	56	10.1	51	10.9	57	6.9	35	8.0	28	--	--
<i>InvestorForce Public DB > \$1B Net Median</i>	-0.1		7.1		10.1		10.9		6.5		7.7		5.9	
Total Fund ex Overlay	-0.5	78	6.1	92	8.8	93	10.3	73	6.5	53	7.8	43	5.9	52
<i>Policy Index¹</i>	-0.7	90	7.0	57	10.0	52	11.0	46	6.9	31	8.1	27	6.6	15
<i>Allocation Index</i>	-0.5	81	7.0	56	10.1	51	10.9	57	6.9	35	8.0	28	--	--
<i>InvestorForce Public DB > \$1B Net Median</i>	-0.1		7.1		10.1		10.9		6.5		7.7		5.9	
Public Equity	-0.8	79	9.8	69	14.6	57	14.7	79	8.6	61	10.3	57	6.7	79
<i>Blended Public Equity Index²</i>	-0.8	79	10.7	36	15.5	35	16.1	31	9.0	33	10.5	51	7.5	42
<i>InvestorForce All DB Total Eq Net Median</i>	-0.4		10.2		14.8		15.5		8.8		10.6		7.3	
US Equity	-0.7	67	10.6	41	13.8	49	15.5	65	9.7	53	12.5	54	8.9	69
<i>Blended US Equity Index²</i>	-0.6	63	10.5	49	13.8	47	16.1	39	9.9	44	12.8	36	9.7	26
<i>Russell 3000</i>	-0.6	63	10.5	49	13.8	47	15.9	48	10.2	30	13.0	25	9.6	29
<i>InvestorForce All DB US Eq Net Median</i>	-0.5		10.5		13.7		15.9		9.8		12.6		9.3	
Large Cap Equity	-0.6	45	11.1	43	14.5	45	16.5	32	11.1	20	13.5	29	9.2	48
<i>Russell 1000</i>	-0.7	46	10.6	49	14.0	48	15.7	40	10.4	29	13.2	34	9.6	40
<i>eV US Large Cap Equity Net Median</i>	-0.9		10.4		13.4		14.9		9.1		12.3		9.2	
<i>BlackRock Russell 1000***</i>	-0.7	46	10.6	52	14.0	50	--	--	--	--	--	--	--	--
<i>DE Shaw</i>	-0.4	37	13.8	13	16.8	20	18.9	6	12.4	3	14.7	4	--	--
<i>Russell 1000</i>	-0.7	45	10.6	51	14.0	50	15.7	33	10.4	22	13.2	28	9.6	33
<i>eV US Large Cap Core Equity Net Median</i>	-0.8		10.6		13.9		14.7		9.3		12.3		9.1	

* 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. Effective 10/1/17, Policy Index is 21% Russell 3000/19% MSCI ACWI ex US IMI NI/ 14% BBgBarc Aggregate/ 2% BBgBarc TIPS/ 7% BBgBarc BA Intermediate HY / 8% NCREIF NFI ODCE/ 7% Russell 3000 + 3% 8% (60% MSCI World/40% BBgBarc Global Aggregate)/ 6% Libor +4%/ 8% (34% Bloomberg Roll Select Commodity/ 33% S&P Global Large-MidCap Commodity and Resources/ 33% S&P Global Infrastructure)

2. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: March 31, 2018

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Small Cap Equity	-0.8	53	7.3	66	9.3	61	14.5	76	6.0	83	9.4	84	8.2	90
<i>Russell 2000</i>	-0.1	44	9.1	47	11.8	47	18.8	36	8.4	52	11.5	50	9.8	59
<i>eV US Small Cap Equity Net Median</i>	-0.5		8.7		11.0		17.3		8.5		11.5		10.2	
QMA US Small Cap	-0.8	56	7.3	76	9.3	69	--	--	--	--	--	--	--	--
<i>Russell 2000</i>	-0.1	39	9.1	45	11.8	44	18.8	22	8.4	53	11.5	56	9.8	60
<i>eV US Small Cap Core Equity Net Median</i>	-0.5		8.7		11.2		17.4		8.6		11.9		10.2	
International Equity	-0.9	77	8.9	81	15.6	80	13.4	82	6.6	59	6.4	58	2.1	84
<i>MSCI ACWI ex US IMI ²</i>	-1.1	81	10.7	44	17.4	51	15.5	52	7.2	37	6.7	48	3.3	44
<i>MSCI EAFE Gross</i>	-1.4	90	8.4	86	15.3	82	13.8	80	6.0	70	7.0	37	3.2	50
<i>InvestorForce All DB ex-US Eq Net Median</i>	-0.4		10.5		17.4		15.5		6.8		6.6		3.2	
Developed Markets	-1.2	74	8.2	82	15.3	65	13.1	73	6.4	49	6.8	62	2.3	81
<i>MSCI ACWI ex USA Gross</i>	-1.1	64	10.4	28	17.0	39	15.4	26	6.7	43	6.4	70	3.2	49
<i>InvestorForce All DB Dev Mkt ex-US Eq Net Median</i>	-0.4		9.6		16.2		14.0		6.4		7.2		3.0	
Baillie Gifford	-0.8	91	9.3	91	18.8	89	14.5	81	7.8	72	8.2	65	--	--
<i>MSCI ACWI ex US ²</i>	-1.1	94	10.4	84	17.0	96	15.4	70	6.7	92	7.3	83	--	--
<i>MSCI ACWI ex US Growth ²</i>	-0.8	92	11.7	80	20.3	77	15.1	74	7.7	78	8.0	69	--	--
<i>eV ACWI ex-US Growth Equity Net Median</i>	1.1		15.2		24.5		17.1		9.3		8.7		5.4	
BlackRock EAFE Index	-1.6	69	8.2	69	15.0	71	13.6	54	5.9	67	--	--	--	--
<i>MSCI EAFE</i>	-1.5	66	8.2	69	14.8	72	13.2	58	5.6	72	6.5	76	2.7	89
<i>MSCI EAFE Gross</i>	-1.4	61	8.4	65	15.3	68	13.8	50	6.0	65	7.0	70	3.2	71
<i>eV EAFE Core Equity Net Median</i>	-1.0		9.9		16.8		13.8		6.8		7.7		3.9	
Mondrian	-1.3	51	7.7	59	12.2	67	11.8	67	5.1	65	5.8	74	2.8	68
<i>MSCI ACWI ex USA Value Gross</i>	-1.4	55	9.2	40	13.9	43	15.6	45	5.6	62	5.5	84	2.7	69
<i>MSCI ACWI ex USA Gross</i>	-1.1	44	10.4	20	17.0	16	15.4	48	6.7	39	6.4	68	3.2	49
<i>eV ACWI ex-US Value Equity Net Median</i>	-1.3		8.4		13.5		15.0		6.5		6.9		3.1	

2. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: March 31, 2018

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Emerging Markets	1.4	59	14.0	63	17.8	80	16.2	85	7.5	73	3.7	68	--	--
MSCI Emerging Markets Gross	1.5	59	17.8	20	25.4	13	21.5	33	9.2	31	5.4	22	3.4	30
InvestorForce All DB Emg Mkt Eq Net Median	1.7		15.8		20.8		19.3		8.5		4.3		3.1	
Parametric Core	1.4	51	14.0	72	17.8	86	16.2	84	--	--	--	--	--	--
MSCI Emerging Markets Gross	1.5	50	17.8	44	25.4	38	21.5	43	9.2	49	5.4	50	3.4	61
eV Emg Mkts Equity Net Median	1.4		17.0		24.2		20.6		9.0		5.3		3.8	
Fixed Income	-0.3	26	1.3	30	2.8	48	5.7	7	3.4	13	3.1	28	5.3	26
Blended Fixed Income Index ²	-1.1	66	0.6	61	2.5	56	2.7	61	2.5	41	2.1	57	4.0	73
InvestorForce All DB Total Fix Inc Net Median	-0.9		0.8		2.7		3.1		2.2		2.3		4.7	
Core Fixed	-1.0	--	0.4	--	2.1	--	3.0	--	2.1	--	2.6	--	4.6	--
BBgBarc US Aggregate TR	-1.5	--	-0.2	--	1.2	--	0.8	--	1.2	--	1.8	--	3.6	--
BlackRock Intermediate Govt	-0.7	17	-0.7	65	0.1	61	--	--	--	--	--	--	--	--
BBgBarc US Govt Int TR	-0.7	25	-0.8	72	-0.1	76	-0.4	68	0.5	67	0.7	67	2.2	77
eV US Government Fixed Inc Net Median	-0.9		-0.5		0.7		-0.1		0.6		1.0		2.8	
FIAM Bond	-1.3	36	0.2	23	1.5	40	2.0	17	1.8	18	2.4	16	4.7	16
BBgBarc US Aggregate TR	-1.5	56	-0.2	61	1.2	66	0.8	71	1.2	71	1.8	62	3.6	80
Western TRU	-0.7	6	2.5	1	5.8	1	7.0	1	--	--	--	--	--	--
3-Month Libor Total Return USD	0.5	1	1.2	4	1.5	39	1.2	51	0.9	89	0.7	99	0.7	99
BBgBarc US Aggregate TR	-1.5	56	-0.2	61	1.2	66	0.8	71	1.2	71	1.8	62	3.6	80
eV US Core Fixed Inc Net Median	-1.4		-0.1		1.4		1.2		1.4		1.9		4.1	
Opportunistic Credit	1.1	--	3.7	--	6.2	--	11.6	--	6.6	--	6.8	--	--	--
BBgBarc BA Intermediate HY	-1.5	--	0.4	--	2.9	--	6.4	--	4.3	--	3.6	--	--	--
Angelo Gordon Opportunistic **	5.7	--	14.3	--	19.1	--	15.6	--	10.8	--	--	--	--	--
Angelo Gordon STAR **	7.5	--	15.8	--	22.2	--	17.5	--	11.5	--	12.7	--	--	--
BBgBarc US Aggregate TR	-1.5	--	-0.2	--	1.2	--	0.8	--	1.2	--	1.8	--	3.6	--

** Preliminary return as of 3/31/2018.

2. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: March 31, 2018

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Beach Point Select	1.1	4	5.1	5	7.1	6	11.5	9	8.3	1	--	--	--	--
BBgBarc BA Intermediate HY ²	-1.5	88	0.4	93	2.9	79	6.4	82	4.3	60	3.6	86	--	--
eV US High Yield Fixed Inc Net Median	-0.7		1.5		3.6		8.6		4.5		4.4		7.4	
Brigade Capital	1.1	5	2.8	22	4.7	22	13.8	3	5.2	24	4.4	54	--	--
BBgBarc BA Intermediate HY ²	-1.5	88	0.4	93	2.9	79	6.4	82	4.3	60	3.6	86	--	--
50% Barclays HY/ 50% Bank Loan	0.4	16	2.7	22	4.2	30	8.5	52	4.8	45	4.6	40	--	--
eV US High Yield Fixed Inc Net Median	-0.7		1.5		3.6		8.6		4.5		4.4		7.4	
PIMCO Diversified ^{**}	-0.6	49	--	--	--	--	--	--	--	--	--	--	--	--
Blended PIMCO Diversified Index ²	-1.3	78	1.3	67	3.4	58	5.9	88	4.3	58	4.2	62	6.7	75
BBgBarc BA Intermediate HY	-1.5	88	0.4	93	2.9	79	6.4	82	4.3	60	3.6	86	--	--
eV US High Yield Fixed Inc Net Median	-0.7		1.5		3.6		8.6		4.5		4.4		7.4	
Franklin Templeton	2.0	14	1.9	69	0.9	98	6.9	28	3.0	60	2.0	67	--	--
BBgBarc Multiverse TR	1.3	27	4.3	26	7.0	27	2.9	76	3.4	51	1.7	76	2.8	80
eV All Global Fixed Inc Net Median	0.3		2.8		4.9		5.1		3.4		2.9		4.3	
Private Credit	1.8	--	4.5	--	6.6	--	--	--	--	--	--	--	--	--
Cliffwater Direct Lending Index	2.0	--	6.1	--	8.3	--	10.2	--	8.3	--	9.3	--	9.6	--
TCP Direct Lending VIII [*]	1.5	3	4.8	6	6.8	7	--	--	--	--	--	--	--	--
White Oak Yield ^{* **}	2.2	2	1.9	39	--	--	--	--	--	--	--	--	--	--
Cliffwater Direct Lending Index [*]	2.0	2	6.1	2	8.3	3	10.2	26	8.3	1	9.3	1	9.6	1
eV US High Yield Fixed Inc Net Median	-0.7		1.5		3.6		8.6		4.5		4.4		7.4	
Risk Parity	-1.4	--	6.9	--	8.5	--	9.1	--	4.1	--	4.3	--	--	--
Blended Risk Parity Index ²	-0.7	--	6.2	--	9.2	--	10.1	--	6.9	--	8.7	--	--	--
AQR GRP, 10% Volatility	-1.2	--	8.1	--	9.7	--	10.0	--	3.4	--	3.0	--	--	--

* Preliminary return as of 3/31/2018.

** Funded August 2017.

*** Funded June 2017.

2. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: March 31, 2018

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
PanAgora	-1.6	--	5.8	--	7.5	--	8.2	--	4.7	--	--	--	--	--
Blended Risk Parity Index ²	-0.7	--	6.2	--	9.2	--	10.1	--	6.9	--	8.7	--	--	--
Blended RP Secondary Index ²	-0.9	--	6.2	--	8.7	--	8.8	--	5.5	--	7.0	--	--	--
Alternatives	0.7	--	3.9	--	5.8	--	9.7	--	7.7	--	6.2	--	--	--
Alternatives Allocation Index ²	0.8	--	8.8	--	11.2	--	12.2	--	7.7	--	6.7	--	--	--
Blended Alternatives Index	0.8	--	9.0	--	11.5	--	12.6	--	7.9	--	8.0	--	--	--
Private Equity **	4.8	20	7.0	73	11.3	67	17.0	17	15.8	15	16.6	11	--	--
Russell 3000 +3%	0.2	81	13.3	17	16.8	36	18.9	9	13.2	24	16.0	13	12.7	1
Russell 3000 +3% 1Q Lag	7.1	9	16.6	7	24.1	10	19.9	9	14.1	20	18.6	6	11.7	5
InvestorForce All DB Private Eq Net Median	2.6		9.5		13.5		11.5		10.6		11.3		8.0	
Hedge Fund/Absolute Return	-3.1	98	1.1	86	0.5	93	2.1	92	3.3	25	5.7	14	--	--
Libor 1 month +4%	1.3	22	4.0	48	5.4	43	5.0	70	4.7	9	4.5	33	--	--
InvestorForce All DB Hedge Funds Net Median	0.1		3.9		5.0		6.3		2.2		3.8		2.7	
AQR DELTA XN	-3.9	90	1.3	77	0.1	83	2.1	77	3.6	49	5.8	44	--	--
Aberdeen Standard GARS	-1.9	78	0.3	85	1.1	77	1.5	80	--	--	--	--	--	--
Libor 1 month +4%	1.3	33	4.0	53	5.4	50	5.0	62	4.7	43	4.5	54	--	--
eV Alt All Multi-Strategy Median	0.3		4.3		5.3		6.6		3.4		4.9		5.9	
Inflation Hedge	-0.3	--	4.7	--	5.2	--	7.2	--	--	--	--	--	--	--
Blended Inflation Pool Index ²	-0.5	--	5.7	--	6.3	--	7.2	--	--	--	--	--	--	--
Real Estate	2.2	5	6.0	5	7.9	10	9.0	3	10.2	3	11.3	2	5.0	3
NCREIF ODCE	2.2	4	6.3	5	8.1	5	8.2	14	10.0	4	11.4	2	5.5	3
InvestorForce All DB Real Estate Pub Net Median	1.7		4.7		6.5		6.5		8.2		9.8		4.0	
Invesco	2.3	--	6.0	--	8.0	--	9.0	--	10.1	--	11.2	--	5.0	--
NCREIF ODCE	2.2	--	6.3	--	8.1	--	8.2	--	10.0	--	11.4	--	5.5	--

** Returns are one-quarter lag.

2. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: March 31, 2018

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Invesco US Val IV	2.4	--	9.9	--	11.7	--	10.6	--	--	--	--	--	--	--
NCREIF ODCE	2.2	--	6.3	--	8.1	--	8.2	--	10.0	--	11.4	--	5.5	--
NCREIF CEVA 1Q Lag - NET	3.4	--	9.3	--	10.8	--	10.3	--	13.1	--	--	--	--	--
PGIM RE US Debt Fund ***	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--
NCREIF ODCE	2.2	--	6.3	--	8.1	--	8.2	--	10.0	--	11.4	--	5.5	--
Private Real Asset * **	-1.9	--	-7.3	--	-10.2	--	-2.6	--	9.8	--	--	--	--	--
Blended Real Asset Index ²	-3.2	--	6.2	--	5.9	--	7.0	--	6.3	--	--	--	--	--
Blended Private Real Asset Index ^{*2}	6.6	--	11.9	--	16.2	--	14.7	--	7.4	--	--	--	--	--
Liquid Pool	-2.9	--	7.2	--	7.4	--	--	--	--	--	--	--	--	--
Blended Real Asset Index ²	-3.2	--	6.2	--	5.9	--	7.0	--	6.3	--	--	--	--	--
SSgA Custom Real Asset	-2.9	--	7.2	--	7.4	--	--	--	--	--	--	--	--	--
Blended Real Asset Index ²	-3.2	--	6.2	--	5.9	--	7.0	--	6.3	--	--	--	--	--
TIPS	-0.3	--	1.7	--	1.0	--	1.8	--	1.6	--	-0.4	--	--	--
BBgBarc US TIPS TR	-0.8	--	1.3	--	0.9	--	1.2	--	1.3	--	0.0	--	2.9	--
Brown Brothers Harriman	-0.3	9	1.7	28	1.0	41	1.8	28	1.6	20	-0.4	78	--	--
BBgBarc US TIPS TR	-0.8	46	1.3	53	0.9	56	1.2	45	1.3	36	0.0	37	2.9	52
eV US TIPS / Inflation Fixed Inc Net Median	-0.8	--	1.3	--	1.0	--	1.1	--	1.2	--	0.0	--	2.9	--
Cash	0.2	--	0.7	--	0.9	--	0.9	--	1.0	--	0.8	--	0.5	--
91 Day T-Bills	0.4	--	0.9	--	1.2	--	0.8	--	0.5	--	0.3	--	0.3	--
General Account	0.4	--	1.7	--	2.0	--	1.5	--	1.7	--	1.1	--	0.9	--
Treasury & LAIF	2.2	--	2.7	--	3.1	--	1.8	--	1.5	--	1.3	--	0.7	--
91 Day T-Bills	0.4	--	0.9	--	1.2	--	0.8	--	0.5	--	0.3	--	0.3	--

* Preliminary return as of 3/31/2018.

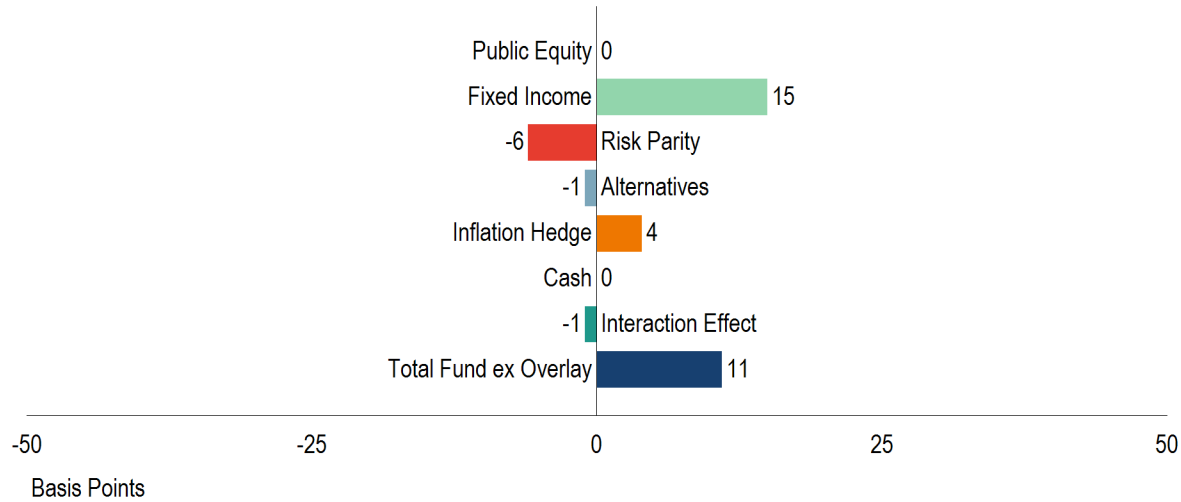
** Returns are one-quarter lag.

*** Funded July 2017.

2. See Appendix for Benchmark History.

Total Fund ex Overlay
Performance Attribution

Period Ending: March 31, 2018

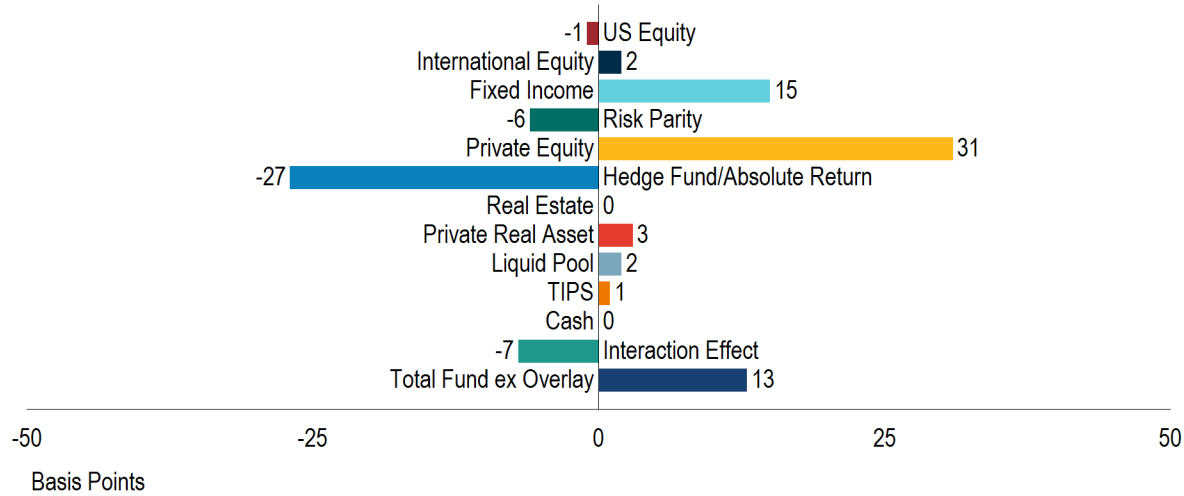


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Public Equity	-0.79%	-0.79%	0.00%	0.00%	-0.01%	0.00%	-0.01%
Fixed Income	-0.34%	-1.07%	0.74%	0.15%	-0.02%	-0.01%	0.13%
Risk Parity	-1.41%	-0.67%	-0.74%	-0.06%	0.00%	0.00%	-0.05%
Alternatives	0.69%	0.77%	-0.08%	-0.01%	-0.02%	0.00%	-0.03%
Inflation Hedge	-0.33%	-0.53%	0.21%	0.04%	-0.01%	-0.01%	0.02%
Cash	0.18%	0.38%	-0.20%	0.00%	0.06%	0.00%	0.05%
Total	-0.44%	-0.55%	0.11%	0.12%	0.00%	-0.01%	0.11%

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

Total Fund ex Overlay
Performance Attribution

Period Ending: March 31, 2018

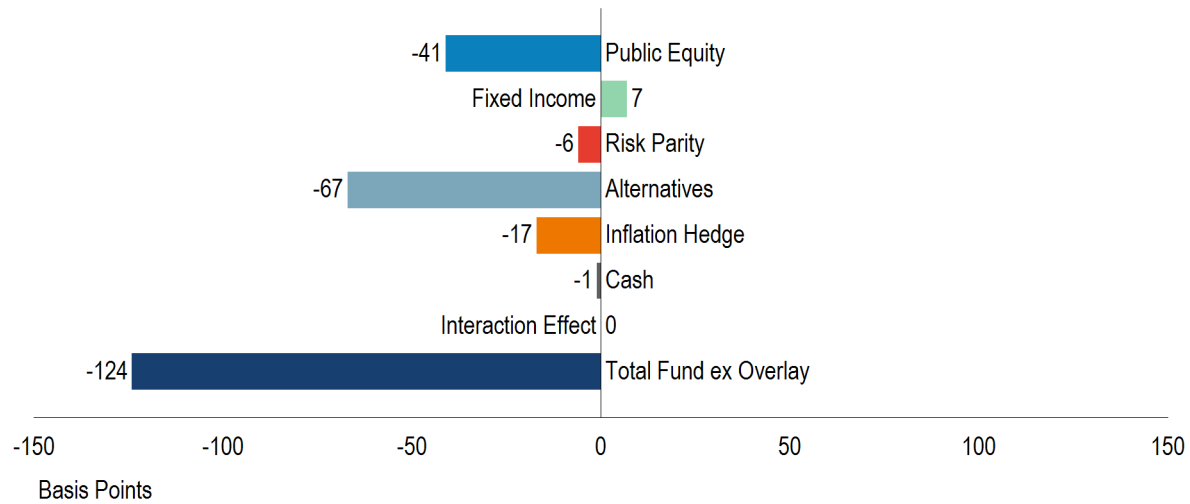


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	-0.66%	-0.64%	-0.02%	-0.01%	0.00%	0.00%	-0.01%
International Equity	-0.93%	-1.06%	0.13%	0.02%	-0.01%	0.00%	0.02%
Fixed Income	-0.34%	-1.07%	0.74%	0.15%	-0.02%	-0.01%	0.13%
Risk Parity	-1.41%	-0.67%	-0.74%	-0.06%	0.00%	0.00%	-0.06%
Private Equity	4.80%	0.22%	4.58%	0.31%	-0.01%	-0.06%	0.24%
Hedge Fund/Absolute Return	-3.13%	1.29%	-4.42%	-0.27%	0.00%	0.00%	-0.27%
Real Estate	2.17%	2.20%	-0.03%	0.00%	-0.04%	0.00%	-0.04%
Private Real Asset	-1.92%	-3.23%	1.31%	0.03%	0.02%	-0.01%	0.03%
Liquid Pool	-2.90%	-3.23%	0.33%	0.02%	0.00%	0.00%	0.02%
TIPS	-0.28%	-0.79%	0.51%	0.01%	0.00%	0.00%	0.01%
Cash	0.18%	0.38%	-0.20%	0.00%	0.06%	0.00%	0.05%
Total	-0.44%	-0.57%	0.13%	0.21%	-0.01%	-0.07%	0.13%

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: March 31, 2018

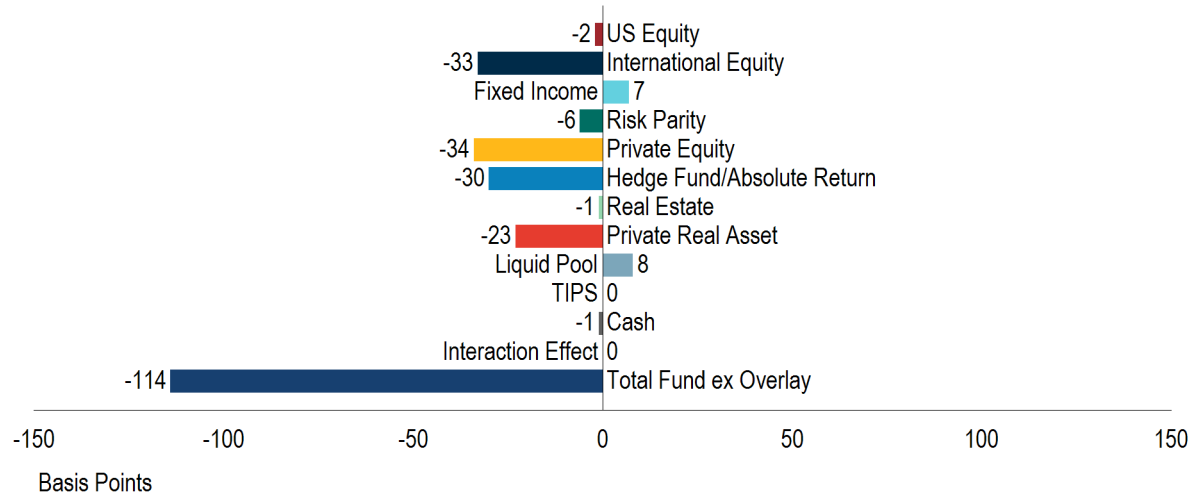


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Public Equity	14.56%	15.54%	-0.98%	-0.41%	0.00%	0.00%	-0.41%
Fixed Income	2.77%	2.50%	0.27%	0.07%	0.00%	0.00%	0.07%
Risk Parity	8.50%	9.20%	-0.70%	-0.06%	0.00%	0.00%	-0.06%
Alternatives	5.77%	11.46%	-5.69%	-0.67%	0.00%	0.00%	-0.67%
Inflation Hedge	5.22%	6.31%	-1.09%	-0.17%	0.00%	0.00%	-0.17%
Cash	0.90%	1.16%	-0.27%	-0.01%	0.00%	0.00%	-0.01%
Total	8.87%	10.11%	-1.24%	-1.24%	0.00%	0.00%	-1.24%

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: March 31, 2018



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	13.76%	13.81%	-0.06%	-0.02%	0.00%	0.00%	-0.02%
International Equity	15.63%	17.43%	-1.80%	-0.33%	0.00%	0.00%	-0.33%
Fixed Income	2.77%	2.50%	0.27%	0.07%	0.00%	0.00%	0.07%
Risk Parity	8.50%	9.20%	-0.70%	-0.06%	0.00%	0.00%	-0.06%
Private Equity	11.32%	16.81%	-5.49%	-0.34%	0.00%	0.00%	-0.34%
Hedge Fund/Absolute Return	0.48%	5.36%	-4.88%	-0.30%	0.00%	0.00%	-0.30%
Real Estate	7.92%	8.07%	-0.15%	-0.01%	0.00%	0.00%	-0.01%
Private Real Asset	-10.24%	5.94%	-16.19%	-0.23%	0.00%	0.00%	-0.23%
Liquid Pool	7.44%	5.94%	1.50%	0.08%	0.00%	0.00%	0.08%
TIPS	1.03%	0.92%	0.11%	0.00%	0.00%	0.00%	0.00%
Cash	0.90%	1.16%	-0.27%	-0.01%	0.00%	0.00%	-0.01%
Total	8.87%	10.01%	-1.14%	-1.14%	0.00%	0.00%	-1.14%

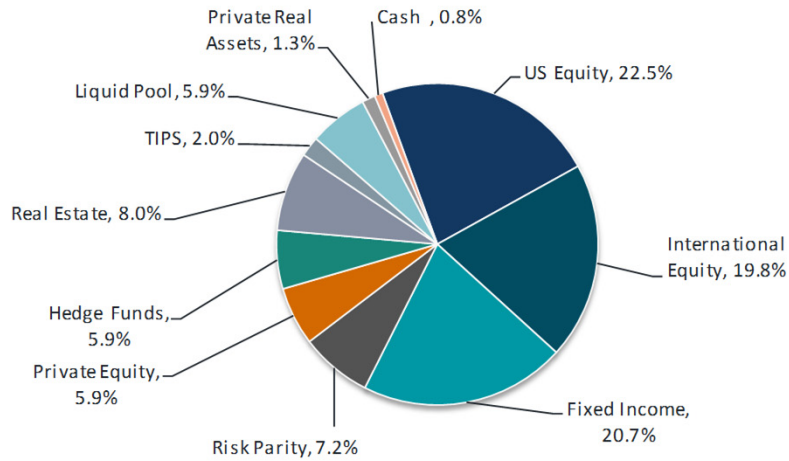
Attribution does not include the impact of the Parametric Minneapolis strategy.
* Interaction Effects include Residual Effects.

Total Fund

Asset Allocation Analysis

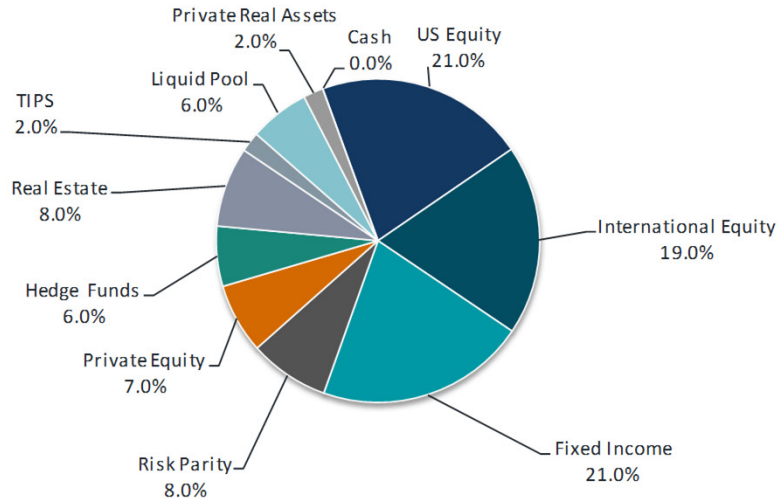
Period Ending: March 31, 2018

Current w/Overlay



ASSET ALLOCATION	MARKET VALUE		
	W/OVERLAY	W/OVERLAY	W/O OVERLAY
US Equity	974,751,392	22.5%	22.2%
International Equity	857,322,259	19.8%	19.6%
Fixed Income	896,477,189	20.7%	20.5%
Risk Parity	311,764,287	7.2%	7.2%
Private Equity	254,246,384	5.9%	5.9%
Hedge Funds	254,250,431	5.9%	5.9%
Real Estate	345,766,757	8.0%	8.0%
TIPS	87,208,248	2.0%	2.0%
Liquid Pool	256,163,006	5.9%	5.9%
Private Real Assets	57,821,752	1.3%	1.3%
Cash	35,132,767	0.8%	1.5%
TOTAL	4,330,904,472	100.0%	100.0%

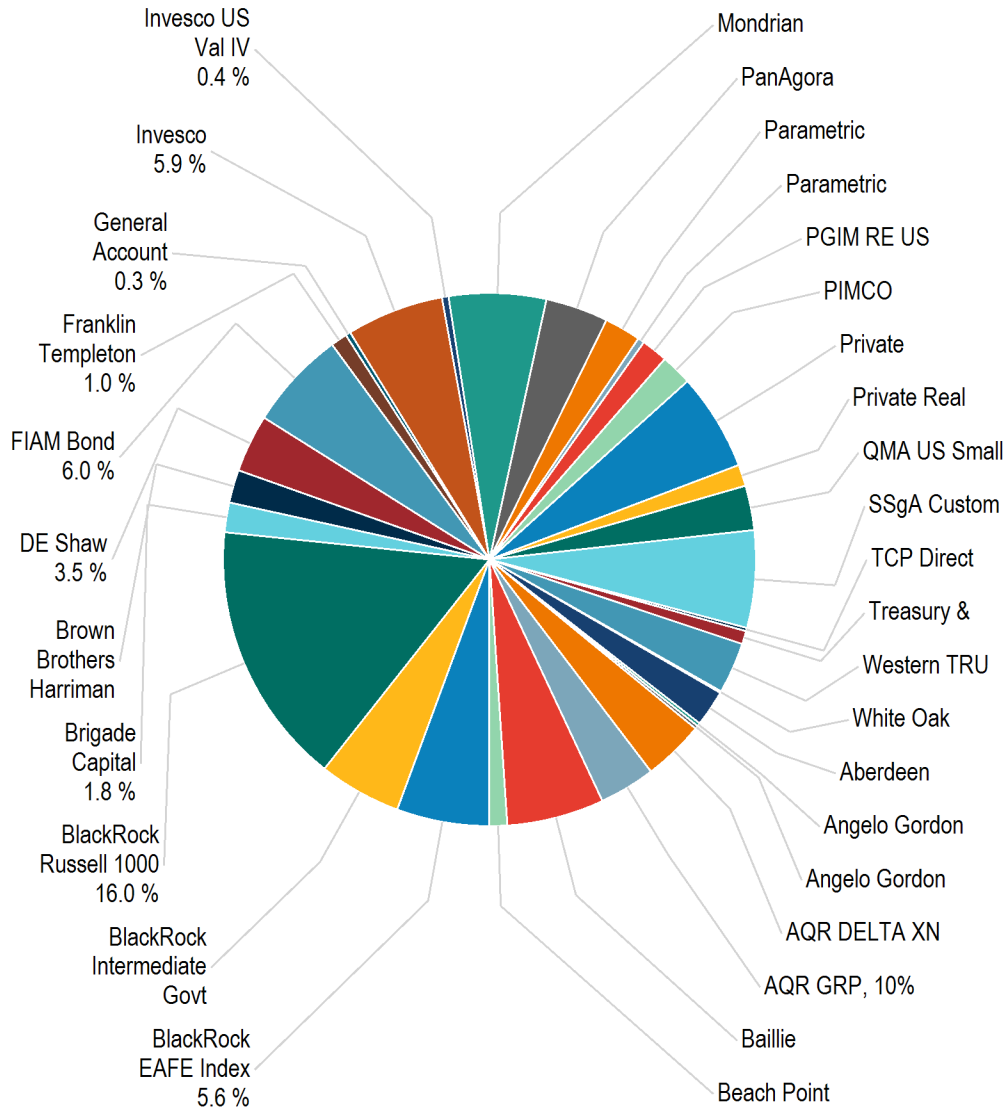
Target



ASSET ALLOCATION	W/OVERLAY	TARGET	DIFF
US Equity	22.5%	21.0%	1.5%
International Equity	19.8%	19.0%	0.8%
Fixed Income	20.7%	21.0%	-0.3%
Risk Parity	7.2%	8.0%	-0.8%
Private Equity	5.9%	7.0%	-1.1%
Hedge Funds	5.9%	6.0%	-0.1%
Real Estate	8.0%	8.0%	0.0%
TIPS	2.0%	2.0%	0.0%
Liquid Pool	5.9%	6.0%	-0.1%
Private Real Assets	1.3%	2.0%	-0.7%
Cash	0.8%	0.0%	0.8%
TOTAL	100.0%	100.0%	0.0%

Total Fund Manager Allocation Analysis

Period Ending: March 31, 2018



	Actual	Actual
Aberdeen Standard GARS	\$95,232,079	2%
Angelo Gordon Opportunistic	\$8,487,000	0%
Angelo Gordon STAR	\$8,442,000	0%
AQR DELTA XN	\$159,018,352	4%
AQR GRP, 10% Volatility	\$147,207,772	3%
Baillie Gifford	\$253,831,627	6%
Beach Point Select	\$48,968,531	1%
BlackRock EAFE Index	\$243,968,185	6%
BlackRock Intermediate Govt	\$214,570,889	5%
BlackRock Russell 1000	\$693,918,140	16%
Brigade Capital	\$76,148,517	2%
Brown Brothers Harriman	\$87,208,248	2%
DE Shaw	\$150,711,952	3%
FIAM Bond	\$260,074,986	6%
Franklin Templeton	\$41,862,663	1%
General Account	\$15,141,651	0%
Invesco	\$257,493,951	6%
Invesco US Val IV	\$18,306,647	0%
Mondrian	\$254,714,534	6%
PanAgora	\$164,556,515	4%
Parametric Core	\$97,346,069	2%
Parametric Minneapolis Overlay	\$15,512,963	0%
PGIM RE US Debt Fund	\$69,966,159	2%
PIMCO Diversified	\$80,366,762	2%
Private Equity	\$254,246,384	6%
Private Real Asset	\$57,821,752	1%
QMA US Small Cap	\$118,879,558	3%
SSgA Custom Real Asset	\$256,163,006	6%
TCP Direct Lending VIII	\$10,050,988	0%
Transition 3	\$10,412	0%
Treasury & LAIF	\$32,567,334	1%
Western TRU	\$132,335,123	3%
White Oak Yield	\$5,773,724	0%
Total	\$4,330,904,472	100%

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%	50	6.1%	61	1.0	56	-0.4	80	1.0%	41
Policy Index	6.9%	31	6.6%	82	1.0	58	--	--	0.0%	1
InvestorForce Public DB > \$1B Net Median	6.5%	--	5.8%	--	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	7.8%	37	6.1%	63	1.2	44	-0.2	75	1.0%	29
Policy Index	8.1%	27	6.5%	82	1.2	51	--	--	0.0%	1
InvestorForce Public DB > \$1B Net Median	7.7%	--	5.8%	--	1.2	--	0.0	--	1.1%	--

Statistics Summary

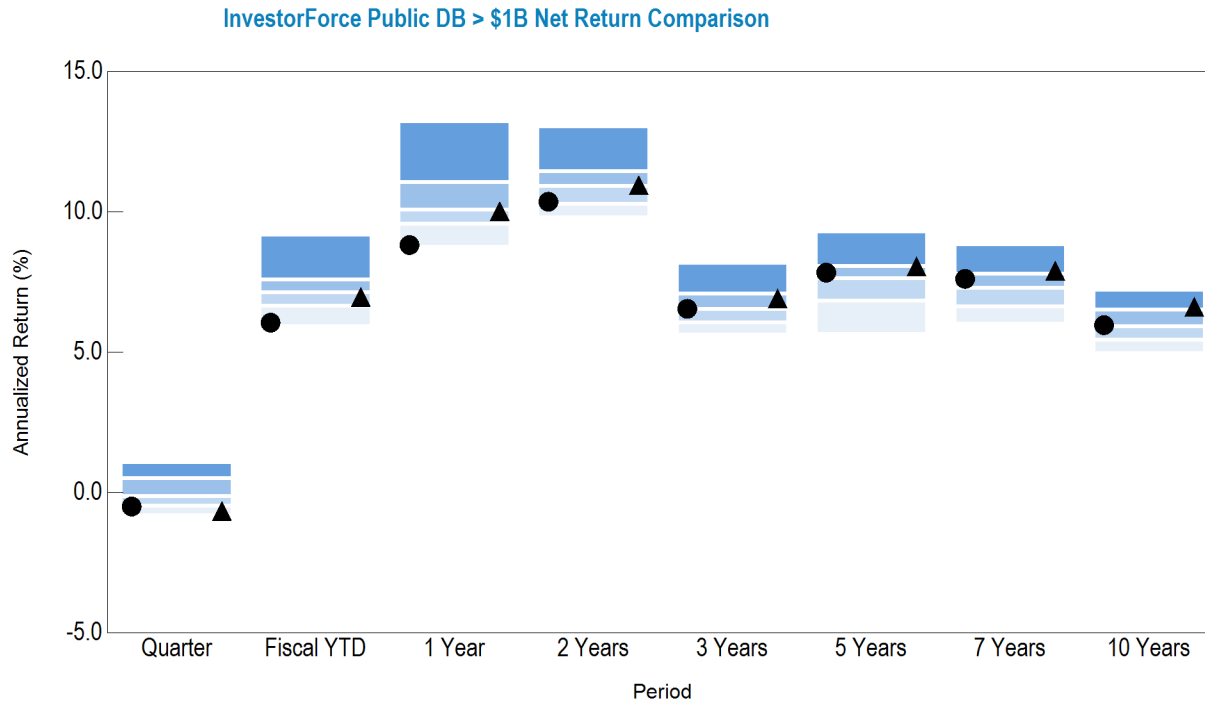
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Cash	1.0%	0.4%	1.3	1.2	0.4%
91 Day T-Bills	0.5%	0.1%	0.0	--	0.0%
General Account	1.7%	0.6%	1.9	1.9	0.6%
91 Day T-Bills	0.5%	0.1%	0.0	--	0.0%
Treasury & LAIF	1.5%	1.0%	1.0	1.0	0.9%
91 Day T-Bills	0.5%	0.1%	0.0	--	0.0%

Statistics Summary

5 Years

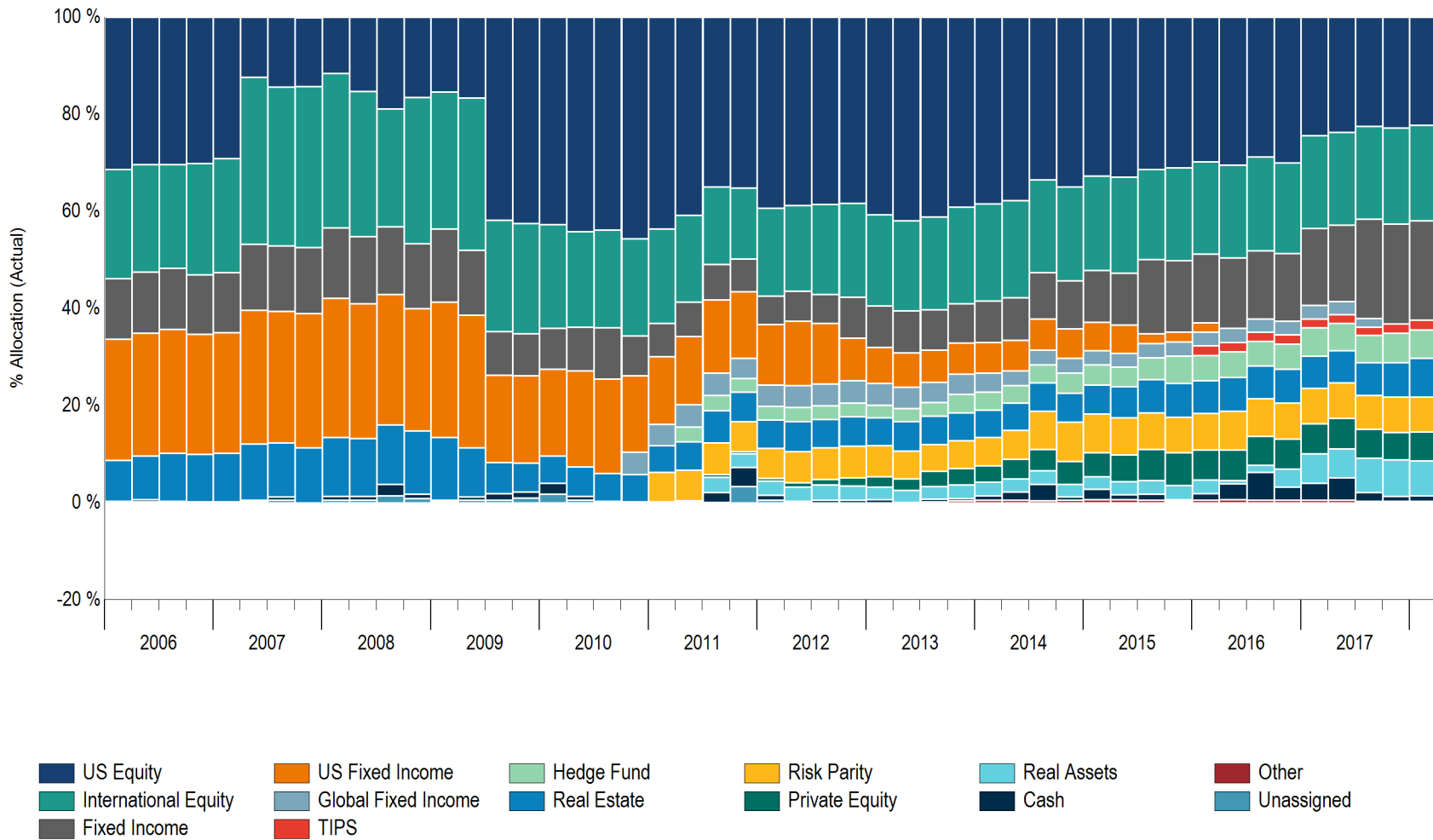
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Cash	0.8%	0.3%	1.5	1.4	0.3%
91 Day T-Bills	0.3%	0.1%	0.0	--	0.0%
General Account	1.1%	0.5%	1.6	1.7	0.5%
91 Day T-Bills	0.3%	0.1%	0.0	--	0.0%
Treasury & LAIF	1.3%	0.8%	1.1	1.2	0.8%
91 Day T-Bills	0.3%	0.1%	0.0	--	0.0%

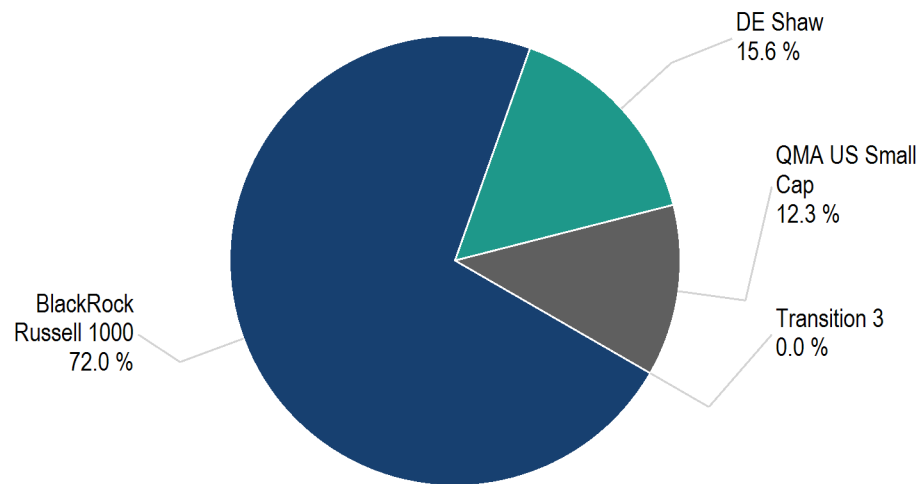


	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
Return (Rank)								
5th Percentile	1.1	9.2	13.2	13.0	8.2	9.3	8.9	7.2
25th Percentile	0.5	7.6	11.1	11.5	7.1	8.1	7.8	6.5
Median	-0.1	7.1	10.1	10.9	6.5	7.7	7.3	5.9
75th Percentile	-0.5	6.7	9.6	10.3	6.1	6.8	6.7	5.5
95th Percentile	-0.8	5.9	8.8	9.8	5.6	5.7	6.0	5.0
# of Portfolios	40	39	39	39	39	39	38	35
● Total Fund	-0.5 (79)	6.1 (93)	8.8 (93)	10.4 (71)	6.5 (50)	7.8 (37)	7.6 (36)	6.0 (48)
▲ Policy Index	-0.7 (90)	7.0 (57)	10.0 (52)	11.0 (46)	6.9 (31)	8.1 (27)	7.9 (22)	6.6 (15)

Total Fund
Asset Allocation History

Period Ending: March 31, 2018





	Actual \$	Actual %	Manager Contribution to Excess Return %
BlackRock Russell 1000	\$693,918,140	72.0%	0.0%
DE Shaw	\$150,711,952	15.6%	0.0%
QMA US Small Cap	\$118,879,558	12.3%	-0.1%
Transition Account	\$10,412	0.0%	0.0%
Actual vs. Policy Weight Difference			0.0%
Total	\$963,520,062	100.0%	0.0%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	9.7%	10.2%	0.9	-0.3	0.7%
Blended US Equity Index	9.9%	10.4%	0.9	--	0.0%
Russell 3000	10.2%	10.4%	0.9	0.5	0.6%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	11.1%	10.2%	1.0	0.6	1.2%
Russell 1000	10.4%	10.3%	1.0	--	0.0%
DE Shaw	12.4%	10.4%	1.1	0.8	2.3%
Russell 1000	10.4%	10.3%	1.0	--	0.0%
Small Cap Equity	6.0%	13.4%	0.4	-0.9	2.8%
Russell 2000	8.4%	13.9%	0.6	--	0.0%

Statistics Summary

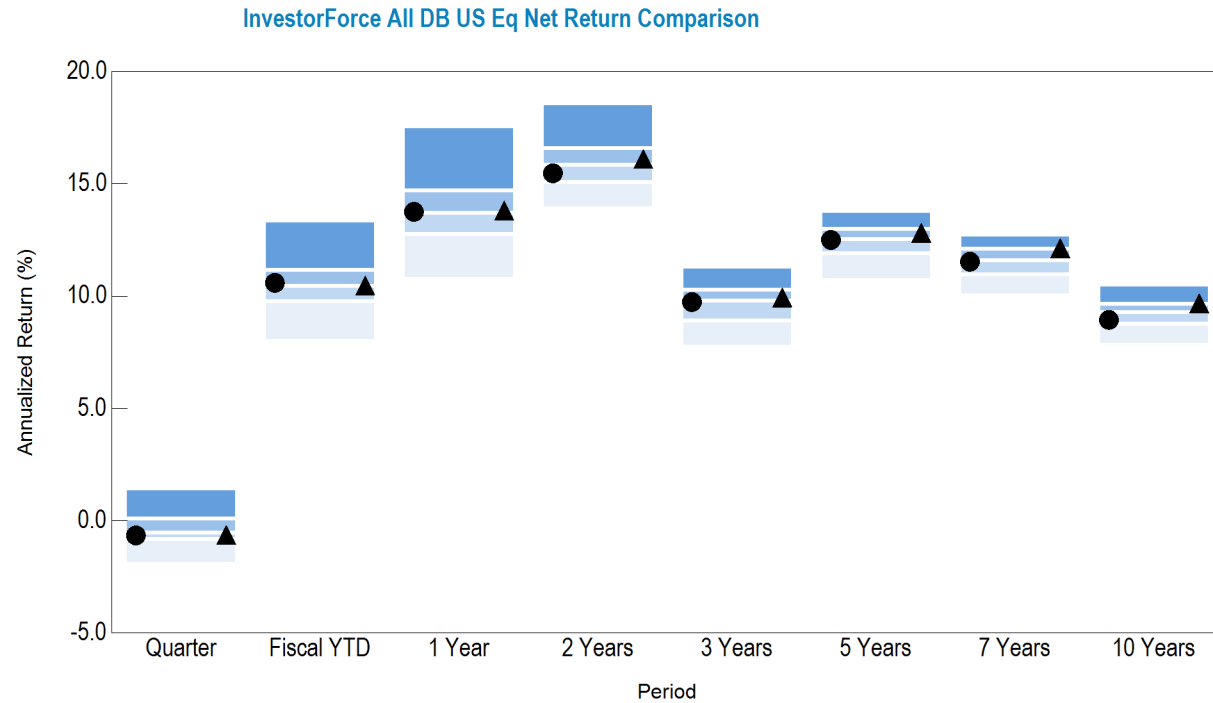
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	12.5%	10.0%	1.2	-0.4	0.8%
Blended US Equity Index	12.8%	10.2%	1.2	--	0.0%
Russell 3000	13.0%	10.0%	1.3	0.3	0.8%

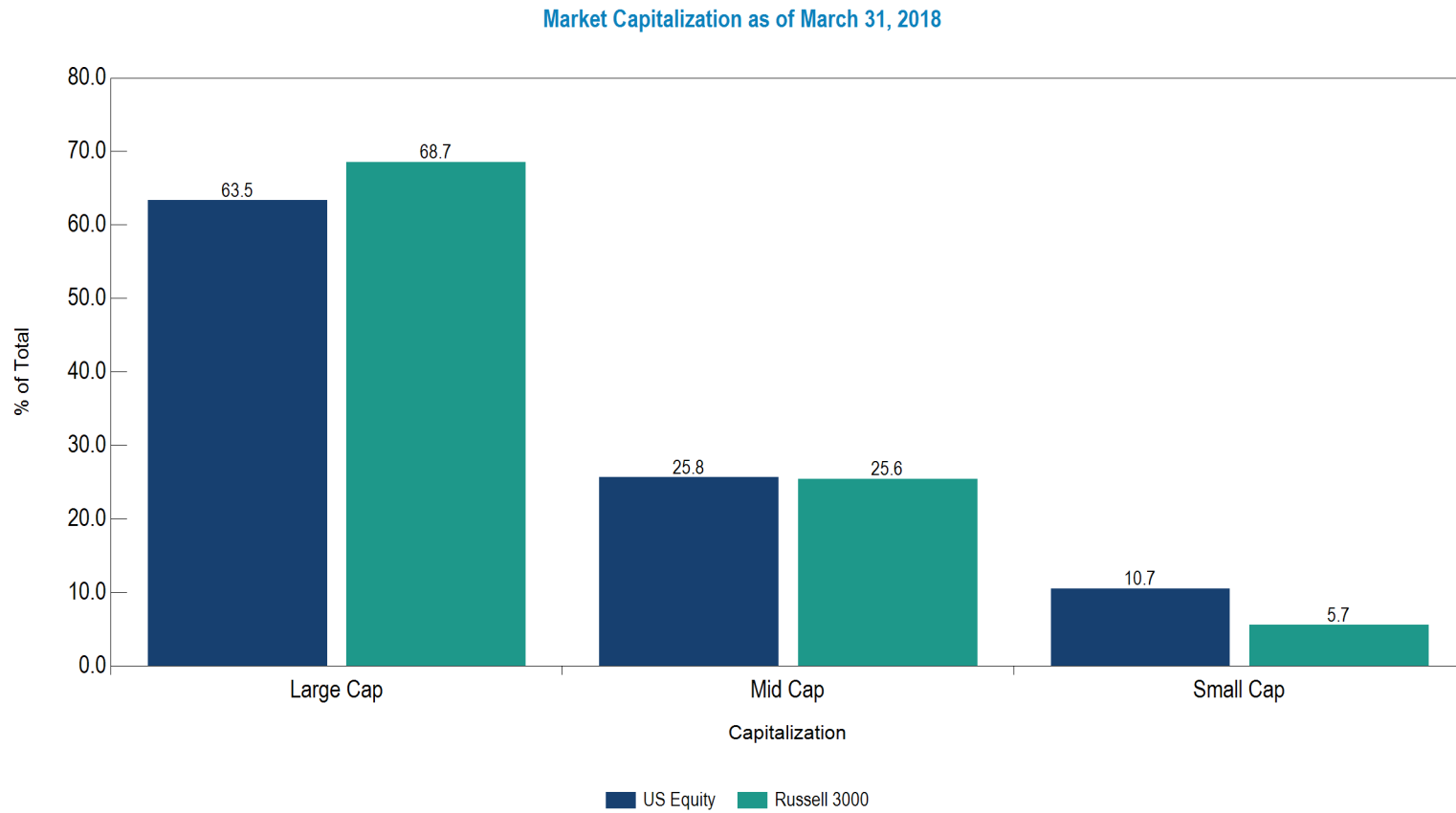
Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	13.5%	9.8%	1.3	0.3	1.1%
Russell 1000	13.2%	9.9%	1.3	--	0.0%
DE Shaw	14.7%	10.1%	1.4	0.7	2.2%
Russell 1000	13.2%	9.9%	1.3	--	0.0%
Small Cap Equity	9.4%	13.3%	0.7	-0.8	2.6%
Russell 2000	11.5%	13.8%	0.8	--	0.0%



	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
Return (Rank)								
5th Percentile	1.4	13.3	17.5	18.6	11.3	13.8	12.7	10.5
25th Percentile	0.1	11.2	14.7	16.6	10.3	13.0	12.1	9.7
Median	-0.5	10.5	13.7	15.9	9.8	12.6	11.6	9.3
75th Percentile	-0.8	9.8	12.8	15.1	8.9	11.9	11.0	8.8
95th Percentile	-1.9	8.0	10.8	13.9	7.7	10.7	10.1	7.8
# of Portfolios	531	526	525	516	507	453	374	297
● US Equity	-0.7 (67)	10.6 (41)	13.8 (49)	15.5 (65)	9.7 (53)	12.5 (54)	11.5 (55)	8.9 (69)
▲ Blended US Equity Index	-0.6 (63)	10.5 (49)	13.8 (47)	16.1 (39)	9.9 (44)	12.8 (36)	12.1 (24)	9.7 (26)



See appendix for the market capitalization breakpoints.

Characteristics

	Portfolio	Russell 3000
Number of Holdings	2,694	2,958
Weighted Avg. Market Cap. (\$B)	138.4	152.0
Median Market Cap. (\$B)	2.8	1.7
Price To Earnings	26.3	23.5
Price To Book	4.8	4.3
Price To Sales	4.0	4.0
Return on Equity (%)	22.7	19.0
Yield (%)	1.8	1.8
Beta (holdings; domestic)	1.1	1.0

Top Holdings

APPLE	3.4%
MICROSOFT	2.0%
AMAZON.COM	1.7%
ALPHABET 'C'	1.2%
BERKSHIRE HATHAWAY 'B'	1.1%
JP MORGAN CHASE & CO.	1.1%
FACEBOOK CLASS A	1.1%
ALPHABET A	1.1%
JOHNSON & JOHNSON	1.0%
BANK OF AMERICA	1.0%

Best Performers

	Return %
NII HOLDINGS (NIHD)	397.3%
DURECT (DRRX)	132.2%
CHEMOCENTRYX (CCXI)	128.6%
PFENEX (PFNX)	125.6%
ATARA BIOTHERAPEUTICS (ATRA)	115.5%
ENDOCYTE (ECYT)	112.4%
IOVANCE BIOTHERAPEUTICS (IOVA)	111.3%
TANDEM DIABETES CARE (TNDM)	110.2%
GENESIS HEALTHCARE 'A' (GEN)	97.9%
CAMBIUM LEARNING GROUP (ABCD)	97.2%

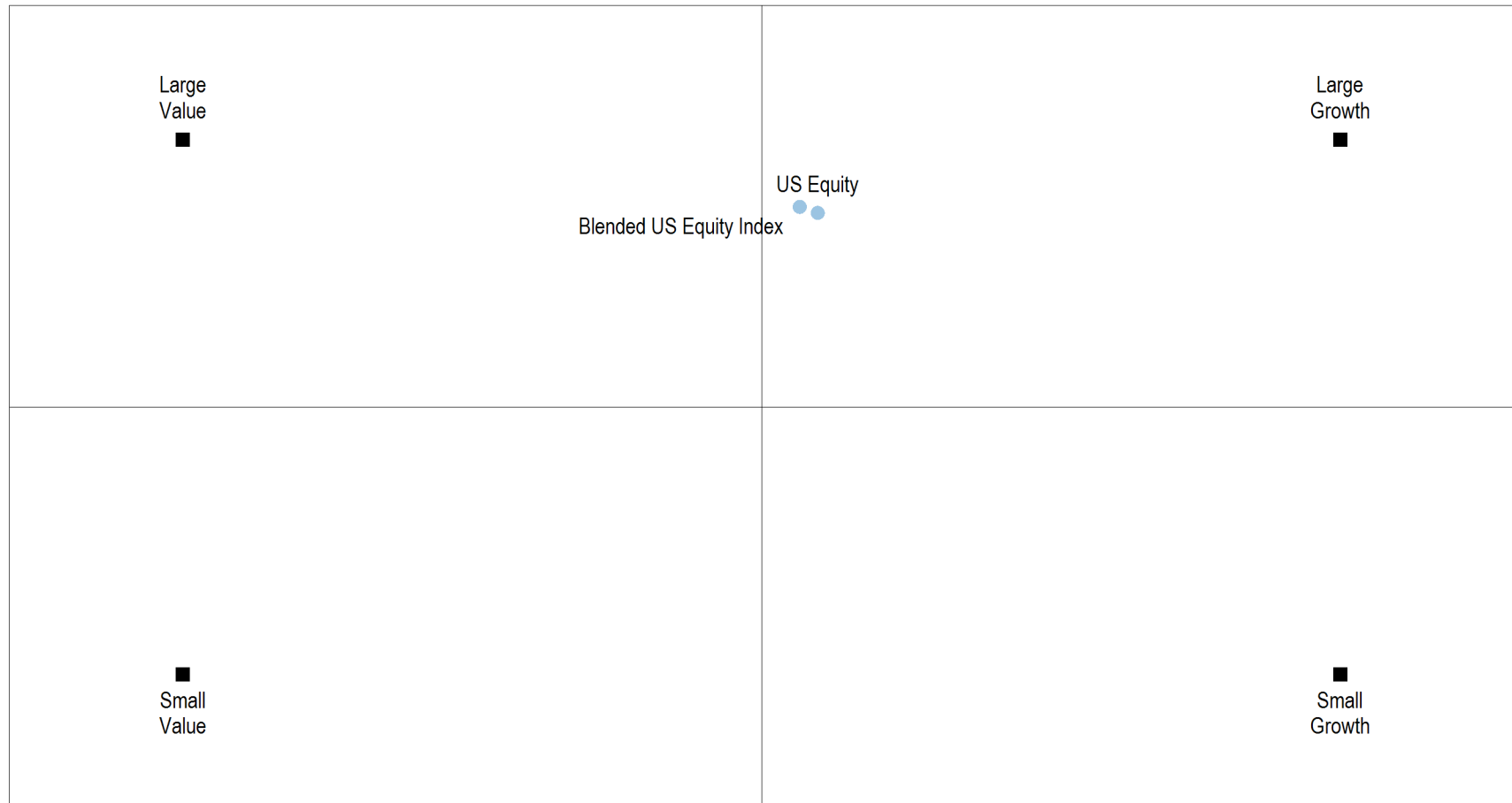
Worst Performers

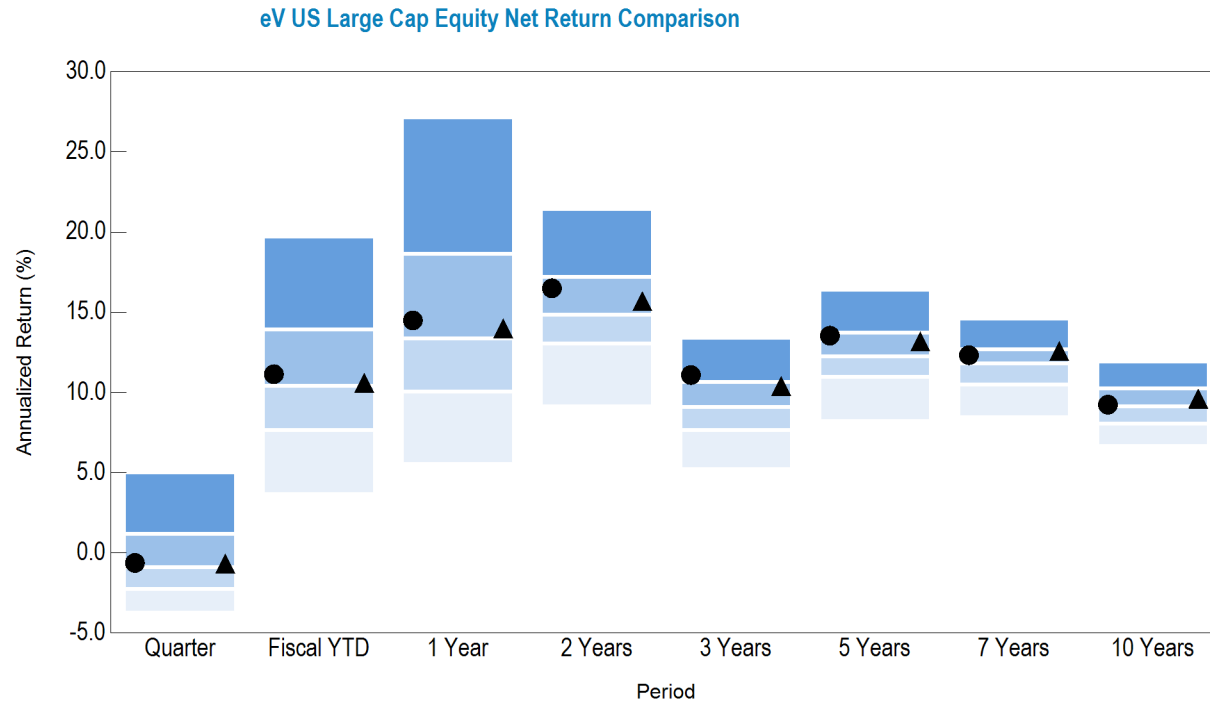
	Return %
COBALT INTL.ENERGY (CIE)	-95.5%
EDGE THERAPEUTICS (EDGE)	-87.4%
AXOVANT SCIENCES (AXON)	-74.8%
DERMIRA (DERM)	-71.3%
LONGFIN CL.A (LFIN)	-69.3%
ASCENT CAP.GP.SR.A (ASCMA)	-68.0%
ROADRUNNER TRSP.SYSTEMS (RRTS)	-67.1%
AUTOWEB (AUTO)	-66.9%
WESTMORELAND COAL (WLBA)	-66.1%
WILLBROS GROUP (WGRP)	-61.1%

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%	-5.8%	-6.0%	5.5%	5.8%			
Materials	0.0%	0.0%	0.0%	0.0%	-5.2%	-5.3%	3.7%	3.5%			
Industrials	0.0%	0.0%	0.0%	0.0%	-1.6%	-1.8%	11.7%	11.0%			
Consumer Discretionary	-0.1%	-0.1%	0.0%	0.0%	1.3%	2.0%	12.2%	12.4%			
Consumer Staples	0.0%	0.0%	0.0%	0.0%	-6.8%	-6.8%	6.8%	7.3%			
Health Care	0.0%	0.0%	0.0%	0.0%	-0.6%	-0.5%	13.7%	13.3%			
Financials	0.1%	0.1%	0.0%	0.0%	0.4%	-0.4%	14.5%	15.2%			
Information Technology	0.0%	0.0%	0.1%	0.0%	3.8%	4.0%	23.9%	22.8%			
Telecommunication Services	0.0%	0.0%	0.0%	0.0%	-7.5%	-7.3%	1.5%	1.9%			
Utilities	0.0%	0.0%	0.0%	0.0%	-4.0%	-3.4%	2.6%	3.0%			
Real Estate	0.0%	0.0%	0.0%	0.0%	-5.0%	-6.2%	4.0%	3.9%			
Cash	0.0%	--	--	--	--	--	0.0%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	-1.0%	--	0.1%	0.0%			
Portfolio	0.1%	=	0.0%	+	0.1%	+	0.0%	-0.5%	-0.7%	100.0%	100.0%

U.S. Effective Style Map





	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	5.0	19.7	27.1	21.4	13.4	16.4	14.6	11.9
25th Percentile	1.2	13.9	18.7	17.2	10.7	13.8	12.7	10.3
Median	-0.9	10.4	13.4	14.9	9.1	12.3	11.8	9.2
75th Percentile	-2.3	7.7	10.1	13.1	7.7	11.0	10.5	8.1
95th Percentile	-3.7	3.7	5.6	9.2	5.2	8.2	8.5	6.7
# of Portfolios	585	583	583	575	566	528	477	429
● Large Cap Equity	-0.6 (45)	11.1 (43)	14.5 (45)	16.5 (32)	11.1 (20)	13.5 (29)	12.3 (35)	9.2 (48)
▲ Russell 1000	-0.7 (46)	10.6 (49)	14.0 (48)	15.7 (40)	10.4 (29)	13.2 (34)	12.6 (29)	9.6 (40)

Characteristics

	Portfolio	Russell 1000
Number of Holdings	2,615	975
Weighted Avg. Market Cap. (\$B)	157.6	164.4
Median Market Cap. (\$B)	3.4	10.1
Price To Earnings	26.0	24.2
Price To Book	5.0	4.6
Price To Sales	4.1	4.2
Return on Equity (%)	23.9	20.0
Yield (%)	1.8	1.9
Beta (holdings; domestic)	1.0	1.0

Top Holdings

APPLE	3.9%
MICROSOFT	2.2%
AMAZON.COM	1.9%
ALPHABET 'C'	1.4%
BERKSHIRE HATHAWAY 'B'	1.3%
JP MORGAN CHASE & CO.	1.2%
FACEBOOK CLASS A	1.2%
ALPHABET A	1.2%
JOHNSON & JOHNSON	1.2%
BANK OF AMERICA	1.1%

Best Performers

	Return %
NII HOLDINGS (NIHD)	397.3%
DURECT (DRRX)	132.2%
CHEMOCENTRYX (CCXI)	128.6%
PFENEX (PFNX)	125.6%
ATARA BIOTHERAPEUTICS (ATRA)	115.5%
ENDOCYTE (ECYT)	112.4%
IOVANCE BIOTHERAPEUTICS (IOVA)	111.3%
TANDEM DIABETES CARE (TNDM)	110.2%
GENESIS HEALTHCARE 'A' (GEN)	97.9%
CAMBIUM LEARNING GROUP (ABCD)	97.2%

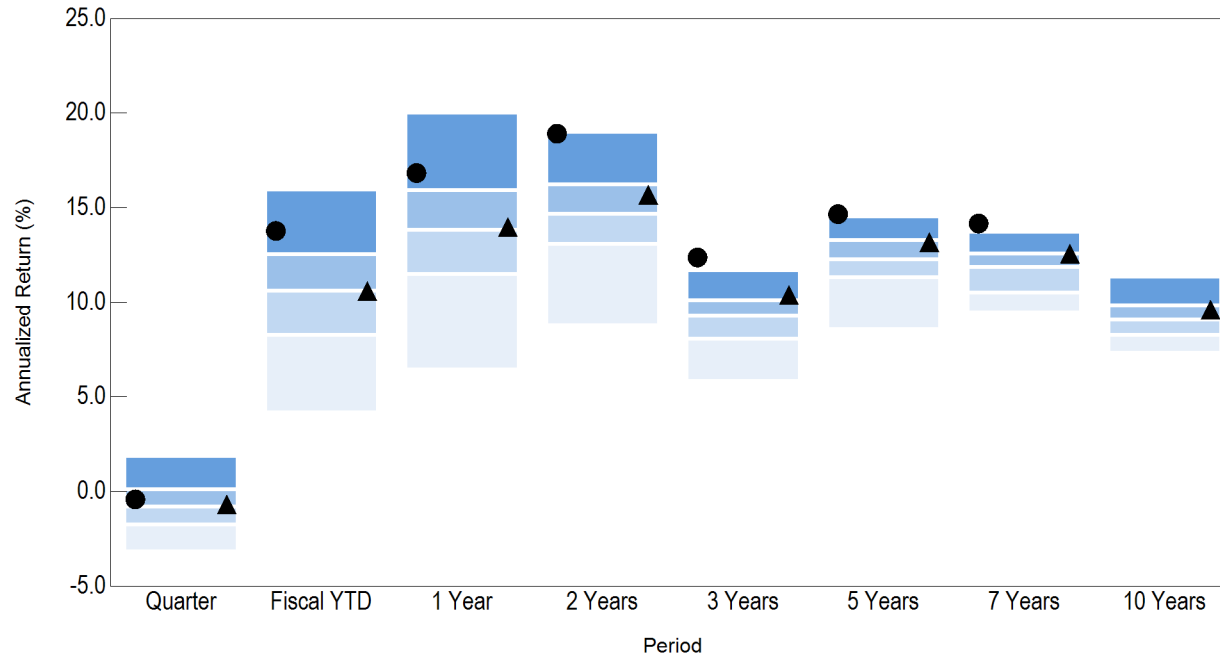
Worst Performers

	Return %
COBALT INTL.ENERGY (CIE)	-95.5%
EDGE THERAPEUTICS (EDGE)	-87.4%
AXOVANT SCIENCES (AXON)	-74.8%
DERMIRA (DERM)	-71.3%
LONGFIN CL.A (LFIN)	-69.3%
ASCENT CAP.GP.SR.A (ASCMA)	-68.0%
ROADRUNNER TRSP.SYSTEMS (RRTS)	-67.1%
AUTOWEB (AUTO)	-66.9%
WESTMORELAND COAL (WLBA)	-66.1%
WILLBROS GROUP (WGRP)	-61.1%

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%	-5.3%	-5.8%	5.9%	5.9%			
Materials	0.0%	0.0%	0.0%	0.0%	-5.5%	-5.5%	3.4%	3.4%			
Industrials	0.0%	0.0%	0.0%	0.0%	-1.8%	-1.7%	11.0%	10.6%			
Consumer Discretionary	-0.1%	0.0%	0.0%	0.0%	2.0%	2.4%	12.1%	12.4%			
Consumer Staples	0.0%	0.0%	0.0%	0.0%	-6.8%	-6.8%	7.5%	7.7%			
Health Care	0.0%	0.0%	0.0%	0.0%	-1.3%	-1.2%	13.4%	13.1%			
Financials	0.1%	0.1%	0.0%	0.0%	-0.1%	-0.5%	13.9%	14.9%			
Information Technology	0.0%	-0.1%	0.1%	0.0%	3.5%	3.9%	24.8%	23.3%			
Telecommunication Services	0.0%	0.0%	0.0%	0.0%	-7.6%	-7.4%	1.6%	2.0%			
Utilities	0.0%	0.0%	0.0%	0.0%	-2.9%	-3.1%	2.6%	2.9%			
Real Estate	0.0%	0.0%	0.0%	0.0%	-5.2%	-5.9%	3.5%	3.6%			
Cash	0.0%	--	--	--	--	--	0.0%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	-1.0%	--	0.1%	0.0%			
Portfolio	0.1%	=	0.0%	+	0.1%	+	0.0%	-0.7%	-0.7%	100.0%	100.0%

eV US Large Cap Core Equity Net Return Comparison



	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
Return (Rank)								
5th Percentile	1.9	16.0	20.0	19.0	11.7	14.5	13.7	11.3
25th Percentile	0.1	12.6	16.0	16.2	10.1	13.3	12.6	9.9
Median	-0.8	10.6	13.9	14.7	9.3	12.3	11.9	9.1
75th Percentile	-1.7	8.3	11.5	13.1	8.1	11.4	10.5	8.3
95th Percentile	-3.2	4.2	6.5	8.8	5.9	8.6	9.5	7.3
# of Portfolios	183	181	181	179	174	159	144	124
● DE Shaw	-0.4 (37)	13.8 (13)	16.8 (20)	18.9 (6)	12.4 (3)	14.7 (4)	14.2 (4)	-- (--)
▲ Russell 1000	-0.7 (45)	10.6 (51)	14.0 (50)	15.7 (33)	10.4 (22)	13.2 (28)	12.6 (26)	9.6 (33)

