



# Notice of Public Meeting

## The Board of Retirement of the San Mateo County Employees' Retirement Association will meet on **Tuesday, March 27, 2018, at 10:00 A.M.**

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

- 1. Call to Order, Roll Call and Miscellaneous Business**
- 2. Oral Communications**
  - 2.1 Oral Communications from the Board
  - 2.2 Oral Communications from the Public
- 3. Approval of the Minutes**
  - 3.1 Approval of Regular Board Meeting Minutes from February 27, 2018
- 4. Approval of the Consent Agenda\***

4.1 Disability Retirements	4.3 Service Retirements
None	4.4 Continuances
	4.5 Deferred Retirements
4.2 Survivor Death Benefits	4.6 Member Account Refunds
	4.7 Member Account Rollovers
	4.8 Member Account Redeposits
	4.9 Report of Trustee Education Received
	4.10 Report on Proxy Voting Summary for the Period Ended December 31, 2017
- 5. Benefit & Actuarial Services**
  - 5.1 Consideration of Agenda Items, if any, Removed from the Consent Agenda
- 6. Investment Services**
  - 6.1 Preliminary Monthly Portfolio Performance Report for the Period Ended February 28, 2018
  - 6.2 Report on Cash Overlay (Parametric) Annual Review
  - 6.3 Report on Global Custodian (Northern Trust) Annual Review
  - 6.4 Report on Update of Verus Capital Market Assumptions
- 7. Board & Management Support**
  - 7.1 Educational Presentation on Strategic Planning
  - 7.2 Report on April 2018 Board-Staff Retreat Planning
  - 7.3 Approval of and Direction to SamCERA Voting Delegate and Alternates for SACRS Spring 2018 Business Meeting
  - 7.4 Ethics Training for Trustees
- 8. Management Reports**
  - 8.1 Chief Executive Officer's Report
  - 8.2 Assistant Executive Officer's Report
  - 8.3 Chief Investment Officer's Report
  - 8.4 Chief Legal Counsel's Report

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

- C1 Consideration of Disability Items, if any, removed from the Consent Agenda

# Notice of Public Meeting

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

Toscanelli, Amil	February 7, 2018	Probation
Lee, Pah	February 13, 2018	Medical Center
Young, Jane	February 15, 2018	Probation
Martinson, Robert	February 19, 2018	Medical Center
Bairfield, Barbara	February 21, 2018	Medical Center
Stengard, Hilda	February 23, 2018	Health Department
Finney, Charles	February 24, 2018	District Attorney
Donigan, Donna	February 25, 2018	County Clerk
Donegan, Michael	February 26, 2018	Public Works
Thomas, Gloria	March 4, 2018	Probation



Scott Hood, Chief Executive Officer

Posted: March 21, 2018

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

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

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**

FEBRUARY 27, 2018 – REGULAR BOARD MEETING MINUTES

**1802.1 Call to Order, Roll Call and Miscellaneous Business**

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

**Roll Call:**

Present: Mark Battey, Ben Bowler, Albert David, Kurt Hoefler, Susan Lee (for David Spinello), Alma Salas (for Paul Hackleman) Eric Tashman and Shirley Tourel.

Absent: Paul Hackleman and David Spinello.

Alternates present: Susan Lee and Alma Salas.

Staff: Brenda Carlson, Tat-Ling Chow, Michael Coultrip, Lili Dames, Barbara Edwards, Scott Hood, Elizabeth LeNguyen, Doris Ng and Gladys Smith.

Consultants: Margaret Jadallah, John Nicolini and Scott Whalen (Verus).

**1802.2.1 Oral Communications from the Board:** None.

**1802.2.2 Oral Communications from the Public:** None.

**1802.3.0 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 January 23, 2018.

**Action:** Mr. David moved to approve the minutes from the Regular Meeting on January 23, 2018. The motion was seconded by Ms. Salas and carried with a vote of 8-0, with trustees Battey, Bowler, David, Hoefler, Lee, Salas, Tashman and Tourel all in favor; Arnott abstained; none opposed.

**1802.4.0 Approval of the Consent Agenda:** Mr. Battey removed the disability application of Samantha Fireman from the Consent Agenda and asked if there were additional items to be removed. No additional items were removed. The disability application of Samantha Fireman was heard in closed session.

**Action:** Mr. Hoefler moved to approve the remaining items on the Consent Agenda, and the motion was seconded by Mr. Bowler. The motion carried with a vote of 9-0, with trustees Battey, David, Hoefler, Salas, Tashman, and Tourel, all in favor; none opposed.

**1802.4.1 Disability Retirements:**

- a) The Board found that Meghan Selig is (1) not permanently incapacitated from the performance of her usual and customary duties as a Deputy Probation Officer II and (2) denied her application for a non-service-connected disability retirement.
- b) The Board found that Tom Sheppard is (1) permanently incapacitated from the performance of his usual and customary duties as a Correctional Officer, (2) found that his disability was a result of an injury rising out of and in the course of his employment and (3) granted his application for a service-connected disability retirement.
- c) The Board found that Robert Stiavetti is (1) permanently incapacitated from the performance of his usual and customary duties as a Stationary Engineer, (2) found that his disability was a result of an injury rising out of and in the course of his employment and (3) granted his application for a service-connected disability retirement.

1802.4.2 **Survivor Death Benefits:** None.

1802.4.3 **Service Retirements:**

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

<b><u>Member Name</u></b>	<b><u>Effective Retirement Date</u></b>	<b><u>Department</u></b>
Ammerman, Mark	December 26, 2017	Sheriff's
Anaya, Roberto	December 18, 2017	Deferred from Human Resources
Burr, Letecia	December 8, 2017	H.S.A.
Dellamonica, Laura	January 1, 2018	Deferred from Medical Center
Himmist, Marja	December 30, 2017	Aging and Adult Services
Jimenez, Maria	December 28, 2017	Family Health
McDougall, Michael	December 9, 2017	Deferred from General Services
Mucha, Jerome	December 30, 2017	H.S.A.
Pineda, Edgardo	December 30, 2017	Courts
Pineda, Veronica	December 30, 2017	Family Health Services
Preston, Helen	December 16, 2017	Aging and Adult Services
Rashed, Shawna	December 2, 2017	Courts
Thomas, John	December 3, 2017	Medical Center
Toy-Wong, Valerie	December 28, 2017	Deferred from Social Services
Yamamoto, Conrad	December 3, 2017	Library

1802.4.4 **Continuances:**

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

<b><u>Survivor's Name</u></b>	<b><u>Beneficiary of:</u></b>
Dillon, Nola	Dillon, Rex
O'Donnell, Noreen	Fasshauer, Nora
Rackham, Elaine	Rackham, Don
Serverian, Hasma	Serverian, Aram
Fields, Elridge	Fields, Margie

1802.4.5 **Deferred Retirements:**

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

<b><u>Member Name</u></b>	<b><u>Retirement Plan Type</u></b>
Anicete, Maria Theresa	G4, Vested– Auto Defer - Code 31700
Johnson, Lauren K.	S4, Vested– Auto Defer - Code 31700
McCracken, Elizabeth E.	G5, Vested– Auto Defer - Code 31700
Paraiso, Jenifer Helise	G4, Vested– Auto Defer - Code 31700
Quan, Jennifer	G4, Vested– Auto Defer - Code 31700
Robinson, Stephen	S4, Vested

1802.4.6 **Member Account Refunds:**

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

<b><u>Member Name</u></b>	<b><u>Retirement Plan Type</u></b>
Arguello, Carlos	G2, Non-vested
Armenta, Casandra	G7, Non-vested
Briseno Sahagun, J Jesus	G7, Non-vested
Cano, Ciara	G7, Non-vested
Carpio, Jose	G7, Non-vested
Chambers, Nicole	G7, Non-vested



Foz, Angela	G7, Non-vested
Gomez, Sandra	G4, Vested
Haimowicz, Andrea	G7, Non-vested
Lerchin, Harvey	G1, Vested
Lodin, Farhad	G7, Non-vested
Mahoney, Brian	G7, Non-vested
Panaligan, Gil-John	G7, Non-vested
Prowitt, Sarah	G7, Non-vested
Rose, Brian (QDRO)	G3/G4, Non-vested
Tunchez, Maria	G7, Non-vested

1802.4.7 **Member Account Rollovers:**

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

Boeldt, Angela	G7, Non-vested
Brasel, Leslie	G7, Non-vested
Cheng, James	G7, Non-vested
Collison, Amanda	G7, Non-vested
Gray, Seth	G7, Non-vested
Hayes, Rosario	G7, Non-vested
Hsu, Sheng	G5, Non-vested
Lerchin, Harvey	G1, Vested
Ochoa, Veronica	G5, Vested
Salmeron, Daisy	G7, Non-vested
Stanton, Kristine	G7, Non-vested
Teo Aukusitino, Myra	G4, Non-vested

1802.4.8 **Member Account Redeposit:** None.

1802.4.9 **Acceptance of Trustees' Reports of Educational Activities Through Outside Provider:** None.

1802.4.10 **Acceptance of Semi-Annual Compliance Certification Statements for the Period Ended December 31, 2017:** The Board accepted the semi-annual Compliance Certification Statements for the Period Ended December 31, 2017 for the Western Asset Management Total Return Unconstrained Bond Fund and Franklin Templeton Global Multisector Plus Bond Fund.

1802.5.1 **Consideration of Agenda Items, if any, removed from the Consent Agenda:** The Board adjourned into closed session at 10:02 a.m. to consider the disability application of Samantha Fireman. The Board reconvened into open session at 10:10 a.m. Ms. Carlson reported the action taken, see Agenda Item 9.

1802.6.1 **Preliminary Monthly Portfolio Performance Report for the Period Ended January 31, 2018:** Mr. Coultrip discussed the preliminary monthly performance report with the Board. He reported that SamCERA's net preliminary return for January 2018 was 2.5%, while the preliminary trailing twelve-month return ending January 2018 was 15.5% net. He also reported that the twelve-month net return is below SamCERA's Plan Benchmark return of 16.8%, but higher than SamCERA's Actuarial Assumed Earnings Rate of 6.75%. This item was informational and for discussion only, no action was taken.

1802.6.2 **Quarterly Investment Performance Report for the Period Ended December 31, 2017:** Mr. Coultrip reported that the 4<sup>th</sup> quarter net total return for the SamCERA portfolio was +3.2%, which was 60 bps lower than the +3.8% policy benchmark return and that private and international equity were the main detractors of relative performance during the quarter.

Ms. Jadallah presented Verus Advisory's quarterly performance report for the period ended December 31, 2017. She discussed the economic climate, portfolio impacts, investment climate and asset allocation issues. This item was informational only, no action was taken.

**1802.6.3 Educational Presentation on Risk Parity:**

Mr. Whalen and Margaret Jadallah, from Verus, provided an overview on risk parity, discussed the potential plan level impact of various portfolio allocations to risk parity along with the potential roles of risk parity within SamCERA's portfolio going forward.

The Board adjourned for lunch at 11:47 a.m. and the meeting reconvened at 12:12 p.m. and went into closed session to hear Agenda Item 6.4. The Board reconvened once again at 12:39 p.m.

Mr. Bowler left the meeting at 11:57 a.m.

**1802.6.4 Approval of Proposed Alternative Investments:**

Heard in closed session, C2. Confidential Under Government Code §54956.81 and §6254.26. Ms. Carlson reported the action taken after the Board resumed open session. See summary under Agenda Item 9.

**1802.7.1 Acceptance of Preliminary Semi-Annual Financial Report for Period Ended December 31, 2017:**

Ms. Chow reported SamCERA's preliminary financial statements for the six-month period ended December 31, 2017. She reported SamCERA's financial position improved modestly over the six-months ended December 31, 2017 and its net position increased \$294 million, or 7% to \$4.3 billion, fueled mainly by an appreciation of investments. This item was informational and for discussion only, no action was taken.

**1802.7.2 Acceptance of Preliminary Semi-Annual Budget Report for Period Ended December 31, 2017:**

Ms. Chow reported that SamCERA's overall budget is on track with regard to the preliminary report on budget-to-actual for the six-months ended December 31, 2017. This item was informational and for discussion only, no action was taken.

Mr. Hood took the opportunity to recognize Ms. Chow, along with other staff members, on the great job producing SamCERA's Popular Annual Financial Report (PAFR), which was awarded the Certificate of Achievement for Excellence in Financial Report by GFOA.

**1802.7.3 Report on April 24 and 25, 2018 Board-Staff Retreat Planning:**

Mr. Hood reviewed and discussed the proposed agenda on the upcoming Board-Staff Retreat in April with the Board. This item was informational and for discussion only, no action was taken.

**1802.8.1 Chief Executive Officer's Report:**

Mr. Hood reported on the upcoming CALAPRS General Assembly and Advanced Principles of Pension Management for Trustees, Pension Bridge Conference and SACRS Spring Conference. He also informed the Board that he met with Mosquito and Vector Control District's (M&VCD) finance committee and Board and provided them a status on their supplemental contribution account and that M&VCD is considering whether to provide additional money towards paying down their unfunded liability. Mr. Hood also informed the Board that he scheduled a meeting with the new Deputy County Manager and new Budget Director for the County to provide an overview of SamCERA. He also mentioned that at next month's Board meeting, Tom Iannucci from Cortex will be present to provide an overview of the Strategic Planning process, and Mr. Hood will present the nomination slate for SACRS.

**1802.8.2 Assistant Executive Officer's Report:**

Ms. Smith reminded the Board to sign their education forms found in their Day of Folder. She also provided dates for upcoming training and conferences, along with an update on SamCERA's current

recruitments. In addition, she also informed the Board that they should have received emails regarding the online sexual harassment prevention training and FPPC Form 700 filing.

**1802.8.3 Chief Investment Officer's Report:**

Mr. Coultrip informed the Board about the upcoming annual manager review with Parametric and Northern Trust, SamCERA's custodian.

**1802.8.4 Chief Legal Counsel's Report:**

Ms. Carlson reported that three petitions for review to the California Supreme Court have been filed in the matter of *Alameda County Sheriff's Association et al., v. Alameda County Employees' Retirement Association et al.*

**C1 Consideration of Disability Items, if any, removed from the Consent Agenda:**

Samantha Fireman's application was removed from the consent agenda and heard in closed session, see Agenda Item 9.

**1802.9 Report on Actions Taken in Closed Session:**

**C-1 Consideration of Disability Items, if any removed from the Consent Agenda:**

Ms. Carlson reported that the Board met in closed session regarding the service-connected disability application of Samantha Fireman. The Board found that Ms. Fireman is (1) not permanently incapacitated from the performance of her usual and customary duties as a Deputy Probation Officer III and (2) denied her application for a service-connected disability retirement with a vote of 8-1, with trustees Arnott, Battey, Bowler, David, Hoefer, Salas, Tashman and Tourel in favor; Lee opposed.

**C-2 Approval of Proposed Alternative Investments:**

Ms. Carlson reported that the Board met in closed session regarding a proposed alternative investment. A motion to invest \$20 million in the LS Power IV was carried with a vote of 9-0, with trustees Arnott, Battey, Bowler, David, Hoefer, Lee, Salas, Tashman and Tourel in favor; none opposed.

**1802.10 Adjournment:** Mr. Battey adjourned the meeting at 12:57 p.m. in memory of the deceased members listed below.

Musante, Andrew	December 30, 2017	Fire Warden
Crouch, Michael	December 30, 2017	Chope Hospital
Sbragia, Roy	January 4, 2018	Long Term Care
Enis, Shirley	January 5, 2018	Crystal Springs Rehab Center
Jones, Mary	January 6, 2018	Courts
Turner, Mary	January 7, 2018	Coroner
Lovisa, Rosemary	January 9, 2018	Human Resources
Summey, Lemuel	January 9, 2018	District Attorney
McKercher, Roy	January 11, 2018	Sheriff's
Ferguson, Neal	January 17, 2018	Sheriff's
Ford, Marjorie	January 18, 2018	Board of Supervisors
Shoemaker, Gerard	January 19, 2018	Coroner
Bennett, Lorena	January 20, 2018	General Hospital
Sprague, Yulanda	January 20, 2018	Probation
Lavaki, Halamako	January 22, 2018	Hospital
Toschik, Joseph	January 23, 2018	Library
Sandoval, Julian	January 24, 2018	Probation
Nelson, Gertrude	January 25, 2018	Crystal Springs Rehab Center

Rojas, Concordia  
Daniels, Margie  
Cutts, Gordon  
Glass, Sharon  
Kashiwahara, Rosa

January 27, 2018  
January 30, 2018  
February 1, 2018  
February 1, 2018  
February 2, 2018

Public Works  
Crystal Springs Rehab Center  
Mental Health  
Courts  
Medical Center

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Scott Hood  
Chief Executive Officer

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Gladys Smith  
Assistant Executive Officer



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

March 27, 2018

Agenda Items 4.1- 4.9

**TO:** Board of Retirement

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



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

**4.1 Disability Retirements**

None.

**4.2 Survivor Death Benefits**

None.

**4.3 Service Retirements**

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

<b>Member Name</b>	<b>Effective Retirement Date</b>	<b>Department</b>
Alvarado, Jose	January 20, 2018	HOS Food & Nutrition
Bautista, James	January 5, 2018	Juvenile Probation
Cardenas, Jose	January 6, 2018	HOS Health Info Management
Chan, Alicia	January 27, 2018	Assessor's
Cheung, Sulina	January 4, 2018	Aging and Adult Services
Copeland, Roger	January 27, 2018	Sheriff's
de Klerk, Kathryn	January 2, 2018	District Attorney
French, Linda	January 20, 2018	Deferred from Sheriff's
Garcia, Carlos	January 27, 2018	HOS Food & Nutrition
Garza, Alvaro	January 8, 2018	Deferred from Public Health
Hurtado, Doris	February 1, 2018	FHS Health Coverage Unit
Jackson, Andre	January 20, 2018	Sheriff's
Ketchen, Eugene	January 26, 2018	Human Services
Lavelle, Madeleine	January 31, 2018	Deferred from Behavioral Health
McKenney, Maria	January 20, 2018	HOS Fair Oaks Family Health

Miller, Christopher	January 6, 2018	Probation
NguyenDuy, Tuonganh	January 31, 2018	Human Services
Nichols, Paul	January 19, 2018	Deferred from DAO
Padilla, Norma	February 1, 2018	Medical Center
Realini, Norma	January 11, 2018	Human Services
Sandoval, Maritza	January 20, 2018	HOS Edison Clinic
Sarraga, Joy	January 31, 2018	Deferred Aging & Adult Svcs
Sheppard, Tom	January 31, 2018	Sheriff's
Thompson, Susan	January 27, 2018	SamCERA
Vargas, Carmen	February 1, 2018	Human Services

#### 4.4 Continuances

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

Survivor's Name	Beneficiary of:
Cohn, Gloria	Cohn, Jerry
Ferguson, Dottie	Ferguson, Neal
Luke, Wanda	Luke, Alfred
McKercher, Margaret	McKercher, Roy
Sandoval, Diana	Sandoval, Julian

#### 4.5 Deferred Retirements

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

Member Name	Retirement Plan Type
Avila, Alfonso	G4, Vested – Reciprocity
Brien, Jason	G5, Vested
Broberg, Lily	G7, Non-vested - Reciprocity
Cesario, Michelle	G4, Vested - Reciprocity
Dejesus, Mario	G5, Non-vested – Reciprocity
Gilchrist, Gerald	G5, Vested - Reciprocity
Lin, David	G4, Vested - Reciprocity
Molina, Arlette	G4, Vested

Nannizzi, Paula	G4, Vested – Reciprocity
Norzaagaray, Cynthia	G4, Vested – Reciprocity
Renzi, Jeanette	G4, Vested – Reciprocity
Saenz, Johanna	G7, Non-vested – Reciprocity
Sandoval, Amaranta	G4, Vested
Tanaka, Greg	G4, 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
Francisco, Ophelia	G4, Vested
Mejia Saucedo, Maria	G7, Non-vested
Morrisette, Randy	G7, Non-vested
Navarro, Mariza	G7, Non-vested
Rose, Rachel	G4, Non-vested
Stehl, Karla	G7, Non-vested
Switlyk, Emily	G7, Non-vested
Valenzuela, Nancy	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
Crothers, Rachel	G7, Non-vested
De Lucchi, Rita	G4, Non-vested
Nigam, Reetu	G7, 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**

March 27, 2018

Agenda Item 4.10

**TO:** Board of Retirement

**FROM:** Doris Ng, Investment Analyst



**SUBJECT:** Report on Proxy Voting Summary for the Year Ended December 31, 2017

**Recommendation**

Accept the Proxy Voting Summary Report for the year ended December 31, 2017.

**Background**

Consistent with SamCERA's Investment Policy, investment managers are delegated authority for the voting of proxies. Managers have been providing staff with quarterly reports on all proxies cast.

The summary report is a more streamlined and robust aggregation of the various reports and shows an overview of the proxy voting conducted by SamCERA's domestic and international equity managers on SamCERA's behalf for the period.

In the June 2016 meeting, the Board decided to change the frequency of receiving the summary report from quarterly to annual and to review on the Consent Agenda in future board meetings.

On the summary page, the first table shows statistics of the proposals voted and how they were voted relative to management's or proxy advisor's recommendations. The majority of proposals are typically cast in favor of management's recommendations. In the second table, we drill into the proposals cast against management's or proxy advisor's recommendations by proposal type.

Details of the subset of proposals voted against management's or proxy advisor's recommendations will be provided in the day-of-folder.

**Discussion**

For the calendar year ended December 31, 2017, there were 27,102 proxy proposals. Of the total proposals, 8% were cast against management's recommendation, 90% with management's recommendation and 2% not voted. The top three categories of the votes cast against management's recommendation, of which the voting rationales were available, were Remuneration and Benefits (46%), Boards and Directors (40%) and Capital Structure, Mergers, Asset Sales and Other Special Transactions (9%). Within the Remuneration and Benefits category, alignment of shareholder interests and structure of remuneration arrangements were some of the common concerns cited in the voting rationales. Within the Boards and Directors



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

category, independence, capacity and performance were some of the common concerns. Lastly, within the Capital Structure, Mergers, Asset Sales and Other Special Transactions category, potential dilution of shareholder interest, anti-takeover potential and giving the board excessive discretion on capital issuance were some of the common concerns.

**Attachment**

Proxy Voting Summary for Calendar Year Ended 12-31-2017

Year Ended 12/31/2017

Proxy Voting Summary Statistics

Investment Manager <sup>1</sup>	Strategy	Total Proposals	Proposals Not Voted	FOR Mgmt Rec	AGAINST Mgmt Rec	AGAINST Proxy Advisor Rec <sup>2</sup>
Baillie Gifford	International Growth	976	27	911	38	0
Passive Core	Russell 1000, EAFE	18,626	252	16,905	1,469	0
Fidelity Institutional Asset Management	International Small Cap	2,656	365	2,087	204	0
Mondrian <sup>3</sup>	International Value	854	2	833	19	2
Mondrian <sup>3</sup>	Emerging Markets Equity Fund, L.P.	983	3	870	110	25
Quantitative Management Associates <sup>4</sup>	Small Cap Core	3,007	31	2,737	239	0
<b>Grand Total</b>		<b>27,102</b>	<b>680</b>	<b>24,343</b>	<b>2,079</b>	<b>27</b>

<sup>1</sup> Note: Information not available for investment managers, D.E. Shaw and Eaton Vance Parametric, as related to the Large Cap Core 130/30 and Emerging Markets Core Equity portfolios, respectively.

<sup>2</sup> Information not available or applicable for all managers.

<sup>3</sup> Voting rationale provided for only select proposals voted against management and/or proxy advisor due to manual process.

<sup>4</sup> Voting rationale may not be provided for proposals voted against management, but consistent with manager's internal proxy voting policy.

Votes Against Management or Proxy Advisor

Summary	Investment Manager					Grand Total
	Baillie Gifford	Fidelity Institutional Asset Management	Mondrian	Passive Core	Quantitative Management Associates	
Boards and Directors	9	126	4	464	111	714
Capital Structure, Mergers, Asset Sales and Other Special Transactions	20	17	5	105	15	162
General Corporate Governance Matters	2	8		98	2	110
Remuneration and Benefits	7	48	2	668	72	797
Social, Ethical and Environmental Issues		1		3		4
Auditors and Audit-Related Issues		2	2	1		5
<b>Grand Total</b>	<b>38</b>	<b>202</b>	<b>13</b>	<b>1,339</b>	<b>200</b>	<b>1,792</b>

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

March 27, 2018

Agenda Item 6.1

**TO:** Board of Retirement

*Michael R Coultrip*

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

**SUBJECT:** Preliminary Monthly Portfolio Performance Report for the Period Ended February 28, 2018

**Recommendation**

Accept the preliminary performance report dated February 28, 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 February was -2.4%, bringing the preliminary trailing twelve-month return ending February 2018 to 10.7% net. The twelve-month net return is below SamCERA's Plan Benchmark return of 11.7%, but is higher than SamCERA's Actuarial Assumed Earnings Rate of 6.75%.

February was a bad month for risk assets, as implied equity volatility spiked at the beginning of the month, resulting in a 10% correction in the S&P 500 Index. Equities recovered partially, but U.S. equities were down for the first time since 2016. Concern about rising inflation in the U.S., improved consumer sentiment and strong employment indicators all led to a shift in investor sentiment related to an expected number of potential interest rate increases by the Fed in 2018 and beyond. The broad U.S. equity market (as measured by the Russell 3000 Index) was down 3.7%, while developed international equity (as measured by MSCI EAFE) was down 4.5%. Emerging markets were also down by 4.6%.

Manufacturing activity, the labor market, and consumer confidence all continued to show strength during February. Inflation concerns continued in February, with the Consumer Price Index

increasing and reaching the highest level since November 2000 (although the reading is still below the Federal Reserve's 2% target).

The general U.S. fixed income market was down 0.9% during the month as higher interest rates and wider credit spreads resulted in negative returns across most fixed income sectors. The 10-year U.S. Treasury yield was higher during the month, with the yield increasing 15 basis points and ending at 2.86% by month-end.

**Attachments**

Northern Trust Performance Report  
Verus Capital Markets Update

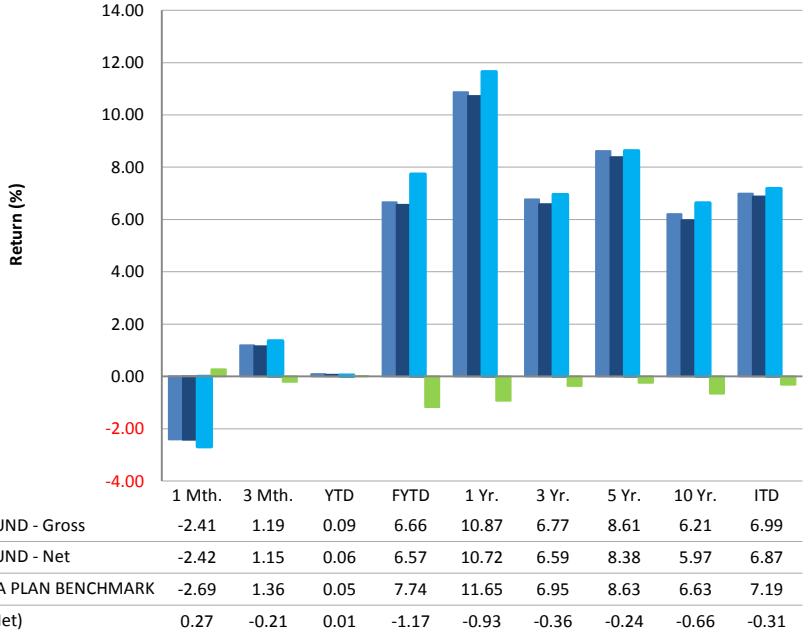


# San Mateo County Total Fund Characteristics

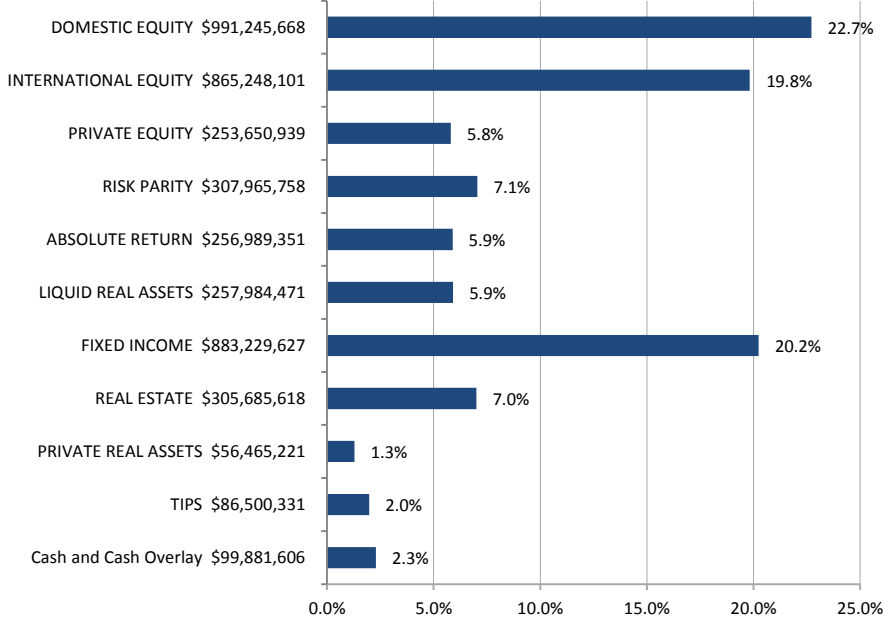


February 28, 2018

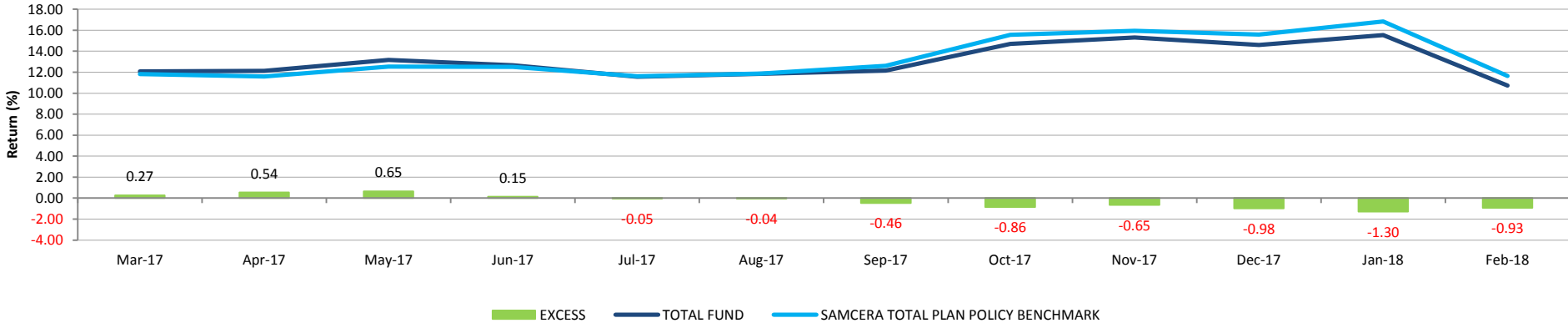
**Total Fund Performance**



**Asset Allocation**



**Rolling Month End Annual Returns**

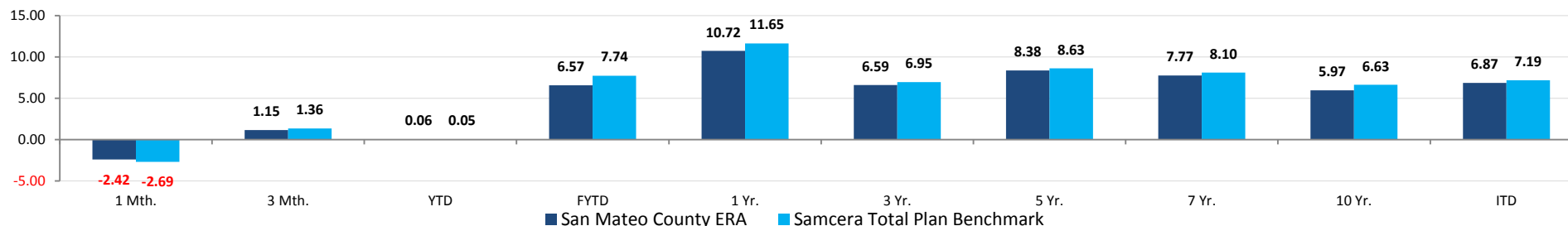


# San Mateo County Composite Return Summary



February 28, 2018

Return Comparison



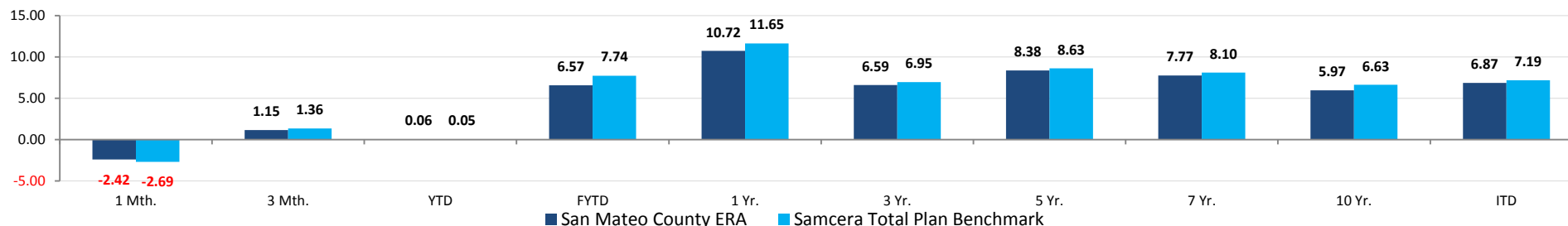
Composite Returns (Net of Manager Fees)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
San Mateo County ERA	4,364,846,691	-2.42	1.15	0.06	6.57	10.72	6.59	8.38	7.77	5.97	6.87
Samcera Total Plan Benchmark		-2.69	1.36	0.05	7.74	11.65	6.95	8.63	8.10	6.63	7.19
Excess		0.27	-0.21	0.01	-1.17	-0.93	-0.36	-0.24	-0.33	-0.66	-0.31
San Mateo Ex-Clifton Overlay	4,349,874,275	-2.41	1.18	0.10	6.59	10.69	6.52	8.33	7.73	5.89	6.80
Samcera Total Plan Benchmark		-2.69	1.36	0.05	7.74	11.65	6.95	8.63	8.10	6.63	7.19
Excess		0.28	-0.17	0.05	-1.15	-0.96	-0.44	-0.30	-0.36	-0.74	-0.38
Total Equity	1,856,493,769	-4.00	2.48	1.01	11.74	18.33	9.12	11.54	9.67	6.78	8.02
Samcera Total Equity Benchmark		-3.91	2.51	1.21	12.61	17.30	9.90	12.44	10.53	7.99	8.60
Excess		-0.09	-0.03	-0.20	-0.87	1.03	-0.78	-0.90	-0.86	-1.21	-0.58
Fixed Income	883,229,627	-0.60	-0.30	-0.79	1.00	3.68	3.38	3.23	4.62	5.17	5.57
Samcera Fixed Income Benchmark		-0.95	-1.43	-1.73	-0.20	1.67	2.08	1.97	3.24	3.93	4.97
Excess		0.36	1.13	0.95	1.21	2.01	1.31	1.26	1.37	1.24	0.60
Risk Parity	307,965,758	-2.90	-1.12	-2.61	5.56	7.81	3.72	4.68	6.28	--	6.28
Samcera Risk Parity Benchmark		-2.86	0.76	-0.24	6.54	10.40	6.99	9.36	8.95	--	8.95
Excess		-0.04	-1.88	-2.37	-0.98	-2.59	-3.26	-4.68	-2.66	--	-2.66