Characteristics

	Portfolio	Russell 1000
Number of Holdings	975	975
Weighted Avg. Market Cap. (\$B)	164.4	164.4
Median Market Cap. (\$B)	10.2	10.1
Price To Earnings	26.3	24.2
Price To Book	5.2	4.6
Price To Sales	4.2	4.2
Return on Equity (%)	24.0	20.0
Yield (%)	1.9	1.9
Beta (holdings; domestic)	1.0	1.0

Top Holdings

APPLE	3.4%
MICROSOFT	2.7%
AMAZON.COM	2.3%
BERKSHIRE HATHAWAY 'B'	1.5%
JP MORGAN CHASE & CO.	1.5%
FACEBOOK CLASS A	1.5%
JOHNSON & JOHNSON	1.4%
EXXON MOBIL	1.3%
ALPHABET 'C'	1.2%
ALPHABET A	1.2%

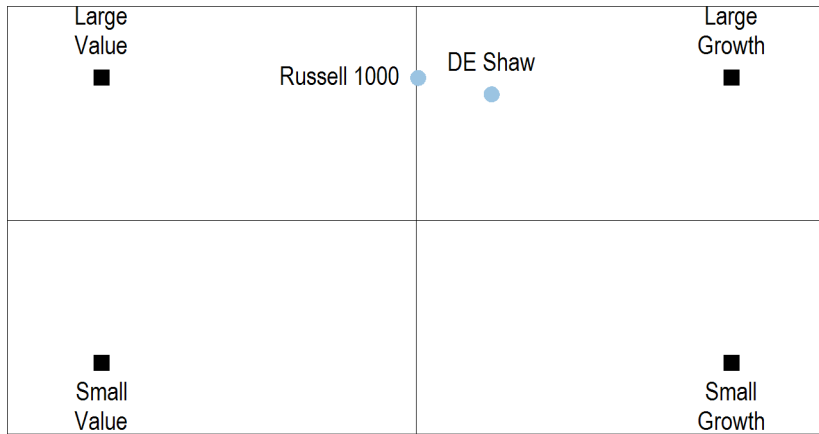
Best Performers

	Return %
XL GROUP (XL)	57.8%
ABIOMED (ABMD)	55.3%
NETFLIX (NFLX)	53.9%
VALIDUS HOLDINGS (VR)	44.6%
HERBALIFE NUTRITION (HLF)	43.9%
AGIOS PHARMACEUTICALS (AGIO)	43.0%
MATCH GROUP (MTCH)	41.9%
SQUARE CL.A (SQ)	41.9%
DST SYS. (DST)	34.8%
ZEBRA TECHNOLOGIES 'A' (ZBRA)	34.1%

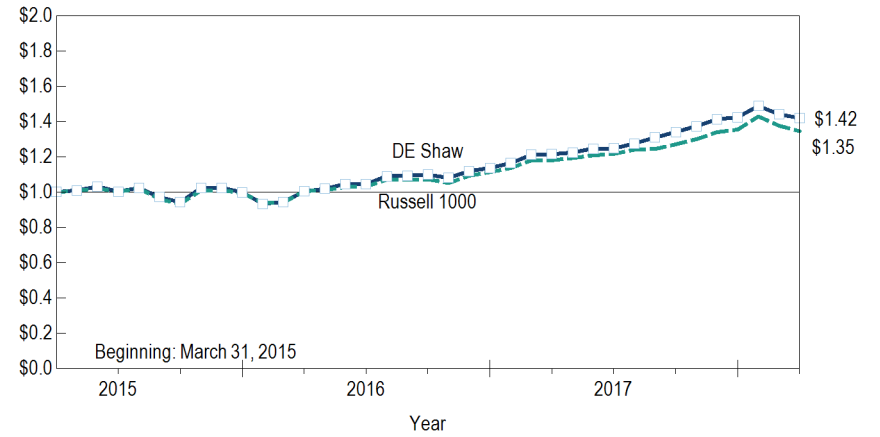
Worst Performers

	Return %
COLONY NORTHSTAR CL.A (CLNS)	-49.8%
WEATHERFORD INTL. (WFT)	-45.1%
AKORN (AKRX)	-41.9%
UNIVERSAL DISPLAY (OLED)	-41.5%
MACQUARIE INFRASTRUCTURE (MIC)	-40.3%
PATTERSON COMPANIES (PDCO)	-38.0%
MALLINCKRODT (MNK)	-35.8%
L BRANDS (LB)	-35.8%
OPKO HEALTH (OPK)	-35.3%
COHERENT (COHR)	-33.6%

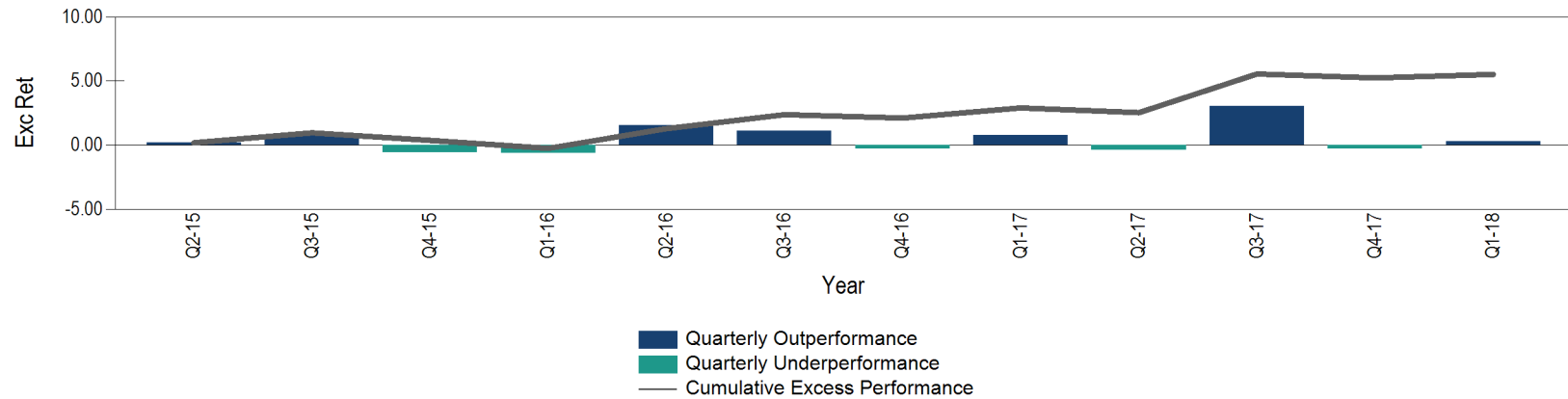
U.S. Effective Style Map

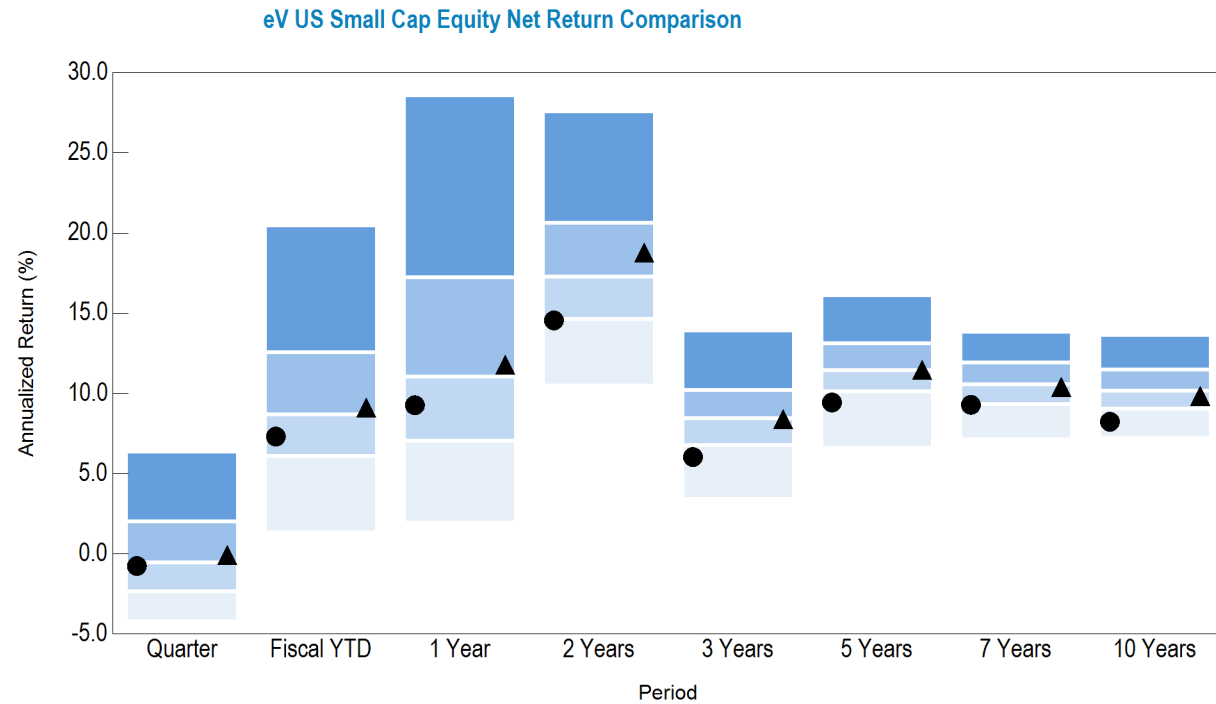


Growth of a Dollar



Quarterly and Cumulative Excess Performance





	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
Return (Rank)	6.3	20.5	28.6	27.6	13.9	16.1	13.8	13.6
5th Percentile	2.0	12.6	17.3	20.6	10.2	13.1	12.0	11.5
25th Percentile	-0.5	8.7	11.0	17.3	8.5	11.5	10.6	10.2
Median	-2.3	6.1	7.1	14.7	6.8	10.2	9.4	9.0
75th Percentile	-4.2	1.3	2.0	10.5	3.4	6.6	7.2	7.2
95th Percentile								
# of Portfolios	404	403	403	397	383	359	337	294
● Small Cap Equity	-0.8 (53)	7.3 (66)	9.3 (61)	14.5 (76)	6.0 (83)	9.4 (84)	9.3 (78)	8.2 (90)
▲ Russell 2000	-0.1 (44)	9.1 (47)	11.8 (47)	18.8 (36)	8.4 (52)	11.5 (50)	10.4 (57)	9.8 (59)

Characteristics

	Portfolio	Russell 2000
Number of Holdings	383	1,983
Weighted Avg. Market Cap. (\$B)	2.3	2.5
Median Market Cap. (\$B)	1.2	0.8
Price To Earnings	28.2	16.8
Price To Book	3.5	3.1
Price To Sales	2.7	3.2
Return on Equity (%)	14.7	8.3
Yield (%)	1.3	1.1
Beta (holdings; domestic)	1.2	1.2

Top Holdings

MKS INSTRUMENTS	1.0%
GRAND CANYON EDUCATION	0.9%
ETSY	0.9%
CATALENT	0.9%
LOUISIANA PACIFIC	0.9%
TEXAS ROADHOUSE	0.8%
MASIMO	0.8%
HAEMONETICS	0.8%
WINTRUST FINANCIAL	0.8%
EMCOR GROUP	0.8%

Best Performers

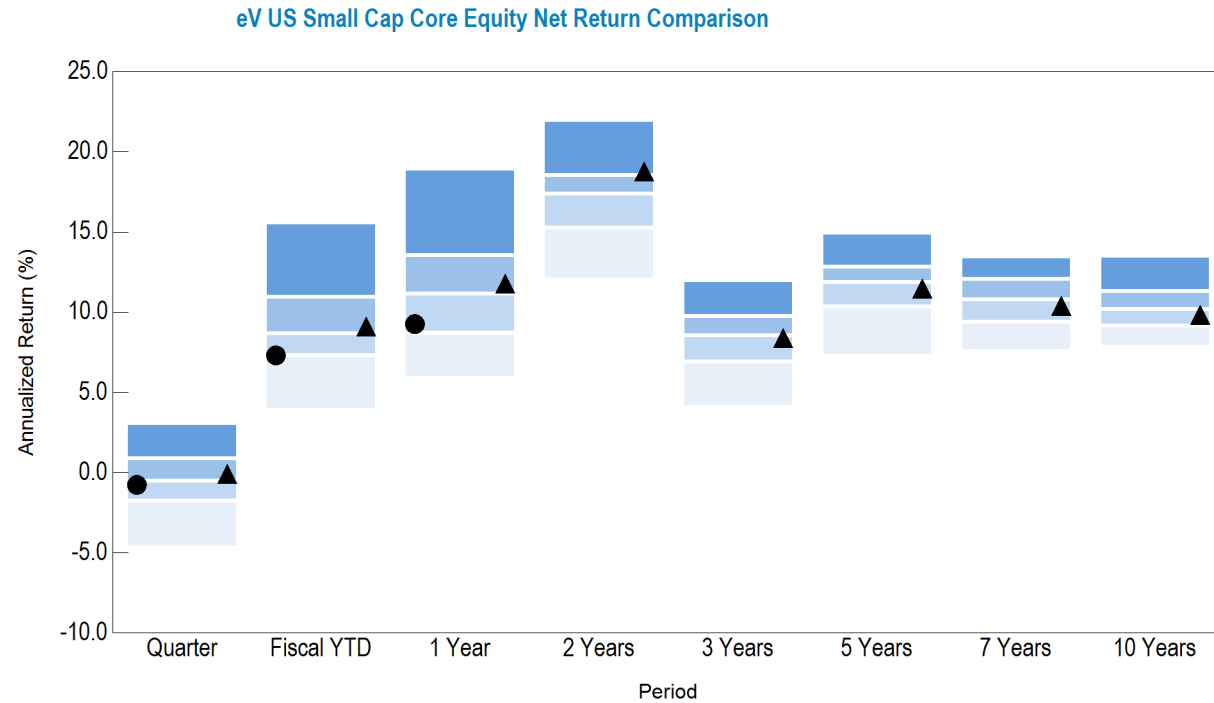
	Return %
CASA SYSTEMS (CASA)	65.2%
QUINSTREET (QNST)	52.4%
AMAG PHARMACEUTICALS (AMAG)	52.1%
SMART GLOBAL HOLDINGS (SGH)	47.9%
ENOVA INTERNATIONAL (ENVA)	45.1%
LIVEPERSON (LPSN)	42.2%
KARYOPHARM THERAPEUTICS (KPTI)	39.8%
WESCO AIRCRAFT HOLDINGS (WAIR)	38.5%
ENANTA PHARMACEUTICALS (ENTA)	37.9%
ETSY (ETSY)	37.2%

Worst Performers

	Return %
ROADRUNNER TRSP.SYSTEMS (RRTS)	-67.1%
PROTAGONIST THERAPEUTICS (PTGX)	-58.7%
FTD COMPANIES (FTD)	-49.4%
NUTRISYSTEM (NTRI)	-48.4%
J JILL (JILL)	-43.3%
IDT 'B' (IDT)	-40.4%
CATALYST PHARMACEUTICAL PARTNERS (CPRX)	-38.9%
OFFICE DEPOT (ODP)	-38.6%
SPARTANNASH (SPTN)	-34.9%
PACIFIC ETHANOL (PEIX)	-34.1%

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	0.1%	-0.2%	0.2%	0.1%	-14.7%	-10.5%	2.3%	3.8%			
Materials	-0.1%	0.0%	0.0%	0.0%	-3.8%	-3.0%	5.3%	4.5%			
Industrials	0.2%	0.2%	0.0%	0.0%	-0.9%	-2.5%	15.8%	15.8%			
Consumer Discretionary	-0.1%	-0.1%	0.0%	0.0%	-3.1%	-2.7%	13.2%	12.5%			
Consumer Staples	0.0%	0.0%	0.0%	0.0%	-7.2%	-5.9%	2.2%	2.5%			
Health Care	-0.4%	-0.4%	0.0%	0.0%	3.5%	6.2%	15.1%	15.4%			
Financials	0.3%	0.3%	0.0%	0.0%	2.6%	0.8%	18.0%	17.9%			
Information Technology	0.1%	0.0%	0.1%	0.0%	7.0%	6.7%	17.7%	16.6%			
Telecommunication Services	0.0%	0.0%	0.0%	0.0%	-2.8%	-5.2%	0.4%	0.6%			
Utilities	-0.1%	-0.2%	0.0%	0.0%	-11.2%	-6.4%	2.9%	3.6%			
Real Estate	0.2%	0.3%	0.0%	0.0%	-4.4%	-8.1%	7.1%	6.8%			
Cash	0.0%	0.0%	0.0%	0.0%	0.4%	--	0.0%	0.0%			
Portfolio	0.3%	=	0.0%	+	0.2%	+	0.1%	0.3%	0.0%	100.0%	100.0%



	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.1	15.6	18.9	22.0	12.0	14.9	13.5	13.5
25th Percentile	0.9	11.0	13.6	18.6	9.8	12.9	12.1	11.3
Median	-0.5	8.7	11.2	17.4	8.6	11.9	10.8	10.2
75th Percentile	-1.7	7.4	8.7	15.3	6.9	10.4	9.4	9.2
95th Percentile	-4.7	3.9	5.9	12.0	4.1	7.3	7.6	7.9
# of Portfolios	102	101	101	100	99	95	85	69
● QMA US Small Cap	-0.8 (56)	7.3 (76)	9.3 (69)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
▲ Russell 2000	-0.1 (39)	9.1 (45)	11.8 (44)	18.8 (22)	8.4 (53)	11.5 (56)	10.4 (59)	9.8 (60)

Characteristics

	Portfolio	Russell 2000
Number of Holdings	383	1,983
Weighted Avg. Market Cap. (\$B)	2.3	2.5
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TEXAS ROADHOUSE	0.8%
MASIMO	0.8%
HAEMONETICS	0.8%
WINTRUST FINANCIAL	0.8%
EMCOR GROUP	0.8%

Best Performers

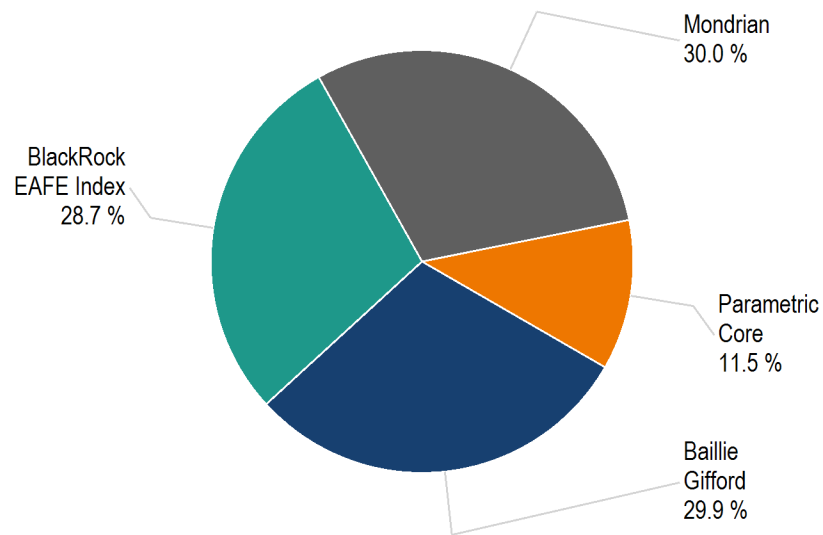
	Return %
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CATALYST PHARMACEUTICAL PARTNERS (CPRX)	-38.9%
OFFICE DEPOT (ODP)	-38.6%
SPARTANNASH (SPTN)	-34.9%
PACIFIC ETHANOL (PEIX)	-34.1%

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	0.1%	-0.2%	0.2%	0.1%	-14.7%	-10.5%	2.3%	3.8%			
Materials	-0.1%	0.0%	0.0%	0.0%	-3.8%	-3.0%	5.3%	4.5%			
Industrials	0.2%	0.2%	0.0%	0.0%	-0.9%	-2.5%	15.8%	15.8%			
Consumer Discretionary	-0.1%	-0.1%	0.0%	0.0%	-3.1%	-2.7%	13.2%	12.5%			
Consumer Staples	0.0%	0.0%	0.0%	0.0%	-7.2%	-5.9%	2.2%	2.5%			
Health Care	-0.4%	-0.4%	0.0%	0.0%	3.5%	6.2%	15.1%	15.4%			
Financials	0.3%	0.3%	0.0%	0.0%	2.6%	0.8%	18.0%	17.9%			
Information Technology	0.1%	0.0%	0.1%	0.0%	7.0%	6.7%	17.7%	16.6%			
Telecommunication Services	0.0%	0.0%	0.0%	0.0%	-2.8%	-5.2%	0.4%	0.6%			
Utilities	-0.1%	-0.2%	0.0%	0.0%	-11.2%	-6.4%	2.9%	3.6%			
Real Estate	0.2%	0.3%	0.0%	0.0%	-4.4%	-8.1%	7.1%	6.8%			
Cash	0.0%	0.0%	0.0%	0.0%	0.4%	--	0.0%	0.0%			
Portfolio	0.3%	=	0.0%	+	0.2%	+	0.1%	0.3%	0.0%	100.0%	100.0%



	Actual \$	Actual %	Manager Contribution to Excess Return %
Baillie Gifford	\$253,831,627	29.9%	0.1%
BlackRock EAFE Index	\$243,968,185	28.7%	0.0%
Mondrian	\$254,714,534	30.0%	0.0%
Parametric Core	\$97,346,069	11.5%	0.0%
Actual vs. Policy Weight Difference			0.1%
Total	\$849,860,414	100.0%	0.1%

Statistics Summary

3 Years

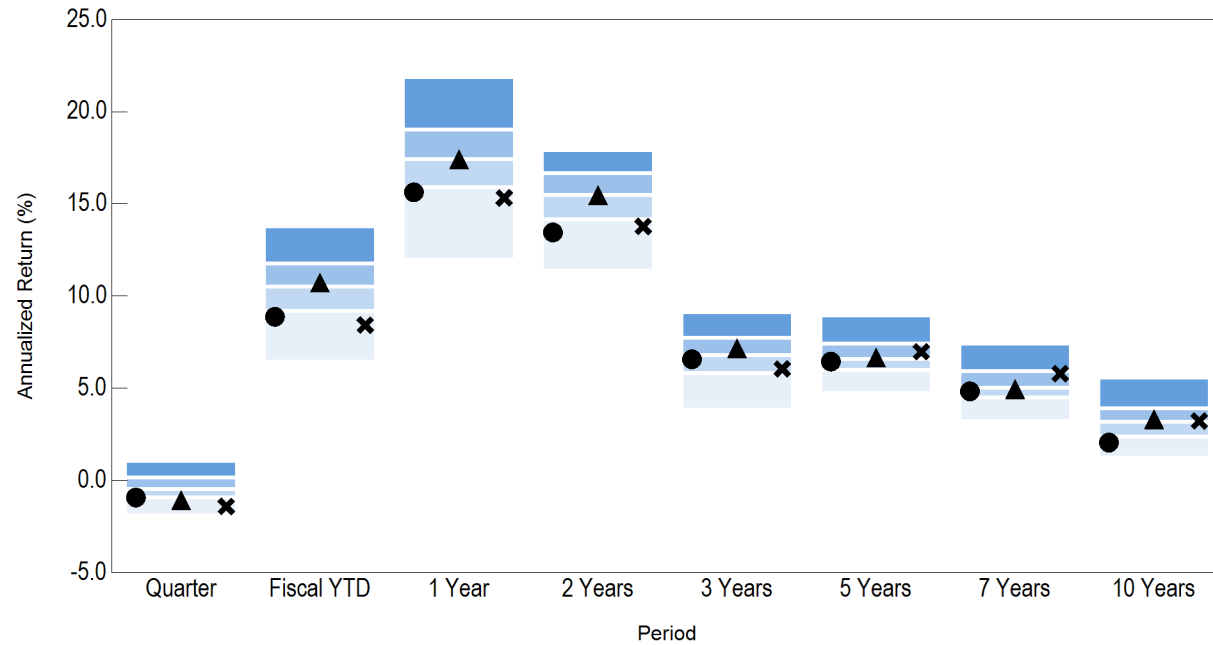
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	6.6%	12.2%	0.5	-0.3	1.8%
MSCI ACWI ex US IMI	7.2%	12.4%	0.5	--	0.0%
Developed Markets	6.4%	12.2%	0.5	-0.1	2.3%
MSCI ACWI ex USA Gross	6.7%	12.5%	0.5	--	0.0%
Baillie Gifford	7.8%	13.5%	0.5	0.3	4.1%
MSCI ACWI ex US	6.7%	12.5%	0.5	--	0.0%
BlackRock EAFE Index	5.9%	12.3%	0.4	2.1	0.1%
MSCI EAFE	5.6%	12.3%	0.4	--	0.0%
Mondrian	5.1%	11.8%	0.4	-0.1	5.0%
MSCI ACWI ex USA Value Gross	5.6%	13.3%	0.4	--	0.0%
Emerging Markets	7.5%	14.7%	0.5	-0.4	3.9%
MSCI Emerging Markets Gross	9.2%	16.5%	0.5	--	0.0%

Statistics Summary

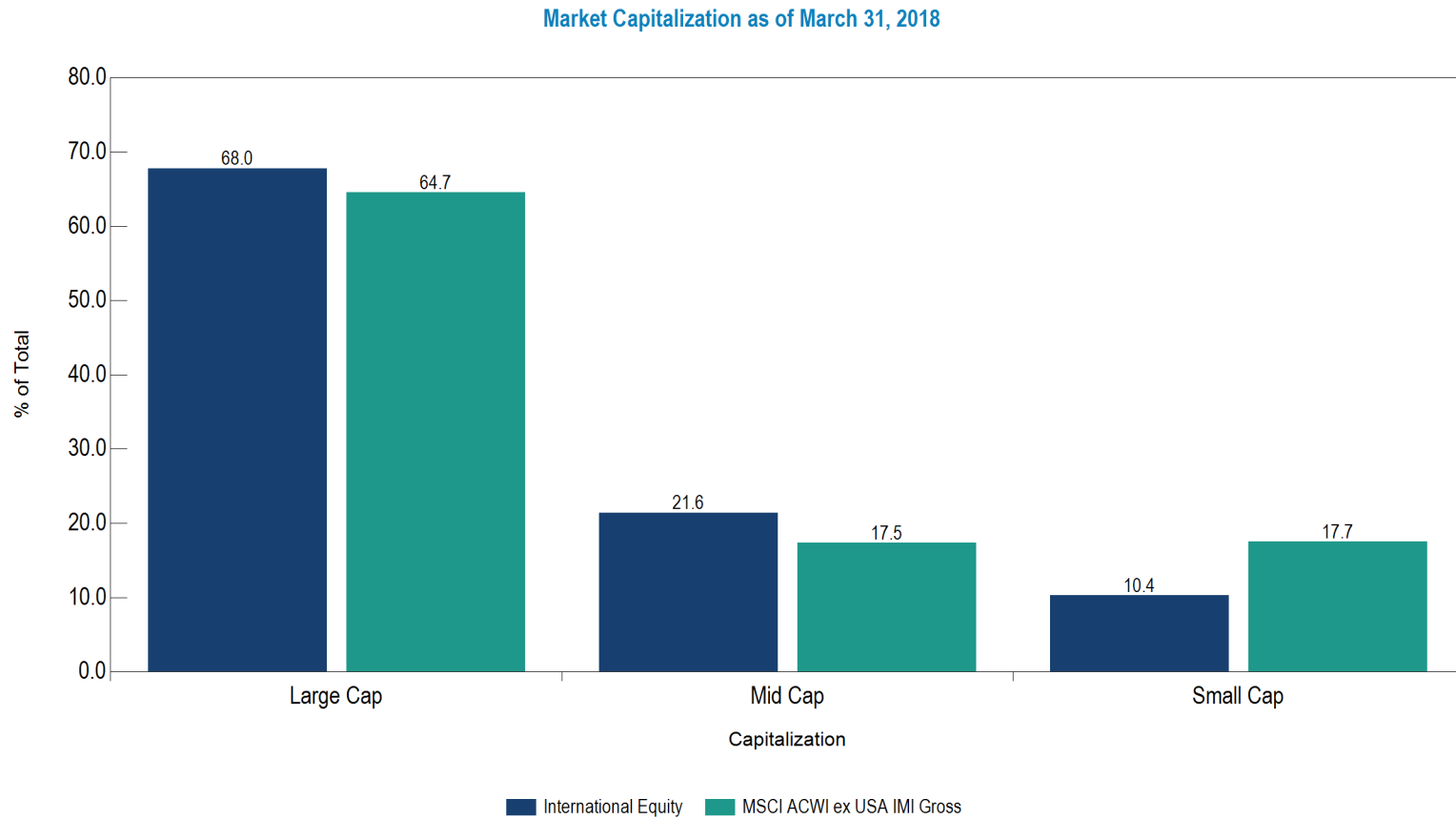
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	6.4%	11.6%	0.5	-0.1	1.7%
MSCI ACWI ex US IMI	6.7%	11.8%	0.5	--	0.0%
Developed Markets	6.8%	11.6%	0.6	0.2	2.0%
MSCI ACWI ex USA Gross	6.4%	11.9%	0.5	--	0.0%
Baillie Gifford	8.2%	12.7%	0.6	0.2	3.9%
MSCI ACWI ex US	7.3%	12.0%	0.6	--	0.0%
Mondrian	5.8%	11.5%	0.5	0.1	4.5%
MSCI ACWI ex USA Value Gross	5.5%	12.7%	0.4	--	0.0%
Emerging Markets	3.7%	13.6%	0.2	-0.4	3.9%
MSCI Emerging Markets Gross	5.4%	15.0%	0.3	--	0.0%

InvestorForce All DB ex-US Eq Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.1	13.8	21.9	17.9	9.1	8.9	7.4	5.6
25th Percentile	0.2	11.8	19.0	16.7	7.8	7.5	5.9	3.9
Median	-0.4	10.5	17.4	15.5	6.8	6.6	5.0	3.2
75th Percentile	-0.9	9.2	15.9	14.2	5.9	6.0	4.5	2.4
95th Percentile	-1.9	6.5	12.0	11.4	3.9	4.8	3.2	1.2
# of Portfolios	354	352	348	343	335	296	244	188
● International Equity	-0.9 (77)	8.9 (81)	15.6 (80)	13.4 (82)	6.6 (59)	6.4 (58)	4.8 (60)	2.1 (84)
▲ MSCI ACWI ex US IMI	-1.1 (81)	10.7 (44)	17.4 (51)	15.5 (52)	7.2 (37)	6.7 (48)	4.9 (55)	3.3 (44)
✕ MSCI EAFE Gross	-1.4 (90)	8.4 (86)	15.3 (82)	13.8 (80)	6.0 (70)	7.0 (37)	5.8 (30)	3.2 (50)



See appendix for the market capitalization breakpoints.

Characteristics

	Portfolio	MSCI ACWI ex USA IMI Gross
Number of Holdings	2,133	6,193
Weighted Avg. Market Cap. (\$B)	49.9	55.9
Median Market Cap. (\$B)	7.1	1.5
Price To Earnings	21.2	18.8
Price To Book	3.5	2.5
Price To Sales	3.0	2.3
Return on Equity (%)	17.8	15.2
Yield (%)	2.9	2.9
Beta (holdings; global)	1.1	1.0

Top Holdings

UNITED OVERSEAS BANK	1.4%
SANOFI	0.9%
NASPERS	0.9%
BP	0.9%
TAIWAN SEMICON.SPN.ADR 1:5	0.9%
HONDA MOTOR	0.9%
ALIBABA GROUP HLDG.SPN. ADR 1:1	0.8%
ENEL	0.8%
NOVARTIS 'R'	0.8%
DAIMLER	0.8%

Best Performers

	Return %
DAEWOO SHIPBLDG.& MAR. ENGR. (KO:OSM)	99.4%
SUZANO PAPEL E CELULOSE ON (BR:SUZ)	78.1%
SWANCOR HOLDING (TW:SWC)	57.6%
NESTLE (MALAYSIA) (L:NEST)	56.6%
ELSWEDY ELECTRIC (EG:SWD)	54.5%
MEDY-TOX (KO:MEY)	51.6%
GKN (UKIR:GKN)	50.3%
VESTEL ELNK.SANVETC. (TK:VES)	47.6%
SIX OF OCT.DEV.& INV. (EG:SOD)	46.3%
CIFI HOLDINGS (GROUP) (K:CIHG)	44.9%

Worst Performers

	Return %
RESILIENT PR.INC.FD. (R:RESJ)	-63.8%
CAPITA (UKIR:CPI)	-62.7%
MICRO FOCUS INTL. (UKIR:MCRO)	-59.0%
KINGSTON FINANCIAL GROUP (K:STIM)	-53.4%
ADANI POWER (IN:ANW)	-44.4%
HOUSING DEV.&INFR. (IN:IHD)	-42.4%
RELIANCE COMMUNICATIONS (IN:RCN)	-41.1%
BRF BRASIL FOODS ON (BR:DG3)	-37.7%
CAPITALAND MALAYSIA MALL TRUST (L:CAPI)	-36.3%
DATATEC (R:DTCJ)	-35.4%

International Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.1%	0.1%	0.0%	0.1%	0.1%	-1.9%	5.6%	6.3%			
Materials	0.1%	0.1%	0.0%	-0.1%	-1.3%	-2.9%	5.8%	8.5%			
Industrials	-0.2%	-0.2%	0.0%	-0.1%	-3.3%	-1.5%	13.2%	13.0%			
Consumer Discretionary	0.0%	-0.1%	0.0%	0.1%	-1.5%	-1.1%	15.0%	12.0%			
Consumer Staples	0.4%	0.3%	0.0%	0.2%	1.2%	-2.4%	11.7%	9.2%			
Health Care	-0.1%	-0.1%	0.0%	0.0%	-0.6%	0.9%	8.5%	7.6%			
Financials	0.1%	0.1%	0.0%	0.1%	-0.2%	-0.9%	18.7%	21.4%			
Information Technology	-0.1%	0.0%	0.0%	0.0%	1.7%	1.8%	10.2%	11.5%			
Telecommunication Services	0.0%	0.1%	0.0%	0.0%	-2.9%	-4.1%	4.7%	3.6%			
Utilities	0.0%	0.0%	0.0%	0.0%	-0.2%	0.9%	3.8%	2.9%			
Real Estate	-0.1%	0.0%	0.0%	0.0%	-0.7%	-0.2%	2.4%	4.0%			
Cash	0.0%	0.0%	0.0%	0.0%	0.4%	--	0.4%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	0.3%	=	0.2%	+	-0.1%	+	0.2%	-0.7%	-1.0%	100.0%	100.0%

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	
Europe									
Austria	2.3%	2.7%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Belgium	0.6%	0.7%	0.3%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	6.0%	5.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Denmark	-4.3%	-0.4%	2.5%	1.2%	0.0%	0.0%	0.0%	0.0%	-0.1%
Finland	1.6%	6.9%	0.6%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
France	-0.6%	0.4%	4.9%	6.6%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Germany	-0.2%	-3.2%	7.0%	6.4%	0.2%	0.0%	0.0%	0.0%	0.2%
Greece*	-3.1%	-4.3%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Hungary*	-5.3%	-0.9%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Ireland	-6.5%	-3.1%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Italy	4.2%	4.8%	2.0%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Luxembourg	-0.3%	-1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	2.3%	0.9%	2.6%	2.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Norway	2.4%	2.8%	0.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	-7.6%	-8.4%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Portugal	-5.6%	2.4%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Russia*	4.8%	9.3%	1.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Spain	-4.6%	-1.1%	2.9%	2.2%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Sweden	-0.3%	-2.0%	3.3%	2.1%	0.0%	0.0%	0.0%	0.0%	0.1%
Switzerland	-3.7%	-3.7%	5.3%	5.2%	0.0%	0.0%	0.0%	0.0%	0.0%
United Kingdom	-3.5%	-3.5%	13.8%	12.2%	0.0%	-0.1%	0.1%	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		
AsiaPacific										
Australia	-3.1%	-5.8%	4.0%	4.8%	0.1%	0.0%	0.0%	0.0%	0.1%	
China*	2.1%	2.0%	3.4%	7.0%	0.0%	-0.2%	0.0%	0.0%	-0.2%	
Hong Kong	-2.6%	-1.3%	4.2%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
India*	-4.8%	-7.9%	2.7%	2.3%	0.1%	0.0%	0.0%	0.0%	0.1%	
Indonesia*	-3.8%	-5.4%	0.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	
Japan	0.8%	1.1%	16.5%	17.4%	0.0%	0.0%	-0.1%	0.0%	-0.1%	
Korea*	-3.6%	-0.4%	2.7%	3.8%	-0.1%	0.0%	0.0%	0.0%	-0.1%	
Malaysia*	8.8%	7.1%	1.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.1%	
New Zealand	-4.9%	1.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
Pakistan*	8.4%	8.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Philippines*	-5.4%	-10.5%	0.6%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
Singapore	1.3%	3.1%	3.0%	0.9%	0.0%	0.1%	0.0%	0.0%	0.1%	
Taiwan*	5.7%	4.9%	2.6%	2.9%	0.0%	0.0%	0.0%	0.0%	0.0%	
Thailand*	5.8%	7.0%	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	
Americas										
Brazil*	5.7%	11.7%	2.0%	1.6%	-0.1%	0.1%	0.0%	0.0%	-0.1%	
Canada	2.1%	-7.3%	0.8%	6.5%	0.6%	0.1%	0.2%	-0.5%	0.3%	
Chile*	1.2%	1.0%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
Colombia*	5.8%	3.9%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
Mexico*	2.5%	1.6%	1.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	
Peru*	6.8%	9.5%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
United States	-0.4%	-0.8%	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	
Other									
Egypt*	19.8%	16.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Israel	-5.5%	-3.5%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Kazakhstan**	6.2%	18.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kuwait**	1.3%	8.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	7.5%	4.4%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	26.6%	19.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	-3.2%	-3.4%	2.7%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Turkey*	-6.4%	-3.4%	0.6%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
United Arab Emirates*	10.2%	-0.6%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals									
Americas	3.3%	-2.8%	5.6%	9.3%	0.4%	-0.1%	0.2%	-0.1%	0.3%
Europe	-1.7%	-1.5%	48.0%	44.3%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Asia/Pacific	0.1%	0.1%	41.8%	43.7%	0.0%	0.0%	0.0%	0.0%	-0.1%
Other	-1.5%	-2.6%	4.1%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.4%	--	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	-0.7%	-1.0%	100.0%	100.0%	0.3%	-0.1%	0.2%	-0.1%	0.3%
Totals									
Developed	-1.2%	-1.7%	75.7%	75.5%	0.2%	0.0%	0.2%	0.0%	0.4%
Emerging*	0.9%	1.3%	23.8%	24.5%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Frontier**	11.0%	--	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.4%	--	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

InvestorForce All DB Dev Mkt ex-US Eq Net Return Comparison



	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
Return (Rank)								
5th Percentile	1.4	14.6	23.8	20.9	8.9	9.3	8.2	5.3
25th Percentile	0.1	10.8	19.6	15.4	7.7	8.3	6.7	4.0
Median	-0.4	9.6	16.2	14.0	6.4	7.2	5.7	3.0
75th Percentile	-1.3	8.6	14.9	13.0	4.8	5.8	4.6	2.5
95th Percentile	-2.7	3.6	7.2	8.5	3.6	4.2	3.0	0.9
# of Portfolios	140	139	138	133	131	112	88	64
● Developed Markets	-1.2 (74)	8.2 (82)	15.3 (65)	13.1 (73)	6.4 (49)	6.8 (62)	5.2 (67)	2.3 (81)
▲ MSCI ACWI ex USA Gross	-1.1 (64)	10.4 (28)	17.0 (39)	15.4 (26)	6.7 (43)	6.4 (70)	4.7 (73)	3.2 (49)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	1,055	1,864
Weighted Avg. Market Cap. (\$B)	53.0	65.0
Median Market Cap. (\$B)	12.0	8.5
Price To Earnings	21.2	18.6
Price To Book	3.5	2.5
Price To Sales	3.0	2.3
Return on Equity (%)	17.8	15.4
Yield (%)	2.9	3.0
Beta (holdings; global)	1.1	1.1

Top Holdings

UNITED OVERSEAS BANK	1.6%
SANOFI	1.1%
BP	1.0%
TAIWAN SEMICON.SPN.ADR 1:5	1.0%
HONDA MOTOR	1.0%
ENEL	1.0%
NOVARTIS 'R'	0.9%
NASPERS	0.9%
ALIBABA GROUP HLDG.SPN. ADR 1:1	0.9%
DAIMLER	0.9%

Best Performers

	Return %
SUZANO PAPEL E CELULOSE ON (BR:SUZ)	78.1%
GKN (UKIR:GKN)	50.3%
SARTORIUS PREF. (D:SRT3)	44.6%
SKY (UKIR:SKY)	35.6%
ITAUSA INVESTIMENTOS ITAU PN (BR:IS4)	34.9%
KOSE (J:OSEC)	34.5%
TDC (DK:TDC)	34.5%
ONO PHARM. (J:PS@N)	33.7%
SHISEIDO (J:SHDO)	32.5%
WILLIAM DEMANT HLDG. (DK:WDH)	32.2%

Worst Performers

	Return %
CAPITA (UKIR:CPI)	-62.7%
MICRO FOCUS INTL. (UKIR:MCRO)	-59.0%
KINGSTON FINANCIAL GROUP (K:STIM)	-53.4%
SURUGA BANK (J:SURB)	-35.2%
PJSC MAGNIT GDR (REG S) (UKIR:MGNT)	-32.6%
HENNES & MAURITZ 'B' (W:HMBF)	-27.7%
DEUTSCHE BANK (D:DBK)	-26.9%
HUTCHISON PORT HDG.TRUST (T:HPHH)	-26.0%
KROTON EDUCACIONAL ON (BR:KRO)	-25.7%
MINTH GROUP (K:MINT)	-24.5%

Developed Markets Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.0%	-0.1%	0.0%	0.1%	-1.2%	-1.6%	5.1%	6.8%			
Materials	0.0%	0.1%	0.0%	-0.1%	-1.8%	-2.8%	4.9%	8.0%			
Industrials	-0.3%	-0.2%	0.0%	-0.1%	-3.7%	-1.5%	13.7%	11.9%			
Consumer Discretionary	0.0%	-0.1%	0.0%	0.2%	-1.3%	-1.1%	15.6%	11.4%			
Consumer Staples	0.5%	0.3%	0.0%	0.2%	1.3%	-2.7%	11.9%	9.6%			
Health Care	0.0%	-0.1%	0.0%	0.0%	-0.9%	0.0%	8.9%	7.7%			
Financials	0.0%	0.0%	0.0%	0.1%	-0.5%	-1.0%	19.2%	23.2%			
Information Technology	-0.1%	-0.1%	0.0%	0.0%	1.7%	1.7%	10.5%	11.5%			
Telecommunication Services	0.0%	0.1%	0.0%	0.0%	-2.9%	-4.0%	4.2%	4.0%			
Utilities	0.0%	-0.1%	0.0%	0.0%	-0.7%	1.4%	3.5%	2.9%			
Real Estate	0.0%	0.0%	0.0%	0.0%	-0.8%	-1.3%	2.0%	3.1%			
Cash	0.0%	0.0%	0.0%	0.0%	0.4%	--	0.5%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	0.2%	=	-0.1%	+	-0.1%	+	0.4%	-0.9%	-1.1%	100.0%	100.0%

Developed Markets Performance Attribution vs. MSCI ACWI ex USA Gross

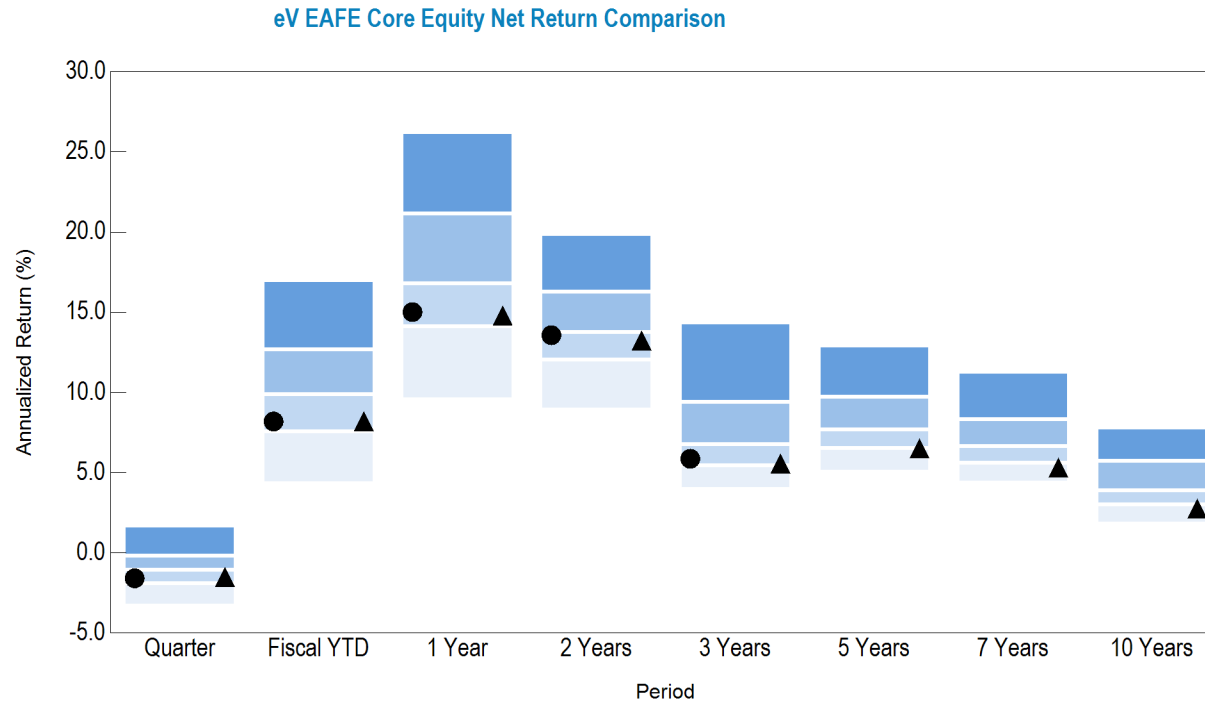
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	2.3%	2.2%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Belgium	0.6%	0.6%	0.4%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	--	6.4%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Denmark	-4.3%	-1.1%	2.8%	1.3%	0.0%	0.0%	0.0%	0.0%	-0.1%
Finland	1.6%	8.6%	0.7%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
France	-0.6%	0.5%	5.5%	7.2%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Germany	-0.2%	-3.5%	7.9%	6.8%	0.2%	0.0%	0.0%	0.0%	0.3%
Greece*	--	-6.7%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	-1.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	-6.5%	-5.7%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Italy	4.2%	5.5%	2.2%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Luxembourg	0.0%	-1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	2.3%	1.0%	2.9%	2.5%	0.0%	0.0%	0.0%	0.0%	0.1%
Norway	2.4%	2.4%	0.2%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	--	-8.2%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	-5.6%	3.1%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Russia*	1.0%	9.5%	0.5%	0.8%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Spain	-4.6%	-1.7%	3.3%	2.2%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Sweden	-0.3%	-1.8%	3.7%	1.9%	0.0%	0.1%	0.0%	0.0%	0.1%
Switzerland	-3.7%	-3.9%	6.0%	5.5%	0.0%	0.0%	0.0%	0.0%	0.0%
United Kingdom	-3.5%	-3.8%	15.5%	12.1%	0.0%	-0.1%	0.1%	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	
AsiaPacific									
Australia	-3.1%	-6.1%	4.5%	4.8%	0.1%	0.0%	0.0%	0.0%	0.1%
China*	2.2%	1.8%	3.1%	7.4%	0.0%	-0.2%	0.0%	0.0%	-0.2%
Hong Kong	-3.7%	-1.4%	3.9%	2.5%	-0.1%	0.0%	0.0%	0.0%	-0.1%
India*	-2.3%	-6.9%	2.1%	2.2%	0.1%	0.0%	0.0%	0.0%	0.1%
Indonesia*	-2.5%	-7.0%	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	0.8%	0.8%	18.5%	16.6%	0.0%	0.0%	0.1%	0.0%	0.1%
Korea*	-5.2%	-0.9%	2.1%	3.8%	-0.2%	0.0%	0.0%	0.1%	-0.1%
Malaysia*	11.9%	8.7%	0.7%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	-4.9%	-4.9%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Pakistan*	--	11.7%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	-2.0%	-11.4%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	1.4%	2.9%	3.3%	0.9%	0.0%	0.1%	0.0%	0.0%	0.1%
Taiwan*	6.6%	5.6%	2.0%	2.8%	0.1%	-0.1%	0.0%	0.0%	0.0%
Thailand*	0.0%	9.1%	0.2%	0.6%	0.0%	0.0%	0.0%	0.0%	-0.1%
Americas									
Brazil*	6.3%	12.5%	1.4%	1.7%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Canada	2.1%	-7.2%	0.9%	6.4%	0.6%	0.1%	0.2%	-0.5%	0.3%
Chile*	--	1.6%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	4.9%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	2.9%	0.9%	0.4%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	9.5%	10.4%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
United States	-2.1%	-0.8%	0.9%	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	
Other									
Egypt*	--	12.1%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	-5.5%	-5.3%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Kazakhstan**	6.2%	18.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	10.8%	4.6%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	26.6%	19.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	-4.2%	-4.0%	2.1%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Turkey*	-9.6%	-4.8%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
United Arab Emirates*	21.5%	-0.8%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals									
Americas	3.0%	-2.4%	3.6%	9.4%	0.4%	-0.1%	0.1%	-0.2%	0.2%
Europe	-1.8%	-1.7%	52.3%	44.9%	0.0%	-0.1%	0.1%	0.0%	0.0%
Asia/Pacific	0.1%	-0.1%	40.9%	43.1%	-0.1%	0.0%	0.1%	0.0%	0.0%
Other	-2.9%	-3.4%	2.8%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.4%	--	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	-0.9%	-1.1%	100.0%	100.0%	0.2%	-0.2%	0.4%	-0.2%	0.2%
Totals									
Developed	-1.2%	-1.9%	83.9%	75.2%	0.3%	-0.1%	0.4%	0.0%	0.7%
Emerging*	1.0%	1.4%	15.6%	24.8%	-0.1%	-0.3%	0.0%	0.1%	-0.5%
Frontier**	17.8%	--	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.4%	--	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.7	17.0	26.2	19.9	14.3	12.9	11.3	7.8
25th Percentile	-0.2	12.7	21.2	16.3	9.4	9.8	8.3	5.8
Median	-1.0	9.9	16.8	13.8	6.8	7.7	6.7	3.9
75th Percentile	-1.9	7.6	14.1	12.1	5.5	6.6	5.6	3.0
95th Percentile	-3.3	4.3	9.6	8.9	4.0	5.1	4.4	1.8
# of Portfolios	137	135	135	133	126	106	91	79
● BlackRock EAFE Index	-1.6 (69)	8.2 (69)	15.0 (71)	13.6 (54)	5.9 (67)	-- (--)	-- (--)	-- (--)
▲ MSCI EAFE	-1.5 (66)	8.2 (69)	14.8 (72)	13.2 (58)	5.6 (72)	6.5 (76)	5.3 (82)	2.7 (89)

Characteristics

	Portfolio	MSCI EAFE
Number of Holdings	928	926
Weighted Avg. Market Cap. (\$B)	56.8	56.9
Median Market Cap. (\$B)	11.2	11.2
Price To Earnings	19.0	18.1
Price To Book	2.8	2.5
Price To Sales	2.5	2.2
Return on Equity (%)	16.6	14.2
Yield (%)	3.2	3.2
Beta (holdings; global)	1.1	1.1

Top Holdings

NESTLE 'R'	1.7%
HSBC HOLDINGS	1.3%
NOVARTIS 'R'	1.2%
TOYOTA MOTOR	1.1%
ROCHE HOLDING	1.1%
ROYAL DUTCH SHELL A	1.0%
TOTAL	0.9%
BP	0.9%
BRITISH AMERICAN TOBACCO	0.9%
ROYAL DUTCH SHELL B	0.8%

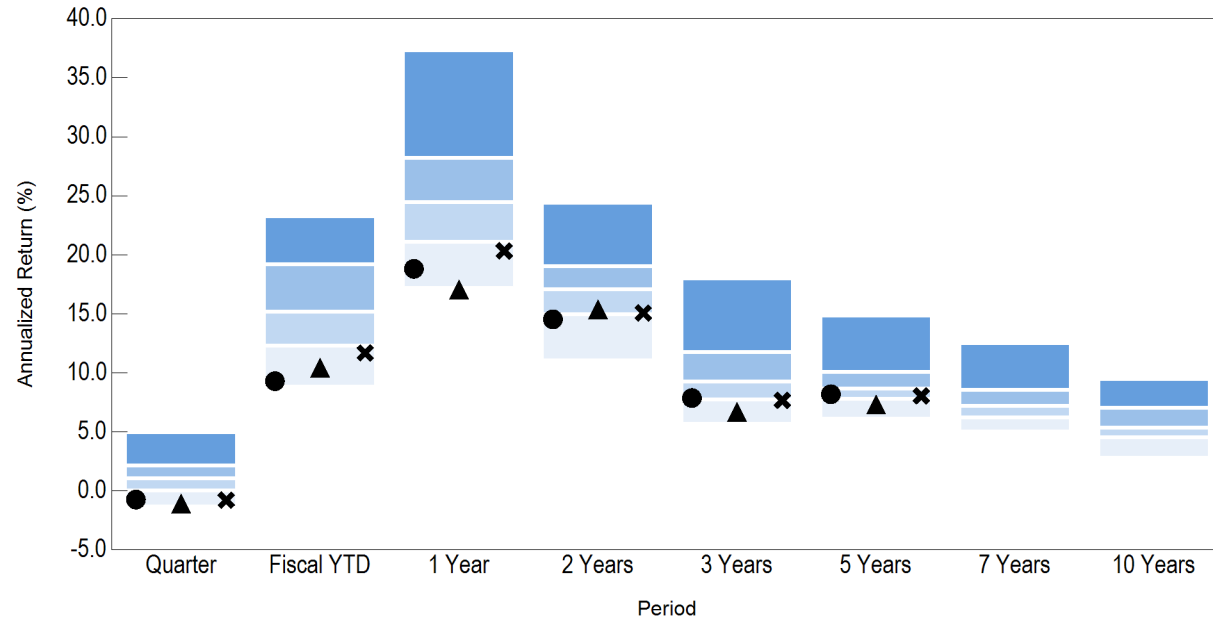
Best Performers

	Return %
GKN (UKIR:GKN)	50.3%
SKY (UKIR:SKY)	35.6%
KOSE (J:OSEC)	34.5%
TDC (DK:TDC)	34.5%
ONO PHARM. (J:PS@N)	33.7%
SHISEIDO (J:SHDO)	32.5%
WILLIAM DEMANT HLDG. (DK:WDH)	32.2%
OTSUKA (J:OTSK)	31.4%
IPSEN (F:IPN)	29.8%
SEGA SAMMY HDG. (J:SESA)	29.2%

Worst Performers

	Return %
CAPITA (UKIR:CPI)	-62.7%
MICRO FOCUS INTL. (UKIR:MCRO)	-59.0%
KINGSTON FINANCIAL GROUP (K:STIM)	-53.4%
SURUGA BANK (J:SURB)	-35.2%
HENNES & MAURITZ 'B' (W:HMBF)	-27.7%
DEUTSCHE BANK (D:DBK)	-26.9%
HUTCHISON PORT HDG.TRUST (T:HPHH)	-26.0%
MINTH GROUP (K:MINT)	-24.5%
INGENICO GROUP (F:INGE)	-24.2%
SEIKO EPSON (J:SEEP)	-23.4%

eV ACWI ex-US Growth Equity Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	4.9	23.2	37.3	24.4	18.0	14.8	12.5	9.5
25th Percentile	2.2	19.2	28.2	19.0	11.8	10.1	8.6	7.0
Median	1.1	15.2	24.5	17.1	9.3	8.7	7.2	5.4
75th Percentile	0.1	12.3	21.1	15.0	7.7	7.8	6.2	4.6
95th Percentile	-1.3	8.8	17.2	11.1	5.7	6.1	5.1	2.8
# of Portfolios	70	70	70	70	67	56	50	43
● Baillie Gifford	-0.8 (91)	9.3 (91)	18.8 (89)	14.5 (81)	7.8 (72)	8.2 (65)	-- (--)	-- (--)
▲ MSCI ACWI ex US	-1.1 (94)	10.4 (84)	17.0 (96)	15.4 (70)	6.7 (92)	7.3 (83)	-- (--)	-- (--)
✕ MSCI ACWI ex US Growth	-0.8 (92)	11.7 (80)	20.3 (77)	15.1 (74)	7.7 (78)	8.0 (69)	-- (--)	-- (--)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	86	1,864
Weighted Avg. Market Cap. (\$B)	47.7	65.0
Median Market Cap. (\$B)	14.1	8.5
Price To Earnings	31.8	18.6
Price To Book	6.7	2.5
Price To Sales	4.6	2.3
Return on Equity (%)	24.1	15.4
Yield (%)	1.6	3.0
Beta (holdings; global)	1.1	1.1

Top Holdings

TAIWAN SEMICON.SPN.ADR 1:5	3.0%
NASPERS	2.8%
ALIBABA GROUP HLDG.SPN. ADR 1:1	2.7%
HARGREAVES LANSDOWN	2.4%
SHISEIDO	2.3%
ATLAS COPCO 'B'	2.3%
COCHLEAR	2.2%
ZALANDO	2.0%
UNITED OVERSEAS BANK	2.0%
NOVOZYMES	2.0%

Best Performers

	Return %
SARTORIUS PREF. (D:SRT3)	44.6%
SHISEIDO (J:SHDO)	32.5%
SHOPIFY 'A' (NYS) (SHOP)	23.4%
PUBLIC BANK (L:PBOM)	22.6%
ADIDAS (D:ADS)	20.3%
PIGEON (J:PIGC)	19.6%
MAKEMYTRIP (MMYT)	16.2%
ADVANTEST (J:AB@N)	13.8%
ASML HOLDING (H:ASML)	13.0%
KAO (J:KA@N)	11.0%

Worst Performers

	Return %
CAPITA (UKIR:CPI)	-62.7%
SURUGA BANK (J:SURB)	-35.2%
PJSC MAGNIT GDR (REG S) (UKIR:MGNT)	-32.6%
RAIA DROGASIL ON (BR:DR3)	-18.5%
JUPITER FUND MANAGEMENT (UKIR:JUP)	-18.2%
DISTRIBUIDORA INTNAC.DE ALIMENTACION (E:DIA)	-18.0%
WOOD GROUP (JOHN) (UKIR:WG.)	-13.8%
NASPERS (R:NPNJ)	-12.4%
THAI BEVERAGE PUBLIC (T:THBE)	-11.7%
INDITEX (E:IND)	-10.3%

Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.1%	-1.0%	0.0%	0.9%	-13.8%	-1.8%	0.5%	6.7%			
Materials	-0.1%	-0.1%	0.1%	0.0%	-4.2%	-2.9%	3.8%	8.1%			
Industrials	-0.4%	-0.2%	0.0%	-0.2%	-4.5%	-1.5%	14.3%	11.9%			
Consumer Discretionary	0.2%	0.0%	-0.1%	0.2%	-1.1%	-1.1%	19.4%	11.3%			
Consumer Staples	1.1%	0.5%	-0.2%	0.7%	3.1%	-2.7%	18.2%	9.5%			
Health Care	0.0%	0.1%	0.0%	-0.1%	0.2%	0.0%	7.6%	7.6%			
Financials	-0.5%	-0.6%	0.0%	0.1%	-3.1%	-1.0%	17.6%	23.1%			
Information Technology	0.5%	0.2%	0.2%	0.2%	3.4%	1.7%	16.6%	11.5%			
Telecommunication Services	0.0%	-0.2%	0.1%	0.1%	-5.3%	-4.0%	0.9%	4.0%			
Utilities	-0.1%	--	-0.1%	--	--	1.4%	0.0%	2.9%			
Real Estate	-0.1%	--	0.0%	--	--	-1.2%	0.0%	3.2%			
Cash	0.1%	0.0%	0.1%	0.0%	0.4%	--	1.2%	0.0%			
Portfolio	0.6%	=	-1.2%	+	0.1%	+	1.8%	-0.5%	-1.1%	100.0%	100.0%

Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross

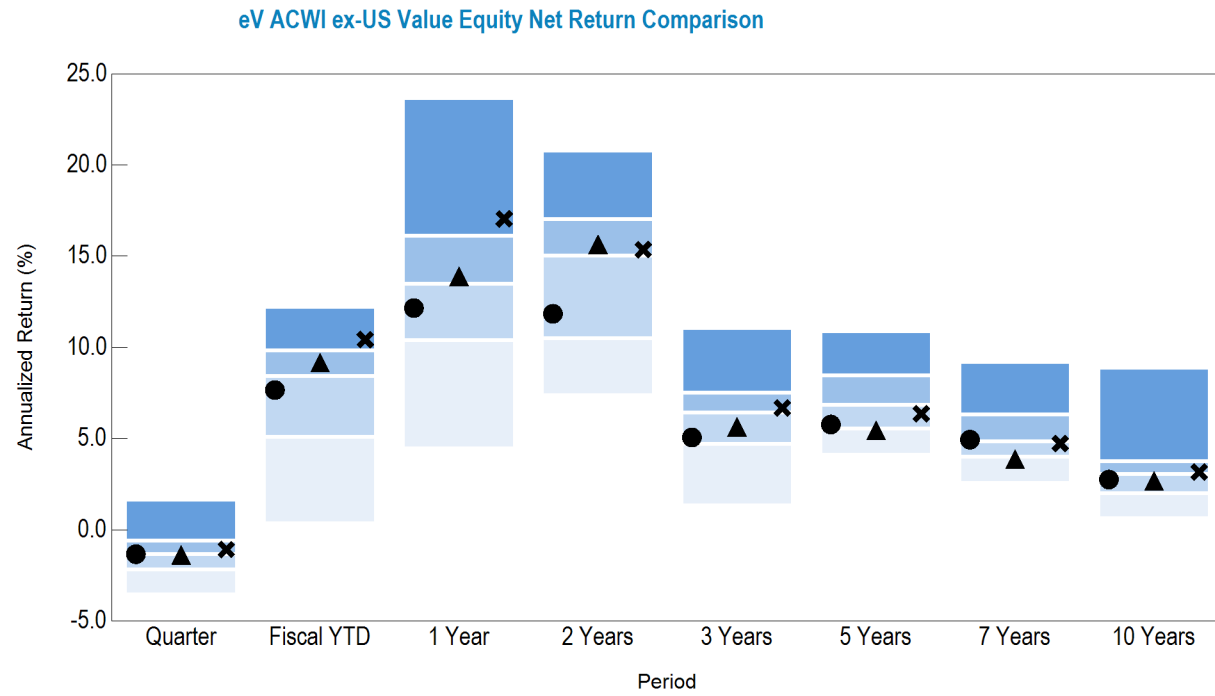
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	2.2%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Belgium	--	0.5%	0.0%	0.8%	--	0.0%	0.0%	--	0.0%
Czech Republic*	--	6.4%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Denmark	-5.3%	-1.1%	5.5%	1.3%	-0.1%	0.0%	0.1%	-0.2%	-0.1%
Finland	-3.7%	8.7%	1.2%	0.6%	-0.1%	0.1%	0.0%	-0.1%	-0.1%
France	1.6%	0.5%	1.5%	7.3%	0.1%	-0.1%	-0.1%	-0.1%	-0.2%
Germany	10.7%	-3.5%	5.1%	6.7%	0.9%	0.0%	0.0%	-0.2%	0.7%
Greece*	--	-6.7%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	-1.1%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	--	-5.7%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Italy	--	5.4%	0.0%	1.6%	--	-0.1%	0.0%	--	-0.1%
Netherlands	13.0%	1.0%	0.9%	2.5%	0.3%	0.0%	0.0%	-0.2%	0.0%
Norway	--	2.3%	0.0%	0.5%	--	0.0%	0.0%	--	0.0%
Poland*	--	-8.2%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	-6.4%	3.1%	1.5%	0.1%	0.0%	0.1%	0.0%	-0.1%	0.0%
Russia*	-32.6%	9.4%	0.4%	0.8%	-0.4%	-0.1%	0.0%	0.2%	-0.2%
Spain	-12.1%	-1.7%	2.8%	2.2%	-0.2%	0.0%	0.0%	-0.1%	-0.3%
Sweden	-1.3%	-1.8%	5.1%	1.8%	0.0%	0.1%	-0.1%	0.0%	0.1%
Switzerland	-5.3%	-3.9%	4.4%	5.5%	-0.1%	0.0%	0.0%	0.0%	-0.1%
United Kingdom	-5.3%	-4.0%	13.5%	12.1%	-0.2%	-0.1%	0.1%	0.0%	-0.2%

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	
AsiaPacific									
Australia	2.0%	-6.1%	5.6%	4.8%	0.4%	0.0%	0.0%	0.1%	0.4%
China*	1.3%	1.8%	7.1%	7.4%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Hong Kong	-2.0%	-1.4%	1.9%	2.5%	0.0%	0.0%	0.0%	0.0%	0.0%
India*	-0.9%	-6.9%	2.8%	2.2%	0.1%	0.0%	0.0%	0.0%	0.1%
Indonesia*	--	-7.1%	0.0%	0.6%	--	0.0%	0.0%	--	0.0%
Japan	3.9%	0.8%	17.7%	16.6%	0.5%	0.0%	0.0%	0.0%	0.5%
Korea*	-2.6%	-0.9%	3.0%	3.8%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Malaysia*	22.6%	8.7%	0.9%	0.6%	0.1%	0.0%	0.0%	0.0%	0.2%
New Zealand	--	-4.9%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Pakistan*	--	11.6%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	0.4%	-11.4%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	0.3%	2.7%	3.9%	0.9%	0.0%	0.1%	0.0%	-0.1%	0.1%
Taiwan*	7.2%	5.7%	3.6%	2.8%	0.1%	0.1%	-0.1%	0.0%	0.1%
Thailand*	--	9.0%	0.0%	0.6%	--	0.0%	0.0%	--	-0.1%
Americas									
Brazil*	-18.5%	12.4%	1.2%	1.7%	-0.6%	-0.1%	0.0%	0.2%	-0.5%
Canada	5.5%	-7.2%	1.6%	6.6%	0.8%	0.1%	0.1%	-0.6%	0.4%
Chile*	--	1.6%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	4.9%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	3.3%	0.9%	0.6%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	--	10.3%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
United States	-2.5%	-0.8%	2.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%

Baillie Gifford Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	12.0%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	--	-5.3%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Qatar*	--	4.5%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
South Africa*	-6.5%	-4.0%	4.6%	1.8%	0.0%	-0.1%	0.1%	-0.1%	-0.1%
Turkey*	--	-4.8%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
United Arab Emirates*	--	-0.8%	0.0%	0.2%	--	0.0%	0.0%	--	0.0%
Totals									
Americas	-3.2%	-2.5%	5.5%	9.5%	-0.2%	-0.1%	0.1%	0.1%	-0.1%
Europe	-2.9%	-1.7%	41.8%	44.9%	-0.4%	0.0%	-0.2%	0.0%	-0.6%
Asia/Pacific	2.6%	0.0%	46.9%	42.9%	1.2%	0.0%	0.0%	0.1%	1.3%
Other	-6.5%	-3.4%	4.6%	2.7%	-0.1%	-0.1%	0.1%	-0.1%	-0.2%
Cash	0.4%	--	1.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%
Total	-0.5%	-1.1%	100.0%	100.0%	0.4%	0.1%	0.1%	0.1%	0.6%
Totals									
Developed	-0.5%	-1.9%	74.1%	75.2%	1.1%	0.0%	0.0%	0.0%	1.1%
Emerging*	-0.7%	1.4%	24.7%	24.8%	-0.6%	0.0%	0.1%	0.0%	-0.6%
Cash	0.4%	--	1.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.6	12.2	23.7	20.8	11.0	10.9	9.2	8.9
25th Percentile	-0.6	9.9	16.1	17.1	7.6	8.5	6.4	3.8
Median	-1.3	8.4	13.5	15.0	6.5	6.9	4.9	3.1
75th Percentile	-2.1	5.1	10.4	10.5	4.7	5.6	4.0	2.0
95th Percentile	-3.5	0.4	4.5	7.4	1.4	4.1	2.6	0.7
# of Portfolios	36	36	36	35	32	25	19	16
● Mondrian	-1.3 (51)	7.7 (59)	12.2 (67)	11.8 (67)	5.1 (65)	5.8 (74)	4.9 (50)	2.8 (68)
▲ MSCI ACWI ex USA Value Gross	-1.4 (55)	9.2 (40)	13.9 (43)	15.6 (45)	5.6 (62)	5.5 (84)	3.9 (77)	2.7 (69)
✕ MSCI ACWI ex USA Gross	-1.1 (44)	10.4 (20)	17.0 (16)	15.4 (48)	6.7 (39)	6.4 (68)	4.7 (53)	3.2 (49)

Characteristics

	Portfolio	MSCI ACWI ex USA Value Gross
Number of Holdings	141	1,075
Weighted Avg. Market Cap. (\$B)	54.7	57.0
Median Market Cap. (\$B)	20.2	7.5
Price To Earnings	13.4	13.8
Price To Book	1.8	1.5
Price To Sales	1.7	1.6
Return on Equity (%)	13.0	12.0
Yield (%)	4.0	4.0
Beta (holdings: global)	1.0	1.1

Top Holdings

SANOFI	2.5%
ENEL	2.5%
TESCO	2.5%
UNITED OVERSEAS BANK	2.5%
HONDA MOTOR	2.5%
ENI	2.3%
LLOYDS BANKING GROUP	2.2%
TELIA COMPANY	2.2%
DAIMLER	2.1%
BP	2.1%

Best Performers

	Return %
SUZANO PAPEL E CELULOSE ON (BR:SUZ)	78.1%
ITAUSA INVESTIMENTOS ITAU PN (BR:IS4)	34.9%
CSPC PHARMACEUTICAL GP. (K:CPHA)	31.6%
ROMGAZ GDR REGS (UKIR:SNGR)	26.6%
ITAU UNIBANCO BANCO HLDG.ADR 1:1 (ITUB)	25.4%
FIRST ABU DHABI BANK (AD:NBA)	21.5%
LUKOIL OAO SPN.ADR 1:1 (LUKOY)	20.1%
NOVATEK MICROELS. (TW:NOV)	18.7%
OTSUKA HOLDINGS (J:OTHD)	14.1%
MALAYAN BANKING (L:MALY)	13.2%

Worst Performers

	Return %
KROTON EDUCACIONAL ON (BR:KRO)	-25.7%
TONGDA GROUP HOLDINGS (K:TGDA)	-24.5%
CMPH.COCS. RODOVIARIAS ON (BR:CCR)	-22.8%
TURKIYE HALK BANKASI (TK:HLB)	-20.5%
BAJAJ AUTO (IN:BHG)	-19.4%
LUPIN (IN:LUP)	-18.6%
KANGWON LAND (KO:KWL)	-18.6%
WOOD GROUP (JOHN) (UKIR:WG.)	-13.8%
KOREA ELECTRIC POWER (KO:KAW)	-13.5%
TAKEDA PHARMACEUTICAL (J:TA@N)	-12.8%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.2%	-0.2%	0.0%	0.1%	-1.5%	-0.4%	9.5%	10.8%			
Materials	-0.1%	-0.2%	0.0%	0.1%	-5.3%	-1.9%	3.0%	7.6%			
Industrials	-0.5%	-0.2%	-0.1%	-0.2%	-5.4%	-1.5%	12.2%	8.3%			
Consumer Discretionary	-0.3%	-0.3%	0.0%	0.1%	-3.6%	-0.8%	15.1%	9.5%			
Consumer Staples	0.7%	0.3%	-0.1%	0.4%	5.5%	-5.1%	6.3%	3.4%			
Health Care	-0.2%	-0.2%	0.1%	-0.1%	-2.7%	0.4%	9.0%	5.1%			
Financials	0.5%	1.3%	0.0%	-0.8%	2.6%	-1.5%	18.7%	36.1%			
Information Technology	0.2%	0.2%	-0.1%	0.1%	-0.3%	-3.9%	8.4%	3.8%			
Telecommunication Services	0.2%	0.3%	0.0%	-0.1%	-1.4%	-4.0%	7.9%	6.3%			
Utilities	-0.1%	-0.1%	0.1%	-0.1%	-2.2%	1.2%	7.2%	4.7%			
Real Estate	-0.1%	0.0%	0.0%	-0.1%	-1.4%	0.3%	2.7%	4.4%			
Cash	0.1%	0.0%	0.1%	0.0%	0.3%	--	0.0%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	0.2%	=	0.8%	+	-0.1%	+	-0.5%	-1.2%	-1.4%	100.0%	100.0%

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	
Europe									
Austria	--	1.3%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Belgium	--	2.3%	0.0%	0.5%	--	0.0%	0.0%	--	0.0%
Czech Republic*	--	6.7%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Denmark	-4.8%	1.6%	1.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Finland	--	9.9%	0.0%	0.7%	--	-0.1%	0.0%	--	-0.1%
France	-3.7%	-0.9%	4.8%	7.0%	-0.2%	0.0%	-0.1%	0.1%	-0.2%
Germany	-3.1%	-3.8%	8.9%	6.4%	0.0%	-0.1%	0.1%	0.0%	0.0%
Greece*	--	-7.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Hungary*	--	1.7%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Ireland	--	-1.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Italy	3.5%	6.7%	4.3%	2.5%	-0.1%	0.1%	0.0%	-0.1%	0.0%
Netherlands	2.7%	-2.4%	3.5%	1.4%	0.1%	0.0%	0.1%	0.1%	0.2%
Norway	--	6.8%	0.0%	0.6%	--	0.0%	0.0%	--	-0.1%
Poland*	--	-12.4%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Portugal	--	7.0%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Russia*	14.2%	12.3%	1.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Spain	-1.5%	-1.1%	3.9%	3.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Sweden	2.3%	-3.0%	3.2%	1.2%	0.1%	0.1%	0.0%	0.1%	0.2%
Switzerland	-2.3%	-1.8%	5.5%	4.8%	0.0%	0.0%	0.0%	0.0%	0.0%
United Kingdom	-2.0%	-3.9%	17.5%	14.0%	0.3%	-0.1%	0.1%	0.1%	0.3%

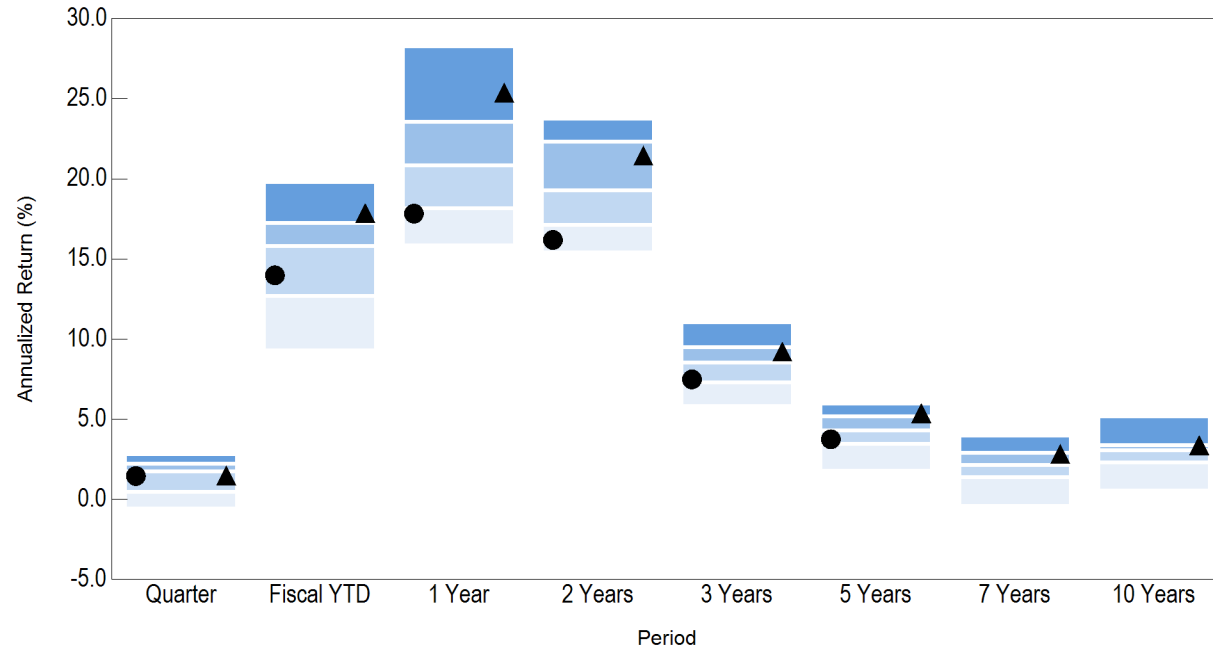
Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	-11.2%	-8.3%	1.0%	4.6%	-0.1%	0.1%	0.1%	0.1%	0.2%
China*	5.0%	1.3%	2.1%	7.3%	0.2%	-0.3%	0.1%	-0.1%	-0.2%
Hong Kong	-4.9%	-1.7%	5.1%	2.4%	-0.1%	0.1%	0.0%	-0.1%	-0.1%
India*	-3.5%	-7.6%	3.4%	2.1%	0.1%	0.0%	0.0%	0.1%	0.1%
Indonesia*	-2.5%	-7.9%	0.4%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	-3.3%	-0.6%	13.9%	16.7%	-0.4%	0.1%	-0.2%	0.1%	-0.5%
Korea*	-7.5%	-3.6%	3.3%	3.8%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Malaysia*	3.9%	5.8%	1.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	--	-6.8%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Pakistan*	--	11.0%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Philippines*	-5.7%	-13.5%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	2.1%	-0.3%	4.6%	0.9%	0.0%	0.0%	0.1%	0.1%	0.2%
Taiwan*	5.7%	3.8%	2.3%	2.9%	0.1%	0.0%	0.0%	0.0%	0.0%
Thailand*	0.0%	14.3%	0.7%	0.6%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Americas									
Brazil*	16.4%	19.5%	2.9%	1.8%	-0.1%	0.3%	0.0%	0.0%	0.2%
Canada	-2.7%	-7.5%	1.1%	6.4%	0.3%	0.1%	0.1%	-0.3%	0.3%
Chile*	--	1.2%	0.0%	0.3%	--	0.0%	0.0%	--	0.0%
Colombia*	--	5.6%	0.0%	0.1%	--	0.0%	0.0%	--	0.0%
Mexico*	2.5%	2.8%	0.5%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	9.5%	9.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

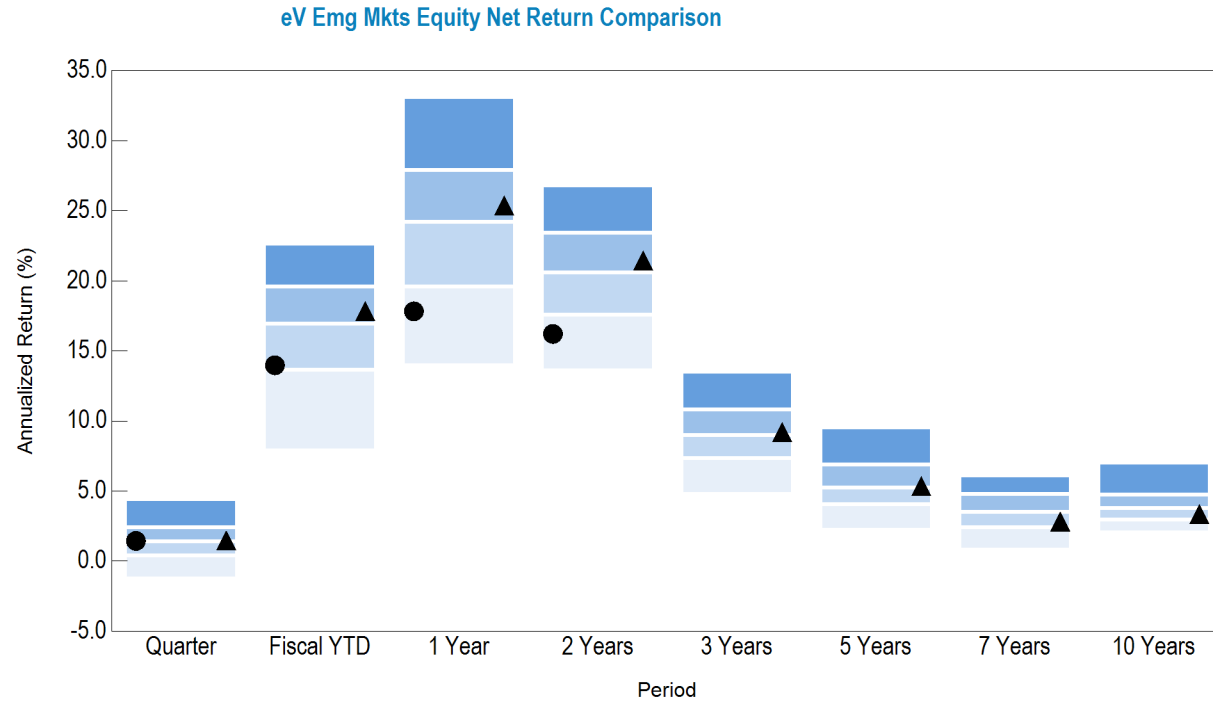
Mondrian Performance Attribution vs. MSCI ACWI ex USA Value Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	15.4%	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Israel	--	-7.5%	0.0%	0.4%	--	0.0%	0.0%	--	0.0%
Kazakhstan**	6.2%	-1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	10.8%	4.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Romania**	26.6%	-1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	2.3%	1.4%	1.6%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Turkey*	-9.6%	-6.3%	0.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
United Arab Emirates*	21.5%	3.8%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%
Totals									
Americas	10.2%	-1.0%	4.8%	9.4%	0.9%	-0.2%	0.1%	-0.5%	0.4%
Europe	-1.0%	-1.5%	53.8%	45.0%	0.3%	-0.1%	0.1%	0.1%	0.4%
Asia/Pacific	-2.2%	-1.4%	38.3%	42.9%	-0.5%	0.0%	0.0%	0.0%	-0.4%
Other	2.5%	-0.1%	3.2%	2.7%	0.1%	0.0%	0.0%	0.0%	0.1%
Cash	--	--	0.0%	0.0%	--	0.0%	0.0%	--	0.0%
Total	-0.8%	-1.4%	100.0%	100.0%	0.9%	-0.2%	0.2%	-0.3%	0.6%
Totals									
Developed	-1.9%	-2.4%	78.3%	75.2%	0.2%	0.0%	0.2%	0.0%	0.4%
Emerging*	2.9%	1.7%	21.5%	24.8%	0.3%	-0.1%	0.0%	0.0%	0.1%
Frontier**	17.8%	--	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

InvestorForce All DB Emg Mkt Eq Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	2.8	19.8	28.3	23.8	11.0	6.0	4.0	5.1
25th Percentile	2.2	17.3	23.6	22.3	9.5	5.2	2.9	3.4
Median	1.7	15.8	20.8	19.3	8.5	4.3	2.1	3.1
75th Percentile	0.5	12.7	18.2	17.2	7.3	3.5	1.4	2.3
95th Percentile	-0.6	9.3	15.9	15.4	5.8	1.8	-0.4	0.5
# of Portfolios	81	79	78	77	74	63	39	12
● Emerging Markets	1.4 (59)	14.0 (63)	17.8 (80)	16.2 (85)	7.5 (73)	3.7 (68)	-- (--)	-- (--)
▲ MSCI Emerging Markets Gross	1.5 (59)	17.8 (20)	25.4 (13)	21.5 (33)	9.2 (31)	5.4 (22)	2.8 (27)	3.4 (30)



	Return (Rank)											
5th Percentile	4.4	22.6	33.1	26.8	13.5	9.5	6.1	7.0				
25th Percentile	2.4	19.6	27.9	23.5	10.8	6.9	4.8	4.8				
Median	1.4	17.0	24.2	20.6	9.0	5.3	3.5	3.8				
75th Percentile	0.4	13.7	19.6	17.6	7.4	4.1	2.4	3.0				
95th Percentile	-1.2	7.9	14.0	13.6	4.8	2.2	0.8	2.1				
# of Portfolios	188	187	185	180	169	139	97	63				
● Parametric Core	1.4 (51)	14.0 (72)	17.8 (86)	16.2 (84)	-- (--)	-- (--)	-- (--)	-- (--)				
▲ MSCI Emerging Markets Gross	1.5 (50)	17.8 (44)	25.4 (38)	21.5 (43)	9.2 (49)	5.4 (50)	2.8 (68)	3.4 (61)				

Characteristics

	Portfolio	MSCI Emerging Markets Gross
Number of Holdings	1,155	847
Weighted Avg. Market Cap. (\$B)	24.6	91.9
Median Market Cap. (\$B)	3.4	5.9
Price To Earnings	20.6	20.3
Price To Book	3.1	2.7
Price To Sales	2.8	2.5
Return on Equity (%)	17.3	19.0
Yield (%)	2.9	2.3
Beta (holdings; global)	0.9	1.0

Top Holdings

SBERBANK OF RUSSIA	1.2%
AMERICA MOVIL SAB DE CV SPN.ADR 'L' 1:20	1.0%
NASPERS	0.8%
CREDICORP	0.7%
CHINA MOBILE	0.7%
PETROLEO BRASILEIRO ADR 1:2	0.6%
LUKOIL OAO SPN.ADR 1:1	0.6%
OAO GAZPROM SPN.ADR 1:2	0.6%
SAMSUNG ELECTRONICS SUSP - SUSP.30/04/18	0.6%
YANDEX	0.6%

Best Performers

	Return %
DAEWOO SHIPBLDG.& MAR. ENGR. (KO:OSM)	99.4%
SUZANO PAPEL E CELULOSE ON (BR:SUZ)	78.1%
SWANCOR HOLDING (TW:SWC)	57.6%
NESTLE (MALAYSIA) (L:NEST)	56.6%
ELSWEDY ELECTRIC (EG:SWD)	54.5%
MEDY-TOX (KO:MEY)	51.6%
VESTEL ELNK.SANVETC. (TK:VES)	47.6%
SIX OF OCT.DEV.& INV. (EG:SOD)	46.3%
CIFI HOLDINGS (GROUP) (K:CIHG)	44.9%
IRPC FB (Q:CIF)	43.9%

Worst Performers

	Return %
RESILIENT PR.INC.FD. (R:RESJ)	-63.8%
ADANI POWER (IN:ANW)	-44.4%
HOUSING DEV.&INFR. (IN:IHD)	-42.4%
RELIANCE COMMUNICATIONS (IN:RCN)	-41.1%
BRF BRASIL FOODS ON (BR:DG3)	-37.7%
CAPITALAND MALAYSIA MALL TRUST (L:CAP1)	-36.3%
DATATEC (R:DTCJ)	-35.4%
GLOBETRONICS TECHNOLOGY (L:GLTE)	-34.9%
EOH (R:EOHJ)	-33.4%
IDEA CELLULAR (IN:ILC)	-31.3%

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%	0.2%	0.0%	5.9%	7.6%	9.4%	6.8%			
Materials	-0.1%	0.0%	-0.1%	0.0%	0.1%	0.7%	12.7%	7.4%			
Industrials	0.1%	0.1%	-0.1%	0.1%	1.1%	-0.7%	9.5%	5.3%			
Consumer Discretionary	0.2%	0.2%	0.1%	0.0%	-4.6%	-6.1%	9.5%	10.2%			
Consumer Staples	0.0%	0.1%	-0.1%	0.1%	0.1%	-0.7%	10.0%	6.5%			
Health Care	0.0%	-0.1%	0.2%	-0.1%	3.1%	7.1%	5.9%	2.7%			
Financials	-0.4%	-0.3%	-0.2%	0.1%	3.5%	4.3%	15.1%	23.5%			
Information Technology	-0.2%	-0.1%	-0.1%	0.0%	2.0%	1.9%	7.3%	27.7%			
Telecommunication Services	-0.1%	0.1%	-0.2%	0.0%	-3.1%	-3.6%	8.8%	4.8%			
Utilities	0.0%	0.0%	0.1%	0.0%	2.0%	3.3%	6.3%	2.4%			
Real Estate	0.0%	0.0%	-0.1%	0.1%	-0.2%	-1.8%	5.3%	2.8%			
Cash	0.0%	0.0%	0.0%	0.0%	0.4%	--	0.1%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	-0.5%	=	-0.3%	+	-0.4%	+	0.3%	1.0%	1.4%	100.0%	100.0%

Parametric Core Performance Attribution vs. MSCI Emerging Markets Gross

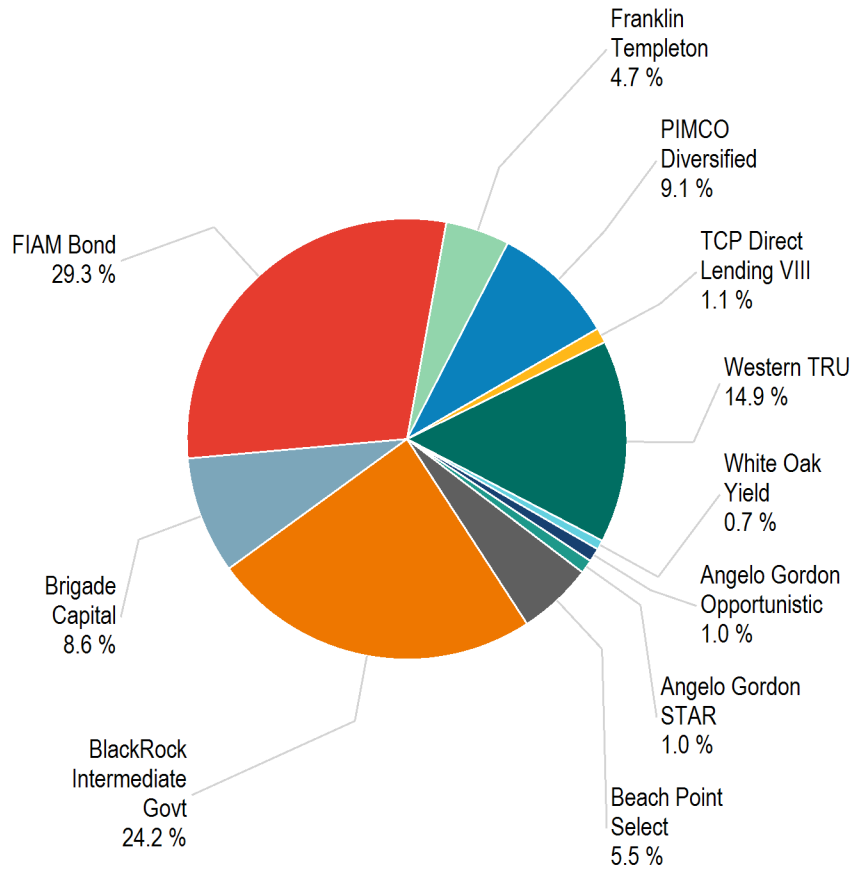
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Czech Republic*	6.0%	6.4%	0.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Greece*	-3.1%	-6.7%	1.6%	0.3%	0.0%	-0.1%	0.0%	0.0%	0.0%
Hungary*	-5.3%	-1.0%	1.0%	0.3%	0.0%	0.0%	0.0%	0.0%	-0.1%
Luxembourg	-1.6%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	-27.2%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	-7.6%	-8.2%	3.4%	1.3%	0.0%	-0.2%	0.0%	0.0%	-0.2%
Russia*	7.4%	9.5%	5.7%	3.3%	-0.1%	0.2%	0.0%	0.0%	0.1%
United Kingdom	-2.1%	-3.9%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AsiaPacific									
China*	1.9%	1.8%	5.8%	29.8%	0.0%	-0.3%	0.1%	0.0%	-0.3%
Hong Kong	2.3%	-1.4%	6.6%	0.0%	0.0%	-0.1%	0.0%	0.2%	0.1%
India*	-10.2%	-6.9%	7.5%	8.7%	-0.3%	0.1%	0.1%	0.0%	-0.2%
Indonesia*	-4.2%	-7.0%	3.3%	2.2%	0.1%	-0.1%	0.0%	0.0%	0.0%
Korea*	0.6%	-0.9%	6.9%	15.5%	0.2%	0.2%	0.0%	-0.1%	0.2%
Malaysia*	3.9%	8.7%	3.6%	2.3%	-0.1%	0.0%	0.1%	-0.1%	-0.1%
Pakistan*	8.4%	11.7%	1.5%	0.1%	0.0%	0.2%	-0.1%	0.0%	0.1%
Philippines*	-7.2%	-11.4%	3.6%	1.1%	0.0%	-0.2%	-0.1%	0.1%	-0.1%
Singapore	-11.3%	2.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Taiwan*	3.7%	5.6%	7.1%	11.2%	-0.2%	-0.1%	-0.1%	0.1%	-0.3%
Thailand*	9.0%	9.1%	3.3%	2.3%	0.0%	0.0%	0.0%	0.0%	0.1%
Americas									
Brazil*	4.6%	12.5%	7.0%	6.9%	-0.5%	0.0%	0.0%	0.0%	-0.5%
Chile*	1.2%	1.6%	3.6%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Colombia*	5.8%	4.9%	1.8%	0.4%	0.0%	0.0%	0.1%	0.0%	0.1%
Mexico*	2.4%	0.9%	6.6%	2.9%	0.1%	-0.2%	0.1%	0.1%	0.1%
Peru*	5.6%	10.4%	1.5%	0.4%	0.0%	0.1%	0.0%	-0.1%	0.0%
United States	8.8%	-0.8%	1.3%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%

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	
Other									
Egypt*	19.8%	12.1%	0.9%	0.1%	0.0%	0.1%	0.0%	0.1%	0.2%
Kuwait**	1.3%	8.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	5.6%	4.6%	1.9%	0.6%	0.0%	0.1%	0.0%	0.0%	0.1%
South Africa*	-1.0%	-4.0%	7.5%	7.1%	0.2%	0.0%	0.0%	0.0%	0.2%
Turkey*	-4.4%	-4.8%	3.5%	1.1%	0.0%	0.0%	-0.1%	0.0%	-0.1%
United Arab Emirates*	2.0%	-0.8%	1.3%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals									
Americas	3.8%	8.2%	22.0%	11.8%	-0.5%	0.6%	0.2%	-0.5%	-0.2%
Europe	0.7%	3.5%	12.9%	5.5%	-0.2%	0.1%	0.1%	-0.2%	-0.2%
Asia/Pacific	-0.1%	0.8%	49.6%	73.2%	-0.6%	0.0%	-0.1%	0.2%	-0.5%
Other	0.5%	-3.2%	15.4%	9.5%	0.5%	-0.4%	-0.1%	0.3%	0.3%
Cash	0.4%	--	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	1.0%	1.4%	100.0%	100.0%	-0.8%	0.4%	0.1%	-0.2%	-0.5%
Totals									
Developed	2.6%	--	8.6%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%
Emerging*	0.8%	1.4%	91.0%	100.0%	-0.9%	0.0%	0.2%	0.1%	-0.6%
Frontier**	1.3%	--	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.4%	--	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Fixed Income
 Manager Allocation Analysis

Period Ending: March 31, 2018



	Actual \$	Actual %	Manager Contribution to Excess Return %
Angelo Gordon Opportunistic	\$8,487,000	1.0%	0.1%
Angelo Gordon STAR	\$8,442,000	1.0%	0.1%
Beach Point Select	\$48,968,531	5.5%	0.1%
BlackRock Intermediate Govt	\$214,570,889	24.2%	0.0%
Brigade Capital	\$76,148,517	8.6%	0.2%
FIAM Bond	\$260,074,986	29.3%	0.0%
Franklin Templeton	\$41,862,663	4.7%	0.0%
PIMCO Diversified	\$80,366,762	9.1%	0.1%
TCP Direct Lending VIII	\$10,050,988	1.1%	0.0%
Western Asset TRU	\$132,335,123	14.9%	-0.2%
White Oak Yield	\$5,773,724	0.7%	0.0%
Actual vs. Policy Weight Difference			0.2%
Total	\$887,081,183	100.0%	0.7%

Statistics Summary

3 Years

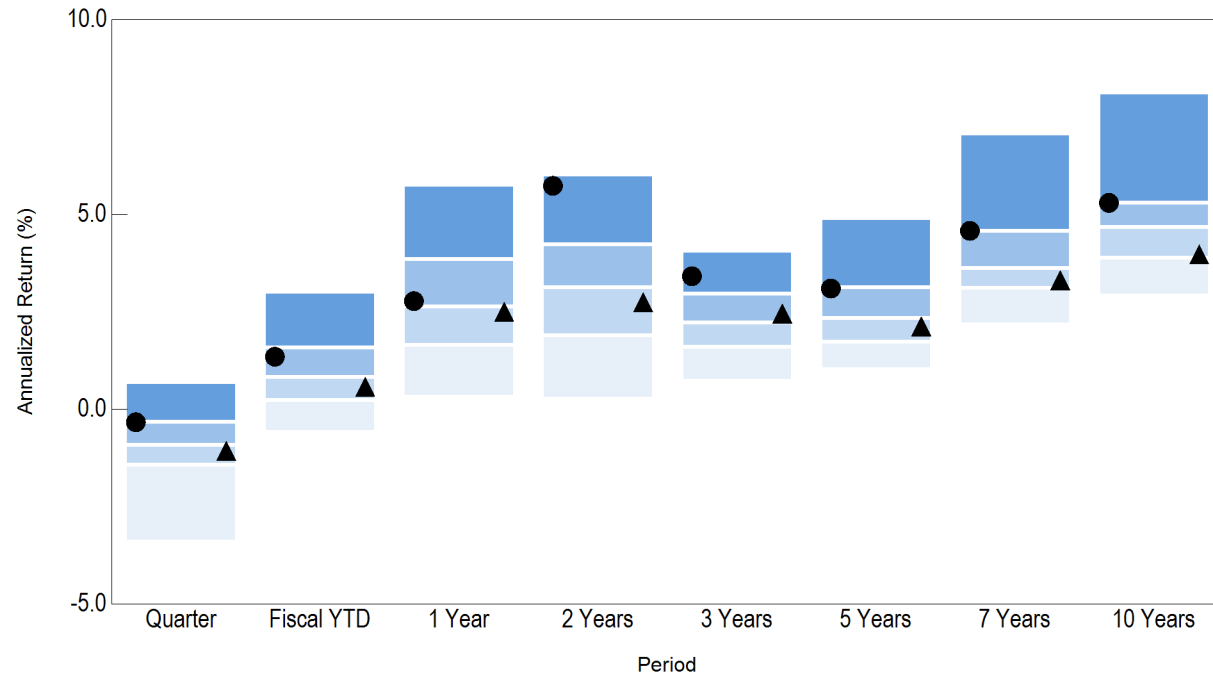
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	3.4%	2.8%	1.0	0.5	2.0%
Blended Fixed Income Index	2.5%	2.8%	0.7	--	0.0%
Core Fixed	2.1%	2.7%	0.6	0.5	1.8%
BBgBarc US Aggregate TR	1.2%	2.7%	0.2	--	0.0%
FIAM Bond	1.8%	2.9%	0.5	0.7	0.9%
BBgBarc US Aggregate TR	1.2%	2.7%	0.2	--	0.0%
Opportunistic Credit	6.6%	3.8%	1.6	0.8	3.0%
BBgBarc BA Intermediate HY	4.3%	4.3%	0.9	--	0.0%
Angelo Gordon Opportunistic	10.8%	7.2%	1.4	1.3	7.5%
BBgBarc US Aggregate TR	1.2%	2.7%	0.2	--	0.0%
Angelo Gordon STAR	11.5%	7.0%	1.6	1.4	7.5%
BBgBarc US Aggregate TR	1.2%	2.7%	0.2	--	0.0%
Brigade Capital	5.2%	7.2%	0.6	0.2	4.4%
BBgBarc BA Intermediate HY	4.3%	4.3%	0.9	--	0.0%
Franklin Templeton	3.0%	6.4%	0.4	0.0	8.2%
BBgBarc Multiverse TR	3.4%	4.8%	0.6	--	0.0%

Statistics Summary

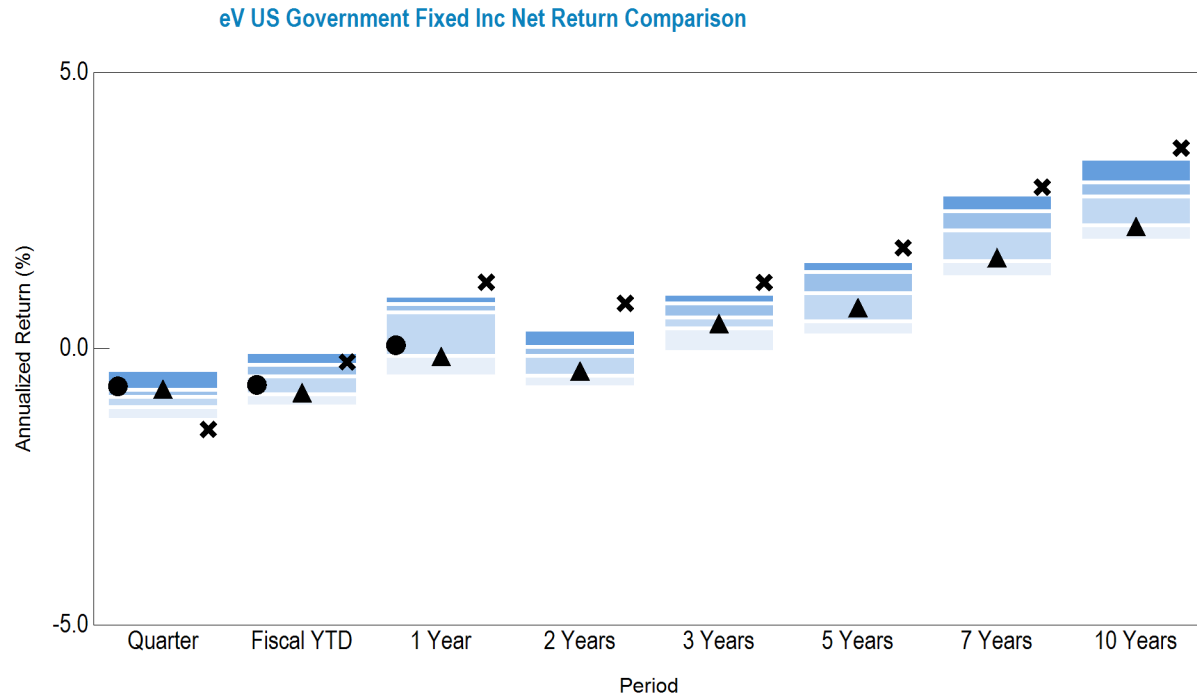
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	3.1%	3.1%	0.9	0.5	1.8%
Blended Fixed Income Index	2.1%	3.2%	0.6	--	0.0%
Core Fixed	2.6%	3.0%	0.7	0.5	1.4%
BBgBarc US Aggregate TR	1.8%	2.9%	0.5	--	0.0%
FIAM Bond	2.4%	3.1%	0.7	0.7	0.8%
BBgBarc US Aggregate TR	1.8%	2.9%	0.5	--	0.0%
Opportunistic Credit	6.8%	3.5%	1.8	0.9	3.8%
BBgBarc BA Intermediate HY	3.6%	4.7%	0.7	--	0.0%
Angelo Gordon STAR	12.7%	6.7%	1.8	1.4	7.7%
BBgBarc US Aggregate TR	1.8%	2.9%	0.5	--	0.0%
Brigade Capital	4.4%	6.2%	0.7	0.2	4.1%
BBgBarc BA Intermediate HY	3.6%	4.7%	0.7	--	0.0%
Franklin Templeton	2.0%	6.2%	0.3	0.1	6.9%
BBgBarc Multiverse TR	1.7%	4.7%	0.3	--	0.0%

InvestorForce All DB Total Fix Inc Net Return Comparison



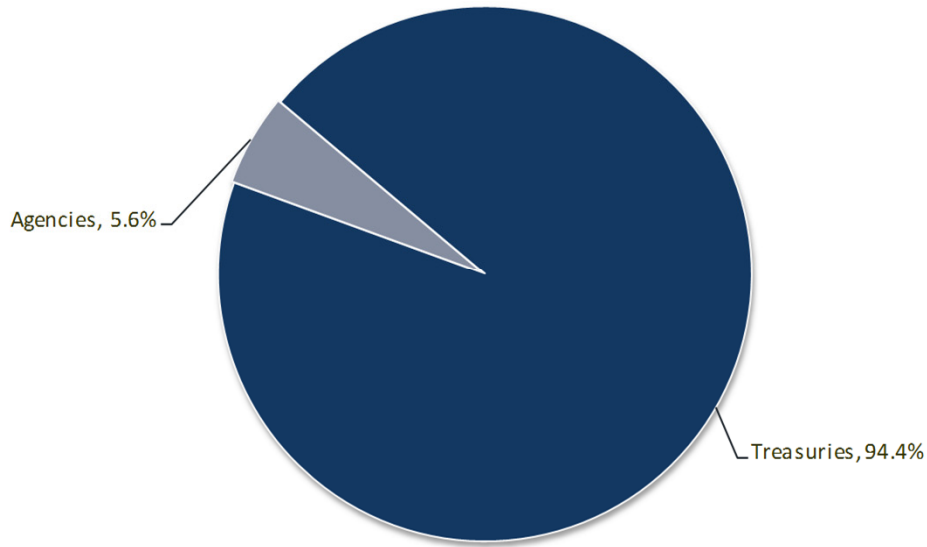
	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	0.7	3.0	5.8	6.0	4.1	4.9	7.1	8.1
25th Percentile	-0.3	1.6	3.9	4.2	3.0	3.1	4.6	5.3
Median	-0.9	0.8	2.7	3.1	2.2	2.3	3.6	4.7
75th Percentile	-1.4	0.2	1.7	1.9	1.6	1.7	3.1	3.9
95th Percentile	-3.4	-0.6	0.3	0.3	0.7	1.0	2.2	2.9
# of Portfolios	267	264	264	257	251	232	202	162
● Fixed Income	-0.3 (26)	1.3 (30)	2.8 (48)	5.7 (7)	3.4 (13)	3.1 (28)	4.6 (27)	5.3 (26)
▲ Blended Fixed Income Index	-1.1 (66)	0.6 (61)	2.5 (56)	2.7 (61)	2.5 (41)	2.1 (57)	3.3 (64)	4.0 (73)



	Return (Rank)															
	Quarter		Fiscal YTD		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	-0.4	-0.1	1.0	0.3	1.0	1.6	2.8	3.4								
25th Percentile	-0.7	-0.3	0.8	0.0	0.8	1.4	2.5	3.0								
Median	-0.9	-0.5	0.7	-0.1	0.6	1.0	2.2	2.8								
75th Percentile	-1.1	-0.8	-0.1	-0.5	0.4	0.5	1.6	2.2								
95th Percentile	-1.3	-1.0	-0.5	-0.7	-0.1	0.2	1.3	2.0								
# of Portfolios	12	12	11	11	11	11	11	11								
● BlackRock Intermediate Govt	-0.7 (17)	-0.7 (65)	0.1 (61)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)								
▲ BBgBarc US Govt Int TR	-0.7 (25)	-0.8 (72)	-0.1 (76)	-0.4 (68)	0.5 (67)	0.7 (67)	1.6 (69)	2.2 (77)								
✕ BBgBarc US Aggregate TR	-1.5 (99)	-0.2 (15)	1.2 (1)	0.8 (1)	1.2 (1)	1.8 (1)	2.9 (2)	3.6 (1)								

BlackRock Intermediate Govt Market Duration Pool
 Bond Sector Allocation

Period Ending: March 31, 2018



Sector	Account Weight	BBgBarc Intermediate	
		Govt Weight	Difference
Treasuries	94.4%	95.5%	-1.1%
Agencies	5.6%	4.5%	1.1%
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%
TOTAL	100.0%	100.0%	0.0%

BlackRock Intermediate Govt Market Duration Pool
 Bond Summary Statistics

Period Ending: March 31, 2018

Portfolio Characteristics		Portfolio
Total Number of Securities		368
Total Market Value	\$	214,570,889
Current Coupon		2.09
Yield to Maturity		2.47
Average Life		4.07
Duration		3.78
Quality		AA+

BBgBarc Intermediate Govt	
Current Coupon	1.96
Yield to Maturity	2.47
Average Life	4.07
Duration	3.79
Quality	AA+

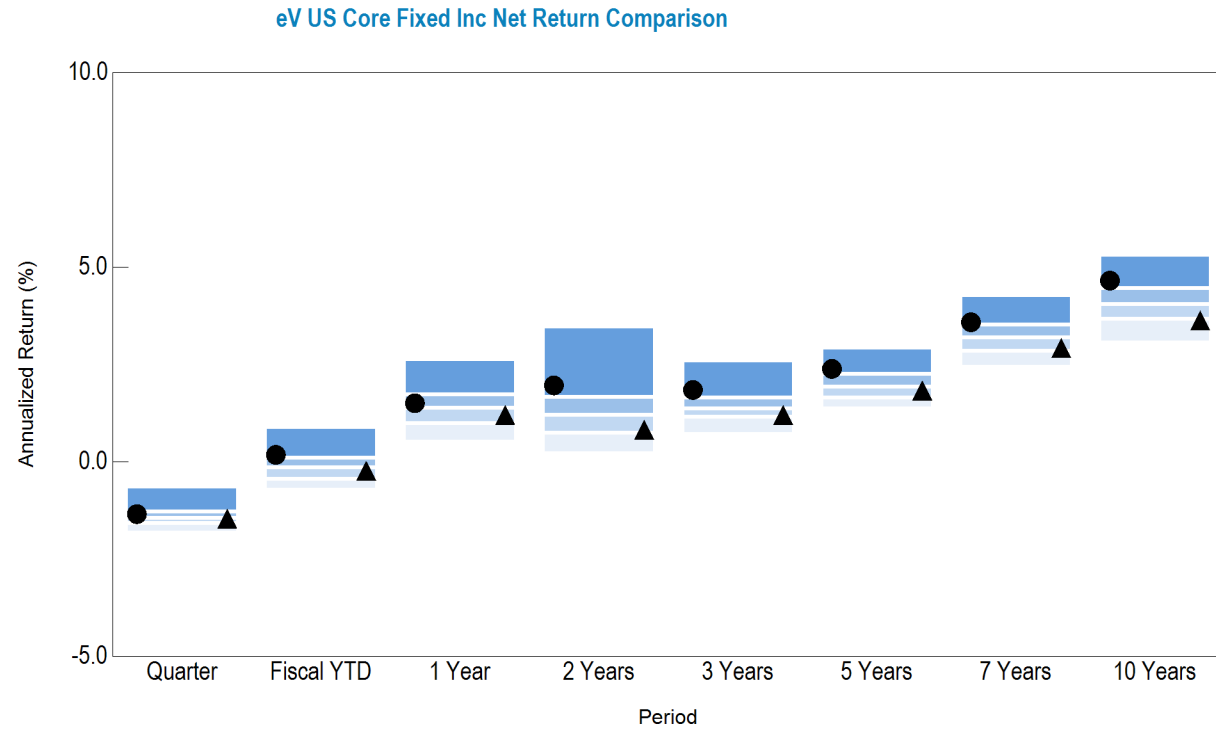
Yield to Maturity	
Range	% Held
0.0 - 5.0	100.0
5.0 - 7.0	0.0
7.0 - 9.0	0.0
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	0.0
Unclassified	0.0

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	20.6
2.0 - 4.0	41.9
4.0 - 6.0	18.5
6.0 - 8.0	15.4
8.0+	3.6
Unclassified	0.0

Quality	
Range	% Held
Govt (10)	0.0
Aaa (10)	98.9
Aa (9)	1.1
A (8)	0.0
Baa (7)	0.0
Below Baa (6-1)	0.0
Other	0.0

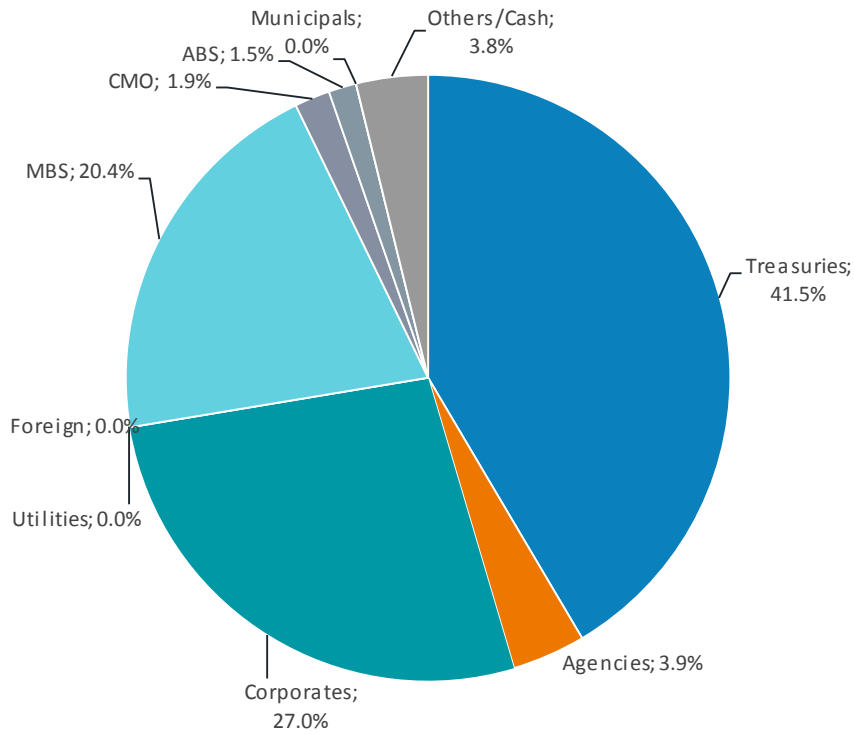
Coupon	
Range	% Held
0.0 - 5.0	100.0
5.0 - 7.0	0.0
7.0 - 9.0	0.0
9.0 - 10.0	0.0
10.0+	0.0
Unclassified	0.0



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-0.6	0.9	2.6	3.5	2.6	2.9	4.3	5.3
25th Percentile	-1.3	0.1	1.7	1.7	1.7	2.3	3.5	4.5
Median	-1.4	-0.1	1.4	1.2	1.4	1.9	3.2	4.1
75th Percentile	-1.6	-0.4	1.0	0.8	1.2	1.7	2.9	3.7
95th Percentile	-1.8	-0.7	0.5	0.2	0.7	1.4	2.4	3.1
# of Portfolios	144	140	137	134	133	131	123	109
● FIAM Bond	-1.3 (36)	0.2 (23)	1.5 (40)	2.0 (17)	1.8 (18)	2.4 (16)	3.6 (23)	4.7 (16)
▲ BBgBarc US Aggregate TR	-1.5 (56)	-0.2 (61)	1.2 (66)	0.8 (71)	1.2 (71)	1.8 (62)	2.9 (70)	3.6 (80)

FIAM Bond Market Duration Pool
Bond Sector Allocation

Period Ending: March 31, 2018



Sector	Account Weight	BBgBarc Aggregate	
		Weight	Difference
Treasuries	41.5%	37.0%	4.5%
Agencies	3.9%	6.9%	-3.0%
Corporates	27.0%	25.5%	1.5%
Utilities	0.0%	0.0%	0.0%
Foreign	0.0%	0.0%	0.0%
MBS	20.4%	28.2%	-7.8%
CMO	1.9%	0.0%	1.9%
ABS	1.5%	2.4%	-0.9%
Municipals	0.0%	0.0%	0.0%
Others/Cash	3.8%	0.0%	3.8%
TOTAL	100.0%	100.0%	0.0%

FIAM Bond Market Duration Pool
Bond Summary Statistics

Period Ending: March 31, 2018

Portfolio Characteristics		
	Portfolio	
Total Number of Securities		827
Total Market Value	\$	260,074,986
Current Coupon		3.03
Yield to Maturity		3.06
Average Life		8.32
Duration		5.83
Quality		AA

BBgBarc Aggregate	
	3.14
	3.11
	8.14
	5.98
	AA

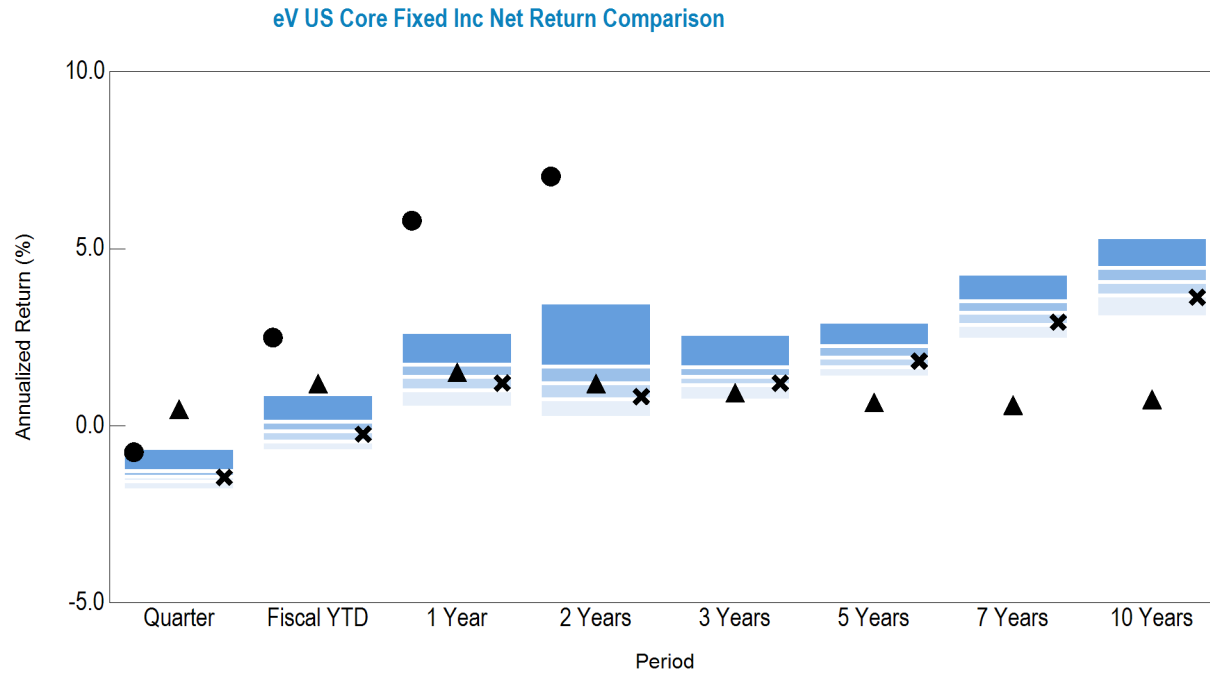
Yield to Maturity	
Range	% Held
0.0 - 5.0	96.0
5.0 - 7.0	4.0
7.0 - 9.0	0.1
9.0 - 11.0	0.1
11.0 - 13.0	0.0
13.0+	-0.1
Unclassified	0.0

Average Life	
Range	% Held
0.0 - 1.0	1.6
1.0 - 3.0	7.9
3.0 - 5.0	26.6
5.0 - 10.0	44.2
10.0 - 20.0	3.5
20.0+	16.3
Unclassified	0.0

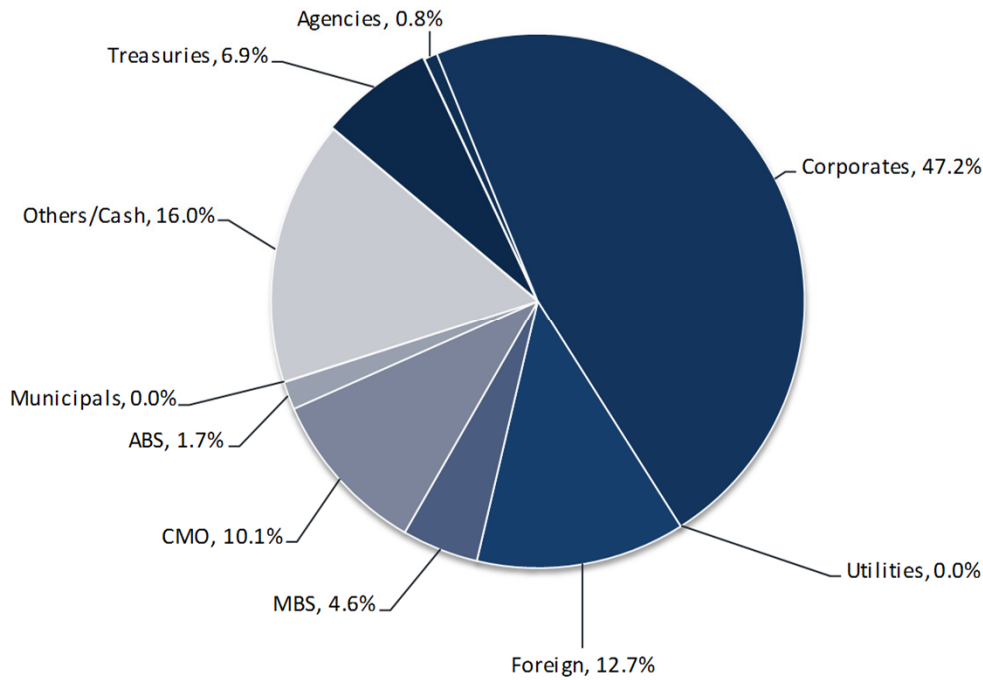
Duration	
Range	% Held
0.0 - 1.0	1.5
1.0 - 3.0	9.8
3.0 - 5.0	37.1
5.0 - 7.0	28.5
7.0 - 10.0	4.8
10.0+	18.4
Unclassified	0.0

Quality	
Range	% Held
Govt (10)	64.7
Aaa (10)	0.4
Aa (9)	0.7
A (8)	12.0
Baa (7)	16.4
Below Baa (6-1)	1.5
Other	4.2

Coupon	
Range	% Held
0.0 - 5.0	84.6
5.0 - 7.0	8.4
7.0 - 9.0	1.7
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	5.3
Unclassified	0.0



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	-0.6	0.9	2.6	3.5	2.6	2.9	4.3	5.3
25th Percentile	-1.3	0.1	1.7	1.7	1.7	2.3	3.5	4.5
Median	-1.4	-0.1	1.4	1.2	1.4	1.9	3.2	4.1
75th Percentile	-1.6	-0.4	1.0	0.8	1.2	1.7	2.9	3.7
95th Percentile	-1.8	-0.7	0.5	0.2	0.7	1.4	2.4	3.1
# of Portfolios	144	140	137	134	133	131	123	109
● Western TRU	-0.7 (6)	2.5 (1)	5.8 (1)	7.0 (1)	-- (--)	-- (--)	-- (--)	-- (--)
▲ 3-Month Libor Total Return USD	0.5 (1)	1.2 (4)	1.5 (39)	1.2 (51)	0.9 (89)	0.7 (99)	0.6 (99)	0.7 (99)
✕ BBgBarc US Aggregate TR	-1.5 (56)	-0.2 (61)	1.2 (66)	0.8 (71)	1.2 (71)	1.8 (62)	2.9 (70)	3.6 (80)



Sector	Account Weight	BBgBarc Aggregate	
		Weight	Difference
Treasuries	6.9%	37.0%	-30.1%
Agencies	0.8%	6.9%	-6.1%
Corporates	47.2%	25.5%	21.7%
Utilities	0.0%	0.0%	0.0%
Foreign	12.7%	0.0%	12.7%
MBS	4.6%	28.2%	-23.6%
CMO	10.1%	0.0%	10.1%
ABS	1.7%	2.4%	-0.7%
Municipals	0.0%	0.0%	0.0%
Others/Cash	16.0%	0.0%	16.0%
TOTAL	100.0%	100.0%	0.0%

Portfolio Characteristics		Portfolio	BBgBarc Aggregate
Total Number of Securities		5,283	
Total Market Value	\$	132,335,123	
Current Coupon		5.13	3.14
Yield to Maturity		5.18	3.11
Average Life		10.12	8.14
Duration		3.59	5.98
Quality		BBB+	AA

Yield to Maturity	
Range	% Held
0.0 - 5.0	59.6
5.0 - 7.0	25.1
7.0 - 9.0	4.9
9.0 - 11.0	2.1
11.0 - 13.0	0.4
13.0+	1.9
Unclassified	6.0

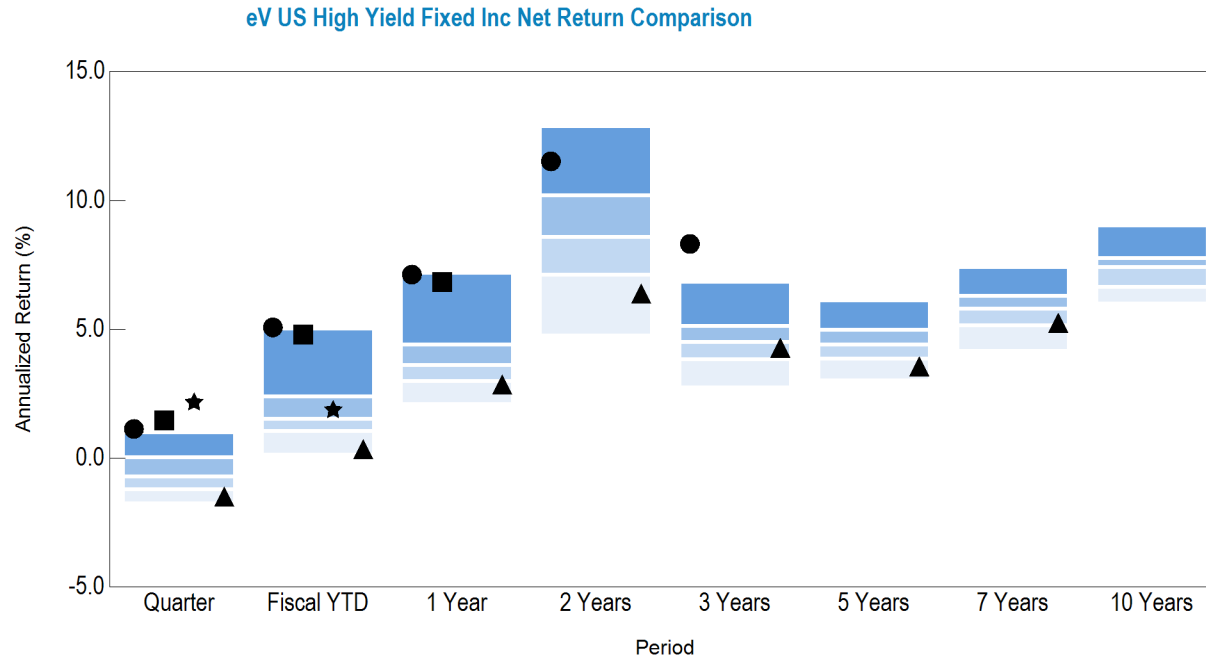
Average Life	
Range	% Held
0.0 - 1.0	25.2
1.0 - 3.0	13.2
3.0 - 5.0	17.5
5.0 - 10.0	15.2
10.0 - 20.0	14.1
20.0+	10.3
Unclassified	4.5

Duration	
Range	% Held
< 1.0	38.6
1.0 - 3.0	17.4
3.0 - 5.0	10.9
5.0 - 7.0	15.8
7.0 - 10.0	2.0
10.0+	11.2
Unclassified	4.0

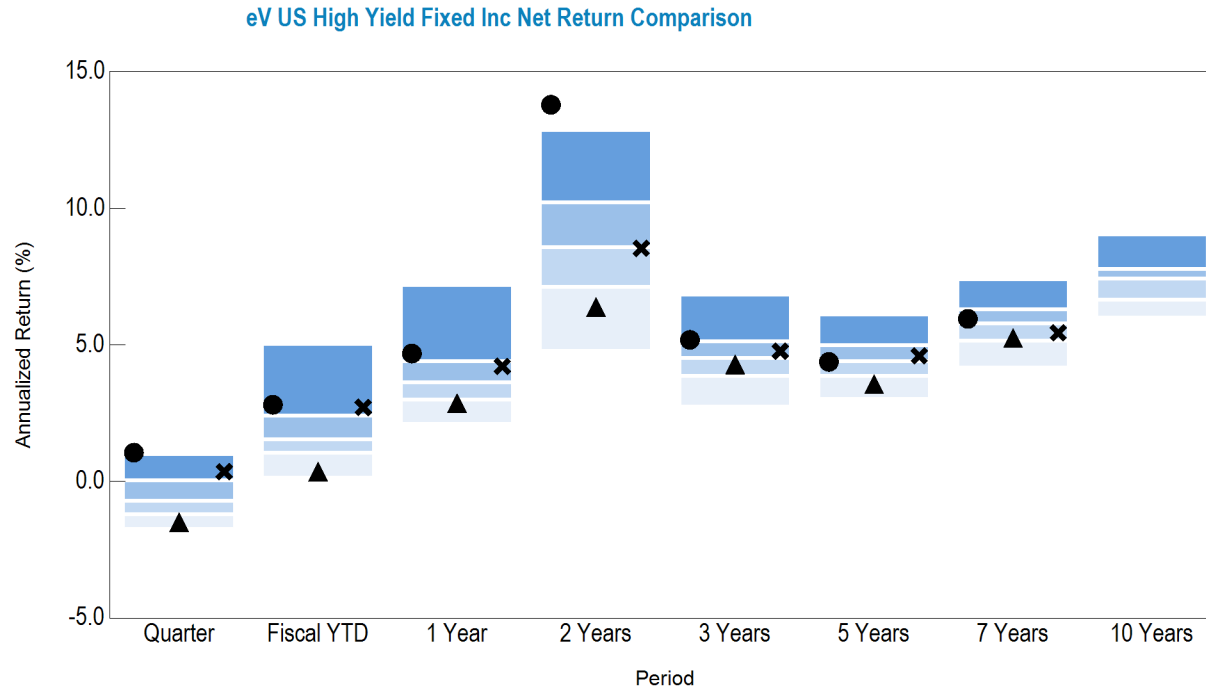
Quality	
Range	% Held
Govt* (10)	3.0
Aaa (10)	13.1
Aa (9)	10.0
A (8)	11.0
Baa (7)	18.9
Below Baa (6-1)	37.5
Other	6.5

Coupon	
Range	% Held
0.0 - 5.0	63.2
5.0 - 7.0	24.2
7.0 - 9.0	10.0
9.0 - 10.0	0.9
10.0+	2.5
Unclassified	-0.8

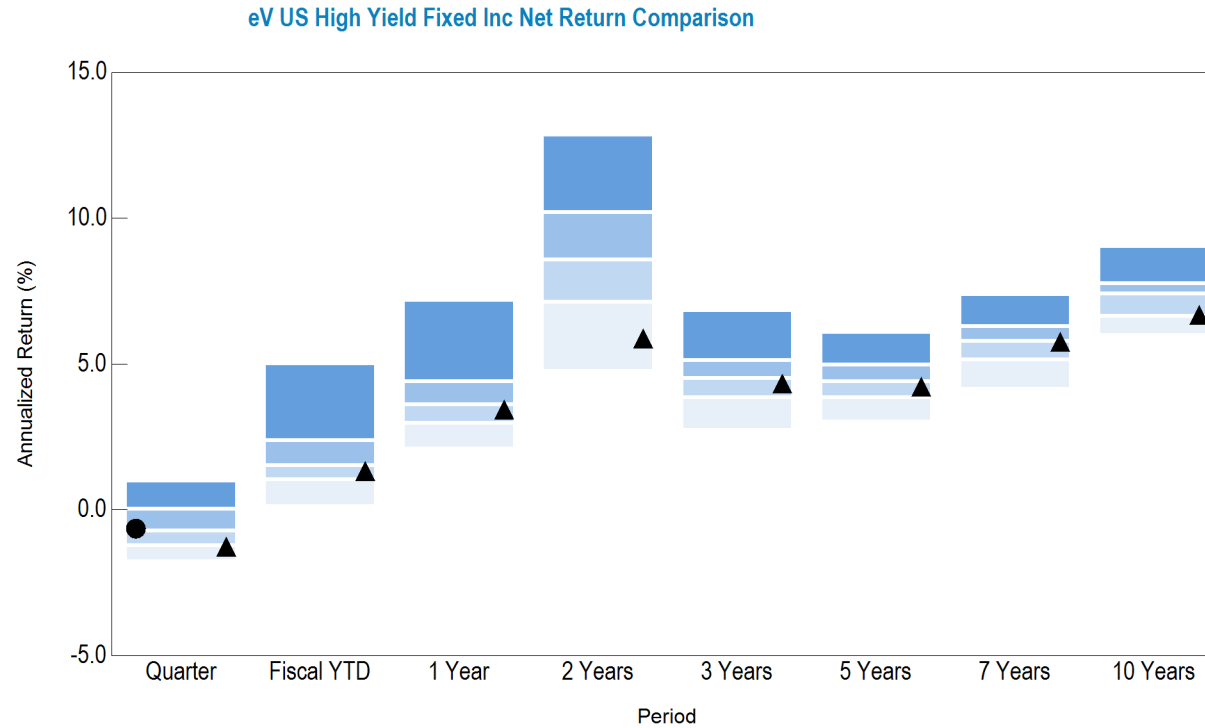
*Govt is specifically U.S Govt securities



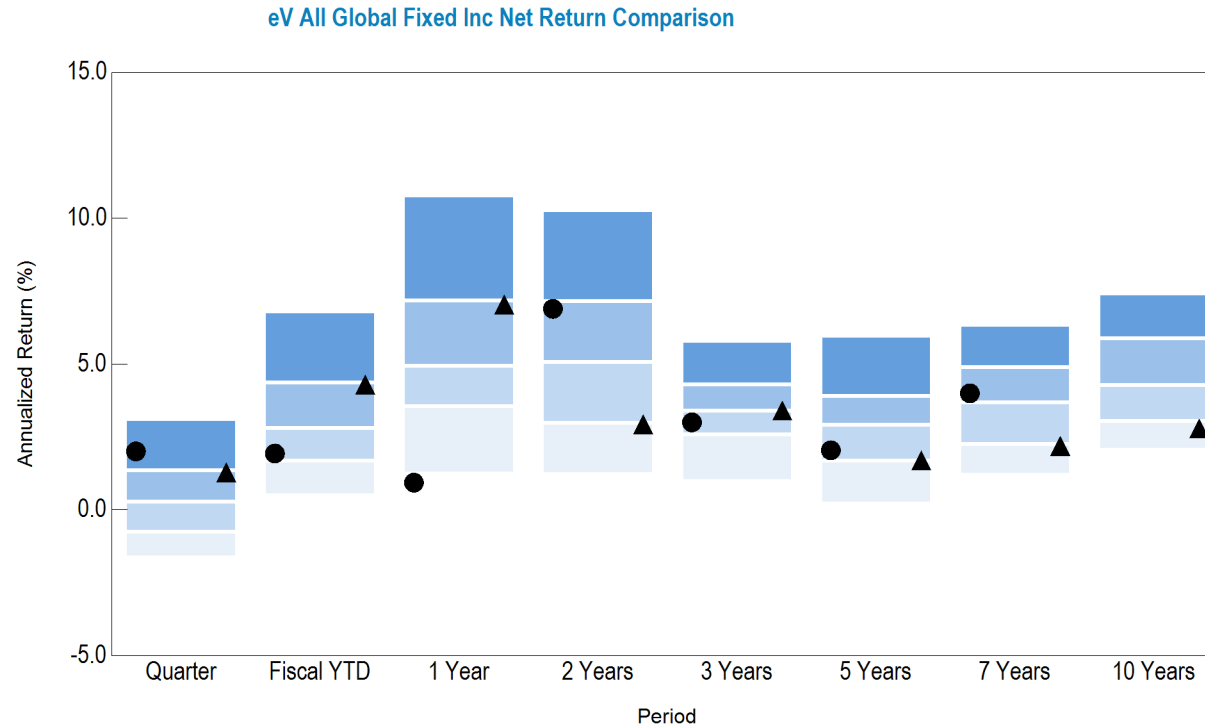
	Return (Rank)															
	Quarter		Fiscal YTD		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	1.0	5.0	7.2	12.9	6.8	6.1	7.4	9.0								
25th Percentile	0.0	2.4	4.4	10.2	5.1	5.0	6.3	7.8								
Median	-0.7	1.5	3.6	8.6	4.5	4.4	5.8	7.4								
75th Percentile	-1.2	1.1	3.0	7.1	3.9	3.9	5.2	6.7								
95th Percentile	-1.7	0.1	2.1	4.8	2.8	3.0	4.2	6.0								
# of Portfolios	124	123	123	118	114	96	86	62								
● Beach Point Select	1.1	(4)	5.1	(5)	7.1	(6)	11.5	(9)	8.3	(1)	--	(--)	--	(--)	--	(--)
■ TCP Direct Lending VIII	1.5	(3)	4.8	(6)	6.8	(7)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
★ White Oak Yield	2.2	(2)	1.9	(39)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ BBgBarc BA Intermediate HY	-1.5	(88)	0.4	(93)	2.9	(79)	6.4	(82)	4.3	(60)	3.6	(86)	5.3	(73)	--	(--)



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.0	5.0	7.2	12.9	6.8	6.1	7.4	9.0
25th Percentile	0.0	2.4	4.4	10.2	5.1	5.0	6.3	7.8
Median	-0.7	1.5	3.6	8.6	4.5	4.4	5.8	7.4
75th Percentile	-1.2	1.1	3.0	7.1	3.9	3.9	5.2	6.7
95th Percentile	-1.7	0.1	2.1	4.8	2.8	3.0	4.2	6.0
# of Portfolios	124	123	123	118	114	96	86	62
● Brigade Capital	1.1 (5)	2.8 (22)	4.7 (22)	13.8 (3)	5.2 (24)	4.4 (54)	6.0 (40)	-- (--)
▲ BBgBarc BA Intermediate HY	-1.5 (88)	0.4 (93)	2.9 (79)	6.4 (82)	4.3 (60)	3.6 (86)	5.3 (73)	-- (--)
✕ 50% Barclays HY/ 50% Bank Loan	0.4 (16)	2.7 (22)	4.2 (30)	8.5 (52)	4.8 (45)	4.6 (40)	5.4 (67)	-- (--)



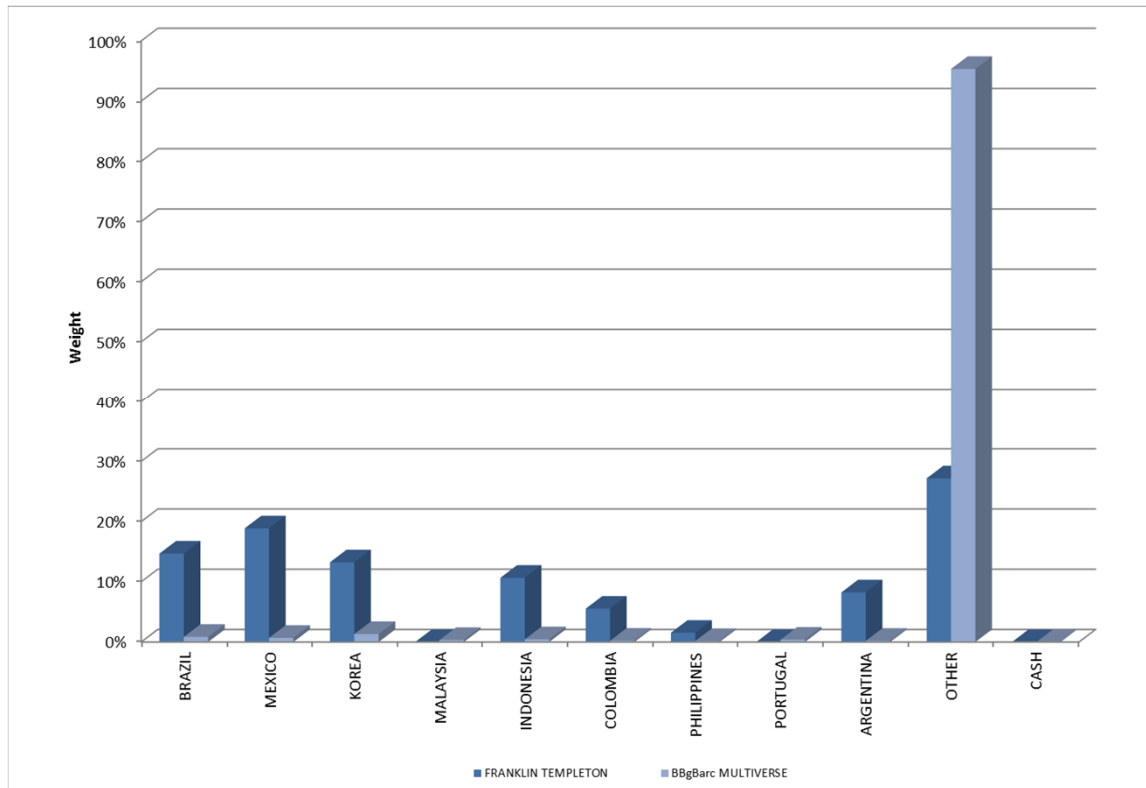
	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.0	5.0	7.2	12.9	6.8	6.1	7.4	9.0
25th Percentile	0.0	2.4	4.4	10.2	5.1	5.0	6.3	7.8
Median	-0.7	1.5	3.6	8.6	4.5	4.4	5.8	7.4
75th Percentile	-1.2	1.1	3.0	7.1	3.9	3.9	5.2	6.7
95th Percentile	-1.7	0.1	2.1	4.8	2.8	3.0	4.2	6.0
# of Portfolios	124	123	123	118	114	96	86	62
● PIMCO Diversified	-0.6 (49)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
▲ Blended PIMCO Diversified Index	-1.3 (78)	1.3 (67)	3.4 (58)	5.9 (88)	4.3 (58)	4.2 (62)	5.8 (52)	6.7 (75)



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.1	6.8	10.8	10.3	5.8	6.0	6.3	7.4
25th Percentile	1.4	4.4	7.2	7.2	4.3	3.9	4.9	5.9
Median	0.3	2.8	4.9	5.1	3.4	2.9	3.7	4.3
75th Percentile	-0.7	1.7	3.6	3.0	2.6	1.7	2.3	3.1
95th Percentile	-1.6	0.5	1.3	1.2	1.0	0.2	1.2	2.1
# of Portfolios	217	215	214	206	194	173	137	93
● Franklin Templeton	2.0 (14)	1.9 (69)	0.9 (98)	6.9 (28)	3.0 (60)	2.0 (67)	4.0 (41)	-- (--)
▲ BBgBarc Multiverse TR	1.3 (27)	4.3 (26)	7.0 (27)	2.9 (76)	3.4 (51)	1.7 (76)	2.2 (78)	2.8 (80)

Franklin Templeton
Portfolio Country Weights

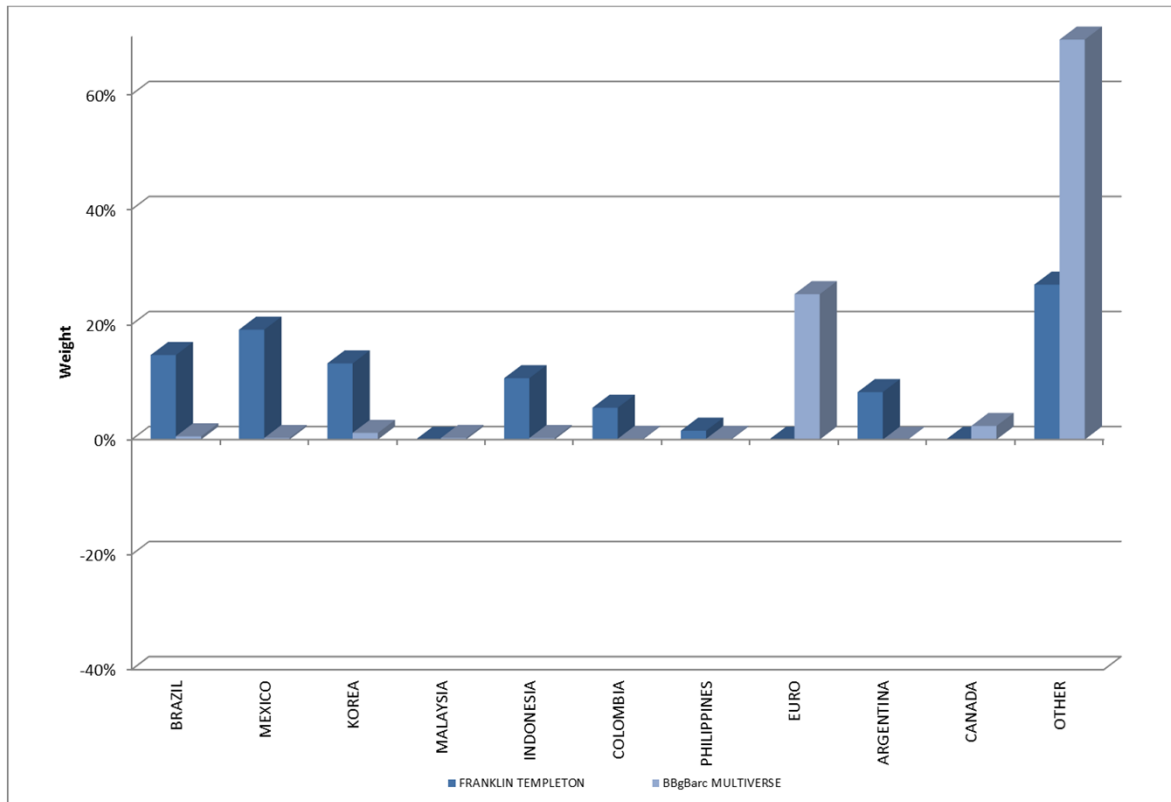
Period Ending: March 31, 2018



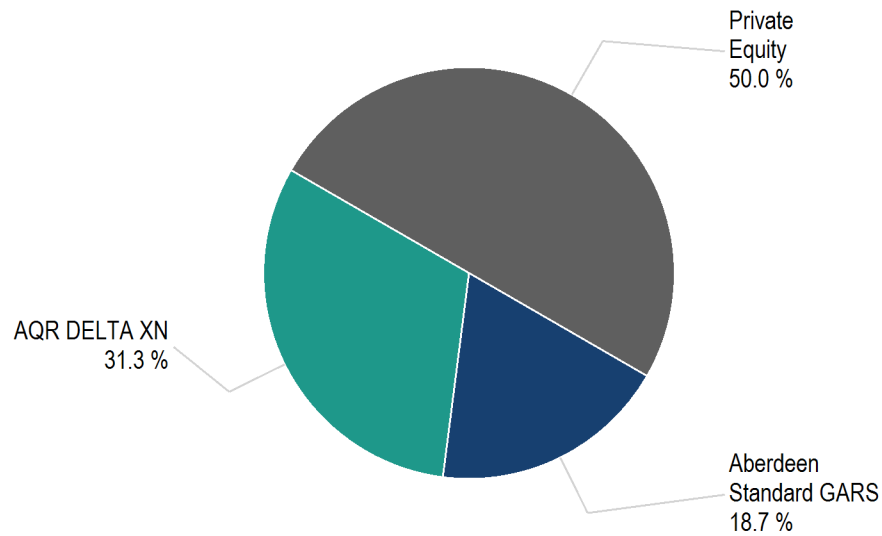
COUNTRY	MARKET VALUE	FRANKLIN TEMPLETON	BBgBarc MULTIVERSE	DIFF
BRAZIL	\$ 6,150	14.7%	0.9%	+13.8%
MEXICO	\$ 7,904	18.9%	0.7%	+18.2%
KOREA	\$ 5,543	13.2%	1.3%	+11.9%
MALAYSIA	\$ -	0.0%	0.3%	-0.3%
INDONESIA	\$ 4,467	10.7%	0.5%	+10.2%
COLOMBIA	\$ 2,319	5.5%	0.2%	+5.3%
PHILIPPINES	\$ 645	1.5%	0.2%	+1.4%
PORTUGAL	\$ -	0.0%	0.4%	-0.4%
ARGENTINA	\$ 3,454	8.3%	0.2%	+8.1%
OTHER	\$ 11,382	27.2%	95.4%	-68.2%
CASH	\$ -	0.0%	0.0%	0.0%
	\$ 41,863	100.0%	100.0%	0.0%

Franklin Templeton
Portfolio Currency Exposures

Period Ending: March 31, 2018



CURRENCY	MARKET VALUE	FRANKLIN TEMPLETON	BbgBarc MULTIVERSE	DIFF
BRAZIL	\$ 6,150	14.7%	0.6%	+14.1%
MEXICO	\$ 8,000	19.1%	0.3%	+18.8%
KOREA	\$ 5,543	13.2%	1.2%	+12.1%
MALAYSIA	\$ -	0.0%	0.3%	-0.3%
INDONESIA	\$ 4,467	10.7%	0.3%	+10.4%
COLOMBIA	\$ 2,319	5.5%	0.1%	+5.4%
PHILIPPINES	\$ 645	1.5%	0.1%	+1.4%
EURO	\$ 8	0.0%	25.3%	-25.3%
ARGENTINA	\$ 3,454	8.3%	0.0%	+8.3%
CANADA	\$ -	0.0%	2.4%	-2.4%
OTHER	\$ 11,278	26.9%	69.6%	-42.6%
	\$ 41,863	100.0%	100.0%	0.0%



	Actual \$	Actual %	Manager Contribution to Excess Return %
Aberdeen Standard GARS	\$95,232,079	18.7%	-0.6%
AQR DELTA XN	\$159,018,352	31.3%	-1.7%
Private Equity	\$254,246,384	50.0%	2.2%
Actual vs. Policy Weight Difference			-0.1%
Total	\$508,496,815	100.0%	-0.1%

Statistics Summary

3 Years

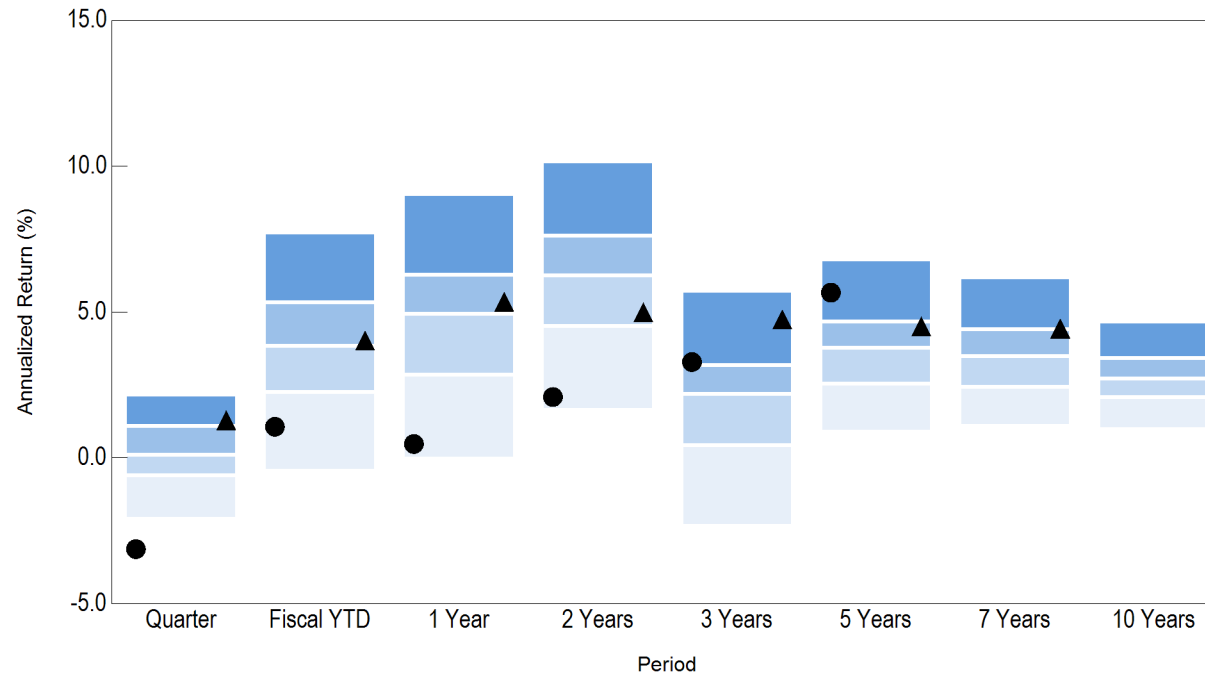
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	7.7%	5.4%	1.3	0.0	6.1%
Alternatives Allocation Index	7.7%	5.4%	1.3	--	0.0%
Private Equity	15.8%	9.5%	1.6	0.2	12.5%
Russell 3000 +3%	13.2%	10.1%	1.3	--	0.0%
Hedge Fund/Absolute Return	3.3%	4.8%	0.6	-0.3	4.8%
Libor 1 month +4%	4.7%	0.2%	27.5	--	0.0%
AQR DELTA XN	3.6%	5.4%	0.6	-0.2	5.4%
Libor 1 month +4%	4.7%	0.2%	27.5	--	0.0%

Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	6.2%	5.4%	1.1	-0.1	6.1%
Alternatives Allocation Index	6.7%	5.4%	1.2	--	0.0%
Private Equity	16.6%	9.3%	1.7	0.0	12.8%
Russell 3000 +3%	16.0%	9.8%	1.6	--	0.0%
Hedge Fund/Absolute Return	5.7%	5.0%	1.1	0.2	5.0%
Libor 1 month +4%	4.5%	0.2%	27.5	--	0.0%
AQR DELTA XN	5.8%	5.3%	1.0	0.2	5.3%
Libor 1 month +4%	4.5%	0.2%	27.5	--	0.0%

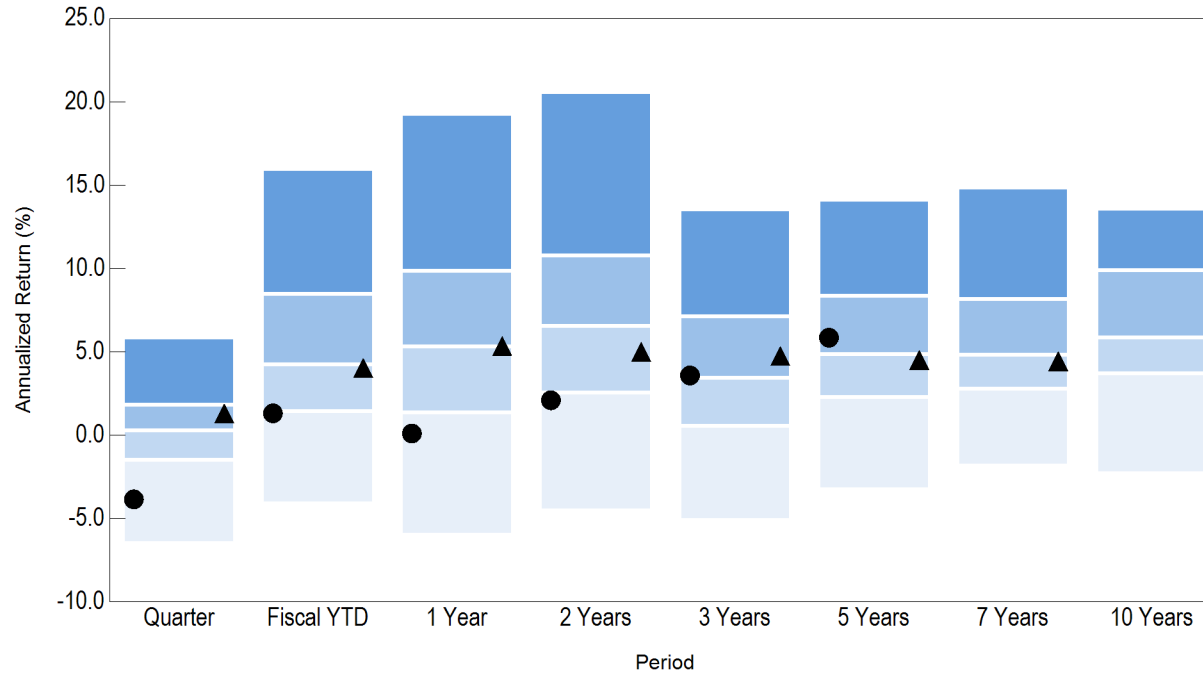
InvestorForce All DB Hedge Funds Net Return Comparison



Return (Rank)

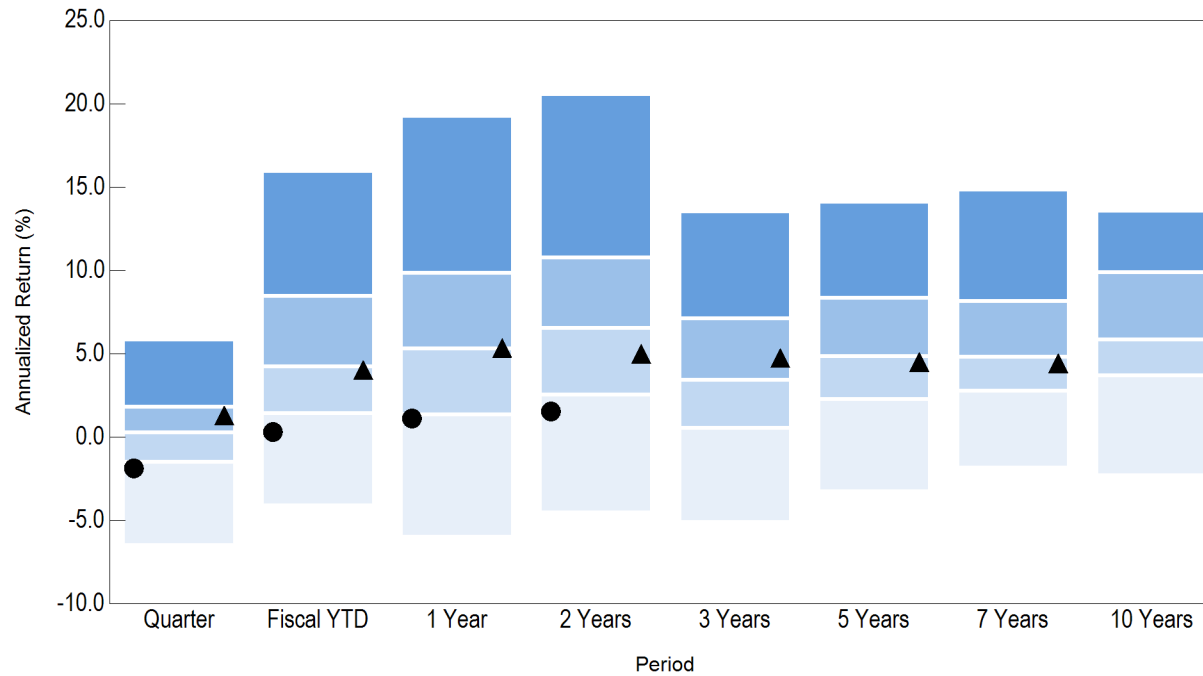
5th Percentile	2.2	7.7	9.0	10.2	5.7	6.8	6.2	4.7
25th Percentile	1.1	5.3	6.3	7.6	3.2	4.7	4.4	3.4
Median	0.1	3.9	5.0	6.3	2.2	3.8	3.5	2.7
75th Percentile	-0.6	2.3	2.9	4.5	0.4	2.6	2.4	2.1
95th Percentile	-2.1	-0.4	0.0	1.7	-2.3	0.9	1.1	1.0
# of Portfolios	197	197	197	191	184	170	147	78
● Hedge Fund/Absolute Return	-3.1 (98)	1.1 (86)	0.5 (93)	2.1 (92)	3.3 (25)	5.7 (14)	-- (--)	-- (--)
▲ Libor 1 month +4%	1.3 (22)	4.0 (48)	5.4 (43)	5.0 (70)	4.7 (9)	4.5 (33)	4.4 (25)	-- (--)

eV Alt All Multi-Strategy Return Comparison

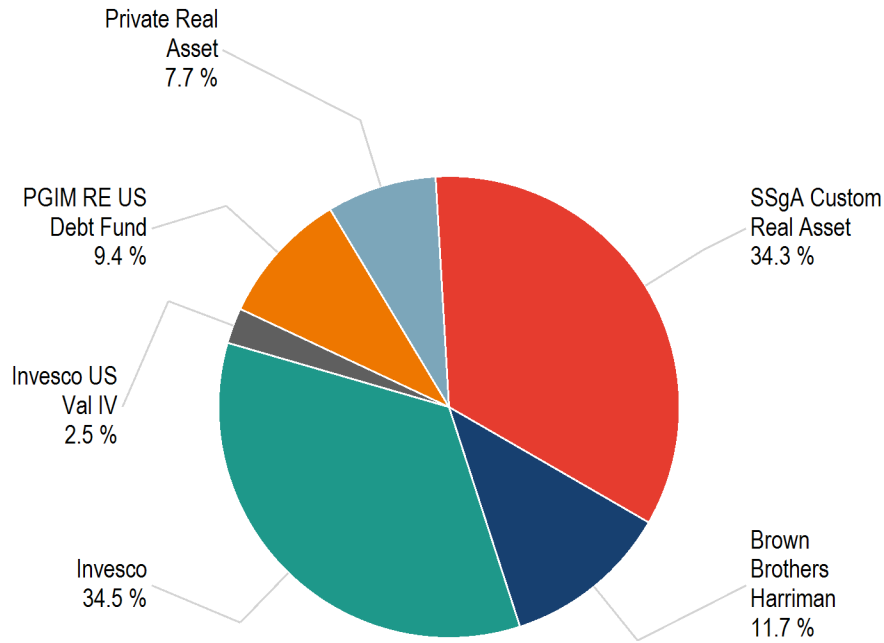


	Return (Rank)							
5th Percentile	5.9	15.9	19.3	20.6	13.5	14.1	14.8	13.6
25th Percentile	1.9	8.5	9.9	10.8	7.1	8.4	8.2	9.9
Median	0.3	4.3	5.3	6.6	3.4	4.9	4.8	5.9
75th Percentile	-1.5	1.5	1.4	2.6	0.6	2.3	2.8	3.7
95th Percentile	-6.4	-4.1	-6.0	-4.5	-5.1	-3.2	-1.8	-2.3
# of Portfolios	284	276	270	253	228	183	150	98
● AQR DELTA XN	-3.9 (90)	1.3 (77)	0.1 (83)	2.1 (77)	3.6 (49)	5.8 (44)	-- (--)	-- (--)
▲ Libor 1 month +4%	1.3 (33)	4.0 (53)	5.4 (50)	5.0 (62)	4.7 (43)	4.5 (54)	4.4 (53)	-- (--)

eV Alt All Multi-Strategy Return Comparison



	Return (Rank)							
5th Percentile	5.9	15.9	19.3	20.6	13.5	14.1	14.8	13.6
25th Percentile	1.9	8.5	9.9	10.8	7.1	8.4	8.2	9.9
Median	0.3	4.3	5.3	6.6	3.4	4.9	4.8	5.9
75th Percentile	-1.5	1.5	1.4	2.6	0.6	2.3	2.8	3.7
95th Percentile	-6.4	-4.1	-6.0	-4.5	-5.1	-3.2	-1.8	-2.3
# of Portfolios	284	276	270	253	228	183	150	98
● Aberdeen Standard GARS	-1.9 (78)	0.3 (85)	1.1 (77)	1.5 (80)	-- (--)	-- (--)	-- (--)	-- (--)
▲ Libor 1 month +4%	1.3 (33)	4.0 (53)	5.4 (50)	5.0 (62)	4.7 (43)	4.5 (54)	4.4 (53)	-- (--)



	Actual \$	Actual %	Manager Contribution to Excess Return %
Brown Brother Harriman	\$87,208,248	11.7%	0.1%
Invesco	\$257,493,951	34.5%	0.0%
Invesco US Val IV	\$18,306,647	2.5%	0.0%
PGIM RE US Debt Fund	\$69,966,159	9.4%	-0.1%
Private Real Asset	\$57,821,752	7.7%	0.1%
SSgA Custom Real Asset	\$256,163,006	34.3%	0.1%
Actual vs. Policy Weight Difference			-0.1%
Total	\$746,959,763	100.0%	0.2%

Statistics Summary

3 Years

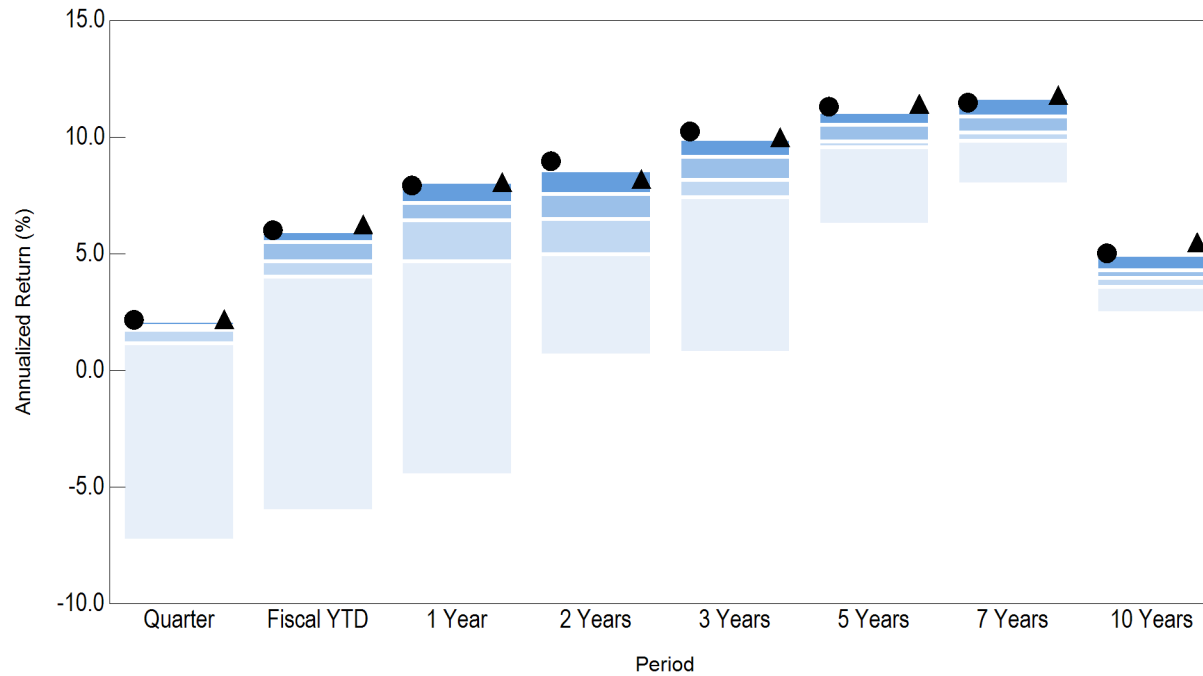
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Real Estate	10.24%	4.60%	2.11	0.17	1.44%
NCREIF ODCE	9.99%	4.25%	2.22	--	0.00%
Invesco	10.13%	4.57%	2.10	0.09	1.53%
NCREIF ODCE	9.99%	4.25%	2.22	--	0.00%
Private Real Asset	9.78%	26.88%	0.34	0.13	27.17%
Blended Real Asset Index	6.34%	4.83%	1.20	--	0.00%
TIPS	1.60%	2.30%	0.46	0.24	1.25%
BBgBarc US TIPS TR	1.30%	3.08%	0.24	--	0.00%
Brown Brothers Harriman	1.60%	2.30%	0.46	0.24	1.25%
BBgBarc US TIPS TR	1.30%	3.08%	0.24	--	0.00%

Statistics Summary

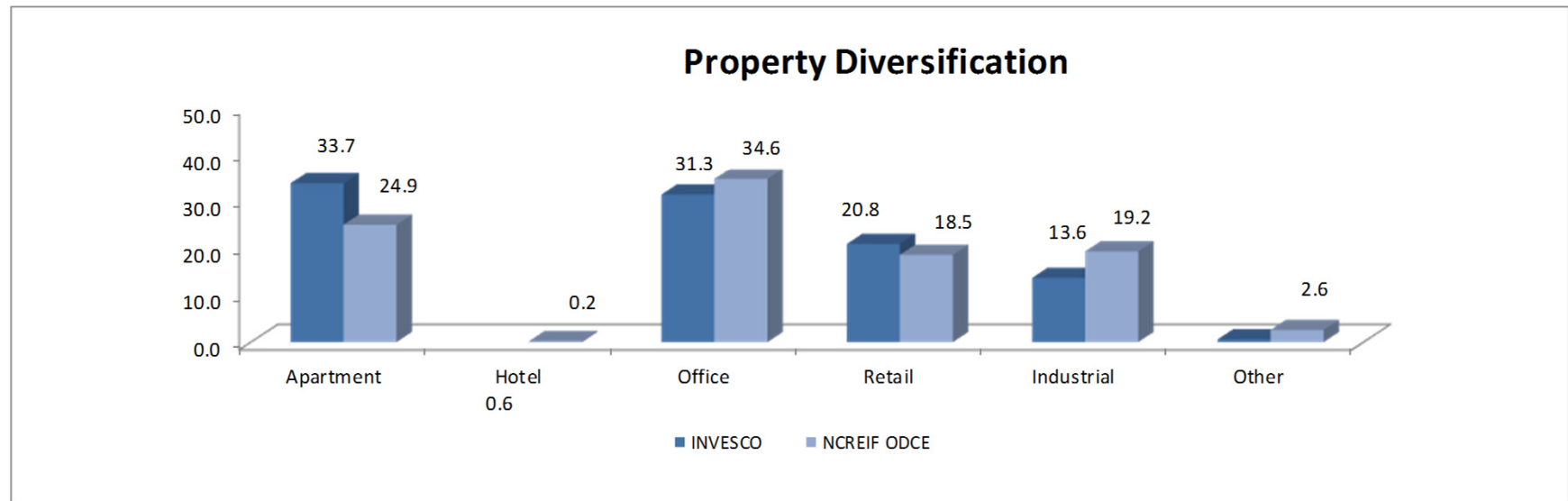
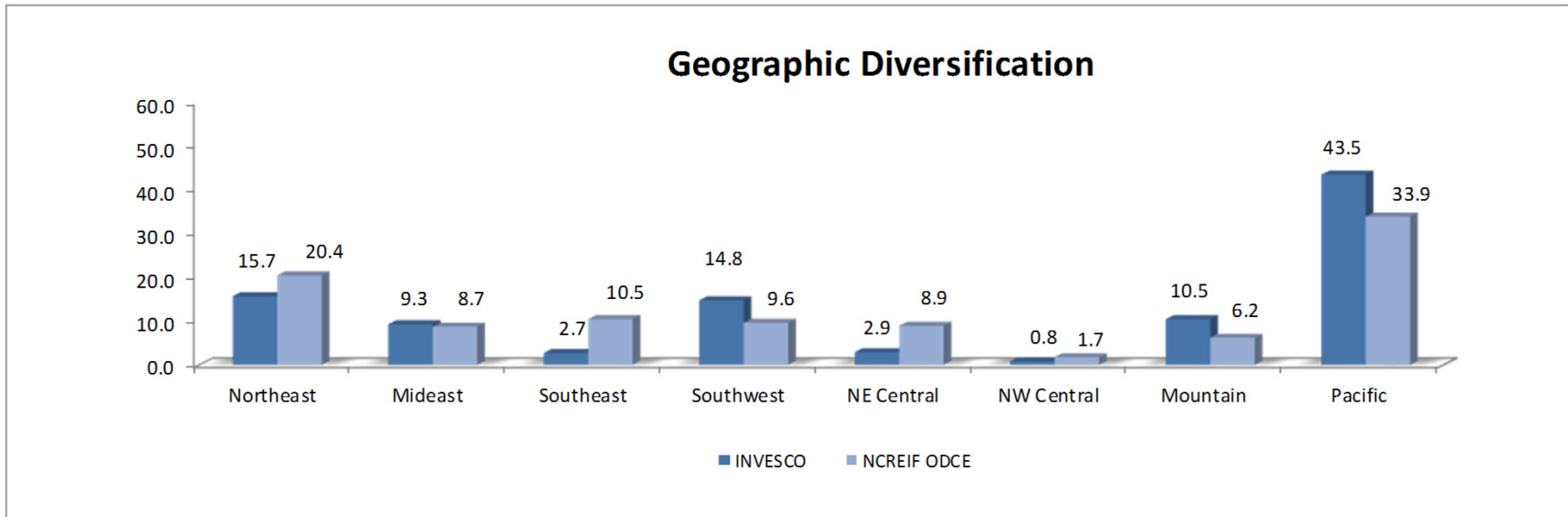
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error Rank
Real Estate	11.30%	4.92%	2.23	-0.09	32
NCREIF ODCE	11.42%	4.75%	2.33	--	1
Invesco	11.23%	4.90%	2.23	-0.13	--
NCREIF ODCE	11.42%	4.75%	2.33	--	--
TIPS	-0.36%	3.87%	-0.18	-0.31	--
BBgBarc US TIPS TR	0.05%	4.51%	-0.07	--	--
Brown Brothers Harriman	-0.36%	3.87%	-0.18	-0.31	61
BBgBarc US TIPS TR	0.05%	4.51%	-0.07	--	1

InvestorForce All DB Real Estate Pub Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	2.1	6.0	8.1	8.6	9.9	11.1	11.7	4.9
25th Percentile	1.9	5.5	7.2	7.6	9.2	10.5	10.9	4.3
Median	1.7	4.7	6.5	6.5	8.2	9.8	10.2	4.0
75th Percentile	1.2	4.0	4.7	5.0	7.5	9.6	9.9	3.6
95th Percentile	-7.3	-6.0	-4.5	0.7	0.8	6.3	8.0	2.5
# of Portfolios	60	60	60	59	57	50	43	37
● Real Estate	2.2 (5)	6.0 (5)	7.9 (10)	9.0 (3)	10.2 (3)	11.3 (2)	11.5 (9)	5.0 (3)
▲ NCREIF ODCE	2.2 (4)	6.3 (5)	8.1 (5)	8.2 (14)	10.0 (4)	11.4 (2)	11.8 (2)	5.5 (3)



INVESCO Core Real Estate
Real Estate Valuation Analysis

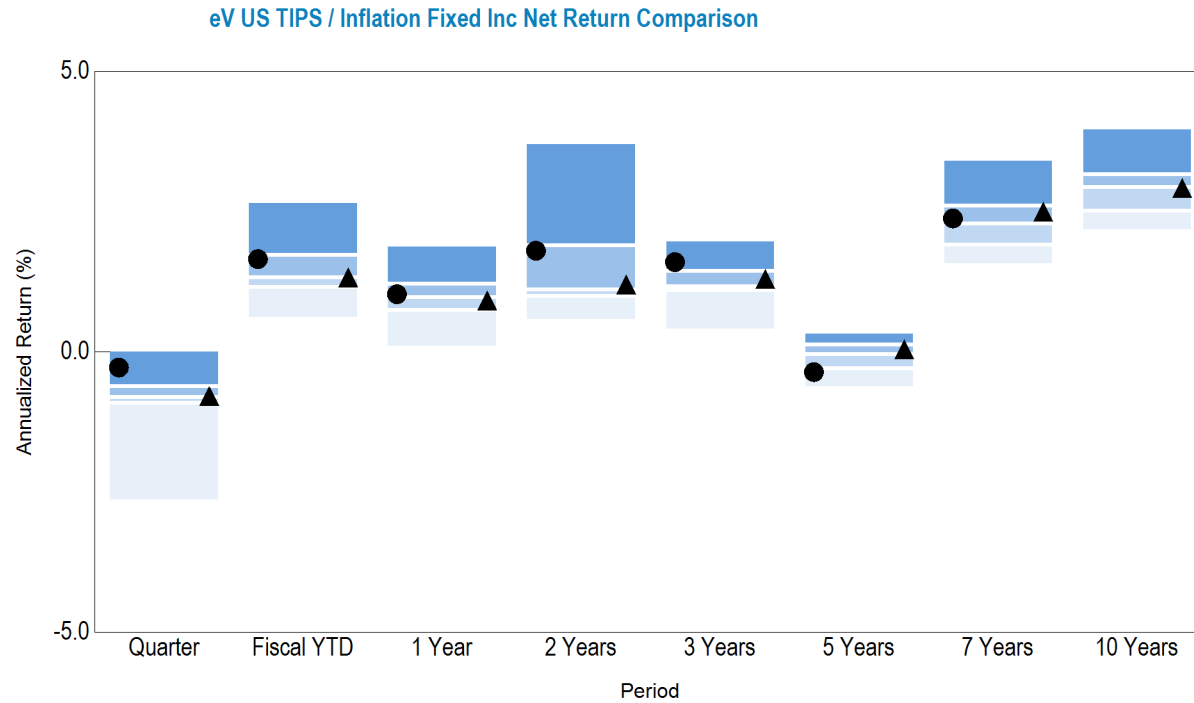
Period Ending: March 31, 2018

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 03/31/2018 2.76%
APARTMENTS							
Stoneridge Apartments	Pleasanton, CA	\$237,000,000	\$238,000,000	\$238,000,000	4Q06	March-18	\$6,559,665
Instrata Pentagon City	Arlington, VA	\$152,000,000	\$152,000,000	\$152,000,000	3Q10	March-18	\$4,189,366
Ladd Tower	Portland, OR	\$136,000,000	\$133,000,000	\$76,382,713	4Q10	March-18	\$2,105,231
Legacy Fountain Plaza	San Jose, CA	\$157,966,912	\$158,969,725	\$158,969,725	1Q11	March-18	\$4,381,463
Instrata Gramercy (fka The Elektra)	New York, NY	\$172,300,000	\$172,500,000	\$100,201,217	1Q11	March-18	\$2,761,707
Instrata Brooklyn Heights (fka 75 Clinton Street)	Brooklyn, NY	\$69,200,000	\$68,500,000	\$68,500,000	1Q12	March-18	\$1,887,971
The Artisan Laguna Beach	Orange County, CA	\$165,000,000	\$164,000,000	\$102,728,393	3Q12	March-18	\$2,831,361
The GoodWynn	Atlanta, GA	\$98,400,000	\$98,200,000	\$98,200,000	4Q12	March-18	\$2,706,551
Instrata Hell's Kitchen	New York, NY	\$194,000,000	\$194,000,000	\$194,000,000	1Q13	March-18	\$5,346,953
Sunset Vine Tower	Los Angeles, CA	\$98,000,000	\$102,000,000	\$102,000,000	2Q13	March-18	\$2,811,285
Instrata Ashton Uptown	Dallas, TX	\$122,000,000	\$122,000,000	\$65,082,917	4Q13	March-18	\$1,793,790
206 Bell	Seattle, WA	\$48,700,000	\$48,500,000	\$48,500,000	4Q13	March-18	\$1,336,738
Cadence Union Station	Denver, CO	\$90,100,000	\$90,600,000	\$53,646,801	1Q14	March-18	\$1,478,593
Joseph Arnold Lofts	Seattle, WA	\$71,600,000	\$71,300,000	\$37,214,292	2Q14	March-18	\$1,025,686
Verve	Denver, CO	\$108,000,000	\$108,000,000	\$108,000,000	3Q14	March-18	\$2,976,655
Broadstone Little Italy	San Diego CA	\$121,000,000	\$121,000,000	\$68,044,021	3Q14	March-18	\$1,875,403
33 Tehama	San Francisco, CA	\$272,513,101	\$290,440,459	\$179,031,733	3Q14	March-18	\$4,934,404
The Parker	Portland, OR	\$66,000,000	\$66,000,000	\$34,513,946	1Q15	March-18	\$951,260
Legacy West Apartments	Plano, TX	\$113,950,008	\$114,944,403	\$83,460,904	1Q15	March-18	\$2,300,317
The Royce	Irvine, CA	\$161,950,335	\$179,275,326	\$102,893,317	2Q15	March-18	\$2,835,906
Wheaton 121	Wheaton, IL	\$77,000,000	\$77,100,000	\$77,100,000	2Q15	March-18	\$2,125,001
Jefferson Marketplace	Washington, DC	\$154,000,000	\$154,000,000	\$84,038,061	4Q15	March-18	\$2,316,225
Retreat at Park Meadows	Littleton, CO	\$137,000,000	\$147,000,000	\$147,000,000	4Q15	March-18	\$4,051,558
North Water Apartments	Chicago, IL	\$265,000,000	\$265,000,000	\$265,000,000	1Q16	March-18	\$7,303,828
2270 Broadway	Oakland, CA	\$26,873,390	\$27,925,453	\$27,925,453	1Q16	March-18	\$769,671
Runway at Playa Vista Apartments	Playa Vista, CA	\$163,770,012	\$163,770,000	\$100,302,500	1Q16	March-18	\$2,764,499
Clayton Lane Apartments	Denver, CO	\$36,716,851	\$37,489,843	\$37,489,843	1Q16	March-18	\$1,033,281
Biscayne 27	Miami, FL	\$50,493,109	\$57,823,573	\$51,875,321	2Q16	March-18	\$1,429,768
Flats 8300	Washington DC	\$236,000,000	\$236,000,000	\$132,500,000	2Q16	March-18	\$3,651,914
407 1st Ave	New York, NY	\$195,600,000	\$196,800,000	\$196,800,000	4Q16	March-18	\$5,424,126
5250 Park	Miami, FL	\$13,940,141	\$18,295,297	\$17,919,593	2Q17	March-18	\$493,893
The Mason	Pleasanton, CA	\$100,000,000	\$100,000,000	\$100,000,000	3Q17	March-18	\$2,756,162
		\$4,112,073,859	\$4,174,434,079	\$3,309,320,750			\$91,210,227
INDUSTRIAL							
Arjons Industrial Park	San Diego CA	\$42,700,000	\$42,100,000	\$42,100,000	2Q04	March-18	\$1,160,344
Gateway Business Park	Dallas TX	\$13,000,000	\$13,300,000	\$13,300,000	2Q04	March-18	\$366,569
Hayward Industrial	Oakland CA	\$187,600,000	\$192,400,000	\$192,400,000	3Q04-3Q07	March-18	\$5,302,855
Oakesdale Commerce Center	Seattle - Belle - Eve WA	\$55,700,000	\$58,100,000	\$58,100,000	1Q06	March-18	\$1,601,330
South Bay Industrial	Los Angeles, CA	\$56,300,000	\$58,000,000	\$58,000,000	4Q06	March-18	\$1,598,574
Steeplechase Portfolio	Capitol Heights, MD	\$97,200,000	\$99,500,000	\$99,500,000	1Q11	March-18	\$2,742,381
Airport Trade Center Portfolio	Dallas, TX	\$130,900,000	\$131,200,000	\$131,200,000	1Q11	March-18	\$3,616,084
IE Logistics	San Bernardino, CA	\$147,500,000	\$151,000,000	\$151,000,000	3Q11	March-18	\$4,161,804
Railhead Industrial	Dallas, TX	\$62,500,000	\$65,300,000	\$65,300,000	4Q11	March-18	\$1,799,774
Empire Gateway aka Chino South Logistics Center	Chino, CA	\$275,000,000	\$280,000,000	\$280,000,000	4Q12	March-18	\$7,717,252
SFO Logistics Center	San Francisco, CA	\$146,000,000	\$147,000,000	\$147,000,000	4Q13	March-18	\$4,051,558
Miami Industrial Portfolio	Various, FL	\$82,288,400	\$84,011,472	\$57,092,131	1Q16	March-18	\$1,573,551
Miami Industrial Portfolio - Fedex	Hollywood, FL	\$36,981,581	\$42,600,000	\$28,120,004	1Q16	March-18	\$775,033
OMP Burbank	Los Angeles, CA	\$74,234,521	\$74,360,605	\$74,360,605	2Q16	March-18	\$2,049,498
US Storage	Compton, CA	\$7,630,467	\$7,992,682	\$7,992,682	4Q17	March-18	\$220,291
Pacific Commons	Freemont, CA	\$160,128,073	\$150,062,415	\$133,472,469	1Q17	March-18	\$3,678,717
Gateway 80 Business Park	Fairfield, CA	\$0	\$100,000,000	\$100,000,000	1Q18	Acq 1Q18	\$2,756,162
Baranof - Walden Park	San Marcos, TX	\$0	\$10,860,901	\$10,860,901	1Q18	Acq 1Q18	\$299,344
Baranof - Ranch Road 620	San Marcos, TX	\$0	\$9,020,071	\$9,020,071	1Q18	Acq 1Q18	\$248,608
Baranof - Glenwood Avenue	Raleigh, NC	\$0	\$9,059,741	\$9,059,741	1Q18	Acq 1Q18	\$249,701
Baranof - 1-84 & 60th	Vancouver, WA	\$0	\$19,561,445	\$19,561,445	1Q18	Acq 1Q18	\$539,145
Baranof - Fishers Landing Vancouver	Vancouver, WA	\$0	\$15,249,371	\$15,249,371	1Q18	Acq 1Q18	\$420,297
		\$1,575,663,042	\$1,760,678,703	\$1,702,689,420			\$46,928,872

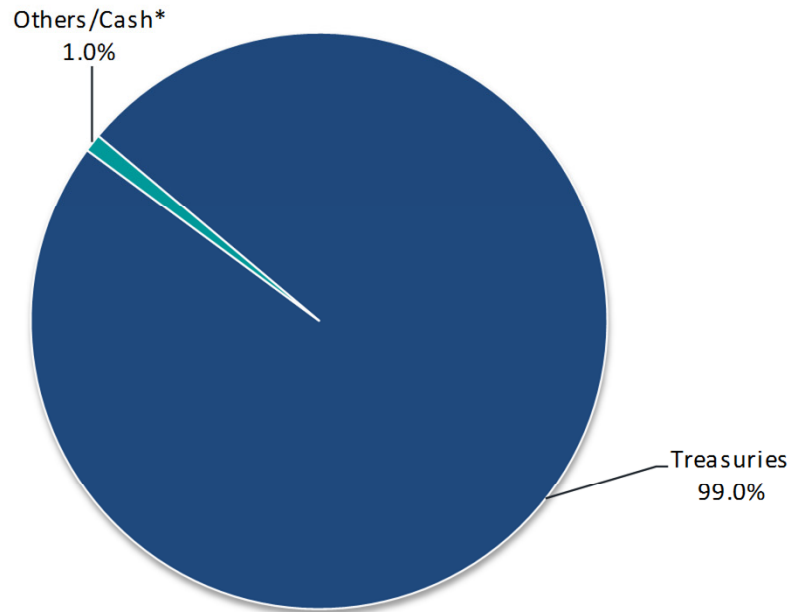
INVESCO Core Real Estate
Real Estate Valuation Analysis

Period Ending: March 31, 2018

OFFICE							
55 Cambridge Parkway	Boston MA - NH	\$291,000,000	\$306,000,000	\$306,000,000	4Q06	March-18	\$8,433,854
1111 Pennsylvania Avenue	Washington, D.C.	\$327,000,000	\$343,000,000	\$343,000,000	4Q10	March-18	\$9,453,634
1800 Larimer	Denver, CO	\$327,000,000	\$329,000,000	\$329,000,000	1Q11	March-18	\$9,067,772
Hillview Office	San Jose, CA	\$80,100,000	\$79,100,000	\$79,100,000	3Q12	March-18	\$2,180,124
Williams Tower	Houston, TX	\$594,000,000	\$598,000,000	\$415,060,308	1Q13	March-18	\$11,439,733
Westlake Park Place	Westlake Village, CA	\$112,000,000	\$109,000,000	\$109,000,000	4Q13	March-18	\$3,004,216
101 Second	San Francisco, CA	\$415,000,000	\$415,000,000	\$415,000,000	1Q14	March-18	\$11,438,071
Energy Crossing II	Houston, TX	\$103,700,000	\$104,000,000	\$104,000,000	2Q14	March-18	\$2,866,408
1776 Wilson Blvd.	Arlington, VA	\$90,400,000	\$90,100,000	\$90,100,000	3Q14	March-18	\$2,483,302
631 Howard	San Francisco, CA	\$92,000,000	\$94,000,000	\$94,000,000	3Q14	March-18	\$2,590,792
Barton Oaks	Austin, TX	\$91,500,000	\$92,900,000	\$92,900,000	3Q14	March-18	\$2,560,474
Hercules East and South Campus	Los Angeles, CA	\$176,532,387	\$181,123,239	\$181,123,239	3Q14	March-18	\$4,992,049
The Reserve	Playa Vista, CA	\$371,739,709	\$379,040,898	\$379,040,898	1Q15	March-18	\$10,446,980
Fort Point Portfolio	Boston, MA	\$239,421,743	\$245,357,819	\$245,357,819	2Q15	March-18	\$6,762,458
Legacy West Office	Plano, TX	\$87,182,740	\$97,319,895	\$46,911,204	1Q15	March-18	\$1,292,949
1101 Westlake	Seattle, WA	\$127,000,000	\$128,000,000	\$128,000,000	3Q15	March-18	\$3,527,887
PearlWest	Boulder, CO	\$120,000,000	\$121,000,000	\$121,000,000	4Q16	March-18	\$3,334,956
The Mark 302	Santa Monica, CA	\$0	\$49,898,678	\$49,898,678	1Q18	Acq 1Q18	\$1,375,288
		\$3,768,576,579	\$3,877,840,529	\$3,606,632,737			\$99,404,626
RETAIL							
Chandler Pavilion	Phoenix - Mesa AZ	\$23,900,000	\$23,900,000	\$23,900,000	2Q04	March-18	\$658,723
Cityline at Tenley	Washington, D.C.	\$65,000,000	\$65,000,000	\$65,000,000	4Q05	March-18	\$1,791,505
Ridgehaven Shopping Center	Minnetonka, MN	\$42,300,000	\$42,300,000	\$42,300,000	4Q05	March-18	\$1,165,856
The Beacon Garage (units)	San Francisco, CA	\$36,069,106	\$36,215,385	\$36,215,385	1Q06	March-18	\$998,155
The Beacon Office (210 King)	San Francisco, CA	\$25,500,000	\$25,500,000	\$25,500,000	1Q15	March-18	\$702,821
Hawthorne Plaza	Overland Park, KS	\$51,525,000	\$51,900,000	\$51,900,000	4Q07	March-18	\$1,430,448
The Loop	Boston MA - NH	\$89,000,000	\$89,000,000	\$89,000,000	1Q08	March-18	\$2,452,984
Westbank Market	Austin, TX	\$61,700,000	\$62,900,000	\$62,900,000	3Q10	March-18	\$1,733,626
910 Lincoln Road	Miami, FL	\$34,300,000	\$34,700,000	\$34,700,000	4Q10	March-18	\$1,733,626
Lake Pointe Village	Houston, TX	\$83,650,000	\$83,850,000	\$83,850,000	4Q11	March-18	\$956,388
Safeway Kapahulu	Hawaii	\$94,900,000	\$94,900,000	\$58,972,049	4Q11	March-18	\$1,625,365
Safeway Burlingame	San Francisco, CA	\$58,700,000	\$58,800,000	\$36,270,901	4Q11	March-18	\$999,685
Shamrock Plaza	Oakland, CA	\$40,600,000	\$40,600,000	\$24,471,903	4Q11	March-18	\$674,485
Pavilions Marketplace	West Hollywood, CA	\$69,900,000	\$70,200,000	\$45,712,502	1Q12	March-18	\$1,259,910
130 Prince	New York, NY	\$217,000,000	\$217,000,000	\$217,000,000	2Q12	March-18	\$5,980,871
Safeway Pleasanton	Pleasanton, CA	\$83,200,000	\$83,000,000	\$83,000,000	4Q12	March-18	\$2,287,614
Liberty Wharf	Boston, MA	\$97,100,000	\$97,200,000	\$67,453,045	4Q12	March-18	\$1,859,115
Shops at Legacy	Plano, TX	\$117,547,410	\$117,561,046	\$117,561,046	3Q13	March-18	\$3,240,172
Pasadena Commons	Pasadena, CA	\$61,200,000	\$61,900,000	\$61,900,000	4Q14	March-18	\$1,706,064
Rush Street Retail	Chicago, IL	\$16,700,000	\$16,900,000	\$16,900,000	4Q14	March-18	\$465,791
Legacy West Retail	Plano, TX	\$191,902,109	\$198,740,004	\$148,331,313	1Q15	March-18	\$4,088,251
Legacy West Land	Plano, TX	\$917,929	\$917,929	\$917,929	2Q17	March-18	\$25,300
131-137 Spring Street	New York, NY	\$235,667,973	\$228,000,000	\$115,200,000	3Q15	March-18	\$3,175,098
Runway at Playa Vista - Retail	Playa Vista, CA	\$122,960,009	\$127,200,000	\$64,792,500	1Q16	March-18	\$1,785,786
139 Spring	New York, NY	\$126,924,800	\$126,924,800	\$126,924,800	1Q16	March-18	\$3,498,253
Clayton Lane	Denver, CO	\$141,644,611	\$145,484,260	\$99,576,093	1Q16	March-18	\$2,744,478
4th & Colorado	Santa Monica, CA	\$13,280,000	\$13,280,000	\$13,280,000	1Q16	March-18	\$366,018
Legacy West - Block H	Plano, TX	\$4,832,913	\$5,188,070	\$5,188,070	4Q17	March-18	\$142,992
Shops at Crystals	Las Vegas, NV	\$290,250,000	\$292,750,000	\$156,057,242	2Q16	March-18	\$4,301,190
		\$2,566,602,754	\$2,580,496,109	\$2,043,459,393			\$55,743,627
Portfolio Total		\$12,022,916,234	\$12,393,449,420	\$10,662,102,300			\$293,287,353



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	0.0	2.7	1.9	3.7	2.0	0.4	3.4	4.0
25th Percentile	-0.6	1.7	1.2	1.9	1.5	0.1	2.6	3.2
Median	-0.8	1.3	1.0	1.1	1.2	0.0	2.3	2.9
75th Percentile	-0.9	1.2	0.8	1.0	1.1	-0.3	1.9	2.5
95th Percentile	-2.7	0.6	0.1	0.6	0.4	-0.6	1.6	2.2
# of Portfolios	20	20	20	20	19	17	15	11
● Brown Brothers Harriman	-0.3 (9)	1.7 (28)	1.0 (41)	1.8 (28)	1.6 (20)	-0.4 (78)	2.4 (40)	-- (--)
▲ BBgBarc US TIPS TR	-0.8 (46)	1.3 (53)	0.9 (56)	1.2 (45)	1.3 (36)	0.0 (37)	2.5 (31)	2.9 (52)



Sector	Account Weight	BBgBarc TIPS	
		Index	Difference
Treasuries	99.0%	100.0%	-1.0%
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*	1.0%	0.0%	1.0%
TOTAL	100.0%	100.0%	0.0%

* 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	\$	87,208,248
Current Coupon		1.08
Yield to Maturity		0.47
Average Life		
Duration		7.10
Quality		AAA

BBgBarc TIPS	
Total Number of Securities	39
Total Market Value	N/A
Current Coupon	0.76
Yield to Maturity	0.51
Average Life	
Duration	7.51
Quality	AAA

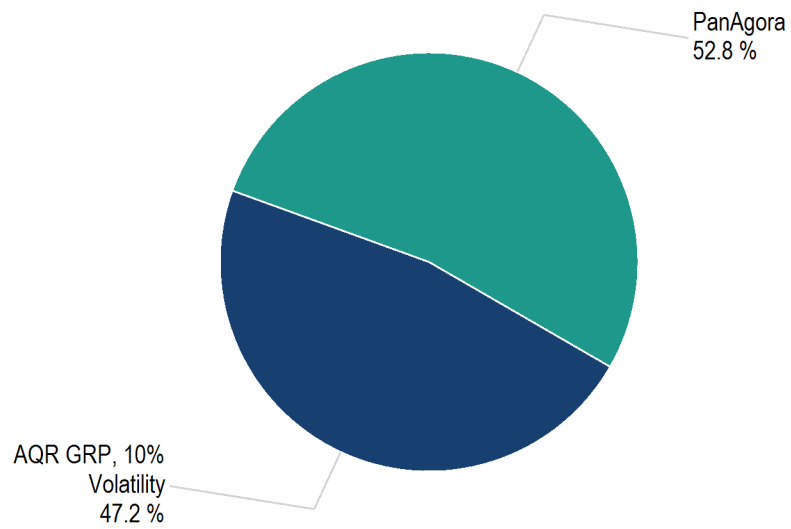
Yield to Maturity	
Range	% Held
0.0 - 5.0	100.0
5.0 - 7.0	0.0
7.0 - 9.0	0.0
9.0 - 11.0	0.0
11.0 - 13.0	0.0
13.0+	0.0
Unclassified	0.0

Average Life	
Range	% Held
0.0 - 3.0	19.8
3.0 - 5.0	12.9
5.0 - 10.0	54.5
10.0- 15.0	4.8
15.0+	8.1
Unclassified	0.0

Duration	
Range	% Held
0.0 - 3.0	19.8
3.0 - 5.0	12.9
5.0 - 10.0	54.5
10.0- 15.0	4.8
15.0+	8.1
Unclassified	0.0

Quality	
Range	% Held
Govt (10)	98.9
Aaa (10)	0.0
Aa (9)	0.0
A (8)	0.0
Baa (7)	0.0
Below Baa (6-1)	0.0
Other	1.1

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	\$147,207,772	47.2%	-0.3%
PanAgora	\$164,556,515	52.8%	-0.5%
Actual vs. Policy Weight Difference			0.0%
Total	\$311,764,287	100.0%	-0.7%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Risk Parity	4.1%	7.8%	0.5	-0.5	6.1%
Blended Risk Parity Index	6.9%	6.2%	1.0	--	0.0%
AQR GRP, 10% Volatility	3.4%	7.7%	0.4	-0.6	5.9%
Blended Risk Parity Index	6.9%	6.2%	1.0	--	0.0%
PanAgora	4.7%	8.4%	0.5	-0.3	6.9%
Blended Risk Parity Index	6.9%	6.2%	1.0	--	0.0%

Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Risk Parity	4.3%	8.7%	0.5	-0.6	6.9%
Blended Risk Parity Index	8.7%	6.0%	1.4	--	0.0%
AQR GRP, 10% Volatility	3.0%	8.7%	0.3	-0.8	6.7%
Blended Risk Parity Index	8.7%	6.0%	1.4	--	0.0%

Total Fund
Performance Summary (Gross of Fees)

Period Ending: March 31, 2018

	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Fund	-0.5	6.2	9.0	10.6	6.8	8.1	6.3
<i>Policy Index</i>	-0.7	7.0	10.0	11.0	6.9	8.1	6.6
<i>Allocation Index</i>	-0.5	7.0	10.1	10.9	6.9	8.0	--
Total Fund ex Overlay	-0.4	6.2	9.0	10.6	6.7	8.0	6.2
<i>Policy Index</i>	-0.7	7.0	10.0	11.0	6.9	8.1	6.6
<i>Allocation Index</i>	-0.5	7.0	10.1	10.9	6.9	8.0	--
Public Equity	-0.7	10.0	14.8	15.1	8.9	10.7	7.0
<i>Blended Public Equity Index</i>	-0.8	10.7	15.5	16.1	9.0	10.5	7.5
US Equity	-0.6	10.7	13.9	15.7	10.0	12.8	9.3
<i>Blended US Equity Index</i>	-0.6	10.5	13.8	16.1	9.9	12.8	9.7
<i>Russell 3000</i>	-0.6	10.5	13.8	15.9	10.2	13.0	9.6
Large Cap Equity	-0.6	11.2	14.6	16.7	11.3	13.7	9.5
<i>Russell 1000</i>	-0.7	10.6	14.0	15.7	10.4	13.2	9.6
<i>BlackRock Russell 1000</i>	-0.7	10.6	14.0	--	--	--	--
<i>DE Shaw</i>	-0.3	14.1	17.3	19.6	13.1	15.3	--
<i>Russell 1000</i>	-0.7	10.6	14.0	15.7	10.4	13.2	9.6
Small Cap Equity	-0.5	7.9	9.8	15.3	6.8	10.2	9.0
<i>Russell 2000</i>	-0.1	9.1	11.8	18.8	8.4	11.5	9.8
<i>QMA US Small Cap</i>	-0.5	7.9	9.8	--	--	--	--
<i>Russell 2000</i>	-0.1	9.1	11.8	18.8	8.4	11.5	9.8
International Equity	-0.9	9.1	16.0	13.8	7.0	6.8	2.4
<i>MSCI ACWI ex US IMI</i>	-1.1	10.7	17.4	15.5	7.2	6.7	3.3
<i>MSCI EAFE Gross</i>	-1.4	8.4	15.3	13.8	6.0	7.0	3.2
Developed Markets	-1.2	8.5	15.7	13.5	6.8	7.2	2.6
<i>MSCI ACWI ex USA Gross</i>	-1.1	10.4	17.0	15.4	6.7	6.4	3.2
<i>Baillie Gifford</i>	-0.6	9.6	19.3	15.0	8.3	8.6	--
<i>MSCI ACWI ex US</i>	-1.1	10.4	17.0	15.4	6.7	7.3	--
<i>MSCI ACWI ex US Growth</i>	-0.8	11.7	20.3	15.1	7.7	8.0	--

Total Fund
Performance Summary (Gross of Fees)

Period Ending: March 31, 2018

	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
BlackRock EAFE Index	-1.6	8.2	15.1	13.6	5.9	--	--
<i>MSCI EAFE</i>	-1.5	8.2	14.8	13.2	5.6	6.5	2.7
<i>MSCI EAFE Gross</i>	-1.4	8.4	15.3	13.8	6.0	7.0	3.2
Mondrian	-1.2	8.0	12.6	12.3	5.5	6.1	3.0
<i>MSCI ACWI ex USA Value Gross</i>	-1.4	9.2	13.9	15.6	5.6	5.5	2.7
<i>MSCI ACWI ex USA Gross</i>	-1.1	10.4	17.0	15.4	6.7	6.4	3.2
Emerging Markets	1.5	14.2	18.1	16.5	7.9	4.3	--
<i>MSCI Emerging Markets Gross</i>	1.5	17.8	25.4	21.5	9.2	5.4	3.4
Parametric Core	1.5	14.2	18.1	16.5	--	--	--
<i>MSCI Emerging Markets Gross</i>	1.5	17.8	25.4	21.5	9.2	5.4	3.4
Fixed Income	-0.3	1.4	2.9	6.0	3.7	3.4	5.6
<i>Blended Fixed Income Index</i>	-1.1	0.6	2.5	2.7	2.5	2.1	4.0
Core Fixed	-1.0	0.6	2.3	3.3	2.4	2.8	4.8
<i>BBgBarc US Aggregate TR</i>	-1.5	-0.2	1.2	0.8	1.2	1.8	3.6
BlackRock Intermediate Govt	-0.7	-0.6	0.1	--	--	--	--
<i>BBgBarc US Govt Int TR</i>	-0.7	-0.8	-0.1	-0.4	0.5	0.7	2.2
FIAM Bond	-1.3	0.3	1.6	2.1	2.0	2.5	4.8
<i>BBgBarc US Aggregate TR</i>	-1.5	-0.2	1.2	0.8	1.2	1.8	3.6
Western TRU	-0.7	2.9	6.6	7.7	--	--	--
<i>3-Month Libor Total Return USD</i>	0.5	1.2	1.5	1.2	0.9	0.7	0.7
<i>BBgBarc US Aggregate TR</i>	-1.5	-0.2	1.2	0.8	1.2	1.8	3.6
Opportunistic Credit	1.1	3.7	6.2	12.0	7.2	7.5	--
<i>BBgBarc BA Intermediate HY</i>	-1.5	0.4	2.9	6.4	4.3	3.6	--
Angelo Gordon Opportunistic	5.7	14.3	19.1	16.1	11.5	--	--
Angelo Gordon STAR	7.5	15.8	22.2	18.3	12.5	13.9	--
<i>BBgBarc US Aggregate TR</i>	-1.5	-0.2	1.2	0.8	1.2	1.8	3.6
Beach Point Select	1.1	5.1	7.1	11.9	8.9	--	--
<i>BBgBarc BA Intermediate HY</i>	-1.5	0.4	2.9	6.4	4.3	3.6	--

Total Fund
Performance Summary (Gross of Fees)

Period Ending: March 31, 2018

	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Brigade Capital	1.1	2.8	4.7	14.1	5.7	4.9	--
<i>BBgBarc BA Intermediate HY</i>	-1.5	0.4	2.9	6.4	4.3	3.6	--
<i>50% Barclays HY/ 50% Bank Loan</i>	0.4	2.7	4.2	8.5	4.8	4.6	--
PIMCO Diversified	-0.6	--	--	--	--	--	--
<i>Blended PIMCO Diversified Index</i>	-1.3	1.3	3.4	5.9	4.3	4.2	6.7
<i>BBgBarc BA Intermediate HY</i>	-1.5	0.4	2.9	6.4	4.3	3.6	--
Franklin Templeton	2.0	1.9	0.9	6.9	3.0	2.1	--
<i>BBgBarc Multiverse TR</i>	1.3	4.3	7.0	2.9	3.4	1.7	2.8
Private Credit	1.8	4.5	6.6	--	--	--	--
<i>Cliffwater Direct Lending Index</i>	2.0	6.1	8.3	10.2	8.3	9.3	9.6
TCP Direct Lending VIII	1.5	4.8	6.8	--	--	--	--
White Oak Yield	2.2	1.9	--	--	--	--	--
<i>Cliffwater Direct Lending Index</i>	2.0	6.1	8.3	10.2	8.3	9.3	9.6
Risk Parity	-1.4	6.9	8.5	9.1	4.1	4.4	--
<i>Blended Risk Parity Index</i>	-0.7	6.2	9.2	10.1	6.9	8.7	--
AQR GRP, 10% Volatility	-1.2	8.1	9.7	10.0	3.4	3.0	--
PanAgora	-1.6	5.8	7.5	8.2	4.7	--	--
<i>Blended Risk Parity Index</i>	-0.7	6.2	9.2	10.1	6.9	8.7	--
<i>Blended RP Secondary Index</i>	-0.9	6.2	8.7	8.8	5.5	7.0	--
Alternatives	0.7	3.9	5.8	9.7	7.7	6.2	--
<i>Alternatives Allocation Index</i>	0.8	8.8	11.2	12.2	7.7	6.7	--
<i>Blended Alternatives Index</i>	0.8	9.0	11.5	12.6	7.9	8.0	--
Private Equity	4.8	7.0	11.3	17.0	15.8	16.6	--
<i>Russell 3000 +3%</i>	0.2	13.3	16.8	18.9	13.2	16.0	12.7
<i>Russell 3000 +3% 1Q Lag</i>	7.1	16.6	24.1	19.9	14.1	18.6	11.7
Hedge Fund/Absolute Return	-3.1	1.1	0.5	2.1	3.3	5.7	--
<i>Libor 1 month +4%</i>	1.3	4.0	5.4	5.0	4.7	4.5	--
AQR DELTA XN	-3.9	1.3	0.1	2.1	3.6	5.8	--

Total Fund
Performance Summary (Gross of Fees)

Period Ending: March 31, 2018

	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Aberdeen Standard GARS	-1.9	0.3	1.1	1.5	--	--	--
<i>Libor 1 month +4%</i>	1.3	4.0	5.4	5.0	4.7	4.5	--
Inflation Hedge	-0.3	4.9	5.5	7.5	--	--	--
<i>Blended Inflation Pool Index</i>	-0.5	5.7	6.3	7.2	--	--	--
Real Estate	2.3	6.3	8.3	9.4	10.6	11.7	5.4
<i>NCREIF ODCE</i>	2.2	6.3	8.1	8.2	10.0	11.4	5.5
Invesco	2.4	6.3	8.3	9.4	10.5	11.6	5.4
<i>NCREIF ODCE</i>	2.2	6.3	8.1	8.2	10.0	11.4	5.5
Invesco US Val IV	2.7	10.6	12.7	11.7	--	--	--
<i>NCREIF ODCE</i>	2.2	6.3	8.1	8.2	10.0	11.4	5.5
<i>NCREIF CEVA 1Q Lag - NET</i>	3.4	9.3	10.8	10.3	13.1	--	--
PGIM RE US Debt Fund	1.1	--	--	--	--	--	--
<i>NCREIF ODCE</i>	2.2	6.3	8.1	8.2	10.0	11.4	5.5
Private Real Asset	-1.9	-7.3	-10.2	-2.6	11.3	--	--
<i>Blended Real Asset Index</i>	-3.2	6.2	5.9	7.0	6.3	--	--
<i>Blended Private Real Asset Index</i>	6.6	11.9	16.2	14.7	7.4	--	--
Liquid Pool	-2.9	7.4	7.6	--	--	--	--
<i>Blended Real Asset Index</i>	-3.2	6.2	5.9	7.0	6.3	--	--
SSgA Custom Real Asset	-2.9	7.4	7.6	--	--	--	--
<i>Blended Real Asset Index</i>	-3.2	6.2	5.9	7.0	6.3	--	--
TIPS	-0.2	1.8	1.2	2.0	1.8	-0.2	--
<i>BBgBarc US TIPS TR</i>	-0.8	1.3	0.9	1.2	1.3	0.0	2.9
Brown Brothers Harriman	-0.2	1.8	1.2	2.0	1.8	-0.2	--
<i>BBgBarc US TIPS TR</i>	-0.8	1.3	0.9	1.2	1.3	0.0	2.9
Cash	0.2	0.7	0.9	0.9	1.0	0.8	0.5
<i>91 Day T-Bills</i>	0.4	0.9	1.2	0.8	0.5	0.3	0.3
General Account	0.4	1.7	2.0	1.5	1.7	1.1	0.9
Treasury & LAIF	2.2	2.7	3.1	1.8	1.5	1.3	0.7
<i>91 Day T-Bills</i>	0.4	0.9	1.2	0.8	0.5	0.3	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: March 31, 2018

Total Plan Policy Index	As of																	
	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%	0.0%	0.0%	0.0%
60/40 MSCI World/BBgBarc Global Aggregate (RP)	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%	0.0%
60/40 Russell 3000/BBgBarc US Aggregate (RP)	0.0%	0.0%	0.0%	8.0%	8.0%	8.0%	8.0%	8.0%	6.0%	6.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Aggregate	14.0%	12.0%	10.0%	10.0%	10.0%	10.0%	10.0%	9.3%	11.0%	11.0%	12.9%	27.0%	27.0%	29.0%	25.0%	21.0%	21.0%	21.0%
BBgBarc BA Intermediate HY	7.0%	6.0%	6.0%	6.0%	5.0%	5.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Multiverse	0.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.8%	4.4%	4.4%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc TIPS	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	3.1%	3.3%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Commodity	0.0%	0.0%	0.0%	0.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	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%	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%	0.0%
Blended Real Asset	8.0%	7.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Libor +4% (HF)	6.0%	6.0%	5.0%	5.0%	5.0%	5.0%	4.0%	4.0%	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.0%	18.0%	18.0%	21.0%	21.0%	15.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	0.0%	19.0%	19.0%	19.0%	20.0%	20.0%	20.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI (Net)	19.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	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%	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%	0.0%
NCREIF Property	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	6.0%	0.0%	0.0%	0.0%	0.0%
Russell 1000	0.0%	0.0%	0.0%	0.0%	0.0%	24.0%	24.0%	24.0%	28.0%	28.0%	28.0%	37.0%	37.0%	40.0%	22.0%	20.0%	20.0%	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%	4.0%	6.0%	6.0%	7.0%	7.0%	7.0%	9.0%	9.0%	10.0%	15.0%	15.0%	15.0%	15.0%
Russell 3000	21.0%	23.0%	28.0%	28.0%	28.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000 +3% (PE)	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	8.0%	8.0%	8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	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%

Policy Index and Benchmark History

Period Ending: March 31, 2018

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%	31.3%	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:										
	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	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	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%	7.3%	0.0%	0.0%	0.0%
BBgBarc Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	16.0%	15.0%	0.0%	0.0%	0.0%	0.0%
BBgBarc Multiverse	14.3%	15.8%	16.7%	15.0%	18.8%	20.0%	20.0%	20.5%	0.0%	0.0%	0.0%
BBgBarc TIPS	0.0%	0.0%	0.0%	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%	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%

Opportunistic Credit Benchmark	As of:	
	1/1/14	12/1/09
BBgBarc BA Intermediate HY	100.0%	0.0%
BBgBarc Credit BAA	0.0%	100.0%
	100.0%	100.0%

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

Policy Index and Benchmark History

Period Ending: March 31, 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%
	100.0%	100.0%	100.0%	100.0%	100.0%

Private Equity Benchmark	As of:
	10/1/10
Russell 3000 +3%	100.0%
	100.0%

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

Inflation Hedge	As of:		
	2/1/17	10/1/16	4/1/16
BBgBarc TIPS	12.50%	14.3%	14.3%
Bloomberg Commodity	0.00%	0.0%	21.4%
CPI + 5% (RA)	0.00%	0.0%	14.3%
Bloomberg Roll Select Commodity	14.87%	12.1%	0.0%
S&P Global Large-MidCap Commodity and Resource	14.44%	11.8%	0.0%
S&P Global Infrastructure	14.44%	11.8%	0.0%
NCREIF ODCE	43.75%	50.0%	50.0%
	100.0%	100.0%	100.0%

Real Asset Benchmark	As of:	
	10/1/16	1/1/14
Bloomberg Roll Select Commodity	34.00%	0.0%
S&P Global Large-MidCap Commodity and Resource	33.00%	0.0%
S&P Global Infrastructure	33.00%	0.0%
CPI + 5%	0.00%	100.0%
	100.0%	100.0%

Real Estate Benchmark	As of:		
	1/1/09	6/1/00	7/1/96
10 Year Treasury +2%	0.0%	0.0%	100.0%
NCREIF ODCE	100.0%	0.0%	0.0%
NCREIF Property	0.0%	100.0%	0.0%
	100.0%	100.0%	100.0%

Policy Index and Benchmark History

Period Ending: March 31, 2018

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%
	100.0%	100.0%

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%
	100.0%	100.0%

Brigade Secondary Benchmark	As of:	
	8/1/10	
BBgBarc High Yield	50.0%	
Credit Suisse Leveraged Loans	50.0%	
	100.0%	

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%
	100.0%	100.0%

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%
	100.0%	100.0%

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%	
	100.0%	

Fee Schedule

Period Ending: March 31, 2018

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:	0.45% per annum
Next \$50 million:	0.35% per annum
Thereafter:	0.30% 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	--	--	--
AQR DELTA XN	Libor 1 month +4%	✓	✓	✗
Aberdeen Standard GARS	Libor 1 month +4%	--	--	--

Rule 1 - Manager has underperformed the benchmark index for the five year period.

Rule 2 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.

Rule 3 - Excess 5 Year Sharpe Ratio vs. Benchmark is positive

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	--	--	--
AQR DELTA XN	Libor 1 month +4%	✓	✓	✗
Aberdeen Standard GARS	Libor 1 month +4%	--	--	--

Rule 1 - Manager has underperformed the benchmark index for the five year period.

Rule 2 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.

Rule 3 - Excess 5 Year Sharpe Ratio vs. Benchmark is positive

Manager Performance Comparison (Gross of Fees)

Period Ending: March 31, 2018

	Jan	Feb	Mar	1st Qtr. 2018	Difference	4th Qtr. 2017	Difference	3rd Qtr. 2017	Difference	2nd Qtr. 2017	Difference	1st Qtr. 2017	Difference
Verus	5.49%	-3.67%	-2.27%	-0.69%		6.58%		4.49%		3.07%		5.46%	
BlackRock Russell 1000	5.49%	-3.67%	-2.27%	-0.69%	0.00%	6.59%	0.00%	4.49%	0.00%	3.07%	0.00%	5.46%	0.00%
Russell 1000 Index	5.49%	-4.64%	-1.77%	-1.19%		4.90%		4.48%		3.07%		6.02%	
Verus	4.49%	-3.09%	-1.57%	-0.32%		6.38%		7.60%		2.79%		7.02%	
D.E. Shaw	4.49%	-3.08%	-1.56%	-0.31%	-0.01%	6.39%	-0.01%	7.60%	0.00%	2.79%	0.00%	7.02%	0.00%
Russell 1000 Index	5.49%	-4.64%	-1.77%	-1.19%		4.90%		4.48%		3.07%		6.02%	
Verus	2.75%	-3.92%	0.77%	-0.51%		2.34%		5.94%		1.82%		2.46%	
QMA US Small Cap (Net)	2.75%	-3.92%	0.77%	-0.51%	0.00%	2.34%	0.00%	5.95%	-0.01%	1.82%	0.00%	2.46%	0.00%
Russell 2000 Index	2.61%	-3.87%	1.29%	-0.08%		3.34%		5.67%		2.46%		2.47%	
Verus	5.74%	-4.16%	-1.96%	-0.65%		4.95%		5.14%		8.83%		10.12%	
Baillie Gifford	5.75%	-4.20%	-1.98%	-0.70%	0.05%	4.92%	0.03%	5.12%	0.02%	8.80%	0.03%	10.07%	0.01%
MSCI ACWI ex US	5.58%	-4.70%	-1.69%	-1.08%		5.06%		6.25%		5.99%		7.98%	
MSCI ACWI ex US Growth	5.22%	-4.46%	-1.31%	-0.80%		5.81%		6.39%		7.74%		9.22%	
Verus	5.02%	-4.49%	-1.88%	-1.59%		4.26%		5.47%		6.32%		7.38%	
BlackRock EAFE Equity	5.02%	-4.49%	-1.88%	-1.59%	0.00%	4.26%	0.00%	5.47%	0.00%	6.32%	0.00%	7.38%	0.00%
MSCI EAFE (Net)	5.02%	-4.51%	-1.80%	-1.53%		4.23%		5.40%		6.12%		7.25%	
MSCI EAFE (Gross)	5.02%	-4.50%	-1.70%	-1.41%		4.27%		5.47%		6.37%		7.39%	
Verus	5.44%	-4.64%	-1.77%	-1.24%		4.06%		5.05%		4.26%		8.23%	
Mondrian(Net)	5.45%	-4.65%	-1.76%	-1.22%	-0.02%	4.02%	0.04%	5.08%	-0.03%	4.29%	-0.03%	8.23%	0.00%
MSCI ACWI -ex US Value Index	5.95%	-4.93%	-2.07%	-1.36%		4.31%		6.11%		4.33%		6.82%	
MSCI ACWI -ex US	5.58%	-4.70%	-1.69%	-1.08%		5.06%		6.25%		5.99%		7.98%	
Verus	6.93%	-4.05%	-1.06%	1.51%		5.24%		6.91%		3.44%		10.39%	
Parametric Core	6.95%	-4.04%	-1.05%	1.56%	-0.05%	5.30%	-0.06%	6.96%	-0.05%	3.47%	-0.03%	10.44%	0.00%
MSCI EM Market Index	8.34%	-4.60%	-1.83%	1.47%		7.50%		8.04%		6.38%		11.49%	

Manager Performance Comparison (Gross of Fees)

Period Ending: March 31, 2018

	Jan	Feb	Mar	1st Qtr. 2018	Difference	4th Qtr. 2017	Difference	3rd Qtr. 2017	Difference	2nd Qtr. 2017	Difference	1st Qtr. 2017	Difference
Verus	-0.94%	-0.27%	0.54%	-0.67%		-0.36%		0.40%		0.73%		0.34%	
BlackRock Intermediate Govt	-0.94%	-0.27%	0.54%	-0.67%	0.00%	-0.35%	-0.01%	0.41%	-0.01%	0.73%	0.00%	0.34%	0.00%
BBgBarc US Govt Int Index	-0.95%	-0.29%	0.52%	-0.73%		-0.41%		0.85%		1.45%		0.82%	
Verus	-0.97%	-0.93%	0.60%	-1.31%		0.47%		1.13%		1.36%		1.24%	
FIAM Bond	-0.97%	-0.94%	0.60%	-1.31%	0.00%	0.48%	-0.01%	1.13%	0.00%	1.36%	0.00%	1.24%	0.00%
BBgBarc US Aggregate Index	-1.15%	-0.95%	0.64%	-1.46%		0.39%		0.85%		1.45%		0.82%	
Verus	0.74%	-1.47%	0.05%	-0.69%		1.51%		2.09%		3.54%		2.25%	
Western TRU	0.74%	-1.47%	0.05%	-0.69%	0.00%	1.51%	0.00%	2.09%	0.00%	3.54%	0.00%	2.25%	0.00%
3-Month Libor Total Return USD Index	0.15%	0.16%	0.15%	0.46%		0.39%		0.34%		0.31%		0.27%	
BBgBarc US Aggregate Index	-1.15%	-0.95%	0.64%	-1.46%		0.39%		0.85%		1.45%		0.82%	
Verus (Net)				5.70%		11.05%		-0.59%		4.18%		4.34%	
Angelo Gordon Opportunistic				5.70%	0.00%	11.05%	0.00%	-0.59%	0.00%	4.18%	0.00%	4.34%	0.00%
BBgBarc US Aggregate Index				-1.46%		0.39%		0.85%		1.45%		0.82%	
Verus (Net)				7.54%		3.13%		4.96%		6.13%		4.58%	
Angelo Gordon STAR Fund (Net)				7.54%	0.00%	3.13%	0.00%	4.96%	0.00%	6.13%	0.00%	4.58%	0.00%
BBgBarc US Aggregate Index				-1.46%		0.39%		0.85%		1.45%		0.82%	
Verus	1.56%	-0.09%	-0.34%	1.14%		1.79%		2.07%		1.95%		2.45%	
Beach Point Select (Net)	1.56%	-0.09%	-0.34%	1.14%	0.00%	1.79%	0.00%	2.07%	0.00%	1.95%	0.00%	2.45%	0.00%
BBgBarc BA Intermediate HY	-0.06%	-0.97%	-0.47%	-1.49%		0.15%		1.72%		2.50%		1.76%	
Verus	1.73%	-0.43%	-0.23%	1.05%		0.33%		1.40%		1.83%		3.84%	
Brigade Capital (Net)	1.73%	-0.43%	-0.26%	1.03%	0.02%	0.28%	0.05%	1.44%	-0.04%	1.77%	0.06%	3.77%	0.01%
BBgBarc BA Intermediate HY	-0.06%	-0.97%	-0.47%	-1.49%		0.15%		1.72%		2.50%		1.76%	
50% BBgBarc HY/ 50% Bank Loan	0.84%	-0.34%	-0.14%	0.36%		0.82%		1.52%		1.46%		1.95%	
Verus	-0.38%	-0.96%	0.70%	-0.64%		0.82%							
PIMCO Diversified	-0.38%	-0.96%	0.70%	-0.64%	0.00%	0.82%	0.00%						
Blended PIMCO Diversified Index	-0.15%	-1.21%	0.10%	-1.26%		0.75%							
BBgBarc BA Intermediate HY	-0.06%	-0.97%	-0.47%	-1.49%		0.15%							
Verus	1.58%	-0.60%	1.03%	2.01%		-1.31%		1.25%		-0.98%		5.27%	
Franklin Templeton Investments	1.58%	-0.60%	1.03%	2.01%	0.00%	-1.32%	0.01%	1.25%	0.00%	-0.98%	0.00%	5.27%	0.00%
BBgBarc Multiverse Index	1.23%	-0.93%	1.00%	1.29%		1.06%		1.88%		2.64%		1.90%	
Verus				1.46%		4.67%		2.69%		2.65%		2.06%	
TCP Direct Lending VIII				1.46%	0.00%	4.67%	0.00%	2.69%	0.00%	2.65%	0.00%	2.06%	0.00%
Cliffwater Direct Lending Index				2.02%		1.97%		1.72%		2.50%		1.76%	

Manager Performance Comparison (Gross of Fees)

Period Ending: March 31, 2018

	Jan	Feb	Mar	1st Qtr. 2018	Difference	4th Qtr. 2017	Difference	3rd Qtr. 2017	Difference	2nd Qtr. 2017	Difference	1st Qtr. 2017	Difference
Verus				2.17%		0.51%		-4.64%					
White Oak Yield				2.17%	0.00%	0.51%	0.00%	-4.64%	0.00%				
Cliffwater Direct Lending Index				2.02%		1.97%		1.72%					
Verus	0.67%	-3.03%	1.19%	-1.21%		4.72%		4.47%		1.46%		4.57%	
AQR GRP, 10% Volatility (Net)	0.67%	-3.03%	1.19%	-1.21%	0.00%	4.72%	0.00%	4.47%	0.00%	1.46%	0.00%	4.57%	0.00%
60% R3000/ 40% BBgBarc Agg	2.88%	-2.58%	-0.90%	-0.67%		3.61%		3.21%		2.39%		3.76%	
60% MSCI World/ 40% BBgBarc Glb	2.70%	-2.59%	-0.95%	-0.91%		3.93%		3.08%		2.80%		3.98%	
Verus	-0.03%	-2.78%	1.27%	-1.58%		4.38%		2.98%		1.60%		4.16%	
PanAgora (Net)	-0.03%	-2.78%	1.27%	-1.58%	0.00%	4.38%	0.00%	2.98%	0.00%	1.60%	0.00%	4.16%	0.00%
60% R3000/ 40% BBgBarc Agg	2.88%	-2.58%	-0.90%	-0.67%		3.61%		3.21%		2.39%		3.76%	
60% MSCI World/ 40% BBgBarc Glb	2.70%	-2.59%	-0.95%	-0.91%		3.93%		3.08%		2.80%		3.98%	
Verus	1.21%	-4.06%	-0.99%	-3.86%		1.33%		3.99%		-1.19%		1.42%	
AQR DELTA XN (Net)	1.21%	-4.06%	-0.99%	-3.86%	0.00%	1.33%	0.00%	3.99%	0.00%	-1.19%	0.00%	1.43%	0.00%
Labor + 4%	0.38%	0.44%	0.47%	1.29%		1.46%		1.22%		1.29%		1.11%	
Verus	1.46%	-2.07%	-1.24%	-1.88%		1.87%		0.34%		0.81%		0.59%	
Aberdeen Standard GARS (Net)	1.46%	-2.07%	-1.24%	-1.88%	0.00%	1.87%	0.00%	0.34%	0.00%	0.81%	0.00%	0.59%	0.00%
Labor + 4%	0.38%	0.44%	0.47%	1.29%		1.46%		1.22%		1.29%		1.11%	
Verus				2.42%		2.29%		1.48%		1.88%		2.55%	
INVESCO Real Estate				2.46%	-0.04%	2.26%	0.00%	1.46%	0.02%	1.88%	0.00%	2.54%	0.00%
NCREIF NFI ODCE Index				2.20%		2.07%		1.87%		1.70%		1.77%	
Verus				2.67%		2.09%		5.56%		1.85%		2.90%	
Invesco US Val IV				2.67%	0.00%	2.09%	0.00%	5.56%	0.00%	1.85%	0.00%	2.90%	0.00%
NCREIF NFI ODCE Index				2.20%		2.07%		1.87%		1.70%		1.77%	
NCREIF CEVA 1Q Lag - NET				3.41%		3.00%		2.61%		1.36%		2.75%	
Verus				1.09%		2.52%		-0.84%					
PGIM RE US Debt Fund				1.09%	0.00%	2.52%	0.00%	-0.84%	0.00%				
NCREIF NFI ODCE Index				2.20%		2.07%		1.87%					
Verus	-0.45%	-0.61%	0.82%	-0.25%		1.25%		0.76%		-0.58%		1.13%	
Brown Brothers Harriman	-0.45%	-0.62%	0.81%	-0.27%	0.02%	1.26%	0.00%	0.76%	0.00%	-0.60%	0.02%	1.13%	0.00%
BBgBarc U.S Tips	-0.86%	-0.97%	1.05%	-0.79%		1.26%		0.86%		-0.40%		1.26%	

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
03/31/2018	17.921	10.888	5.334	3.023	0
12/31/2017	17.679	9.979	5.011	2.793	0
9/30/2017	17.696	9.979	5.011	2.793	0
6/30/2017	15.834	9.267	4.517	2.573	0
3/31/2017	15.834	9.267	4.517	2.573	0
12/31/2016	15.239	9.375	4.416	2.520	0
9/30/2016	15.239	9.375	4.416	2.520	0
6/30/2016	15.358	9.43	4.548	2.591	0
3/31/2016	15.358	9.43	4.548	2.591	0
12/31/2015	16.507	9.968	5.069	2.917	0
9/30/2015	16.507	9.968	5.069	2.917	0
6/30/2015	15.288	9.09	4.506	2.596	0
3/31/2015	15.356	9.083	4.491	2.577	0
12/31/2014	15.356	9.083	4.491	2.577	0

Number in billion USD

InvestorForce Report reflects changes in the MSCI breakpoints once MSCI publishes new breakpoints. For months when no new breakpoints are published always the last breakpoints are applied. Changes usually but always happen around re-balancing of the indexes. Some index reviews do not contain changes to the market-cap breakpoints.

1.2 MSCI DEVELOPED AND EMERGING MARKET BREAKPOINTS

In case of MSCI Indexes to define the Size - Segment Indexes for a market, the following free float - adjustedmarket capitalization Market Coverage Target Ranges are applied to the Market Investable Equity Universe:

Break Point	Companies included
Large Cap Index	70% ±5%
Standard Index*	85% ±5%
Investable Market Index**	99%+1% or -0.5%

* Standard Index (Large+Mid)

**Investable Market Index (Large+Mid+Small)

MSCI Country Classification can be found here: <https://www.msci.com/market-classification>

For Emerging Markets, the Global Minimum Size Reference is set at *one-half* the corresponding level of full market capitalization used for the Developed Markets for each size-segment.