# San Mateo County Composite Return Summary



February 28, 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	510,640,290	-0.55	0.85	0.18	4.06	6.68	5.93	5.19	5.57	-8.02	-2.43
Samcera Alternatives Benchmark		-1.65	2.37	1.48	9.61	12.85	7.92	8.92	8.22	6.88	7.82
Excess		1.09	-1.52	-1.31	-5.55	-6.17	-1.99	-3.73	-2.66	-14.90	-10.25
Inflation Hedge	706,635,641	-1.81	1.04	-0.01	3.97	6.16	--	--	--	--	9.68
SamCERA Inflation Hedge Index		-2.19	1.05	-1.12	5.46	7.19	--	--	--	--	8.02
Excess		0.38	-0.01	1.10	-1.50	-1.03	--	--	--	--	1.66
Cash	84,909,190	0.06	0.25	0.11	0.55	0.83	0.61	0.59	0.61	0.42	1.97
Samcera Cash Benchmark		0.09	0.33	0.21	0.76	0.99	0.48	0.31	0.25	0.35	1.83
Excess		-0.04	-0.07	-0.10	-0.21	-0.16	0.13	0.28	0.36	0.07	0.14

# San Mateo County Manager Return Summary



February 28, 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	1,856,493,769	-4.00	2.48	1.01	11.74	18.33	9.12	11.54	9.67	6.78	8.02
Samcera Total Equity Benchmark		-3.91	2.51	1.21	12.61	17.30	9.90	12.44	10.53	7.99	8.60
Excess		-0.09	-0.03	-0.20	-0.87	1.03	-0.78	-0.90	-0.86	-1.21	-0.58
Domestic Equity	991,245,668	-3.63	2.01	1.14	12.49	15.91	10.52	13.91	11.96	9.08	8.80
Samcera Dom. Equity Benchmark		-3.69	2.40	1.39	12.74	16.22	10.45	14.18	12.58	9.85	9.15
Excess		0.05	-0.39	-0.25	-0.25	-0.32	0.07	-0.27	-0.62	-0.78	-0.36
Large Cap Equity	863,142,200	-3.57	2.61	1.53	13.45	16.97	11.52	14.82	12.61	9.30	9.57
Russell 1000		-3.67	2.75	1.62	13.16	16.70	10.77	14.56	12.99	9.78	9.87
Excess		0.10	-0.14	-0.09	0.29	0.27	0.75	0.27	-0.38	-0.48	-0.30
Blackrock Russell 1000	710,033,819	-3.67	2.73	1.62	13.15	16.72	--	--	--	--	19.62
Russell 1000		-3.67	2.75	1.62	13.16	16.70	--	--	--	--	19.40
Excess		-0.00	-0.02	-0.00	-0.01	0.02	--	--	--	--	0.21
DE Shaw Commingled Fund	153,108,381	-3.12	2.05	1.13	14.93	18.36	12.43	--	--	--	13.07
Russell 1000		-3.67	2.75	1.62	13.16	16.70	10.77	--	--	--	11.17
Excess		0.56	-0.70	-0.49	1.76	1.66	1.65	--	--	--	1.90
Small Cap Equity	128,103,468	-4.04	-1.79	-1.40	6.54	9.25	5.33	9.57	9.16	7.89	6.56
Russell 2000		-3.87	-1.76	-1.36	7.71	10.51	8.55	12.19	10.59	9.75	8.04
Excess		-0.17	-0.03	-0.04	-1.18	-1.26	-3.22	-2.62	-1.43	-1.85	-1.47
QMA US Small Cap	128,103,468	-4.04	-1.79	-1.40	6.54	9.25	--	--	--	--	15.93
Russell 2000		-3.87	-1.76	-1.36	7.71	10.51	--	--	--	--	15.57
Excess		-0.17	-0.03	-0.04	-1.18	-1.26	--	--	--	--	0.36
International Equity	865,248,101	-4.42	3.04	0.87	10.87	21.57	6.73	7.07	5.10	2.04	5.88
MS AC WldxUS IMI Nt		-4.60	2.99	0.62	12.52	22.04	6.79	6.68	4.75	3.00	5.48
Excess		0.19	0.05	0.25	-1.64	-0.47	-0.06	0.39	0.35	-0.96	0.40

# San Mateo County Manager Return Summary



February 28, 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	766,854,637	-4.46	2.54	0.66	10.34	21.46	6.70	7.49	5.45	2.45	4.82
MS AC WldxUS IMI Nt		-4.60	2.99	0.62	12.52	22.04	6.79	6.68	4.75	3.00	5.35
Excess		0.14	-0.45	0.04	-2.18	-0.58	-0.09	0.80	0.69	-0.56	-0.53
Baillie Gifford	258,899,461	-4.16	3.01	1.23	11.46	25.36	8.48	8.88	--	--	9.72
MSCI ACWI ex US Growth		-4.46	2.71	0.52	13.15	25.46	7.77	7.67	--	--	8.16
Excess		0.30	0.30	0.71	-1.69	-0.10	0.71	1.21	--	--	1.56
Blackrock EAFE Index Fund	248,650,696	-4.49	1.91	0.30	10.26	20.58	6.00	--	--	--	4.66
MSCI EAFE ND		-4.51	1.89	0.28	10.17	20.13	5.65	--	--	--	4.36
Excess		0.02	0.02	0.02	0.09	0.45	0.35	--	--	--	0.31
Mondrian Investment Partners	259,304,480	-4.73	2.68	0.45	9.61	18.35	4.98	6.43	5.06	2.83	6.00
MSCI ACWI ex US Value		-4.93	3.09	0.72	11.48	19.04	5.62	5.84	4.08	2.72	5.91
Excess		0.21	-0.41	-0.27	-1.87	-0.69	-0.64	0.59	0.99	0.11	0.09
Emerging Markets Equity	98,393,465	-4.05	7.18	2.53	15.20	22.25	6.66	3.66	--	--	3.87
MSCI Emerging Markets ND (USD)		-4.61	7.05	3.34	19.79	30.51	8.97	5.02	--	--	4.87
Excess		0.56	0.13	-0.81	-4.59	-8.26	-2.31	-1.35	--	--	-1.00
EV Parametric EM	98,393,465	-4.05	7.18	2.53	15.20	22.25	--	--	--	--	11.36
MSCI Emerging Markets GD		-4.60	7.12	3.36	20.05	30.97	--	--	--	--	14.32
Excess		0.55	0.05	-0.83	-4.85	-8.72	--	--	--	--	-2.96
Fixed Income	883,229,627	-0.60	-0.30	-0.79	1.00	3.68	3.38	3.23	4.62	5.17	5.57
Samcera Fixed Income Benchmark		-0.95	-1.43	-1.73	-0.20	1.67	2.08	1.97	3.24	3.93	4.97
Excess		0.36	1.13	0.95	1.21	2.01	1.31	1.26	1.37	1.24	0.60
Core Fixed Income	604,210,544	-0.83	-1.06	-1.43	0.07	1.93	2.24	2.75	3.96	4.53	5.31
BB Barclays U.S. Aggregate		-0.95	-1.64	-2.09	-0.87	0.51	1.14	1.71	2.84	3.60	4.84
Excess		0.11	0.58	0.66	0.94	1.43	1.10	1.03	1.12	0.93	0.47

# San Mateo County Manager Return Summary



February 28, 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	258,534,393	-0.97	-1.50	-1.93	-0.42	0.89	1.77	2.27	3.49	4.51	4.54
BB Barclays U.S. Aggregate		-0.95	-1.64	-2.09	-0.87	0.51	1.14	1.71	2.84	3.60	4.06
Excess		-0.02	0.14	0.16	0.46	0.39	0.63	0.56	0.65	0.91	0.48
Western Total Return	132,264,660	-1.47	0.06	-0.74	2.84	6.91	--	--	--	--	5.28
BB Barclays U.S. Aggregate		-0.95	-1.64	-2.09	-0.87	0.51	--	--	--	--	1.54
Excess		-0.52	1.70	1.35	3.71	6.40	--	--	--	--	3.75
Blackrock Inter Gov	213,411,491	-0.27	-1.19	-1.21	-1.18	-0.40	--	--	--	--	-0.09
BB Barclays U.S. Aggregate		-0.95	-1.64	-2.09	-0.87	0.51	--	--	--	--	1.24
Excess		0.67	0.45	0.88	-0.31	-0.90	--	--	--	--	-1.34
Opportunistic Credit	279,019,082	-0.09	1.35	0.59	3.56	7.57	6.78	7.03	7.49	--	9.61
BB Barc BA Intermediate HY Ind		-0.97	-1.02	-1.03	0.82	3.22	4.25	4.85	6.10	--	7.41
Excess		0.88	2.37	1.62	2.74	4.35	2.54	2.18	1.40	--	2.20
AG Opportunistic Whole Loan	7,669,768	0.00	0.00	0.00	4.29	12.62	7.25	--	--	--	4.69
BB Barc BA Intermediate HY Ind		-0.97	-1.02	-1.03	0.82	3.22	4.25	--	--	--	4.38
Excess		0.97	1.02	1.03	3.46	9.41	3.00	--	--	--	0.31
Angelo Gordon	8,536,662	3.75	11.06	3.76	19.17	25.68	12.48	12.65	--	--	12.15
BB Barc BA Intermediate HY Ind		-0.97	-1.02	-1.03	0.82	3.22	4.25	4.85	--	--	5.07
Excess		4.72	12.08	4.78	18.34	22.46	8.23	7.81	--	--	7.08
Beach Point Select Fund	49,077,572	1.36	2.88	1.47	5.31	7.99	8.97	--	--	--	9.36
BB Barc BA Intermediate HY Ind		-0.97	-1.02	-1.03	0.82	3.22	4.25	--	--	--	4.76
Excess		2.33	3.90	2.50	4.49	4.77	4.72	--	--	--	4.60
Brigade Cap Mngmt	76,325,414	-0.43	1.65	1.29	3.04	6.76	5.51	5.09	6.38	--	7.07
BB Barc BA Intermediate HY Ind		-0.97	-1.02	-1.03	0.82	3.22	4.25	4.85	6.10	--	6.67
Excess		0.54	2.67	2.32	2.22	3.55	1.26	0.24	0.28	--	0.39

# San Mateo County Manager Return Summary



February 28, 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	2.46	3.89	3.89	3.23	--	--	--	--	--	--
BB Barc BA Intermediate HY Ind		-0.97	-1.02	-1.03	0.82	--	--	--	--	--	--
Excess		3.43	4.91	4.91	2.40	--	--	--	--	--	--
SAMCERA-PIMCO Div. Income Fund	79,804,519	-0.96	-0.81	-1.39	--	--	--	--	--	--	0.38
BB Barc BA Intermediate HY Ind		-0.97	-1.02	-1.03	--	--	--	--	--	--	-0.06
Excess		0.01	0.21	-0.37	--	--	--	--	--	--	0.44
TCP Direct Lending VIII	10,393,144	-0.00	5.38	1.64	6.49	9.91	--	--	--	--	--
BB Barc BA Intermediate HY Ind		-0.97	-1.02	-1.03	0.82	3.22	--	--	--	--	--
Excess		0.97	6.40	2.67	5.66	6.69	--	--	--	--	--
Franklin Templeton	41,438,280	-0.59	-0.16	0.97	0.75	2.33	2.24	2.07	4.19	--	4.33
BB Barclays Multiverse Index		-0.93	0.65	0.29	3.26	6.16	2.71	1.44	2.12	--	2.19
Excess		0.34	-0.81	0.69	-2.51	-3.82	-0.47	0.63	2.07	--	2.14
Risk Parity	307,965,758	-2.90	-1.12	-2.61	5.56	7.81	3.72	4.68	6.28	--	6.28
Samcera Risk Parity Benchmark		-2.86	0.76	-0.24	6.54	10.40	6.99	9.36	8.95	--	8.95
Excess		-0.04	-1.88	-2.37	-0.98	-2.59	-3.26	-4.68	-2.66	--	-2.66
AQR Global Risk III	145,470,521	-3.03	-0.53	-2.38	6.80	9.02	2.84	3.26	5.25	--	5.25
Samcera Risk Parity Benchmark		-2.86	0.76	-0.24	6.54	10.40	6.99	9.36	8.95	--	8.95
Excess		-0.16	-1.29	-2.14	0.26	-1.38	-4.15	-6.10	-3.70	--	-3.70
Panagora	162,495,237	-2.78	-1.65	-2.82	4.47	6.75	4.54	--	--	--	6.25
Samcera Risk Parity Benchmark		-2.86	0.76	-0.24	6.54	10.40	6.99	--	--	--	7.45
Excess		0.08	-2.40	-2.58	-2.07	-3.65	-2.45	--	--	--	-1.20
Alternatives	510,640,290	-0.55	0.85	0.18	4.06	6.68	5.93	5.19	5.57	-8.02	-2.43
Samcera Alternatives Benchmark		-1.65	2.37	1.48	9.61	12.85	7.92	8.92	8.22	6.88	7.82
Excess		1.09	-1.52	-1.31	-5.55	-6.17	-1.99	-3.73	-2.66	-14.90	-10.25



# San Mateo County Manager Return Summary



February 28, 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	253,650,939	2.47	2.77	2.58	6.16	12.81	13.14	14.27	-11.38	--	-20.83
Samcera PE Benchmark		-3.44	3.16	1.89	14.96	19.67	13.89	17.71	16.10	--	17.51
Excess		5.91	-0.39	0.69	-8.80	-6.86	-0.75	-3.44	-27.48	--	-38.34
Absolute Return	256,989,351	-3.37	-0.95	-2.08	2.15	0.73	4.09	5.70	--	--	4.73
Samcera LIBOR + 4%		0.44	1.34	0.91	3.52	5.20	4.65	4.46	--	--	4.41
Excess		-3.81	-2.29	-2.99	-1.37	-4.47	-0.57	1.23	--	--	0.32
AQR Delta XN	160,557,508	-4.13	-1.64	-2.92	2.29	-0.22	4.30	5.82	--	--	4.82
Samcera LIBOR + 4%		0.44	1.34	0.91	3.52	5.20	4.65	4.46	--	--	4.41
Excess		-4.58	-2.98	-3.82	-1.23	-5.42	-0.36	1.36	--	--	0.42
SamCERA-Aberdeen Std GARS	96,431,843	-2.07	0.20	-0.64	1.56	2.65	--	--	--	--	0.26
Samcera LIBOR + 4%		0.44	1.34	0.91	3.52	5.20	--	--	--	--	4.77
Excess		-2.52	-1.14	-1.55	-1.95	-2.55	--	--	--	--	-4.51
Inflation Hedge	706,635,641	-1.81	1.04	-0.01	3.97	6.16	--	--	--	--	9.68
SamCERA Inflation Hedge Index		-2.19	1.05	-1.12	5.46	7.19	--	--	--	--	8.02
Excess		0.38	-0.01	1.10	-1.50	-1.03	--	--	--	--	1.66
TIPS	86,500,331	-0.64	-0.31	-1.09	0.83	0.15	--	--	--	--	1.45
BBG Barclays US TIPS		-0.97	-0.92	-1.82	0.28	-0.18	--	--	--	--	0.70
Excess		0.33	0.62	0.73	0.55	0.33	--	--	--	--	0.75
Brown Brothers Harriman	86,500,331	-0.64	-0.31	-1.09	0.83	0.15	1.10	-0.66	2.26	--	2.41
BBG Barclays US TIPS		-0.97	-0.92	-1.82	0.28	-0.18	0.79	-0.11	2.49	--	2.67
Excess		0.33	0.62	0.73	0.55	0.33	0.31	-0.55	-0.24	--	-0.26
Real Estate	305,685,618	0.12	2.04	2.04	3.76	8.09	--	--	--	--	8.79
Samcera NCREIF ODCE EW (gross)		0.00	2.15	0.00	4.08	7.80	--	--	--	--	7.55
Excess		0.12	-0.11	2.04	-0.32	0.29	--	--	--	--	1.24

# San Mateo County Manager Return Summary



February 28, 2018

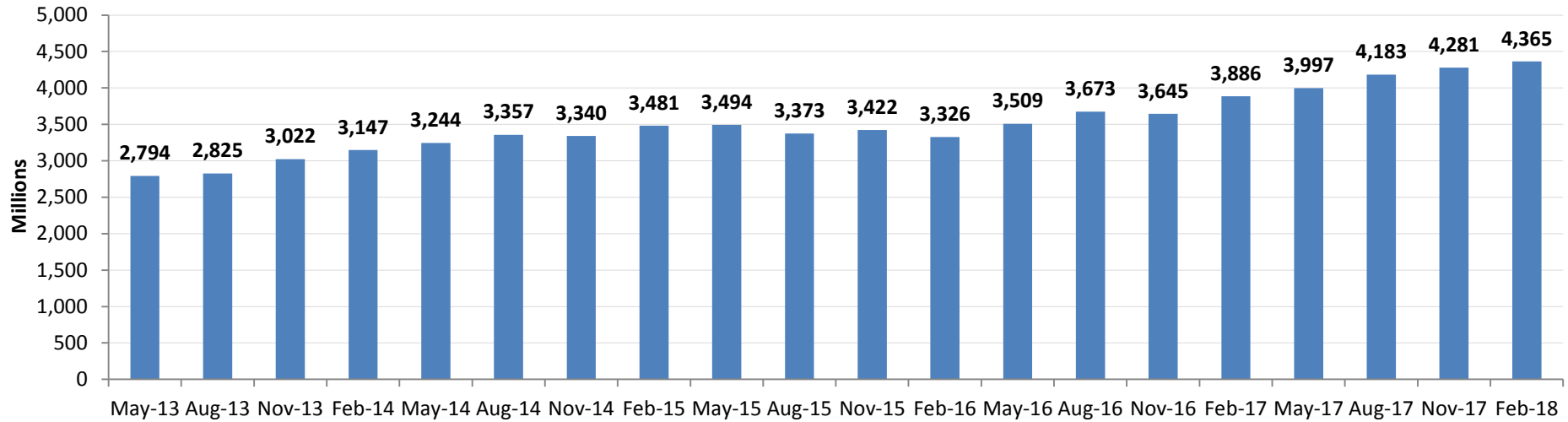
Composite Returns (NET)	Market Value (\$)	1 Mth.	3 Mth.	YTD	FYTD	1 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	ITD
Invesco Core Real Estate	253,388,319	0.00	2.18	2.18	3.58	8.03	10.38	11.55	11.74	4.93	7.82
Samcera NCREIF ODCE EW (gross)		0.00	2.15	0.00	4.08	7.80	10.70	11.56	12.10	4.85	7.69
Excess		0.00	0.03	2.18	-0.50	0.23	-0.32	-0.01	-0.36	0.08	0.13
Invesco US Val IV	17,874,138	0.00	1.84	1.84	9.03	11.41	--	--	--	--	12.57
Samcera NCREIF ODCE EW (gross)		0.00	2.15	0.00	4.08	7.80	--	--	--	--	9.17
Excess		0.00	-0.31	1.84	4.95	3.61	--	--	--	--	3.40
PGIM Real Estate US Debt Fund	34,423,161	1.09	1.11	1.11	1.22	--	--	--	--	--	1.22
Samcera NCREIF ODCE EW (gross)		0.00	2.15	0.00	4.08	--	--	--	--	--	4.08
Excess		1.09	-1.04	1.11	-2.86	--	--	--	--	--	-2.86
Liquid Real Assets	257,984,471	-4.71	0.31	-2.16	8.27	8.65	--	--	--	--	--
SamCera Custom Real Asset Index		-4.68	0.37	-2.12	8.16	8.48	--	--	--	--	--
Excess		-0.03	-0.06	-0.04	0.12	0.17	--	--	--	--	--
SSGA CST REAL ASSET NL	257,984,471	-4.71	0.31	-2.16	8.27	8.65	--	--	--	--	--
SamCera Custom Real Asset Index		-4.68	0.37	-2.12	8.16	8.48	--	--	--	--	--
Excess		-0.03	-0.06	-0.04	0.12	0.17	--	--	--	--	--
Private Real Assets	56,465,221	-0.08	0.58	0.63	-7.32	-5.36	--	--	--	--	19.01
SamCera Custom Real Asset Inde		-4.68	0.37	-2.12	8.16	8.48	--	--	--	--	12.44
Excess		4.60	0.21	2.75	-15.48	-13.84	--	--	--	--	6.58
Cash	84,909,190	0.06	0.25	0.11	0.55	0.83	0.61	0.59	0.61	0.42	1.97
Samcera Cash Benchmark		0.09	0.33	0.21	0.76	0.99	0.48	0.31	0.25	0.35	1.83
Excess		-0.04	-0.07	-0.10	-0.21	-0.16	0.13	0.28	0.36	0.07	0.14
SamCera General Account	41,595,098	0.12	0.36	0.25	0.87	1.22	0.72	0.48	0.43	0.55	1.98
County Treasury Pool	43,306,519	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.40	0.20	2.59
San Mateo County ERA	4,364,846,691	-2.42	1.15	0.06	6.57	10.72	6.59	8.38	7.77	5.97	6.87
Samcera Total Plan Benchmark		-2.69	1.36	0.05	7.74	11.65	6.95	8.63	8.10	6.63	7.19
Excess		0.27	-0.21	0.01	-1.17	-0.93	-0.36	-0.24	-0.33	-0.66	-0.31

February 28, 2018

**Record of Asset Growth**

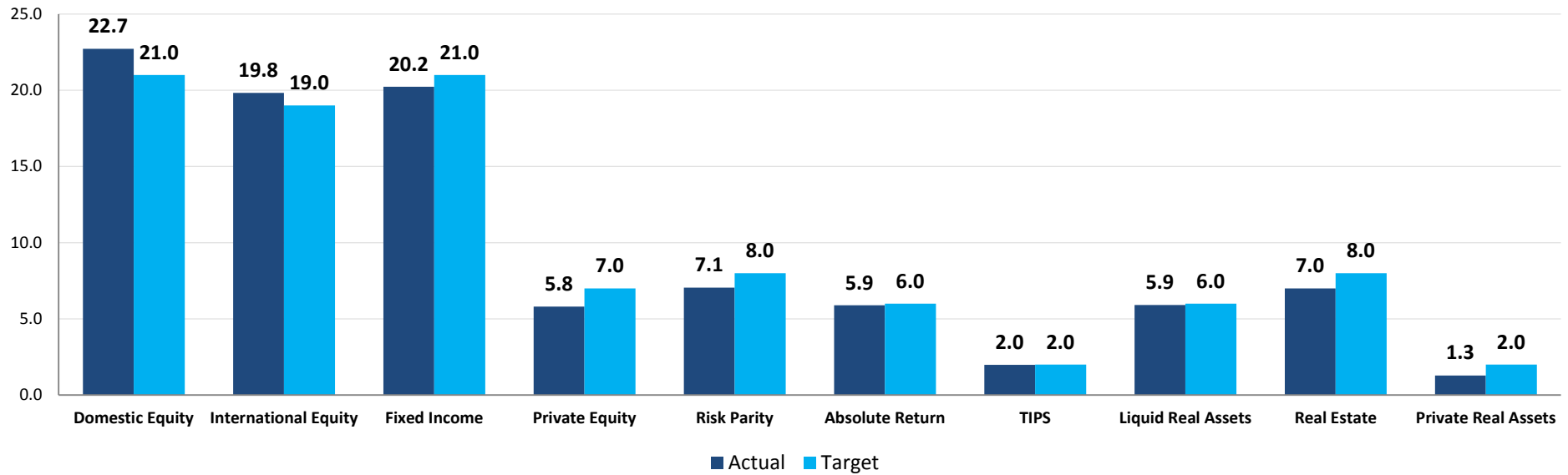
	Three Months	One Year
<b>TOTAL FUND</b>		
Beginning Market Value	4,281,005,918	3,885,972,570
Contributions	87,530,953	259,791,766
Withdrawals	-57,241,895	-208,644,489
Income Received	8,247,622	35,367,796
Gain/Loss	42,698,255	390,112,724
Ending Market Value	4,364,846,691	4,364,846,691

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



February 28, 2018

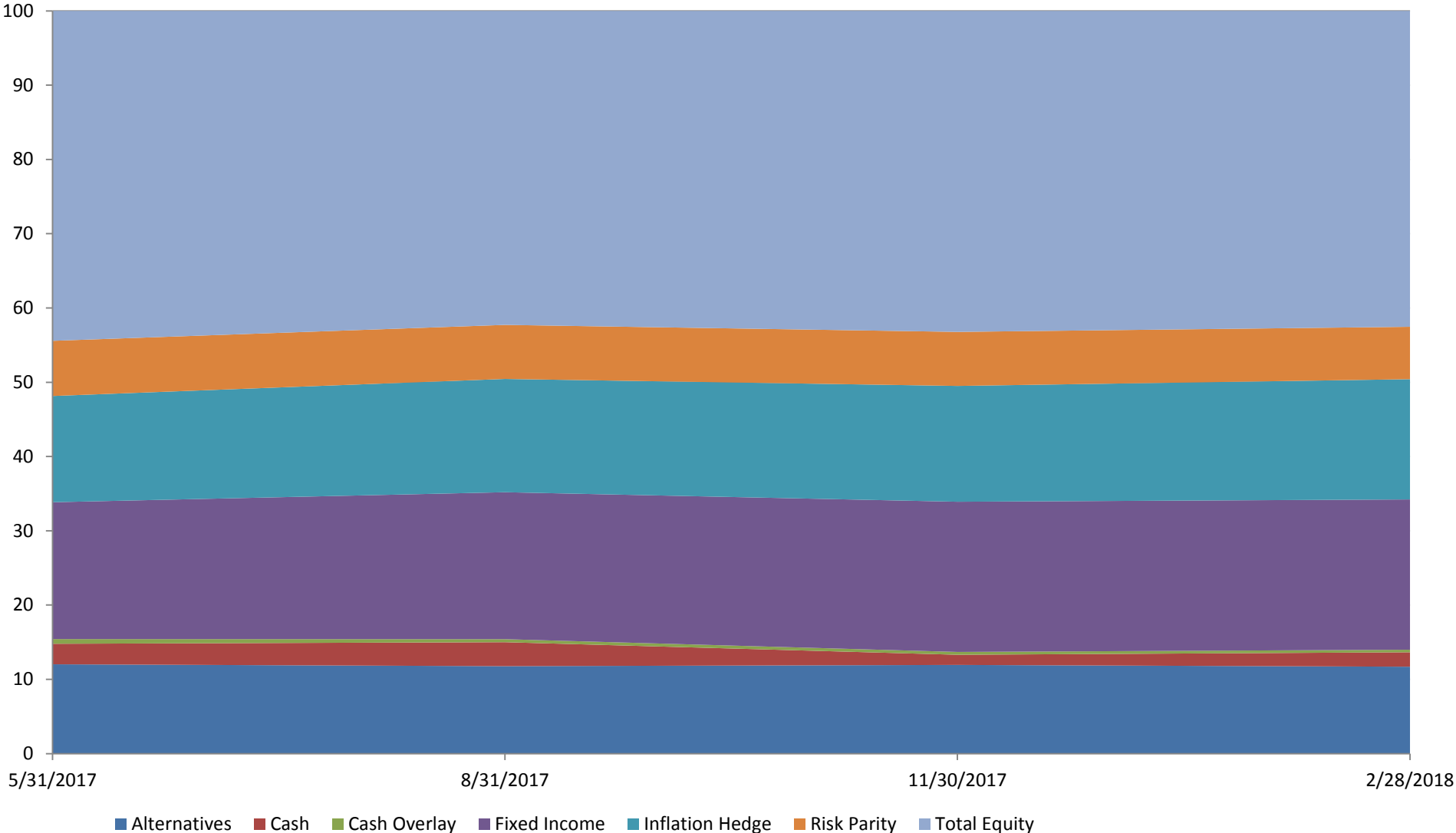
Actual vs Target Weights



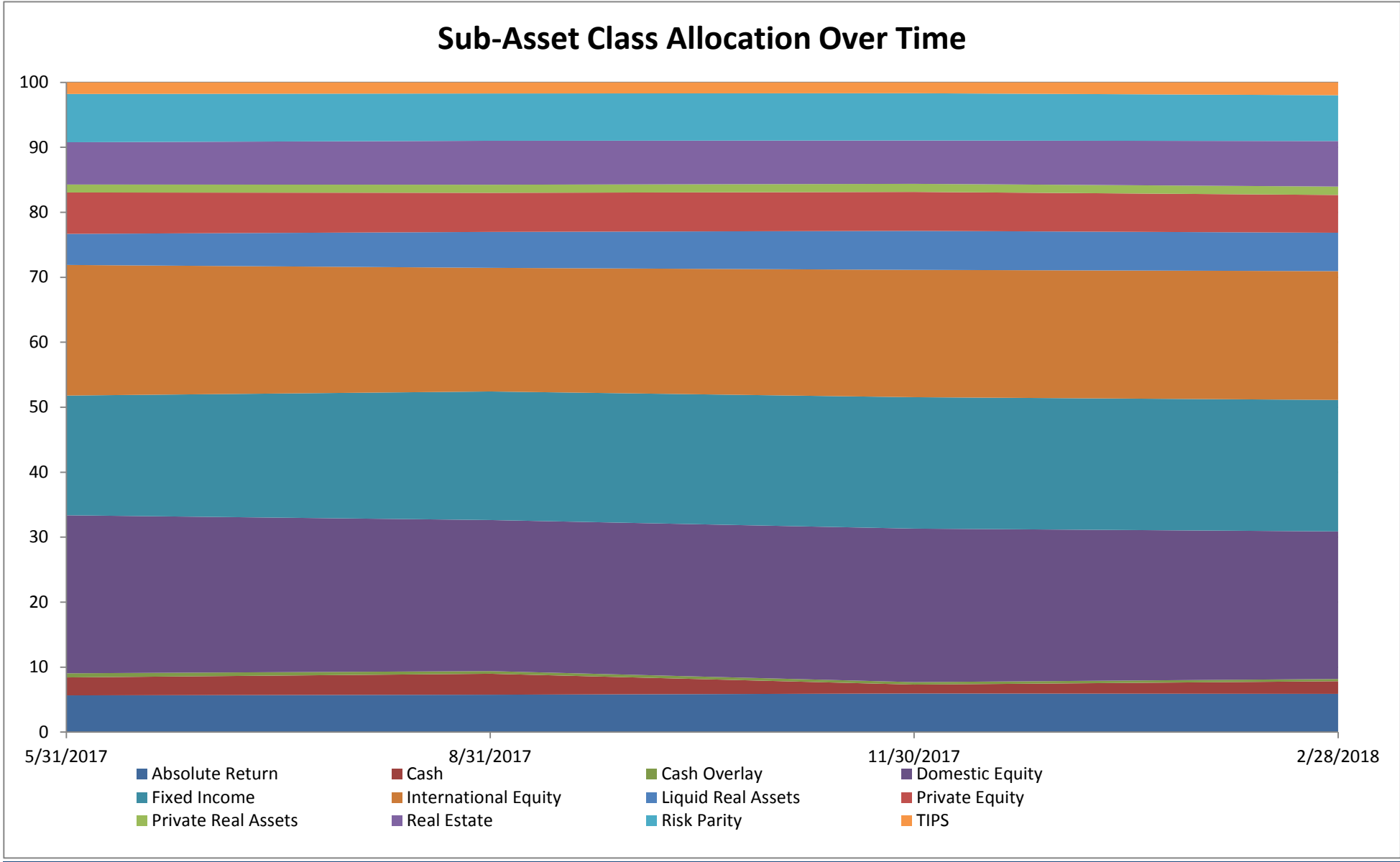
	Min	Actual	Target	Deviation	Max
<b>Domestic Equity</b>	19.0	22.7	21.0	1.7	23.0
<b>International Equity</b>	17.0	19.8	19.0	0.8	21.0
<b>Fixed Income</b>	19.0	20.2	21.0	-0.8	23.0
<b>Private Equity</b>	5.0	5.8	7.0	-1.2	9.0
<b>Risk Parity</b>	6.0	7.1	8.0	-0.9	10.0
<b>Absolute Return</b>	4.0	5.9	6.0	-0.1	8.0
<b>TIPS</b>	0.0	2.0	2.0	0.0	4.0
<b>Liquid Real Assets</b>	4.0	5.9	6.0	-0.1	8.0
<b>Real Estate</b>	6.0	7.0	8.0	-1.0	10.0
<b>Private Real Assets</b>	0.0	1.3	2.0	-0.7	4.0

February 28, 2018

Asset Allocation over Time



February 28, 2018



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**PERSPECTIVES  
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SUCCESS**

FEBRUARY 2018  
Capital Markets Update



# Market commentary

## ECONOMIC CLIMATE

- U.S. real GDP was revised downward to an annualized rate of 2.5% QoQ during the fourth quarter. A decrease in net exports was the largest detractor from growth.
- The Conference Board's Consumer Confidence Index rose to 130.8 in February, up from 124.3 in January. This reading was the highest since December 2000.
- The ISM Manufacturing PMI increased from 59.1 to 60.8 during the period, led by strong gains in employment and inventories.
- The U.S. economy added 313,000 jobs during the month of February, above expectations of 205,000. The unemployment rate held steady at 4.1% while the labor force participation rate rose 30 bps to 63.0%.
- Pending home sales fell 4.7% MoM (-1.7% YoY) in February. The National Association of Realtors has forecast a decline in home sales this year, citing low supply and higher mortgage rates.