As Of	Large Cap DM	Large Cap EM	Medium Cap DM	Medium Cap EM	Small Cap
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

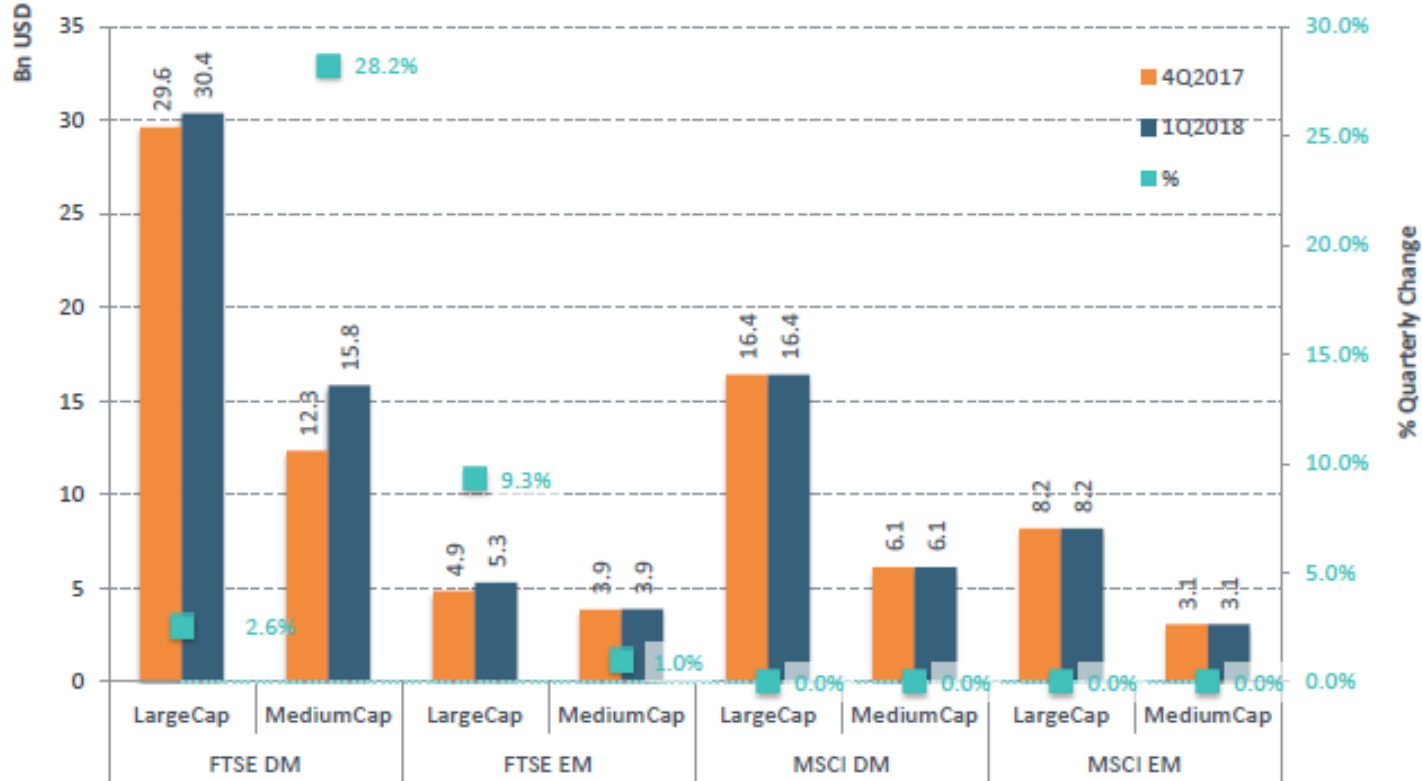
Period Ending: March 31, 2018

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

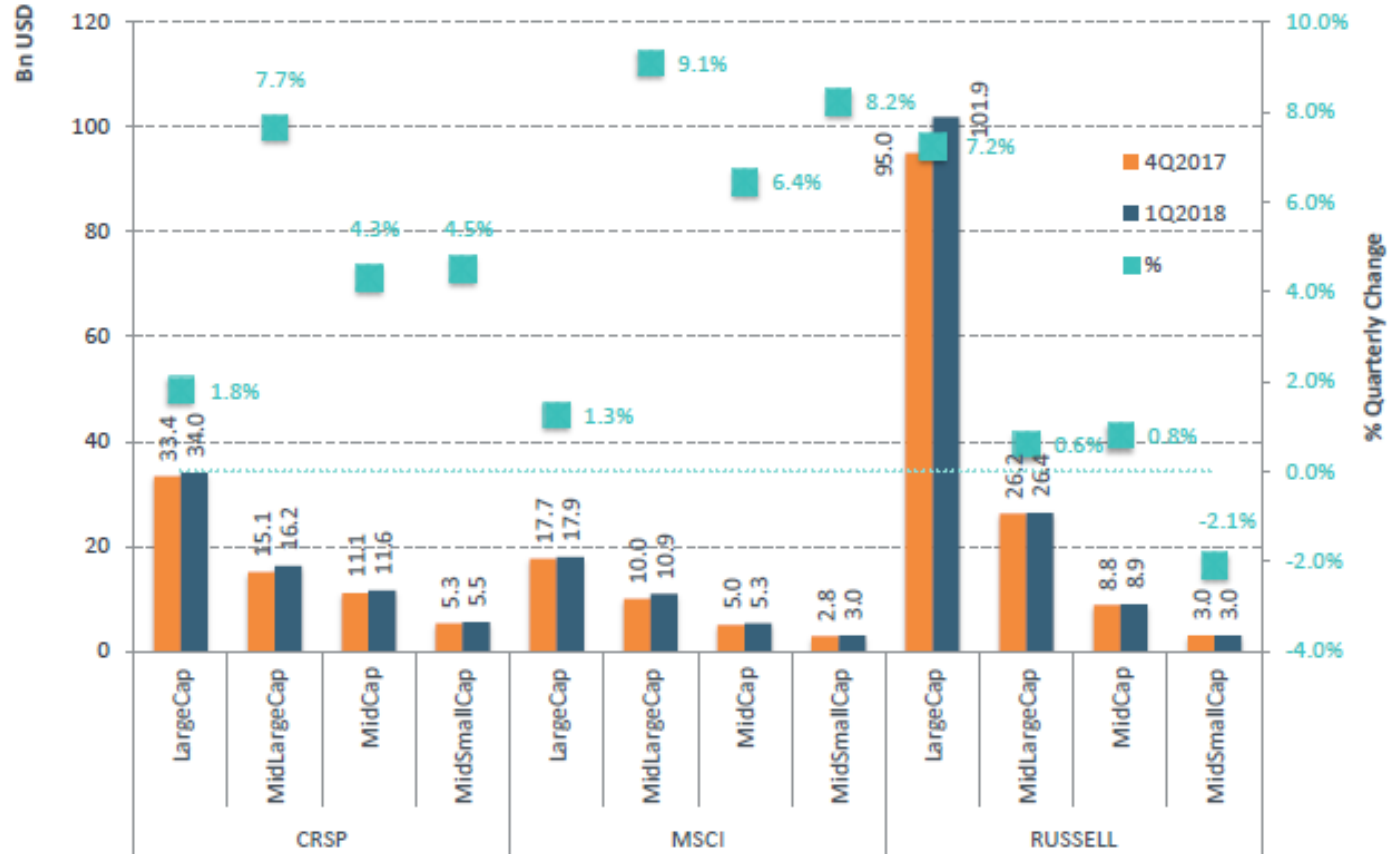
BREAKPOINT TRENDS

1Q2018 DEVELOPED AND EMERGING MARKET BREAKPOINT CHANGES



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.

1Q2018 US MARKET BREAKPOINT CHANGES



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



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

2ND QUARTER 2018
Investment Landscape

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SAN FRANCISCO 415-362-3484

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1st quarter summary

THE ECONOMIC CLIMATE

- The U.S. economy is expected to grow at around 2.2% in Q1. Economists expect a slightly quicker rate of growth throughout the year. We believe that this *middle-of-the-road* expansion – characterized as not too fast and not too slow – may allow the U.S. economy to continue expanding for longer than expected. [p. 8](#)
- The U.S. has enacted a 25% tariff on steel and a 10% tariff on aluminum, which went into effect on March 23rd. The U.S. also engaged with China over allegations of asymmetrical trade policies and intellectual property theft. [p. 18, 19](#)

PORTFOLIO IMPACTS

- Global economic growth has improved – low inflation, strong employment, and accommodative foreign central bank policies have been supportive of equity prices. In the U.S., monetary tightening has yet to have a major impact on equities. [p. 17](#)
- Concerns over increasing trade protectionism weighed on financial markets. The tariffs placed on steel and aluminum are not likely to have a material impact on asset prices, but escalating tensions and retaliatory measures could have a negative impact on global growth. [p. 18, 19](#)

THE INVESTMENT CLIMATE

- Excitement and optimism over tax cuts helped lead equities higher to begin the year. However, markets stumbled in February – falling roughly 10%. Equities recovered much of the losses throughout the quarter, but then fell back to their lows at the end of March. [p. 29](#)
- 2018 is expected to be a banner year for U.S. corporate profits. Earnings for the calendar year are forecast to grow 17.3%, with 7.3% revenue growth. These 2018 expectations may already be priced in. [p. 29](#)
- February’s market correction appeared isolated to the equity markets. “Risk-off” selling that often accompanies market drawdowns was not apparent – credit spreads, U.S. Treasuries, and gold, reacted minimally. [p. 28](#)

ASSET ALLOCATION ISSUES

- Upward price momentum in equities has diminished following the February market correction. Investor sentiment is less positive, but the global economic and earnings backdrop remains intact. We believe a neutral or mild risk overweight is warranted in this environment. [p. 32](#)
- Equity volatility spiked in February, ending the period of extreme calm that investors experienced since the beginning of 2017. The VIX Index averaged 20.7 during the last two months of the quarter. [p. 35, 36](#)

Changing market dynamics suggest a neutral or mild risk overweight may be warranted

What drove the market in Q1?

“Record high increase in S&P 500 EPS estimates for Q1 2018”

CHANGE IN EPS ESTIMATE DURING THE QUARTER (NET)

Q4 16	Q1 17	Q2 17	Q3 17	Q4 17	Q1 18
-2%	-4%	-2%	-4%	0%	+7%

Article Source: FactSet, March 29th, 2018

“U.S. stocks sell off on concerns about trade”

U.S. TRADE DEFICIT BY COUNTRY (\$ BILLIONS)

China	Japan	Germany	Italy	S. Korea	India
-375	-69	-64	-32	-23	-23

Article Source: WSJ, March 23rd, 2018

“Volatility index spikes by largest-ever [one day] amount”

VIX Index (Average)

Oct	Nov	Dec	Jan	Feb	Mar
10.1	10.5	10.2	11.1	22.5	19.0

Article Source: Bloomberg, February 5th, 2018

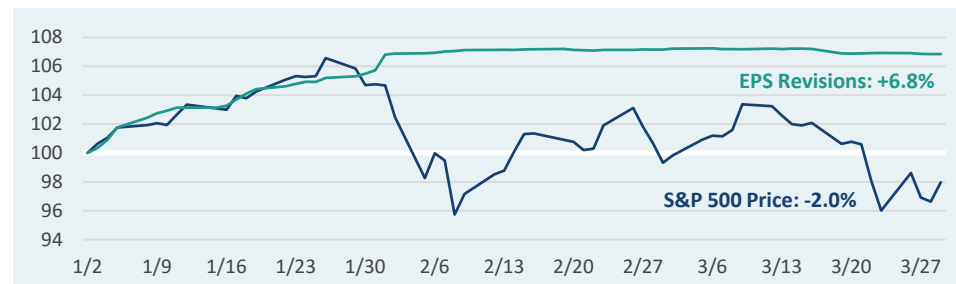
“U.S. Treasury yields rise to a new 4-year high as inflation concerns drag on”

U.S. 10-Year Treasury Yield

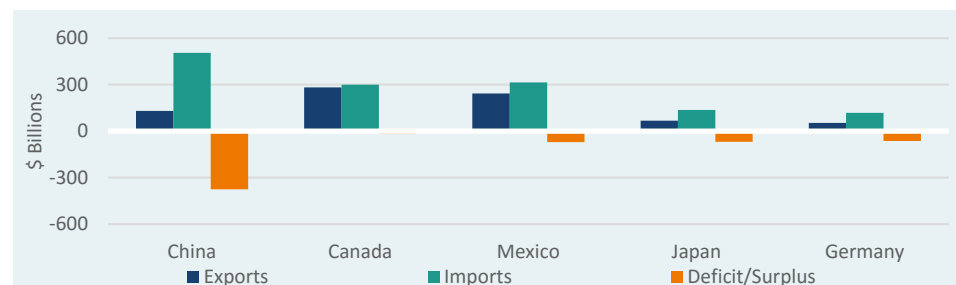
Oct	Nov	Dec	Jan	Feb	Mar
2.38%	2.41%	2.41%	2.71%	2.86%	2.74%

Article Source: USA Today, February 12th, 2018

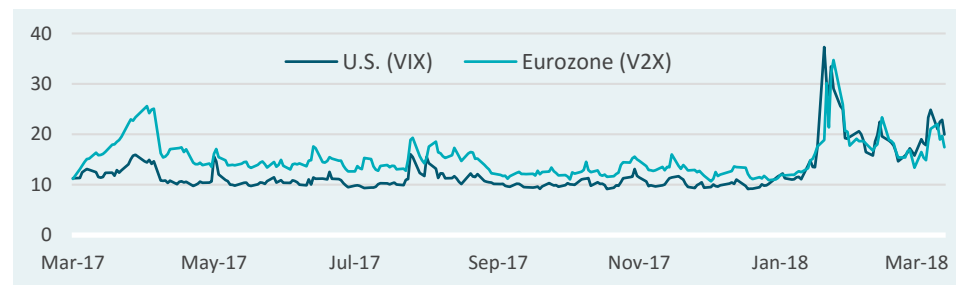
S&P 500 PRICE INDEX AND Q1 EPS ESTIMATES (INDEXED TO 100)



U.S. TRADE DEFICIT BY COUNTRY

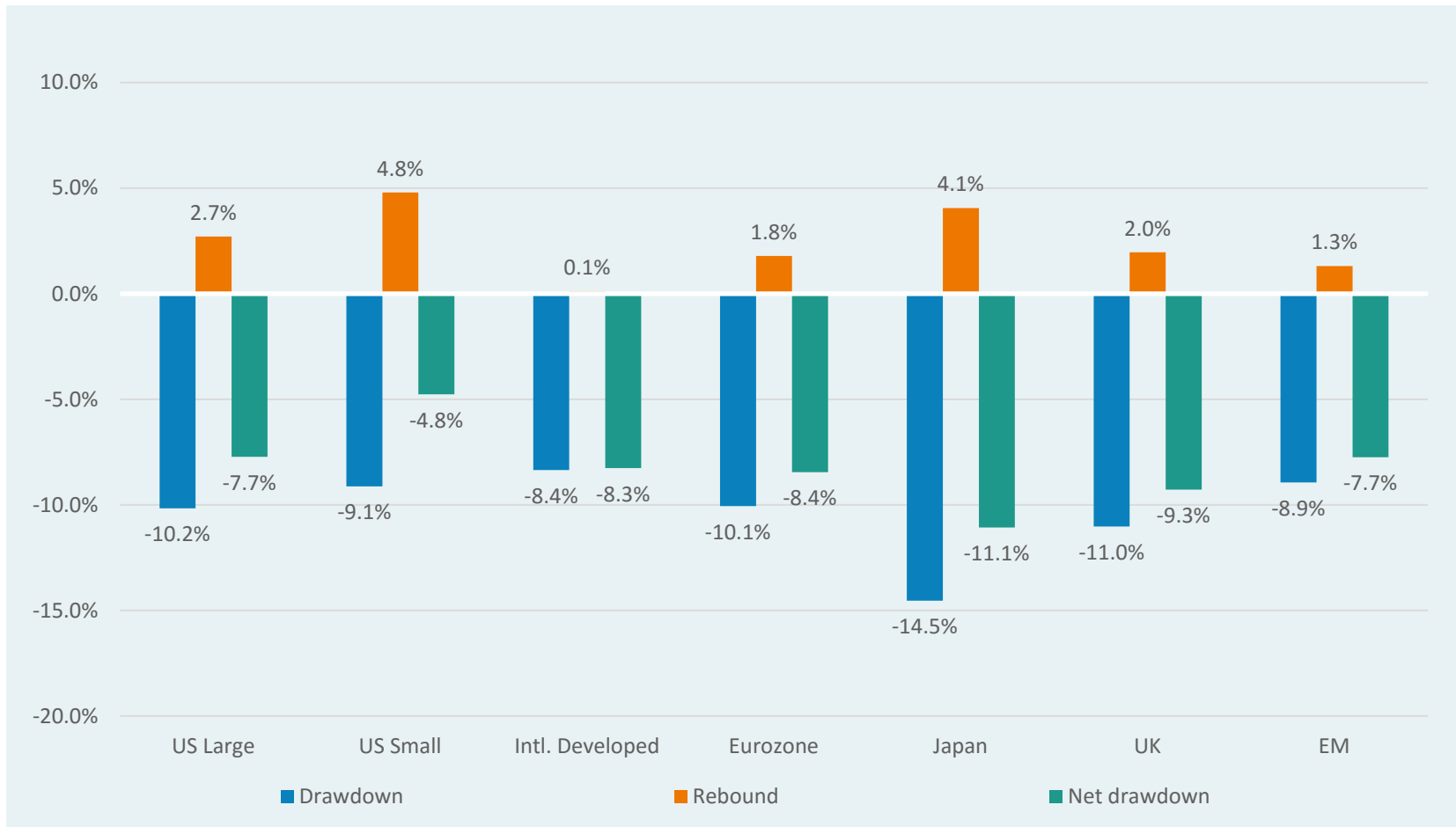


IMPLIED VOLATILITY



The return of volatility

PEAK TO TROUGH (LOCAL RETURNS)



Timeframe includes the February drawdown and subsequent "bottom" of each market, then recovery through 3/31/18

Economic environment

U.S. economics summary

- Economic growth remained near expansion highs in the fourth quarter. U.S. real GDP growth was 2.6% from the previous year. Consumer spending and investment pushed the economy ahead, while falling exports were a drag on growth.
- The U.S. enacted a 25% tariff on steel and 10% tariff on aluminum, which went into effect March 23rd. The U.S. has engaged with China over allegations of asymmetrical trade policies and intellectual property theft, creating concerns over the risks of a trade war.
- Additions to U.S. payrolls averaged 202,000 per month in the first quarter, above the expansion average.
- In recent years, the U.S. has seen discouraged and part-time workers drawn back to full-time employment. This effect can be

quantified by the shrinking difference between U-6 and U-3 unemployment figures. The difference between these two measures fell to 3.9%, matching expansion lows.

- Core CPI inflation moved from 1.8% to 2.1% YoY during the quarter, the highest rate in more than a year. Prices jumped in March primarily due to the low base effect from an unexpected drop in wireless telecom prices one year ago.
- The Fed raised interest rates on March 21st to 1.50-1.75%. Comments made during the March meeting suggest the FOMC expects continued moderate economic activity, spending, and business investment. Unsurprisingly, the Committee stated that the U.S. inflation rate is expected to stabilize at the 2% target over the near-term.

	Most Recent	12 Months Prior
GDP (YoY)	2.6% <i>12/31/17</i>	1.8% <i>12/31/16</i>
Inflation (CPI YoY, Core)	2.1% <i>3/31/18</i>	2.0% <i>3/31/17</i>
Expected Inflation (5yr-5yr forward)	2.2% <i>3/31/18</i>	2.2% <i>3/31/17</i>
Fed Funds Target Range	1.50 – 1.75% <i>3/31/18</i>	0.75 – 1.00% <i>3/31/17</i>
10 Year Rate	2.8% <i>3/31/18</i>	2.4% <i>3/31/17</i>
U-3 Unemployment	4.1% <i>3/31/18</i>	4.5% <i>3/31/17</i>
U-6 Unemployment	8.0% <i>3/31/18</i>	8.8% <i>3/31/17</i>

GDP growth

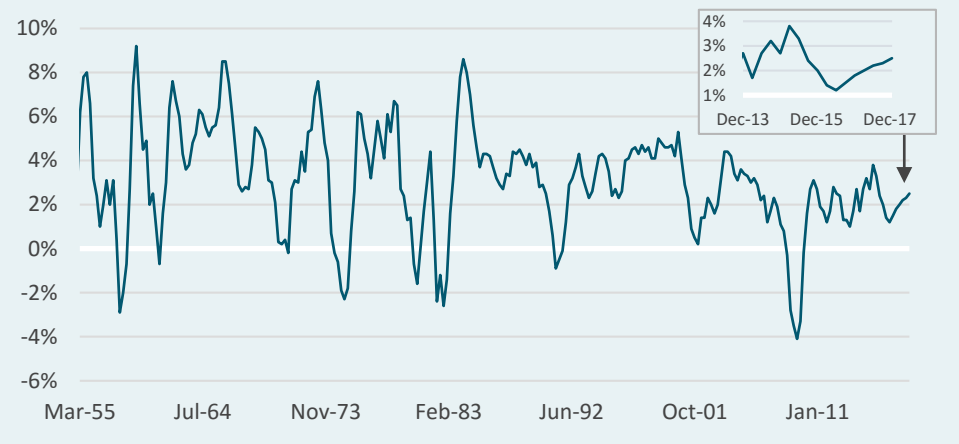
Economic growth accelerated further in the fourth quarter of 2017. Real GDP increased 2.6% from the previous year (2.9% annualized quarterly rate), driven by consumer spending. The pace of growth was faster than the expansion average of 2.2%. Consumer spending contributed 2.8% to the quarterly growth rate, partly due to a strong holiday retail season. Corporate capex spending slowed in Q4, but was still the second largest contributor to the overall growth rate at 1.3%. As discussed last quarter, changes to the tax code could reinforce the current positive trend in fixed business investment.

The economy is expected to experience slower but still moderate growth in the first quarter – the consensus estimate is 2.2%, according to Bloomberg. First quarter growth has underwhelmed the past few years, which may occur again this year. However, expectations for 2018 calendar growth remain robust at 2.8%.

The economy experienced above-trend growth in 2017

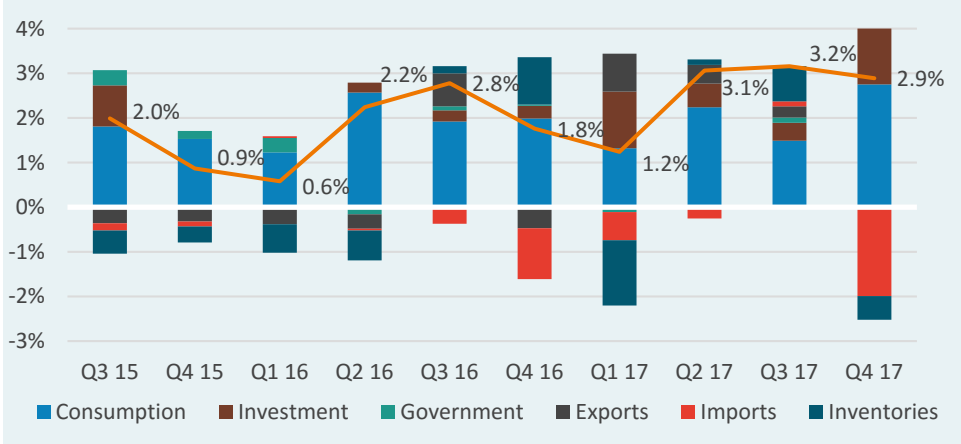
While we continue to see mild pressures building, such as firming inflation, rising interest rates, and tightening in the labor market, there do not appear to be clear signs of economic overheating.

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 12/31/17

U.S. GDP COMPONENTS



Source: BEA, annualized quarterly rate, as of 12/31/17

Inflation

Core CPI inflation moved from 1.8% to 2.1% YoY during the quarter, the highest rate in more than a year. Prices jumped in March primarily due to the low base effect from an unexpected drop in wireless telecom prices one year ago.

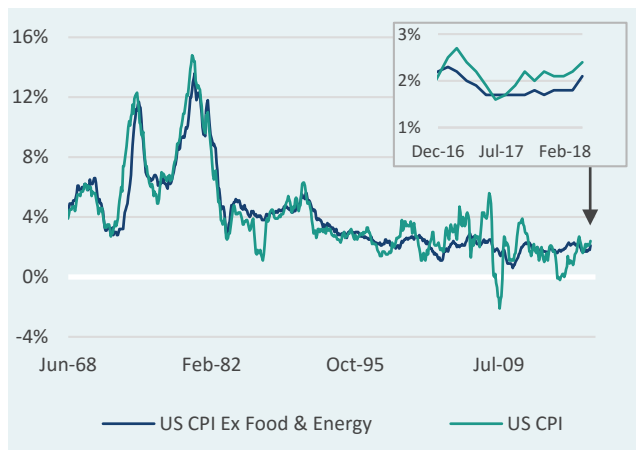
Market inflation expectations have recovered a bit since the deflation scare in 2015 that coincided with an energy driven slump in inflation figures. The 10-year TIPS breakeven inflation rate moved marginally from 2.0% to 2.1%. Investors expect inflation to stay relatively muted

over the longer-term – recent mild rises in inflation may not be indicative of a trend.

While inflation does not actually appear to be bubbling up in most global economies, it is interesting to note that investors are generally expecting higher inflation. Sentiment has transitioned from fear of deflation to fear of inflation, which has broad implications for the markets – central bank confidence in raising rates, and pricing across the fixed income markets, to name a few.

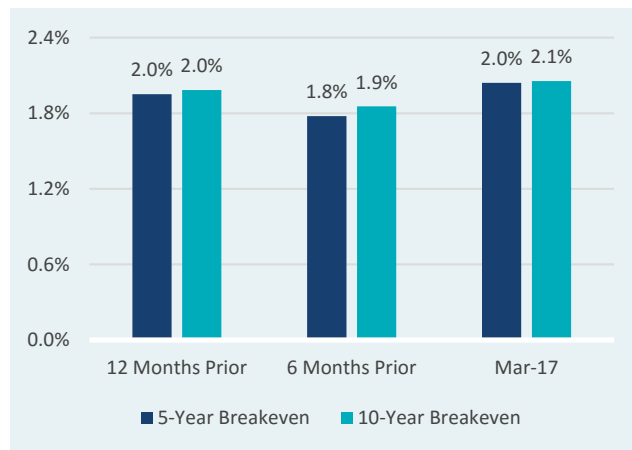
Fears of rising inflation emerged during the quarter

U.S. CPI (YOY)



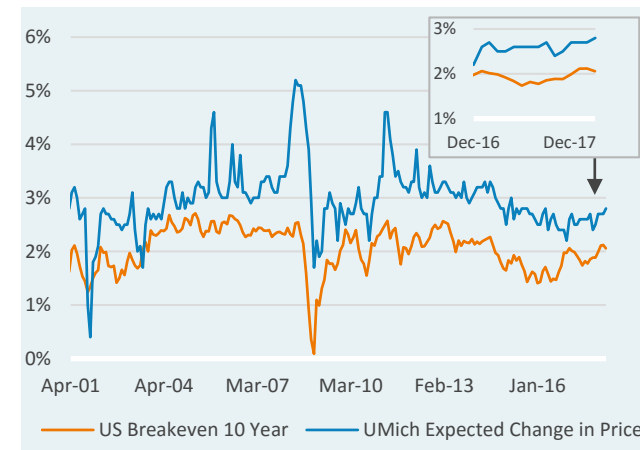
Source: FRED, as of 3/31/18

U.S. TIPS BREAKEVEN RATES



Source: Bloomberg, as of 3/31/18

INFLATION EXPECTATIONS



Source: Bloomberg, as of 3/31/18

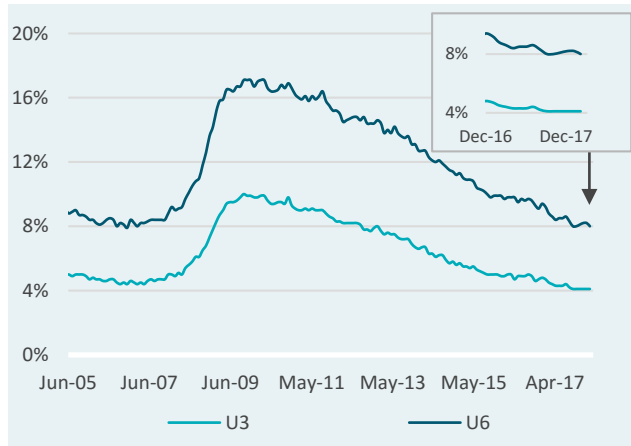
Labor market

Conditions in the U.S. labor market tightened slightly in Q1. Unemployment kept steady at 4.1%, while the unemployment rate that includes discouraged and part time workers fell to 8.0% from 8.2%. In Q1, 202,000 jobs were created per month - slightly stronger than the expansion average.

As we have discussed in recent years, continued labor market slack, not captured in the popular U-3 unemployment figure, has contributed to slower wage gains. Another key contributor to modest wage gains has been weak improvements in business productivity.

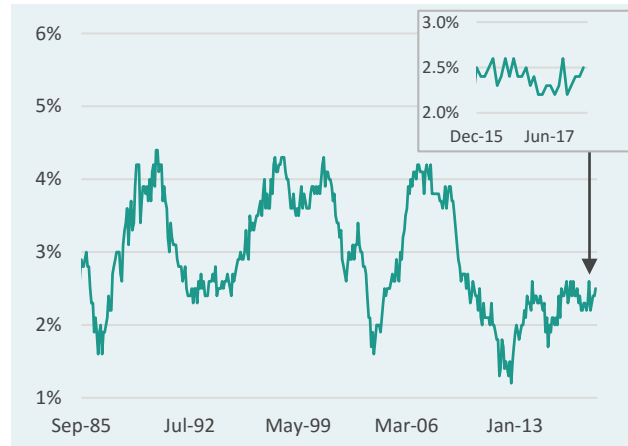
The degree to which U.S. businesses are able to become more efficient has an impact on U.S. employee wages through time. Efficiency is also referred to as *productivity*. As businesses realize productivity gains they are able to pass on some of these gains to employees in the form of higher wages, since output per employee has increased. If businesses are not becoming more productive, this makes it difficult to sustainably raise employee pay. In the current economic expansion, businesses have realized minimal productivity growth, which is likely a contributor to tepid wage growth.

UNEMPLOYMENT RATE



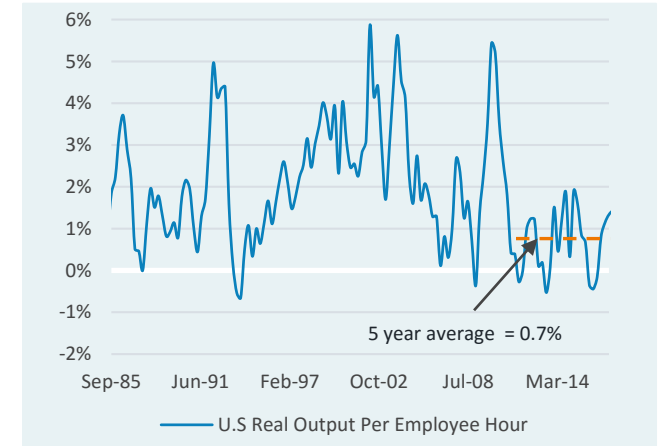
Source: FRED, as of 3/31/18

AVERAGE HOURLY EARNINGS (YOY)



Source: Bloomberg, as 2/28/18

U.S. PRODUCTIVITY GROWTH



Source: FRED, as of 12/31/17

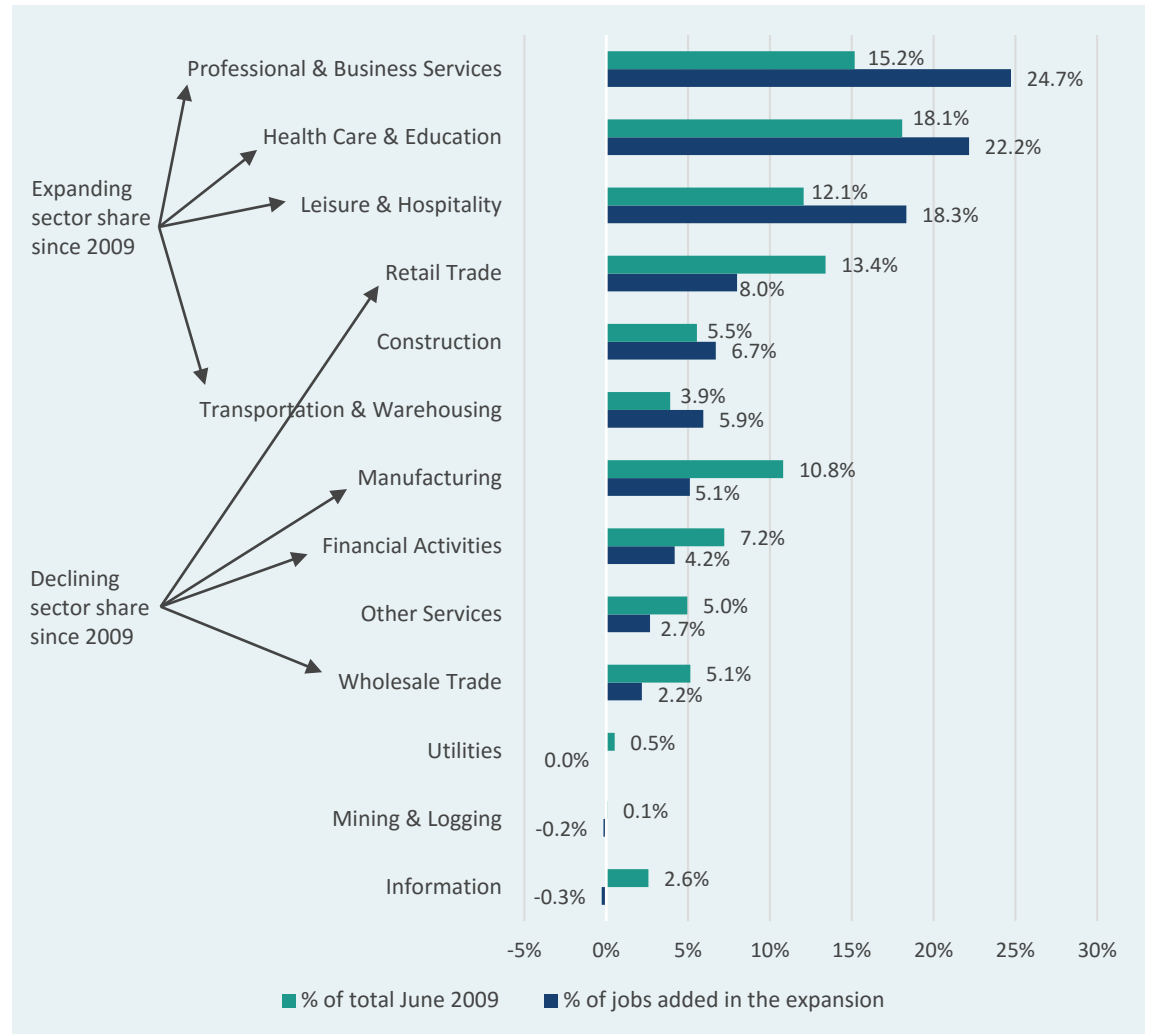
Job creation since the financial crisis

Since the end of the global financial crisis, the U.S. has added more than 17 million workers to the labor force and the unemployment rate has fallen from 9.9% to 4.1%. During this time the composition of the workforce has changed.

Three broad sectors have experienced outsized gains in employment compared to their sizes in June of 2009: Professional and Business Services, Health Care & Education, and Leisure & Hospitality.

Disproportionate gains in the last two sectors have led some to question the quality of jobs that are being added because they are typically low paid positions. On average, Leisure & Hospitality jobs receive \$15.74 per hour, compared to the national average of \$26.75. The changing sector composition is likely one of many structural factors (i.e. globalization and automation) limiting wage growth in the current cycle.

This exercise also created a useful lens to view recent employment trends in terms of the cyclicality of each sector. Manufacturing and construction have historically been the most cyclical sectors and are both growing above trend over the past year, indicating a recent pickup in hiring. This data confirms acceleration in manufacturing surveys, such as PMIs.



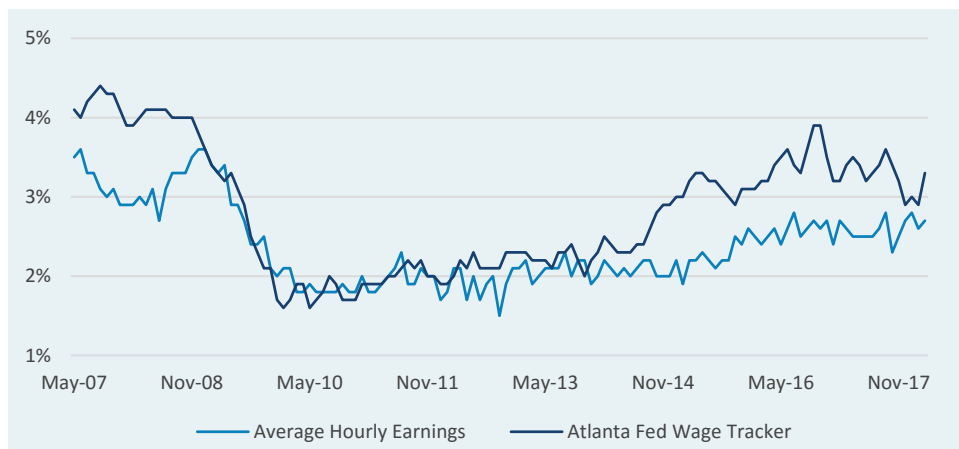
Source: FRED, as of 2/28/18

Wages

Muted wage growth has been heavily scrutinized during the expansion due to its historically strong relationship with the unemployment rate. Although wage growth has accelerated over the past few years, we have yet to experience a material rise in wages that would be consistent with a tight labor market. The broad unemployment rate (U-6, 8.0%) implies wage growth of around 4.5% versus actual wage growth of 3.3% based on a historical regression analysis. Much like our view on overall inflation, we believe cyclical forces may place modest upward pressures on wages, but at a gradual pace.

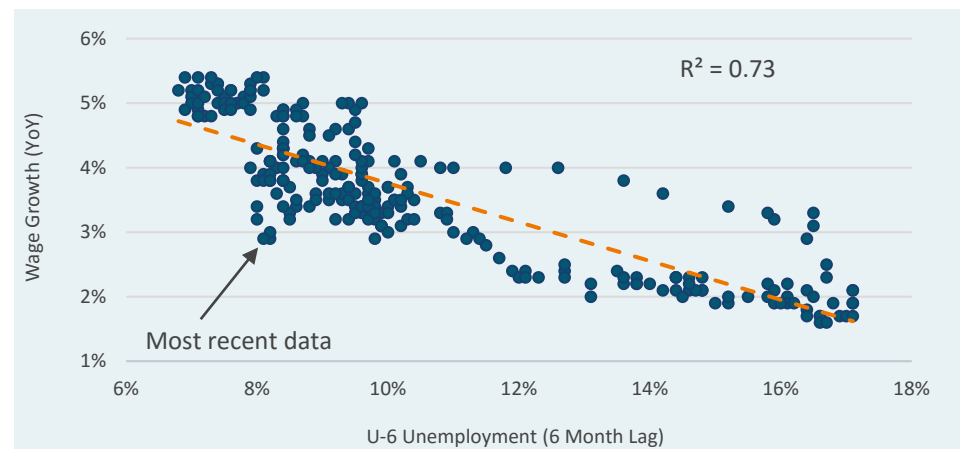
An interesting development during the quarter was a shift in the market narrative surrounding wage growth. In January, a positive surprise in average hourly earnings (mainly caused by a fall in aggregate hours worked during the month) sparked concerns that a faster rate of growth might result in quicker-than-expected monetary tightening. The surprise coincided with a material increase in Treasury yields, although many factors likely influenced these moves. Earlier in the expansion, many market participants voiced concerns that low wage growth was a potential indicator of economic weakness.

WAGE GROWTH (YOY)



Source: Bloomberg, Atlanta Fed, as of 3/31/18 (see appendix)

RELATIONSHIP BETWEEN WAGES AND UNEMPLOYMENT



Source: Bloomberg, Atlanta Fed, Verus, as of 3/31/18

The consumer

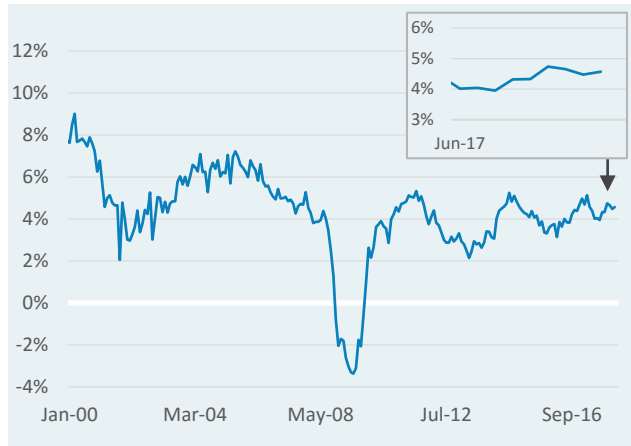
The U.S. continues to be in a *middle-of-the-road* expansion – characterized as not too fast and not too slow. Moderate improvements in wages and employment, conservative spending and borrowing trends, and rising wealth, indicate a sustainable environment going forward for the American consumer.

Current U.S. spending trends appear in-line, or a bit more conservative, than previous economic expansions. Behavior may be partly explained by a more timid pace of employee

wage growth, as well as not-too-distant memories of hardships experienced during the U.S. housing bubble.

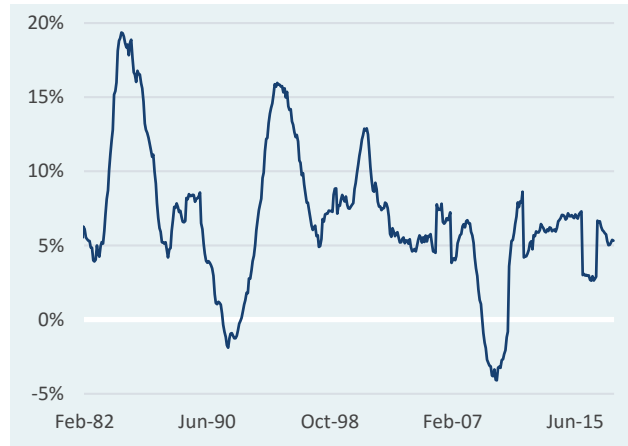
If interest rates continue to rise, this will likely act as a headwind to consumer spending as it becomes more expensive to borrow. Historically, spending patterns tend to ebb and flow through the economic cycle largely through the use of credit (i.e. credit cards, auto loans, home loans).

CONSUMER SPENDING (YOY GROWTH)



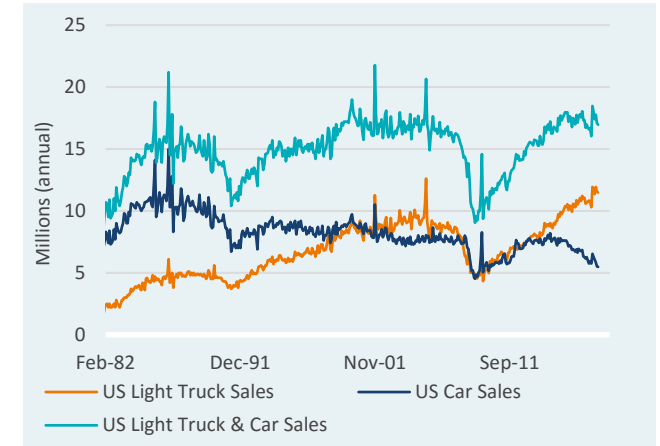
Source: Bloomberg, as of 2/28/18

CONSUMER CREDIT GROWTH (YOY)



Source: FRED, as of 1/31/18

AUTO SALES



Source: Bloomberg, as of 2/28/18

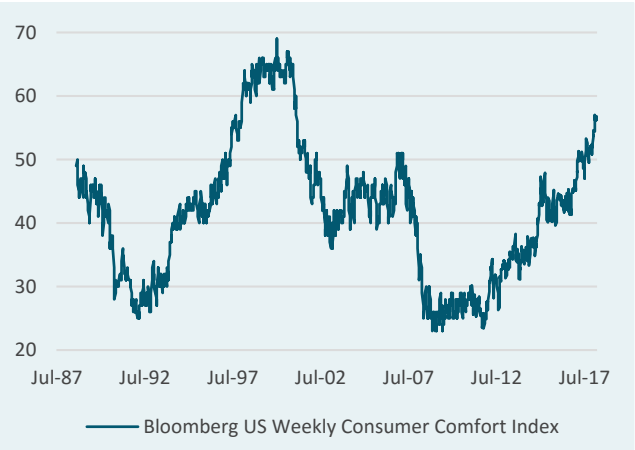
Sentiment

Consumer and business sentiment surveys further improved over the quarter and are now at or above levels of the latest 2001-2007 U.S. economic cycle. The University of Michigan Consumer Sentiment Index now sits at 101.4, which places it in the 91st percentile relative to its own history, since 1978. Consumers’ perception of current economic conditions (employment and wage prospects) are at their highest level since the late 1990s. The Bloomberg Consumer Comfort Index has risen to levels last seen in 2001.

The NFIB Small Business Optimism Index was 107.4 at the end of the quarter – near a record high, although there was a significant drop in businesses’ expectations for the economy. The net number of firms that expect the economy to improve fell from 43% to 32% in March, but this figure was still near historical highs.

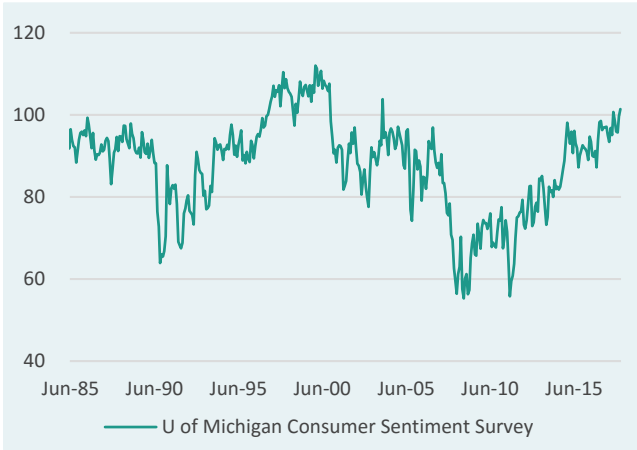
Consumers and small businesses have a positive outlook on the U.S. economy

CONSUMER COMFORT INDEX



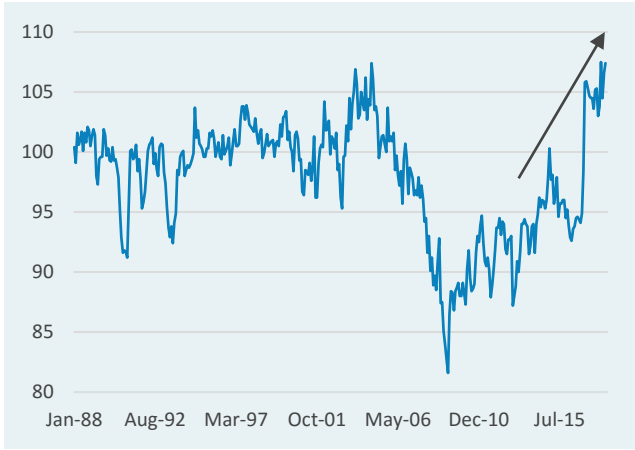
Source: Bloomberg, as of 3/25/18 (see Appendix)

CONSUMER SENTIMENT



Source: University of Michigan, as of 3/31/18 (see Appendix)

NFIB SMALL BUSINESS OPTIMISM INDEX



Source: NFIB, as of 2/28/18 (see Appendix)

Housing

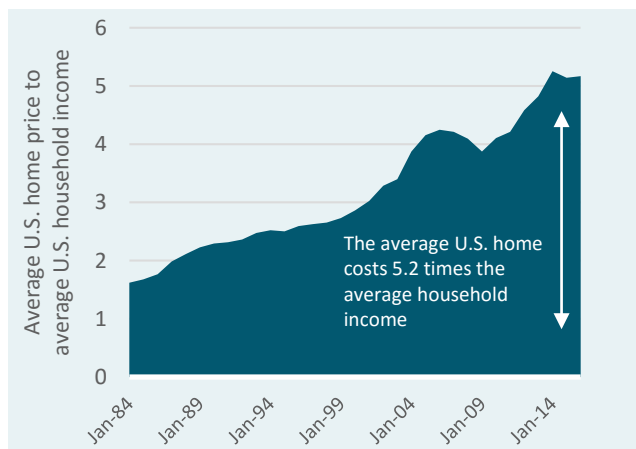
U.S. home prices rose 6.2% YoY, as of January, according to the Case-Shiller National Home Price Index.

Following the U.S. 2008 housing crisis, a combination of lower home prices and ultra-low interest rates made home ownership very affordable. These conditions eventually helped to bring back demand for homes and supported a rise in prices. Today, the price of an American home has returned to, and surpassed, pre-crisis levels. The average U.S. home costs more than 5 times the average household income, which has made purchasing a home increasingly difficult.

This affordability problem could be compounded further if interest rates rise and push mortgage interest rates upward.

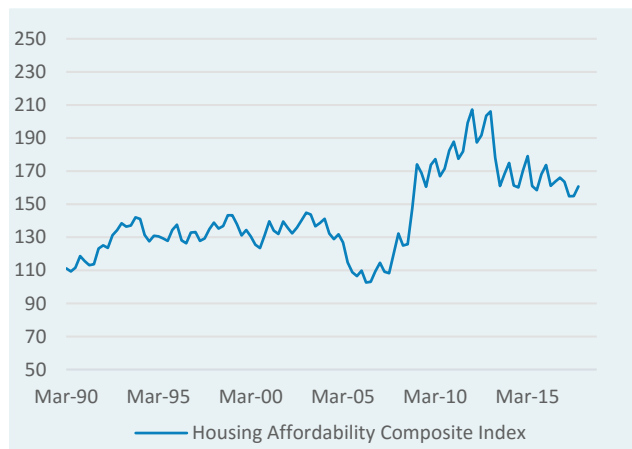
Rising home prices have lopsided effects on consumers. Higher prices add to the wealth of existing homeowners and land owners initially, but also lead to higher property taxes. For prospective homeowners, higher prices translate to a larger required down payment, greater mortgage payments, higher property taxes, and therefore a greater overall drag on standard of living.

HOME PRICE RELATIVE TO HOUSEHOLD INCOME



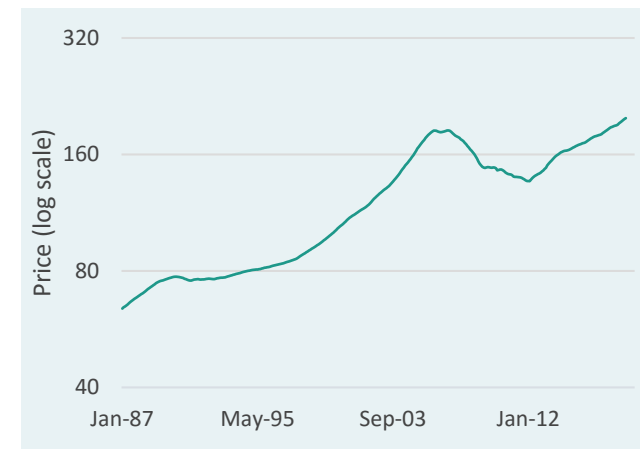
Source: FRED, 2016 census data

HOUSING AFFORDABILITY



Source: National Association of Realtors, as of 12/31/17

U.S. HOME PRICE INDEX



Source: Case-Shiller National Home Price Index, as of 2/28/18

International economics summary

- International economic growth was strong across countries in the fourth quarter, but a combination of recent economic data coming in below expectations and trade concerns created risks to the synchronized global growth narrative.
- The U.S. implemented 25% and 10% tariffs on steel and aluminum imports, respectively. When the tariffs were initially announced the White House pushed for all countries to be subject to them. However, many countries, such as Canada and Mexico, were given exemptions to allow for ongoing negotiations.
- In April, concerns over trade shifted to escalating tensions between the U.S. and China.
- The Eurozone experienced above-trend growth in the fourth quarter at 2.7% YoY, driven by contributions from household spending and fixed capital investment.
- Economic data out of the Eurozone consistently missed expectations in the first quarter. Industrial production was particularly disappointing – the year-over-year rate fell from 5.2% in December to 2.9% in February.
- Global PMIs remained above 50, indicating expansion in the manufacturing sector, although several countries experienced a decline. The Eurozone PMI fell from 60.8 to 56.6 during the quarter.
- The populist Five Star Movement performed better than expected in the Italian general election in March, winning the most seats of any party. However, no party won a majority in Parliament, resulting in the need to form a coalition government. Increasing support for populist governments (i.e. Hungary and Poland) across Europe remains a risk to investors.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.5% <i>12/31/17</i>	2.4% <i>3/31/18</i>	4.1% <i>3/31/18</i>
Western Europe	2.5% <i>12/31/17</i>	1.3% <i>3/31/18</i>	7.4% <i>12/31/17</i>
Japan	2.0% <i>12/31/17</i>	1.5% <i>2/28/18</i>	2.5% <i>2/28/18</i>
BRICS Nations	6.2% <i>12/31/17</i>	2.6% <i>3/31/18</i>	5.6% <i>12/31/17</i>
Brazil	2.1% <i>12/31/17</i>	2.7% <i>3/31/18</i>	12.4% <i>3/31/18</i>
Russia	0.9% <i>12/31/17</i>	2.4% <i>3/31/18</i>	5.0% <i>2/28/18</i>
India	7.2% <i>12/31/17</i>	4.4% <i>2/28/18</i>	8.8% <i>12/31/17</i>
China	6.8% <i>12/31/17</i>	2.1% <i>3/31/18</i>	3.9% <i>12/31/17</i>

International economics

International economic growth continued its upward trend, particularly in emerging countries, where a weaker dollar, higher commodity prices, and stronger external demand has been supportive. Additionally, inflation in emerging economies decelerated to 3.0% in 2017, allowing central banks to cut interest rates. Collectively, the BRICS countries grew by 6.2% in the fourth quarter, the fastest pace since 2012.

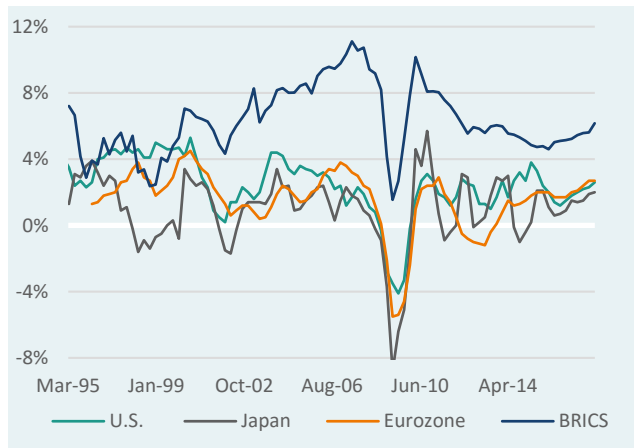
The narrative on international developed economies did not materially change during the quarter – growth accelerated,

inflation remained low, and central banks provided support, but contemplated exit strategies. While inflation is starting to show modest signs of life in the U.S., the Eurozone and Japan are still experiencing inflation well below 2%. In February, year-over-year core CPI growth was 1.0% in both economies.

The European Central Bank continues to express plans to end asset purchases in September and begin raising interest rates sometime next year. The pace of interest rate hikes will likely be heavily dependent on inflation and market reaction to tightening.

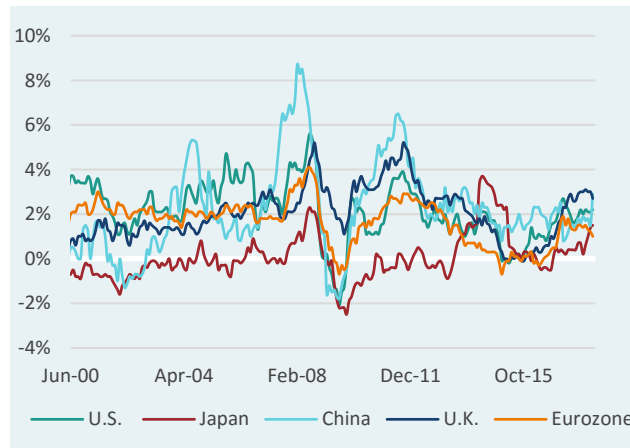
Economic growth improved, especially in emerging markets

REAL GDP GROWTH (YOY)



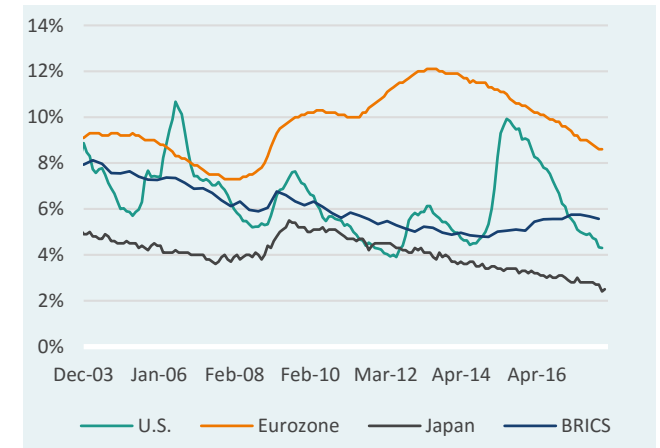
Source: Bloomberg, as of 12/31/17

INFLATION (CPI)



Source: Bloomberg, as of 2/28/18

UNEMPLOYMENT



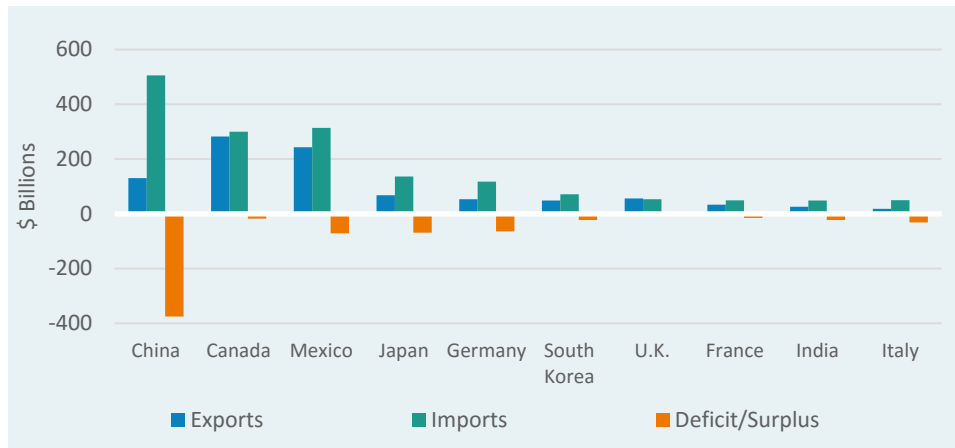
Source: Bloomberg, as of 1/31/18 or most recent release

International trade

The U.S. has enacted a 25% tariff on steel and 10% tariff on aluminum, which went into effect March 23rd, though many U.S. trade partners have been exempted. The U.S. is engaged with China over the significant U.S.-China trade deficit, allegations of China's asymmetrical trade barriers, and the long-term issue of theft of U.S. intellectual property by Chinese companies. The actions of the U.S. administration have stoked fears of a global trade war. While it is broadly agreed that tariffs have a net negative impact on global growth, many hold the view that the U.S. should address these long-running trade issues with China. The motivations and strategy behind the U.S. administration's actions are not yet fully known, but it should not be assumed that the outcome of this process will be negative for the U.S. or the global economy.

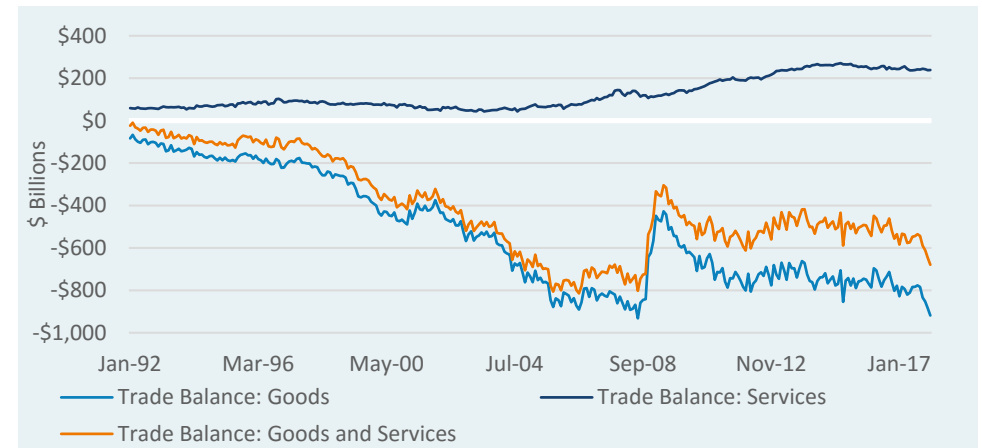
Steel and aluminum represent a small portion of total U.S. imports. On a standalone basis, the economic impact of these tariffs will likely be small. The risk of escalation seems to be the market's primary concern. China-U.S. trade amounts to approximately \$650 Billion annually.

U.S. TRADE BALANCE



Source: U.S. Census Bureau, 2017

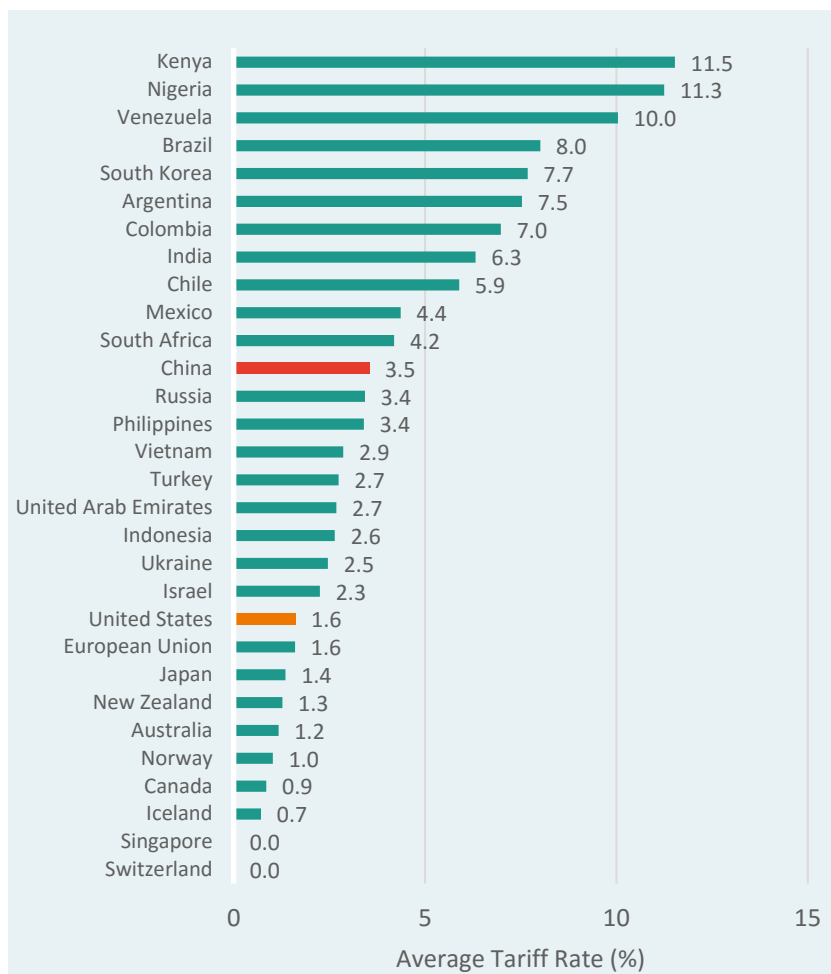
U.S. TRADE – GOODS & SERVICES (ANNUALIZED)



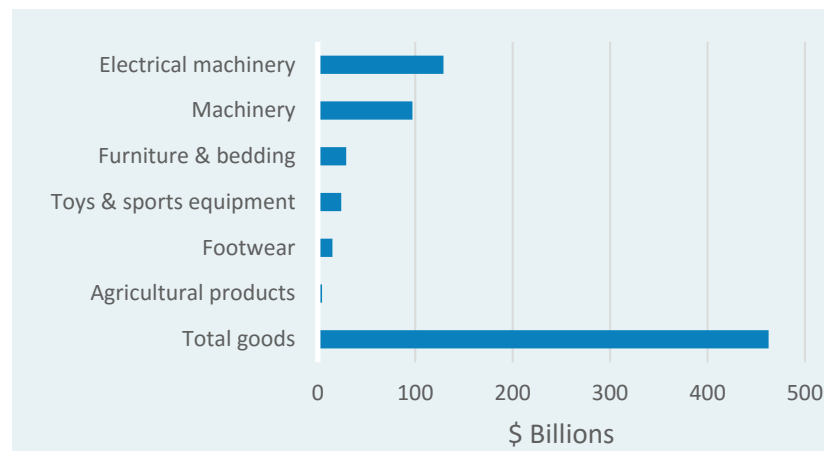
Source: FRED

International trade

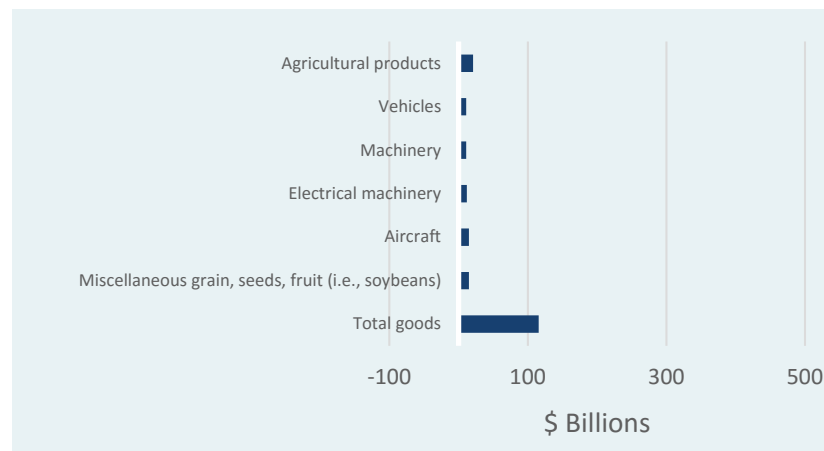
GLOBAL TARIFFS



CHINA EXPORTS TO U.S.



U.S. EXPORTS TO CHINA



Source: World Trade Organization, 2016

Fixed income rates & credit

Interest rate environment

- The Fed raised interest rates by 25 bps to a target range of 1.50% - 1.75% in March, as expected. In his first public comments since taking over as Fed chairman, Jerome Powell's views appeared to support a continuation of gradual monetary tightening.
- According to the Fed dot plot, officials are expecting two additional rate hikes this year, on par with market pricing.
- Long-term Treasury yields rose at the beginning of the year, likely influenced by increasing growth and inflation expectations. The 10-year yield peaked at 2.95% in late February, up 55 bps from year-end. Yields failed to hold these levels, however, and finished the quarter at 2.74%.
- Short-term borrowing costs continued to rise during the quarter, especially in debt tied to Libor. The 3-month USD Libor rate moved steadily higher from 1.7% to 2.3%. Much of this increase was likely mechanical due to record high Treasury bill issuance and repatriation of foreign profits.
- Sovereign yields in developed Europe also ticked up in January, coinciding with yield increases in U.S. Treasuries, but came back down in the last two months of the quarter. German 10-year yields peaked at a two year high of 0.77% in early February before finishing the quarter at 0.50%.
- Developed international central banks remain accommodative compared to the Fed, but they have increasingly hinted towards policy normalization. The ECB is likely next in line to begin monetary tightening by ending asset purchases and raising rates sometime next year. The BOJ has yet to provide any details on ending its stimulus program, but officials have noted internal discussions have begun.

Area	Short Term (3M)	10 Year
United States	1.70%	2.74%
Germany	(0.75%)	0.50%
France	(0.58%)	0.72%
Spain	(0.50%)	1.16%
Italy	(0.43%)	1.79%
Greece	1.31%	4.32%
U.K.	0.49%	1.35%
Japan	(0.17%)	0.04%
Australia	2.03%	2.60%
China	3.12%	3.77%
Brazil	6.31%	9.50%
Russia	6.01%	7.16%

Source: Bloomberg, as of 3/31/18

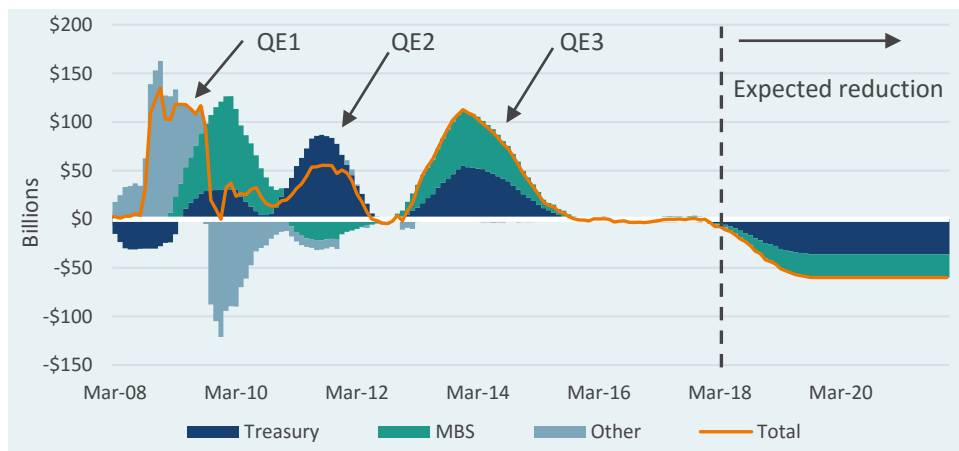
Fed tightening

In Jerome Powell's first meeting as chairman, the Fed hiked interest rates by 25 bps to a target range of 1.50% - 1.75%, as expected. The Fed's forecast for future hikes shifted up slightly based on the dot plot, but Powell's messaging appeared to be similar to the precedent set by Yellen – slow and gradual rate increases coinciding with firming inflation that will eventually reach the 2% target. Markets priced in 25 bps of additional tightening for 2018 during the quarter, and pricing is now on par with Fed expectations of two more rate rises this year. The balance sheet reduction has gone as planned, but we are likely too early in the process to gain insight into its market impact.

The Fed has intentionally tightened slowly, and markets have been able to digest the 150 bps of rate increases thus far. This is consistent with the beginning of past Fed tightening cycles where economic fundamentals were strong. As we move further down this path, additional increases in discount rates will have an increasing impact on the economy and risk assets. However, we believe the Fed will continue to be patient, barring a material change in the inflation environment.

Fed tightening has gone as expected

FED BALANCE SHEET FLOW (12-MONTH CHANGE)



Source: Federal Reserve, as of 3/31/18

FED FUND EXPECTATIONS



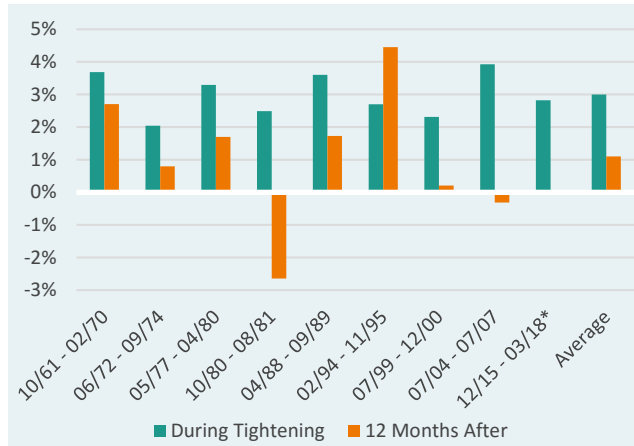
Source: Bloomberg, Federal Reserve as of 3/31/18

The history of monetary tightening

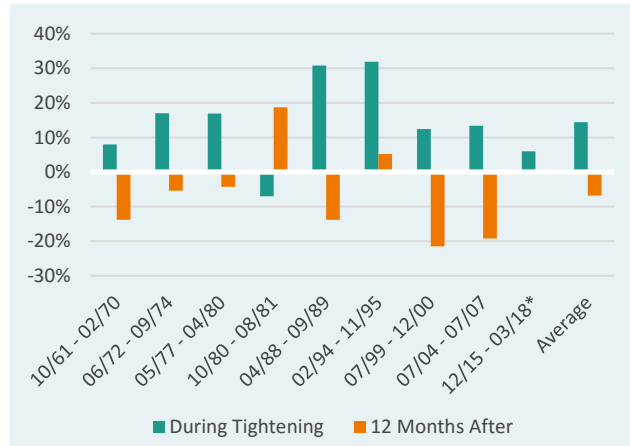
The difficulty of assessing the potential effect of monetary tightening lies in the fact that there are relatively few historical observations to analyze. Since 1959, the Fed has only tightened policy nine times, including the current period which began in December of 2015. There are also unique circumstances in each period, such as the balance sheet reduction coinciding with interest rate increases in this cycle. We looked at three variables: GDP growth, equity earnings growth, and equity performance to get a better understanding of how Fed tightening has historically impacted the economy and financial markets.

As one might expect, GDP growth has been stronger during Fed tightening than in the 12 months following. The same relationship has occurred with equity earnings. This is most likely because the Fed is reacting to underlying economic data rather than driving it. When the economy heats up, the Fed hikes interest rates to avoid overheating, and then stops when things turn over. Equity returns reveal a much more interesting, but muddier picture. On average, equity returns have been higher in the 12 months after tightening than during, although in three of the eight previous periods, equities have experienced a 10% correction.