## DOMESTIC EQUITIES

- Domestic equities fell during the month for the first time since October 2016 as the S&P 500 returned -3.7%.
- As of March 2nd, with 97% of companies reporting, the blended Q4 earnings and revenue growth rates of the S&P 500 were 14.8% and 8.2% YoY, respectively. If both metrics hold, they will each be the highest respective growth rates since Q3 2011, according to FactSet.

## DOMESTIC FIXED INCOME

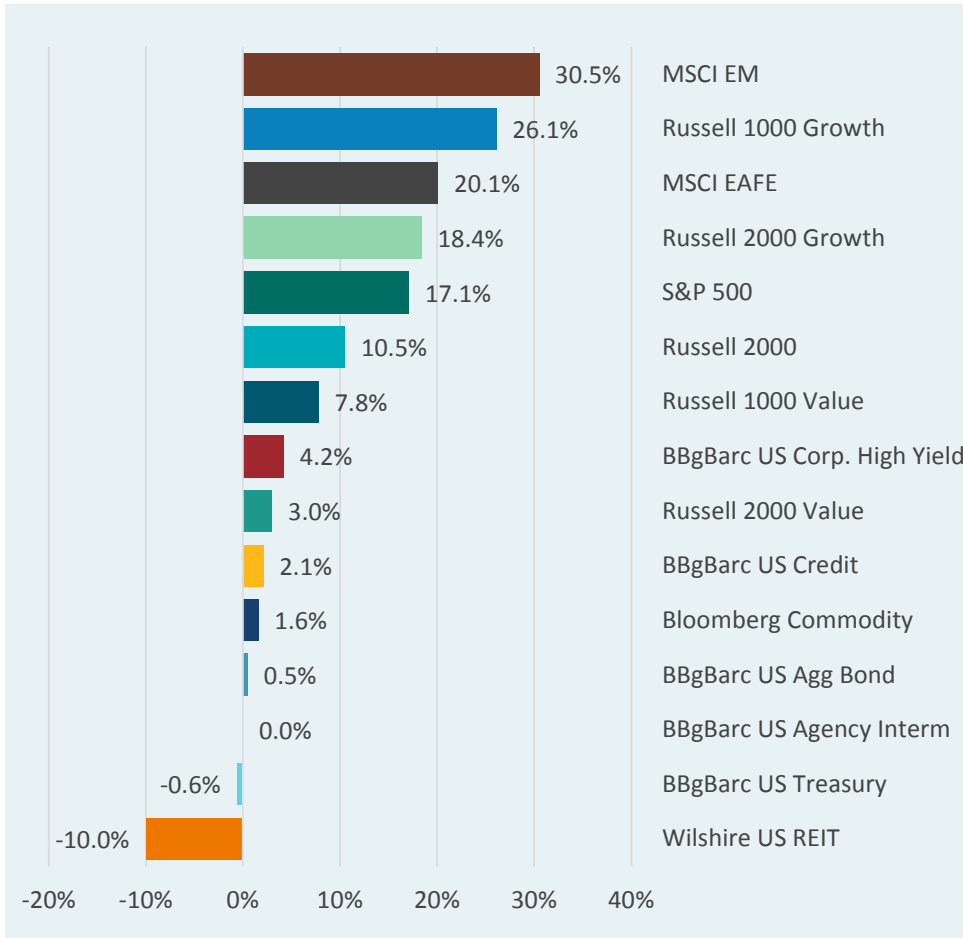
- Domestic fixed income returns were negative in February as the Bloomberg Barclays U.S. Aggregate Index fell -0.9%.
- The U.S. Treasury curve steepened slightly over the month, led by higher long-term yields. The 10-year minus 2-year yield spread increased 6 bps to 0.64%.
- High Yield spreads rose to 3.5% during the month from a cycle low of 3.2% in January. However, spreads remain well below the 20-year average of 5.9%.

## INTERNATIONAL MARKETS

- International equities experienced negative returns during the period as the MSCI ACWI ex U.S. Index fell -4.7% on an unhedged basis (-3.3% hedged).
- Real GDP in the U.K. was revised down to 0.4% QoQ from the preliminary estimate of 0.5%. Calendar year 2017 GDP was also revised down 10 bps to 1.7% due to a decrease in the estimated output of the production industries.
- Eurozone Manufacturing PMI decreased to 58.5 in February, down from 59.6 in January, and the multi-year high of 60.6 in December.
- The European Central Bank left monetary policy unchanged at its latest meeting, but removed language that stated it would increase asset purchases in the event of a market downturn.

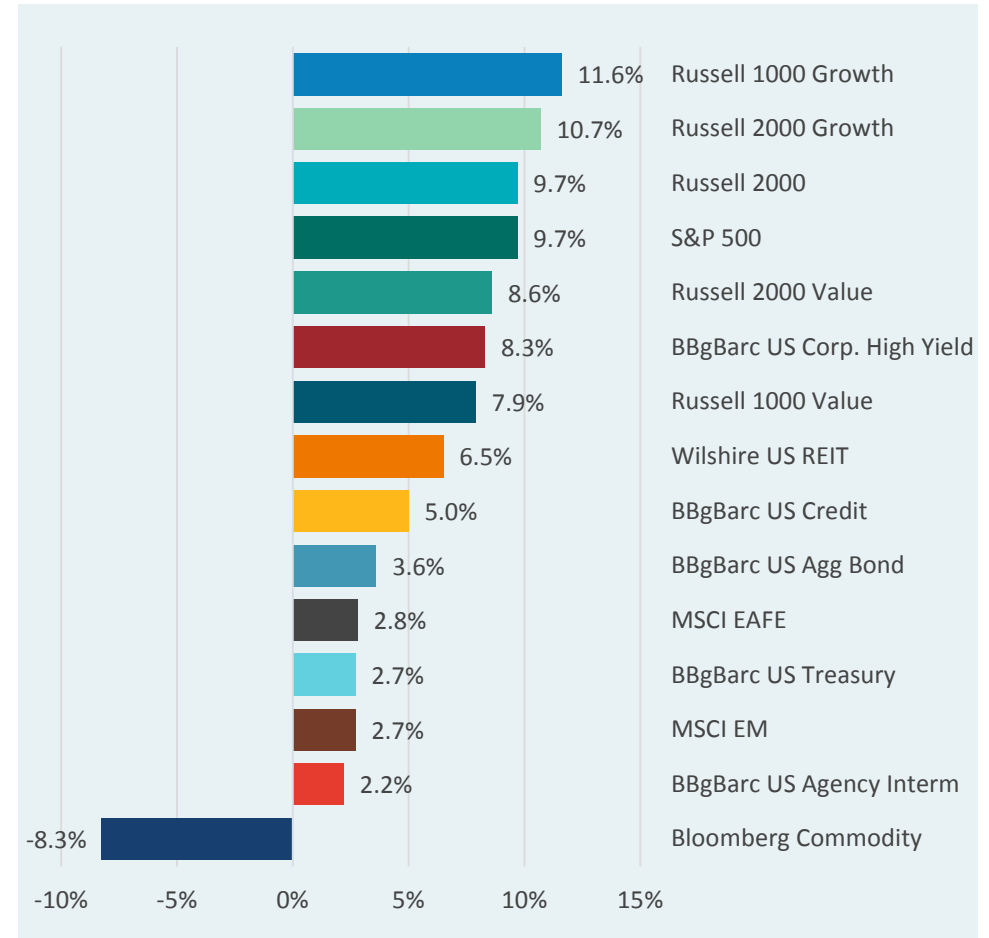
# Major asset class returns

ONE YEAR ENDING FEBRUARY



Source: Morningstar, as of 2/28/18

TEN YEARS ENDING FEBRUARY



Source: Morningstar, as of 2/28/18

# U.S. large cap equities

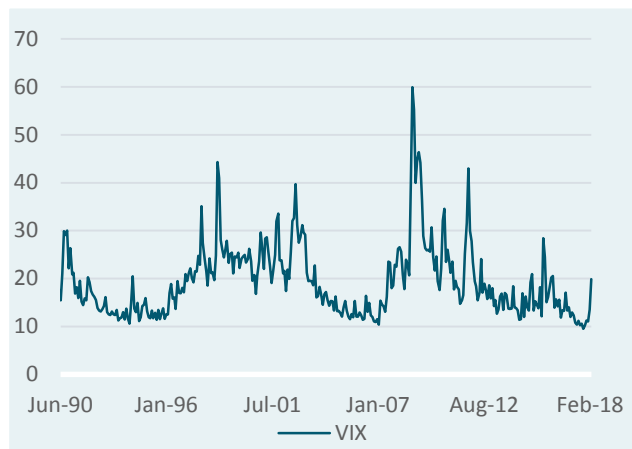
- The S&P 500 experienced a 10% drawdown at the beginning of the month that corresponded with a spike in implied volatility. Equities partially recovered, but had a negative monthly return for the first time since October 2016 (S&P 500 -3.7%). Realized volatility (30-day) jumped to 22.4% during the period, higher than the 5-year average of 12.2%.
- Implied volatility (VIX Index) rose above 50 at one point, jolting markets from a period of extraordinary low levels. The move may have been exacerbated by a build up in short volatility trades.
- Energy and Consumer Staples shares led the way down during the month. The S&P 500 Energy sector fell 10.8%, marking the worst month for the sector since September 2011. Out of the 11 sectors, Technology was the only positive performer, returning 0.1%.
- With equity prices falling in February, most valuation metrics moved back towards historical levels. The trailing and forward P/E ratios decreased from 22.8 and 17.9 to 21.9 and 17.0, respectively. However, they still remain above their respective 10-year averages of 17.5 and 15.6.

**S&P 500 PRICE INDEX**



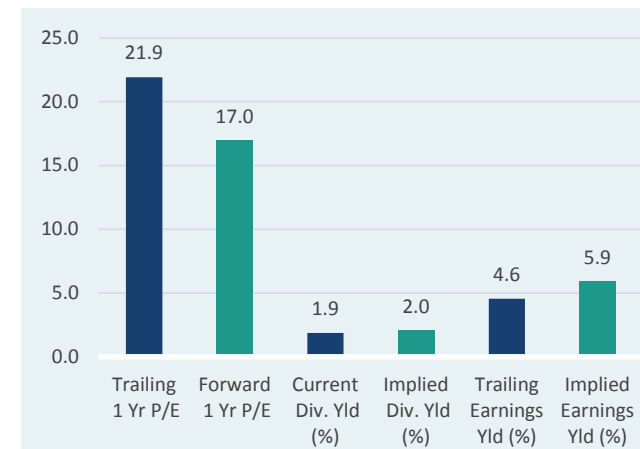
Source: Bloomberg, as of 2/28/18

**IMPLIED VOLATILITY**



Source: CBOE, as of 2/28/18

**S&P 500 VALUATION SNAPSHOT**

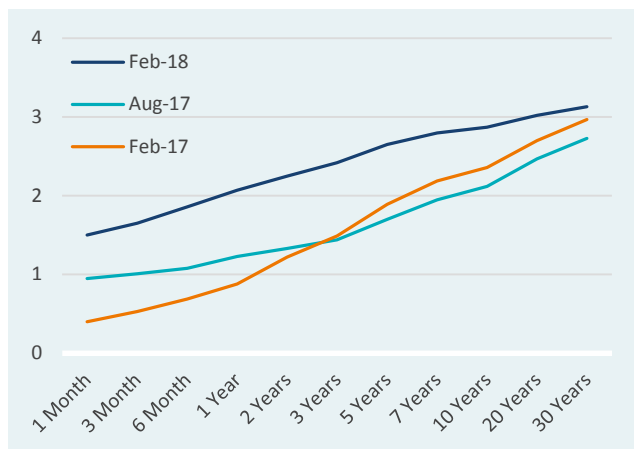


Source: Bloomberg, as of 2/28/18

# Fixed income

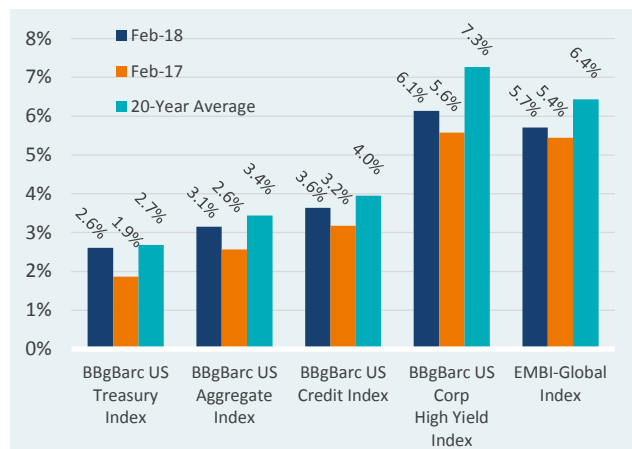
- Markets are expecting three interest rate hikes during 2018, according to fed funds futures pricing, in line with what the Fed has been communicating in recent meeting. In his first comments since becoming Fed Chairman, Jerome Powell noted that Fed guidance may need to be revised towards quicker tightening based on the current strength of the economy.
- Yields rose broadly across fixed income asset classes in February. The EMBI-Global Index (hard currency EM debt) and BBgBarc U.S. Corporate High Yield Index saw the largest moves, rising 40 bps and 30 bps, respectively.
- After marking a recent low of 85 bps on February 2<sup>nd</sup>, Investment Grade spreads rose throughout the month and ended 11 bps higher at 96 bps.
- The U.S. Treasury curve (2-10 year spread) steepened slightly, rising 4 bps to 0.62% during the month – the BBgBarc U.S. Treasury Long Index underperformed the BBgBarc 1-3 Year U.S. Treasury Index by 3.0% in February, and 5.7% YTD.

U.S. TREASURY YIELD CURVE



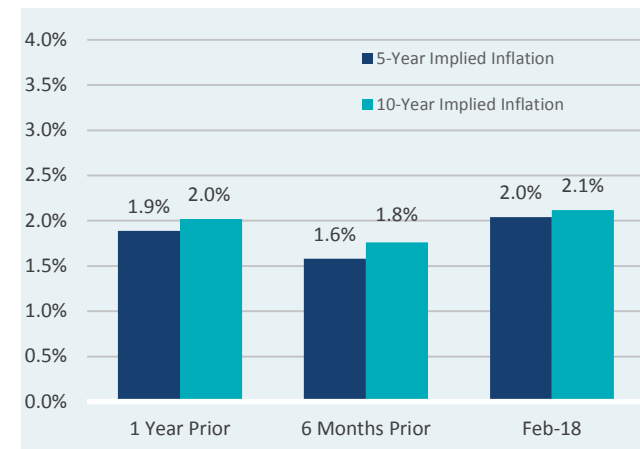
Source: Bloomberg, as of 2/28/18

NOMINAL FIXED INCOME YIELDS



Source: Morningstar, as of 2/28/18

IMPLIED INFLATION (TIPS BRAKEVEN)

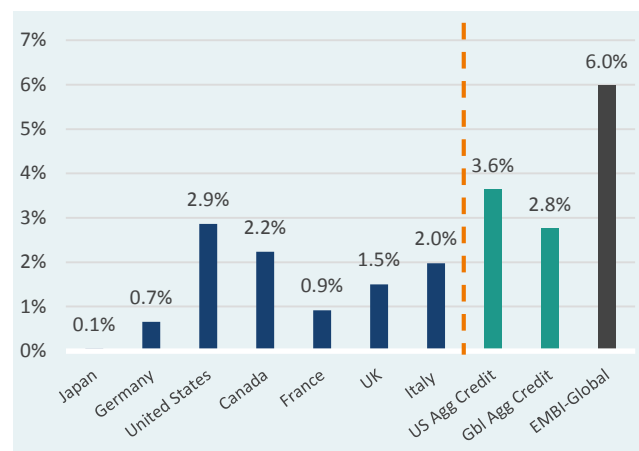


Source: Federal Reserve, as of 2/28/18

# Global markets

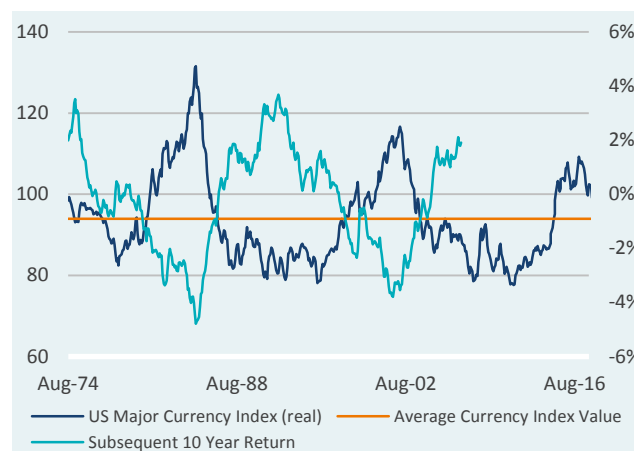
- The drawdown in global equities was consistent across markets with most regional benchmarks down around 10%. The pullback did not appear to be driven by any change in economic or corporate fundamentals and most markets started to recover towards the end of the month. However, international developed and emerging market equities did not recover as much as U.S. equities.
- International equities underperformed U.S. equities in the month as the MSCI ACWI ex U.S. Index fell 4.7% (S&P 500 -3.7%). Equities in the U.K. experienced the largest decline – the MSCI U.K. Index dropped 6.4%.
- The Japanese yen (+2.3%) outperformed the euro and the British pound (-2.1% and -3.1%) against the U.S. dollar in February, possibly benefitting from safe haven flows during the period of elevated volatility in other asset classes.
- Global equity valuations decreased during the month across most regions, led by EAFE markets, where the trailing 12-month P/E ratio dropped to 17.9 from 19.7. The contraction in developed market valuations was driven by both falling prices and rising earnings.

**GLOBAL SOVEREIGN 10-YEAR YIELDS**



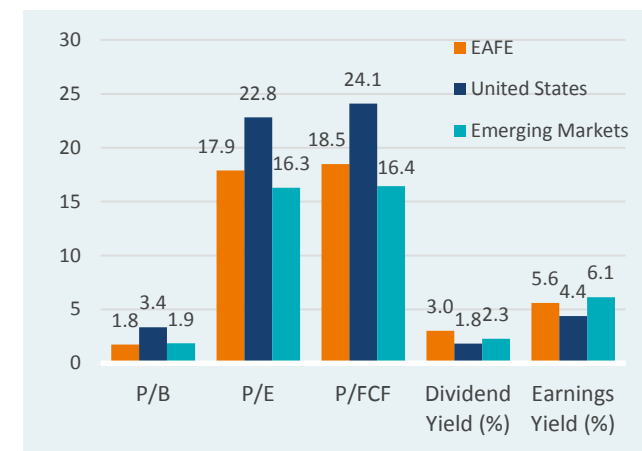
Source: Bloomberg, as of 2/28/18

**U.S. DOLLAR MAJOR CURRENCY INDEX**



Source: Federal Reserve, as of 2/28/18

**MSCI VALUATION METRICS (3-MONTH AVERAGE)**

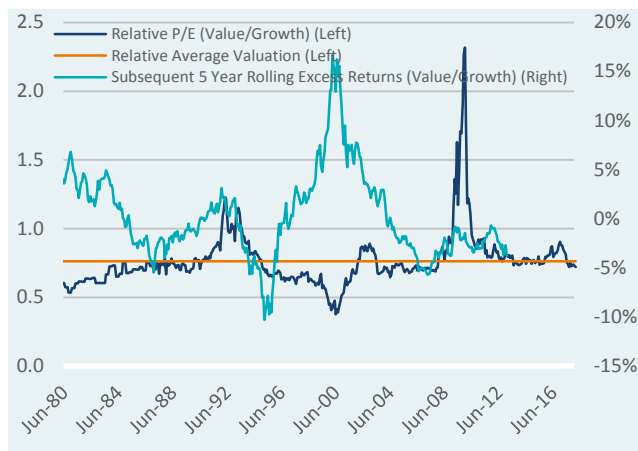


Source: Bloomberg, as of 2/28/18

# Domestic equity size and style

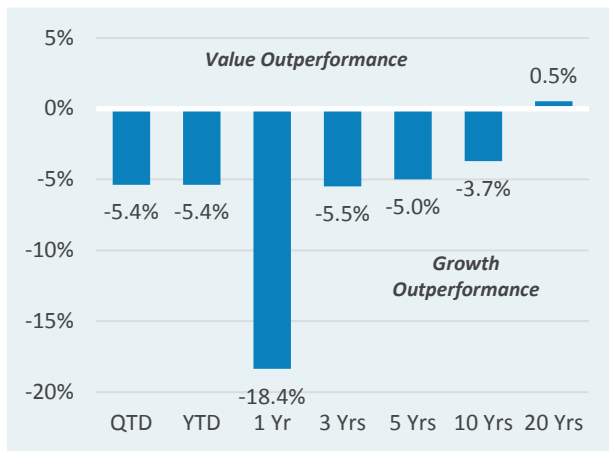
- Large cap equities narrowly outperformed small cap equities (Russell 1000 -3.7%, Russell 2000 -3.9%) during the period. Telecommunications companies contributed the most to this outperformance, with large caps returning 2.5% more than their small cap peers in February, and 25.1% more over the last year.
- The period of small cap outperformance following the U.S. election has faded. Over the past year, large cap equities have outperformed small cap equities by 6.2%.
- Growth-oriented equities (Russell 1000 Growth -2.6%) outperformed value-oriented equities (Russell 1000 Value -4.8%) during the month. The Russell 1000 Value Index was negatively affected by larger allocations to Energy and Utilities companies, whose sectors returned -10.6% and -5.1%, respectively.
- Value stocks have continued to underperform in this equity cycle, down 3.7% per year relative to growth stocks over the past 10 years.

**RELATIVE TRAILING PE RATIO OF U.S. VALUE VS. GROWTH**



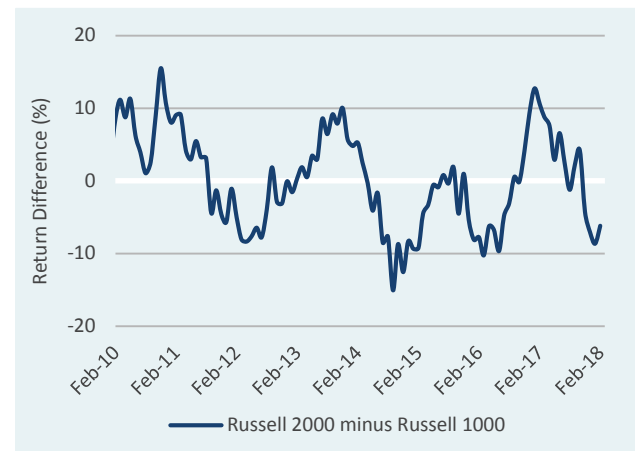
Source: Russell, Bloomberg, as of 2/28/18

**U.S. VALUE VS. GROWTH RELATIVE PERFORMANCE**



Source: Morningstar, as of 2/28/18

**U.S. SMALL VS. LARGE 1-YEAR ROLLING RELATIVE PERFORMANCE**



Source: FTSE, as of 2/28/18



# Commodities

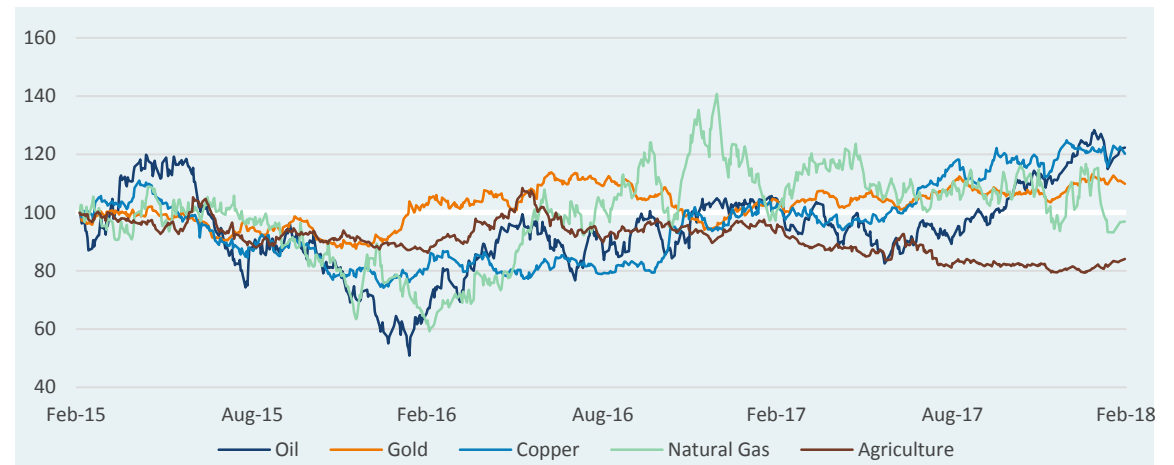
- The broad Bloomberg Commodity Index declined 1.7% in February. The energy and petroleum sub-sectors led the declines, returning -7.2% and -5.7%, respectively.
- WTI oil prices fell 4.8% to \$61.64 per barrel, influenced by concerns over building U.S. shale production that has offset the decrease in supply from the OPEC cuts.
- The Bloomberg Energy sub-index was negatively affected by Natural Gas prices during the month (-11.0%). Unleaded Gasoline and Heating Oil also contributed to the decline, falling -7.8% and -7.5%, respectively.
- The Bloomberg Grains sub-index had the best month of all the sub-indices, rising 5.1% in February. Wheat was the best performing asset within the sub-index, returning 9.6% during the month and 15.9% YTD.

## INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	(1.7)	0.2	0.2	1.6	(4.7)	(8.1)	(8.3)
Bloomberg Agriculture	4.7	6.1	6.1	(8.4)	(5.5)	(8.6)	(6.3)
Bloomberg Energy	(7.2)	(3.0)	(3.0)	3.3	(13.3)	(16.0)	(18.6)
Bloomberg Grains	5.1	9.7	9.7	(6.4)	(8.1)	(10.9)	(8.0)
Bloomberg Industrial Metals	(2.2)	(2.0)	(2.0)	15.4	5.1	(1.5)	(5.1)
Bloomberg Livestock	(1.9)	(3.2)	(3.2)	3.0	(4.0)	(2.0)	(5.6)
Bloomberg Petroleum	(5.7)	(1.3)	(1.3)	12.8	(9.2)	(14.6)	(12.6)
Bloomberg Precious Metals	(2.6)	(0.7)	(0.7)	(0.2)	1.2	(6.0)	1.2
Bloomberg Softs	1.5	(5.7)	(5.7)	(20.8)	(4.7)	(9.1)	(5.8)

Source: Morningstar, as of 2/28/18

## COMMODITY PERFORMANCE



Source: Bloomberg, as of 2/28/18

# Appendix

# Periodic table of returns

	1994	1995	1996	1997	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
Large Cap Growth	16.6	38.4	23.2	35.2	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	4.3	17.0	11.6
Emerging Markets Equity	8.1	37.8	23.1	32.9	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	3.3	14.6	10.7
Large Cap Equity	6.4	37.2	22.4	31.8	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	1.6	13.7	9.8
Small Cap Growth	4.4	31.0	21.6	30.5	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	12.2	9.7
60/40 Global Portfolio	3.2	28.5	21.4	22.4	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	0.9	12.0	8.6
Hedge Funds of Funds	2.6	25.7	16.5	16.2	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	0.7	10.6	7.9
International Equity	0.4	19.6	14.4	13.9	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	0.3	10.2	6.1
Commodities	-1.5	18.5	11.3	12.9	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	0.2	7.1	4.7
Cash	-1.8	15.2	10.3	10.6	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	0.2	6.6	3.6
Real Estate	-2.0	11.6	9.9	9.7	-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	0.0	5.0	2.8
Large Cap Value	-2.4	11.1	6.4	5.2	-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	-1.1	3.7	2.7
Small Cap Equity	-2.9	7.5	6.0	2.1	-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	-1.4	1.7	1.3
US Bonds	-3.5	5.7	5.1	-3.4	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-2.1	0.3	0.3
Small Cap Value	-7.3	-5.2	3.6	-11.6	-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	-3.8	-8.1	-8.3

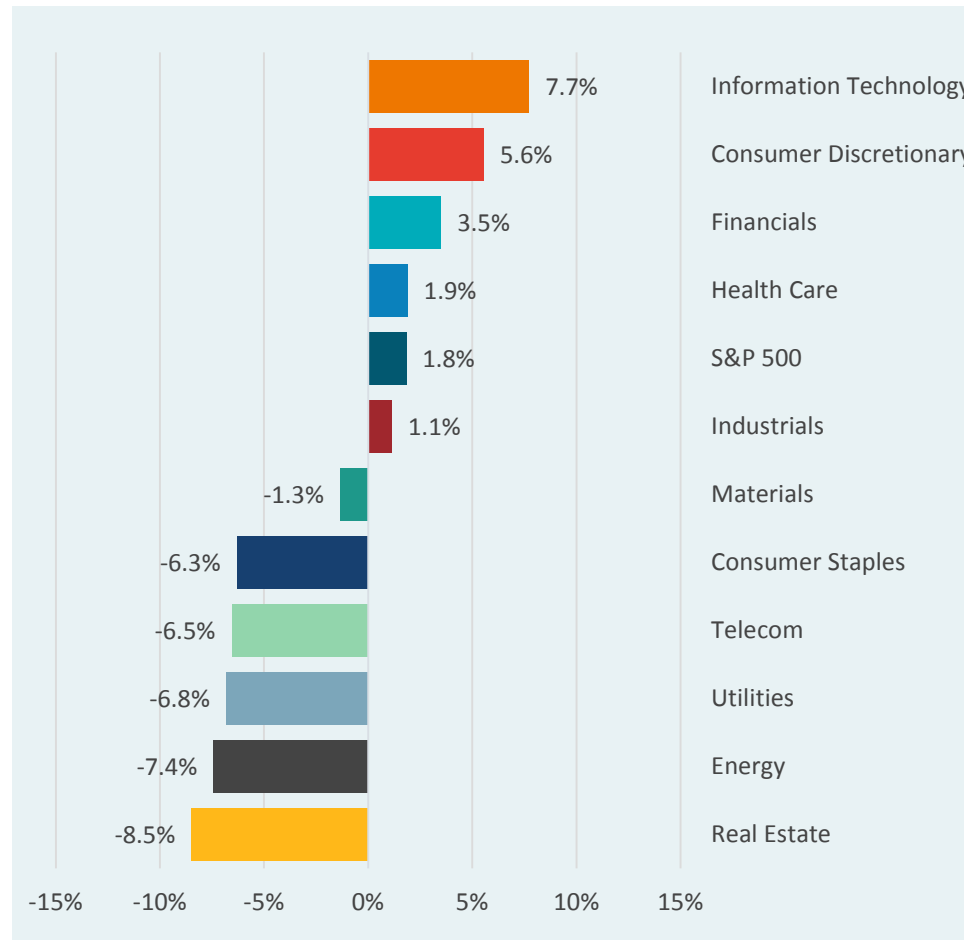
WORST

- Large Cap Equity
- Small Cap Growth
- Commodities
- Large Cap Value
- International Equity
- Real Estate
- Large Cap Growth
- Emerging Markets Equity
- Hedge Funds of Funds
- 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 12/31/17.

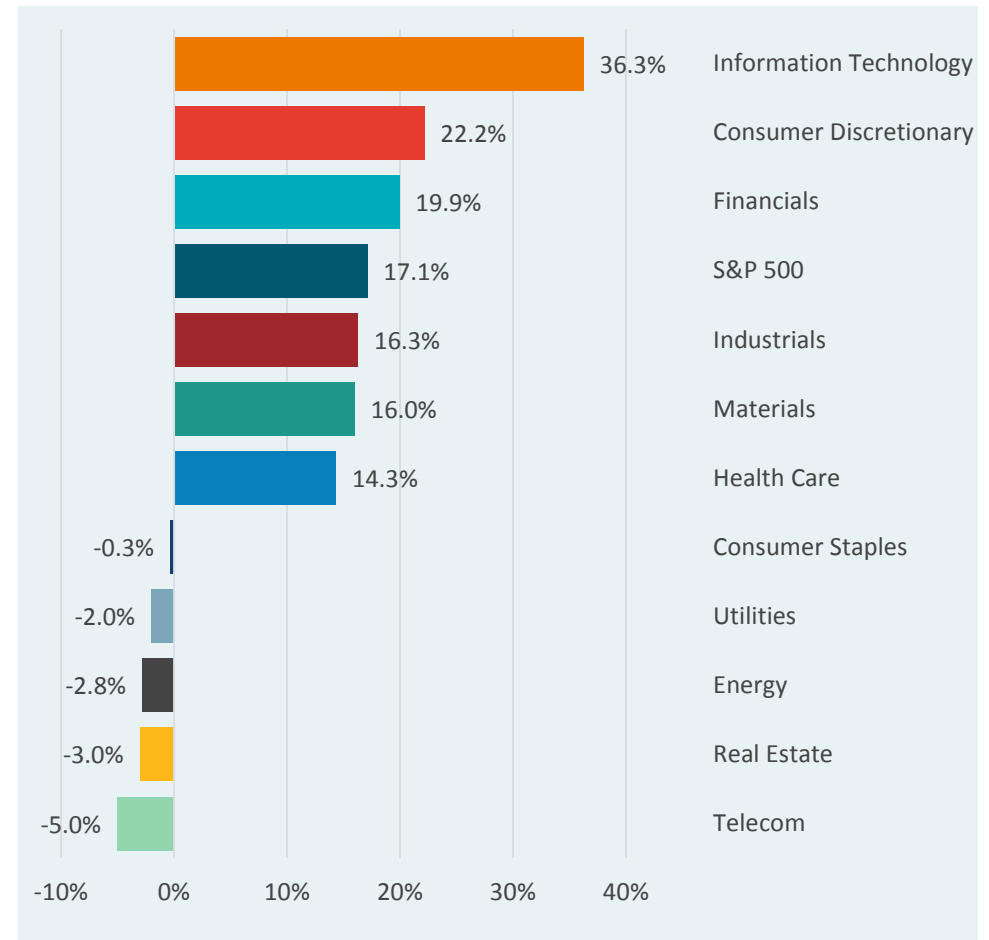
# S&P 500 sector returns

QTD



Source: Morningstar, as of 2/28/18

ONE YEAR ENDING FEBRUARY



Source: Morningstar, as of 2/28/18

# Detailed index returns

## DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Core Index</b>							
S&P 500	(3.7)	1.8	1.8	17.1	11.1	14.7	9.7
S&P 500 Equal Weighted	(4.3)	(0.1)	(0.1)	12.7	9.1	14.0	11.0
DJ Industrial Average	(4.0)	1.7	1.7	23.1	14.2	15.0	10.3
Russell Top 200	(3.5)	2.4	2.4	18.6	11.9	15.2	9.7
Russell 1000	(3.7)	1.6	1.6	16.7	10.8	14.6	9.8
Russell 2000	(3.9)	(1.4)	(1.4)	10.5	8.5	12.2	9.7
Russell 3000	(3.7)	1.4	1.4	16.2	10.6	14.4	9.8
Russell Mid Cap	(4.1)	(0.5)	(0.5)	12.0	8.0	13.0	10.0
<b>Style Index</b>							
Russell 1000 Growth	(2.6)	4.3	4.3	26.1	13.5	17.0	11.6
Russell 1000 Value	(4.8)	(1.1)	(1.1)	7.8	8.0	12.0	7.9
Russell 2000 Growth	(2.8)	0.9	0.9	18.4	8.9	13.7	10.7
Russell 2000 Value	(5.0)	(3.8)	(3.8)	3.0	8.0	10.6	8.6

## INTERNATIONAL EQUITY

<b>Broad Index</b>							
MSCI ACWI	(4.2)	1.2	1.2	18.8	8.3	10.1	5.6
MSCI ACWI ex US	(4.7)	0.6	0.6	21.6	6.2	6.3	2.7
MSCI EAFE	(4.5)	0.3	0.3	20.1	5.7	7.1	2.8
MSCI EM	(4.6)	3.3	3.3	30.5	9.0	5.0	2.7
MSCI EAFE Small Cap	(3.5)	1.4	1.4	27.4	12.3	11.8	6.6
<b>Style Index</b>							
MSCI EAFE Growth	(4.3)	0.2	0.2	22.2	6.8	7.7	3.4
MSCI EAFE Value	(4.8)	0.4	0.4	18.2	4.5	6.3	2.2
<b>Regional Index</b>							
MSCI UK	(6.4)	(3.5)	(3.5)	14.2	1.2	4.2	2.1
MSCI Japan	(1.5)	3.0	3.0	21.8	9.7	10.4	3.9
MSCI Euro	(6.0)	0.8	0.8	24.8	5.6	8.0	1.0
MSCI EM Asia	(5.4)	2.2	2.2	33.1	10.1	8.2	4.7
MSCI EM Latin American	(3.6)	9.1	9.1	21.1	7.7	(1.7)	(1.0)

## FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
BBgBarc US Treasury USTIPS	(1.0)	(1.8)	(1.8)	(0.2)	0.8	(0.1)	2.8
BBgBarc US Treasury Bills	0.1	0.2	0.2	0.9	0.5	0.3	0.4
BBgBarc US Agg Bond	(0.9)	(2.1)	(2.1)	0.5	1.1	1.7	3.6
<b>Duration</b>							
BBgBarc US Treasury 1-3 Yr	(0.0)	(0.4)	(0.4)	(0.2)	0.4	0.5	1.1
BBgBarc US Treasury Long	(3.0)	(6.1)	(6.1)	(0.1)	(0.3)	2.7	5.6
BBgBarc US Treasury	(0.8)	(2.1)	(2.1)	(0.6)	0.3	0.9	2.7
<b>Issuer</b>							
BBgBarc US MBS	(0.7)	(1.8)	(1.8)	0.2	1.0	1.7	3.5
BBgBarc US Corp. High Yield	(0.8)	(0.3)	(0.3)	4.2	5.2	5.3	8.3
BBgBarc US Agency Interm	(0.2)	(0.6)	(0.6)	0.0	0.7	0.8	2.2
BBgBarc US Credit	(1.5)	(2.4)	(2.4)	2.1	2.2	2.8	5.0

## OTHER

<b>Index</b>							
Bloomberg Commodity	(1.7)	0.2	0.2	1.6	(4.7)	(8.1)	(8.3)
Wilshire US REIT	(7.6)	(11.1)	(11.1)	(10.0)	0.2	5.9	6.5
CS Leveraged Loans	0.2	1.3	1.3	4.4	4.4	4.3	5.3
<b>Regional Index</b>							
JPM EMBI Global Div	(2.0)	(2.0)	(2.0)	4.4	5.8	4.5	7.0
JPM GBI-EM Global Div	(1.0)	3.4	3.4	14.4	4.0	(1.0)	3.6
<b>Hedge Funds</b>							
HFRI Composite	(1.8)	0.5	0.5	6.9	3.8	4.5	3.4
HFRI FOF Composite	(1.6)	0.7	0.7	6.5	2.2	3.7	1.3
<b>Currency (Spot)</b>							
Euro	(2.1)	1.6	1.6	14.8	2.8	(1.4)	(2.2)
Pound	(3.1)	1.9	1.9	10.7	(3.8)	(1.9)	(3.6)
Yen	2.3	5.6	5.6	4.9	3.9	(2.9)	(0.2)

Source: Morningstar, as of 2/28/18

# Definitions

**ISM Manufacturing Index** – based on data compiled from purchasing and supply executives nationwide. Survey responses reflect the change, if any, in the current month compared to the previous month. For each of the indicators measured (New Orders, Backlog of Orders, New Export Orders, Imports, Production, Supplier Deliveries, Inventories, Customers' Inventories, Employment and Prices), this report shows the percentage reporting each response, the net difference between the number of responses in the positive economic direction and the negative economic direction, and the diffusion index. Beginning in January 2018, computation of the indexes is accomplished utilizing unrounded numbers.

[www.instituteforsupplymanagement.org](http://www.instituteforsupplymanagement.org)

**Markit Euro Manufacturing Index** – The Eurozone PMI (Purchasing Managers' Index ) is produced by IHS Markit and is based on original survey data collected from a representative panel of around 5,000 companies based in the euro area manufacturing and service sectors. National manufacturing data are included for Germany, France, Italy, Spain, the Netherlands, Austria, the Republic of Ireland and Greece. National services data are included for Germany, France, Italy, Spain and the Republic of Ireland. The flash estimate is typically based on approximately 85%–90% of total PMI survey responses each month and is designed to provide an accurate advance indication of the final PMI data.

**Conference Board Consumer Confidence** - The Consumer Confidence Survey® reflects prevailing business conditions and likely developments for the months ahead. This monthly report details consumer attitudes and buying intentions, with data available by age, income, and region.

<https://www.conference-board.org/data/consumerconfidence.cfm>

**National Association of Realtors' Pending Homes Sales Index**- The Pending Home Sales Index (PHS), a leading indicator of housing activity, measures housing contract activity, and is based on signed real estate contracts for existing single-family homes, condos, and co-ops. Because a home goes under contract a month or two before it is sold, the Pending Home Sales Index generally leads Existing-Home Sales by a month or two. NAR now collects pending home sales data from MLSs and large brokers. Altogether, we receive data from over 100 MLSs & 60 large brokers, giving us a large sample size covering 50% of the EHS sample. This is equal to 20 percent of all transactions.

<https://www.nar.realtor/research-and-statistics/housing-statistics/pending-home-sales/methodology>

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

March 27, 2018

Agenda Item 6.2

**TO:** Board of Retirement

**FROM:** Lili Dames, Investment Analyst *Lili Dames*

**SUBJECT:** Report on Cash Overlay (Parametric) Annual Review

**Recommendation**

Accept the report on the annual review of SamCERA's overlay manager.

**Background**

Parametric's institutional overlay strategies (formerly The Clifton Group) was hired in May 2013 to provide overlay management services to SamCERA. Parametric initially provided securitization of total fund cash, manager cash equitization, and overlay transition management services. Portfolio rebalancing was added in January 2014.

Parametric Policy Implementation Overlay Services (PIOS) provides increased operational efficiency for fund cash flow management, exposure management during manager transitions, eliminates performance drag due to residual manager cash, and rebalances during times of meaningful deviation from policy targets. All of Parametric's overlay activities are performed out of the Minneapolis investment center.

**Discussion**

On March 1<sup>st</sup>, SamCERA staff held the annual review meeting for the Parametric cash overlay strategy. Justin Henne, Managing Director – Customized Exposure Management, and Ben Lazarus, Senior Director – Institutional Relationships attended from Parametric.

The meeting lasted approximately 1.5 hours, and consisted of a firm/organizational update, investment process review, and performance review and attribution.

Overall program results were in line with long-term expectations. From inception through December 31, 2017, the program produced a synthetic index overlay return of \$19.7 million, or 13 basis points of fund assets.

There were no major concerns identified during the review. Meeting notes summarizing the findings from the annual review are attached to this memo.

**Attachment**

Parametric Cash Overlay Annual Review Meeting Notes 2018

*Date of meeting: 3/1/18*

*Location: SamCERA Office*

Manager Representative(s)

Justin Henne, CFA (Mg. Director, Senior PM)  
Ben Lazarus, CFA (Sr. Director, Institutional Relationships)

Verus Representative

Margaret Jadallah (Managing Director)

Client Representative(s)

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

### Product Description

Parametric's cash overlay program is an efficient way for SamCERA to maintain its target asset allocation in a systematic fashion through cash securitization at the fund and manager level, transition/reallocation support and asset class rebalancing back to target within defined bands. The cash overlay program is invested synthetically using liquid futures with cash balances reviewed daily. A combination of large and small cap futures implementation is the proxy for private equity. SamCERA's investment guidelines initially allowed only for cash overlay. Rebalancing was added to the SamCERA program in January 2014.

Parametric estimates that their overlay services should add 10-20 basis points to portfolio returns over time using their systematic approach. Since inception through 12/31/17, SamCERA's overlay program has added 13 basis points to portfolio returns since inception, in line with expectations.

### Meeting Notes

### Organization

Parametric Portfolio Associates is a majority-owned subsidiary of Eaton Vance Corp. Eaton Vance owns 93% of the firm with the remaining equity ownership at Parametric distributed among senior management and investment professionals. Parametric is comprised of three investment centers – Seattle, Minneapolis and Westport, CT. The firm's institutional overlay strategies reside within the Minneapolis investment center which was formerly The Clifton Group prior to Parametric's acquisition of the firm in 2012. Eaton Vance, Parametric's parent company, acquired the business assets of Calvert Investments effective January 1, 2017.

Parametric's firm-wide assets under management are currently \$230 billion in total assets as of 12/31/17 with the majority of AUM with institutional clients. The firm manages over \$86 billion in overlay strategies representing 216 client relationships managed out of Minneapolis. Over the past year, there was a net gain in overlay clients. Parametric's firm-wide assets have grown to the point that the firm's assets comprise half of Eaton Vance's overall AUM. It is worth noting that Parametric is a separate legal entity from Eaton Vance and also that Minneapolis operates independently of the broader organization. The Minneapolis team also manages the firm's Volatility Risk Premium (VRP) strategies and a new Alternative Risk Premia strategy that was launched on September 30, 2017 in partnership with Research Affiliates.

## Investment Team

The Minneapolis investment center's team has 102 team members in total with 42 dedicated to investments. The team has grown commensurate with the office's growth in AUM. Parametric has needed to add more client servicing professionals than investment professionals because of the nature of their investment approach. Minneapolis CIO Jack Hansen has been with the firm for more than 30 years. Justin Henne, Managing Director-Customized Exposure Management, leads the team responsible for implementation and enhancement of Parametric's customized exposure management portfolios and has been with the firm since 2004. Parametric uses a team approach whereby no one individual manages a client portfolio.

There have been no senior personnel changes since SamCERA's last review. The Minneapolis team continues to be extremely stable.

## Investment Strategy

Parametric's cash overlay services are known internally as Policy Implementation Overlay Services (PIOS). The objectives of PIOS are to: 1) increase day-to-day availability of cash and provide operational efficiency for cash flow management, 2) eliminate performance drag due to unintended cash, 3) enable staff to obtain a daily snapshot of total fund exposures, and 4) maintain asset class exposure during manager changes.

Parametric uses liquid futures in the implementation of PIOS. US equity exposures are maintained using large cap and small cap futures. Non-US equity exposures are replicated using developed and emerging markets futures. There is slight tracking error that occurs with non-US equity exposure because the futures trade in the US after international markets have already closed. Fixed income Treasury futures are used for bond replication so interest rate sensitivities are addressed. Credit exposure is not addressed so there is some tracking error within the fixed income asset class compared to SamCERA exposures.

After a several year period where Russell 2000 futures contracts were cheap since hedge funds were shorting them, they reverted to fair value over the course of the year and in light of strong equity markets and, thus, less shorting.

## Performance & Positioning

Parametric has implemented its overlay strategy within SamCERA's guidelines, reducing cash and maintaining the portfolio target asset allocation within tight tracking error bands. SamCERA experienced two synthetic rebalancing events in 2017. SamCERA also had large inflows in January, June and September where Parametric securitized cash flows. Overlay services were employed in January and September as SamCERA implemented planned changes to asset allocation. Domestic equity was reduced with fixed income, absolute return and inflation hedged assets increased on the margin. 2017 was also an active year for transitions. Parametric assisted with five transitions associated with asset allocation and manager changes. This year's rebalancings were tougher than in past years because they took place while equity markets were rising and Parametric was selling down equities.

In January 2018, SamCERA directed Parametric to change its fund level policy mix to 100% fixed income from a blended mix of domestic equity, international equity and fixed income until the Plan gets to its new policy.

## Conclusion

Verus continues to have confidence in Parametric's overlay capabilities and the Minneapolis team implementing SamCERA's program. Alpha and tracking to the fund's strategic asset allocation are in line with expectations.

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

March 27, 2018

Agenda Item 6.3

**TO:** Board of Retirement

**FROM:** Doris Ng, Investment Analyst



**SUBJECT:** Report on Global Custodian (Northern Trust) Annual Review

**Recommendation**

Accept the report on the annual review of SamCERA's custodian bank.

**Background**

Northern Trust became SamCERA's custodian effective July 1, 2014. Northern Trust provides SamCERA with global custody and securities lending services.

**Discussion**

On March 1<sup>st</sup>, SamCERA staff held the annual review meeting in SamCERA's office for Northern Trust. Colleen Brennan, Matt Pfaff, Shane Crea, Nivia Gilkey and Tamara Doi-Beck attended from Northern Trust.

The meeting lasted approximately 1.5 hours, and consisted of a firm/organizational update, global custody overview and a service performance review. In addition, Northern Trust reviewed some of the recent personnel turnover on the team servicing SamCERA, specifically in client services and performance reporting and analytics. We have vetted the reasoning behind these changes and will continue to monitor the level and quality of service.

Northern Trust continues to provide excellent levels of service to staff in accordance with expectations. There were no major concerns identified during the review.

**Attachments**

Northern Trust Custodial Annual Review Questionnaire 2018

Northern Trust custodial Annual Review Presentation 2018



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An RFP Response for:

**SAMCERA**

February 22, 2018

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## EXHIBITS

<b>Exhibit 01</b>	<b>SOC 1 Report</b>
<b>Exhibit 02</b>	<b>Certification of Insurance</b>
<b>Exhibit 03</b>	<b>Code of Conduct and Ethics</b>
<b>Exhibit 04</b>	<b>Business Continuity and Disaster Recovery Brochure</b>
<b>Exhibit 05</b>	<b>Subcustodian Network List</b>

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## ORGANIZATIONAL UPDATE

- 1) **Provide an update on The Northern Trust's organization, with particular emphasis on (a) changes to your management structure over the past eighteen months and (b) additions/deletions in clients and (c) change in assets that you custody. All significant changes should be accompanied by an explanation.**

### CHANGES TO MANAGEMENT STRUCTURE

As our clients' needs continue to grow in both the domestic and international marketplace, we will continue to proactively realign our services to incorporate one global arena. We have detailed below any significant changes to our management staff, but confirm these did not disrupt client servicing in any manner.

#### 2017

- On October 17, 2017 Northern Trust announced the appointment of Mike O'Grady as Chief Executive Officer effective January 1, 2018. He previously served as the President of Northern Trust Corporation. Rick Waddell will continue to serve as chairman of the board.
- On July 19, 2017, Northern Trust announced David Wicks, former Head of Enterprise Enablement, EMEA, as Head of Continental Europe, subject to regulatory approval. The appointment in this newly created role underscores Northern Trust's continued strategic focus and growth across the region.
- On July 17, 2017, Northern Trust announced the following leadership changes, effective October 1, 2017:
  - ◆ Steve Potter, formerly President of Asset Management, was appointed to a new role as Vice Chairman, responsible for the cultivation and development of relationships with select clients and prospects around the globe. He will report directly to Rick Waddell, Chairman and CEO of Northern Trust.
  - ◆ Shundrawn Thomas, formerly Head of the Funds and Managed Accounts Group, was appointed President of Asset Management. He will report directly to Mike O'Grady, President, Northern Trust.
- On May 2, 2017, Northern Trust announced the appointment of Beth Provanzana as Chief Compliance and Ethics Officer. She previously served as Chief Operating Officer for Risk Management. She will report to the Chief Risk Officer, Wilson Leech.
- On January 17, 2017, Northern Trust announced several leadership changes designed to enhance opportunities for strategic growth, effective February 1, 2017, with the exception of Teresa Parker's position which is subject to regulatory approval.
  - ◆ Pete Cherecwich, former President, C&IS-Americas and President of Global Fund Services (GFS), was appointed President of C&IS. Pete will remain on Management Group and report to Mike O'Grady, President, Northern Trust.
  - ◆ Jeff Cohodes, former Chief Risk Officer, was appointed President of C&IS-Americas. He will also serve as Chief Advisor for Global Counterparty Strategy. Jeff will remain on Management Group and report to Pete Cherecwich.
  - ◆ Wilson Leech, former President, Northern Trust-Europe, Middle East & Africa (EMEA), was appointed Chief Risk Officer. Wilson will remain on Management Group and report to CEO Rick Waddell. He will be based in Chicago.
  - ◆ Teresa Parker, former Chief Operating Officer for C&IS, was appointed President, Northern Trust-EMEA. Teresa will join the Management Group and report to Pete Cherecwich.

#### 2016

- On July 19, 2016, Northern Trust announced that President William L. Morrison was appointed to a new role as Vice Chairman, effective October 1, 2016.

- On October 26, 2016, Northern Trust announced that Caroline Higgins was appointed as head of Global Fund Services business in Asia.
- On November 15, 2016, President of C&IS, Mike O'Grady, was appointed President of Northern Trust and a director of the Corporation and Bank, effective January 1, 2017.

### CLIENTS GAINED/LOST

The following table represents the number of clients gained and lost and their market value over the past 18 months.

CLIENTS GAINED			CLIENTS LOST		
Year	Number of Clients	Market Value (\$ billions)	Year	Number of Clients	Market Value (\$ billions)
2017*	93	\$172.25	2017*	24	\$53.27
2016	117	\$243.67	2016	47	\$19.25

\*As of November 2017

### CHANGE IN ASSETS

As of December 31, 2017, Northern Trust had 2,242 institutional trust and custody clients with approximately \$7.4 trillion in assets.

As of December 31, 2016, Northern Trust had 2,279 institutional trust and custody clients with approximately \$6.2 trillion in assets.

## 2) What is Northern's philosophy and current policy regarding new business?

We review our staffing needs, both on a corporate-wide and division-specific basis, throughout the year to determine the appropriate staffing levels to meet our annual growth expectations. Based on the results of these reviews, we increase or move staff as appropriate to continue to provide our clients the highest level of service.

## 3) Provide a list of services available through your firm, including the number of staff supporting those services.

### MASTER TRUST/MASTER CUSTODY – STAFF FIGURES

As of December 31, 2017, Northern Trust had 18,494 total active employees worldwide. Of this figure, 13,152 individuals are dedicated to supporting our worldwide institutional asset servicing business.

We have broken this figure down by functional category below.

Department	Total
Accounting	561
Alternative Assets	852
Asset Coding & Pricing	118
Asset Servicing	1,513
Banking	361
Client Servicing	471
Executive	75
Finance	529
Foreign Exchange and Cash	451
Human Resources & Training	357

Investment Manager Servicing (GFS)	5,174
Investment Risk & Analytical Services (IRAS)	389
Legal	112
Marketing/Business Development	140
NTSI/Brokerage	100
Product Management & Support	202
Risk Management	663
Securities Lending	221
Technology & Other Operations Support	1,083
<b>Total</b>	<b>13,152</b>

**4) Has your firm or any of its employees been involved in regulatory or litigation actions related to your business in the past eighteen months? If yes, please provide details.**

No, in the past 18 months, Northern Trust has not been subject to any litigation that has had a material effect on its ability to perform services for its clients.

Northern Trust is also not currently involved in any government or regulatory investigation or proceeding that would have a material impact on its ability to provide custody services to its clients.

**5) Provide an assessment of the most recently conducted internal and external audits of your firm as they relate to the areas of custody, accounting, performance and/or security lending. Please note any material findings or recommendations if applicable.**

**INTERNAL AUDIT FRAMEWORK**

Northern Trust maintains an internal audit staff (known as Audit Services) who are financial, operational, risk, compliance, and information technology (IT) specialists located globally.

Audit Services reports directly to the Audit Committee chairman, a member of the Board of Directors. All worldwide auditors ultimately report to the Executive Vice President/General Auditor, who reports directly to the Audit Committee and administratively reports to the Chairman & CEO.

**PROCESS AND METHODOLOGY**

Audit Services is organized to parallel the corporation's business unit structure, producing benefits such as increased contact with, and access to, business unit managers.

Audit Services uses a risk-based methodology to arrive at a rolling 12 month plan based on assessment of inherent risk and an evaluation of controls in order to arrive at residual risk. In addition, this risk-based plan is overlaid with coverage of the key operating risks and controls as part of the SOC 1 Report.

Audits and SOC 1 testing are executed on a global basis to ensure adequacy of coverage and to promote consistency in policies and control procedures. The annual Audit Plan is assessed based on the Audit Services continuous monitoring and risk assessment effort which includes:

- Regular meetings with regulators, external auditors, and risk management/compliance
- Participation as a non-voting member in risk committees, councils, and task forces, as well as in product risk and service provider reviews
- Quarterly call programs and discussions with Executive and Senior Management
- Audit Watch Lists developed and Audit Plan adjusted quarterly based on ongoing assessments of risks and issues

A rated report is issued for all audits performed, and the results are shared with senior management and relevant internal governance committee(s), as well as with the Audit Committee. Audit Services monitors the closure of issues reported and performs follow-up work using a risk-based approach.

### EXTERNAL AUDIT

Northern Trust's consolidated financial statements are audited annually by KPMG. As part of its annual review, KPMG provides an opinion of our accounting methodology as being in conformity with U.S. Generally Accepted Accounting Principles (GAAP).

In addition, Northern Trust prepares an in-depth report (SOC 1 Report) on the internal controls applicable to processing client transactions. We engage KPMG to perform an examination of our SOC 1 Report in accordance with The American Institute of Certified Public Accountants' (AICPA) Statement on Standards for Attestation Engagements (SSAE ) No. 16 "Reporting on Controls at a Service Organization" and give us an opinion as to the operating effectiveness of the controls identified.

Northern Trust's SOC 1 Report, inclusive of the opinion provided by KPMG, is intended to relieve a client's auditor of the necessity of a similar study of its procedures during the audit of a particular plan. The Custody and Fund Services SOC 1 Report is produced on a semi-annual basis and accompanies our clients' annual reporting package.

Please refer to the attached Exhibit 01 for our most recent SOC 1 Report.

### MATERIAL FINDINGS

There have been no material issues noted by internal and external audits since the last audit.

## 6) Describe the levels of insurance coverage maintained by your firm. E-mail a current certification of insurance to [Investments@samcera.org](mailto:Investments@samcera.org).

Northern Trust maintains the following corporate insurance coverage to protect Northern Trust against extraordinary events:

- **Bankers Blanket Bond.** USD 50 Million limit. Insured with Chubb, AIG, Houston Casualty, Great American, and CNA. The Bankers Blanket Bond covers criminal acts of officers and employees, loss of property (cash-securities) through burglary, robbery, false pretenses, mysterious disappearance, on premises, in-transit, forgery, alteration of securities, forgery with loan participation or trading. This policy conforms to Section 412 of the Employee Retirement Income Security Act of 1974 (ERISA). This policy is required for FDIC insured institutions. This policy expires on June 1, 2018. Lead Policy #81865905.
- **Electronic Computer Crime Policy.** USD 250 Million limit. Insured with Chubb, AIG, Houston Casualty, Great American, CNA, Berkshire Hathaway, Syndicates of Lloyds of London and Everest National. Protects Northern from dishonest acts of loss resulting directly from the Insured having transferred, paid or delivered any money or property as the direct result of fraudulent input or modification of electronic data into the Insured's computer systems or computer programs; fraudulent voice initiated money transfers or electronic communications to or from the Insured; forged telefax, acts of hacker, virus, causing damage or destruction to data or media, including robbery, burglary, larceny, theft, extortion. This policy expires on June 1, 2018. Lead Policy #81944186.
- **Excess Bond and Computer Crime Policy.** USD 100 Million limit. Insured with Chubb, Liberty, Zurich, Houston Casualty, Axis, CNA, Great American, Lloyds of London. Provides additional excess limits upon the exhaustion of limits under the Bankers Blanket Bond and the Electronic Computer Crime Policy. This policy expires on June 1, 2018. Lead Policy #81944189
- **All Risk Physical Loss of Securities.** USD 50 Million limit, insured with Lloyds of London syndicates. This insurance provides protection for loss of customer's securities while in our custody or held at any other assigned custodial location. This policy serves in conjunction with the exhaustion of the Bankers Blanket Bond to provide excess limits for securities held at other than the bank premises and while in transit. This annual policy expires on June 1, 2018. Policy #FS1690403.

The Depository Trust & Clearing Corporation (DTCC) provides additional levels of protection for on-premises and transit coverage as well as numerous other policies designed to protect institutions that use DTCC services: Fidelity Bond/Electronic Computer Crime/Professional Liability coverage USD 100 Million insured through Lloyds of London Syndicates; All Risk Premise & Transit coverage USD 700

Million (excess to Bond/ECCP/PL limit) insured through Lloyds of London Syndicates; Mail Insurance coverage USD 20 Million limit insured through Travelers Casualty & Surety Co. of America. These policies expire October 31, 2018.

- **Bankers Professional Liability Errors & Omissions.** USD 100 Million limit, insured with CNA, Zurich, Chubb, Liberty, Houston Casualty, Axis, Arch, Freedom Specialty. This policy protects Northern against a legal liability incurred from an act, error or omission committed in our performance of professional services. This policy includes cover for Lender Liability and Fiduciary Liability. This annual policy expires on June 30, 2018. Lead Policy #267890702.
- **Directors & Officers Liability.** USD 125 Million limit and Side A Liability USD 125 Million limit insured with, CNA, Travelers, Houston Casualty, Chubb, Arch, Liberty, Axis, Freedom Specialty, Zurich, AIG, Berkshire Hathaway, Zurich (Zeus). Protects directors and officers against judgments, settlements and expenses arising from litigation brought against them while acting in their capacity as a director or officer. Policy also reimburses the Corporation for indemnification expenses and securities litigation. This annual policy expires on June 30, 2018. Lead Policy #267890702.
- **Comprehensive Domestic General Liability.** USD 2 Million Aggregate limit insured with Federal Insurance Company/Chubb. This policy has several lines of coverage protecting Northern from third party liability claims made against Northern. Per Occurrence Limit USD 1 Million; Aggregate Limit USD 2 Million; Personal & Advertising Injury USD 1 Million; Damage to premises of others USD 1 Million, Medical USD 10,000; products and completed operations included in cover. This annual policy expires on December 31,, 2018 Policy #35762845.
- **Comprehensive Foreign General Liability.** USD 2 Million Aggregate limit insured with Federal Insurance Company/Chubb. This policy has several lines of coverage protecting Northern from third party liability claims made against Northern. Per Occurrence Limit USD 1 Million; Aggregate Limit USD 2 Million; Personal & Advertising Injury USD 1 Million; Damage to premises of others USD 1 Million, Medical USD 10,000; products and completed operations included in cover. This annual policy expires on December 31, 2018. Policy #36028384.
- **Auto Liability.** USD 1 Million insured with Federal Insurance Company/Chubb. This policy provides protection for bodily injury and property damage liability claims made against Northern for any owned, leased, borrowed or hired vehicle (any auto coverage) by Northern Trust Corporation, its affiliated and subsidiary companies. This annual policy expires on December 31, 2018. Policy #73508655.
- **Workers Compensation/Employers Liability.** Statutory for Workers Compensation. USD 1 Million E.L. Each Accident/USD 1 Million E.L. Each Disease/each employee/USD 1 Million E.L. Disease Policy Limit insured with CNA. This policy serves two purposes: provides medical and indemnity for employees who are injured on-the-job including coverage for occupational illness; and, provides liability coverage to the employer for alleged negligence for on-the-job injuries. This annual policy expires on December 31, 2018. Policy #6056955377.
- **Employers Liability for United Kingdom.** GBP 25 Million insured by Zurich Insurance plc. This policy provides liability coverage to the employer for alleged negligence for on-the-job injuries. Several countries are included in this policy. This annual policy expires on December 31, 2018. Policy #054/2C01/JJ352979/2.
- **Umbrella Liability.** USD 75 Million Aggregate limit insured with Federal Insurance Co/Chubb; Continental Casualty Company/CNA. This policy serves in an excess limits capacity upon the exhaustion of liability policies so noted in the Schedule of Underlying on file with the insurance carriers. This annual policy expires December 31, 2018. Lead Policy #79219585.

Recognizing significant and well-thought out controls, the limits of insurance in place protecting our Corporation have been determined to be adequate by the Business Risk Committee of the Board of Directors of Northern Trust Corporation as reviewed on an annual basis. All policies are for Named Insured: Northern Trust Corporation ET AL, which includes all subsidiary and affiliated companies. Insurance coverage is placed with well-respected insurance carriers, having an AM Best, Moody's and/or Standard & Poor rating of A- or better, financial sufficiency of "X" or better. Carrier's financial stability is reviewed annually by the Credit Risk Committee.

Insurance limits do not extend to third party clients, but rather act to reimburse Northern for its' insured loss. Client obligations and fiduciary responsibilities are not limited by insurance coverage terms, conditions, deductibles and limits, as insurance is never a guarantee that a claim may be covered by a policy of insurance. The Corporation remains responsible for legal liabilities imposed against it and to that end; the capital of the Corporation is available.

A current certification of insurance has been submitted to [Investments@samcera.org](mailto:Investments@samcera.org), and is also attached as Exhibit 02

**7) Do you have a written policy on ethics? If so, please e-mail the policy to [Investments@samcera.org](mailto:Investments@samcera.org).**

A current copy of Northern Trust's Ethics Policy has been submitted to [Investments@samcera.org](mailto:Investments@samcera.org), and is also attached as Exhibit 03.

**8) Update all significant personnel changes to the "SamCERA Team".**

Gary Guibert has moved to a new role focused on Sales and Marketing within the Public Funds team at Northern Trust. He is now supporting a specific team of client executives, relationship managers and client service managers.

Effective as of January 2018, Colleen Brennan serves as the Client Executive that will oversee the SamCERA relationship. Patricia (Patti) Somerville supports Colleen as Division Manager. Patti ensures that Colleen has the continued support to expand Northern Trust's franchise that is built on solid client relationships. Matt Pfaff serves as the Client Service Manager. All are located in Chicago.

On the performance reporting front, we also shifted from Patrick Mauloff to Shane Crea. Shane is a Senior Consultant operating out of our office in Tempe, Arizona. The change is to maximize best use of our Arizona location to our west-coast clients, like SamCERA.

**9) Provide an overview of your firm's business continuity plan.**

Northern Trust's business continuity philosophy and ongoing review efforts emphasize disaster prevention, mitigation and recovery. Our work environment is regularly reviewed to identify, avoid and/or minimize potential sources of risk and the likelihood of significant service interruptions.

Because we view data security and business continuity as mission-critical, we have devoted significant planning, resources and staff to the development and implementation of our plans. The primary components of these plans are summarized below:

- 24/7 / 365 monitoring of critical support systems, using staff and electronic tools.
- Two peer Corporate Data Centers in separate geographic locations – each complete with total system redundancy, data back-up, and sufficient processing and bandwidth capacity to run the critical workloads of both centers.
  - ◆ In the event of a disaster at one of our Corporate Data Centers, the other data center can recover all critical processing within 12 hours or less. Individual applications, whether disrupted by an entire data center outage or other incident, may be recovered in 5 hours or less.
  - ◆ Data centers are connected to multiple Internet entry points to ensure connectivity, and supported by a network with a highly redundant, self-healing where possible, diverse and easily re-routable design.
  - ◆ Critical production data is continuously mirrored between both centers via a private, dedicated point-to-point fiber optic network. An electronic data vaulting program is in place between both centers to further protect client data and ensure continuity. Robotic tape backups are also created daily, and stored in both data centers.
- State-of-the-art security and fire protection systems for all data processing facilities.
- Alternate work locations for staff, including our own recovery space, contracted recovery space, and work-from-home programs.
- Regularly scheduled site hazard analyses to identify potential vulnerabilities and mitigate known risks.

Over several decades, Northern Trust has grown from a sizable regional bank and trust company to a global provider of premier financial services. As our business has grown on a global scale, so too has our business continuity and disaster recovery planning, and we have devoted significant planning, resources and staff to the development and implementation of our plans.

All of our BC/DR plans are reviewed, tested and updated on a continual basis. Please see Exhibit 04 for a more detailed description of our BC/DR program.



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## CUSTODIAL/ACCOUNTING REVIEW

- 10) **Provide a full review of the custodial process, including (a) who is responsible for various stages of the process, (b) your assessment of the value added by your policies and procedures, (c) what are the advantages/disadvantages of your international custodial relationships, (d) your assessment of the risks associated with SamCERA's use of your services and (e) which parts of your procedures are not functioning as well as you would expect.**

### REVIEW OF CUSTODIAL PROCESS

The following outlines the key areas of custodial process:

At its most basic level, Northern Trust's services are built on our ability to hold client assets in a safe, efficient, and secure environment without impeding the trading of those assets. Highlights of our custody and safekeeping services for SamCERA include:

- **Scale and Coverage:** Northern Trust maintains assets in physical and book entry form in 104 global markets, holding more than \$3.97 trillion in assets worldwide.
- **Automation and Efficiency:** We support direct connectivity with brokers and depositories to facilitate the automated transfer of your assets.
- **A strong network:** Our network of subcustodians is rigorously monitored, and agent banks are selected based on a combination of creditworthiness, service levels, and ability to support best practices. All of our subcustodians are SWIFT-capable, allowing for automation in trade communication and reconciliation.