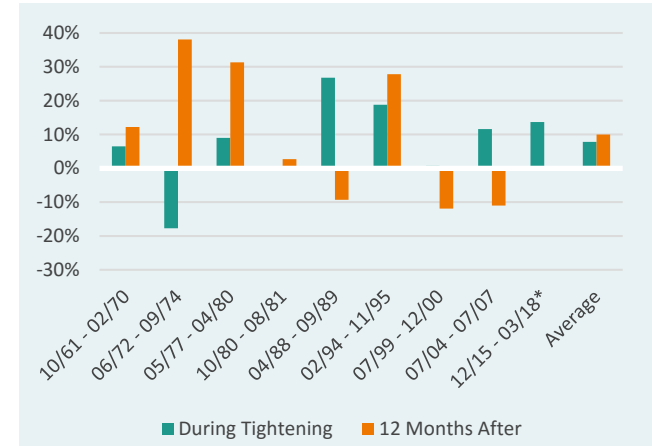
REAL GDP GROWTH



S&P 500 EARNINGS GROWTH



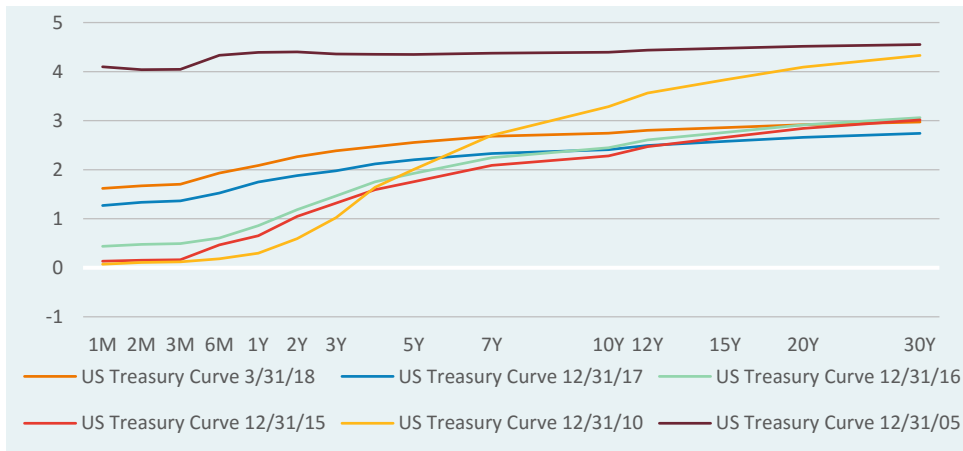
S&P 500 PERFORMANCE



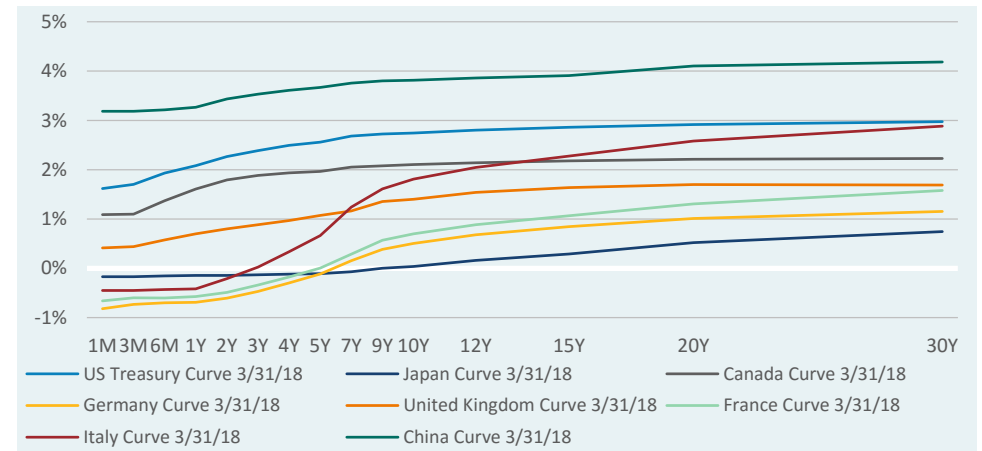
Source: Bloomberg, Verus, analysis started in 1959, all growth calculations are annualized using monthly (earnings/equity performance) or quarterly (GDP) data

Yield environment

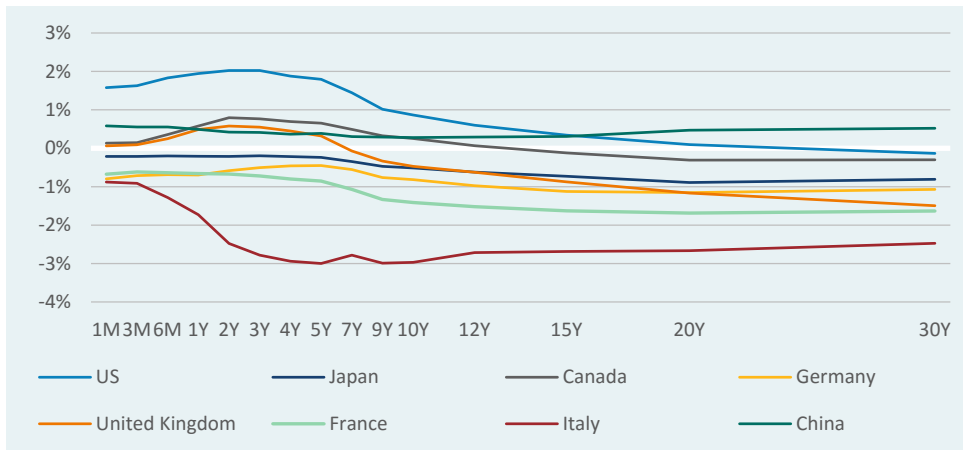
U.S. YIELD CURVE



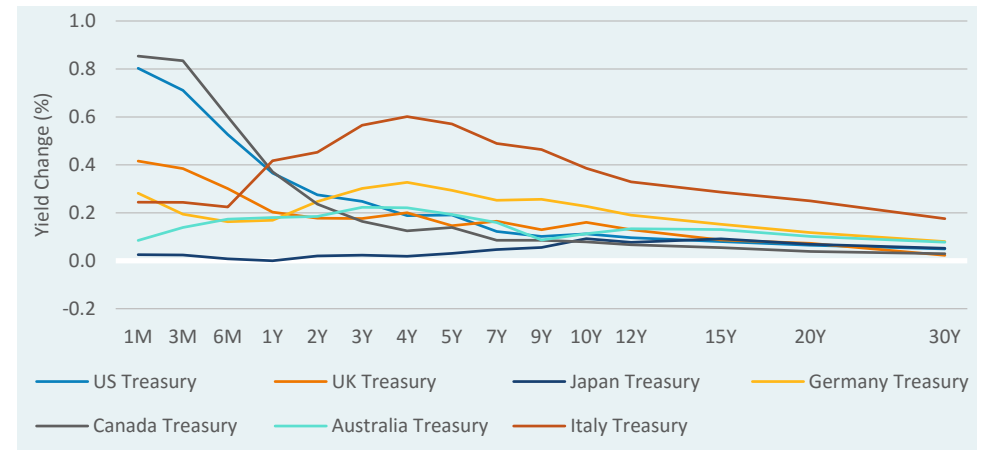
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 3/31/18

Credit environment

Credit spreads in both leveraged loans and high yield have continued to be tight, sitting well below their historic averages. Leveraged loan prices were relatively immune to equity volatility in February. Loans have outperformed high yield year-to-date with an absolute return of 1.6%, driven by strong issuance and demand. LIBOR has steadily risen since 2016, surpassing the LIBOR floors that exist in senior loans, causing them to be fully floating-rate instruments.

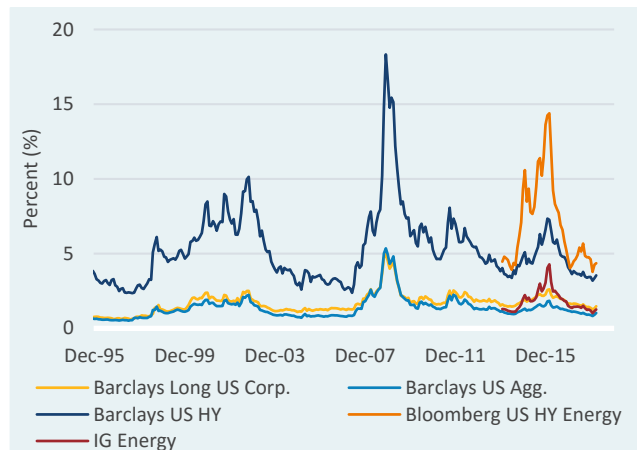
U.S. high yield option-adjusted spreads widened slightly in the

first quarter to 3.5%, with the asset class generating a -0.9% total return for the quarter. Tight credit spreads in both high yield 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.

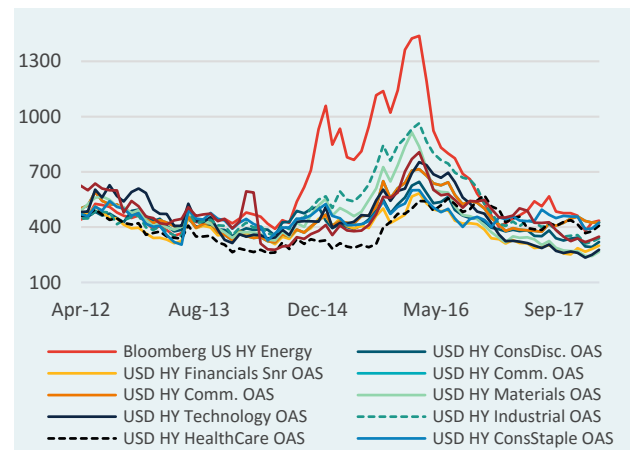
Credit spreads are tight across the capital structure

SPREADS



Source: Barclays, Bloomberg, as of 3/31/18

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 3/31/18

Market	Credit Spread (3/31/18)	Credit Spread (1 Year Ago)
Long US Corporate	1.5%	1.1%
US Aggregate	1.0%	1.1%
US High Yield	3.5%	3.8%
US Bank Loans	3.5%	3.8%

Source: Barclays, Credit Suisse, Bloomberg, as of 3/31/18

Issuance and default

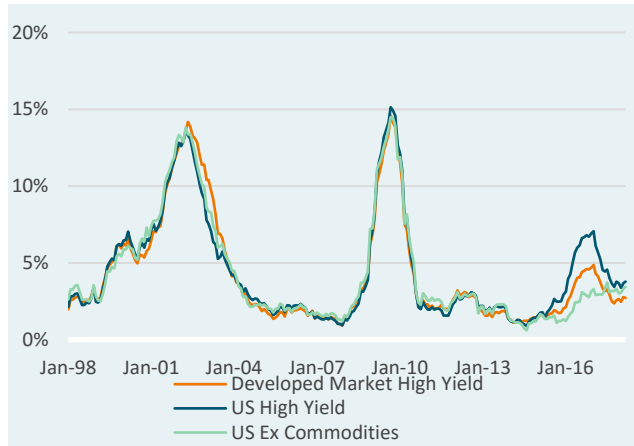
Default activity remains low and stable in the U.S. and international credit markets. The par-weighted U.S. default rate remains below its long-term average of 3.0-3.5% and is currently at 2.4%. In the first quarter, 27% of total defaults have been in the retail sector, followed by energy and broadcasting.

Issuance in bonds and loans both increased in 2017. New issue spreads continue to compress with strong demand supported by significant retail and institutional inflows into the both high yield and senior loan asset class, as well as CLO formation.

Default volume remains below long-term averages

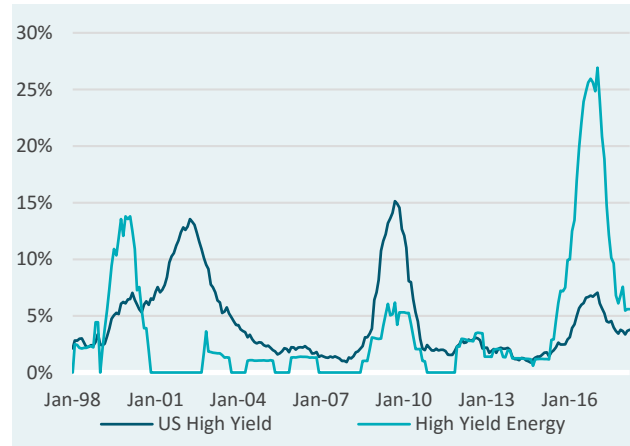
Senior loan and high yield markets are recovering from a wave of defaults that were generated from energy and metals/mining sectors in 2015-2016. Recovery rates for high yield bonds have vastly improved since year-end 2016.

HY DEFAULT TRENDS (ROLLING 1 YEAR)



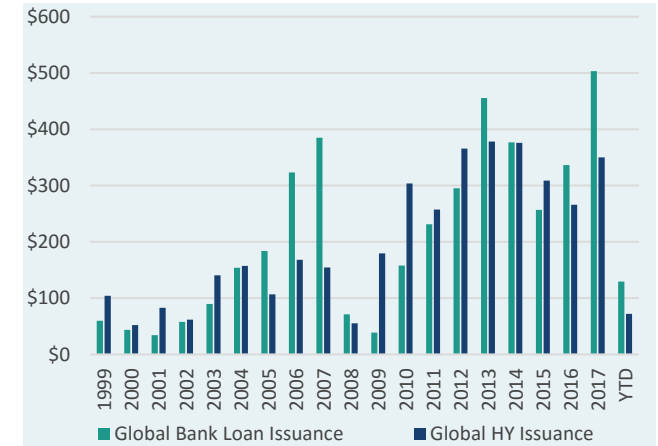
Source: BofA Merrill Lynch, as of 3/31/18

ENERGY DEFAULT TRENDS



Source: BofA Merrill Lynch, as of 3/31/18

GLOBAL ISSUANCE (BILLIONS)



Source: Bloomberg, BofA Merrill Lynch, as of 3/31/18

Equity

Equity environment

- We maintain an overweight position to equities primarily due to enthusiasm for emerging markets. Though the February market correction dampened investor excitement, it is helpful to remind ourselves that 10% equity drawdowns are fairly common.
- Upward price momentum in equities has diminished following the February market correction. Investor sentiment is less positive, but the global economic and earnings backdrop remains intact.
- 2018 is expected to be a banner year for U.S. corporate profits. Earnings for the year are forecast to grow 17.3%, with revenue growth of 7.3% according to Factset - a rare and impressive year for U.S. businesses. A continuation of this trend would be supportive of equity performance.
- Equity valuations (price-to-earnings multiples) fell to more attractive levels in Q1 due to the combination of lower equity prices and strong earnings growth.
- Equity volatility has remained extremely low since the beginning of 2017. However, the equity drawdown and volatility spike in February appears to have ended this period of calm. Investors might expect a more normal volatility environment going forward.
- Currency movement has contributed to volatility and great return disparity for investors with unhedged investments in international assets. A hedging program could allow investors to reduce or eliminate uncompensated currency risk.

	QTD TOTAL RETURN		YTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	(2.0%)		(2.0%)		12.4%	
US Small Cap (Russell 2000)	(1.1%)		(1.1%)		10.5%	
US Large Value (Russell 1000 Value)	(4.0%)		(4.0%)		5.6%	
US Large Growth (Russell 1000 Growth)	(0.1%)		(0.1%)		19.3%	
International Large (MSCI EAFE)	(1.6%)	(3.8%)	(1.6%)	(3.8%)	14.4%	7.1%
Eurozone (Euro Stoxx 50)	(0.5%)	(3.2%)	(0.5%)	(3.2%)	18.0%	0.3%
U.K. (FTSE 100)	(3.8%)	(6.9%)	(3.8%)	(6.9%)	11.9%	1.2%
Japan (NIKKEI 225)	0.6%	(5.3%)	0.6%	(5.3%)	20.9%	15.2%
Emerging Markets (MSCI Emerging Markets)	1.2%	0.4%	1.2%	0.4%	23.1%	20.4%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 3/31/18

Domestic equity

U.S. equities delivered a loss in Q1 (Russell 1000 -2.0%) - a change of pace from steady and strong gains in 2017. Equity indexes around the world fell between 8-12% in early February as the recent bull run was interrupted. Since the selloff, most markets have been rangebound but relatively flat overall. Volatility seems to have returned to the markets as sizable day-to-day swings have been the norm.

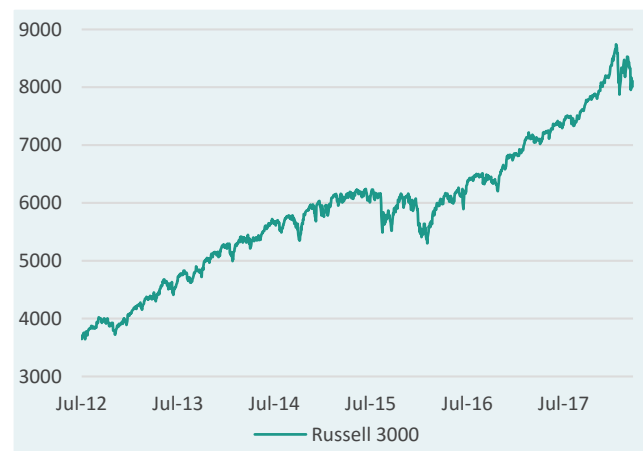
While large price movements tend to naturally cause

investor fear, it is not apparent that the attractive macro picture has changed – i.e. positive economic growth, very strong earnings gains, and healthy sentiment. Equity prices typically follow growth and corporate profit trends over the medium and long-term term, which likely provides some support against larger downside equity movement.

However, the February selloff has dampened recent positive upward price momentum. Momentum is now more neutral as market prices flatten out.

Fundamentals appear unchanged despite falling prices

U.S. EQUITIES



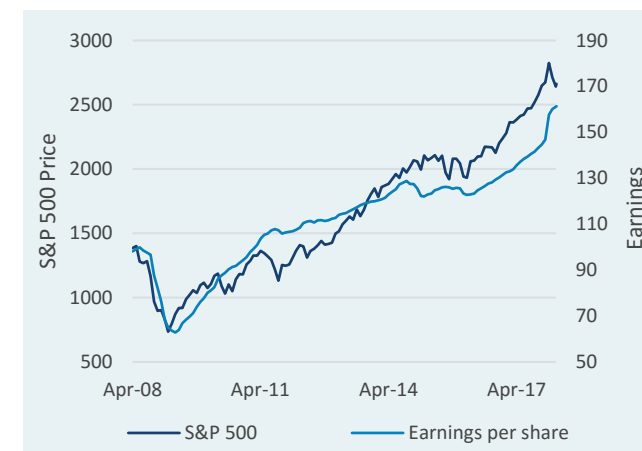
Source: Russell Investments, as of 3/31/18

EARNINGS GROWTH



Source: S&P 500, as of 3/31/18

S&P 500 PRICE & EARNINGS



Source: Bloomberg, as of 3/31/18

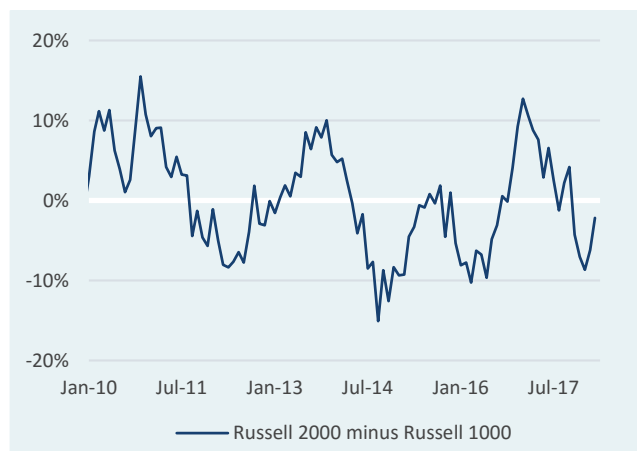
Domestic equity size & style

Large cap equities (Russell 1000 -2.0%) lagged small cap equities (Russell 2000 -1.1%) during the quarter. Value stocks delivered exceptionally poor performance in Q1 (Russell 1000 Value -4.0% vs. Russell 1000 Growth -0.1%), dragged down by the energy and materials sectors, which are heavily tilted towards value. Despite a sell-off in mega-cap tech stocks in March due mainly to company-specific issues, such as a data breach at Facebook and President Trump targeting Amazon over its relationship with the U.S. Postal Service, tech was still the best performing sector in the first quarter.

Traditional style factors – small cap and value in particular – have hit a rough patch since the 2008-2009 global financial crisis. It may be helpful to remember that these periods do occur. In fact, there are multiple points in history where the equity small-cap and value premiums delivered negative returns over more than a 10 year period.

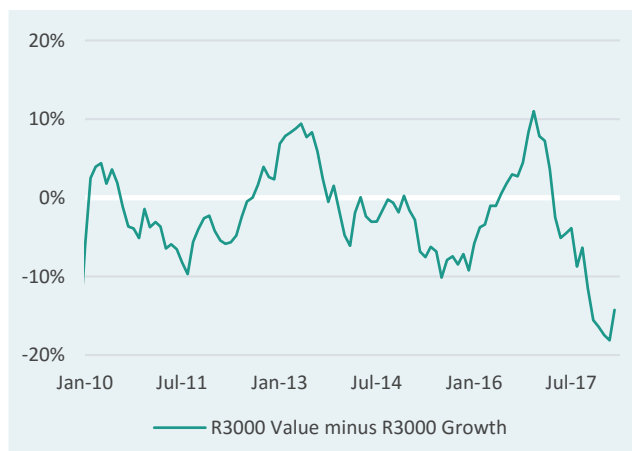
In U.S. equities, value has continued to underperform in recent years, while momentum delivered outperformance alongside the bull market rally.

SMALL CAP VS LARGE CAP (YOY)



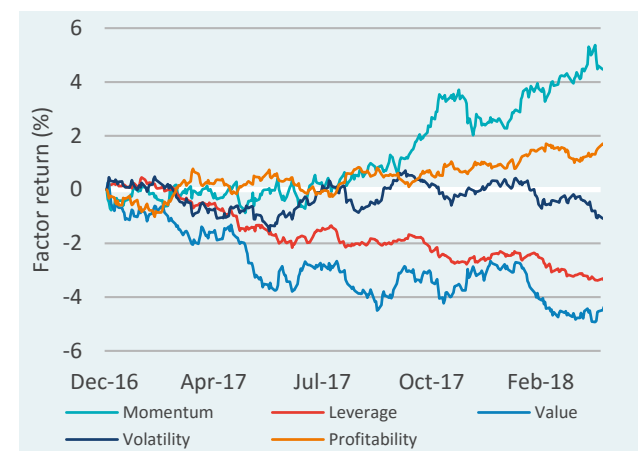
Source: FTSE, as of 3/31/18

VALUE VS GROWTH (YOY)



Source: FTSE, as of 3/31/18

BLOOMBERG FACTOR PERFORMANCE



Source: Bloomberg, as of 3/31/18

Hard times for value investing

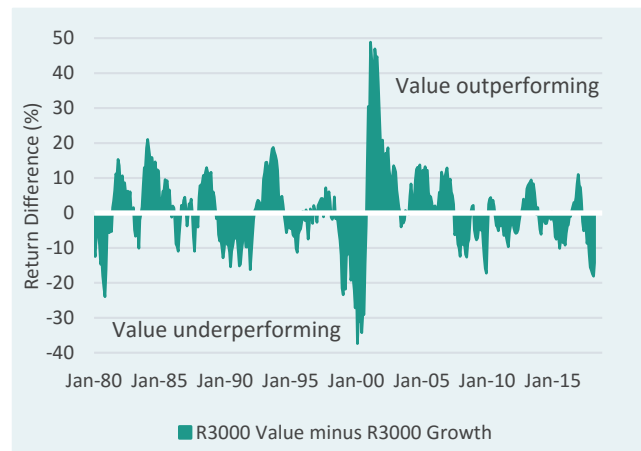
Value equities have underperformed growth equities over the past 10 years. This has occurred only two other times since the 1920's - both periods were followed by a rapid bounce-back in value performance. Is a turning point on the horizon?

Value stocks are concentrated in the financial sector, and growth stocks are concentrated in the technology sector. The global financial crisis led to extreme underperformance of financial stocks, which hurt value. At the same time, technology stocks have fared exceptionally well. These two effects compounded value's underperformance.

The current price difference between value and growth stocks is near the historical average, which is notably different from the most recent bout of value underperformance – the 2001 tech bubble. At that time, growth stocks were anomalously expensive relative to value stocks, which helped explain how value stocks roared back to life after the tech bubble burst.

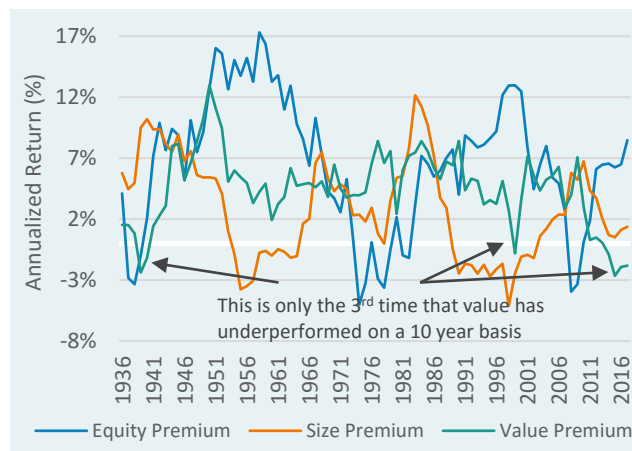
We do not yet see a catalyst for a value comeback. Prices are fairly normal, and the economic environment is positive (growth often performs well during later stages of economic expansions). We recommend that value investors stay the course. Timing factors over the short term is and will always be difficult.

U.S. VALUE PERFORMANCE (1YR ROLLING)



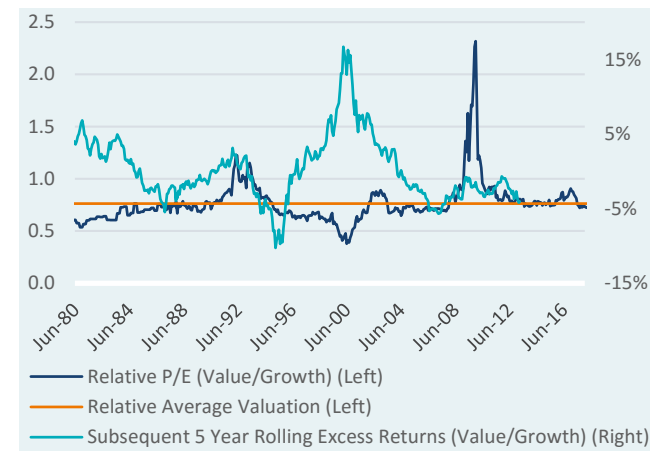
Source: FTSE, as of 3/31/18

U.S. VALUE PERFORMANCE (10YR ROLLING)



Source: Fama French Library, as of 2/28/18

VALUE VS GROWTH - P/E MULTIPLES



Source: FTSE Russell, Bloomberg, as of 3/31/18

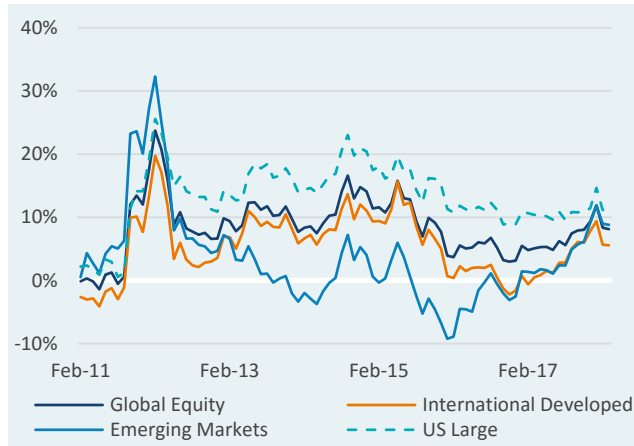
International developed equity

Unhedged International equities were in line with U.S. equities during Q1, delivering slightly negative performance. The MSCI EAFE Index returned -1.5%. Positive currency returns masked underperformance of local developed market equities. On a hedged basis, the MSCI EAFE Index posted a -3.8% return. Looking forward, accelerating corporate earnings, and more attractive valuations following the February fall in equity prices, may be supportive for another positive year in 2018. Forward one year earnings growth is expected to be around 15%.

Along with the U.S., most developed markets also experienced an approximate 10% drawdown in February, but were not as quick to recover. Most regional benchmarks finished the quarter still 7-10% below recent peaks.

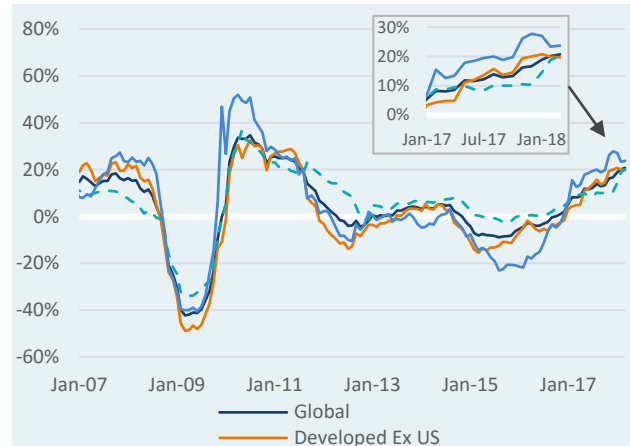
Trailing P/E ratios for the EAFE Index have moved to below average, providing a possible value opportunity. However, downside risks to these markets, including political issues and reliance on central bank support may be a justification for low valuations.

EQUITY PERFORMANCE (3-YEAR ROLLING)



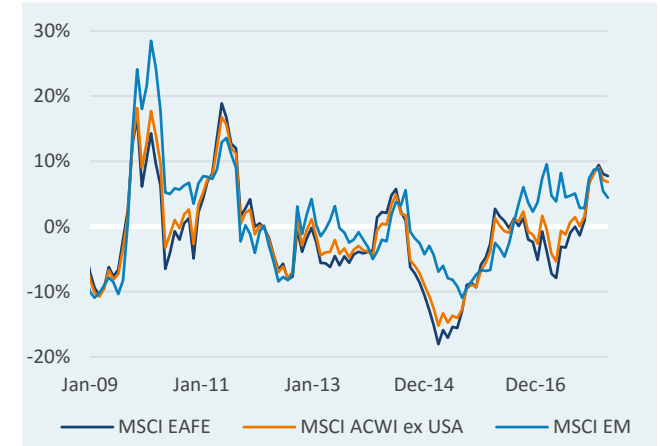
Source: Bloomberg, as of 3/31/18

EARNINGS GROWTH (YOY)



Source: MSCI, as of 3/31/18 – YoY growth in forward earnings

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 3/31/18

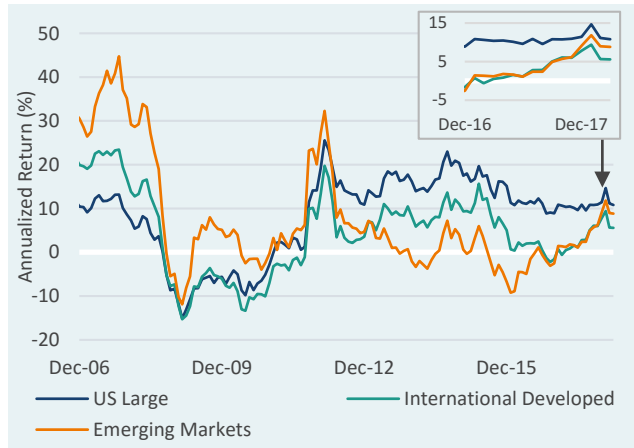
Emerging market equity

We maintain an overweight to emerging market equities. Emerging market equities have exhibited more modest valuations relative to developed markets such as the U.S., while these economies in aggregate continue to outpace developed economies by a wide margin. Furthermore, emerging market currencies remain depressed relative to history. Cheaper valuations, much stronger economic growth, and a currency tailwind may bode well for future performance.

Emerging economies have led the way over the past year in terms of economic growth, earnings, and equity performance. Emerging market equities have delivered positive performance year-to-date despite the February sell-off (MSCI Emerging Markets +1.2%) while developed markets were in negative territory to end the first quarter.

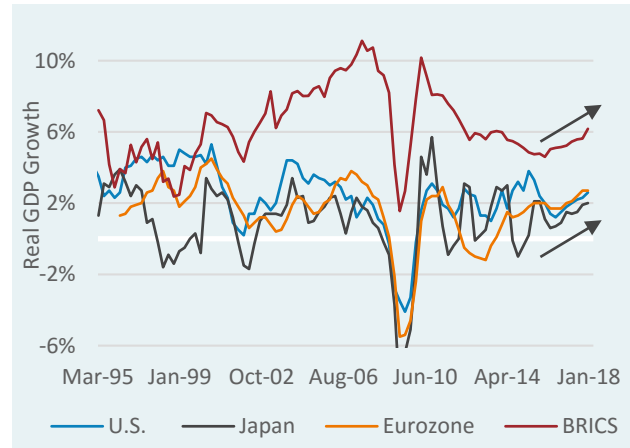
Coordinated global growth has helped propel emerging market equities forward

EQUITY PERFORMANCE (3YR ROLLING)



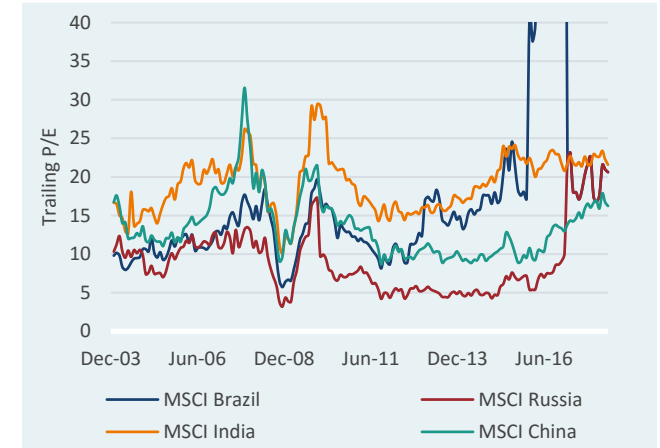
Source: Standard & Poor's, MSCI, as of 3/31/18

ECONOMIC MOMENTUM



Source: Bloomberg, as of 12/31/18

BRIC VALUATIONS



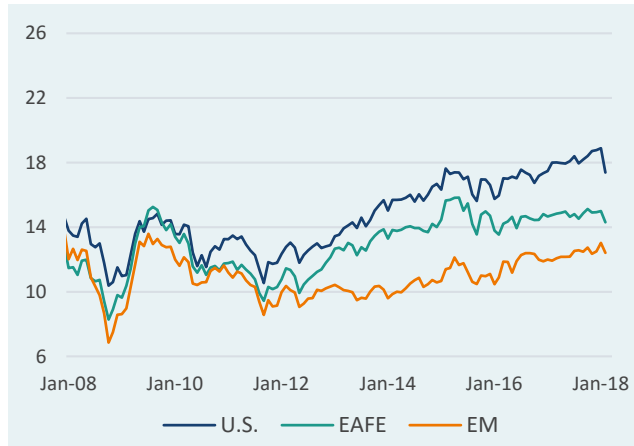
Source: MSCI, as of 3/31/18

Equity valuations

Equity valuations fell over the quarter due to both a decrease in price and an increase in earnings. International developed equities experienced the biggest contraction in valuations and the trailing P/E ratio (16.5) is now below the median multiple since 1995 (20.0). Price-to-earnings multiples also came down in the U.S., although they remain above average. The trailing 12-month P/E ratio for the S&P 500 Index was 21.3 at the end of March, compared to the 30-year median value of 18.3. After strong price gains over the past year, emerging market equity valuation metrics are near their long-term averages.

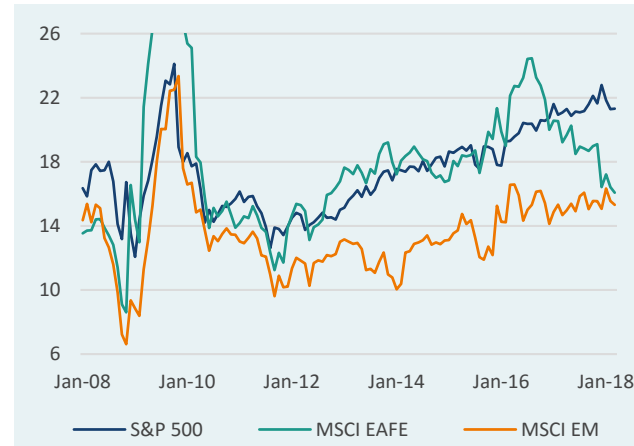
Although most equity markets experienced a 10% correction during the quarter, momentum in earnings growth remained strong. A continuation of this trend may result in further normalization of valuations without a significant drop in equity prices.

FORWARD P/E RATIOS



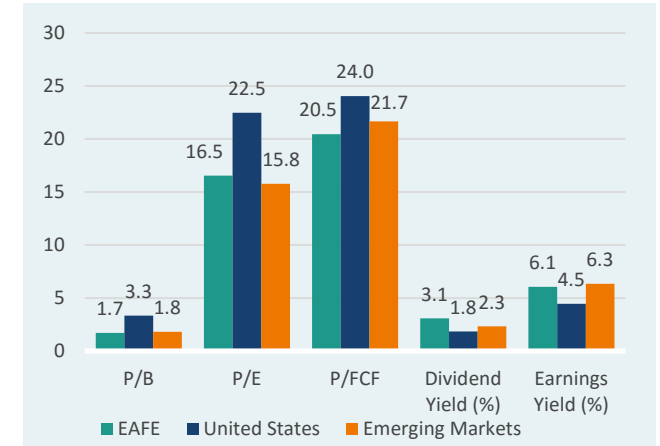
Source: MSCI, as of 3/31/2018

TRAILING P/E RATIOS



Source: Bloomberg, as of 3/31/18

VALUATION METRICS



Source: Bloomberg, as of 3/31/18 - trailing P/E

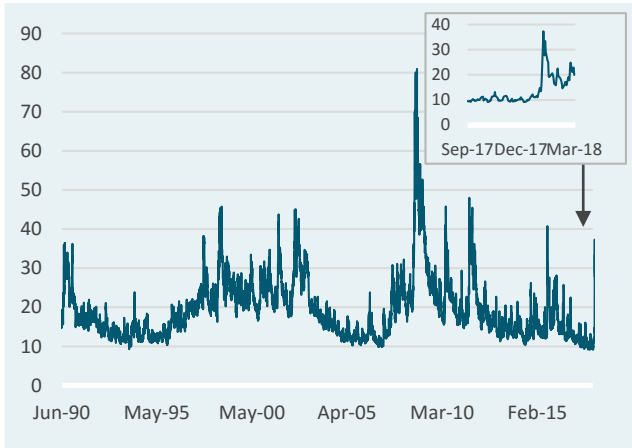
Equity volatility

Volatility in U.S. equities spiked in February and stayed elevated. The VIX Index of implied volatility on the S&P 500 Index registered its largest one-day increase on February 5th, jumping from 17.3 to 37.3. The well-documented period of low volatility that markets experienced in 2017 was broken rather suddenly. Volatility remained high with the VIX averaging 20.7 in the last two month of the quarter, compared to 11.0 during the previous 12 months. The increase in volatility was a U.S. focused event, rather than a global phenomenon – volatility was relatively benign in international developed and emerging markets.

One of the likely drivers of the spike in volatility that occurred in February was the unwinding of the “short vol” trade. The low volatility environment that began in 2016 created an opportunity to profit from selling volatility in the futures market, which is similar to selling insurance. Speculators selling volatility receive a premium for taking on risk from those looking to hedge, and are able to capture this premium when volatility remains low. When volatility increases, however, losses can be catastrophic. An index tracking this strategy lost 96% of its value during one day of trading, which likely reinforced the increase in volatility.

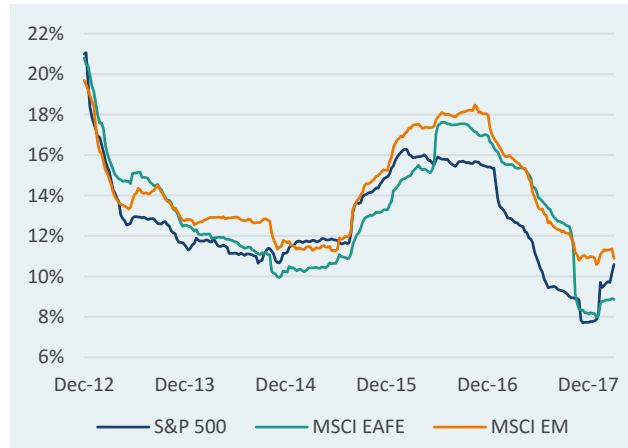
Equity volatility spiked in February and remained at heightened levels

U.S. IMPLIED VOLATILITY (VIX)



Source: CBOE, as of 3/31/18

REALIZED 1-YEAR ROLLING VOLATILITY



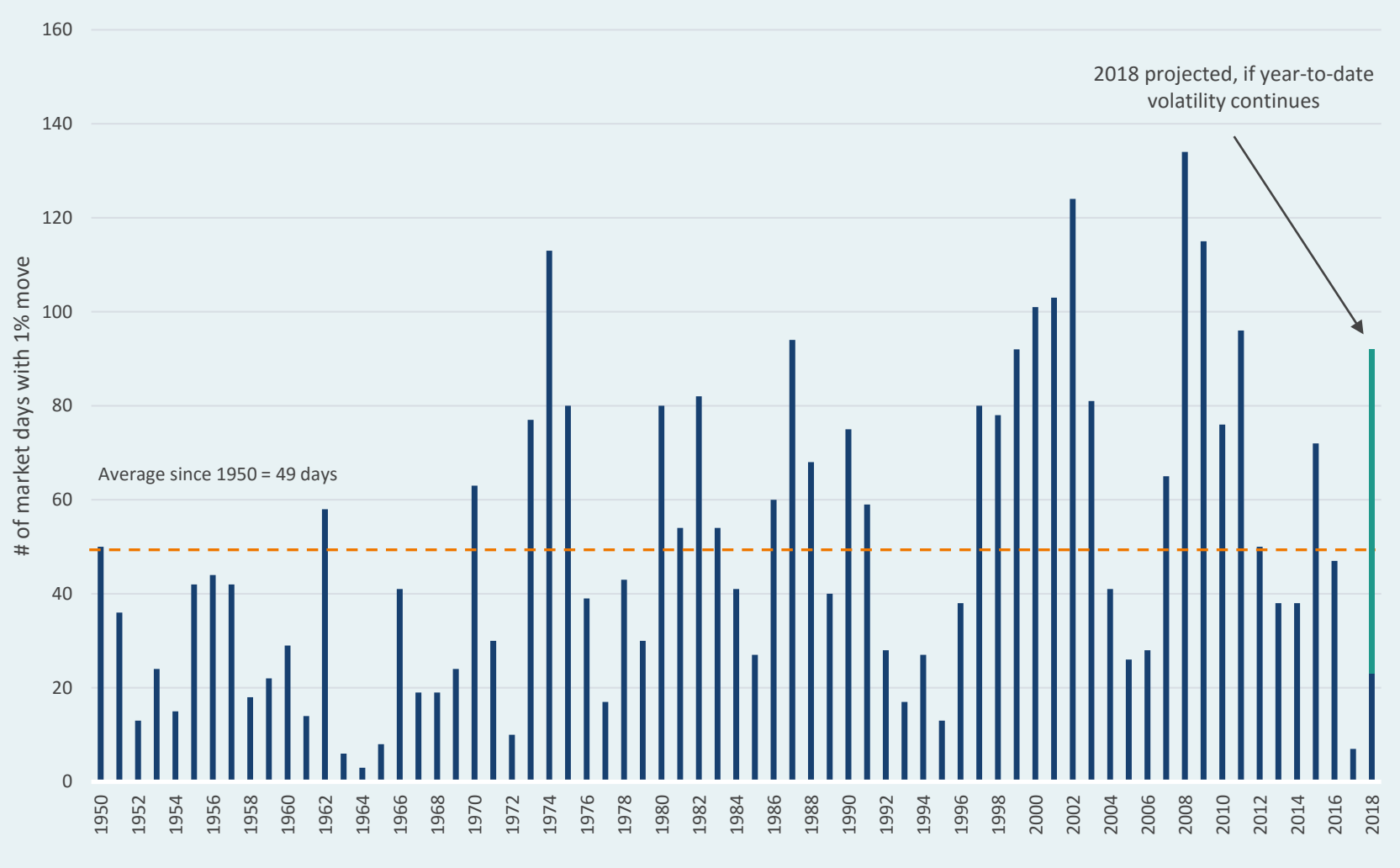
Source: Bloomberg, as of 3/31/18

S&P INVERSE VIX FUTURES INDEX



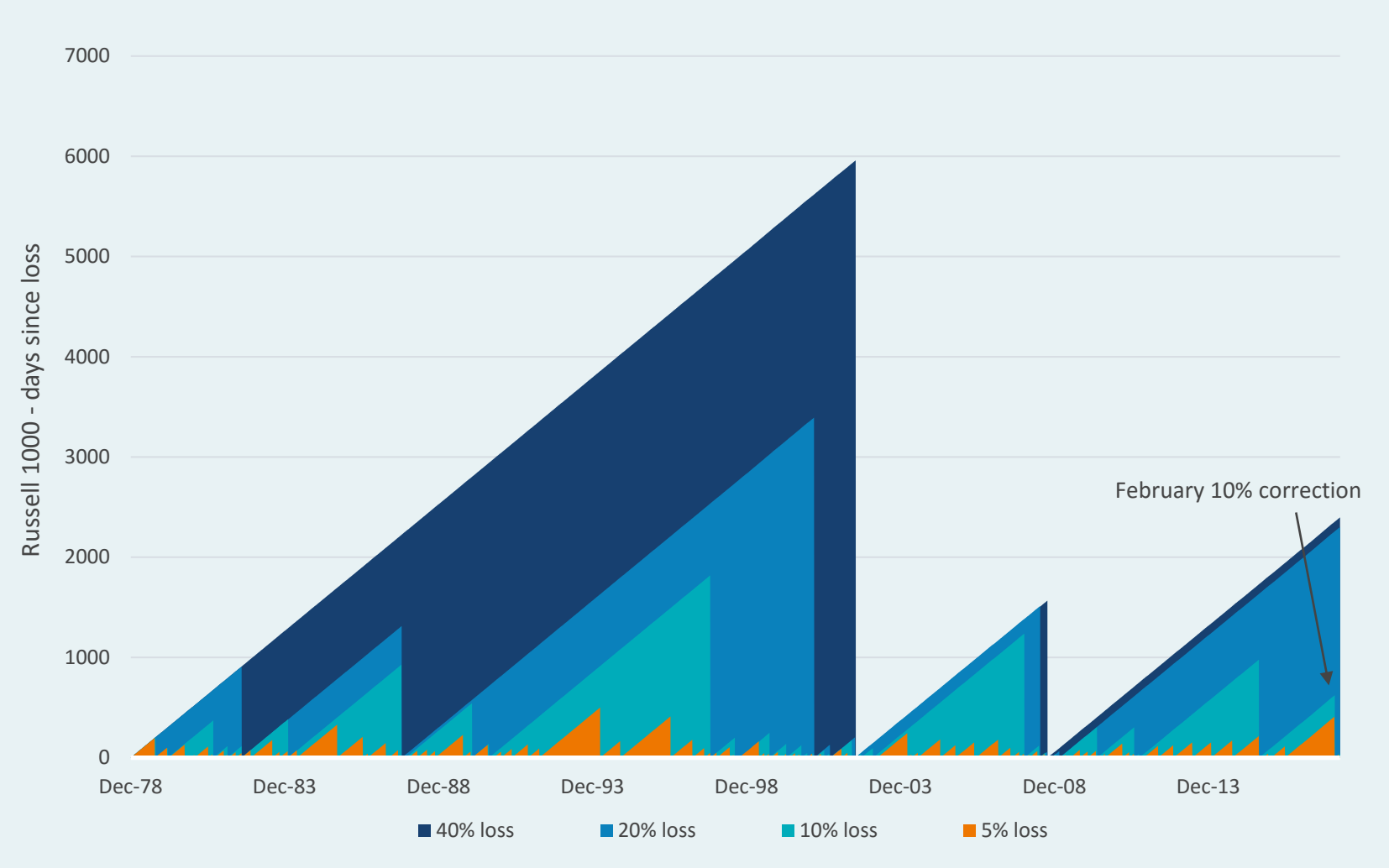
Source: Bloomberg, as of 3/31/18

Equity volatility



Source: S&P 500, as of 3/31/18

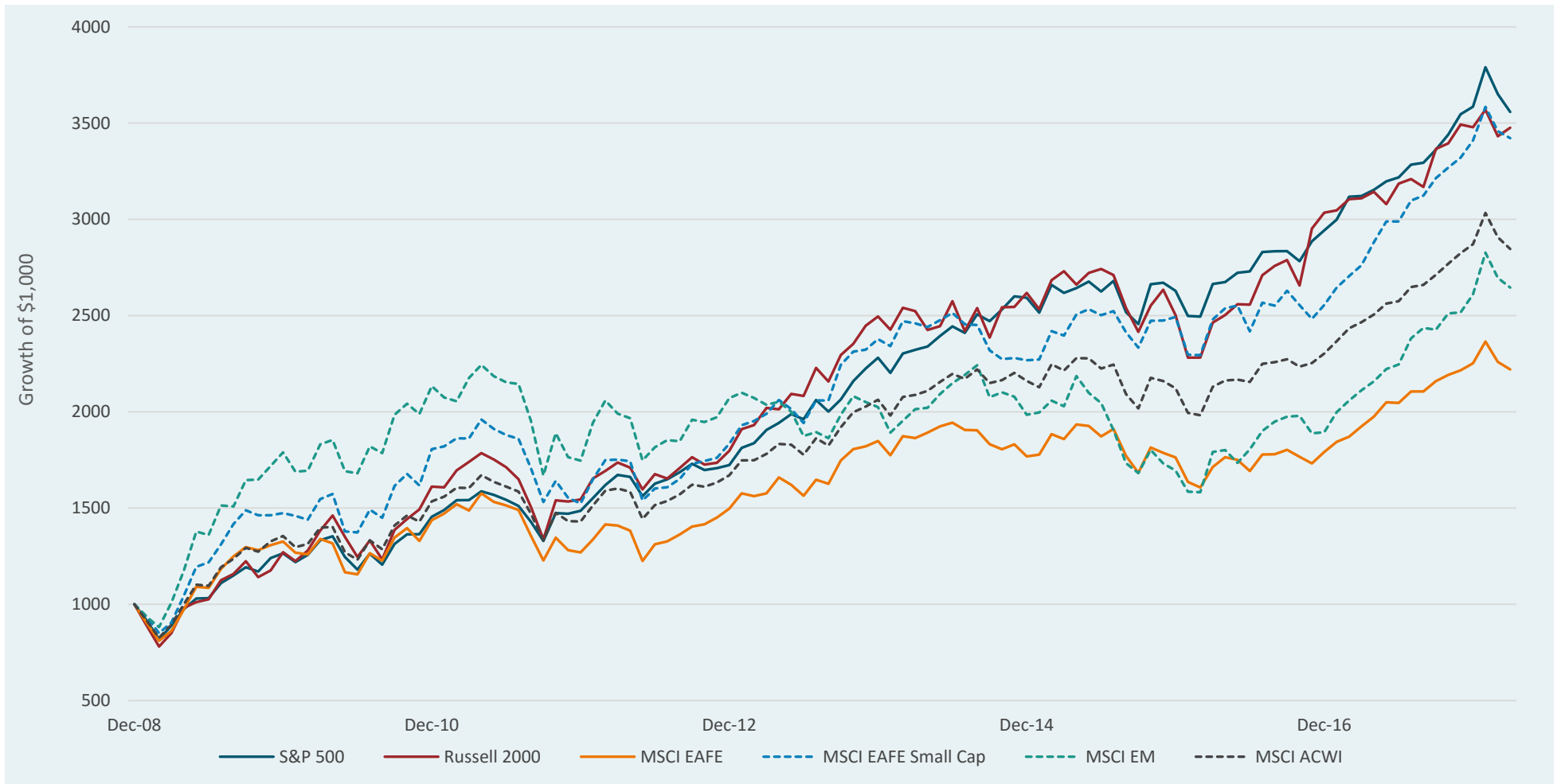
Expect the unexpected



Equities experienced a 10% correction for the first time in more than two years

Source: FTSE Russell, Bloomberg, as of 4/11/18

Long-term equity performance



Source: MPI, as of 3/31/18

Other assets

Opportunity in MLPs

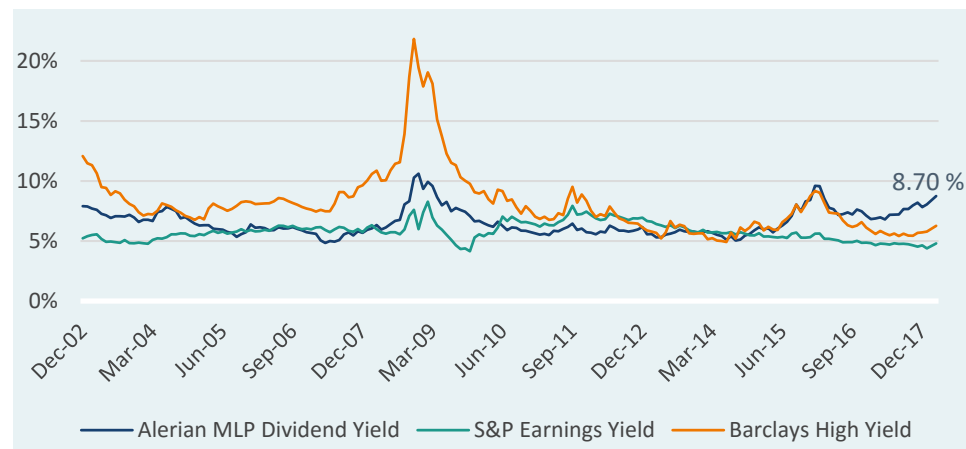
MLP valuations look attractive across a number of historical metrics, including enterprise value-to-EBITDA and price-to-distributable cash flow. We believe there is opportunity to allocate to MLPs for a short to medium holding period (2-4 years).

MLP yields have steadily climbed since mid-2016 on the back of a sell-off in the sector and recovery in distributions following the energy price collapse. Balance sheets across the industry are in better shape today than

before the oil crisis. Debt-to-cash flow levels have improved since peaking at 6.4x in 2015. Furthermore, the U.S. is expected to surpass Russia in 2018 to be the largest oil producer in the world, which is important because midstream companies grow through volume increases rather than commodity price appreciation.

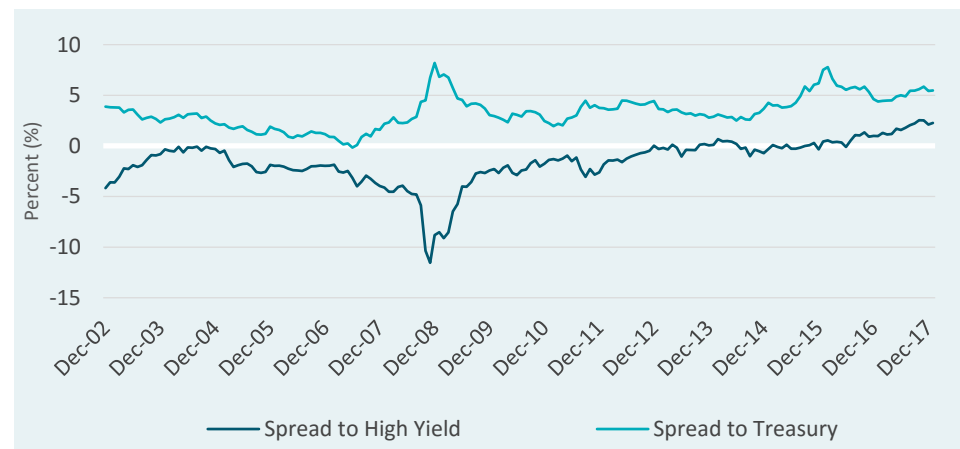
A decision to invest in MLPs, however, is one that should be considered carefully, and after detailed analysis, as it remains a specialist asset class.

MLP YIELDS



Source: Bloomberg, as of 12/31/17

MLP SPREADS VS HIGH YIELD AND TREASURY RATES



Source: Bloomberg, as of 12/31/17

Currency

The U.S. dollar declined further to begin the quarter, but recovered slightly over the past two months. The broad U.S. trade weighted index fell 1.9% in the first quarter. This index was down 8.5% since peaking at the end of 2016.

Dollar depreciation has occurred despite widening short-term interest rate differentials between the U.S. and the rest of the developed world. Typically, higher interest rate differentials result in currency appreciation as investors take advantage of the yield, at least in the short-term.

Based on purchasing power parity (PPP), the dollar is overvalued against the currencies with the biggest weights in international equity benchmarks: the euro, yen, and pound.

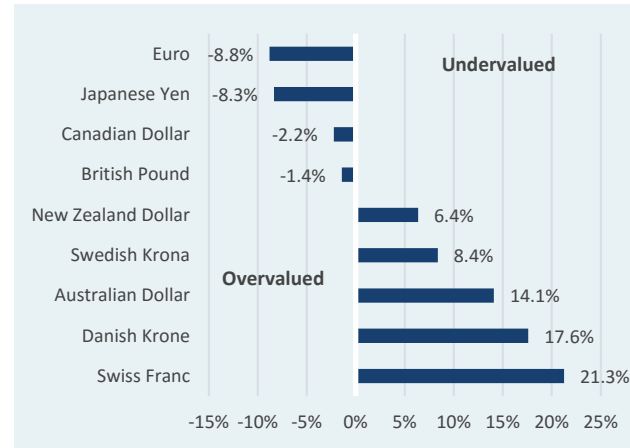
Unhedged foreign currency exposure added to equity returns over the past year, especially in developed markets. Although currency exposure has been positive lately, it has historically tended to experience large swings that add volatility to portfolios.

U.S. DOLLAR TRADE WEIGHTED INDEX



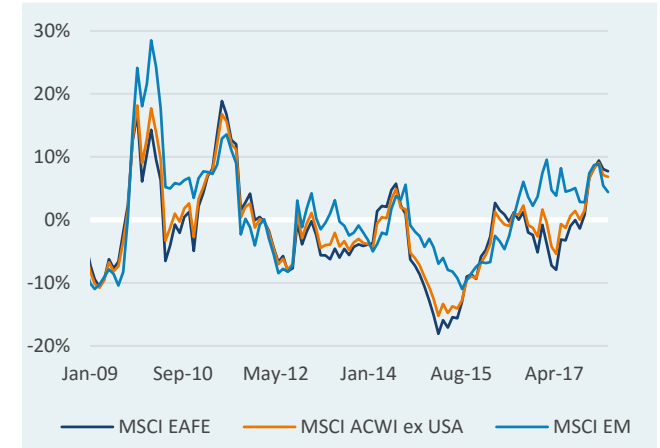
Source: Federal Reserve, as of 3/28/18

CURRENCY VALUATIONS VS USD (PPP)



Source: OECD, as of 3/31/2018 (see appendix)

EFFECT OF CURRENCY (1-YR ROLLING)



Source: MSCI, as of 3/31/18

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	2.3	15.5	11.3
Emerging Markets Equity	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.4	13.2	11.0
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	1.4	12.9	9.8
Hedge Funds of Funds	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	0.9	11.5	9.6
Cash	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	0.4	10.8	8.6
60/40 Global Portfolio	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	0.0	10.2	7.8
Real Estate	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	0.0	10.0	6.1
Small Cap Equity	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	-0.1	6.5	4.7
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	-0.4	6.2	3.6
Large Cap Equity	-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	-0.7	5.0	3.0
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	-1.5	3.5	2.7
International Equity	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-1.5	1.8	1.6
Small Cap Value	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-2.6	0.3	0.3
Large Cap Value	-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	-2.8	-8.3	-7.7

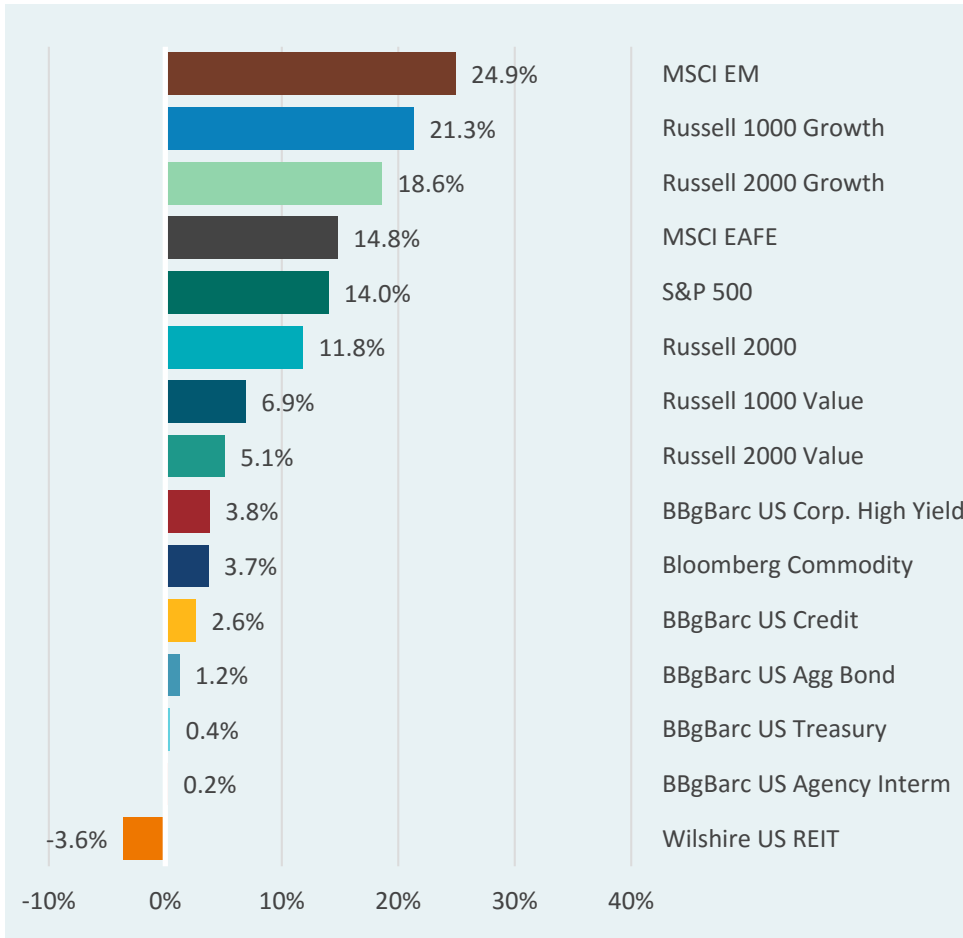
WORST

 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 12/31/17.

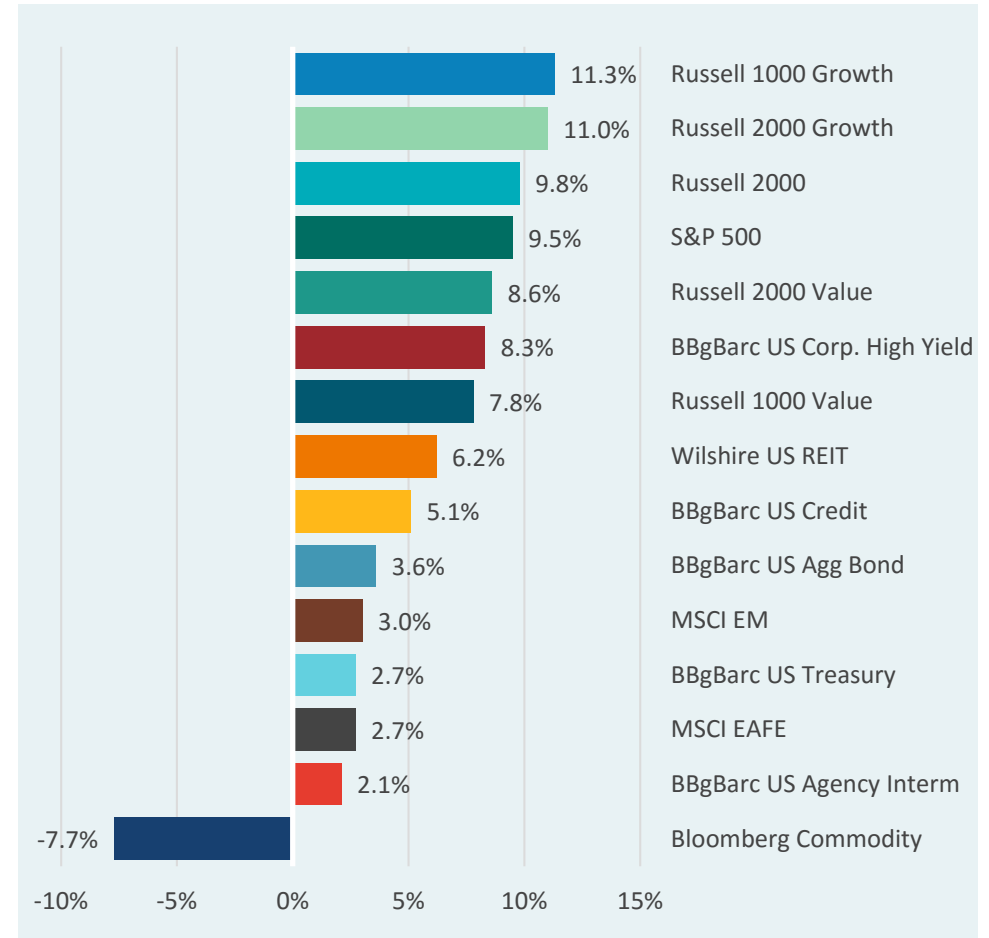
Major asset class returns

ONE YEAR ENDING MARCH



Source: Morningstar, as of 3/31/18

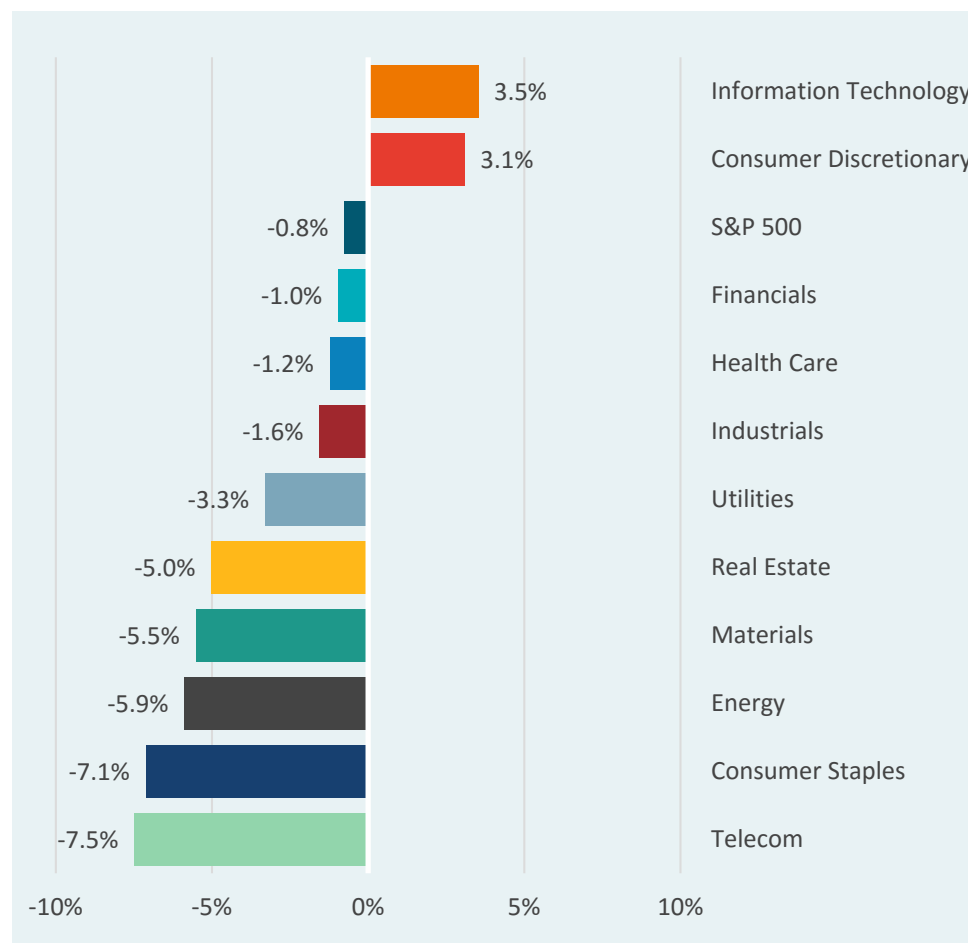
TEN YEARS ENDING MARCH



Source: Morningstar, as of 3/31/18

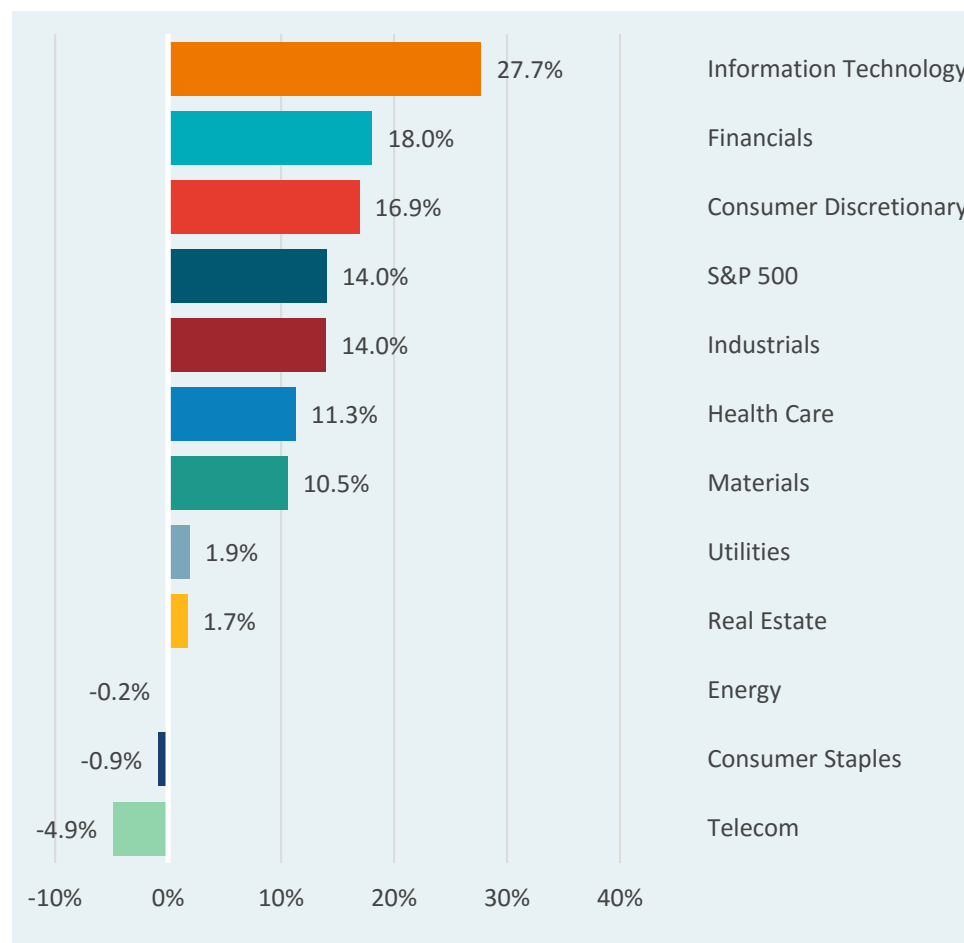
S&P 500 sector returns

1ST QUARTER



Source: Morningstar, as of 3/31/18

ONE YEAR ENDING MARCH



Source: Morningstar, as of 3/31/18

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	(2.5)	(0.8)	(0.8)	14.0	10.8	13.3	9.5
S&P 500 Equal Weighted	(0.9)	(1.0)	(1.0)	11.7	9.1	12.9	11.0
DJ Industrial Average	(3.6)	(2.0)	(2.0)	19.4	13.5	13.3	9.9
Russell Top 200	(3.2)	(0.8)	(0.8)	14.7	11.4	13.6	9.4
Russell 1000	(2.3)	(0.7)	(0.7)	14.0	10.4	13.2	9.6
Russell 2000	1.3	(0.1)	(0.1)	11.8	8.4	11.5	9.8
Russell 3000	(2.0)	(0.6)	(0.6)	13.8	10.2	13.0	9.6
Russell Mid Cap	0.1	(0.5)	(0.5)	12.2	8.0	12.1	10.2
Style Index							
Russell 1000 Growth	(2.7)	1.4	1.4	21.3	12.9	15.5	11.3
Russell 1000 Value	(1.8)	(2.8)	(2.8)	6.9	7.9	10.8	7.8
Russell 2000 Growth	1.3	2.3	2.3	18.6	8.8	12.9	11.0
Russell 2000 Value	1.2	(2.6)	(2.6)	5.1	7.9	10.0	8.6

INTERNATIONAL EQUITY

Broad Index							
MSCI ACWI	(2.1)	(1.0)	(1.0)	14.8	8.1	9.2	5.6
MSCI ACWI ex US	(1.8)	(1.2)	(1.2)	16.5	6.2	5.9	2.7
MSCI EAFE	(1.8)	(1.5)	(1.5)	14.8	5.6	6.5	2.7
MSCI EM	(1.9)	1.4	1.4	24.9	8.8	5.0	3.0
MSCI EAFE Small Cap	(1.1)	0.2	0.2	23.5	12.3	11.1	6.5
Style Index							
MSCI EAFE Growth	(1.2)	(1.0)	(1.0)	17.5	6.7	7.1	3.4
MSCI EAFE Value	(2.4)	(2.0)	(2.0)	12.2	4.3	5.8	2.0
Regional Index							
MSCI UK	(0.3)	(3.9)	(3.9)	11.9	3.1	3.9	2.3
MSCI Japan	(2.1)	0.8	0.8	19.6	8.4	8.9	4.1
MSCI Euro	(1.2)	(0.4)	(0.4)	16.1	5.7	8.1	0.7
MSCI EM Asia	(1.4)	0.8	0.8	27.0	9.4	8.4	5.2
MSCI EM Latin American	(1.0)	8.0	8.0	19.3	10.1	(1.9)	(0.8)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	1.1	(0.8)	(0.8)	0.9	1.3	0.0	2.9
BBgBarc US Treasury Bills	0.1	0.3	0.3	1.0	0.5	0.3	0.4
BBgBarc US Agg Bond	0.6	(1.5)	(1.5)	1.2	1.2	1.8	3.6
Duration							
BBgBarc US Treasury 1-3 Yr	0.2	(0.2)	(0.2)	(0.0)	0.4	0.5	1.1
BBgBarc US Treasury Long	3.0	(3.3)	(3.3)	3.5	0.4	3.3	5.8
BBgBarc US Treasury	0.9	(1.2)	(1.2)	0.4	0.4	1.1	2.7
Issuer							
BBgBarc US MBS	0.6	(1.2)	(1.2)	0.8	1.1	1.8	3.5
BBgBarc US Corp. High Yield	(0.6)	(0.9)	(0.9)	3.8	5.2	5.0	8.3
BBgBarc US Agency Interm	0.3	(0.4)	(0.4)	0.2	0.7	0.9	2.1
BBgBarc US Credit	0.3	(2.1)	(2.1)	2.6	2.2	2.8	5.1

OTHER

Index							
Bloomberg Commodity	(0.6)	(0.4)	(0.4)	3.7	(3.2)	(8.3)	(7.7)
Wilshire US REIT	4.1	(7.5)	(7.5)	(3.6)	1.0	6.1	6.2
CS Leveraged Loans	0.3	1.6	1.6	4.6	4.3	4.2	5.4
Regional Index							
JPM EMBI Global Div	0.3	(1.7)	(1.7)	4.3	5.8	4.7	7.0
JPM GBI-EM Global Div	1.0	4.4	4.4	13.0	5.4	(0.7)	3.8
Hedge Funds							
HFRI Composite	(0.7)	0.1	0.1	4.6	2.0	3.9	3.6
HFRI FOF Composite	(0.0)	0.9	0.9	6.2	2.1	3.5	1.6
Currency (Spot)							
Euro	0.8	2.4	2.4	15.0	4.6	(0.9)	(2.5)
Pound	1.8	3.7	3.7	12.2	(1.9)	(1.6)	(3.4)
Yen	0.3	5.9	5.9	4.8	4.1	(2.4)	(0.7)

Source: Morningstar, as of 3/31/18

Definitions

Atlanta Fed Wage Tracker – a measure of the nominal wage growth of individuals. It is constructed using microdata from the Current Population Survey (CPS), and is the median percent change in the hourly wage of individuals observed 12 months apart. (www.frbatlanta.org)

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)

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)

Citi Economic Surprise Index - objective and quantitative measures of economic news. Defined as weighted historical standard deviations of data surprises (actual releases vs Bloomberg survey median). A positive reading of the Economic Surprise Index suggests that economic releases have on balance been beating consensus. The indices are calculated daily in a rolling three-month window. The weights of economic indicators are derived from relative high-frequency spot FX impacts of 1 standard deviation data surprises. The indices also employ a time decay function to replicate the limited memory of markets. (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/>)

OECD Purchasing Power Parity – the rates of currency conversion that equalize the purchasing power of different currencies by eliminating the differences in price levels between countries. In their simplest form, PPPs show the ratio of prices in national currencies of the same good or service in different countries. (www.OECD.org)

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Glossary

Allocation Effect: An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

Alpha: The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as: $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$.

Benchmark R-squared: Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

Beta: A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

Book-to-Market: The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

Capture Ratio: A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

Correlation: A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

Excess Return: A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

Information Ratio: A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

Interaction Effect: An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

Portfolio Turnover: The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

Price-to-Earnings Ratio (P/E): Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

R-Squared: Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

Selection Effect: An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

Sharpe Ratio: A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as: $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$.

Sortino Ratio: Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

Standard Deviation: A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

Style Analysis: A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

Style Map: A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

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Verus receives universe data from InvestorForce, eVestment Alliance, and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. The resulting universe composition is not static and will change over time. Returns are annualized when they cover more than one year. Investment managers may revise their data after report distribution. Verus will make the appropriate correction to the client account but may or may not disclose the change to the client based on the materiality of the change.

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

May 22, 2018

Agenda Item 6.3

TO: Board of Retirement

FROM: Doris Ng, Investment Analyst



SUBJECT: Report on Real Estate Annual Manager Reviews

Recommendation

Accept and review the report on the annual reviews of SamCERA's real estate managers, PGIM and INVESCO.

Background

On March 29, SamCERA staff and consultant held the annual review meeting in SamCERA's office for our real estate debt manager, PGIM. On April 5, staff and consultant held the annual review meeting with INVESCO.

Each meeting lasted approximately 1.5 - 2 hours, and consisted of a firm/organizational update, investment process review, performance review and attribution, and current positioning/market outlook.

Discussion

PGIM's Real Estate U.S. Debt fund, an open-ended commingled fund that invests primarily in senior loans secured by U.S. commercial real estate, was reviewed first.

Next, INVESCO's Core Real Estate fund, an open-ended commingled pool which invests in institutional quality office, retail, industrial and multi-family residential real estate assets, was reviewed. INVESCO's U.S. Value-Add Fund IV and V, both closed-end funds which acquire and reposition fundamentally sound, but "broken core" real estate into institutional-quality assets across the same sectors, were also reviewed.