All of our subcustodians are held to high standards of quality. Our network management team continuously reviews subcustodian performance, and our credit committee re-evaluates each subcustodian's creditworthiness on an ongoing basis. Finally, we have structured reviews for every subcustodian to ensure that your assets are held in the most secure environment possible.

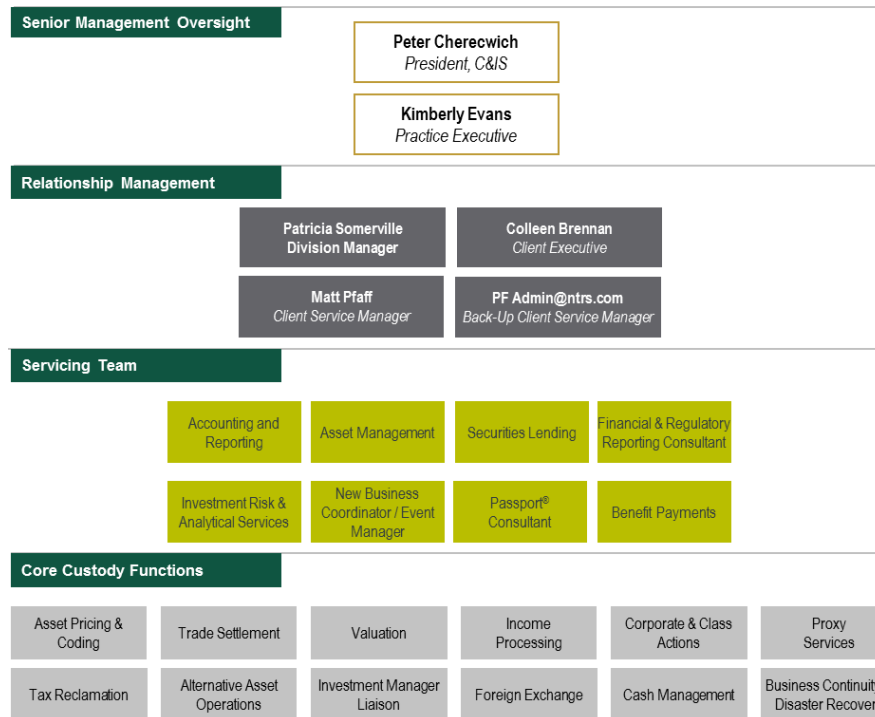
A broader review of our custody includes:

Northern Trust's **Straight-through Processing (STP)** solution offers an end-to-end trade settlement capability for depository-eligible assets, incorporating automation, accuracy, and transparency. Our clients benefit from higher settlement rates and are able to view up-to-date information on the status of their assets.

<b>Trade Capture</b>	<ul style="list-style-type: none"> <li>• &gt;99% auto capture rate on all trades</li> <li>• Automated capture via SWIFT or other e-formats</li> <li>• Automated validation of trade information</li> <li>• Exceptions routed to a repair queue and chased by IMLG experts</li> </ul>
<b>Asset Setup</b>	<ul style="list-style-type: none"> <li>• Automated comparison against our security master file</li> <li>• Instant setup of new assets with information required to facilitate processing -system can process hundreds of securities in seconds</li> <li>• Nightly feeds from data vendors with auto updates, ensuring accuracy</li> </ul>
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Electronic connectivity via SWIFT, flatfile, and other methods</li> <li>• Auto - confirmation with brokers and investment managers</li> <li>• Pre - matching using CTM, OASYS, and MISYS</li> <li>• Exceptions automatically routed to a repair queue and chased daily</li> </ul>
<b>Settlement</b>	<ul style="list-style-type: none"> <li>• All exceptions are cleared by settlement date</li> <li>• Automatic settlement of positions/cash on settlement date</li> <li>• Exceptions automatically routed to a repair queue for resolution</li> <li>• Daily chasing and reporting of exceptions</li> </ul>
<b>Reconciliation</b>	<ul style="list-style-type: none"> <li>• Automated reconciliation with depositories and investment managers using SmartSteam<sup>®</sup> TLM</li> <li>• Daily reconciliation with depositories</li> <li>• Reconciliation with investment managers can be daily, weekly, monthly, or quarterly</li> </ul>
<b>Income Collection</b>	<ul style="list-style-type: none"> <li>• Income information automatically received from a stable of data sources prior to payable date and verified</li> <li>• Income Maps<sup>®</sup> created for each security as data is received</li> <li>• Income automatically posts to client accounts (contractual vs. actual income varies by market and asset type)</li> </ul>
<b>Reporting</b>	<ul style="list-style-type: none"> <li>• Daily and intra - day reporting on trade status</li> <li>• Extensive statistical reporting is available</li> <li>• Available on demand or via periodic reporting packages</li> <li>• Exportable to excel, word, .csv, or .pdf files</li> </ul>

**RESPONSIBILITY FOR VARIOUS STAGES OF THE PROCESS**

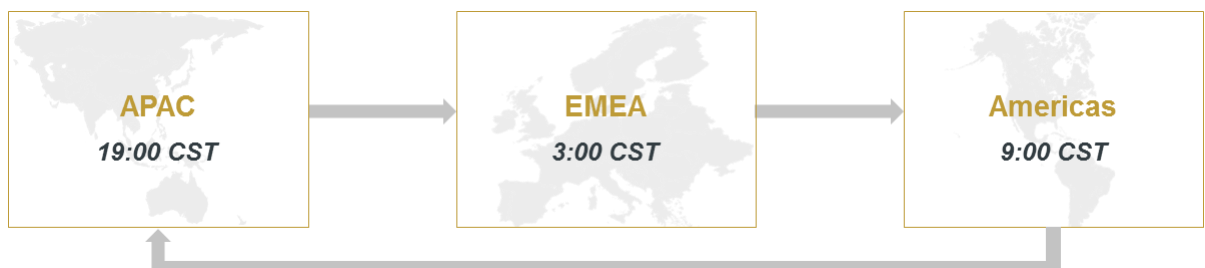
## SamCERA


**VALUE ADDED BY NORTHERN'S PROCESSING AND ADVANTAGES OF GLOBAL OPERATION**

### GLOBAL, ROUND-THE-CLOCK SUPPORT

As a leading global custodian, Northern Trust continually strives to provide the systems and support structure required to support global, round-the-clock trading. With regional client centers in North America, Europe and Asia, we employ a “follow the sun” model that serves our clients’ trading requirements in all time zones.

Northern Trust’s global operating model is designed to be efficient, flexible, and comprehensive. Because all of our clients are serviced using the same global operating platform in all markets, we are able “pass the book” from office to office and offer 24 hour-a-day, 7 -day-a-week processing of our clients’ global portfolios. Furthermore, this one-system approach allows for the seamless transfer of portfolio information among clients, their external investment managers, our appointed subcustodians, and Northern Trust personnel, thus increasing efficiency and reducing opportunities for error.


**ASSESSMENT OF RISKS**

Assessment of the risks associated with SamCERA’s use custody can be grouped by the functions we believe support the primary role of a custodian bank, which is to hold in safekeeping the assets of SamCERA. The key functions of Northern Trust are to:

- Hold assets in custody. This occurs onshore, offshore with an affiliate, or offshore with a subcustodian. When needed, the main custodian is responsible for selecting the sub-custodian.
- Provide daily and/or monthly asset pricing. Pricing information is provided to custodians by third party vendors that are reviewed for accuracy and methodology.
- Monitor and settle depository transactions. Custodians are also critical in monitoring and settling trades. They are connected electronically to the depositories, providing operational efficiencies and economies of scale when initiating and settling trades.
- Monitor and post income payments. Custodians track and record interest on bonds and equity security dividends. The custody system monitors the scheduled payment date and ensures the correct payment is posted to the right account.
- Provide audited reporting. The custodian provides final market value, transactions, cash positions, and cash activity on a daily or monthly basis.

Also under contracted services to SamCERA is Northern's role in providing proxy voting, tax reclaim services, corporate actions, cash management, performance reporting, risk reporting, securities lending, and foreign exchange. Each carries its own set of risks. Examples include:

### **CONTRACT RISK DEFINITION**

Contract risk is the risk that something material is missing from the custody contract or that key Operational topics have not been clearly or completely described. Lack of clarity in key areas presents significant risk.

### **EVALUATION CRITERIA**

Investors should conduct a comprehensive evaluation of the custody contract on a periodic basis. There are a number of key operational factors to evaluate within the custodial agreement to ensure they have been clearly defined, including the roles and responsibilities of the custodian and client; the description of services provided by the custodian to ensure that the contract and related service descriptions suitably protects the client from losses due to negligence, fraud and willful misconduct.

### **PROCEDURES NOT FUNCTIONING WELL**

We believe all functions questioned herein are functioning well. Also supported by our SOC 1 Report and independent audits, we believe that all of our procedures are functioning well.

- 11) Describe the relative strength and longevity of your staff. Are any of your operations outsourced? If the answer is yes, provide details regarding the firm(s) with which your firm has contracted.**

### **STRENGTH AND LONGEVITY OF STAFF**

Client Executives average 19 years of service to Northern Trust, and are part of our 471 client servicing staff members worldwide.

### **OUTSOURCING OPERATIONS**

As is standard in the industry, Northern Trust contracts with various subcustodians to allow our clients to invest in foreign markets. Additionally, Northern Trust receives daily price feeds from various vendors. Finally, Northern Trust partners with Broadridge Financial Solutions for proxy processing. Northern Trust does not consider such partners (pricing and proxy vendors) to be its subcontractors or agents.

All other services are provided in-house by Northern Trust. Please refer to Exhibits 05 for our Subcustodian Network list.

- 12) **What are your mission critical systems? Has your firm experienced any problems with these systems in the past eighteen months? When were these systems implemented and when were they last upgraded? Do you anticipate any changes to these systems in the next eighteen months?**

### **MISSION CRITICAL SYSTEMS**

Northern Trust's in-house computer facilities include the following systems:

#### **UNIX/LINUX**

There are several operating system alternatives for Unix/Linux applications - Red Hat Linux ES 6 and 7 IBM AIX 6 and 7, or Oracle Solaris 10 and 11.

For the Red Hat Linux (x86) 64-bit operating system, we have standardized on HP ProLiant hardware for standalone, physical servers. We have also virtualized over 90% of our Red Hat Linux environment, employing a mix of consolidated infrastructure solutions including vBlock, and Nutanix hardware.

We also employ Oracle Exalogic and Exadata engineered (consolidated infrastructure) systems running Oracle Enterprise Linux.

Our IBM AIX operating systems run on Logical Partitions within several models of IBM hardware, including the E880, the Power 795, Power 750, and Power 740 systems.

For the Oracle Solaris operating system, we support Oracle servers based on the SPARC processor. Much of our Solaris environment has recently been virtualized on Oracle T4 and T5 systems.

All production systems are built with either a warm standby host available in a second data center or a live/live or master/slave configuration, with the hosts split between data centers. Data is kept in synch by various forms of hardware or software based DASD mirroring.

For applications that can withstand only very short unplanned outages, high availability is provided by creating a "cluster", utilizing Veritas Cluster Server (VCS) in the Solaris environment. High availability in the Linux environment is implemented via horizontal scaling on clustered servers sharing Global File Systems (GFS2) AIX high availability is achieved using Live Partition Mobility.

Our strategic Unix/Linux database platforms are Oracle 11g on Red Hat Linux ES, Solaris and AIX and Oracle 12c within Containerized Databases on Exadata systems.

#### **MICROSOFT**

Northern Trust currently supports 64-bit Windows 2008, 2012 and 2016 for application servers, IIS versions 7.0, 8.0, 8.5 and 10 for web servers and MS-SQL 2008, 2012, and 2014 for database servers.

Physical applications deployed in the Microsoft environment are built on HP Blade and ProLiant DL machines with 2 or 4 processors, depending on the application and size of its user base. When feasible multiple applications are consolidated into our VMWare Virtualization environment using VMWare ESXi 5.5 or 6.x. The systems are built on HP Blades, VCE Vblock and Nutanix hardware.

All critical production systems are built with either a warm standby host available in a second data center or a live/live or master/slave configuration, with the hosts split between data centers

For applications less critical that can withstand unplanned outages are recovered from daily back-ups to a designated test system or spare server from Northern's Commvault Galaxy Backup Environment.

#### **Z/OS (FORMERLY OS/390) AND Z/LINUX**

Northern Trust's production mainframe environment consists of two z10 Series processors running z/OS version 1.9 in a Parallel SYSplex environment. Additionally, each mainframe footprint is configured with two Integrated facility for Linux (IFL) running RedHat Linux, which is providing a distributed gateway into the mainframe DB2 environment. Northern Trust's mainframe database environment consists of DB/2 Universal Database for z/OS version 8 and IMS version 9.

For business continuity purposes, another Z-series mainframe and an asynchronously maintained copy of the production DASD environment is housed at our second datacenter. Both mainframe complexes are

maintained in-house by Northern Trust at current, industry-standard levels of software and hardware. Additional capacity is added as business demands warrant.

### OS/400

Northern Trust's iSeries (AS/400) environment currently runs i5/OS Version 7 Release 1. DB2 UDB is the relational database and it is integrated into the operating system.

We can advise that there is no reliance on third parties for development and customization to our systems. Northern Trust's mainframes are updated in-house at least once a year. Further, our technology platforms are constantly monitored for performance and capacity.

### SYSTEM IMPLEMENTATION AND UPGRADES

Northern Trust maintains robust and mature platforms, and continues to invest significant capital in each to ensure we have the capabilities and scalability that our clients require. Northern Trust allocates a percentage of capital each year to upgrade or replace applications that it deems at risk or nearing end of life.

System/Function	Year Installed	Life Expectancy	In-house or Vended	Real-Time vs. Batch
Asset Servicing System	1990	Indefinite	In-house	Real-Time
Fund Accounting (Global Invest One)	1983	Indefinite	Vended (FIS)	Real-Time
Transfer Agency (Multifonds <sup>1</sup> )	2004	Indefinite	Vended (Multifonds)	Real-Time
Performance Analytics Calculation Engine (Analytical/Performance)	2001	Indefinite	In-house	Batch
Northern Trust Passport® (Client/investment manager reporting and information delivery system)	1994	Indefinite	In-house	Real-Time

### ANTICIPATED CHANGES TO THE SYSTEMS

We do not anticipate any major system changes or conversions in the next eighteen months. Slightly more than 50% of our annual technology budget is invested in systems development and enhancement and slightly less than 50% is spent on operational maintenance. Approximately half of our technology budget is dedicated to our core system developments and upgrades, and the other half supports our front-end online system for clients, Passport®.

Unlike many of our competitors (whose technology dollars cover many businesses), our clients can be assured that our investment is targeted at enhancing the asset servicing and asset management services we provide.

### 13) Discuss the Global Custodian marketplace and Northern Trust's relative success or failure in the current market.

Northern Trust's core differentiators include our well-earned reputation for exceptional client service, technological infrastructure, and our sterling financial strength and stability. As it relates specifically to our capabilities as a global custodian, these are some of the features that separate us from our competitors:

**A strong network.** Our subcustodians' ability to provide us with quality information on all types of market events ensures the overall quality of our services. We dedicate considerable resources to selecting the highest quality providers and holding them to high standards. Over years of building relationships with subcustodians, we are able to leverage their local market expertise and identify service solutions that go beyond the industry-accepted service levels. Finally, we make this "on-the-ground" market intelligence available to clients, a key added value in our service model.

**Best-in-class reconciliation process.** We perform daily, position-level reconciliations of both stock and cash through what we believe is the most automated reconciliation practice in the market. The ability to ensure the accuracy of our books and records gives clients peace of mind, and positively impacts the

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<sup>1</sup> Formerly IGEFI

accuracy of our event processing for items such as income, corporate action events, taxation issues, and proxy voting.

**Customized support for client requirements.** Our Subcustodian Network Management Team supports our clients with all specialized requirements in emerging or exotic countries. We go to great lengths to assist our clients with market entry, paperwork, and registration requirements.

**14) What “standards” of measure do other clients employ when evaluating Northern Trust’s Global Custodial capabilities? What standards does your firm utilize when performing a self-evaluation?**

Trust/global custody is our flagship franchise. We cannot expect to grow if we are unsuccessful in serving our clients. We are advised that clients use these GENERAL standards when evaluating Northern Trust’s custody capabilities:

- Superior Service: Sustain best-in-class service to clients, as evidenced by exceptional (90%) approval ratings in our annual client satisfaction survey.
- Organic Growth: Expand our capabilities and global reach, while focusing on core business lines and client satisfaction.
- Technological Leadership: Retain industry leadership with enhancements that enable our clients to efficiently serve their constituents.
- Risk Management: Maintain good stewardship of our organization from the perspective of operational, credit, interest rate and reputational risk.
- Performing a self-evaluation is aligned with our internal and external audit reviews combined with customer satisfaction ratings.

**15) Discuss the environment, outlook or any trends in both domestic and international class actions.**

In the US, Northern Trust monitors the impact that settled class action lawsuits may have on SAMCERA’s portfolios. In order to locate the existence of class actions, we subscribe to several class action notification services, including Securities Class Action Services (SCAS) from ISS, a leading provider of risk management and corporate governance services to the global financial community. More detailed sources for notification of settlement are:

- Security Class Action Services LLC (SCAS) alerts from RiskMetrics ([www.riskmetrics.com/scas](http://www.riskmetrics.com/scas))
- Legal, Consultancy, and Accounting Newsletter from Mondaq.com
- Stanford Law School Securities Class Action Clearinghouse ([www.securities.stanford.edu](http://www.securities.stanford.edu))

The notices include:

- Name of class action and description of settlement
- Court-appointed claims administrator
- Website with all court documents and claim forms
- Class period and eligible assets (security identifiers)
- Filing and objection deadlines

The custodian also notifies investment managers of class action settlements via its web-based system. As soon as funds from the claimed settlement are received, the custodian automatically posts them to SamCERA’s accounts.

In terms of managing SamCERA’s participation in such settled actions, we have a team of market specialists that oversee the filing of class action settlement claims. The team is responsible for the process, from



beginning to end, providing consistency across the filing and tracking of class action claims for audit purposes. It performs three primary functions for securities litigation that have settled through the U.S. courts (where claim administration is being handled by U.S. claim administrators):

- Tracking of settled lawsuits upon request, we supply data to providers who track pending lawsuits and client notification
- Filing of claims
- Posting of subsequent disbursements to client portfolios

The United States continues to be the primary venue for class action activity worldwide (approximately 97% of class actions take place in the U.S.). For class actions settled through the U.S. courts where a U.S. claims administrator is appointed, our custodian notifies SamCERA via web-based reporting, files the claims in accordance with SamCERA's entitlement, and posts the collected proceeds to SamCERA's accounts.

### **FOREIGN CLASS ACTION**

(Global Class action activity is still low, although growing in non-U.S. jurisdictions.) For class actions outside the U.S. courts, we pass along notifications SamCERA. The Class Action module on Passport allows for Class Action reporting that also specifies the class actions where we are not allowed to autonomously proceed with the action. Conversely, since 2011, we file claims in Canada and the Netherlands, whenever the claim filing occurs after a court settlement and the custodian is allowed.

In summary, for global Class Action, SamCERA must choose to opt-in to a global class action detailed as follows:

- Custodian provides information – on a best effort basis – of active actions in the global markets that currently allow for class litigations.
- SamCERA must choose to opt-in.
- Currently, there are only a few foreign markets that allow for class action lawsuits, including Canada, and European countries like Austria, Belgium, Denmark, France, Germany, Italy, Netherlands, Portugal, Russia, Switzerland and UK. All are opt-in except Netherlands with is questionably opt-in and opt-out.
- In opt-in cases, SamCERA must work directly with law firms to secure settlement proceeds.
- Northern posts the proceeds to SamCERA's account, once received.

We are also working with external vendors to offer clients with an added solution to Global Class Action. An official release of the information will soon be provided. We also welcome an opportunity to detail our views of Global Class Action and would be pleased to schedule a more formal review with the investment team as well as the Board of SamCERA. Please let us know if you'd be interested in such a review.

## **16) Detail Northern Trust's perspective of SamCERA's performance expectations for Northern's accounting group, as spelled out in the contract and how Northern Trust is doing relative to those expectations.**

We are still operating under a monthly accounting deadline of six business days as well as a deadline of eight business days for performance analytics.

For each of SamCERA's alternative investment funds, a Northern Trust technician with industry experience is assigned to handle all aspects of data collection, reconciliation, and problem resolution. With the support of Matt Pfaff, we actively chase the managers and track receipt of statements.

Continued use of Preliminary Hedge Fund Reporting Services (PHFRS) continues to enable us to be better position preliminary returns and more effectively meet the agreed upon deadlines. From Northern Trust's perspective, we are meeting our deliverables to SamCERA.

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## SECURITIES LENDING REVIEW

**17) Security lending – Any issues in how we utilize your services? What are the current trends in revenue sharing? How does our revenue split compare with your other security lending clients?**

There are no issues with how SamCERA utilizes Northern Trust's securities lending program as the program is customized based upon SamCERA's risk tolerances. SamCERA's earnings could potentially be increased through acceptance of additional borrowers and modification of borrower restrictions. Revenue sharing in Securities Lending continues to be driven by the fee split sharing model. Fee splits have remained fairly stable with a slight increase to the client side over the more recent time frames. SamCERA's current fee split is very favorable to SamCERA relative to other public funds of similar lendable asset size and similar earnings potential.

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## PERFORMANCE & ANALYTICAL REVIEW

- 18) **Provide a full review of the performance process, including (a) who is responsible for various stages of the process, (b) your assessment of adequacy of communication between performance and accounting, (c) which parts of your procedures are not functioning as well as you would expect.**

### **OVERVIEW OF PERFORMANCE SYSTEM**

Our internally developed performance system is a single, flexible, worldwide, multi-currency engine, which supports all asset classes and all clients regardless of geographical location. Our performance module offers tremendous flexibility and customization to properly analyze any investment strategy regardless of mandate or the investment program structure.

Performance data (positions, valuations, and transactions) is sourced directly from our accounting database. An extract from the accounting database to our performance module is triggered after each day's transaction activity and updated valuations have been processed.

Rates of return and other measures are calculated in accordance with CFA Institute, GIPS, and BAI standards.

Prior to producing any periodic performance reporting for the client, we reconcile return calculations using a series of automated on-line tools and exception-based reports to flag items falling outside of defined tolerance levels.

All of the following analytical information is available:

### **CALCULATION FREQUENCY**

- Accounts, aggregations, and indexes: daily, monthly, and cumulative
- Plan and Program level Universe composites and populations: quarterly and cumulative
- Manager Universes: quarterly and cumulative

### **FLEXIBLE CATEGORIZATION**

- Total fund gross and net of fees
- Asset class returns
- Regional returns
- Variety of sector returns (GICS, FTSE, Russell, Style and Size, Fixed Income Sectors, and maturity bands, etc.)
- Custom categorization

### **SECURITY LEVEL RETURNS**

- Security level returns sorted by market value or greatest asset impact
- Long-term, dollar-weighted rates for alternative assets

### **ATTRIBUTION**

- Total plan fund
- Arithmetic and geometric equity models (for single currency)
- Arithmetic and geometric equity models (for multiple currencies)
- Stock level

- Arithmetic and geometric fixed income models (for single currency)
- Arithmetic and geometric fixed income models (for multiple currencies)
- Risk decomposition

### **CHARACTERISTICS**

- Worldwide equity and fixed income security characteristics
- Portfolio vs. benchmark comparisons

### **COMPOSITES AND POPULATIONS**

- Trust composites & populations: Corporate ERISA, Public Funds, and Not-for-Profits, Canadian Defined Benefit
- Multiple trust composites and populations based on fund size
- Multiple program universes for comparison to your aggregations
- Multiple asset class and style manager universes in multiple currencies
- 3rd party universes from: eVestment, TUCS, Thomson Reuters, etc.

### **INDEXES**

- Thousands of indexes from all index vendors
- Custom benchmarking support

### **MISCELLANEOUS**

- Statistical calculations such as standard deviations, tracking error, Sharpe Ratios, etc.
- Correlation analysis for managers and asset classes
- Specialized support and analytics for private investment, including private equity, real estate, and hedge funds
- Ex-post Value at Risk
- “Peek-through” on commingled fund accounts

### **PRIVATE MONITOR™**

Private Monitor™ is a comprehensive custom report for private equity and real estate investments that includes internal rates of return and funding and distribution ratios grouped by vintage year and type, portfolio asset allocation by partnership type, and opportunity costs analysis. Benchmarking reports depicting the private equity portfolio's value added over the public market, your program versus the returns of other private equity and real estate programs, and universe comparisons by vintage year are included.

### **ADEQUACY OF COMMUNICATION**

Specific to performance reporting, our performance consultants and analysts employ a rigorous process for validating the accounting data imported into the performance engine, as well as the performance calculations themselves. We have an automated tool that hosts accounting and performance data side-by-side so that analysts can perform a series of logical and reasonableness checks (over and above the controls surrounding the accounting audit) to promote accurate reporting. For example, analysts review NAV calculations vs. previous returns and flag values outside of certain, pre-determined thresholds. An analysis of reported shares confirms that the reported holdings are accurate, and NAV to NAV analyses help identify potential pricing issues.

When a potential issue is identified, the performance analyst will contact his or her counterpart in the accounting group to raise and resolve the query. Where necessary, analysts will escalate to team leaders or section managers if they are unable to resolve the issue quickly.

Prior to preparing any periodic performance reporting for the client, we reconcile return calculations using a series of automated online tools and exception-based reports to flag items falling outside of client-defined tolerance levels. All potential discrepancies are researched and resolved before results are considered final.

**19) Describe the relative strength and longevity of your staff. Are any of your operations outsourced? If the answer is yes, provide details regarding the firm(s) with which your firm has contracted.**

**IRAS STAFF OVERVIEW**

Our clients are supported by our **Investment Risk & Analytical Services (IRAS)** group. The unit is staffed with more than 390 Northern Trust investment professionals, with service teams and support personnel located in all three major regions offering 24-hour processing and coverage.

Clients are assigned a dedicated Senior Consultant and Analyst. The Consultant is responsible for tailoring a performance analysis program that is aligned with a client's specific needs. They also provide ongoing professional support and training to ensure that clients are able to fully utilize the power and utility of our performance product range and introduce new capabilities and enhancements. The Analyst works in support of the Consultant and with our Operations Group to ensure data quality.

Our Senior Consultants have more than 15 years of experience and possess either a graduate degree and/or a CFA designation. These professionals typically have prior experience working at investment management firms, outside consulting firms, plan sponsor organizations, and other areas within Northern Trust.

Recognizing need for specialists in a complex investment environment, we also have three specialist teams dedicated to alternative investments, manager compliance, and ex-ante risk analysis, allowing us to bring additional resources to the relationship, when appropriate.

Our IRAS professionals are supported by:

- A dedicated Product Development Team
- Comprehensive Economic Research, Investment Research, and Accounting Teams
- Powerful systems architecture that provides the flexibility to meet clients' evolving needs, and
- A dedicated staff of over 50 Information Technology professionals.

**20) Discuss the Performance & Analytical marketplace and Northern Trust's relative success or failure in the current market.**

We added 51 new clients in the last year and now have 925 clients worldwide as of December 31<sup>st</sup>, 2017. Totals assets under measurement are nearly \$5.1 Trillion.

**21) Detail Northern Trust's perspective of SamCERA's performance expectations for Northern's performance group, as spelled out in the contract and how Northern Trust is doing relative to those expectations.**

Deliverables related to performance analytics in the contract lists the following:

**ISSUE PRELIMINARY FUND VALUATION INFORMATION FOR MONTHLY REPORTS.**

For those funds that have been identified, Northern generates fund values for monthly account statements using a specified process to estimate the NAV's.

**PROVIDE MONTHLY PERFORMANCE DATA ON A GROSS AND NET OF FEES BASIS.**

For month end performance, preliminary results shall be available on the 1st day after month end and everyday thereafter until final numbers are available. Final "signed-off" monthly performance results shall be available approximately 2-4 business days after accounting has been finalized.

For monthly audited accounts, monthly rates of return are dollar-weighted, based on fully accrued, trade-dated transactions and asset positions. Northern Trust's Investment Risk & Analytical Services (IRAS) uses an industry standard BAI iterative (Newton Raphson method) Internal Rate of Return (IRR) calculation method. The IRR calculation uses an iterative technique, which solves for the rate that would discount all flows to zero.

Transactions are incorporated on the day in which they are executed, at the prevailing conversion rate.

In situations where cash flows exceed 10% of the beginning market value, the value of the portfolio (as of the day before the cash flow) is recalculated and the sub-period returns are created for the month and then linked to remove the possible distortion (due to the large cash flow).

Returns for periods longer than one month are time-weighted rates, calculated by linking the monthly dollar-weighted rates together. Non-annualized rates are used for time periods shorter than one year and annualized rates are used for periods longer than one year. For private equity, real estate, and other investments structured as partnerships, IRR returns are available for periods longer than one month.

**PROVIDE CUSTOMIZED BOARD PERFORMANCE REPORT ON A MONTHLY BASIS.**

We verified all the data elements currently on the report. SamCERA acknowledged that there may be some variation in format due to different report writing applications.

**PROVIDE ACCESS TO BENCHMARK RETURNS AND BUILD CUSTOMIZED BENCHMARKS.**

We believe we are meeting each expectation as we work very closely with SamCERA, when needed to secure each deliverable.

# OUTLOOK/CONCLUSION

## 22) What is Northern Trust's outlook for the Global Custodial marketplace?

### STRATEGY FOUNDATIONS

Our ambition is underpinned by four core pillars



#### Client Engagement Strategy

- Client governance
- Service delivery
- Relationship management
- Local and Global expertise
- Thought leadership



#### Product Development Strategy

- Capability expansion
- Data/digital integration
- Enhanced experience
- Insightful solutions
- Smarter analytics



#### Information Technology Strategy

- Industry
- Infrastructure
- Integrity data security
- Innovation Blockchain
- Information delivery speed



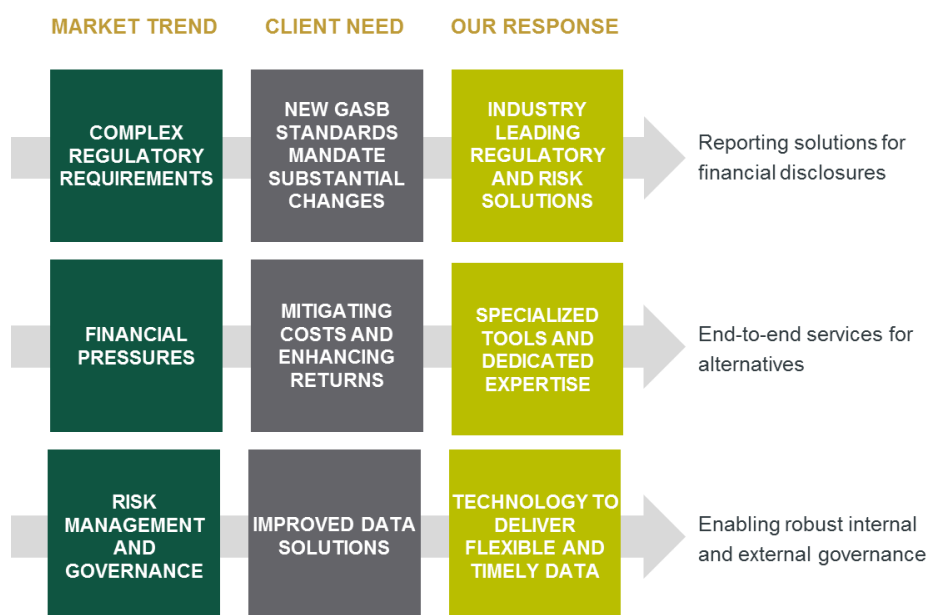
#### Business Optimization Strategy

- Capital efficiency
- Employee engagement
- Location strategy
- Operational excellence
- Process optimization

Twice a year, with continued focus on technology, Northern Trust sends representatives to Silicon Valley to meet with technology leaders and to preview current innovations to determine potential business alignment. Investment professionals from our private equity group along with executives from our Technology Enterprise group interview Silicon Valley innovators and see first-hand product demos. The private equity research team reviews with an eye for investment (spending in excess of \$750 Million), and the technology executives with an eye for applicability to Northern Trust. This strategy has proven to be effective with Northern Trust deploying and using venture capital start-up technologies. Connections in Silicon Valley provide Northern Trust access to deploy capital start-up technologies leading to faster time to market and resource efficiency.

## 23) What issues are other clients concerned with in regards to products, markets, education and governance?

Please see the chart below for trend of client concerns:





**24) Describe your outlook on strategic partnerships.**

Our outlook continues to include the ability to be a full solutions-driven provider to our Public Fund clients. That includes a host of products and services that can address the continuum of needs as our partnership with every client evolves. A sample of that continuum is captured below.

## THE COMPLETE SOLUTIONS PARTNERSHIP

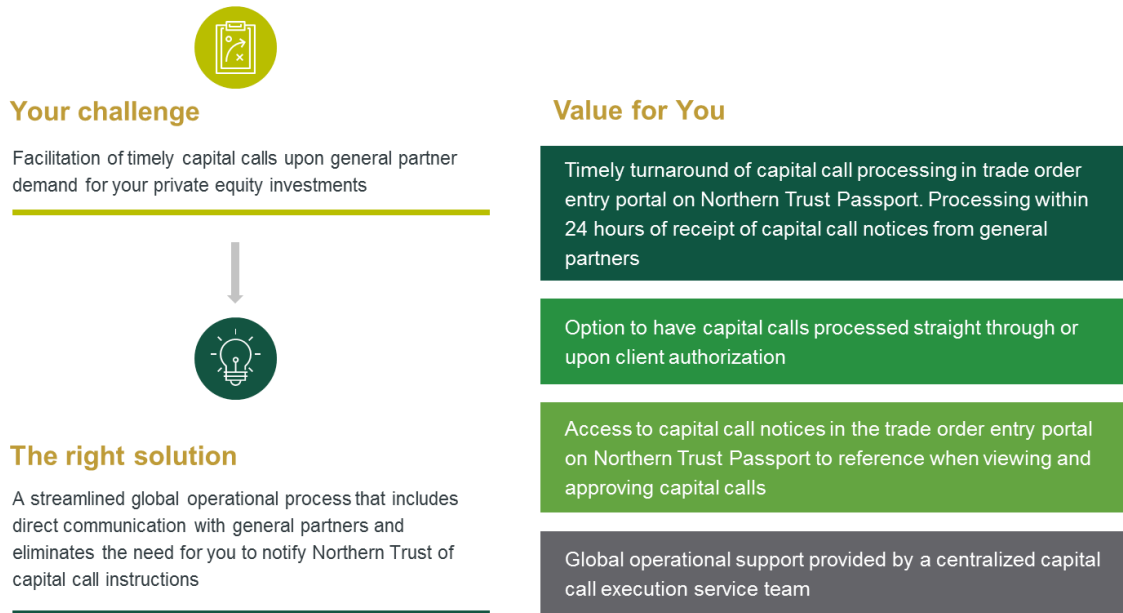
<b>Asset Management</b>	<ul style="list-style-type: none"> <li>Active management</li> <li>Alternative investments</li> <li>Cash management</li> </ul>	<ul style="list-style-type: none"> <li>Defined contribution</li> <li>Equities /fixed income</li> <li>ESG/SRI</li> </ul>	<ul style="list-style-type: none"> <li>Factor-based investing</li> <li>Index management</li> <li>Outsourced CIO</li> </ul>
<b>Asset Servicing</b>	<ul style="list-style-type: none"> <li>Alternative asset servicing</li> <li>Collateral management</li> <li>Derivatives processing</li> </ul>	<ul style="list-style-type: none"> <li>Fund execution</li> <li>Entitlement processing</li> <li>Proxy voting</li> </ul>	<ul style="list-style-type: none"> <li>Safekeeping</li> <li>Settlement</li> <li>Tax reclamation</li> </ul>
<b>Capital Markets</b>	<ul style="list-style-type: none"> <li>Brokerage</li> <li>Commission management</li> <li>Foreign exchange</li> </ul>	<ul style="list-style-type: none"> <li>FX eCommerce/algos</li> <li>Passive currency overlay</li> <li>Pooled fund transitions</li> </ul>	<ul style="list-style-type: none"> <li>Securities lending</li> <li>Third party lending</li> <li>Transition management</li> </ul>
<b>Data</b>	<ul style="list-style-type: none"> <li>Compliance monitoring</li> <li>Data aggregation</li> <li>Financial accounting</li> </ul>	<ul style="list-style-type: none"> <li>Investment accounting</li> <li>Performance analytics</li> <li>Risk analytics</li> </ul>	<ul style="list-style-type: none"> <li>Transparency analysis</li> <li>Unitization/plan allocation</li> <li>Valuation reporting</li> </ul>
<b>Fund</b>	<ul style="list-style-type: none"> <li>Cross-border pooling</li> <li>Corporate secretarial</li> <li>Component outsourcing</li> </ul>	<ul style="list-style-type: none"> <li>Financial reporting</li> <li>Fund administration</li> <li>Operations outsourcing</li> </ul>	<ul style="list-style-type: none"> <li>Tax transparent pooling</li> <li>Transfer agency</li> <li>Trustee/depositary</li> </ul>
<b>Liquidity</b>	<ul style="list-style-type: none"> <li>Banking</li> <li>Cash funds/management</li> <li>Credit facilities</li> </ul>	<ul style="list-style-type: none"> <li>Corporate cash services</li> <li>Deposit placing</li> <li>Evergreen deposits</li> </ul>	<ul style="list-style-type: none"> <li>Peer to peer</li> <li>Repo, reverse repo</li> <li>Treasury management</li> </ul>
<b>Regulatory</b>	<ul style="list-style-type: none"> <li>EMIR/Dodd Frank FASB</li> <li>GASB, GAAP</li> <li>IFRS, APRA, ASCII</li> </ul>	<ul style="list-style-type: none"> <li>Regulatory reporting</li> <li>Regulatory returns</li> <li>Investment oversight</li> </ul>	<ul style="list-style-type: none"> <li>SORP, nFTK</li> <li>Solvency II</li> <li>Transparency analytics</li> </ul>
<b>Retirement</b>	<ul style="list-style-type: none"> <li>Account control agreement</li> <li>Benefit payments</li> <li>Contingent assets</li> </ul>	<ul style="list-style-type: none"> <li>Defined contribution</li> <li>De-risking support</li> <li>Fund rebalancing</li> </ul>	<ul style="list-style-type: none"> <li>Institutional governance</li> <li>Reservoir trusts</li> <li>Trapped surplus vehicles</li> </ul>

**25) Describe your assessment of the relationship between The Northern Trust and SamCERA. How can we better take advantage of your firm's capabilities?**

Our assessment is that Northern Trust shares a valued relationship with SamCERA. We are committed to efficient and value-added service. One of the services recently discussed with SamCERA is use of Capital Call Execution. We welcome continued review. A synopsis is offered below.

## CAPITAL CALL EXECUTION SERVICES

*Gain operational efficiencies by delegating the processing of capital calls*



How can we better take advantage of your firm's capabilities? We would like to also offer ways for us to be much more consultative to SamCERA and its Board. We often bring our own industry expert to client offices to discuss industry trends. A sample of those trends is detailed below:

1. **Chipping away at the retirement savings gap.**
2. **More job openings, but fewer qualified candidates.** In 2017, human resources managers reported that police officers, information technology, engineers, and health care positions were the most difficult to fill.
3. **Growing talent is a top strategy.** As older workers reach retirement age, succession planning has become integrated into state and local government strategies to attract, engage, and retain employees. This is also occurring within the private sector.
4. **Timely and complete pension reporting is more important than ever.**

Our answer to question 24 also expands on a host of services that may prove advantageous to SamCERA. We further welcome the opportunity to expand on each.



# **NORTHERN TRUST**

NORTHERN TRUST

# Annual Service Review

Prepared for **San Mateo County Employees' Retirement Association (SamCERA)**

**Colleen Brennan**  
Vice President  
Public Funds

**Matt Pfaff**  
Officer  
Public Funds, Client Service

**Shane Crea**  
Vice President  
Performance Analytics

**Nivia Gilkey**  
2<sup>nd</sup> VP, Financial Reporting  
Client Valuation Reporting



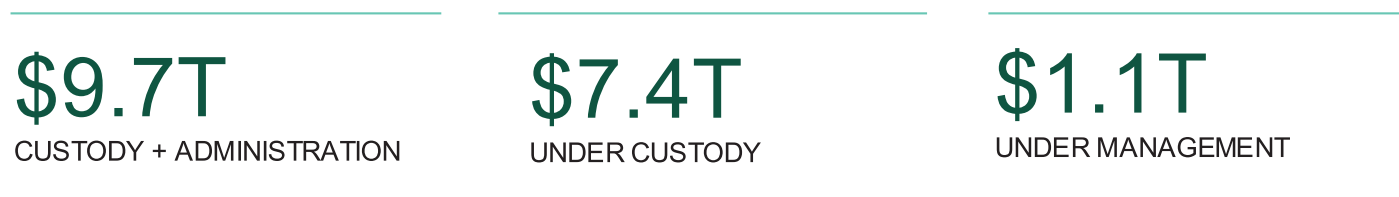
NORTHERN TRUST

March 1, 2018

# A FOCUSED BUSINESS MODEL

*Asset servicing, administration, investment, banking and fiduciary trust solutions for sophisticated individual and institutional investors across the globe*

## ASSETS:\*



## A MODEL FOCUSED ON THREE CORE BUSINESSES:

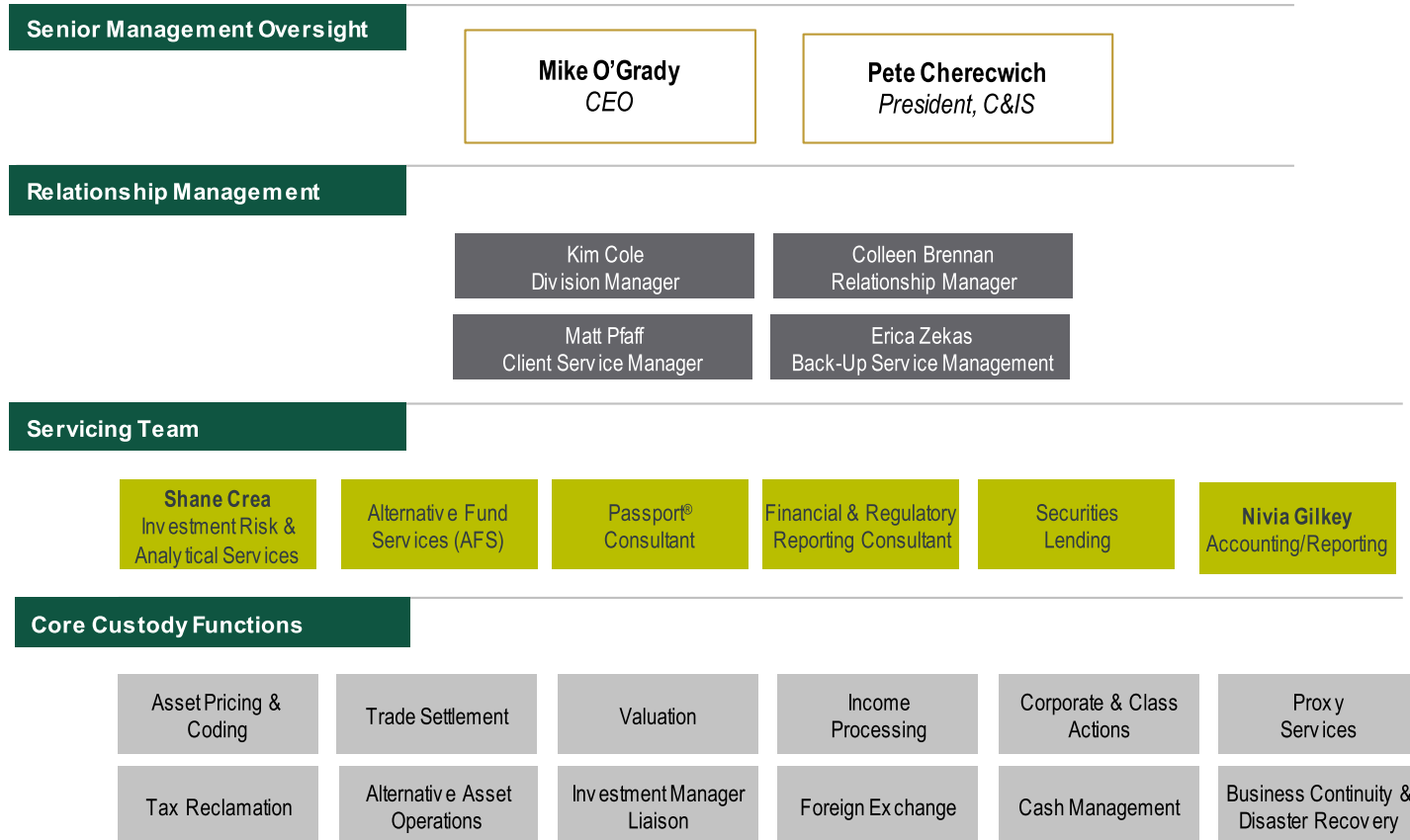


## OUR CLIENTS:

- Financial institutions
  - Insurance companies
  - Not-for-profit
  - Pension funds
  - Sovereign entities
- 
- Alternative managers
  - Fiduciary managers
  - Investment managers
- 
- Families
  - Family offices
  - Individuals
  - Private businesses
  - Trusts

# CLIENT SERVICING TEAM APPROACH

## SamCERA



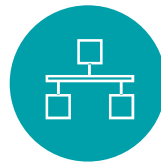
# KEY CLIENT SERVICE PROCESSES

*Focused on solid communication and review processes to make sure that we understand your business and your needs*



## Service level description

- **Creation:** During conversion, the client and the relationship manager meet to create the service level description
- **Standard:** Provides formal documentation of the client's and Northern Trust's agreed service standards/deliverables
- **Communication:** Details contact names, telephone/fax and emergency numbers



## Relationship reviews

- **Review:** Discuss our performance against the standards detailed in the service level description
- **Response:** Address issues/opportunities as needed and agree upon time frames for execution
- **Result:** Continue the two-way conversation of our service balancing your business needs



## Executive oversight

- **Schedule:** Every client relationship is reviewed at least annually by our senior management
- **Awareness:** Senior management are actively engaged in monitoring service delivery versus expectations
- **Support:** Ensure that relationship between the servicing team and client is working to the optimum level



NORTHERN TRUST

# Client Valuation Reporting (CVR)



NORTHERN TRUST

# CLIENT VALUATION REPORTING (CVR)

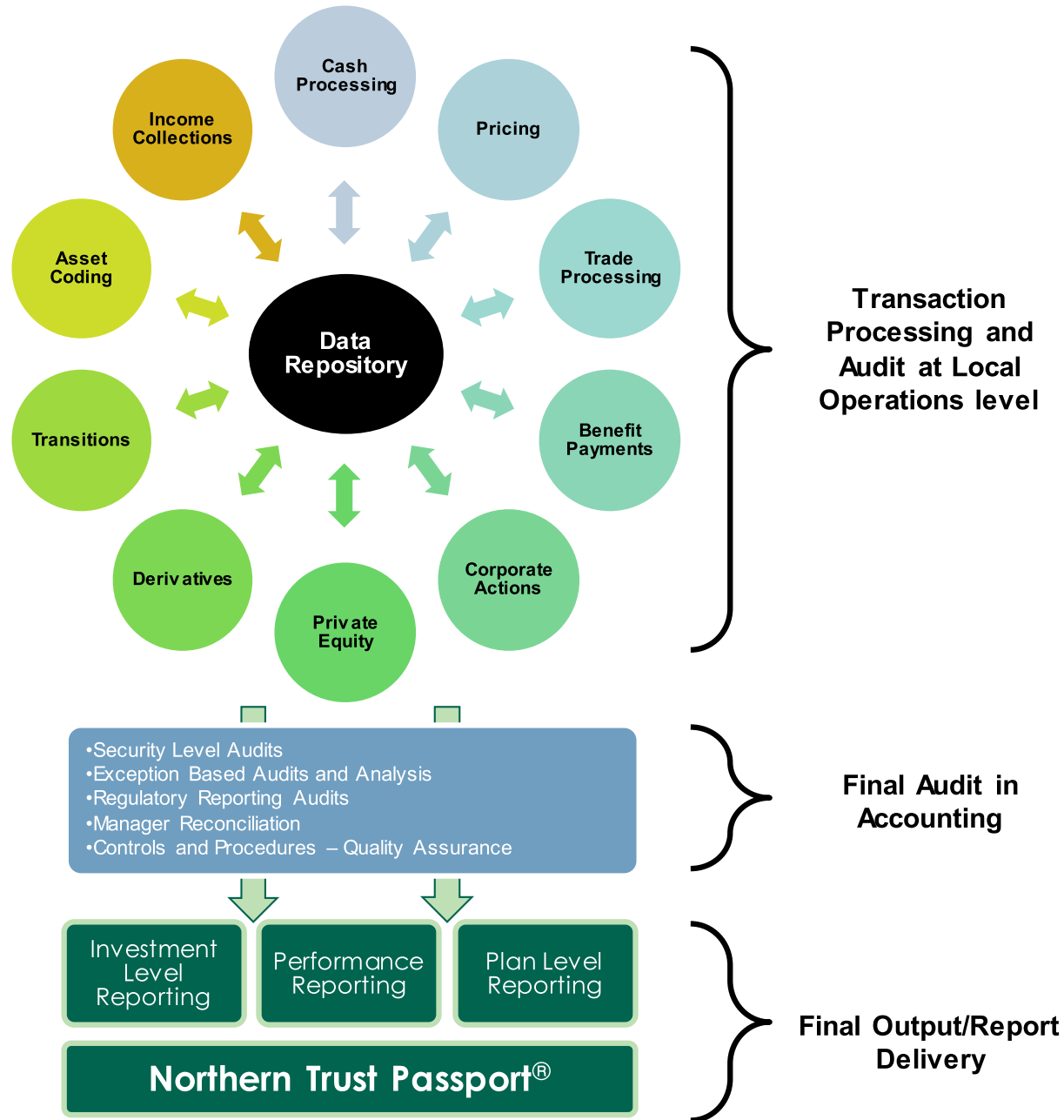
*CVR supports the accounting needs of our clients. Our mission is to offer accurate reporting solutions.*

- The role of Client Valuation Reporting is to work effectively with Northern Trust partners to deliver complete and accurate information to our clients on a daily and periodic basis.
- CVR plays an integral role in the accounting operations-controlled environment by providing the final review of data before it is released to the client.
- CVR's process allows for independent segregation of duty; we audit data supplied by other Operations partner areas by locating and resolving exceptions that are out of tolerance.
- With respect to our clients, CVR has vertical responsibilities and services the client from top to bottom. We serve as the client-facing center of Operations, acting as a liaison between internal partners to resolve inquiries. This requires CVR to interface with Client Servicing as well as clients.

# CLIENT ACCOUNTING & REPORTING INFORMATION FLOW

## Sophisticated Architecture

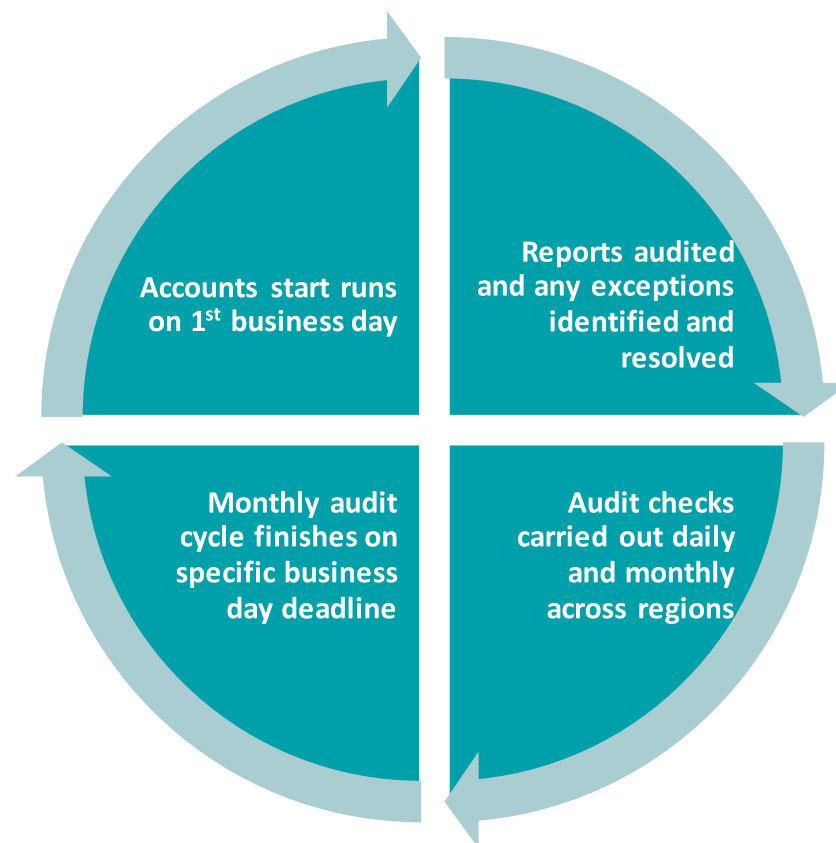
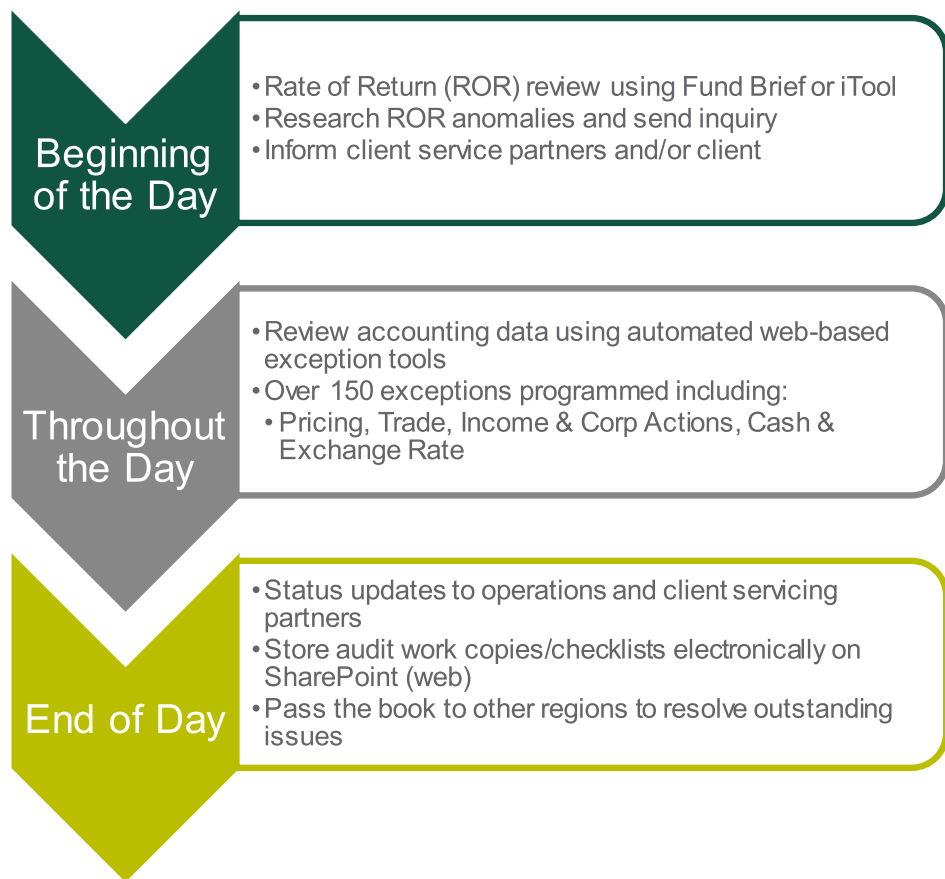
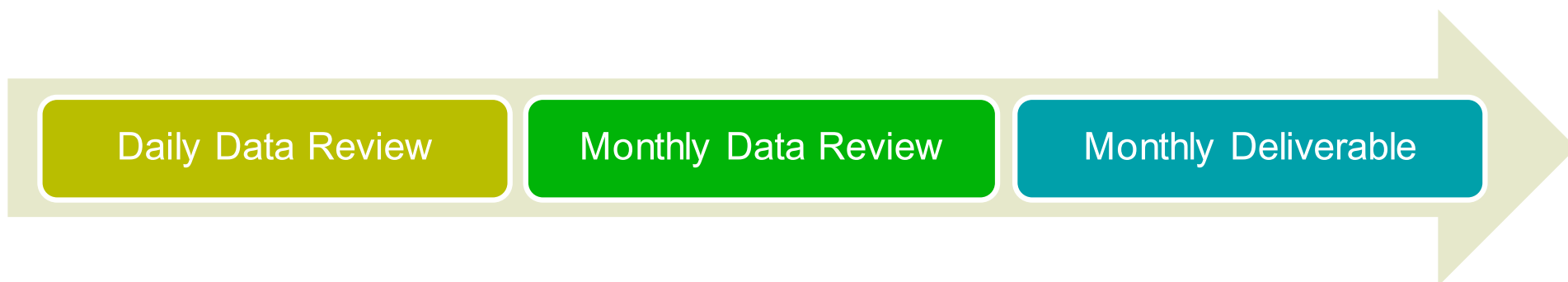
- Common trade capture for custody and trade services
- Shared utilities benefit all processes and businesses
- An absence of reconciliation by function, platform, or geography
- A single data repository



## Delivering Exceptional Results

- Faster, more accurate results
- Greater access to our experts
- Ability to focus on more critical/value-added activities
- Greater flexibility on deadlines

# DATA REVIEW PROCESS FLOW



# AUDIT CHECKS COMPLETED WITHIN CVR

## Price Check

Current price to prior month price  
Systems price  
Stale price  
Zero price

## Trade Price Tolerance Check

Compare price on trade to current and prior month end price utilizing various tolerances

## Market to Book Reasonability Check

Market versus book for reasonability on each asset using set tolerances  
Zero cost and zero market value  
Negative holdings/negative cost  
Residual cost  
Expired security  
Fractional shares

## Corporate Actions Check

Shares held on ex date  
Shares received  
Gain / loss on redemption  
Cost on parent and child lines

## Duplicate Trade Check

Duplicate trades

## Futures Check

Future offset liabilities  
Mark to markets  
Transactional check for shares, market value and cost

## Cash Exchange Rate Check

Compare exchange rate on all movements to spot rates on the day of trade

## Forward Foreign Exchange Check

Gain / loss on spot trades less than 10%  
Gain / loss on forward trades less than 30%

## Cash Movements Check

Verify all contributions, withdrawals, fees, etc.

## Transaction Check

Failed trades / pending trades that did not settle  
Late trades  
Corporate actions without market value  
Zero cost on trades  
Gain / loss on purchases and short term assets  
New securities to the bank

## Tax Recoverable Check

Drop on / drop off  
Changes to local value  
Filing date review for late payments

## Equity Accrual Check

Drop on/drop off  
Rate changes  
Nominal changes  
Duplicate accruals  
Negative accrual

## Bond Accrual Check

Days on accrual  
Compare accrual days month to month  
Drop on / drop off  
Missing accruals  
Income received on pay / maturity date  
Negative days accrual  
Accrued interest purchased / sold  
Mortgage backed securities  
Accruals greater than 10% of market value

## Transition Check

Verify cost, market value and nominal on all assets, including cash  
Verify all accruals are set up

# CVR RESOURCES

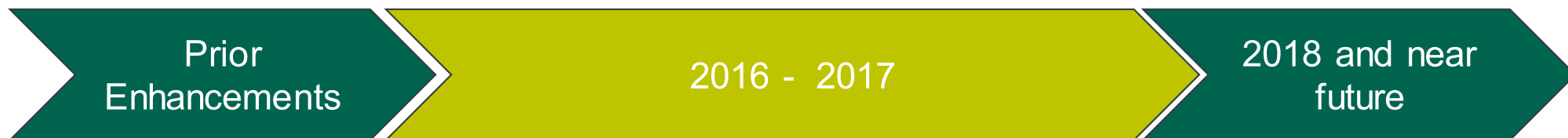
- **Accounting include Client Resource Analyst and Operations Resource Analyst Teams**
  - Vertical and Horizontal Responsibilities
- **Proprietary Web Based Audit Tools**
  - iTool – Exception Driven
  - Control Panel – Audit Packages and Client Information
- **ERM – Enterprise Relationship Management Tool**
  - Centralized inquiry tool
- **Technical Accounting Consulting**
  - Ensure reporting regulations are understood
- **Consulting Groups**
  - PACE (performance), Allocations, Lot Accounting, etc.
- **Data Quality Assurance Team**
  - Ensure standard of "Core Audit Work"

NORTHERN TRUST

# Performance Analytics



# IRAS - PRODUCT EVOLUTION



- |  |   |  |  |
|--|---|--|--|
| <ul style="list-style-type: none"> <li>■ De-Risking and Enhanced Asset/ Liability Reporting</li> <li>■ IRAS Omnium Integration: Support Portfolios with Equity, Fixed Income, Cash, Futures, FX</li> <li>■ Integrated Reporting:             <ul style="list-style-type: none"> <li>• Market Value Summary</li> <li>• Regional/Sector Reports</li> <li>• Holdings/Contribution</li> <li>• Allocation Reports</li> </ul> </li> <li>■ Long / Short Position Evaluation</li> <li>■ Fixed Income Attribution-Successive Pricing</li> <li>■ True Trade Date Enhancements</li> <li>■ Time Matched Reporting Product</li> </ul> | <ul style="list-style-type: none"> <li>■ State of the Art, Published Reporting             <ul style="list-style-type: none"> <li>• Commentary</li> <li>• Policy Level Attribution/Contribution</li> </ul> </li> <li>■ iPad Mobile App</li> <li>■ Dashboard enhancements             <ul style="list-style-type: none"> <li>• Linked Exhibits</li> <li>• Full screen exhibits</li> <li>• Improved speed</li> <li>• Index templates</li> </ul> </li> <li>■ IRAS Omnium Integration:             <ul style="list-style-type: none"> <li>• Support Portfolios with OTC's</li> <li>• Add Characteristics</li> </ul> </li> <li>■ Principle &amp; Income Returns</li> </ul> | <ul style="list-style-type: none"> <li>■ Asset/Liability Modeling Solution</li> <li>■ Data Direct Scheduler</li> <li>■ Service Oriented Architecture: Consistent Calculation Across Platforms</li> <li>■ Significant content and usability improvements to Dashboard             <ul style="list-style-type: none"> <li>• <i>Copy/Share</i></li> <li>• <i>Holdings &amp; Contribution</i></li> <li>• <i>Policy Level Attribution/Contribution</i></li> <li>• <i>Regional/Sector Analysis</i></li> </ul> </li> <li>■ Infrastructure upgrades to support over 700 asset owners and asset managers</li> <li>■ eInvestment Manager Universes delivered via reporting channels</li> </ul> | <ul style="list-style-type: none"> <li>■ Expand mobile Technology</li> <li>■ Enhanced Fixed Income Analytics</li> <li>■ Alternative Asset Integration</li> <li>■ Completion of NEW proprietary Investment Compliance Application</li> <li>■ Integrated Analytics, Risk, &amp; Compliance Across Reporting Platforms</li> <li>■ Service Oriented Architecture: Consistent Calculation Across Platforms</li> </ul> |
|--|---|--|--|

# PRODUCT MIX AND SERVICE STRUCTURE

## DEDICATED CONSULTANT SUPPORT

### PERFORMANCE MEASUREMENT

Get a clear picture of your performance using our proprietary measurement and attribution engine fed directly from our accounting platform.

### RISK SERVICES

Fulfil your market risk requirements from an investment and regulatory perspective with our sophisticated analytical tools and best-of-breed risk engines.

### COMPLIANCE MONITORING

Ensure adherence to your investment policies and achieve greater transparency using our compliance monitoring platform, Compliance Analyst<sup>®</sup>.

### ALTERNATIVE ASSETS

Access Experts who truly understand private equity and other alternative investments and enable better decision making with our cutting-edge tool, Private Monitor<sup>™</sup>.

# ONLINE ACCESS: DASHBOARDS

Flexible dashboards allow you to access multiple views of information on a single page

Intuitive graphs and charts quickly summarize substantial amounts of complex data

Powerful graphics such as heat maps help you focus on what's important

Linked exhibits and drill through capabilities provide transparency and valuable insight



# DATA DIRECT FOR EXCEL

## Overview

Designed to integrate Northern Trust analytical data directly to Excel spreadsheets.

Formats can be saved and refreshed at any point in the future.

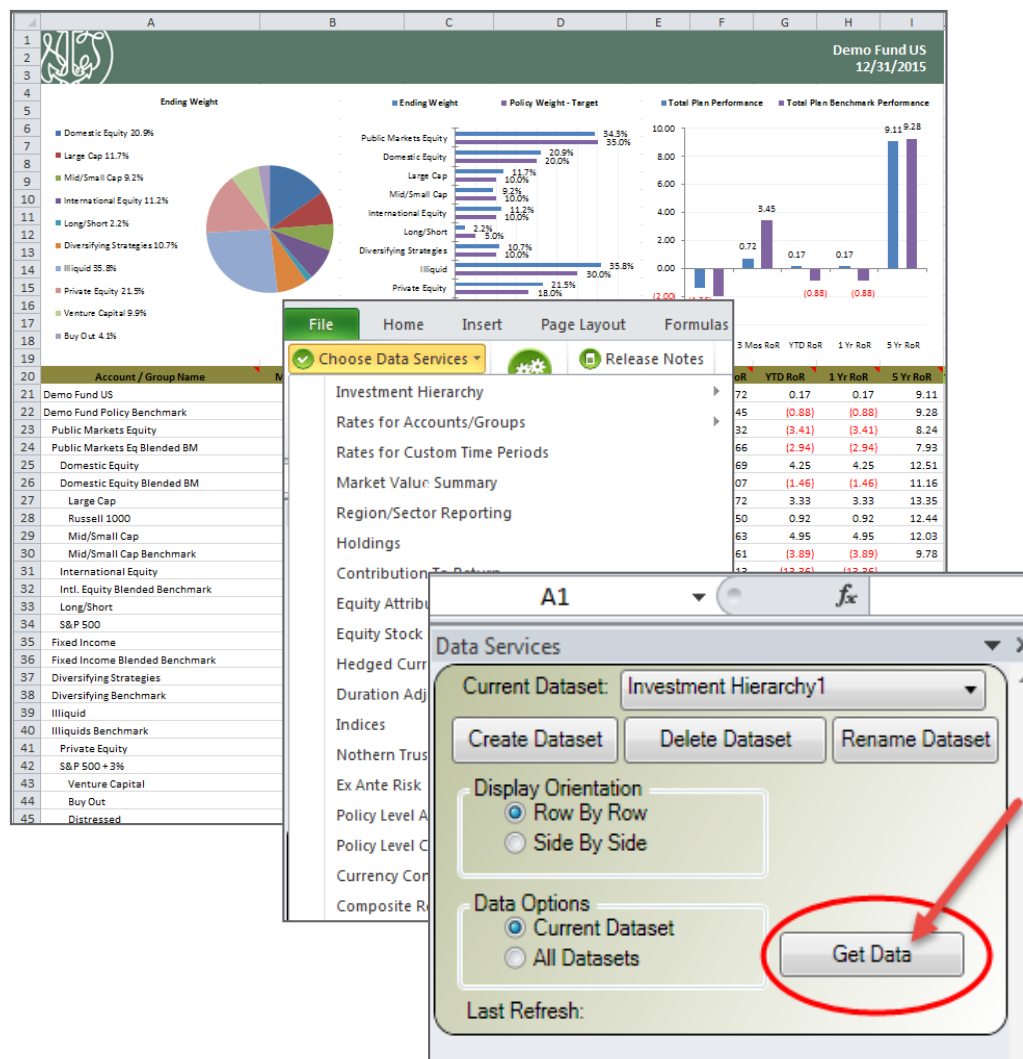
Simple data calls populate client risk and performance data that can be integrated with user defined calculations and formats.