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

Attachments

INVESCO Core Real Estate Annual Review Meeting Notes

INVESCO Value-Add IV & V Real Estate Annual Review Meeting Notes (confidential)

PGIM Real Estate U.S. Debt Fund Annual Review Meeting Notes (confidential)

Research Meeting Notes

Investment Organization	Invesco
Business Type	Publicly Traded
Firm Inception Date	1935
Firm \$AUM	\$937M
Investment Org Attendees	Max Swango, Chad Provost
Verus Attendees	John Nicolini
Interview Date(s)	4/5/18
Meeting Type	In office
Meeting Purpose	Update
Strategy Name	Invesco Core Real Estate
Strategy Inception Date	2004
Asset Class (Style)	Real Estate
If other, please name	
Sub-Style	Equity
Strategy \$AUM	\$12.3B (Core)
AIC Approved (Yes or No)	Yes

Notes and Analysis

Firm:

Invesco has become a large investment management firm with assets under management of \$937 billion and more than 7,000 employees worldwide. Of this number, more than 750 are investment professionals. The product mix within Invesco is broad with both public and private market strategies and a mix of retail and institutional clients. Growth within the platform has come from acquisitions in the ETF market and from a growing alternatives asset class platform.

As of the December 31, 2017, the real estate platform had assets of \$66.4 billion. It has also become increasingly global both in terms of offices and product offerings. Invesco manages core open end funds in all three developed market regions, North America, Europe and Asia. In addition to direct real estate Investments, Invesco also offers U.S. and Global real estate securities (REIT) offerings, and has approximately \$21 billion in these vehicles. The Core Fund grew from \$11.3 billion in 2016 to \$12.3 billion at the end of 2017. As of January 2018, the Core Fund paid its final outstanding redemption for \$38 million.

Team/People:

The structure of Invesco's real estate team emphasizes specialization and a focus on accountability. The Invesco Core Real Estate fund is overseen by three committees composed of senior professionals. The Investment Committee is responsible for approving acquisitions and sales. The Steering Committee governs the Fund's investment and governance policy. And the North American Direct Investment Strategy Group oversees execution, including market selection and sector allocation. In addition to the Portfolio Management Team, INVESCO employs professionals dedicated to a range of real estate specializations including research, acquisitions, financing, underwriting, closing and due diligence, asset management, and accounting and reporting.

Michelle Foss has been co-portfolio manager on the Core Fund with Bill Grubbs for three years. She joined from Bailard where she was a core, open end real estate fund manager. She had worked with Bill previously at Prudential 20 years ago. The real estate team has grown in San Francisco and New York, where there are 20 and 30 professionals, respectively. (Bill Grubbs has always been based in the Bay Area.) Jay Hurley is the portfolio manager for Invesco's value-add funds. He joined Invesco Real Estate in 1995.

Process/Philosophy

SamCERA is one of the founding investors in the Invesco Core Real Estate fund in 2004. As a founding investor, SamCERA has benefited from lower fees than those paid by more recent investors. This fund is Invesco's largest and flagship real estate fund, and has assets of \$12.3 billion. Invesco's Core Fund invests in high quality office, apartment, industrial and retail properties in major markets while utilizing a conservative balance sheet. The Fund's performance target is to outperform the NCREIF ODCE Index over longer time periods.

Four broad principles underlie Invesco's approach to core real estate investing. They seek to manage a diversified portfolio, both geographically and by property type. The portfolio holds office, industrial, retail and apartment properties. The portfolio maintains an income-oriented investment approach. Attractive markets and properties must offer investments that are "durable" with barriers to entry, in growing areas and liquid, meaning that it's possible to redeem if desired. They strive to have a conservative risk profile, with strong balance sheets, limited leverage and selective exposure to value add type investments. Invesco also strives to be transparent and efficient in client communication and reporting.

The investment process has both top down and bottom up elements. Invesco has long term strategic ranges for each property type with an overweight to apartments. They develop a view about different regions and cities and focus on specific target markets. Invesco is looking primarily at gateway cities and up-and-coming markets. They are most selective in office and industrial properties, where they believe a market needs to have high value jobs and high barriers to entry to be attractive. Invesco also seeks to generate returns on a bottom up basis with property specific selection within their target property type ranges and preferred regions.

The Core Fund will selectively make value add investments (up to 15% allowed). But they do so only in cases where replacement cost is lower than purchasing an existing property. Value add investments are not made with the expectation of a quick sale, but of holding the property in the portfolio for purposes of generating income. While there are some value-add investments in the Core Fund, there isn't overlap in exposure with the Value Add Fund. The Value Add Fund has higher return/risk expectations of 12-15% and, thus, value add investments in the Core Fund fail to meet the higher hurdle for inclusion in the Value Add Fund.

Performance

Chad Provost discussed Invesco's outlook and positioning with a focus on the Core Fund where he is associate portfolio manager. There are big differences between winners and losers post-Great Financial Crisis, so geography and location is critical for success. Industrial pricing is high in some regions now to the extent that it is above replacement cost and finding scalable transactions continues to present challenges for Invesco. Industrial remains an underweight in the Invesco Fund which has created a headwind for performance relative the ODCE peer group. The apartment overweight has also been a headwind recently as pricing was soft though Invesco believes this is a temporary blip. Office exposure has been reduced because it is more volatile. The retail segment shifted towards what Invesco calls "experiential", meaning that the property offers a unique experience that can't be replicated easily. They also look for retail centers anchored by grocers in high-barrier to entry locations. Invesco's analysis includes a detailed review of tenant profiles. Almost all tenant profiles are strong from the cash flow and longevity standpoint.

The manage to core portfolio (i.e. value-add) will be providing material appreciation and growth in the Fund's income as projects in the industrial and apartment portfolio generate rental income.

The Core Fund outperformed the ODCE index over the trailing 1, 3, 5 and 10-year periods. Outperformance recently was attributed to strong appreciation in Los Angeles and Bay Area properties, as well as the Industrial portfolio. The Core Fund increased its leverage to be more in-line with the Index which has helped relative performance. As of year-end 2017, debt to total assets was 25.2% which is still a conservative level relative to the asset classes history. Invesco has maintained a longer duration than most peers as they lock-in low fixed rates. The weighted average remaining term on their debt was 8.6 years with an average contract interest rate of 3.7% at year-end. Noticeably, the leverage on the Core Fund increased from 21% in 2015 to 25.2% which puts the Fund leverage at or above the ODCE average.

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

May 22, 2018

Agenda Item 6.4

TO: Board of Retirement

FROM: Lilibeth Dames, Investment Analyst *Lilibeth Dames*

SUBJECT: Approval of Changes to Private Equity and Private Real Asset Policy Benchmarks

Recommendation

Approve changes to the policy benchmarks for SamCERA's private equity and private real asset programs.

Background

The policy benchmark for SamCERA's private equity program is the Russell 3000 + 3%, while the policy benchmark for SamCERA's Private Real Assets program is a blended benchmark of 34% Bloomberg Roll Select Commodity Index, 33% S&P Global Large-MidCap Commodity and Resources Index, and 33% S&P Global Infrastructure Index.

Discussion

Over the course of the past several months, staff and consultant have been discussing the appropriateness of SamCERA's current set of benchmarks for its private equity and private real assets programs. As a result of the analysis, staff recommends the following changes to the policy benchmarks used by Verus in computing the performance of SamCERA's policy benchmark portfolio.

	Current Policy Benchmark	Proposed Policy Benchmark
Private Equity	Russell 3000 + 3% (Real time)	Russell 3000 + 3% (One-quarter lagged)
Private Real Assets	34% Bloomberg Roll Select Commodity, 33% S&P Global Large-MidCap Commodity and Resources and 33% S&P Global Infrastructure (Real time)	50% S&P Global Infrastructure and 50% S&P Global Large-MidCap Commodity and Resources + 2% (One-quarter lagged)

Timing

Most non-traditional asset valuations (e.g. private equity and private real assets) may take up to 90 days after quarter-end or 120 days after year-end to be distributed to LPs. Hence, valuations are not received prior to the production of Verus' quarterly performance report for SamCERA. For

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

Board of Retirement

the purpose of calculating performance, Verus uses the most recently available quarterly market value (generally the previous quarter) for private assets, adjusts the value for the current quarter's

cash flows and rolls it forward to the end of the current quarter. The resulting quarterly return is then benchmarked against the current quarter's performance of the public benchmark. The *unlagged* benchmarks against the *lagged* private asset valuations can cause big distortions, especially in the short-term. Staff recommends that SamCERA lag the public benchmark to match the lagged valuation. The majority of Verus clients do lag the public benchmark by one quarter.

Change to Private Real Assets Benchmark

In October 2016, the Board approved several changes to SamCERA's Investment Policy. One of these changes included the composition of the sub-categories in Private Real Assets. The change reduced the number of sub-categories from three to two: Infrastructure and Natural Resources. The other change was the addition of the Liquid Pool sub-asset class under SamCERA's Inflation Hedge portfolio. Both the Liquid Pool and Private Real Asset sub-asset classes are currently benchmarked to 34% Bloomberg Roll Select Commodity, 33% S&P Global Large-MidCap Commodity and Resources and 33% S&P Global Infrastructure. In order to be consistent with the sub-category breakdown of Private Real Assets stated in SamCERA's Investment Policy, and to include an appropriate hurdle for the illiquidity premium, staff recommends that the public benchmark be changed to 50% S&P Global Infrastructure and 50% S&P Global Large-MidCap Commodity and Resources, plus a 2% hurdle.

Staff recommends that the changes be effective as of April 1, 2018 so that they may be utilized in the upcoming fiscal-year end June 30, 2018 quarterly performance report.

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

May 22, 2018

Agenda Item 6.5

TO: Board of Retirement

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

SUBJECT: Approval of Updated Asset Allocation Policy Portfolio

Recommendation

Review the attached asset allocation study from Verus and provide direction to staff and consultant regarding potential target policy allocation changes.

Background

In 2016, SamCERA undertook a full asset-liability analysis, which resulted in a number of changes to SamCERA's policy portfolio, including the reduction of the equity allocation and an increase in diversifying and inflation hedge assets. The asset-liability process entailed developing efficient frontier mixes to be used in asset-liability simulations, which were then used to analyze the risk/return portfolio tradeoffs across multiple dimensions. Consistent with SamCERA's Investment Policy, it is anticipated that SamCERA will undertake an asset-liability study every three years.

In the years in which a full asset-liability analysis is not performed, it is anticipated that the Board will reevaluate the target policy portfolio, incorporating updated capital market assumptions and current market trends, to determine whether to incorporate any smaller asset allocation adjustments to the target policy portfolio.

Discussion

In the March meeting, Verus reviewed their updated capital market assumptions. The attached report from Verus utilizes these assumptions and includes a number of potential asset allocation modifications to the target policy portfolio.

Page 8 shows the proposed asset allocation mixes. There are 5 proposed mixes to compare against our current policy, which is shown in the first column. The primary difference between the mixes is the amount in risk parity. Proposed 1 (and 1a, which is a slightly more aggressive version of Proposed 1) contains no exposure to risk parity. Proposed 2 contains 4%, Proposed 3 contains 8% (current amount), and Proposed 4 contains 12% to risk parity. The other universal changes across all of the proposed mixes are a 1% reduction in private equity (and 1% corresponding increase to public equity) and utilizing low volatility equity and a 50% currency hedge for international developed equity as a way to dampen expected portfolio

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

volatility. Page 9 shows the expected return and risk metrics. For the most part all of the proposed mixes are similar in risk-adjusted returns, with the mixes containing higher risk parity

exposure exhibiting higher expected returns and volatility (due to the leverage in the strategy). Pages 11-13 show the risk decomposition and stress cases/historical scenarios.

Margaret Jadallah from Verus will present this report to the Board during the May meeting.

Attachment

Verus Asset Allocation Study



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



MAY 2018

Asset Allocation Study

SamCERA

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2018 Capital Market Assumptions

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					
Equities								
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
Fixed Income								
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	-	-
Other								
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



Asset Allocation

Allocations

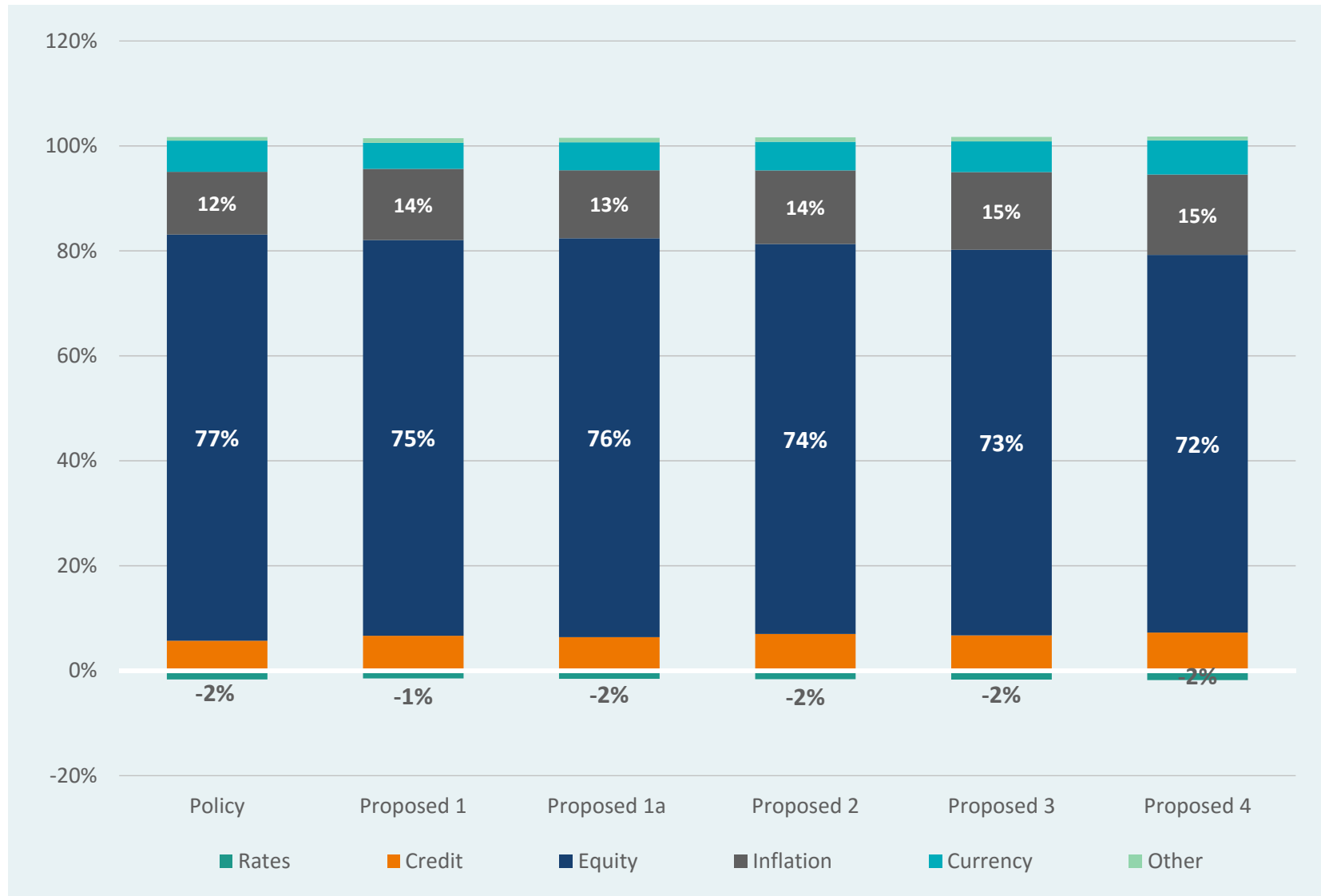
	SamCERA						CMA's (10 Yr)		
	Current Policy	Proposed 1	Proposed 1a	Proposed 2	Proposed 3	Proposed 4	Return (g)	Standard Deviation	Sharpe Ratio
US Large	19.0	11.0	11.0	11.0	11.0	11.0	4.5	15.7	0.15
US Small	2.0	2.0	2.0	2.0	2.0	2.0	4.4	21.5	0.10
Low Volatility	0.0	6.0	6.0	6.0	6.0	5.0	4.1	12.7	0.15
International Developed	15.0	7.0	8.0	7.0	7.0	7.0	8.6	18.1	0.35
Intl Developed Hedged	0.0	7.0	8.0	7.0	7.0	7.0	8.6	16.2	0.46
Emerging Markets	4.0	4.0	4.0	4.0	4.0	4.0	7.3	26.6	0.19
High Yield Corp. Credit	7.0	10.0	10.0	10.0	9.0	9.0	3.7	11.6	0.13
Private Equity	7.0	6.0	6.0	6.0	6.0	6.0	6.4	25.8	0.16
Total Growth	54	53	55	53	52	51			
Core Fixed Income	14.0	18.0	17.0	16.0	14.0	12.0	2.9	6.4	0.11
Hedge Fund	6.0	8.0	8.0	7.0	6.0	6.0	4.0	7.9	0.23
Total Diversifying	20	26	25	23	20	18			
Commodities	4.0	4.5	4.5	4.5	5.0	4.5	4.3	15.9	0.13
Core Real Estate	8.0	10.0	10.0	10.0	10.0	10.0	6.0	12.7	0.30
Infrastructure	4.0	4.5	4.5	4.5	5.0	4.5	7.1	18.9	0.26
US TIPS	2.0	2.0	1.0	1.0	0.0	0.0	2.6	5.5	0.07
Total Inflation	18	21	20	20	20	19			
Risk Parity	8.0	0.0	0.0	4.0	8.0	12.0	7.2	10.0	0.50
Total Multi-Asset	8	0	0	4	8	12			
Total Allocation	100	100	100	100	100	100			

Forecasts

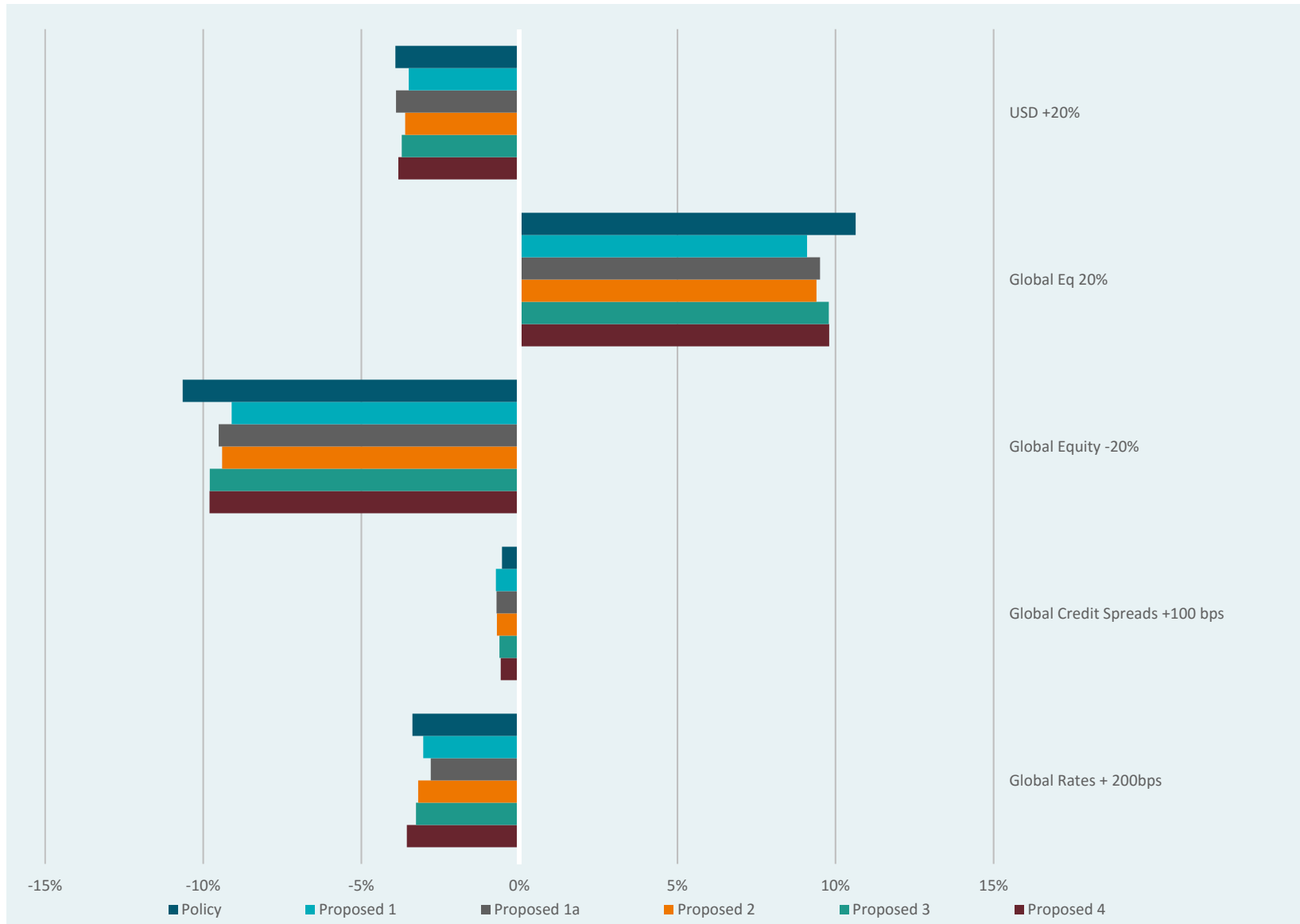
	SamCERA					
	Current Policy	Proposed 1	Proposed 1a	Proposed 2	Proposed 3	Proposed 4
Mean Variance Analysis						
<i>Forecast 10 Year Return</i>	6.0	5.7	5.8	5.8	6.0	6.1
Standard Deviation	11.0	10.0	10.3	10.2	10.4	10.4
<i>Return/Std. Deviation</i>	0.5	0.6	0.6	0.6	0.6	0.6
<i>1st percentile ret. 1 year</i>	-22.1	-18.2	-18.8	-18.9	-19.6	-19.9
Sharpe Ratio	0.39	0.38	0.38	0.39	0.40	0.41

Barra analysis

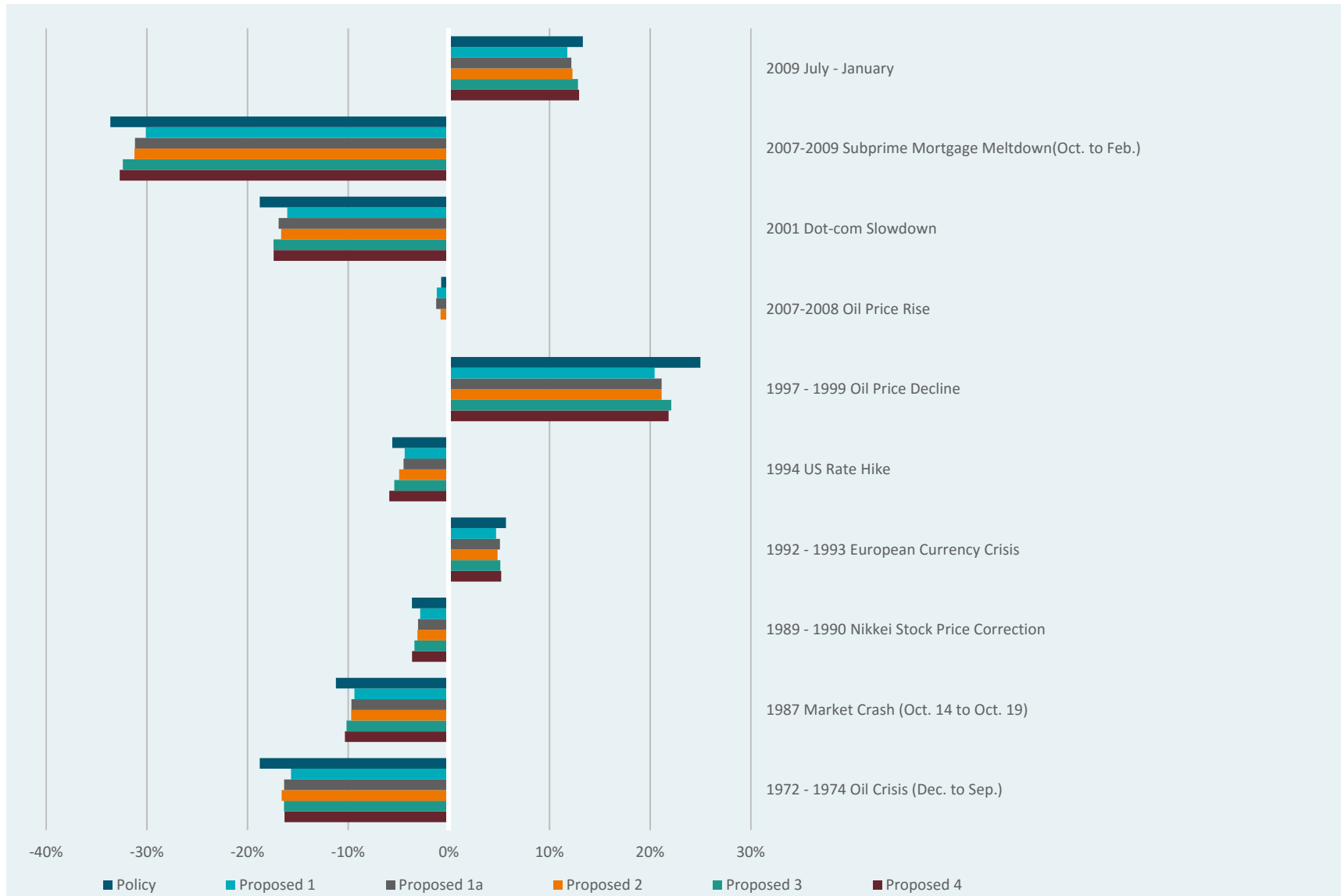
Risk decomposition



Stress tests



Scenario analysis



SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

May 22, 2018

Agenda Item 6.6

TO: Board of Retirement

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

SUBJECT: Report on Opportunity in MLP's and Approval of Process to Select MLP Manager

Recommendation

Receive the presentation on the current potential opportunity in MLP's, and if appropriate, approve the process to select an MLP manager.

Background

Verus has identified a potential tactical (approx. 2-4 year holding period) opportunity in MLP (Master Limited Partnership) assets, which are publicly-traded midstream energy (e.g. pipeline and storage) stocks that trade in the U.S. MLP's are currently undervalued, while providing an attractive yield coupled with interesting growth prospects. John Nicolini from Verus will present this topic, along with their approved shortlist of MLP managers, during the meeting.

Discussion

If the Board is interested in moving forward with this investment opportunity, staff recommends the Board use a modified process for selecting an MLP manager that entails delegating the ultimate selection of the MLP manager to staff.

Given that there is no regularly scheduled June Board meeting, and given the time-sensitive nature of this opportunity, staff is requesting the Board approve the following process and parameters to select the MLP manager:

- 1) Investment size of up to \$80 million (approximately 2% of plan assets, sourced 50% from TIPS and 50% from the liquid pool).

- 2) Strategy must be either the Cushing MLP Alpha Total Return or the Harvest MLP Alpha strategy.

If the Board approves, staff will conduct in-depth due diligence on the two short-listed strategies above to select the ultimate strategy to utilize. Staff will inform the Board in July on the final outcome.

Attachments

Verus Presentation on Opportunity in MLP's
Verus MLP Manager Shortlist



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



APRIL 2018

Opportunity in Midstream Energy

Table of Contents



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SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

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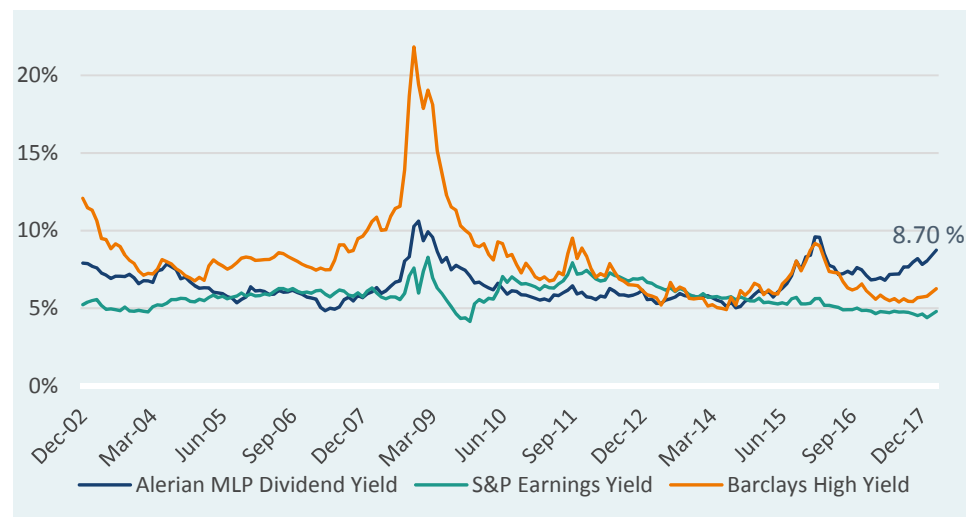
Past performance is no guarantee of future results. This document is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and is not intended for retail investors. Nothing herein constitutes investment, legal, accounting or tax 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. Additional information about Verus Advisory, Inc. is available on the SEC’s website at www.adviserinfo.sec.gov. Verus – also known as Verus Advisory™.

Opportunity in midstream energy

Opportunity in midstream energy

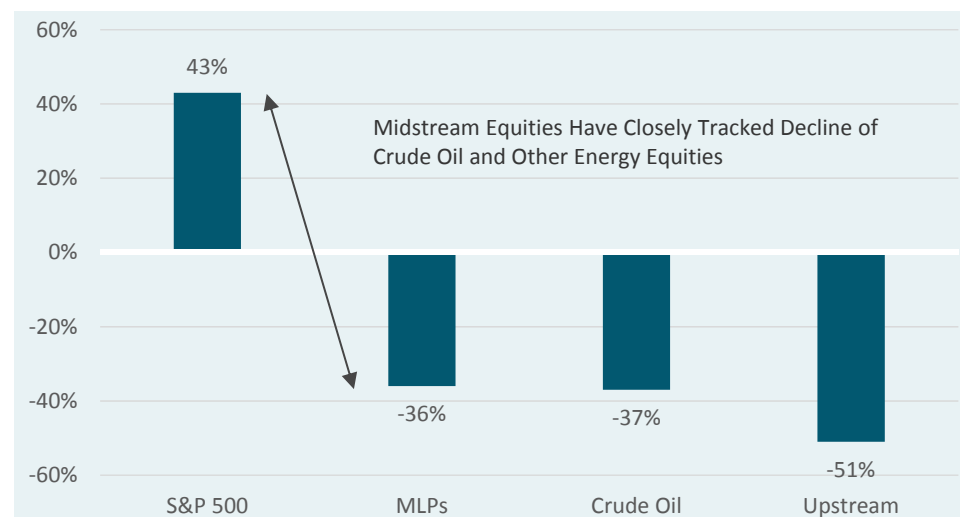
- Traditionally, midstream energy companies have traded as publicly-listed MLPs. While MLPs comprise the bulk of the midstream sector universe, there are a number of C-corps within midstream energy with equally attractive fundamentals.
- This presentation will focus primarily on the MLP universe where current and historical data is readily available.
- MLP yields have steadily climbed since mid-2016 on the back of a sell-off in the sector and recovery in distributions following the energy price collapse.
- MLP yields are now 250bps above high yield debt, a level not seen in the asset classes history

MLP YIELDS



As of December 2017.

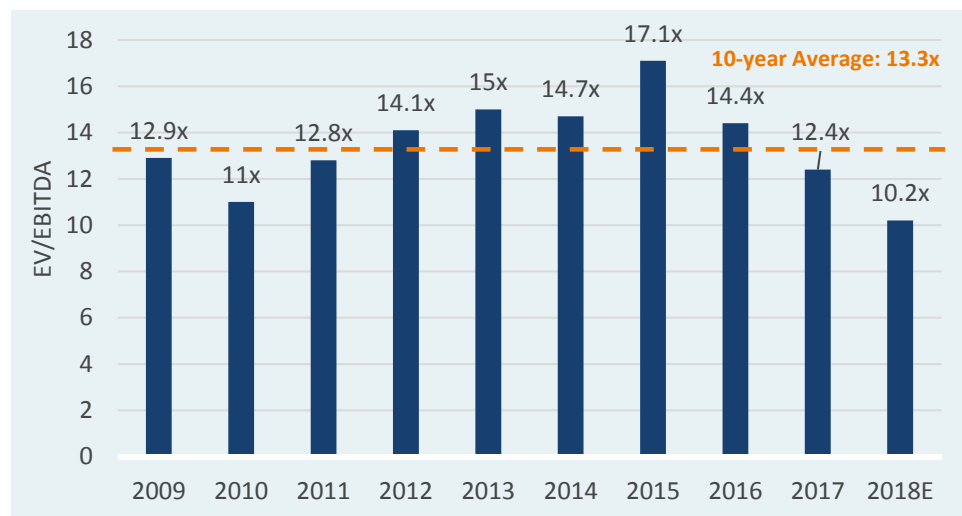
RETURNS SINCE AUG 2014



Attractive valuations

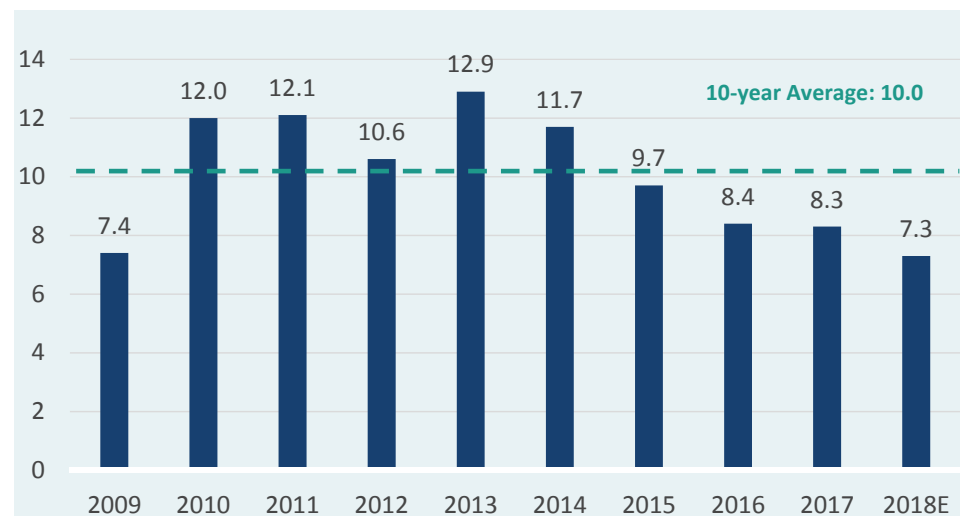
- MLP valuations look attractive across a number of historical metrics, including Enterprise Value-to-EBITDA and Price to Distributable Cash Flow.
- Price to Distributable Cash Flow has become an increasingly important metric to MLP investors as weakness in the sector following the oil price collapse put pressure on sustainable distribution levels. As earnings in midstream energy recover, we have seen cash flows available for distribution return to sustainable levels.

MLP VALUATION MULTIPLES (EV/EBITDA)



Source: Bloomberg

MLP VALUATION MULTIPLES (PRICE-TO-DISTRIBUTABLE CASH FLOW)

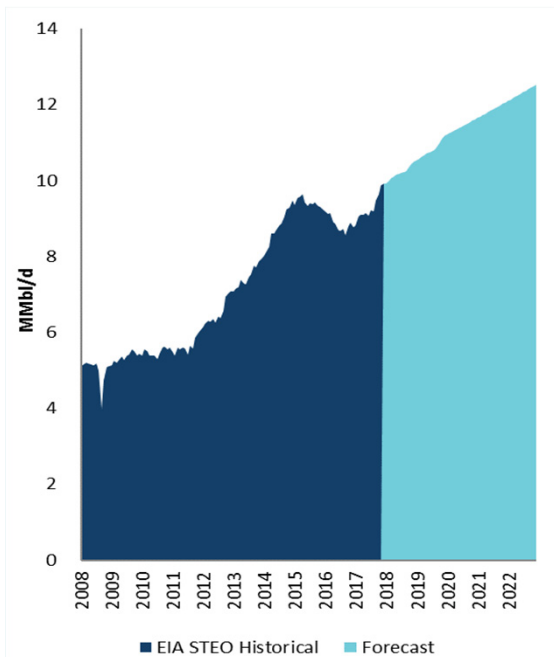


Source: Tortoise, TCA

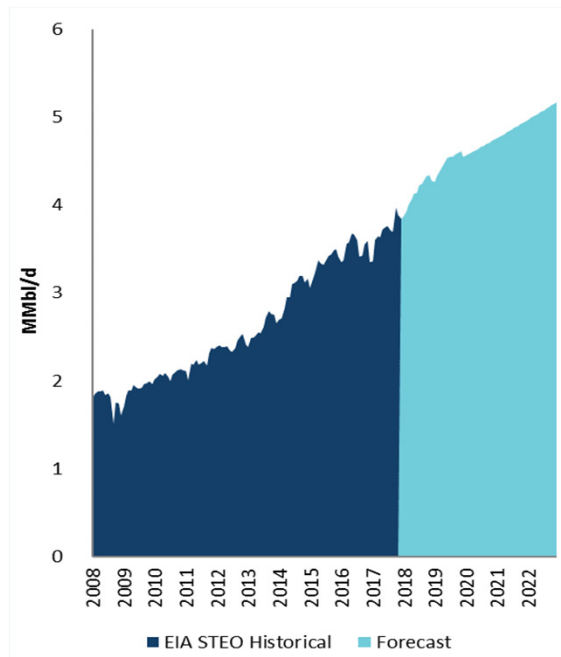
U.S. energy production forecasts

- U.S. Production of crude oil, natural gas liquids (NGLs) and dry natural gas has been climbing over the last decade with increased use of new shale drilling technology .
- The U.S. is expected to surpass Russia in 2018 to be the largest oil producer in the world. Midstream companies grow through volume increases, not commodity price appreciation.
- Additional capex will be needed to service growing production though the pace of spending should decline over time.

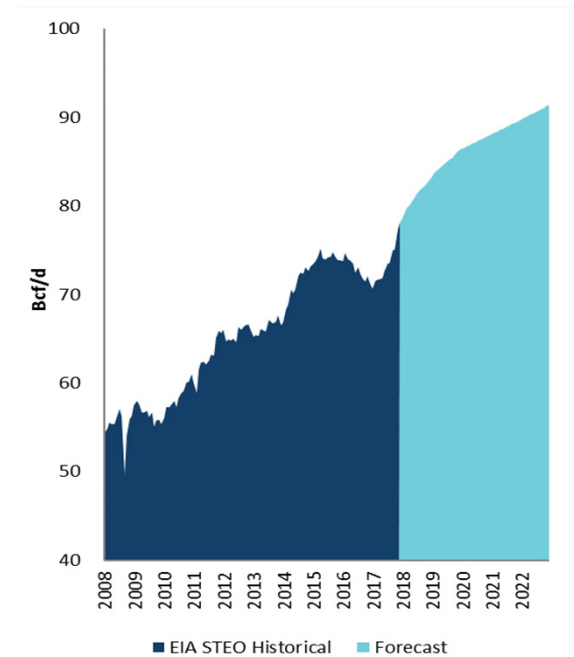
U.S. CRUDE OIL PRODUCTION



U.S. NGL PRODUCTION



U.S. DRY NATURAL GAS PRODUCTION

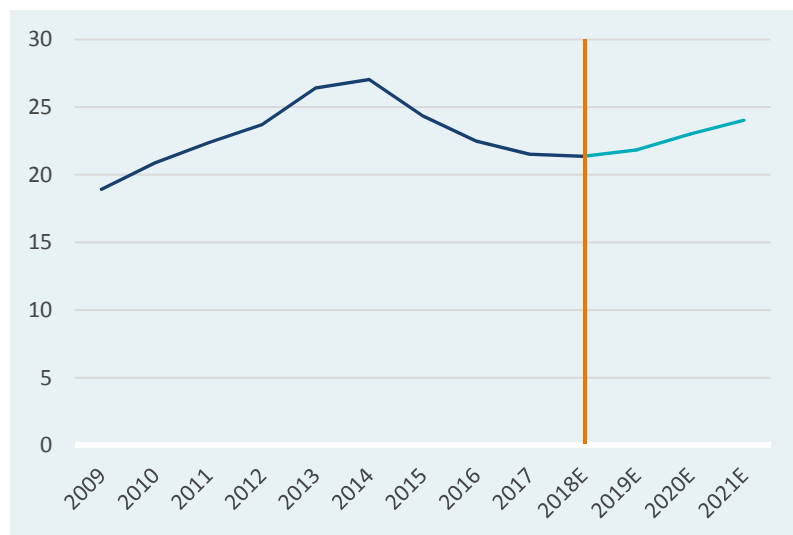


Source: Bloomberg, EIA STEO (January 2018), EPD, IHS, Tortoise estimates and Wood Mackenzie as of 12/31/2017

Distribution growth

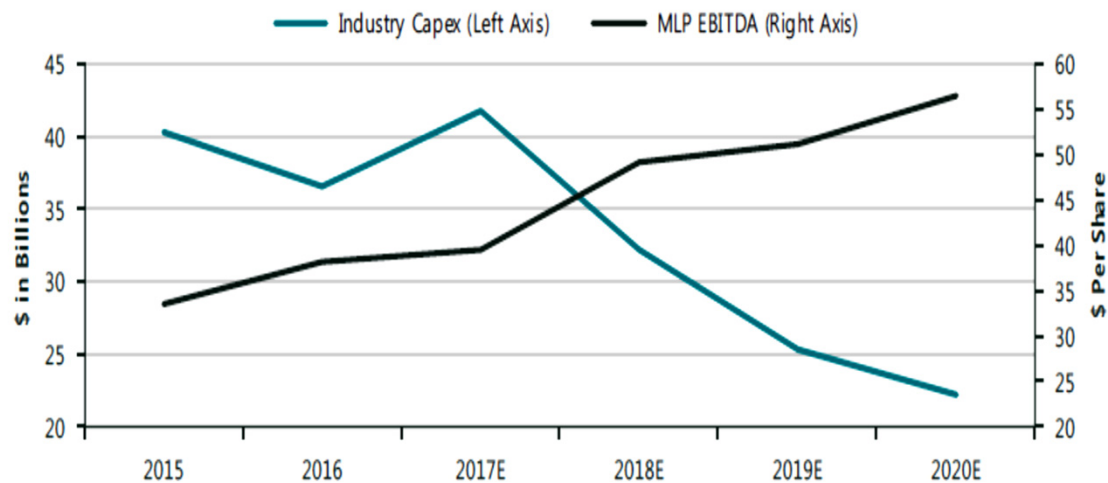
- Declining distributions per share since 2015, while unpopular, were necessary for MLPs to strengthen balance sheets and sustain future distributions.
- Consensus expectations are for distributions to grow in 2018 and beyond.
- Expectations for reduced capex spending needs going forward could lead to more earnings being converted into free cash flow.

ALERIAN INDEX DIVIDENDS PER SHARE



Source: Bloomberg, Clearbridge

POTENTIAL OUTCOME IF CAPEX DECLINES AND CASH FLOWS INCREASE



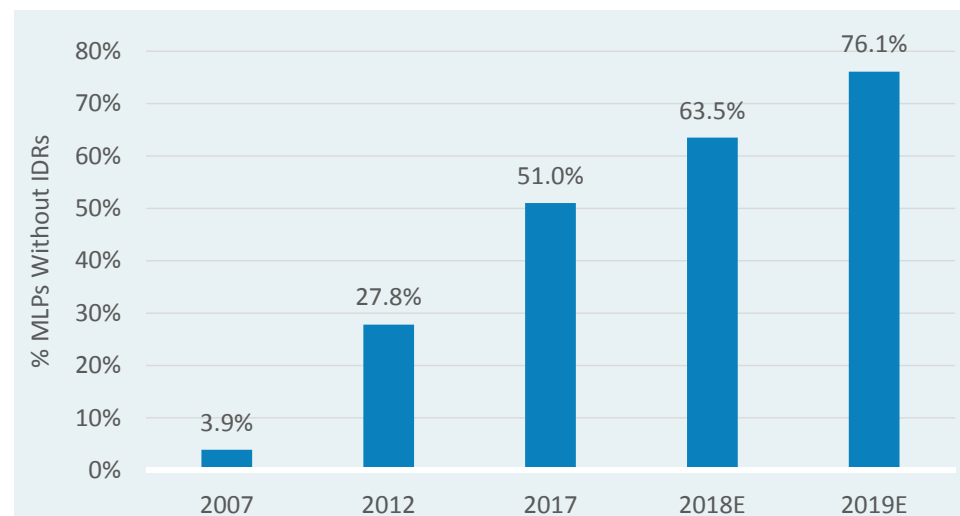
Improving corporate governance

- IDRs (Incentive Distribution Rights) are used to incentivize the general partner (GP) of the MLP to grow distributions.
- In the early stages of an MLPs life, IDRs may divert 2-5% of the distributable cash flow to the GP. As MLPs matured, IDRs were diverting as much as 50% of the cash flows to the GP.
- MLPs with substantial IDR exposure have seen their share prices trade at a discount to peers. The re-rating that MLPs gain from IDR removal has created a positive alignment of interest between GPs and LPs.
- In addition, the removal of IDRs will allow a greater share of operating cash flow to reach common units and provide the MLP with greater flexibility in funding capex.

MLPS HAVE BEEN ELIMINATING IDRS

	2007	2017		
Names Without IDRs	-	<ul style="list-style-type: none"> — Enterprise Products — Magellan Midstream Partners — Targa — Plains All American Pipeline — ONEOK 	<ul style="list-style-type: none"> — Andeavor Logistics — MPLX Energy Logistics — Buckeye Partners — Kinder Morgan — Crestwood — Williams — SemGroup — Spectra Energy 	
C-Corps vs. MLPs	Spectra Energy	<ul style="list-style-type: none"> — Kinder Morgan — Plains All American Pipeline — ONEOK 	<ul style="list-style-type: none"> — Targa — Williams — SemGroup 	

% MLPS WITHOUT IDRS

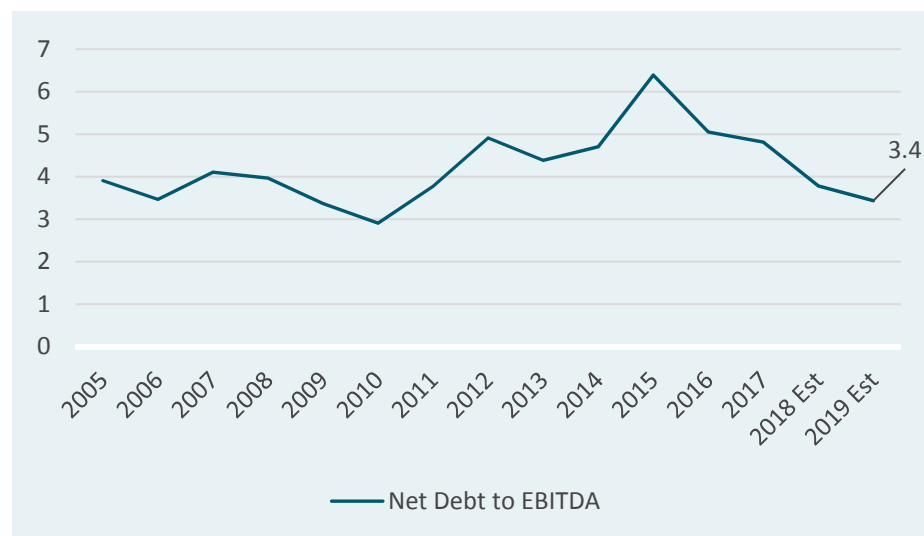


Source: TPH (Tudor Pickering Holt & Co)

Balance sheet improvements

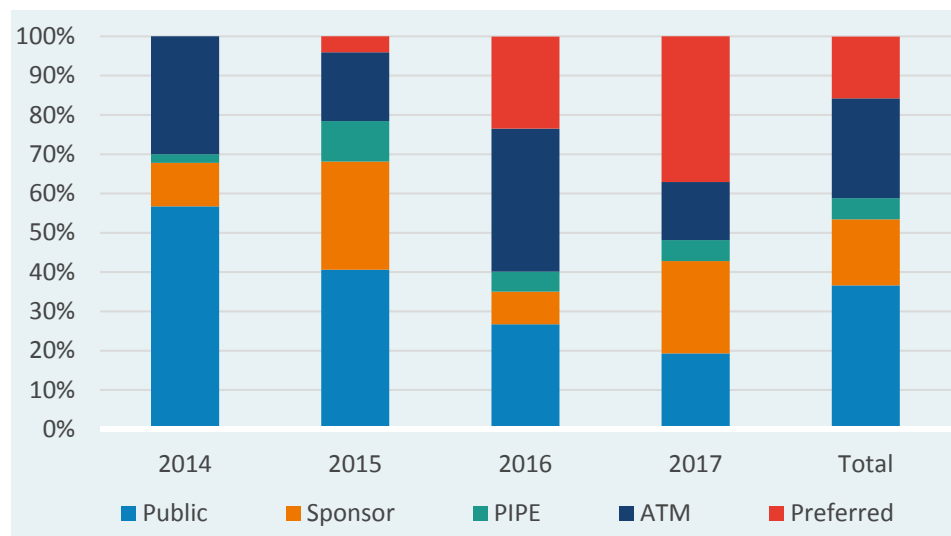
- Debt-to-cash flow has improved since peaking at 6.4x in 2015.
- Preferred equity capital issuance has grown dramatically since 2016 as MLPs found issuing debt difficult and large blocks of common unit issuance were hard to place. Much of the preferred equity is convertible into common units with potential dilution already priced into the market. As cash flows have recovered, MLPs have scaled back their equity issuance.
- Amid the recovery in oil prices, there have been selective openings in the credit markets for debt issuance. So far in 2018, MLPs have raised \$13B in debt, mostly in investment grade paper where capital markets are more receptive to energy-related issuance.

ALERIAN MLP DEBT TO CASH FLOW RATIO



Source: Bloomberg

MLP NON-DEBT CAPITAL ISSUANCE



Source: Company reports and Wells Fargo Securities, LLC

New tax bills impact on MLPs

— New tax law changes will narrow the MLP tax advantages relative to C-corps.

- 7% tax advantage for MLPs today vs. 8% prior to the tax bills passing.

— **Impact:**

- Potentially fewer MLP IPOs in the future as companies weigh the benefits of tax pass-through vehicles vs. the larger pool of potential investors available as C-corps.

2017 SYSTEM

	C Corporations	MLPs
Federal Tax Rate	35%	0%
Qualified Dividend Rate	20%	n/a
Individual Tax Rate	n/a	39.6%
Income Deduction	n/a	n/a
Effective Rate	48%	39.6%

NEW SYSTEM

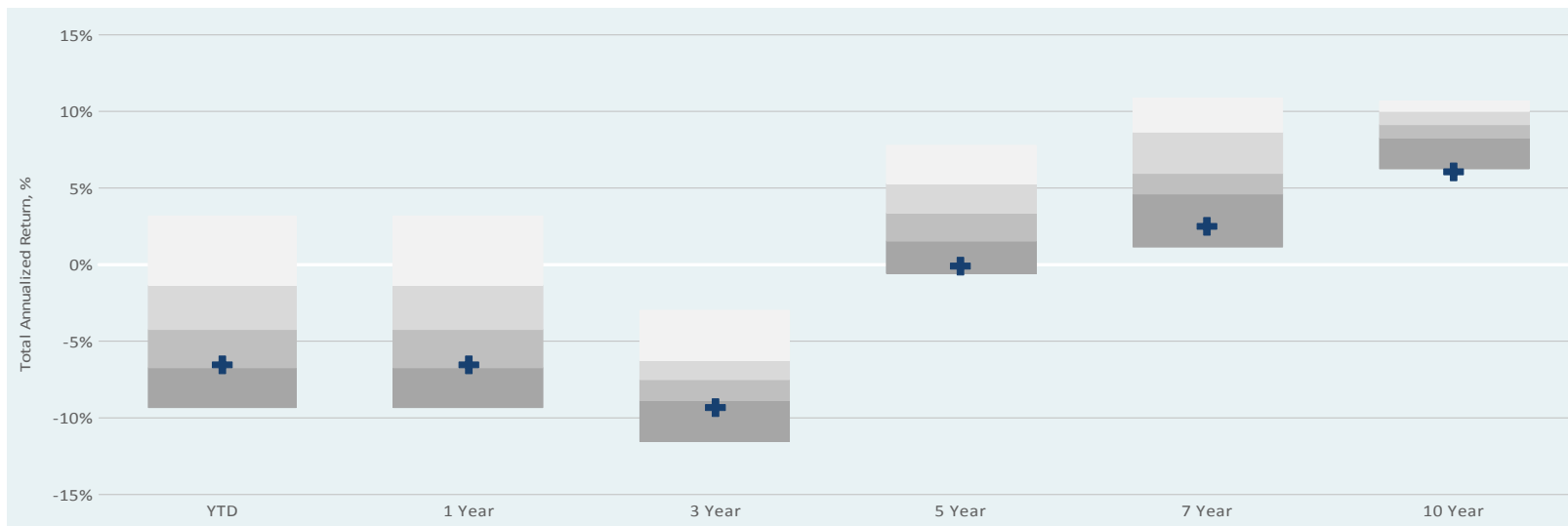
	C Corporations	MLPs
Federal Tax Rate	21%	0%
Qualified Dividend Rate	20%	n/a
Individual Tax Rate	n/a	37%
Income Deduction	n/a	20%
Effective Rate	36.8%	29.6%

Source: Alerian

Active vs. passive

— MLP Indices like the Alerian exclude C-corps which are becoming a larger component of the midstream universe

CUMULATIVE PERFORMANCE - ALERIAN INDEX VS UNIVERSE OF ACTIVE MLP MANAGERS



The Alerian MLP Index has consistently underperformed active management within the MLP Universe.

ANNUAL PERFORMANCE AND RANKING	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Alerian MLP Index	-36.9	76.5	35.9	13.9	4.8	27.6	4.8	-32.6	18.3	-6.5
Rank	30	72	55	68	87	78	89	53	67	73

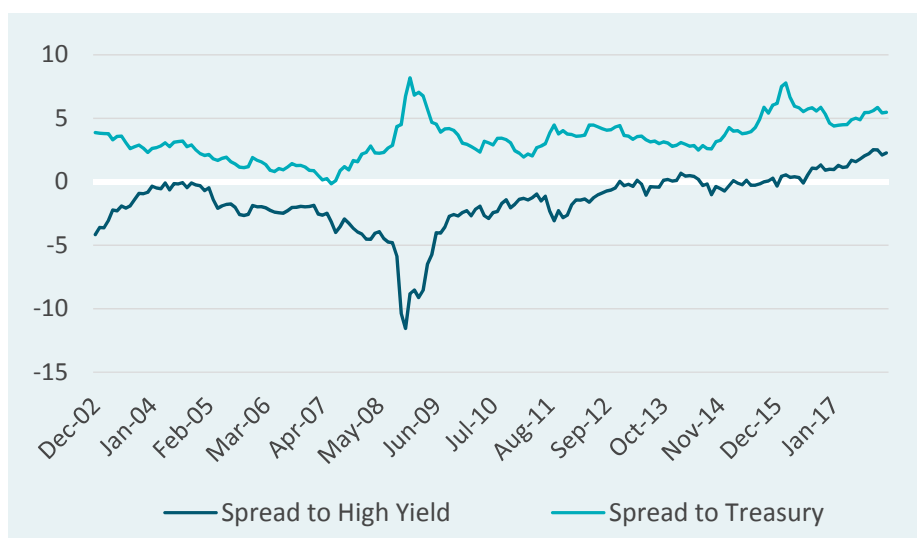
The Alerian MLP Index has been a below median performer in 9 of the last 10 calendar years.

Source: MPI

Return drivers

- For most clients, we recommend a tactical position in MLPs with a short-medium term hold period (2-4 years).
- The current spread on MLPs above the 10-year Treasury is around 580bps; closer to 300bps historically.
- The current spread on MLPs above the Barclays High Yield index is around 250bps.
- **We recognize that 20+% returns in any environment are rare. Therefore, we place a low probability on fully achieving those return levels but even a 50% probability would still provide an attractive return target to investors in today's environment.**

MLP SPREADS VS HIGH YIELD AND TREASURY RATES



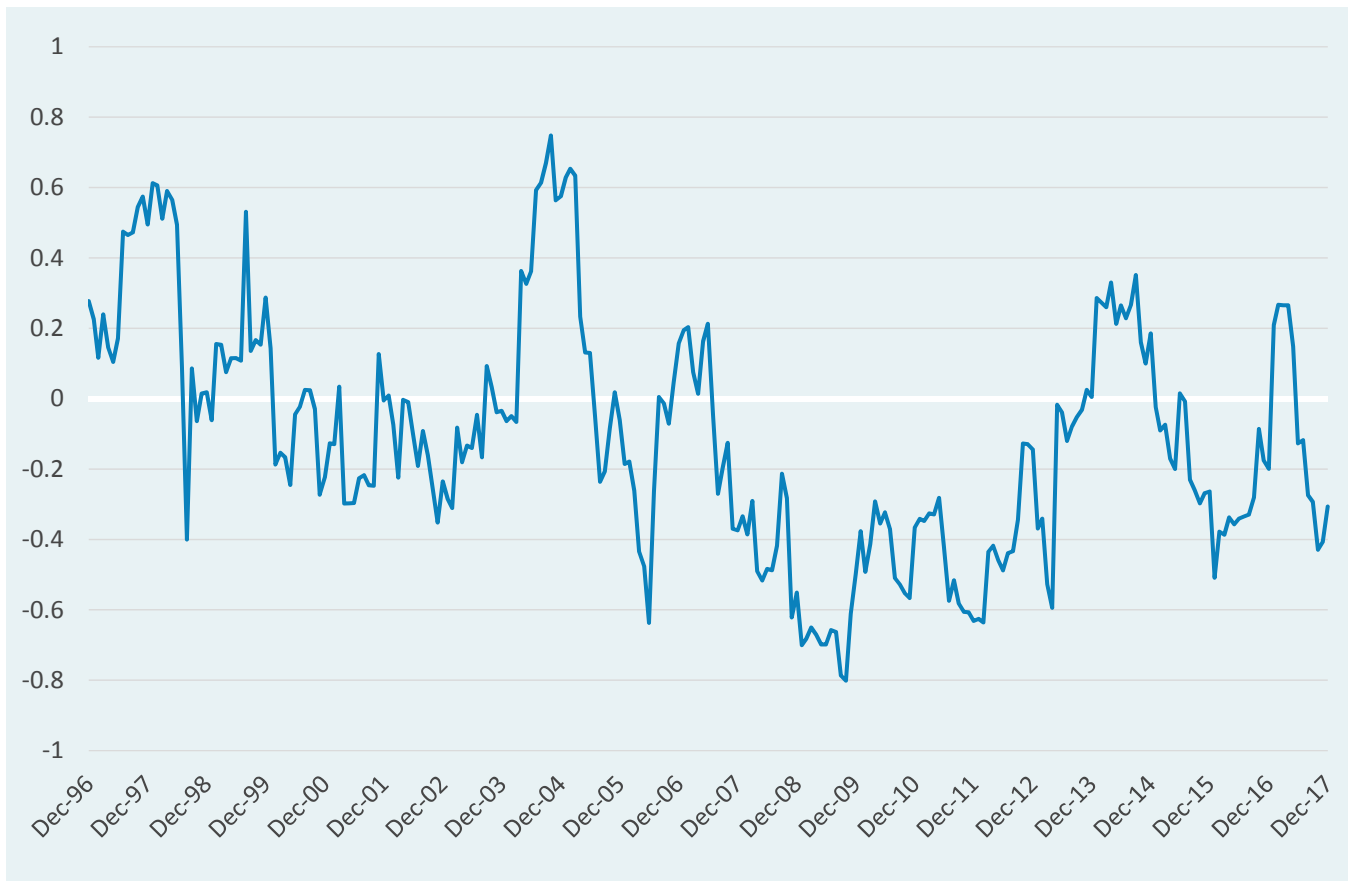
Source: Bloomberg

3-Year Expected Return:
Current Yield - 8%
+
Distribution Growth - 4-6%
+
Return to FMV - 10-13%
= 22-27%/year

Risks

Rising interest rates

1-YEAR ROLLING CORRELATION OF MLPs TO TREASURIES

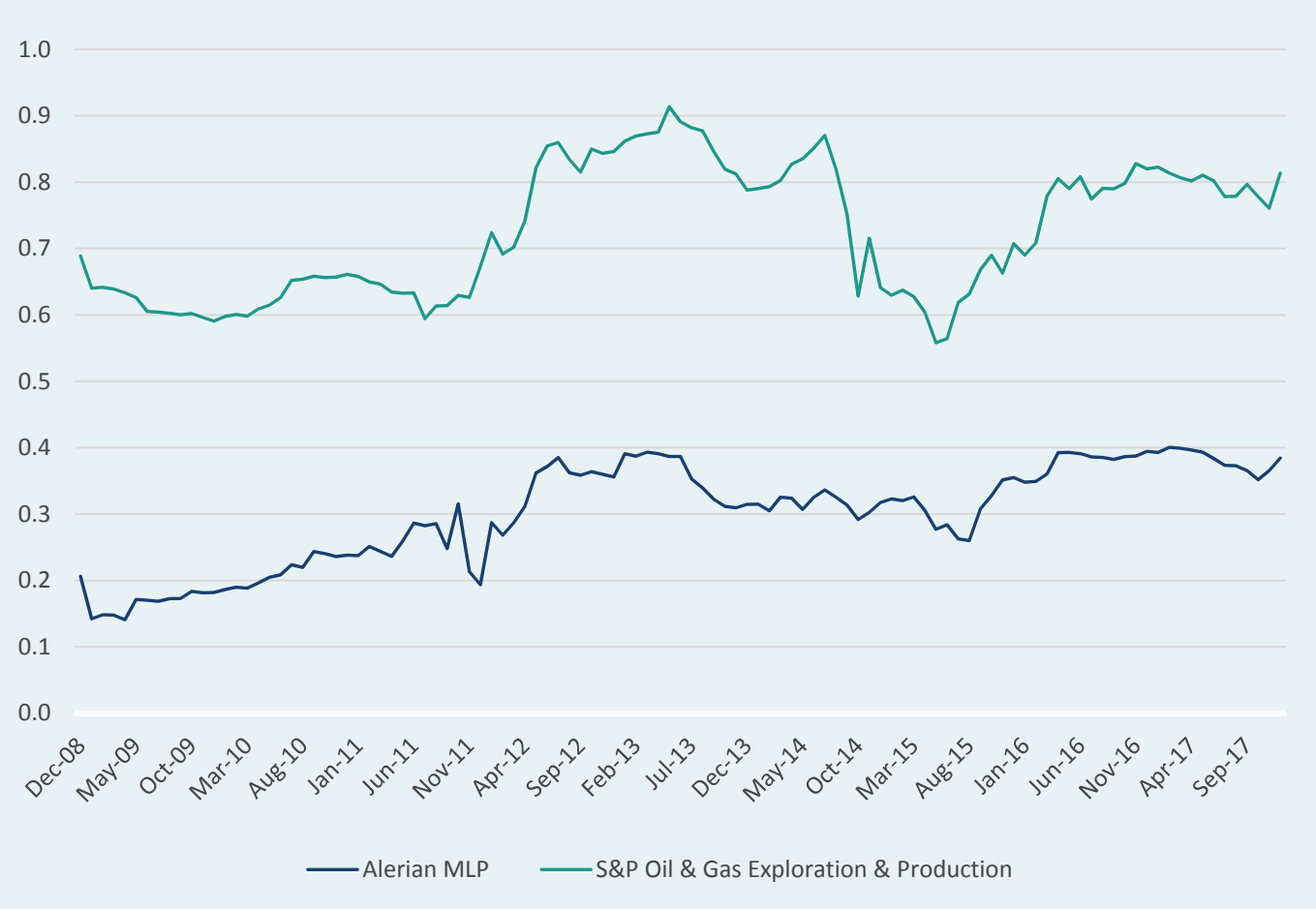


- Historically, MLPs have exhibited low correlation to Treasury price movements
- Correlation between MLPs and Treasury rates goes up in rising rate environments
- MLPs with healthy distribution growth rates should be able to deliver attractive returns in a steady rate rising environment

Source: MPI

Correlation to oil prices

3-YEAR ROLLING BETA TO WTI OIL PRICES



- MLPs tend to exhibit much lower betas to the oil market than E&P companies as they have less exposure to oil prices directly
- MLPs are exposed to volume risk which can be influenced by commodity prices but more as a second-order derivative

Source: MPI

Appendix

MLP fund structures

ATTRIBUTES OF MIDSTREAM ENERGY INVESTMENT OPTIONS

	Tax Advantaged Distributions	Counterparty Risk	Liquidity Terms	Tax Reporting	UBTI	Corporate Level Drag on Returns	Tax Status	Leverage
Separately Managed Account	Yes	No	Daily	Multiple K-1's	Yes	No	Partnership	No
Limited Partnership Fund	Yes	No	Monthly/Quarterly	Consolidated K-1's	Yes	No	Partnership	No
Group Variable Annuity	Yes	Yes	Daily	No K-1's or 1099	No	Yes	Not Applicable	No
Exchange Traded Note (ETN)	No <i>(distributions treated as taxable income)</i>	Yes	Daily	1099	No	No	Taxable Note	No
40-Act Mutual Fund	Yes	No	Daily	1099	No	Yes	Taxable C-Corp	No
Exchange Traded Fund (ETF)	Yes	No	Daily	1099	No	Yes	Taxable C-Corp	No
Closed-End Fund	Yes	No	Daily	1099	No	Yes	Taxable C-Corp	Yes

Source: NBW



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

May 2018
MLP Review Search
SamCERA



I. Manager overview

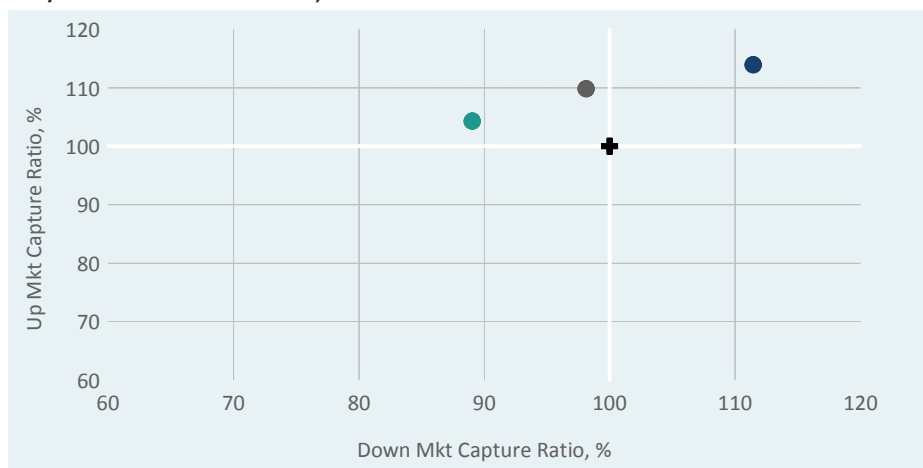
Manager comparison

	Cushing	Harvest	NBW Capital
FIRM OWNERSHIP	100% employee owned	Wholly owned subsidiary of Blackstone	100% employee owned
FIRM NAME	Cushing Asset Management, L. P.	Harvest Fund Advisors LLC	NBW Capital (formerly Taylor Investments)
PRODUCT NAME	Cushing MLP Alpha Total Return Strategy	Harvest MLP Alpha Composite	NBW Capital MLP
FIRM TOTAL AUM (\$MM)	\$3,607	\$10,700	\$415
STRATEGY AUM (\$MM)	\$796	\$10,700	\$106
INCEPTION DATE	Jun-06	Jan-06	Dec-99
PREFERRED BENCHMARK	Alerian MLP	Alerian MLP	Alerian MLP
INVESTMENT APPROACH	Fundamental	Fundamental	Fundamental
SCREENING APPROACH	Combined	Combined	Combined

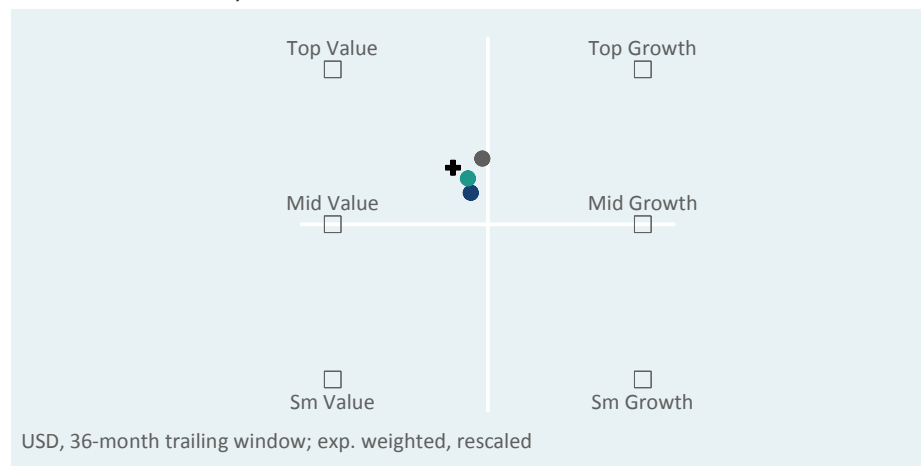
Style and portfolio comparison

● Cushing ● Harvest ● NBW Capital + Alerian MLP Index

UP/DOWN MARKET CAPTURE, JAN-08 TO DEC-17



RUSSELL 6 STYLE MAP, MAY-09 TO DEC-17

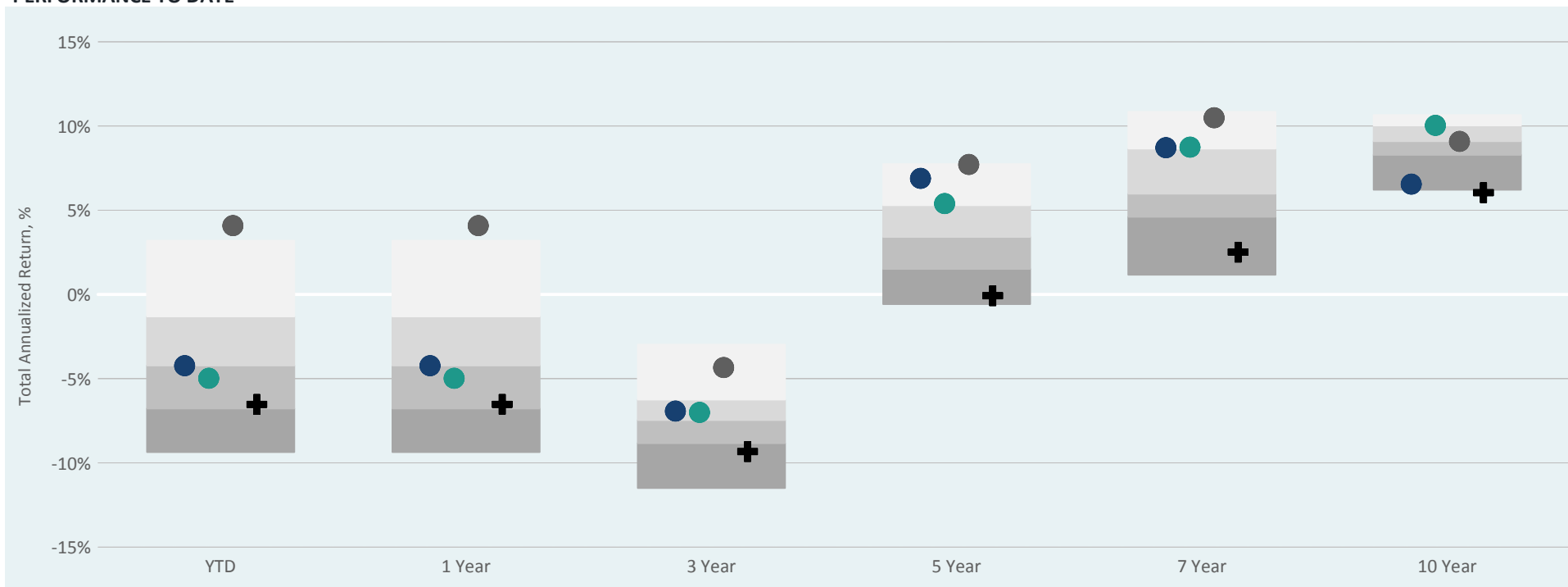


	Cushing	Harvest	NBW Capital
% HOLDINGS IN 10 LARGEST STOCKS	49.6%	63.0%	58.9%
ANNUAL TURNOVER	26.0%	25.0%	28.0%
CASH	1.4%	1.0%	2.5%
CURRENT DIVIDEND YIELD	5.6%	7.3%	5.9%
PORTFOLIO HOLDINGS	25	45	20
WGTD. AVG. MKT. CAP	\$ 14,582	\$ 20,073	\$ 6,700
MEDIAN MKT. CAP	\$ 8,136	\$ 5,206	---
MAX CASH POSITION	5.0	10.0	5.0
MAX POSITION SIZE	7.00	20.0	10.0

Performance comparison - as of December 2017

● Cushing ● Harvest ● NBW Capital + Alerian MLP Index

PERFORMANCE TO DATE

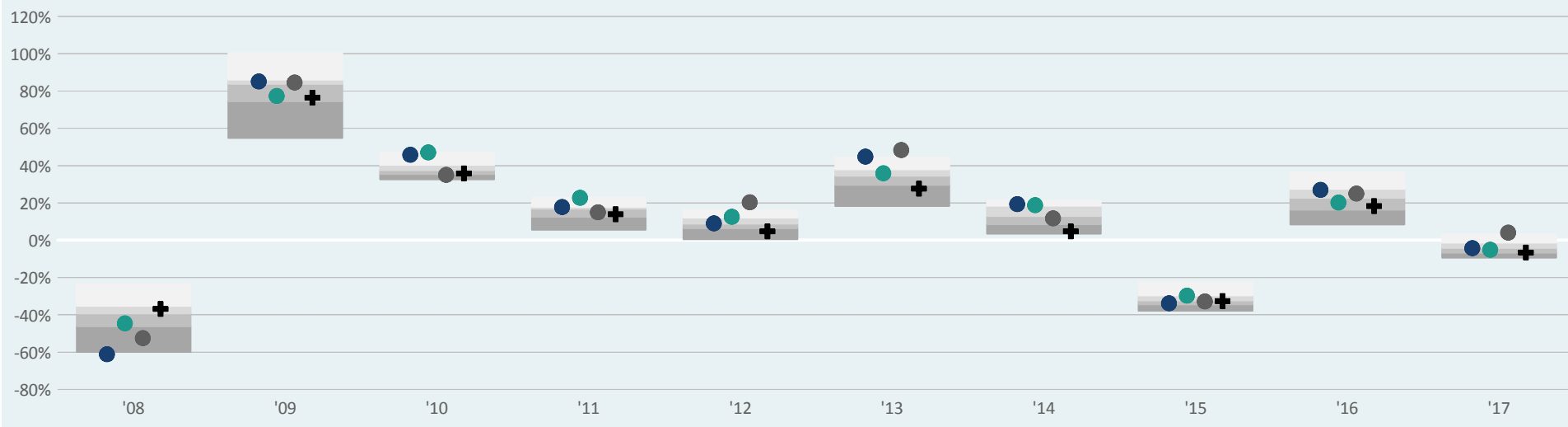


EXCESS ANNUALIZED RETURN TO DATE, %	YTD	1 Year	3 Year	5 Year	7 Year	10 Year
Cushing	2.3	2.3	2.4	7.0	6.2	0.5
Harvest	1.6	1.6	2.3	5.5	6.2	4.0
NBW Capital	10.6	10.6	5.0	7.8	8.0	3.1

Calendar year performance

● Cushing ● Harvest ● NBW Capital + Alerian MLP Index

ANNUAL PERFORMANCE



ANNUAL PERFORMANCE AND RANKING	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Cushing	-61.1	85.2	45.8	17.9	9.1	44.9	19.5	-33.7	27.0	-4.2
Rank	100	29	9	26	44	5	16	69	28	50
Harvest	-44.5	77.4	47.1	22.8	12.6	36.0	18.8	-29.6	20.3	-5.0
Rank	69	71	5	6	18	42	20	24	57	56
NBW Capital	-52.4	84.6	35.1	15.1	20.4	48.4	11.7	-32.8	25.1	4.1
Rank	85	41	82	63	0	0	57	54	39	4
Alerian MLP Index	-36.9	76.5	35.9	13.9	4.8	27.6	4.8	-32.6	18.3	-6.5
Rank	30	72	55	68	87	78	89	53	67	73

Performance summary - as of December 2017

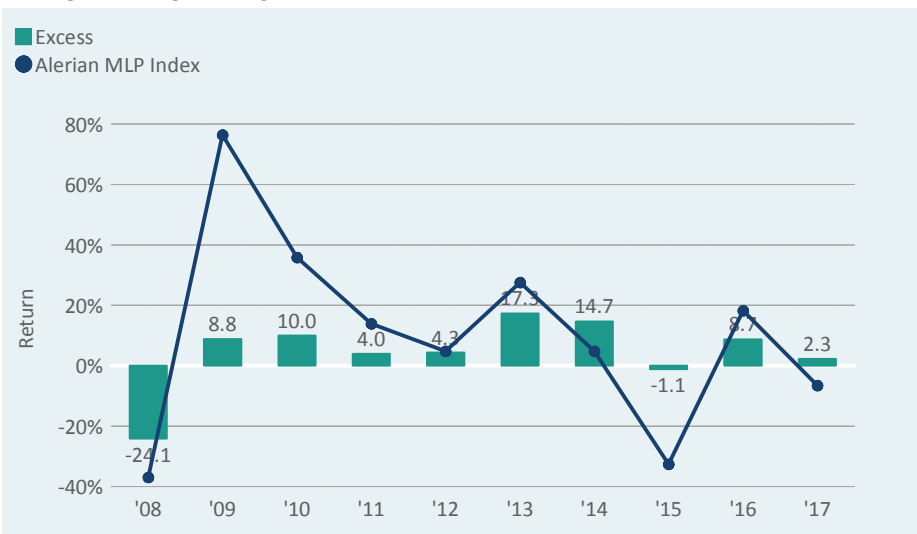
	Cushing	Harvest	NBW Capital	Alerian MLP Index
PERFORMANCE ANALYSIS - (5 Years)				
Alpha %	7.1	5.3	8.0	0.0
Beta	1.1	1.0	1.1	1.0
R-squared %	90.0	94.8	86.3	100.0
Sharpe Ratio	0.3	0.3	0.4	0.0
Treynor Ratio	0.1	0.1	0.1	0.0
Tracking Error %	6.3	4.0	7.6	0.0
Annualized Std Dev %	19.8	17.4	20.3	17.7
Information Ratio	1.1	1.3	1.0	---
Max Drawdown %	-48.5	-43.1	-49.2	-48.5
Calmar Ratio	0.1	0.1	0.2	0.0
Excess Ann. Return %	7.0	5.5	7.8	0.0
PERFORMANCE TO DATE				
1 Year	-4.2	-5.0	4.1	-6.5
3 Year	-6.9	-7.0	-4.3	-9.3
5 Year	6.9	5.4	7.7	-0.1
7 Year	8.7	8.8	10.5	2.5
10 Year	6.6	10.0	9.1	6.0
Common Inception (Jun-06)	9.4	12.6	10.7	7.6
CALENDAR YEAR RETURNS				
2017	-4.2	-5.0	4.1	-6.5
2016	27.0	20.3	25.1	18.3
2015	-33.7	-29.6	-32.8	-32.6
2014	19.5	18.8	11.7	4.8
2013	44.9	36.0	48.4	27.6
2012	9.1	12.6	20.4	4.8
2011	17.9	22.8	15.1	13.9
2010	45.8	47.1	35.1	35.9
2009	85.2	77.4	84.6	76.5
2008	-61.1	-44.5	-52.4	-36.9

Investment vehicle information

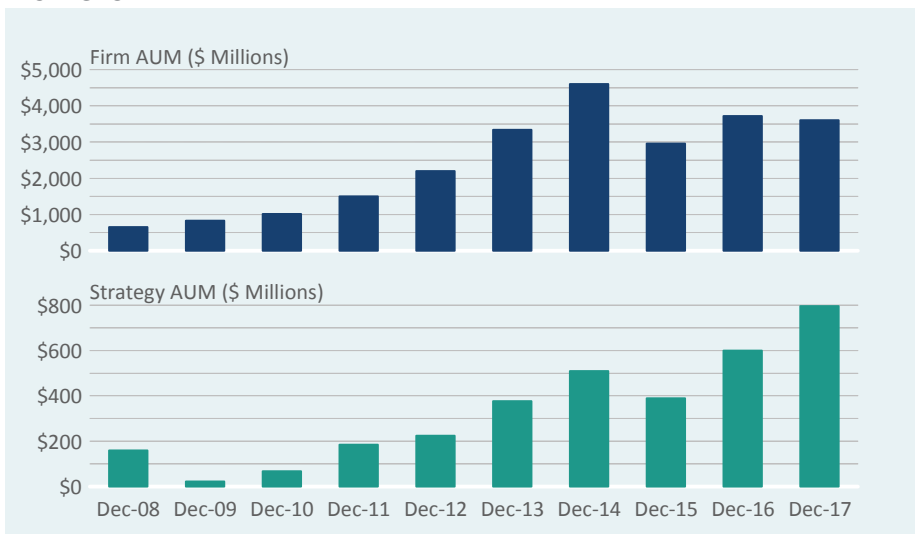
	INVESTMENT VEHICLES	MINIMUM INVESTMENT	EXPENSE RATIO	FEE SCHEDULE	Other Fees	Liquidity
Cushing	Separate Account	\$1,000,000	1.00% 0.85% 0.75% 0.65% 0.60%	First \$25,000,000 Next \$25,000,000 Next \$25,000,000 Next \$25,000,000 Next \$25,000,000	K-1s	Daily
	Mutual Fund / RIC (PIPEX)	\$250,000	1.5%	All Assets	1099 Filing	Daily
	Commingled Fund (CIT) (ERISA Only)	None	0.98% 0.63%	<\$100 million >\$100 million	No Tax Filing No Tax Filing	Daily
Harvest	Separate Account	\$10,000,000	0.75%	All Assets	K-1s	Daily
	Commingled Fund	\$500,000	0.75%	All Assets	Consolidated K-1	Monthly
	Pooled Vehicle (Swap)	\$500,000	0.75% + 0.75%	All Assets	Single K-1	Monthly
	Group Variable Annuity	\$500,000	0.75% + 0.35%	All Assets	No Tax Filing	Monthly
NBW Capital	Separate Account	\$500,000	0.75%	All Assets	K-1's	Daily
	Commingled Fund (Group Variable Annuity)	\$3,000,000	0.75% + 0.30%	All Assets	No Tax Filing	Daily

Strategy overview - Cushing

ANNUAL PERFORMANCE



AUM GROWTH



INVESTMENT PHILOSOPHY

- Cushing believes that a bottom-up research process focusing on company and sector analysis, will allow them to identify superior distribution growth opportunities in public MLPs.
- The firm believes there is a high correlation between 12-months distribution growth and stock price performance, they seek to identify companies with the highest anticipated distribution growth rates.