## Key Benefits

Updates can be produced to a timetable set by the client.

Files can be shared and refreshed on multiple computers.

Application is transportable – secured authentication is done through any available internet proxy.



# Closing Thoughts

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# WHY NORTHERN TRUST?

*We offer an outstanding combination of...*

## Product leadership and innovation

We are a diversified, world-class financial institution offering comprehensive product solutions

## Client standards

An outstanding client experience is at the heart of proposition; it's in our DNA

## Strategic ambition

Global trends and industry challenges inform a nimble and evolving business strategy

## Strong culture and heritage

Our client-centric approach is underpinned by our core values: service, expertise and integrity

## Financial strength and stability

Our conservative approach to risk continues to provide a stable environment for our clients' investments

## Business focus

We are highly focused, client-centric and recognized as industry leaders across the markets we serve



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

March 27, 2018

Agenda Item 6.4

**TO:** Board of Retirement

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

**SUBJECT:** Report on Update of Verus Capital Market Assumptions

*Michael R Coultrip*

**Recommendation**

Review the attached report from Verus that summarizes their latest capital market assumptions and the impact on SamCERA's total fund policy expectations.

**Background**

Verus updates their capital market assumptions once per year. These assumptions will form the basis for the upcoming asset allocation review which will take place in May.

**Discussion**

The attached report from Verus summarizes their latest asset class capital market assumptions and the resulting impact on the total fund policy expectations. Margaret Jadallah and Stephen Quirk from Verus will present this report to the Board.

**Attachment**

Verus 2018 Capital Market Assumptions





**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

MARCH 2018  
Capital Market Assumptions



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[VERUSINVESTMENTS.COM](http://VERUSINVESTMENTS.COM)

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

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Asset Classes 9

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SamCERA Forecast 18

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Appendix 23

# Summary

# Methodology

## CORE INPUTS

- We use a fundamental building block approach based on several inputs, including historical data and academic research to create asset class return forecasts.
- For most asset classes, we use the long-term historical volatility after adjusting for autocorrelation.
- Correlations between asset classes are calculated based on the last 10 years. For illiquid assets, such as private equity and private real estate, we use BarraOne correlation estimates.

Asset	Return Methodology	Volatility Methodology*
Inflation	25% weight to the University of Michigan Survey 5-10 year ahead inflation expectation and the Survey of Professional Forecasters (Fed Survey), and the remaining 50% to the market's expectation for inflation as observed through the TIPS breakeven rate	-
Cash	Real yield estimate + inflation forecast	Long-term volatility
Bonds	Nominal bonds: current yield; Real bonds: real yield + inflation forecast	Long-term volatility
International Bonds	Current yield + implied currency effect	Long-term volatility
Credit	Current option-adjusted spread + U.S. 10-year Treasury – effective default rate	Long-term volatility
International Credit	Current option-adjusted spread + foreign 10-year Treasury – effective default rate + implied currency effect	Long-term volatility
Private Credit	Bank loan forecast + 2% illiquidity premium	Long-term volatility
Equity	Current yield + real earnings growth (historical average) + inflation on earnings (inflation forecast) + expected P/E change	Long-term volatility
Intl Developed Equity**	Current yield + real earnings growth (historical average) + inflation on earnings (intl. inflation forecast) + expected P/E change + implied currency effect	Long-term volatility
Private Equity	US large cap domestic equity forecast * 1.85 beta adjustment	1.2 * Long-term volatility of U.S. small cap
Commodities	Collateral return (cash) + spot return (inflation forecast) + roll return (assumed to be zero)	Long-term volatility
Hedge Funds	Return coming from traditional betas + 15-year historical idiosyncratic return	Long-term volatility
Hedge Funds (FoF)	Return coming from traditional betas + 15-year historical idiosyncratic return – 1% expected fund of funds management fee	Long-term volatility
Core Real Estate	Cap rate + real income growth – capex + inflation forecast	65% of REIT volatility
REITs	Core real estate	Long-term volatility
Value-Add Real Estate	Core real estate + 2%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Opportunistic Real Estate	Core real estate + 4%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Infrastructure	Current yield + real income growth + inflation on earnings (inflation forecast)	Long-term volatility
Risk Parity	Expected Sharpe Ratio * target volatility + cash rate	Target volatility

\*Long-term historical volatility data is adjusted for autocorrelation (see Appendix)

\*\*We use local inflation for international developed equity markets. When using local inflation rates, expected returns are adjusted for the implied currency effect based on currency forward contract rates (see Appendix)

# 10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)
		Geometric	Arithmetic					
<b>Equities</b>								
U.S. Large	S&P 500	4.5%	5.6%	15.7%	0.15	0.22	0.50	0.56
U.S. Small	Russell 2000	4.4%	6.5%	21.5%	0.10	0.20	0.36	0.44
International Developed	MSCI EAFE	8.6%	10.1%	18.1%	0.35	0.44	0.11	0.2
International Developed Hedged	MSCI EAFE Hedged	8.6%	9.8%	16.2%	0.40	0.47	0.21	0.28
International Small	MSCI EAFE Small Cap	7.9%	10.2%	22.7%	0.25	0.35	0.24	0.33
International Small Hedged	MSCI EAFE Small Cap Hedged	7.9%	9.7%	20.1%	0.28	0.37	0.36	0.43
Emerging Markets	MSCI EM	7.3%	10.4%	26.6%	0.19	0.31	0.17	0.28
Global Equity	MSCI ACWI	6.3%	7.7%	17.5%	0.23	0.31	0.27	0.35
Private Equity	Cambridge Private Equity	6.4%	9.3%	25.8%	0.16	0.28	0.93	0.92
<b>Fixed Income</b>								
Cash	30 Day T-Bills	2.2%	2.2%	1.2%	-	-	-	-
U.S. TIPS	BBgBarc U.S. TIPS 5 - 10	2.6%	2.7%	5.5%	0.07	0.09	0.57	0.59
U.S. Treasury	BBgBarc Treasury 7-10 Year	2.4%	2.6%	6.8%	0.03	0.06	0.68	0.70
Global Sovereign ex U.S.	BBgBarc Global Treasury ex U.S.	2.7%	3.2%	9.9%	0.05	0.10	0.30	0.33
Global Sovereign ex U.S. Hedged	BBgBarc Global Treasury ex U.S. Hedged	2.7%	2.8%	3.3%	0.15	0.18	1.23	1.22
Core Fixed Income	BBgBarc U.S. Aggregate Bond	2.9%	3.1%	6.4%	0.11	0.14	1.09	1.08
Core Plus Fixed Income	BBgBarc U.S. Corporate IG	3.3%	3.6%	8.4%	0.13	0.17	0.81	0.81
Short-Term Gov't/Credit	BBgBarc U.S. Gov't/Credit 1 - 3 year	2.5%	2.6%	3.7%	0.08	0.11	1.36	1.34
Short-Term Credit	BBgBarc Credit 1-3 Year	2.4%	2.5%	3.7%	0.05	0.08	1.05	1.05
Long-Term Credit	BBgBarc Long U.S. Corporate	3.5%	3.9%	9.4%	0.14	0.18	0.64	0.67
High Yield Corp. Credit	BBgBarc U.S. Corporate High Yield	3.7%	4.3%	11.6%	0.13	0.18	0.64	0.67
Bank Loans	S&P/LSTA	4.9%	5.4%	10.5%	0.26	0.30	0.48	0.51
Global Credit	BBgBarc Global Credit	1.7%	2.0%	7.6%	-0.07	-0.03	0.59	0.61
Global Credit Hedged	BBgBarc Global Credit Hedged	1.7%	1.8%	5.0%	-0.10	-0.08	1.01	1.00
Emerging Markets Debt (Hard)	JPM EMBI Global Diversified	5.1%	5.9%	12.8%	0.23	0.29	0.74	0.76
Emerging Markets Debt (Local)	JPM GBI EM Global Diversified	5.8%	6.5%	12.1%	0.30	0.36	0.31	0.37
Private Credit	Bank Loans + 200 bps	6.9%	7.5%	10.5%	0.45	0.50	-	-
<b>Other</b>								
Commodities	Bloomberg Commodity	4.3%	5.5%	15.9%	0.13	0.21	-0.33	-0.25
Hedge Funds	HFRI Fund of Funds	4.0%	4.8%	7.9%	0.23	0.33	0.21	0.23
Hedge Fund of Funds	HFRI Fund of Funds	3.0%	3.8%	7.9%	0.10	0.20	0.21	0.23
Hedge Funds - Equity Hedge	HFRI Equity Hedge	4.2%	5.5%	11.1%	0.18	0.30	0.36	0.39
Hedge Funds - Event Driven	HFRI Event Driven	4.5%	5.6%	9.9%	0.22	0.34	0.55	0.57
Hedge Funds - Relative Value	HFRI Relative Value	3.9%	4.5%	6.8%	0.25	0.34	0.89	0.89
Hedge Funds - Macro	HFRI Macro	3.3%	4.7%	8.5%	0.12	0.29	0.43	0.44
Core Real Estate	NCREIF Property	6.0%	6.7%	12.7%	0.30	0.35	0.77	0.75
Value-Add Real Estate	NCREIF Property + 200bps	8.0%	9.7%	19.5%	0.30	0.38	-	-
Opportunistic Real Estate	NCREIF Property + 400bps	10.0%	12.9%	26.0%	0.30	0.41	-	-
REITs	Wilshire REIT	6.0%	7.7%	19.5%	0.19	0.28	0.16	0.28
Infrastructure	S&P Global Infrastructure	7.1%	8.7%	18.9%	0.26	0.34	0.27	0.34
Risk Parity	Risk Parity	7.2%	7.7%	10.0%	0.50	0.55	-	-
Currency Beta	Russell Conscious Currency	2.2%	2.3%	4.4%	0.00	0.02	0.23	0.24
Inflation		2.1%	-	-	-	-	-	-

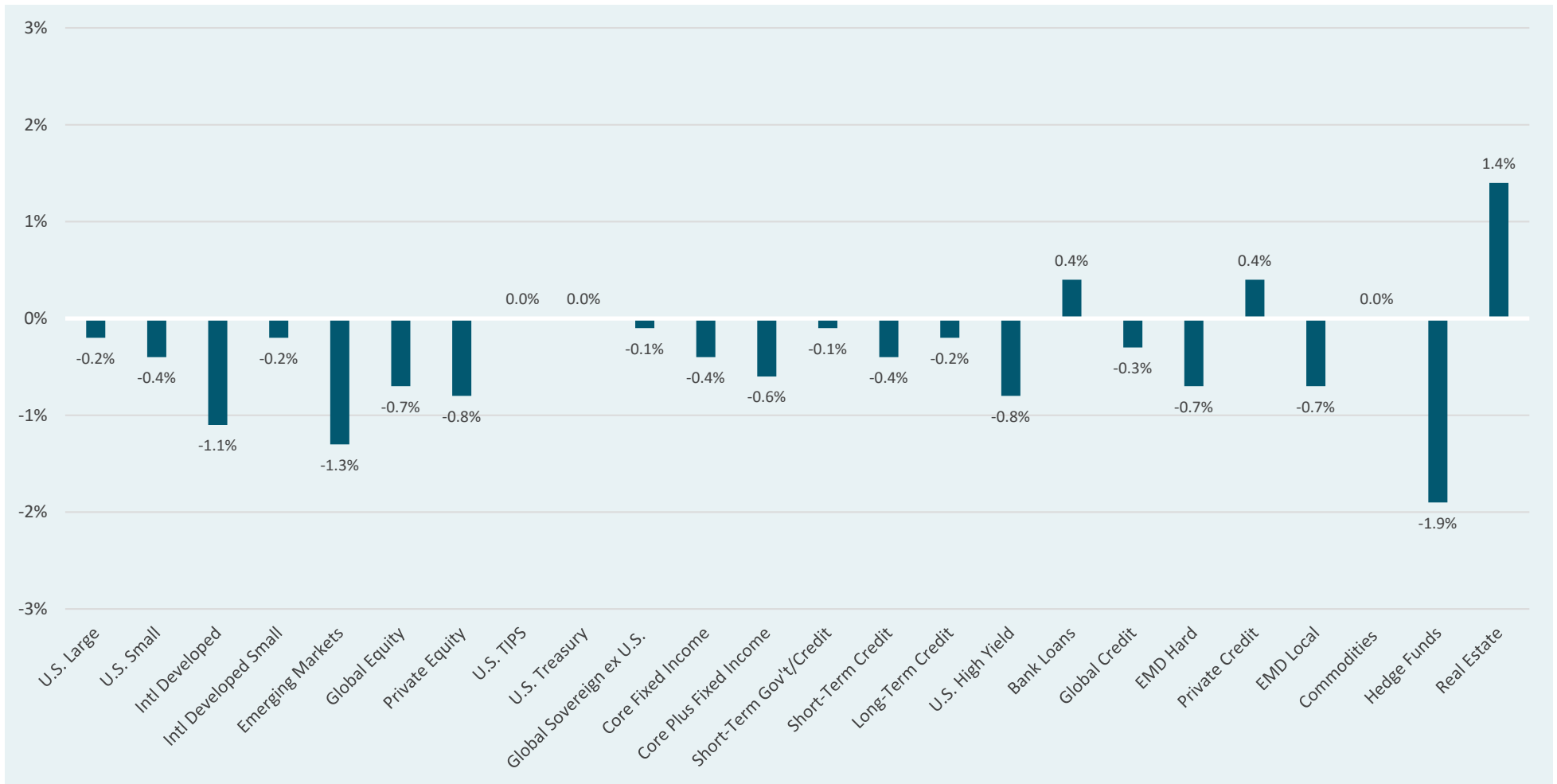
Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.

# Range of likely 10 year outcomes

10 YEAR RETURN 90% CONFIDENCE INTERVAL



# 2018 vs. 2017 return forecast





# Relevant forecast changes

- Risk premia contracted during 2017, especially in international equities and domestic credit, which resulted in lower return forecasts. High valuations across risk assets and low interest rates have resulted in lower expected returns for almost all asset classes.
- Price appreciation in international developed large cap equities helped normalize valuations, particularly the Shiller P/E ratio. Over the past year, the Shiller P/E ratio rose from 14.5 to 18.6, which placed it in the 36th percentile relative to history. Due to higher P/E ratios, the valuation adjustment to expected return fell from +0.5% to 0.0%.
- Higher valuations in emerging market equities caused expected returns to fall by -0.5%. The Shiller P/E ratio rose from 8.7 to 11.9 and the 12-month trailing P/E ratio rose from 15.4 to 15.9.
- U.S. interest rates were unchanged over the period, but spreads tightened further in both investment grade and high yield credit. Core fixed income spreads fell from 92 bps to 61 bps, and high yield spreads dropped from 437 bps to 356 bps. Tighter spreads in U.S. credit resulted in lower expected returns for almost all fixed income asset classes.
- Bank loans were an exception as a rise in LIBOR offset tighter spreads. The three-month LIBOR reference rate increased from 1.0% to 1.7%, while spreads contracted from 387 bps to 357 bps.
- Expected returns also declined for hard and local currency emerging market debt. In hard currency-denominated debt, spreads to U.S. Treasury yields dropped from 360 bps to 290 bps, while yields of local-denominated debt fell from 6.8% to 6.1%.

*All data cited above is as of 12/31/17*

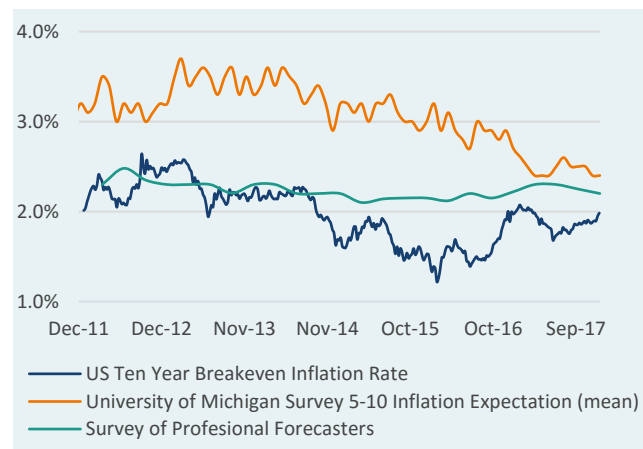
# Asset Classes

# Inflation

We use a weighted average of market expectations (50%), consumer expectations (25%), and professional forecasts (25%) to create a 10-year inflation forecast. The market's expectations for 10-year inflation can be inferred by taking the difference between the U.S. 10-year Treasury yield and the 10-year Treasury Inflation-Protected (TIPS) yield (referred to as the breakeven inflation rate). Market inflation expectations increased modestly over the past year, while consumer and forecaster expectations were relatively stable. Overall, our inflation forecast was unchanged at 2.1%.

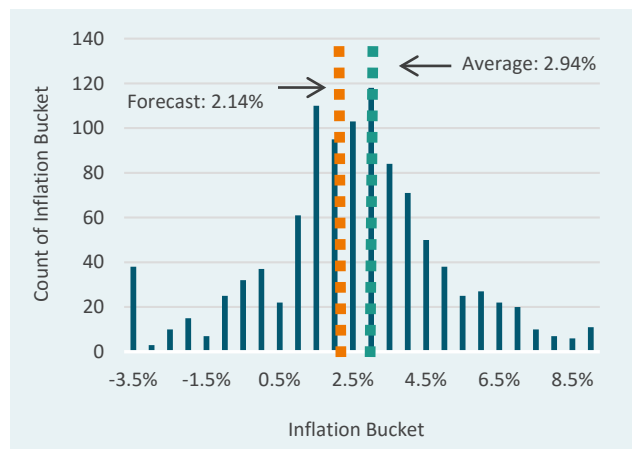
The 10-year breakeven inflation rate was 2.0% at year-end. The market is expecting the low inflation environment to continue well into the future. Breakeven rates fell during the first half of the year, but rose in the later half, possibly influenced by upward revisions to economic growth forecasts. Consumer inflation expectations fell slightly from 2.7% to 2.4% based on the University of Michigan Consumer Sentiment Survey. Inflation expectations from the Survey of Professional Forecasters were unchanged at 2.2% - this measure has historically been fairly stable, especially in environments characterized by suppressed inflation volatility.

## INFLATION EXPECTATIONS



Source: U. of Michigan, Philly Fed, as of 12/31/17

## U.S. 10-YR ROLLING AVERAGE INFLATION SINCE 1923



Source: Bloomberg, as of 12/31/17

## FORECAST

	10-Year Forecast
University of Michigan Survey (25% weight)	2.40%
Survey of Professional Forecasters (25% weight)	2.20%
US 10-Year TIPS Breakeven Rate (50% weight)	1.98%
<b>Inflation Forecast</b>	<b>2.14%</b>

Source: Verus, as of 12/31/17

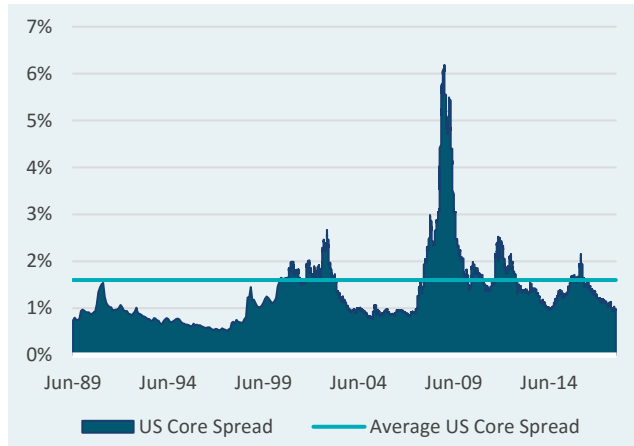
# Core fixed

Credit fixed income return is composed of a bond term premium (duration) and credit spread. The bond term premium is represented by the 10-year U.S. Treasury yield.

We use appropriate default rates and credit spreads for each fixed income category to provide our 10-year return forecast. Our default rate assumption is derived from a variety of sources, including historical data and academic research. The effective default that is subtracted from the return forecast is based on our assumed default and recovery rates.

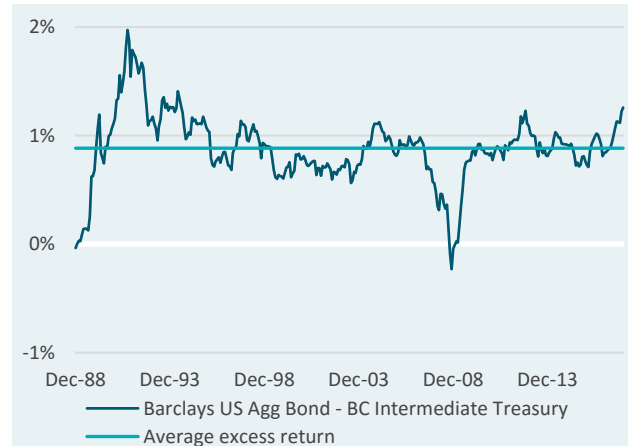
Spreads are well below their 30-year average and continue to exhibit behavior consistent with later stages of the economic cycle. Credit markets appear slightly more expensive than in prior years, as compensation for taking credit risk decreases. Tighter credit spreads over the past year resulted in a 40 bps decrease in our core fixed income expected return.

## U.S. CORE CREDIT SPREAD



Source: Barclays, as of 12/31/17

## ROLLING EXCESS RETURN (10YR)



Source: Barclays, as of 12/31/17

## FORECAST

	10-Year Forecast
Barclays U.S. Option-Adjusted Spread	+0.61%
Effective Default	-0.10%
U.S. 10-Year Treasury	+2.41%
Nominal Return	2.91%
Inflation Forecast	-2.14%
Real Return	0.77%

Source: Verus, as of 12/31/17

# Credit summary

	Core	Long-Term Credit	Global Credit*	High Yield	Bank Loans	EM Debt (USD)	EM Debt (Local)	Private Credit
<b>Index</b>	BBgBarc U.S. Aggregate	BBgBarc Long U.S. Corporate	BBgBarc Global Credit	BBgBarc US High Yield	S&P LSTA	JPM EMBI	JPM GBI	S&P LTSA+ 2%
<b>Method</b>	OAS + U.S. 10-Year	OAS + U.S. 10-Year	OAS + Global 10-Year Treasuries	OAS + U.S. 10-Year	LIBOR + Spread	OAS + U.S. 10-Year	Current Yield	Bank Loans+ 2% illiquidity premium
<b>Spread to</b>	Intermediate U.S. Treasury	Long-Term U.S. Treasury	Global Long-Term Treasuries	Intermediate U.S. Treasury	LIBOR	Intermediate U.S. Treasury	-	-
<b>Default Assumption</b>	-0.5%	-4.5%	-3.0%	-3.8%	-3.5%	-0.5%	-0.5%	-
<b>Recovery Assumption</b>	80%	95%	40%	40%	90%	60%	40%	-
<b>Spread</b>	0.6%	1.3%	1.0%	3.6%	3.6%	2.9%	-	-
<b>Yield</b>	-	-	-	-	-	-	6.1%	-
<b>Risk Free Yield</b>	2.4%	2.4%	1.9%	2.4%	1.7%	2.4%	-	-
<b>Effective Default</b>	-0.1%	-0.2%	-1.8%	-2.3%	-0.4%	-0.2%	-0.3%	-
<b>Expected Currency Effect</b>	-	-	0.5%	-	-	-	-	-
<b>Nominal Return</b>	2.9%	3.5%	1.7%	3.7%	4.9%	5.1%	5.8%	6.9%
<b>Inflation Forecast</b>	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%	2.1%
<b>Real Return</b>	0.8%	1.3%	-0.0%	1.6%	2.8%	3.0%	3.7%	4.4%

\*Global Credit expected returns are adjusted for the implied currency effect based on currency forward contract rates (see Appendix)

# Equities

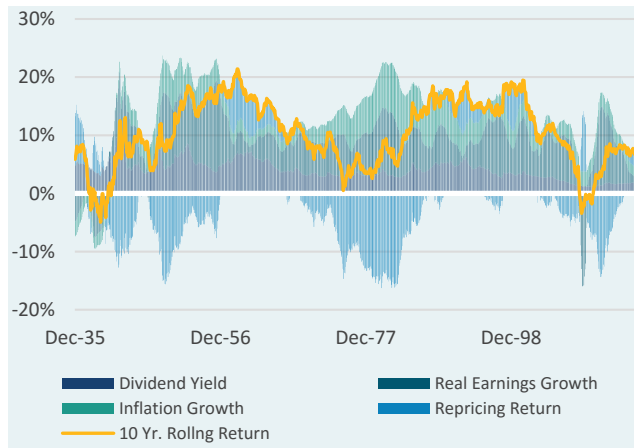
Investment returns in the equity space can be broken down into earnings growth, dividend yield, inflation, and repricing. Over the very long-term, repricing represents a small portion of return to equity investors, but over shorter time frames, the effect on return can vary considerably.

If investors are willing to pay more for earnings, it could signal that investors are more confident in positive earnings growth going forward, while the opposite is true if investors pay less for earnings. It is somewhat surprising that investor confidence varies so much given that the long-term earnings growth is relatively stable.

Investor confidence in earnings growth can be measured using both the Shiller P/E ratio and the trailing 12-month P/E ratio. We take an average of these two valuations metrics when determining our repricing assumption. In short, if the P/E ratio is too high (low) relative to history, we expect future returns to be lower (higher) than the long-term average. Implicit in this analysis is the assumption that P/E's will exhibit mean reversion over 10 years.

We make a conservative repricing estimate given how widely repricing can vary over time. We then skew the repricing adjustment because the percentage change in index price is larger with each incremental rise in valuations when P/E's are low, compared to when they are high.

**TRAILING 10-YR S&P 500 RETURN COMPOSITION**



Source: Shiller, Standard & Poor's, as of 9/30/17

**U.S. LARGE SHILLER P/E**



Source: Shiller, as of 9/30/17

**P/E REPRICING ASSUMPTION**

Average P/E Percentile Bucket	Lower P/E	Upper P/E	Repricing Assumption
Lower 10%	-	10	2.00%
10% - 20%	10	13	1.50%
20% - 30%	13	15	0.75%
30% - 45%	15	18	0.50%
45% - 55%	18	19	0.0%
55% - 70%	19	21	-0.25%
70% - 80%	21	22	-0.50%
80% - 90%	22	24	-1.25%
Top 10%	24	-	-1.50%

Source: Verus

# Equity summary

	U.S. Large	U.S. Small	EAFE	EAFE Small	EM
Index	S&P 500	Russell 2000	MSCI EAFE Large	MSCI EAFE Small	MSCI EM
<b>Method</b>	Building Block Approach: current dividend yield + historical average real earnings growth + inflation on earnings + repricing + expected currency effect				
<b>Current Shiller P/E Ratio</b>	32.5	49.6	18.6	-	11.9
<b>Regular P/E Ratio</b>	22.5	56.9	19.9	25.3**	15.9
<b>2017 Shiller P/E Expansion</b>	16.1%	13.2%	28.3%	-	36.8%
<b>2017 Regular P/E Expansion</b>	7.7%	16.8%	-13.1%	-27.5%	3.2%
<b>Current Shiller P/E Percentile Rank</b>	90%	100%	36%	-	32%
<b>Current Regular P/E Percentile Rank</b>	85%	98%	58%	51%**	71%
<b>Average of P/E Methods' Percentile Rank</b>	87%	99%	47%	51%**	52%
<b>2017 Total Return</b>	21.8%	14.7%	25.0%	33.0%	37.3%
<b>Shiller PE History</b>	1982	1988	1982	Not Enough History	2005
<b>Long-Term Average Shiller P/E</b>	22.4	29.5	23.0	-	16.2
<b>Current Dividend Yield</b>	1.9%	1.2%	3.1%	2.2%	2.4%
<b>Long-Term Average Real Earnings Growth</b>	1.7%	2.6%	2.0%	2.1%	2.7%
<b>Inflation on Earnings</b>	2.1%	2.1%	1.5%*	1.5%*	2.1%
<b>Repricing Effect (Estimate)</b>	-1.3%	-1.5%	0.0%	0.0%	0.0%
<b>Implied Currency Effect*</b>	-	-	2.1%*	2.1%*	-
<b>Nominal Return</b>	4.5%	4.4%	8.6%	7.9%	7.3%
<b>Inflation Forecast</b>	2.1%	2.1%	2.1%	2.1%	2.1%
<b>Real Return</b>	2.4%	2.3%	6.5%	5.7%	5.1%

\*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)

\*\*Average trailing P/E from previous 12 months is used

NOTE: For all equities, we exclude data prior to 1972, which allows for a more appropriate comparison between data sets

# Private equity

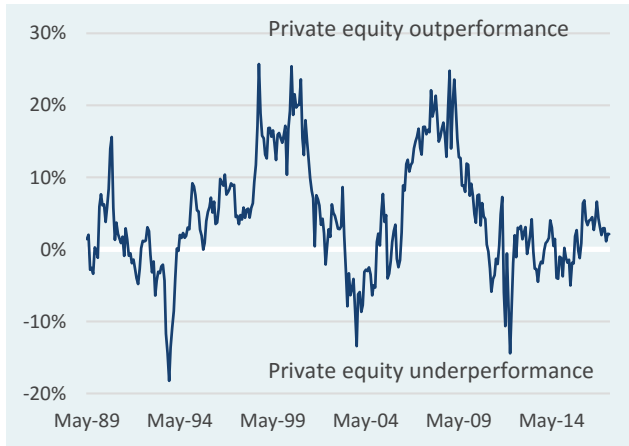
Private equity and public equity returns have been correlated historically because the underlying economic forces driving these asset class returns are quite similar. The return relationship between the two can vary in the short-term, but over the long-term investors have traditionally believed the return from private equity should carry a premium, driven by leverage, concentrated factor exposure (smaller and undervalued companies), skill, and possibly illiquidity.

Historically the beta of private equity relative to public equities has been high, though appraisal-based pricing and data lag effects make it

necessary to use more sophisticated approaches when estimating true beta. We use a beta assumption of 1.85 to U.S. large cap equities in our capital market forecast.

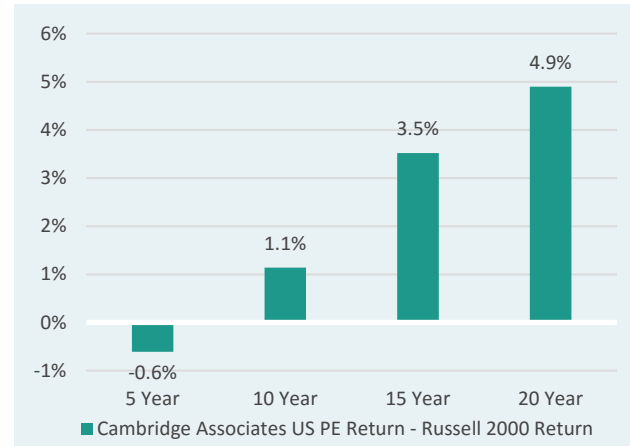
Private equity performance on average has been lackluster since the global financial crisis – on par with the returns of public equities and not rewarding investors for the greater risk and resources involved in implementing and maintaining a private equity program.

**ROLLING 3YR PRIVATE EQUITY EXCESS RETURN (PE – U.S. SMALL CAP)**



Source: Cambridge, Russell, as of 6/30/17

**PRIVATE EQUITY EXCESS RETURN**



Source: Cambridge, Russell, as of 6/30/17

**FORECAST**

	10-Year Forecast
U.S. Large Cap Forecast	+4.5%
1.85 beta multiplier	+1.9%
Nominal Return	+6.4%
Inflation Forecast	-2.1%
Real Return	+4.3%

Source: Verus



# Hedge funds

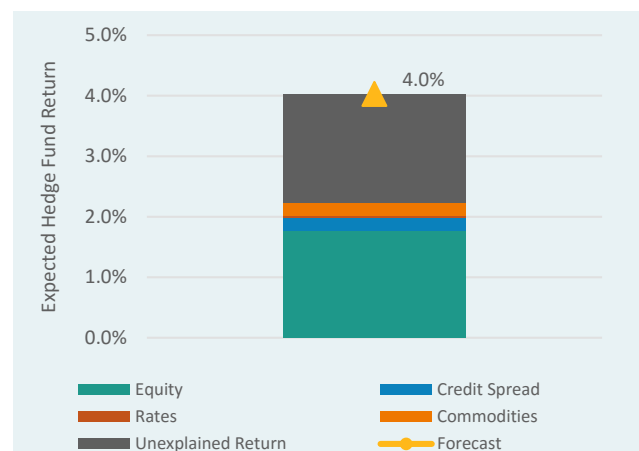
Hedge fund performance variation through time can be partly explained by public market betas (ex: equity, rates, credit, commodities) and partly explained by non-public sources of return (ex: alternative betas, skill, luck). Certain hedge fund strategies can be mostly explained by public market betas, while other types of hedge fund strategies are driven mostly by non-public sources of return.

To forecast hedge fund returns, we identified the portion of historical hedge fund performance that can be attributed to public market betas, and the portion of hedge fund returns that cannot be attributed to public market beta. This means our forecast has two components:

the public market return (explained return) and the non-public market return (unexplained return).

To forecast the public market beta portion of hedge funds, we take the historical sensitivity of hedge funds to equity, rates, credit, and commodities and pair these with our current 10 year public market forecasts for each asset class. To forecast the non-public market return portion of hedge funds (unexplained return) we simply assume the historical performance contribution of these sources will continue over the next 10 years.

## HEDGE FUND FORECAST



Source: Verus

## HEDGE FUND PUBLIC MARKET SOURCES OF RETURN (EXPLAINED RETURN)

Equity
Rates
Credit
Commodities

## HEDGE FUND NON-PUBLIC SOURCES OF RETURN (UNEXPLAINED RETURN)

Alternative betas
Skill
Luck

Source: Verus

Hedge fund category	Public market % of return	Non-public market % of return	10-year forecast
Hedge Funds (total)	2.2%	1.8%	4.0%
Equity Hedge	2.8%	1.4%	4.2%
Event-Driven	2.0%	2.5%	4.5%
Relative Value	1.4%	2.5%	3.9%
Macro	1.8%	1.5%	3.3%

Source: Verus

# Risk parity

Risk parity is built upon the philosophy of allocating to risk premia rather than to asset classes. Because risk parity by definition aims to diversify risk, the actual asset allocation can appear very different from traditional asset class allocation.