PORTFOLIO CONSTRUCTION

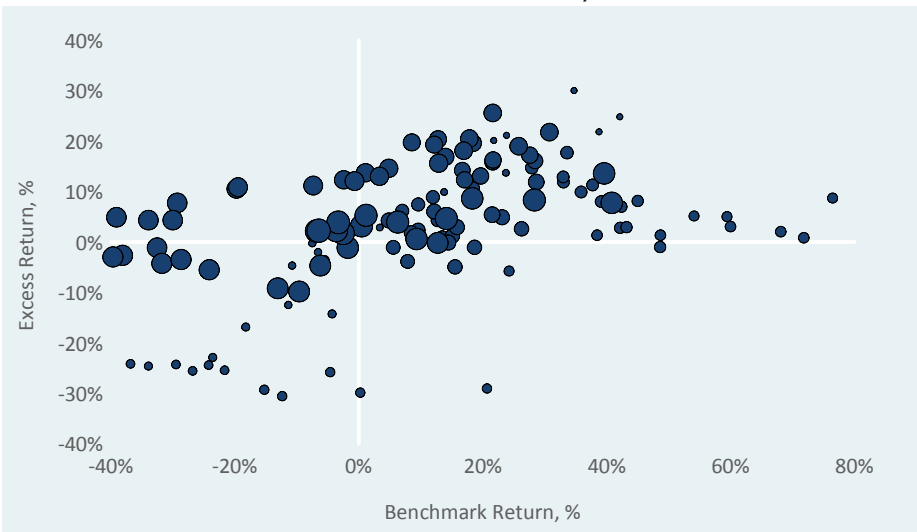
- Typically 25-35 holdings
- 7% max position size, 4% average size, typically 2-6%
- Limited exposure to upstream or variable distribution MLPs
- Cash typically less than 3%.
- Turnover between 20 - 45%

TEAM DESCRIPTION

- 2 dedicated Co-PMs / 6 Analysts managing this strategy. In addition, there are 5 PM/Sr Analysts that are managing other energy related strategies.
- Co-PM Libby Toudouze has over 30 years experience in investment management with 15 years experience in Energy and MLPs. Ms. Toudouze has been a PM with the firm for over 10 years and since the inception of the Alpha strategy.
- Co PM John Musgrave has been an Energy analyst since 2004 and has been with Cushing since 2007. Mr. Musgrave has been a Co-PM on this strategy since 2012.

Strategy overview - Cushing

12 MONTH EXCESS PERFORMANCE VS. BENCHMARK, MAY-07 TO DEC-17



PERFORMANCE SENSITIVITY

- The Alpha strategy has outperformed in 8 of the last 9 calendar years.
- The only two years of relative underperformance came in 2008 and 2015, both strong down years for the index. The strategy's higher growth focus has hurt in those type of environments when yield is supportive, although the overall down market capture is a positive at 90%.
- Tracking error is typically between 5-7%.

DIFFERENTIATING CHARACTERISTICS

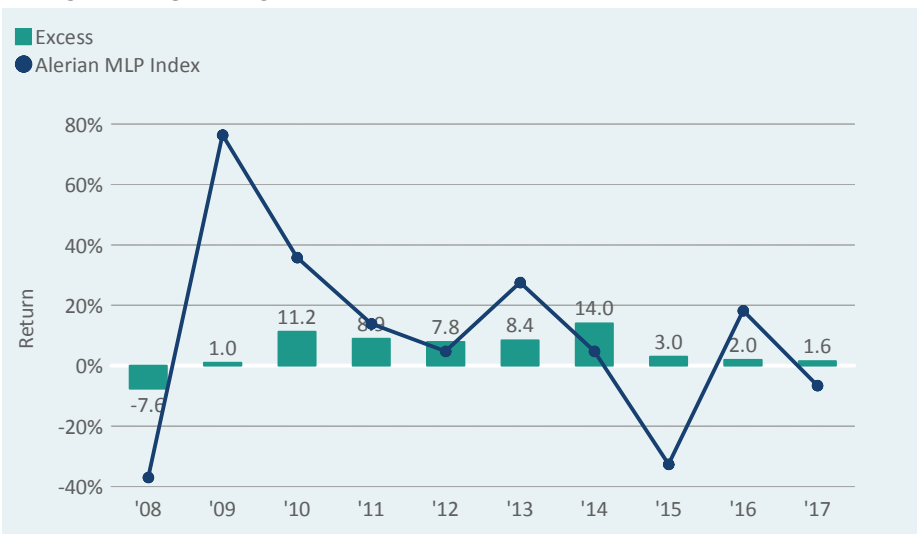
- 100% independent firm. New equity plan in place distributed 35% equity to 13 key employees.
- Firm is focused on research across the entire energy supply chain (upstream, midstream and downstream).

POTENTIAL CONCERNS

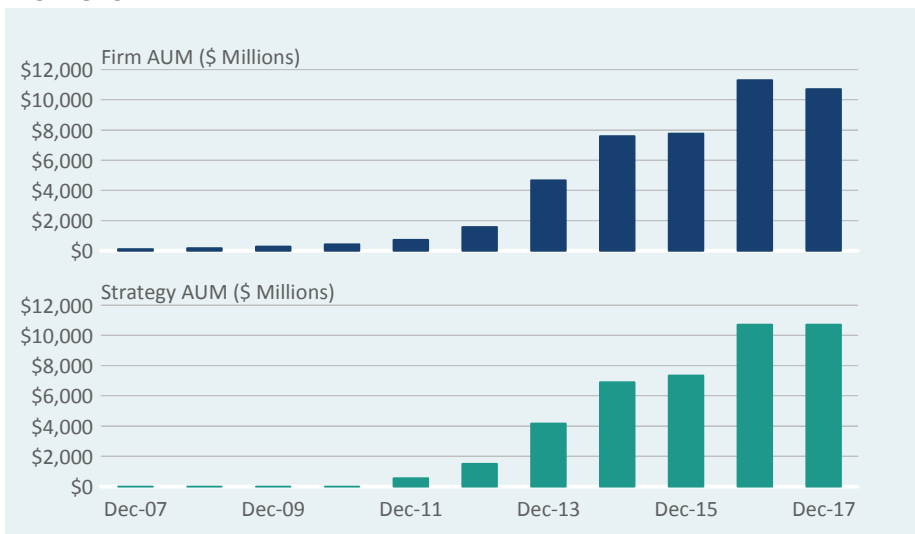
- While there are 39 total accounts in this strategy, one is very large, comprising approximately 50% of the AUM.

Strategy overview - Harvest

ANNUAL PERFORMANCE



AUM GROWTH



INVESTMENT PHILOSOPHY

- Total return focus, although with a higher emphasis on yield than peers.
- Bottom up, research intensive fundamentally driven selection process
- Team is looking to identify midstream companies with consistent growth through organic expansion and accretive acquisitions, high quality management and improving payouts.

PORTFOLIO CONSTRUCTION

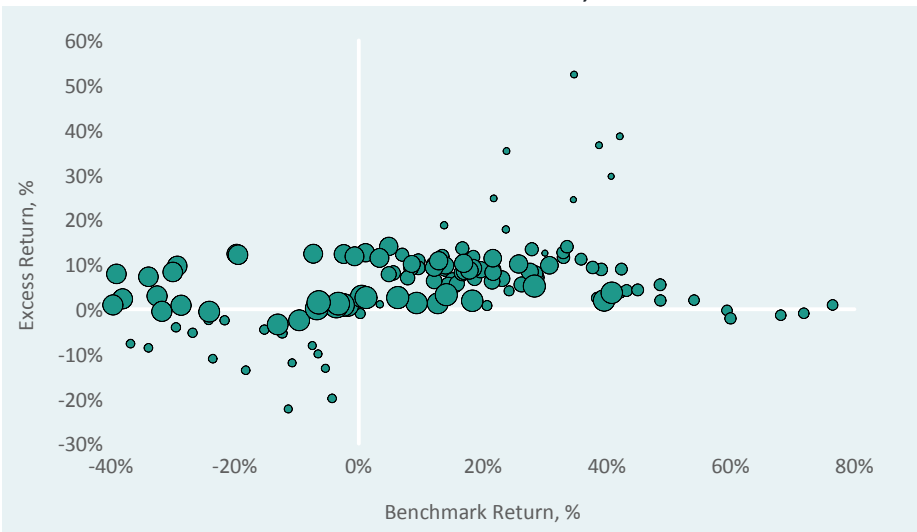
- The strategy tends to hold around 40 securities, which is slightly more diversified than peers.
- They manage a conviction weighted portfolio with currently over 60% in the top ten securities.

TEAM DESCRIPTION

- 2 Portfolio Managers, 7 Analysts
- 19 Total employees
- Eric Conklin is a Co-PM, has over 10 years of experience in the space and prior experience in exploration and production and oil services at Lehman Brothers and investment banking experience within the energy groups at JPMorgan and Bank of New York.
- John Simkiss is a Co-PM and Chief Strategist. He has over 16 years of experience in the space and five years prior in private equity and 10 years in the insurance industry. He has helped direct the fund's investment decisions since inception.

Strategy overview - Harvest

12 MONTH EXCESS PERFORMANCE VS. BENCHMARK, DEC-06 TO DEC-17



PERFORMANCE SENSITIVITY

- Harvest has a total return focus, however their yield tends to be in line with the Alerian index and currently over 8%.
- The strategy has outperformed the Alerian Index over each of the last 9 calendar years.
- The only year of outperformance over the last 10 years was 2008, when the strategy returned -44.5% vs. -36.9% for the index.
- The higher yield relative to peers has allowed the strategy to exhibit greater relative downside protection over the long term and more moderate tracking error.

DIFFERENTIATING CHARACTERISTICS

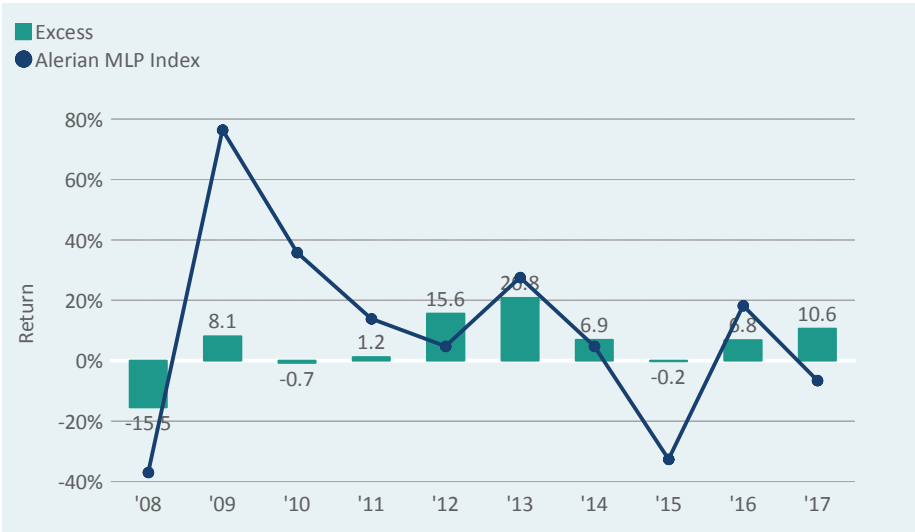
- Firm has 100% institutional client base. Investor focus is total return.
- Firm is dedicated to MLP asset management, this is all they do with one strategy
- Multiple vehicles available for all client types and tax filing needs
- Lower standard fees with a flat 75 bps management fee for all vehicles.

POTENTIAL CONCERNS

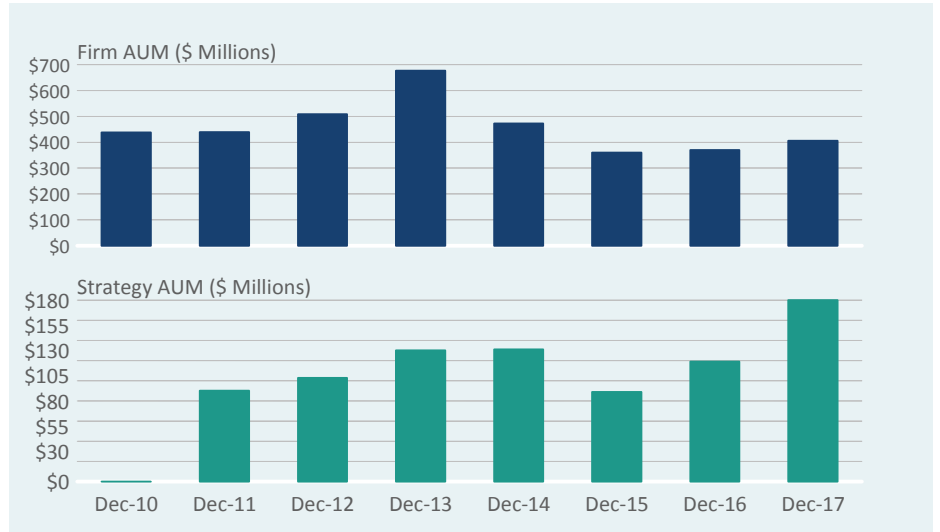
- With over \$10 billion in assets under management in the space, they are one of the larger managers in the space
- There is potential for liquidity concerns in getting into smaller names or time to liquidate larger positions, although these have not impacted long term performance relative to peers.
- A lower up market capture return profile may not take advantage of a bullish MLP market relative to more aggressive growth oriented peers.
- There was a recent ownership change, as Harvest was acquired by Blackstone in 2017. All but one Partner, who retired, became Partners at Blackstone, while keeping a separate P&L as a silo within Blackstone.

Strategy overview - NBW Capital

ANNUAL PERFORMANCE



AUM GROWTH



INVESTMENT PHILOSOPHY

- The MLP strategy emphasizes total rate of return, incorporating both yield and growth.
- They also focus on risk-adjusted returns and downside protection.
- A macro view is developed and combined with fundamental bottom up research.
- Ideal MLP candidates will have dominantly fee based revenue streams from take or pay contracts with built in inflation escalators and strong counterparties.
- Ideal MLP candidates will be diverse in terms of customers and geographical exposures, high distribution coverage ratios, low valuations and conservative accounting.

PORTFOLIO CONSTRUCTION

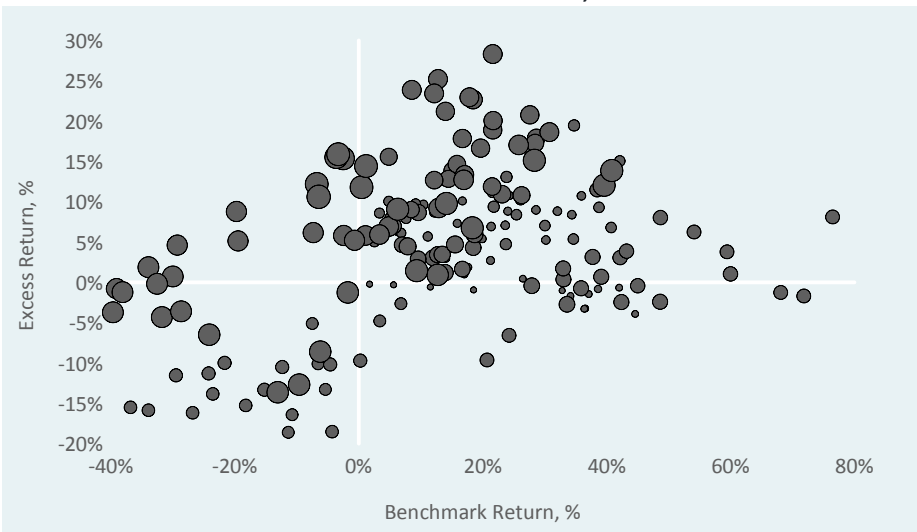
- 20 holdings
- 4-5% typical position sizes, max 10%
- Cash is minimized

TEAM DESCRIPTION

- Ben Neidermeyer is the lead Portfolio Manager for the MLP strategy.
- There are two other Portfolio Managers that contribute to the MLP strategy (Christopher Blakely and Michael Whitney).
- These three PMs comprise the investment committee, which has final authority over the portfolios.
- Mr. Neidermeyer has 40 years of investment experience and has been with this firm since 2003. He was previously at Harbor Capital, The Boston Company and Ferguson Wellman. He has managed MLPs for 18 years.

Strategy overview - NBW Capital

12 MONTH EXCESS PERFORMANCE VS. BENCHMARK, JAN-03 TO DEC-17



PERFORMANCE SENSITIVITY

- Has outperformed 7 of the last 10 years with only one significant year of underperformance, which was in 2008 (-52 vs. -37).
- Heavy growth and small-mid cap focus may hurt during strong down markets, but tend to outperform a full cycle.
- Tracking error is on the higher side between 5% - 9%.

DIFFERENTIATING CHARACTERISTICS

- Smaller firm, smaller assets under management
- Heavier focus on faster growing mid cap companies, size allows them to be more nimble
- More concentrated at 20 holdings
- Group Variable Annuity vehicle offers option that does not require tax filing at the client level.

POTENTIAL CONCERNS

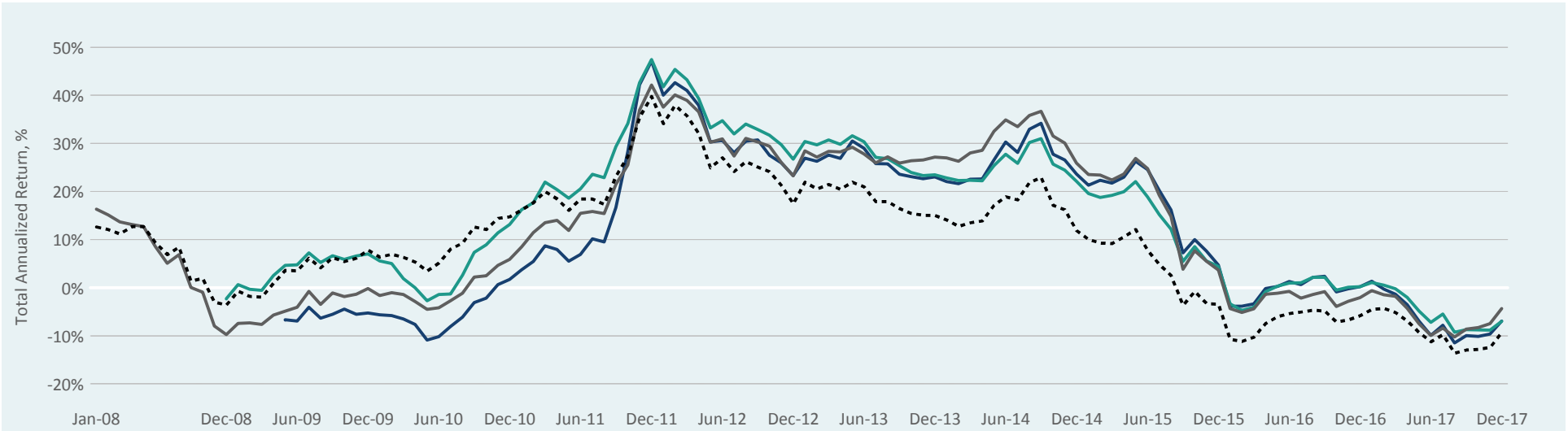
- Firm is relatively small and has a client base that is >50% high net worth. The MLP team has managed over \$1 billion of institutional money at other firm's previously.
- The strategy is slightly more concentrated and focused on small-to-mid cap companies with greater growth potential. Therefore, the strategy will tend to exhibit higher tracking error than some peers.

III. Appendix

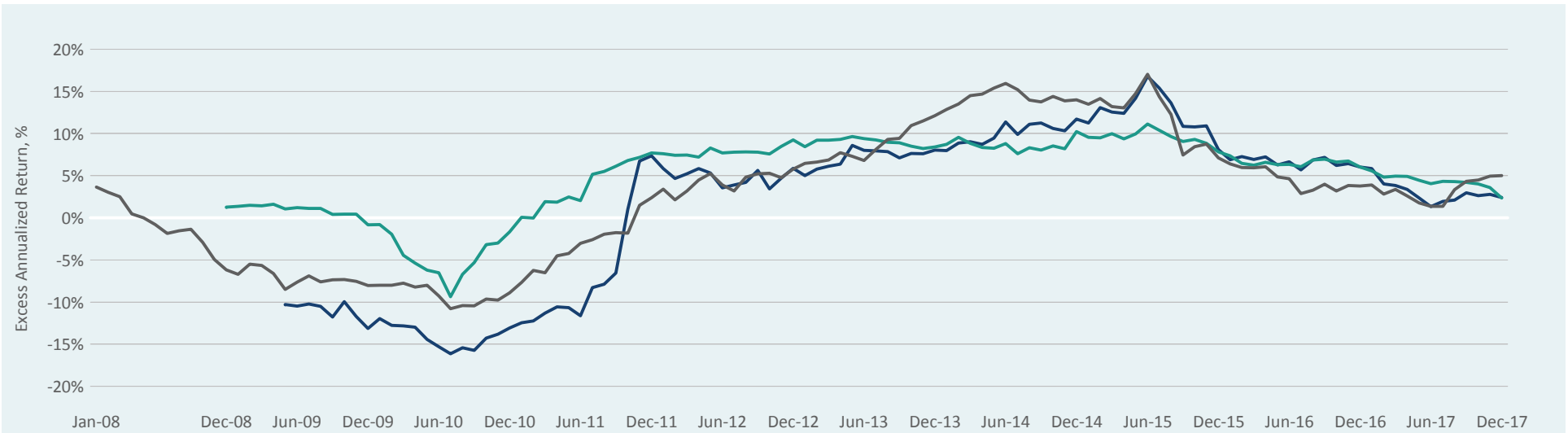
Rolling performance

● Cushing ● Harvest ● NBW Capital + Alerian MLP Index

TOTAL 36 MONTH ROLLING PERFORMANCE



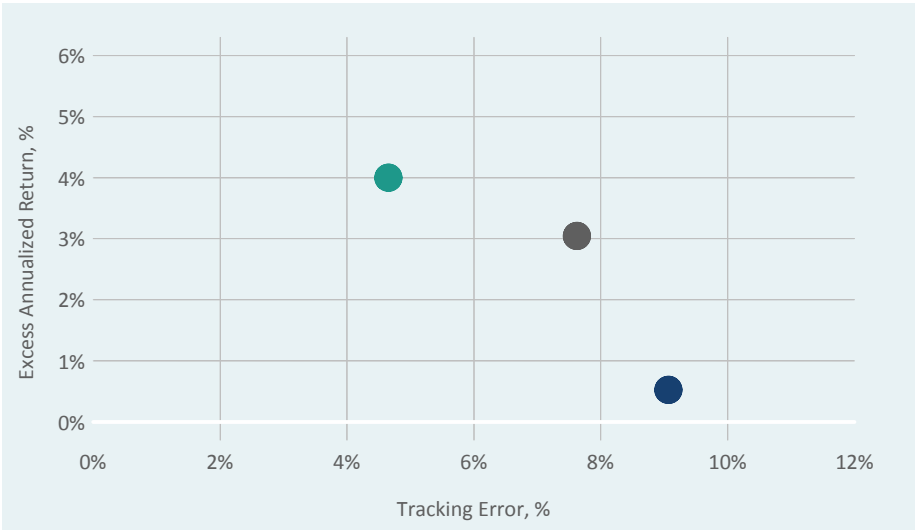
EXCESS 36 MONTH ROLLING PERFORMANCE



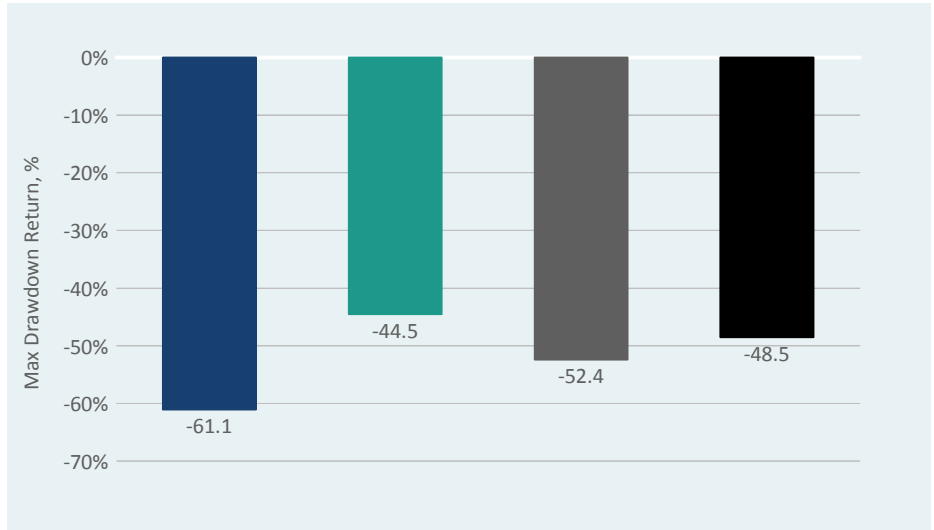
Performance statistics

● Cushing ● Harvest ● NBW Capital + Alerian MLP Index

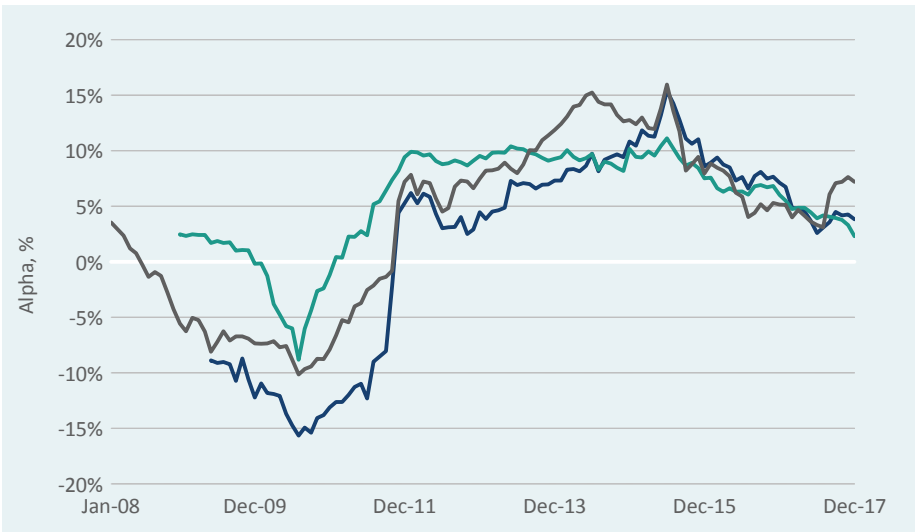
EXCESS PERFORMANCE VS. RISK, JAN-08 TO DEC-17



MAX DRAWDOWN RETURN, JAN-08 TO DEC-17



36 MONTH ROLLING ALPHA



36 MONTH ROLLING BETA



Performance statistics

● Cushing ● Harvest ● NBW Capital ● Alerian MLP Index

36 MONTH ROLLING RISK



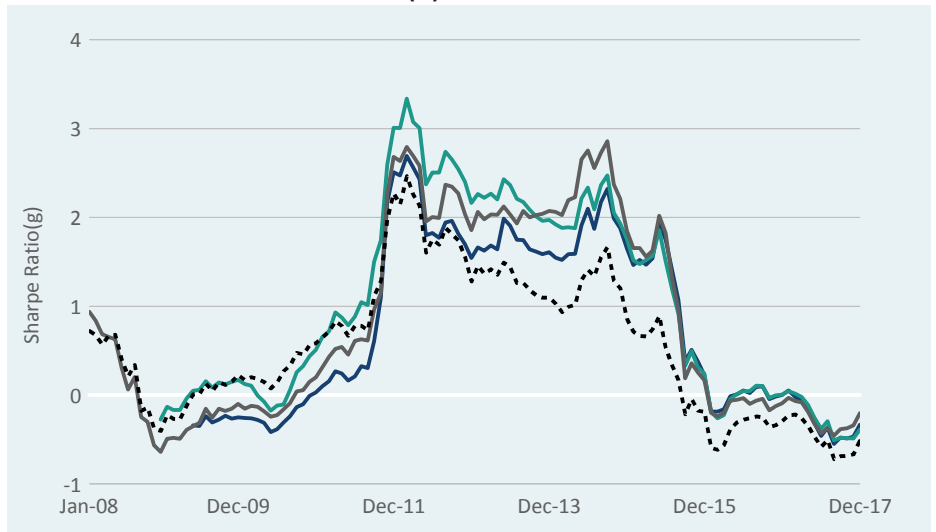
36 MONTH ROLLING INFORMATION RATIO



36 MONTH ROLLING TRACKING ERROR



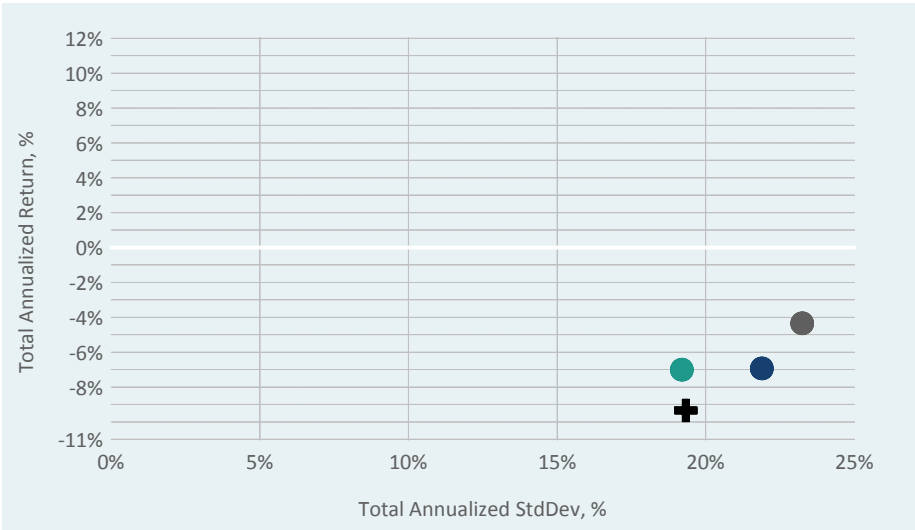
36 MONTH ROLLING SHARPE RATIO(G)



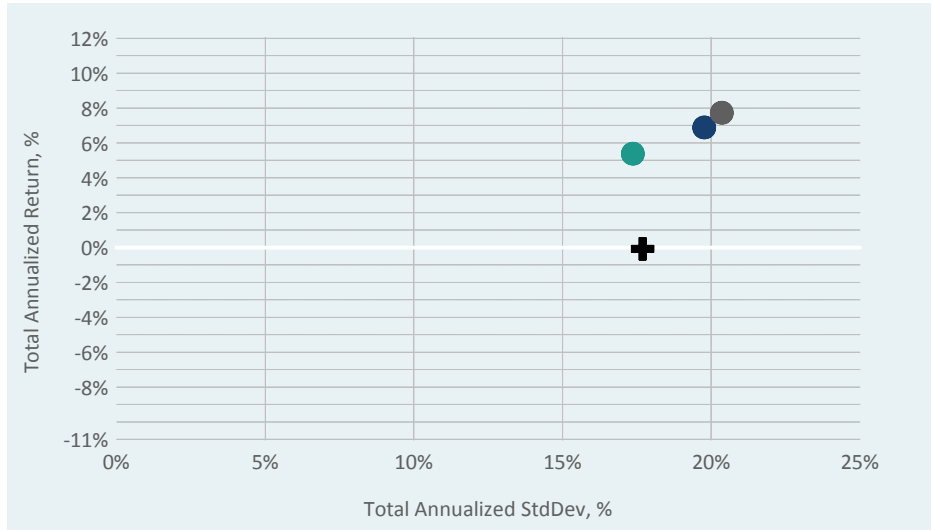
Risk vs. return

● Cushing ● Harvest ● NBW Capital + Alerian MLP Index

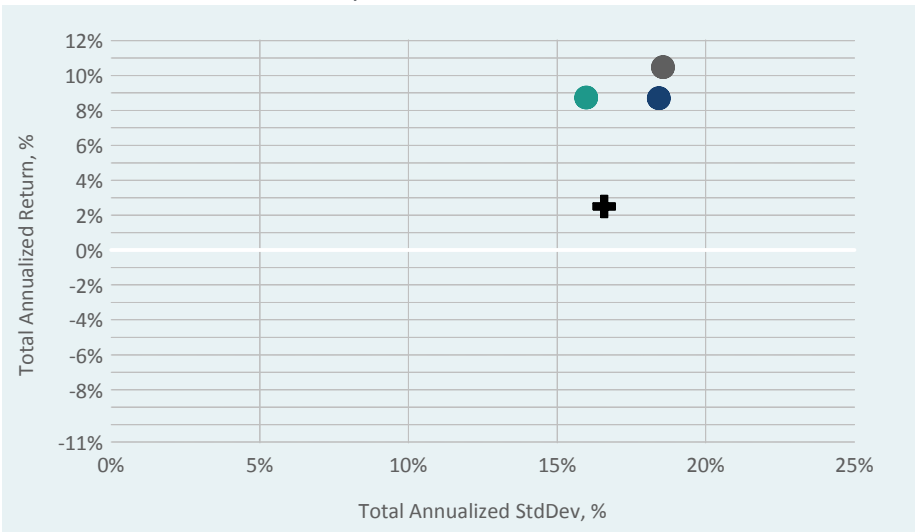
TOTAL PERFORMANCE VS. RISK, JAN-15 TO DEC-17



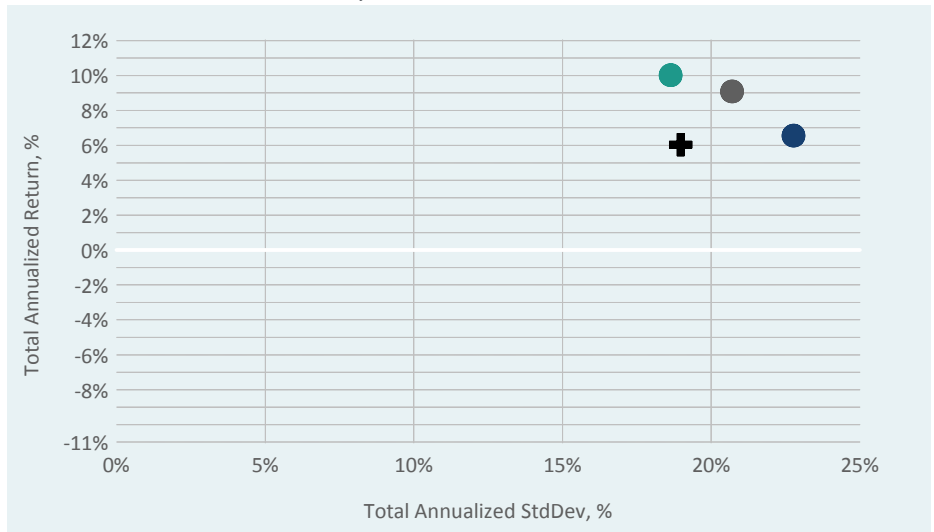
TOTAL PERFORMANCE VS. RISK, JAN-13 TO DEC-17



TOTAL PERFORMANCE VS. RISK, JAN-11 TO DEC-17



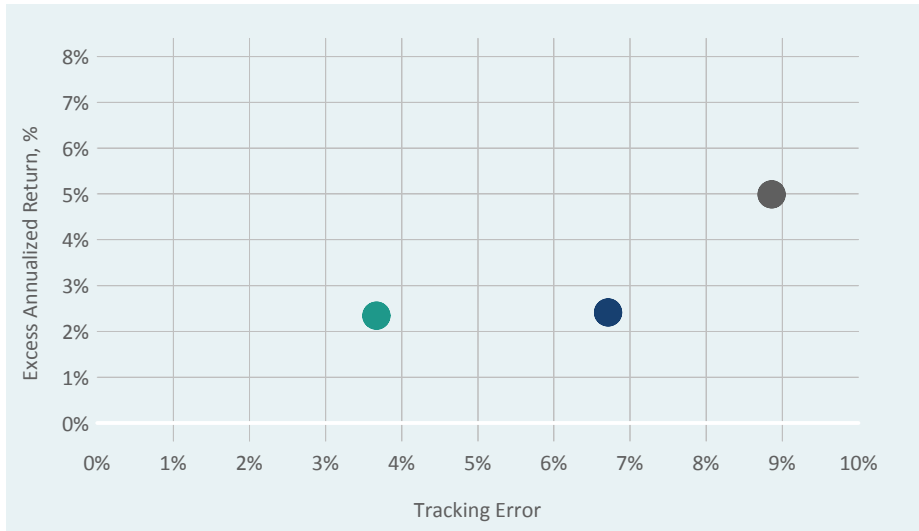
TOTAL PERFORMANCE VS. RISK, JAN-08 TO DEC-17



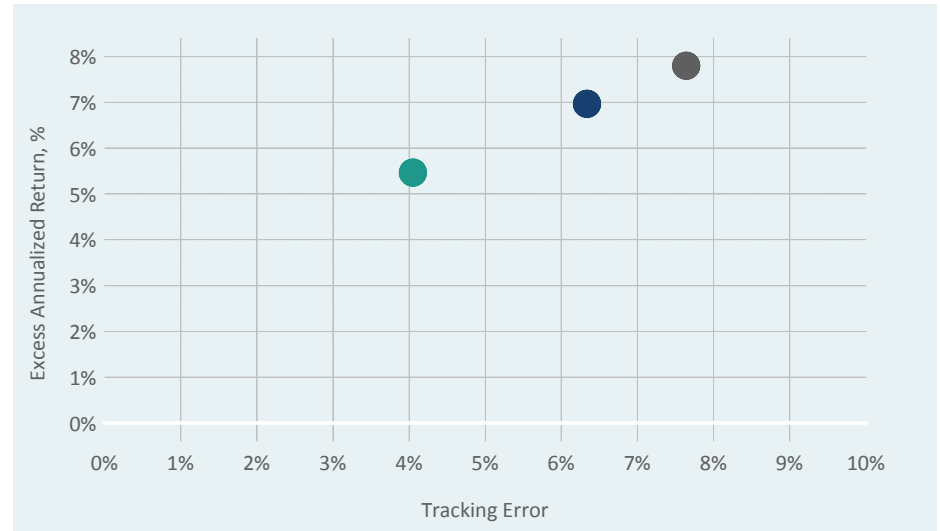
Performance efficiency

● Cushing ● Harvest ● NBW Capital + Alerian MLP Index

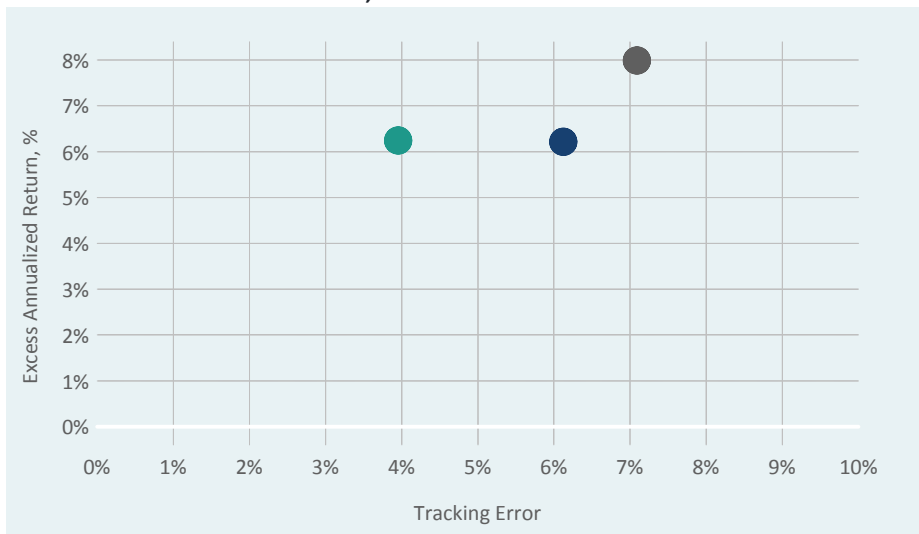
EXCESS PERFORMANCE VS. RISK, JAN-15 TO DEC-17



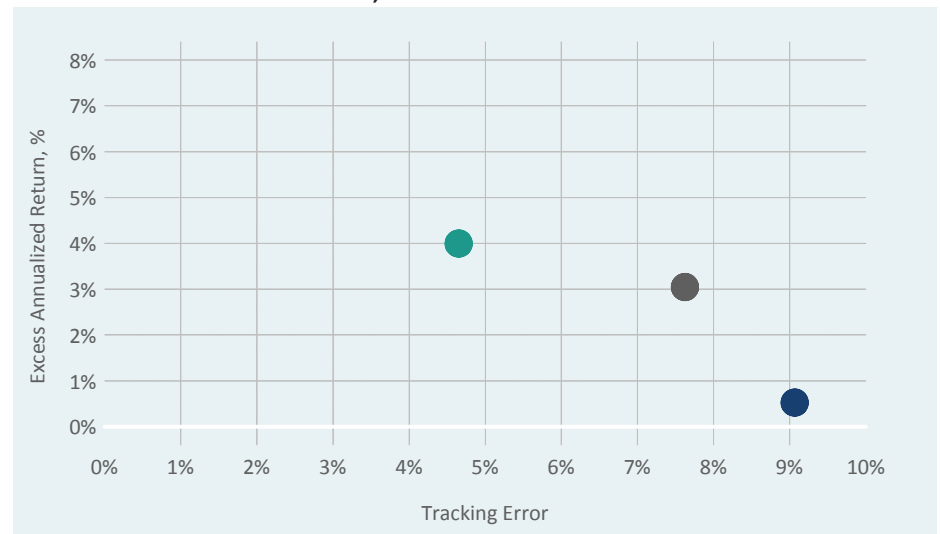
EXCESS PERFORMANCE VS. RISK, JAN-13 TO DEC-17



EXCESS PERFORMANCE VS. RISK, JAN-11 TO DEC-17



EXCESS PERFORMANCE VS. RISK, JAN-08 TO DEC-17



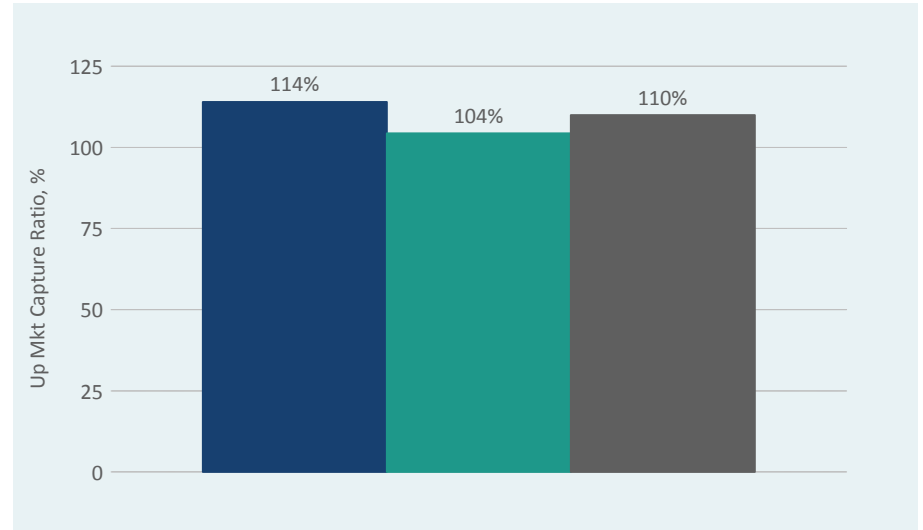
Up & down market analysis

● Cushing ● Harvest ● NBW Capital + Alerian MLP Index

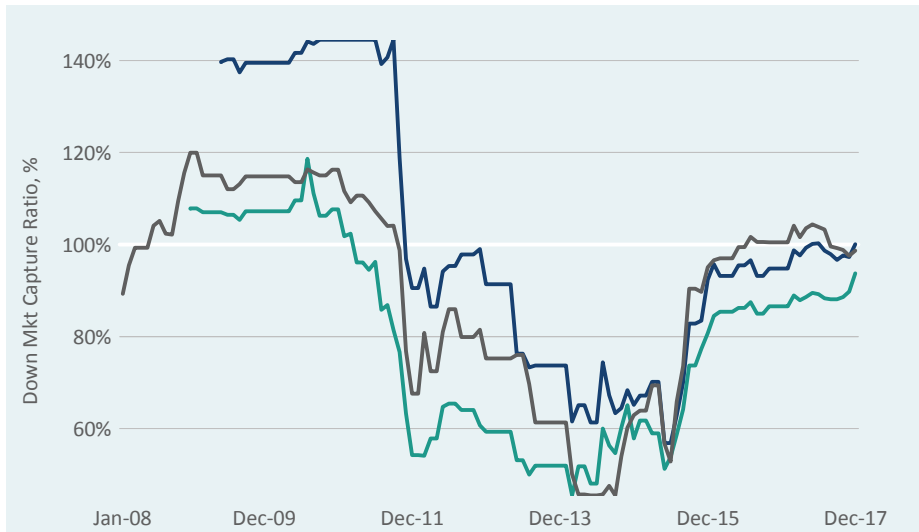
36 MONTH ROLLING UP MKT CAPTURE RATIO



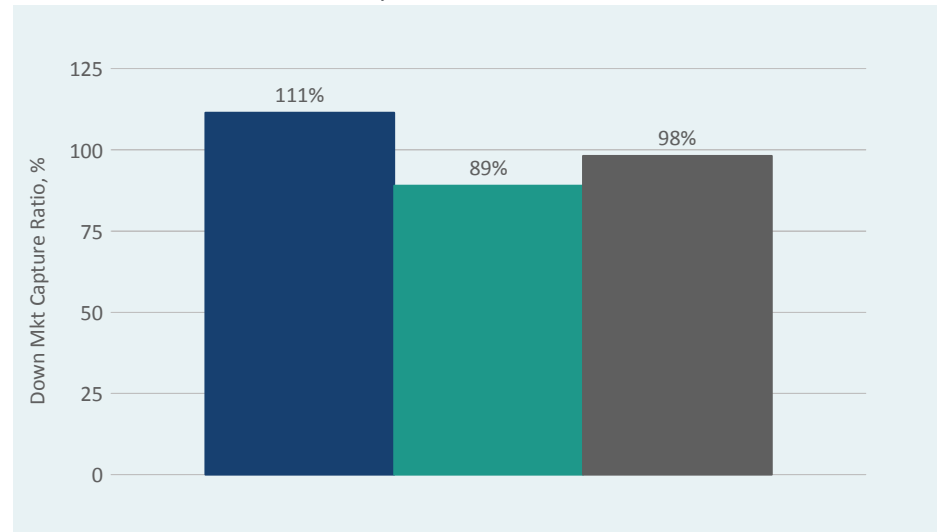
UP MARKET CAPTURE RATIO, JAN-08 TO DEC-17



36 MONTH ROLLING DOWN MKT CAPTURE RATIO



DOWN MARKET CAPTURE RATIO, JAN-08 TO DEC-17



IV. Glossary of terms

Glossary

Alpha (a): The excess return of a portfolio after adjusting for market risk, usually attributable to the selection skill of the portfolio manager. $\text{Alpha} = \text{Excess Return} - (\text{Beta} \times \text{Excess Market Return})$.

Annualized Return: Converts the Total Return to an annual basis for comparison purposes. Periods shorter than one year are not annualized.

Benchmark: Investment index used as a standard by which to measure the relative performance of an overall portfolio or an individual money manager. Appropriate benchmarks are selected based on their similarity to a portfolio or to the style of the individual money manager being measured.

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 (b): 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.

Calmar Ratio - The Calmar Ratio is a risk/return ratio that calculates return on a downside risk adjusted basis. Similar to other efficiency ratios it balances return in the numerator per unit risk in the denominator. In this case risk is characterized by the Maximum Drawdown.

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/fallen. 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 Coefficient (r): 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.

Hurst Exponent: quantifies the relative tendency of a time series either to regress the mean. A value H in the range $0.5 < H < 1$ indicates a time series with long-term positive autocorrelation, meaning a high value in the series will probably be followed by another high value. A value in the range $0 < H < 0.5$ indicates a time series with long-term switching between high and low values in adjacent pairs, meaning that a single high value will probably be followed by a low value. A value of $H=0.5$ can indicate a completely uncorrelated series.

Excess Correlation: Correlation of the excess returns (above the benchmark).

GARP: Growth-At-A-Reasonable-Price. Equity strategy that combines tenets of both growth and value investing, looking for companies with above average earnings growth but excluding those with high valuations.

Information Ratio: A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: $\text{alpha} / \text{tracking error}$.

Glossary

Kurtosis (excess returns)- Kurtosis describes whether the series distribution is peaked or flat and how thick the tails are as compared to a normal distribution. Positive kurtosis indicates a relatively peaked distribution near the mean and tends to decline rapidly and have fat tails. Negative kurtosis indicates a relatively flat distribution near the mean.

Long Term Reversal Factor: Risk premium associated with buying past losers and selling past winners (five year time horizon).

Low Volatility: Risk premium generated by picking low volatility stocks, measured by the MSCI USA Minimum Volatility Index.

Momentum Factor: Risk premium associated with buying past winners and selling past losers.

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.

Predicted Style R-squared: Measures how well the manager's predicted style fits the manager's return series. Adding many unnecessary indices will not improve the Predicted Style R-Squared. The methodology essentially predicts the manager's style at each point in time without the data at that point with the rationale being that if the style estimates obtained so far are good, then they can be used to predict the style at the estimation point.

Price-to-Earnings Ratio: 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.

Quality: The quality factors measured the manager's exposure to high quality stocks versus low quality stocks as defined by S&P. The factor is constructed by combining a long position in the S&P 500 High Quality index and short position S&P 500 Low Quality index.

Regression Based Asset Loadings: Represents the exposure period of an investment product (called a Manager, Fund, or Index in Stylus) to various explanatory variables. It is also referred to as Style Indices or Asset Classes. These Indices can be interpreted as the Manager Betas or risk factors at a given point in time.

Risk Premium: An expected return in excess of the risk-free rate. The premium provides compensation for the assumption of risk.

Risk-Free Rate: The rate of interest that one can earn on an investment with no default risk. It is generally assumed to be the interest rate on a 91 day T-Bill.

R-Squared: Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another. 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 return: The difference between the Manager and the Manager's Style Return.

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: Portfolio Excess Return / Portfolio Standard Deviation.

Short Term Reversal Factor: Risk premium associated with buying past losers and selling past winners (two month time horizon).

Significance Level (Excess Returns) - The Significance Level of a test is the probability that the test statistic will reject the null hypothesis when the hypothesis is true. Significance is a property of the distribution of a test statistic, not of any particular draw of the statistic.

Glossary

Size Factor: Risk premium associated with buying small companies.

Skewness (Excess Returns)- Skewness describes the degree of asymmetry of a distribution around its mean. A distribution is said to be symmetric if it has the same shape to both the left and right of the mean. A perfectly symmetrical distribution has a Skewness of 0. A positively skewed distribution has larger gains than losses, while a negatively skewed distribution has a longer tail of losses.

Standard Deviation (s): 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.

Style Returns: The sum of the Return of each Style Asset multiplied by its weight for the time period.

Style R-squared: Measures how well the estimated Manager's style return series fits the manager's return series. The higher the Style R-squared, the better the fit between the manager's style and return series.

Total Return: Total Return geometrically compounds the Returns in the series from one period to the next.

Tracking Error/Excess Standard Deviation: The standard deviation of the difference between the rate of return of a portfolio and its benchmark.

Treynor Ratio - The Treynor Ratio is defined as the ratio of the manager's excess geometrically annualized return over the portfolio Beta. Excess returns are computed versus the cash index.

Universe: Also called a peer group, a universe is a large number of portfolios of a similar style. These portfolios can be divided into deciles or quartiles and then used for performance measurement and comparative purposes. Portfolios are ranked within the universe, which tells the investor how well a manager has done relative to his or her peers.

Value: Refers to the style of an equity manager. A value manager seeks to create returns by purchasing stocks selling at a discount to their true or intrinsic value. Typical portfolio characteristics of this strategy include a low price-to-earnings ratio, high book-to-market ratio, and high dividend yield.

Valuation Factor: Risk premium associated with buying companies trading at a low price/book multiple.

VIX : VIX is a trademark ticker symbol for the Chicago Board Options Exchange Market Volatility Index, a popular measure of the implied volatility of S&P 500 index options. Often referred to as the fear index or the fear gauge, it represents one measure of the market's expectation of stock market volatility over the next 30 day period.

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

May 22, 2018

Agenda Item 7.1

TO: Board of Retirement

FROM: Tat-Ling Chow, Finance Officer



Lilibeth Dames, Investment Analyst



Tariq Ali, Chief Technology Officer



SUBJECT: SamCERA's Fiscal Year 2018-19 Budget

Recommendation

Approve SamCERA's Fiscal Year (FY) 2018-19 Budget totaling \$35 million.

<u>SamCERA Budget</u>	<u>FY 2018-19 Proposed</u>	<u>FY 2017-18 Adopted</u>	<u>Increase</u>	<u>% of Change</u>
Professional Services	\$ 25,900,207	\$ 24,885,317	\$ 1,014,890	4.1%
Administrative	7,025,095	6,636,677	388,418	5.9%
Technology	2,138,340	1,667,340	471,000	28.2%
Total budget - SamCERA	<u>\$ 35,063,642</u>	<u>\$ 33,189,334</u>	<u>\$ 1,874,308</u>	5.6%

Background

SamCERA's budget consists of three components: a professional services budget, an administrative budget, and a technology budget.

- **Professional Services Budget** (see Attachment 1 on page 4) – provides an itemized summary of projected professional fees. Government Code §31596.1 authorizes the expenditure of funds from the investment earnings of the Fund for specific professional services, including: actuarial consulting, custodial, investment management, investment consulting, and legal services.

<u>Professional Services Budget</u>	<u>FY 2018-19 Proposed</u>	<u>FY 2017-18 Adopted</u>	<u>Increase (Decrease)</u>	<u>% of Change</u>
Investment Management	\$ 24,958,707	\$ 23,815,317	\$ 1,143,390	4.8%
Other Professional Service Fees	941,500	1,070,000	(128,500)	-12.0%
Total - Professional Services	<u>\$ 25,900,207</u>	<u>\$ 24,885,317</u>	<u>\$ 1,014,890</u>	4.1%

The professional services budget for FY 2018-19 is projected to be around \$26 million, 4% higher than the adopted budget for FY 2017-18. Investment management fees are expected to increase in proportion to the market appreciation of assets. Other professional service fees, on the contrary, will decline after the completion of the triennial experience study and actuarial valuation audit in FY 2017-18.

The professional services budget for FY 2018-19 is based on SamCERA’s current asset allocation and does not reflect any potential changes to the investment structure from the upcoming asset allocation study.

- **Administrative Budget** – Below is an itemized summary of projected administrative expenses. Government Code §31580.2(a) limits SamCERA’s administrative budget to twenty-one hundredths of one percent (0.21%) of the accrued actuarial liability of the retirement system.

Administrative Budget	FY 2018-19 Proposed	FY 2017-18 Adopted	Increase (Decrease)	% of Change
Salaries and Benefits				
Salaries	\$ 3,516,800	\$ 3,393,192	\$ 123,608	3.6%
Benefits	1,871,900	1,660,579	211,321	12.7%
Total salaries and benefits	5,388,700	5,053,771	334,929	6.6%
Services and Supplies				
Board expense	10,000	10,000	-	0.0%
Insurance	80,000	80,000	-	0.0%
Medical record and appeal hearing	75,000	75,000	-	0.0%
Member education	63,800	61,000	2,800	4.6%
Education and conference	143,115	119,880	23,235	19.4%
Transportation and lodging	160,230	138,705	21,525	15.5%
Property and equipment	36,000	36,000	-	0.0%
General office supplies	49,000	45,000	4,000	8.9%
Postage and printing	40,000	40,000	-	0.0%
Leased facilities	533,000	525,000	8,000	1.5%
County services	378,750	384,821	(6,071)	-1.6%
Audit services	52,500	52,500	-	0.0%
Other administration	15,000	15,000	-	0.0%
Total Services and Supplies	1,636,395	1,582,906	53,489	3.4%
Total administrative expenses	<u>\$ 7,025,095</u>	<u>\$ 6,636,677</u>	<u>\$ 388,418</u>	5.9%

The proposed administrative budget for FY 2018-19 is about \$0.4 million, or 6%, higher than the adopted budget for FY 2017-18. This amount approximates to 0.15% of the total accrued actuarial liability of \$4.7 billion at June 30, 2017 (as determined by the SamCERA’s actuarial firm, Milliman).

Projected *Salaries and Benefits* are slightly higher than the prior fiscal year’s budget by about 7%. The key reasons for the increase include a 3% negotiated increase in salaries in October 2018 as well as a modest increase in cost for employees’ health benefits.

Projected *Services and Supplies* expenses are about 3% higher than the prior year’s budget. Most budget items in FY 2018-19 are expected to maintain the same level of spending as in the prior fiscal year except the following key changes:

- “Education and conference” expenses are expected to increase by 19%. Recently, SamCERA has filled three vacant positions - the Communication Specialist, the Executive Secretary, and a Retirement Analyst. To help the new hires perform at the highest level of proficiency, specific training programs will be assigned to them based on their individual needs.

- Transportation and lodging expenses are projected to increase by about 16%. Some of the training for the new hires will be outside of the Bay Area, thus spending on transportation and lodging is expected to rise.

- **Technology Budget** (see Attachment 2 on pages 5-7) – provides an itemized summary of projected technology expenses that are separate from the cost of administering the system. Government Code §31580.2(b) provides that: “Expenditures for computer software, computer hardware, and computer technology consulting services in support of these computer products shall not be considered a cost of administration of the retirement system.”

	FY 2018-19 <u>Proposed</u>	FY 2017-18 <u>Adopted</u>	Increase <u>(Decrease)</u>	% of <u>Change</u>
Computer equipment and software	85,000	150,000	\$ (65,000)	-43.3%
Software license maintenance - IT infrastructure	1,736,340	430,340	1,306,000	303.5%
Electronic content management	-	500,000	(500,000)	-100.0%
Server - IT infrastructure	100,000	200,000	(100,000)	-50.0%
Contract IT Services - IT Infrastructure	53,000	203,000	(150,000)	-73.9%
ISD budget	150,000	150,000	-	0.0%
Technology research and development	14,000	34,000	(20,000)	-58.8%
Total - Technology expenses	<u>\$ 2,138,340</u>	<u>\$ 1,667,340</u>	<u>\$ 471,000</u>	28.2%

The technology budget for FY 2018-19 is projected to be \$2.1 million, about 28% higher than the prior year budget. The increase is solely tied to the software license and maintenance fees with Vitech (V3) and VMware.

- A system upgrade to the pension administration system V3 is expected to take place in FY 2018-19 with an estimated cost of \$700,000. The periodic upgrade costs are expensive because V3 is a highly customized software program needed to administer SamCERA’s complex system comprised of 14 retirement plans. Additionally, in this second year of implementation, we expect to make further changes to our system to reflect administrative needs that came to our attention during our first year of implementation. To address customized changes, it is estimated, based on discussions with Vitech, that in addition to our current 750 annual base support hours, 2850 hours of service support will be needed, bringing the total to approximately \$570,000 in support and maintenance expenses.
- Staff uses a virtualization software from VMware to enhance the efficiency of its IT operations. This software allows a single computer to host multiple IT resources (such as applications, servers, storage capacities, or networks), providing better business continuity and the ability to recover from a disaster at a much lower cost. Renewal of the maintenance agreement with VMware for technical support services is done every three years. The current maintenance agreement will expire in June 2018.

Attachments

1. SamCERA’s Professional Services Budget
2. SamCERA’s Technology Budget

Attachment 1 - SamCERA's PROFESSIONAL SERVICES BUDGET

SamCERA employs external investment managers to maximize its investment return and minimize related risks. Investment management fees are performance driven, primarily dependent upon the market value of the assets under management and the negotiated fee schedule of the individual investment management agreements. As the market value of the assets increases, so do management fees. Such expenses/fees are netted against investment income for financial reporting purposes; however, they are reported at gross for budgetary purposes.

Other professional service fees arising from investment activities are dictated by contractual agreements. Fees for actuarial services, investment consulting services, and custodian services are based on per-service and/or per-retainer as detailed in individual contractual agreements.

The Chief Investment Officer and the investment consultant periodically review the portfolio's performance and report the results to the Board. Likewise, staff reviews other professional service expenses quarterly to verify compliance with the respective contractual agreements. The tables below summarize the projected professional service fees for FY 2018-19.

Investment Management Fees				
Investment Manager	Fee (bps)	Projected	Projected	Total
		Annual Fee	Performance Fee	Projected Fee FY18-19
Total Public Equity	26.8	\$ 4,933,694	\$ 371,292	\$ 5,304,986
Total Fixed Income	39.0	3,463,055	133,877	3,596,932
Total Risk Parity	40.2	1,370,182	-	1,370,182
Total Alternative Assets	N/A	9,565,475	899,707	10,465,182
Total Inflation Hedge	58.2	3,794,815	241,610	4,036,425
Total Cash Overlay	N/A	185,000	-	185,000
TOTAL	54.9	\$ 23,312,221	\$ 1,646,486	\$ 24,958,707

Other Professional Fees			
Contractor	Service	Fee (bps)	Projected Fee FY18-19
Milliman	Actuarial Consulting	0.2	\$ 91,500
Verus Investments	Investment Consulting	1.1	500,000
Northern Trust	Custodian	0.8	350,000
TOTAL		2.1	\$ 941,500

Attachment 2 - SamCERA's TECHNOLOGY BUDGET

The table below provides details for each Technology Budget item

Budget Item	Description	Amount
Computer Equipment and Software		
Computer Equipment	Purchase equipment to meet the needs of staff. Examples: purchasing a color laser printer, networking equipment, laptops, PCs, other hardware.	\$50,000
Electronic Board Materials	Provide electronic materials for new and existing board members and for upgrades to existing devices such as new Agenda Management software to aid in the process of board packet assembly.	\$10,000
Computer Software	Purchase software to meet the needs of SamCERA staff. This need is usually determined by feedback from staff and new technologies that would benefit SamCERA. Examples: purchasing extra licenses for Microsoft Windows, Microsoft Office, Adobe Acrobat Professional, other software licensing.	\$25,000
SUB TOTAL		\$85,000
Software License Maintenance – IT Infrastructure		
V3 Hosting and PASS Support	Required annual fee for hosting services, support and maintenance of the Vitech V3 product including Hosting, PASS Support, Imaging Support, and VPN Support.	\$250,000
V3 Hardware and Commercial Software Support	Required annual fee for the hardware warranty as well as service and support for third party software used with the Vitech V3 system.	\$150,000
V3 Hourly Support	Based on current usage (300 hrs/mo), 2850 extra support hours above annual limit of 750 hrs @ \$200/hr = \$570K. Upgrading from 10.4 to 10.6 estimate is \$700K.	\$1,270,000
Dynamics Yearly Maintenance	Required annual maintenance fee for six support calls to Microsoft per year and version upgrades as needed.	\$3,000
Datawatch Yearly Maintenance	Required annual maintenance fee, which includes support and upgrades, for 4 licenses of Datawatch Monarch software.	\$1,700

Budget Item	Description	Amount
Sun Storage (Oracle) Support and Maintenance	Annual support and maintenance for Sun storage.	\$5,000
Website Support	Monthly support from Digital Deployment at \$975 per month.	\$12,000
Kodak Scanners	Annual maintenance for two Kodak scanners at \$870 each.	\$1,740
Kofax Software	Annual support and maintenance for Kofax Scanning Software.	\$3,000
Desktop Central	Annual maintenance for patch management software.	\$400
Sharepoint (Vitech)	Annual license cost for SharePoint Online used for V3 Project.	\$3,000
Atlassian	Annual support and maintenance for Confluence and JIRA.	\$500
VMware	Three years of support and maintenance.	\$35,000
Other Yearly Licenses	Other miscellaneous annual license expenses (Including Apple Developer, App Store, Google Developer accounts)	\$1,000
SUB TOTAL		\$1,736,340
Server - IT Infrastructure		
Technology Infrastructure (Maintenance Tools & Equipment)	Increase capacities of the existing infrastructure to help SamCERA handle current and future workloads as well as create a robust business continuance and disaster recovery plan. SamCERA is currently using virtual hosts running a variety of operating systems and applications.	\$100,000
SUB TOTAL		\$100,000
Contract IT Services – IT Infrastructure		
Miscellaneous Consulting Fees	Support special projects that may require consultation from experts. These special projects may include services from the county Information Services Department (ISD); consultation on expanding our technology infrastructure, more power, more rack space in our file room, and researching alternative offsite services in case of a disaster.	\$50,000

Budget Item	Description	Amount
Printer Maintenance	Secure printer maintenance from Computer Extras Xpress.	\$3,000
SUB TOTAL		\$53,000
ISD Budget (County)		
ISD Budget	Cover ISD charges such as network connectivity, remote access, mobile data, network backup, upgrade of the wireless connectivity to the county, and other related IT services offered by the county.	\$150,000
SUB TOTAL		\$150,000
Technology Research and Development		
Research and Development	Continue to evaluate potential technologies that may benefit the SamCERA board, staff, and membership.	\$10,000
Norex Subscription	Provide technology research resources.	\$4,000
SUB TOTAL		\$14,000
TOTAL		\$2,138,340

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

May 22, 2018

Agenda Item 7.2

TO: Board of Retirement

FROM: Scott Hood, Chief Executive Officer



SUBJECT: Board Level Strategic Plan

Recommendation

Provide direction to staff on the draft Board level Strategic Plan.

Background

Each year, staff presents a staff level Strategic Plan to the Board. This past December, the Board directed staff to create a process for the Board to create a “Board level” Strategic Plan consisting of high level policies. In March, the Board received a presentation on strategic planning. This presentation was followed by a survey that solicited information from each Board members regarding strategic priorities. In April, the Board received a presentation on the survey results and discussed them.

Discussion

Using the survey results and subsequent Board input, staff listed items which builds upon what was expressed by the Board. With further input and direction from the Board, staff will continue to develop a draft three to five year Board level strategic plan reflecting the long-term policies of the Board.

The Board will implement its strategy to carry out SamCERA’s Mission and Goals. The Board and staff will regularly identify and analyze issues to determine if and how they may impact this strategy and whether any response is needed to address them.

SamCERA is a complex organization that operates in a challenging environment. The most significant of these challenges, as identified by the Board, are the following. The next step is for the Board to discuss potential Board level strategies/policies to address each area.

Challenges

1. Investment Management:

SamCERA manages a sophisticated portfolio that is invested in a wide range of asset categories. SamCERA has recently begun to group its investments by what drives the underlying performance of each asset class composite. As part of this process, SamCERA classifies its portfolio into three main drivers of performance: 1) Growth,

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

2) Diversifying, and 3) Inflation Hedge. SamCERA has built a small internal investment team consisting of three investment professionals, with support from external

investment consultants. Together, they oversee third-party investment management firms that directly manage all of the assets in the portfolio. As the investment program has evolved to meet its investment goals and objectives, its complexity makes it increasingly challenging to easily assess its performance, costs, and risks.

Challenge: Balance complexity of the investment program with the expected returns and risks inherent from more traditional stocks and bonds.

2. Proposed Board Strategy:

Decrease in Contributions:

Assuming the Fund meets its expected rate of return, analysis by staff and the actuary has concluded that the plan is expected to approach full funded status by 2023. With a lower Unfunded Actuarial Assumed Liability (UAAL), the employers' contributions will be lower.

In addition, the ongoing maturing of SamCERA's membership will continually affect the plan's demographics: the number of retirees exceeding the number of active members, the increasing longevity of members and beneficiaries, and the long-term impact of PEPPA plan members with lower member contributions.

Challenge: Prepare for future periods in which contributions into the plan are lower while outflows out of the plan are higher (due to larger number of retirements and longer longevity of retiree life expectancies and lower contributions.)

Proposed Board Strategy:

3. Risk Management:

Widespread growth and reliance on technology is helpful but there are inherent risks with technology, especially technology connected to the internet. It is vital to continuously maintain and update our pension administration system to properly and efficiently administer and deliver benefits in a manner that is consistent with current laws and regulations.

Challenge: Enhance risk management of the data security and recovery capabilities and financial accounting and lower risk by updating systems to stay current with changes in laws and regulations.

Proposed Board Strategy:

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

4. High Costs of Living in the County:

Growth in local home prices and commute times poses challenges to attracting and retaining staff. The cost of rent for SamCERA office space continues to accelerate due to the demand in our area.

Challenge: Ensure successful recruitment and retention of SamCERA staff and obtain optimal lease for office space in current economic environment.

Proposed Board Strategy:

5. Board Governance:

The Board has developed a governance model in which allows the Board to focus more on high-level policy and oversight while management and staff run the operations of the System.

Challenge: To have an evolving Board governance policy which addresses the reality that (1) the investment landscape will continue to be complex; (2) certain decisions require in-depth education and expertise in portfolio management and (3) there will always be a differing level of expertise among the Board members and turn over on the Board.

Proposed Board Strategy:

Strategic Priorities

Based on the internal analysis, staff has come up with a list of draft of strategic priorities for the coming 3-5 years:

- Continue the accurate and efficient administration and delivery of benefits.
- Balance complexity of the investment program with the expected returns and risks inherent from more traditional stocks and bonds.
- Prepare for future periods in which contributions into the plan are lower while outflows out of the plan are higher (due to larger number of retirements and longer longevity of retiree life expectancies and lower employer contributions.)
- Enhance risk management of the investment program, financial accounting and data security and business recovery capabilities
- Continue to evolve the Board's governance model.

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
Board of Retirement

Vision Statement

In addition to the above the Board may want to discuss a proposed vision statement. Here are a few examples:

CALPERS:

A respected partner, providing a sustainable retirement system and health care program for those who serve California

CALSTRS:

Your Reward- a Sustainable Retirement. Our reward- Getting You There

OCERS:

To be a trusted partner providing premier pension administration, distinguished by consistent, quality member experiences and prudent financial stewardship.

Idaho:

To be the premier public retirement system, respected by customers, peers, and the community, and known for professional service, technological advancement, and fund stability.

STANCERA:

Ensuring tomorrow's benefits through prudent management.

SeattleCERS:

SCERS is a trusted, financially strong institution whose members receive their retirement benefits through exceptional customer service.

INPRS:

To be a 100% funded public retirement system trusted and valued by stakeholders.

MPERS:

To be the best retirement system we can be by making strategic investment decisions and implementing technological tools that streamline our processes and enhance customer service.

OHPERS:

Maintain a financially sound pension system that is a leader in the oversight of our investments and liabilities, providing for the long term financial wellbeing of our retirement system.

NHRS:

NHRS will fulfill our role as fiduciary of the trust and deliver retirement benefits to our members and beneficiaries through a commitment to value, innovation and excellence.