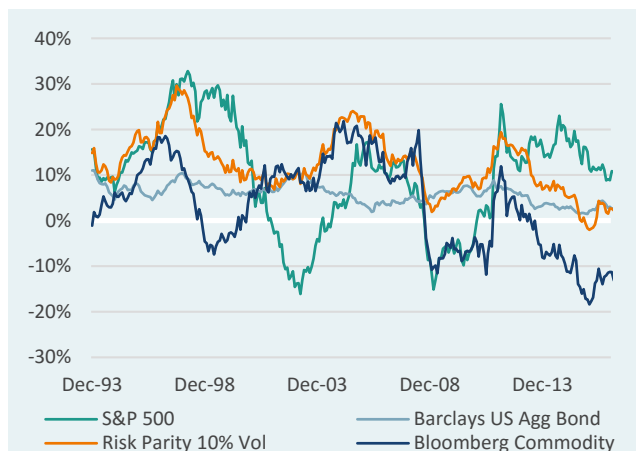
We model risk parity using an assumed Sharpe Ratio of 0.5, which considers the historical performance of risk parity. This assumed Sharpe Ratio is higher than other asset class forecasts, but is consistent with these forecasts because *portfolios* of assets tend to deliver materially higher Sharpe Ratios than individual assets.

The expected return of Risk Parity is determined by this Sharpe Ratio forecast, along with a 10% volatility assumption.

We used a 10-year historical return stream from a market-leading product to represent risk parity correlations relative to the behaviors of each asset class. Risk parity funds are suggested to be better able to withstand various difficult economic environments - reducing volatility without sacrificing return, over longer periods.

It is difficult to arrive at a single model for risk parity, since strategies can differ significantly across firms/strategies. Risk parity almost always requires explicit leverage. The amount of leverage will depend on the specific strategy implementation style, as well as expected correlations and volatility.

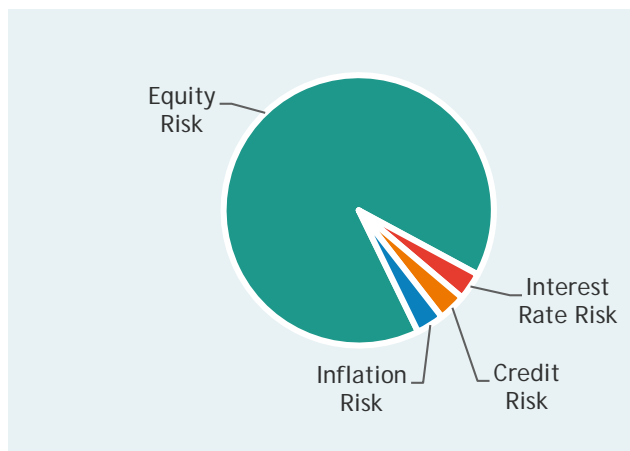
## VS. TRADITIONAL ASSET CLASSES



Source: MPI, as of 12/31/17

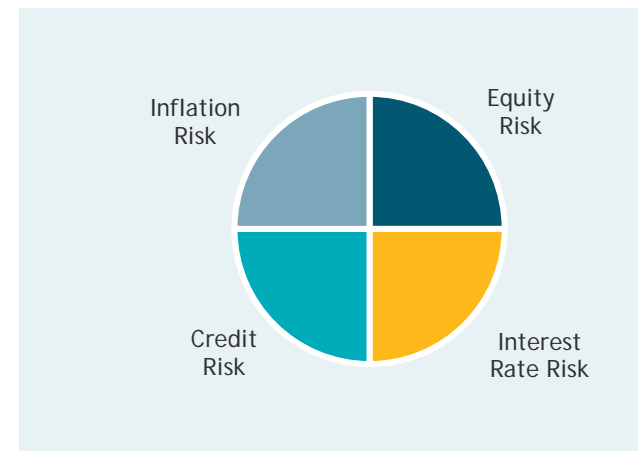
Note: Risk parity is modeled here using the AQR GRP-EL 10% Volatility fund. Performance is back tested prior to February 2015

## TRADITIONAL ASSET ALLOCATION



Source: Verus

## RISK PARITY



Source: Verus

# SamCERA Forecast

# SamCERA Risk/Return Forecast

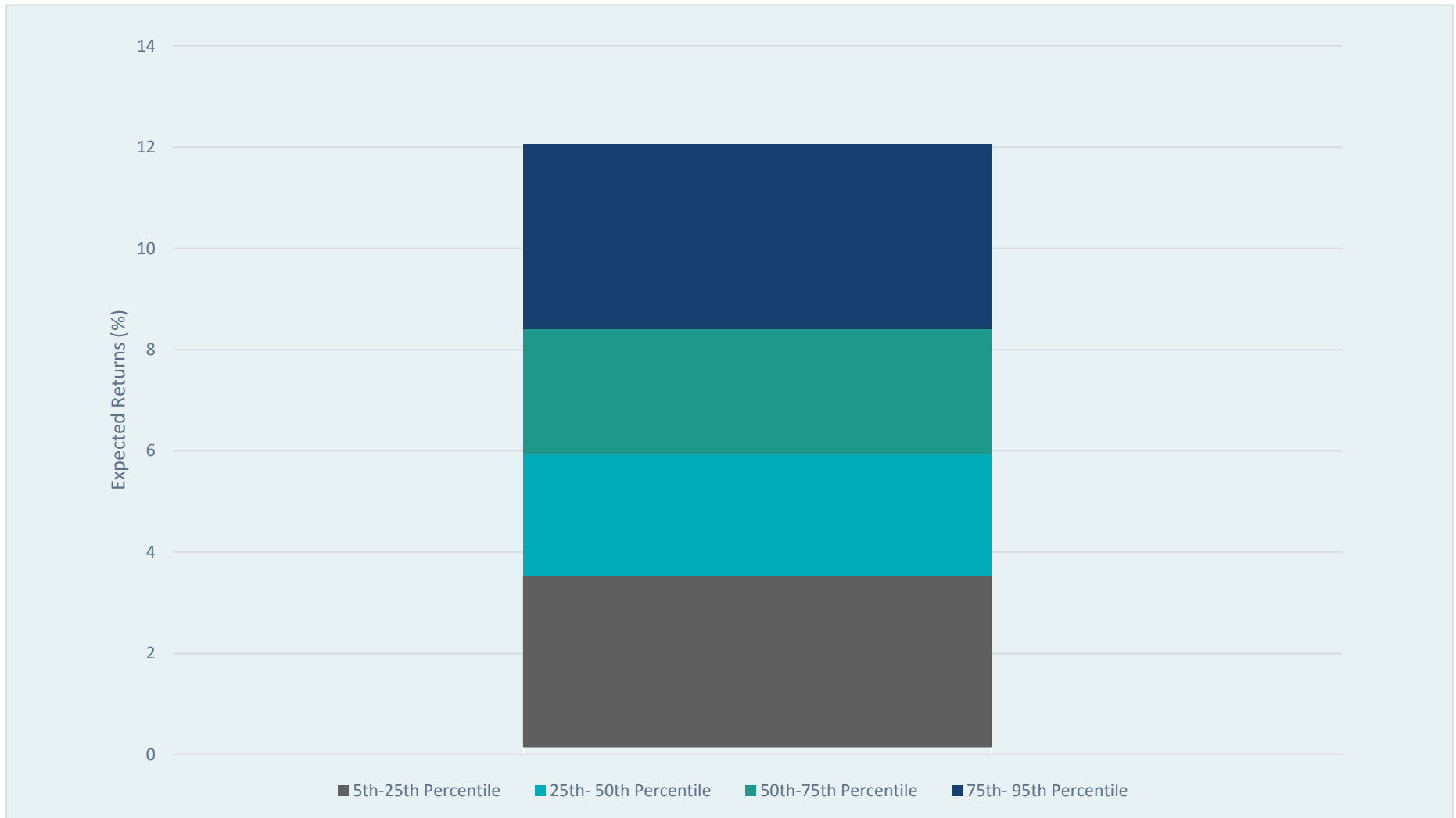
## CMA's (10 Yr)

	Policy	Return (g)	Standard Deviation	Sharpe Ratio
US Large	19.0	4.5	15.7	0.15
US Small	2.0	4.4	21.5	0.10
International Developed	15.0	8.6	18.1	0.35
Emerging Markets	4.0	7.3	26.6	0.19
Private Equity	7.0	6.4	25.8	0.16
High Yield Corp. Credit	7.0	3.7	11.6	0.13
<b>Total Growth</b>	<b>54.0</b>			
Core Fixed Income	14.0	2.9	6.4	0.11
Hedge Funds (FoF)	6.0	4.0	7.9	0.23
<b>Total Diversifying</b>	<b>20.0</b>			
Core Real Estate	8.0	6.0	12.7	0.30
Private Real Assets*	2.0	6.4	17.2	0.32
Liquid Real Assets*	6.0	6.4	17.2	0.32
US TIPS	2.0	2.6	5.5	0.07
<b>Total Inflation</b>	<b>18.0</b>			
Risk Parity	8.0	7.2	10.0	0.50
<b>Total Allocation</b>	<b>100.0</b>			

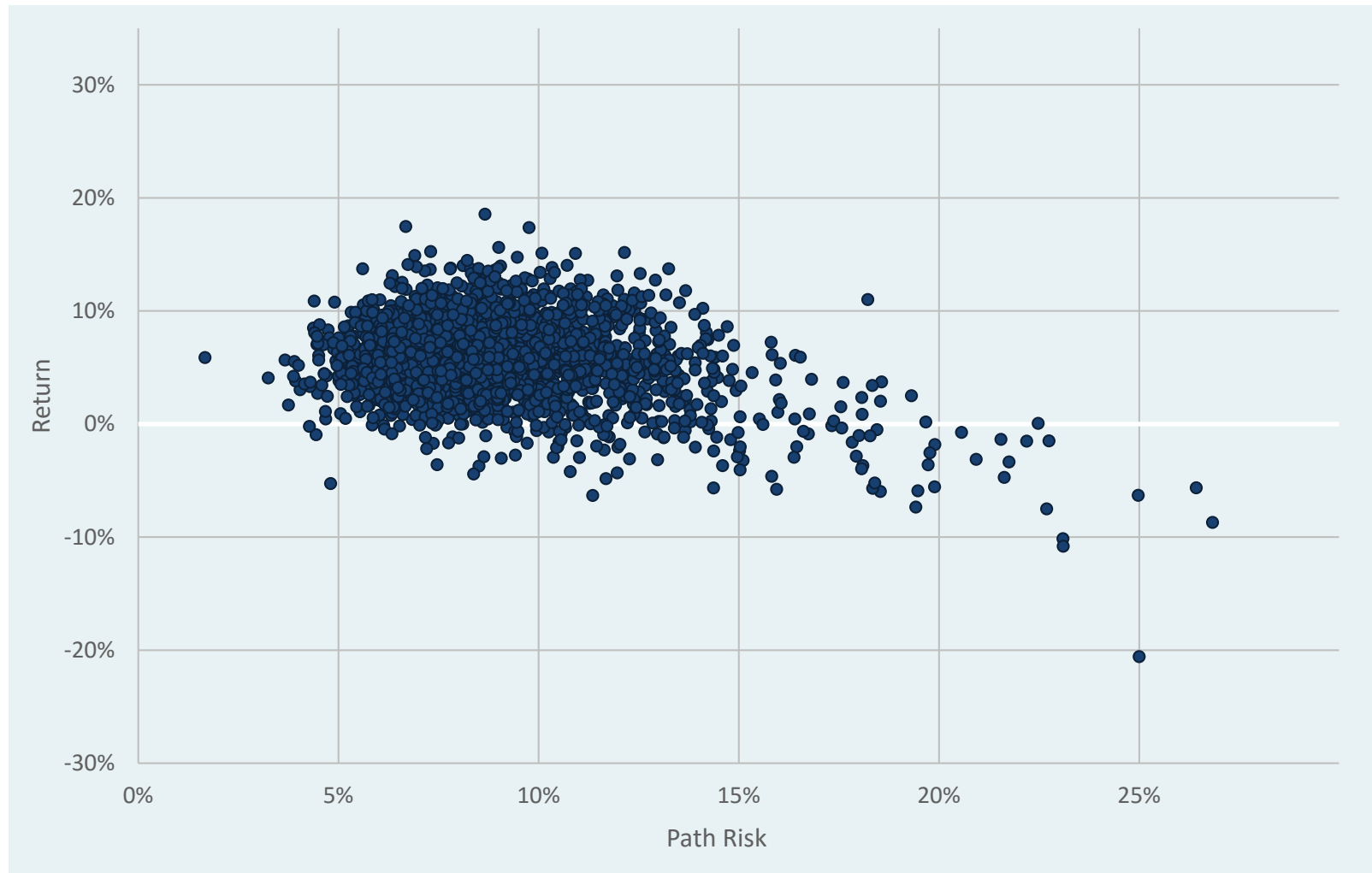
\*Real Assets Allocation modeled as Commodities and Infrastructure

	Policy	Policy using prior year CMAs
<b>Mean Variance Analysis</b>		
<b>Forecast 10 Year Return</b>	<b>6.0</b>	<b>6.6</b>
Standard Deviation	11.4	11.3
Return/Std. Deviation	0.5	0.58
1st percentile ret. 1 year	-20.9	-21.3
Sharpe Ratio	0.38	0.43

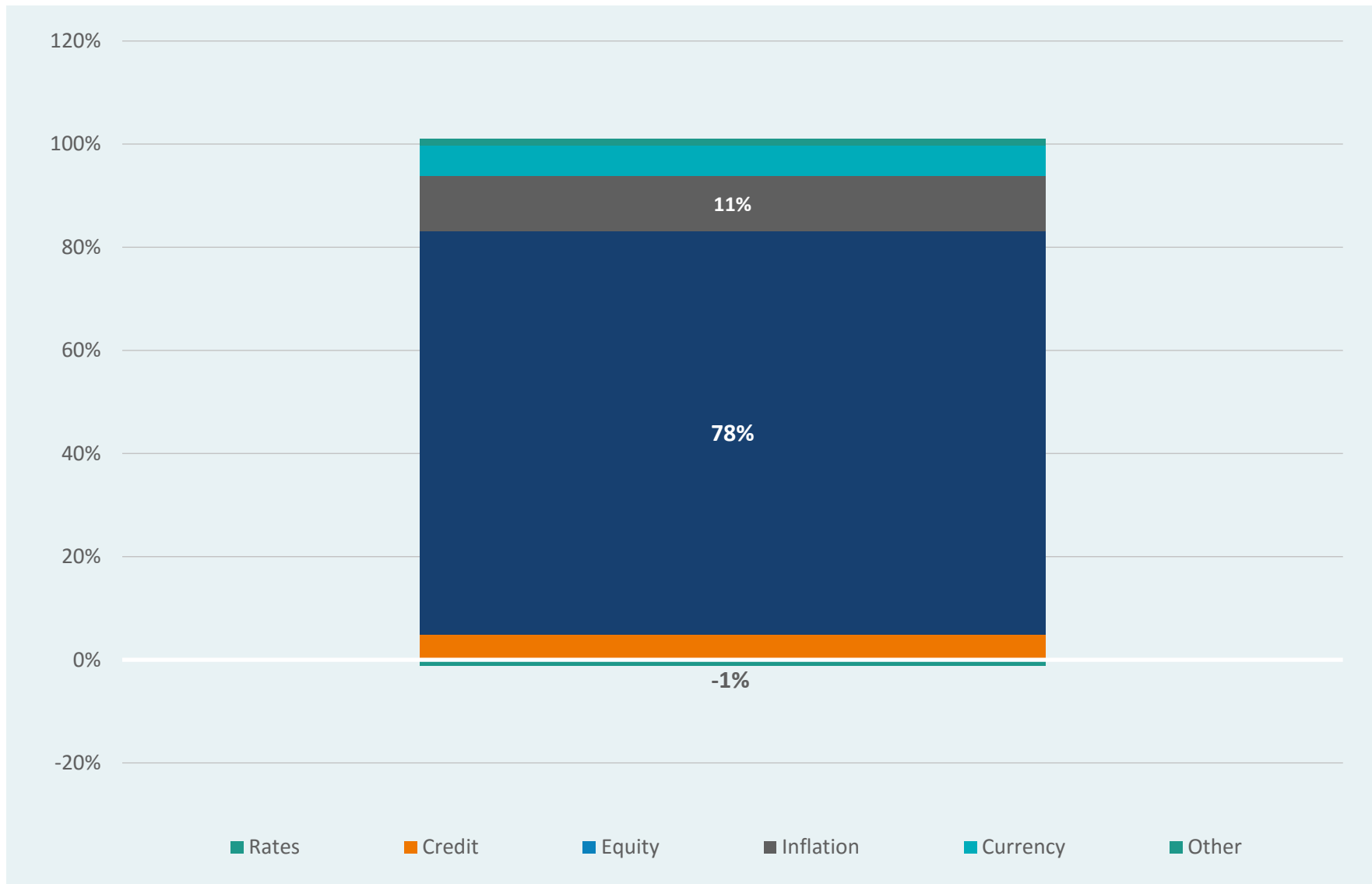
# Range of 10 year Expected Returns



# Monte Carlo



# Risk Decomposition



# Appendix



# Cash

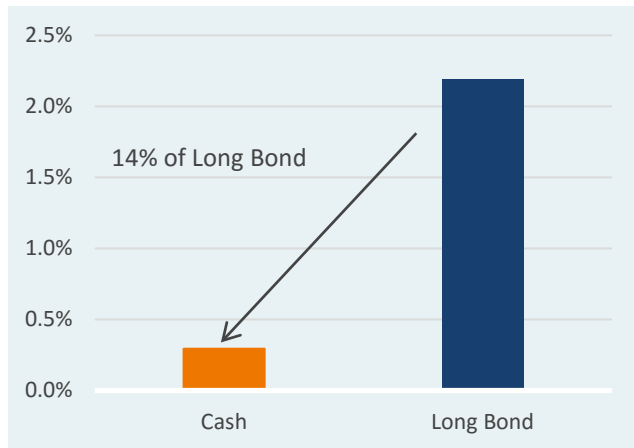
In 2017 the U.S. Treasury yield curve flattened materially, though it was still upward sloping, as inflation expectations remained steady and growth expectations increased. The Fed raised short term rates three times during the year and are forecasting three additional rate hikes in 2018.

Over rolling ten year time periods, the average historical real return to cash has been 14% of the real return to long-term bonds.

By applying this historical real return relationship, we arrive at a 4 bps expected real return to cash (14% of our 27 bps 10-year U.S. Treasury real return forecast).

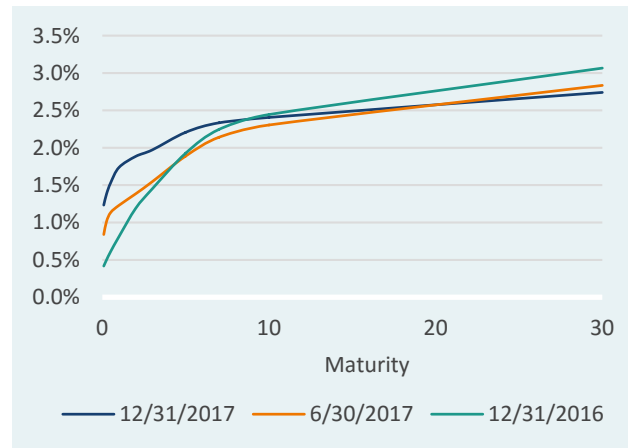
Adding our inflation forecast of 2.14% results in a nominal return to cash of 2.18%.

## AVERAGE REAL RETURN



Source: Bloomberg

## U.S. TREASURY CURVE



Source: Bloomberg, as of 12/31/17

## FORECAST

	10-Year Forecast
Cash	2.18%
Inflation Forecast	2.14%
Real Return	0.04%

Source: Verus, as of 12/31/17

# Rates

We forecast the return from rates based upon the current 10-year Treasury yield, with all cash flows reinvested at the current yield. Although there was some intra-period volatility, the 10-year yield was unchanged at 2.4% from the previous year.

U.S. Treasury yields remain high relative to other developed nations, specifically Japan and Germany. U.S. short-term yields rose steadily throughout the year, while long-term yields fell and then rebounded by year-end on increased economic growth expectations and tax reform developments.

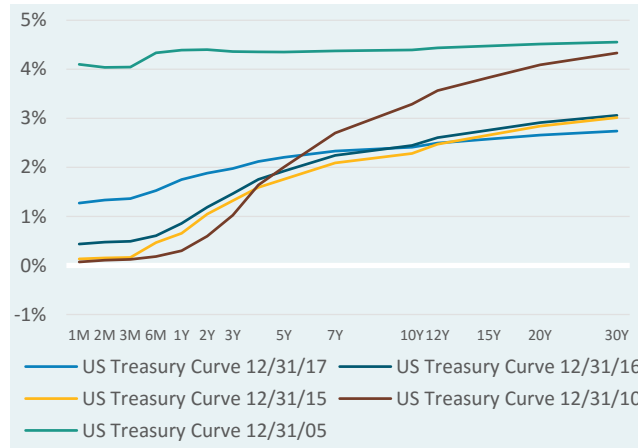
Central bank policies diverged across developed markets in 2017. The U.S. remained on its gradual path of tightening, while the U.K. and Canada raised rates for the first time in years. The European Union continued its stimulus program but at a slower pace and Japan maintained its negative short-term rates with the goal of higher spending and inflation.

**U.S. 10-YR TREASURY YIELD**



Source: Bloomberg, as of 12/31/17

**U.S. YIELD CURVE**



Source: Bloomberg, as of 12/31/17

**FORECAST**

	10-Year Forecast
U.S. 10-Year Treasury	2.41%
Inflation Forecast	-2.14%
Real Return	0.27%

Source: Verus, as of 12/31/17

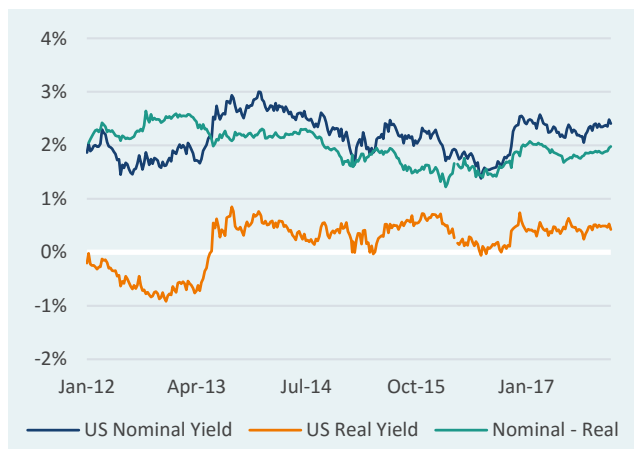
# Real rates

TIPS provide high sensitivity to duration (interest rate risk) over short periods and track inflation (CPI) fairly well over longer periods. Changing inflation expectations, demand for inflation protection, and rate movements contribute to price volatility of TIPS.

To arrive at a nominal 10-year forecast, we add the current real TIPS yield to our 10-year inflation forecast. Our real rates forecast fell modestly over the year from 0.5% to 0.4%.

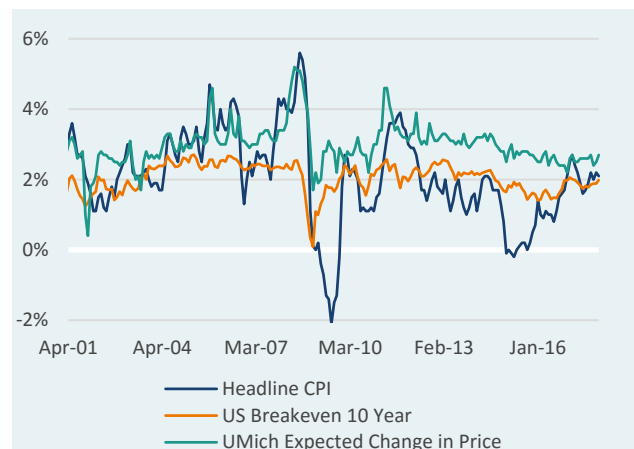
The U.S. 10-year real yield was rangebound in 2017, ending the year materially unchanged at 0.4%. Breakeven inflation expectations fell mid-year following a string of missed inflation prints, but rebounded to finish the year unchanged near 2.0%.

## NOMINAL YIELD VS. REAL



Source: Bloomberg, as of 12/31/17

## INFLATION EXPECTATIONS



Source: Bloomberg, as of 12/31/17

## FORECAST

	10-Year Forecast
U.S. 10-Year TIPS Real Yield	0.42%
Inflation Forecast	+2.14%
Nominal Return	2.56%

Source: Verus, as of 12/31/17

# Global equity

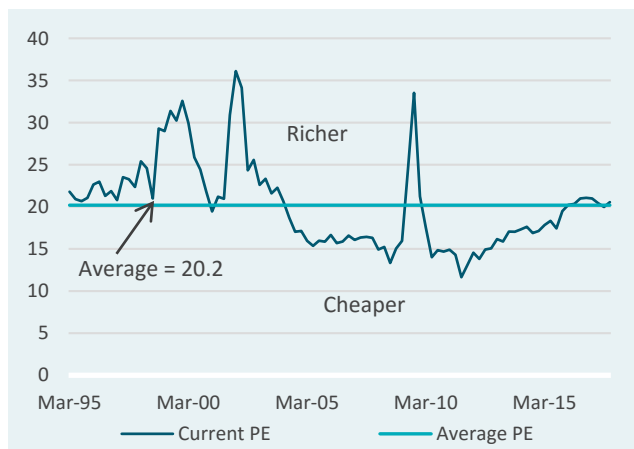
Global Equity is a combination of U.S. large, international developed, and emerging market equities. We can therefore combine our existing return forecasts for each of these asset classes to arrive at our global equity return forecast.

We use the MSCI ACWI Index as our benchmark for global equity and apply the country weights of this index to determine the weightings for our global equity return calculation. As with other equity asset classes, we use the historical standard deviation of the benchmark (MSCI ACWI Index) for our volatility forecast.

The valuation of global equities are driven by the richness/cheapness of the underlying markets, as indicated by the current price-to-earnings ratio.

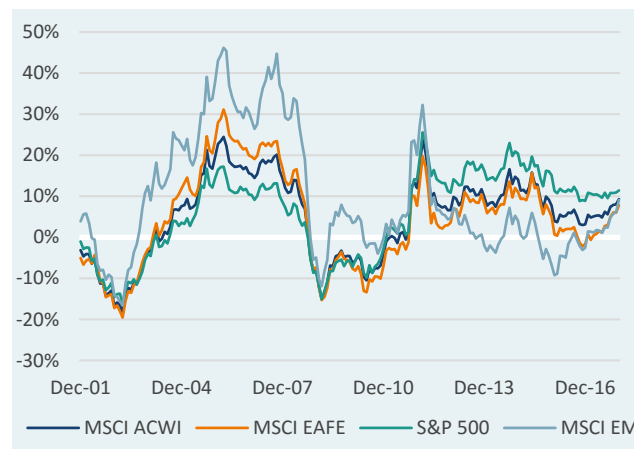
Our return building blocks produce a local return forecast for international equities. In order to create a useable forecast for U.S.-based investors, we adjust for implied currency movements in international developed equities based on forward currency pricing. Please reference pages 32 and 33 for a detailed explanation of this adjustment.

## GLOBAL EQUITY P/E RATIO HISTORY



Source: MSCI, as of 12/31/17

## MARKET PERFORMANCE (3-YR ROLLING)



Source: MSCI, Standard & Poor's, as of 12/31/17

## FORECAST

Market	Weight	CMA return	Weighted return
US Large	52.3%	4.5%	2.8%
Developed Large	32.7%	8.6%	2.4%
Emerging Markets	12.0%	7.3%	0.9%
Canada	3.0%	8.6%	0.3%
Global equity forecast			6.3%

Source: Verus, as of 12/31/17, may not sum due to rounding

# Private core real estate/REITS

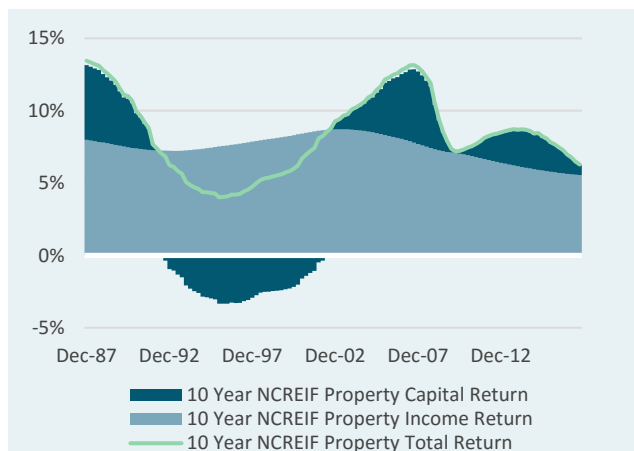
Performance of the NCREIF property index can be decomposed into an income return (cap rate) and capital return. The return coming from income has historically been more stable than the return derived from capital changes.

The cap rate is the ratio earnings less expenses to price, and does not include extraordinary expenses. A more accurate measure of the yield investors receive should include non-recurring capital expenditures; we assume a 2.0% capex expenditure. We also assume income growth will track inflation as inflation is passed through to rents.

Over the last ten years performance between private real estate and REITs is similar. Investors should be careful when comparing risk-adjusted returns of publicly traded assets to returns of appraisal priced assets. Private real estate and REITs provide an example of different volatility characteristics of public and private assets.

We assume the effects of leverage and liquidity offset each other, therefore our forecast for private real estate becomes our forecast for REITs.

## TRAILING 10YR NCREIF RETURN COMPOSITION



Source: NCREIF, as of 9/30/17

## PRIVATE REAL ESTATE

	Private Real Estate 10-Year Forecast
Current Cap Rate	+4.4%
Real Income Growth	+1.4%
Capex Assumption	-2.0%
Inflation	+2.1%
Nominal Return	6.0%
Inflation Forecast	-2.1%
Real Return	3.8%

Source: Verus, as of 12/31/17

## REITS

	10-Year Forecast
Nominal Return Forecast	6.0%
Inflation Forecast	-2.1%
Real Return	3.8%

Source: Verus, as of 12/31/17

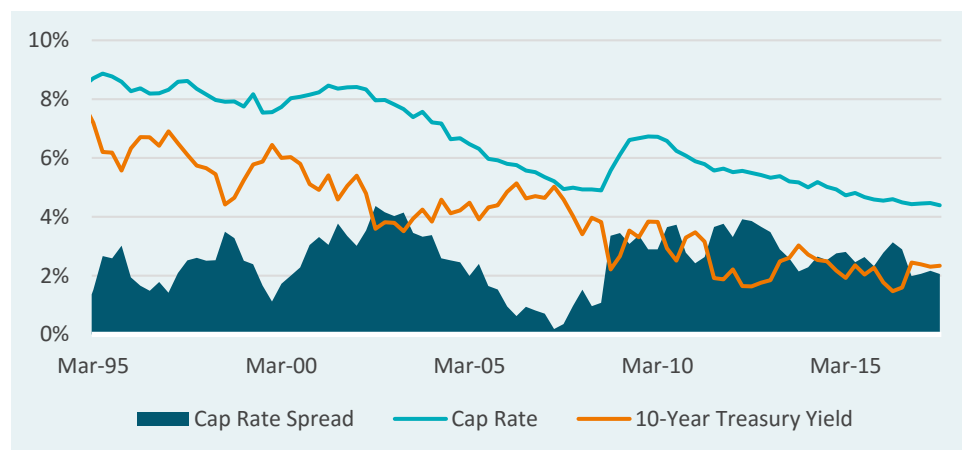
# Value-add & opportunistic real estate

Value-add real estate includes properties which are in need of renovation, repositioning, and/or lease-up. Properties may also be classified as value-add due to their lower quality and/or location. Opportunistic real estate can also include development and distressed or very complex transactions. Greater amounts of leverage are usually employed within these strategies. Leverage increases beta (risk) by expanding the purchasing power of property managers via a greater debt load, which magnifies gains or losses. Increased debt also results in greater interest rate sensitivity. An increase/decrease in interest rates may result in a write-up/write-down of fixed rate debt, since debt holdings are typically marked-to-market.

Performance of value-add real estate is composed of the underlying private real estate market returns, plus a premium for additional associated risk, which is modeled here as 200 bps above our core real estate return forecast. Performance of opportunistic real estate strategies rest further out on the risk spectrum, and are modeled as 400 bps above the core real estate return forecast.

Additional expected returns above core real estate are justified by the higher inherent risk of properties which need improvement (operational or physical), price discounts built into properties located in non-core markets, illiquidity, and the ability of real estate managers to potentially source attractive deals in this less-than-efficient marketplace.

## CAP RATE SPREADS



Source: NCREIF, Bloomberg, as of 9/30/17

	Value-Add 10-Year Forecast	Opportunistic 10-Year Forecast
Premium above core	+2.0%	+4.0%
Current Cap Rate	+4.4%	+4.4%
Real Income Growth	+1.4%	+1.4%
Capex Assumption	-2.0%	-2.0%
Inflation	+2.1%	+2.1%
Nominal Return	8.0%	10.0%
Inflation Forecast	-2.1%	-2.1%
Real Return	5.9%	7.9%

Source: Verus, as of 12/31/17

# Infrastructure

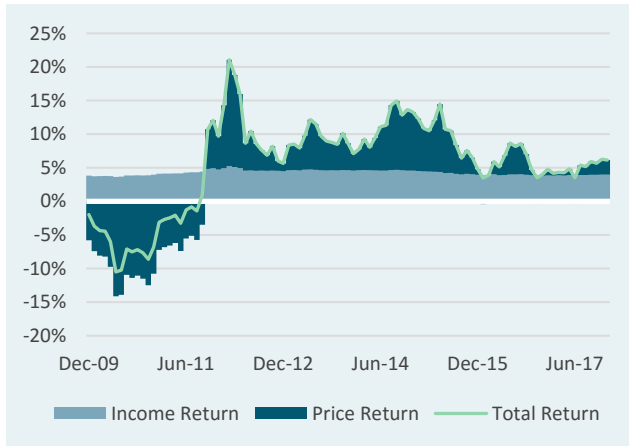
Infrastructure includes a variety of investment types across a subset of industries. There is not one definition for what can be included within infrastructure. The asset class has grown dramatically in the last 5-7 years as investors sought assets that might provide more attractive yield relative to fixed income along with the potential for inflation protection.

Similar to real estate investment, income plays a significant role in the returns investors receive. Income yields are currently lower than average due to higher prices and competition in the space, which

might reasonably be expected to translate to lower expected future returns.

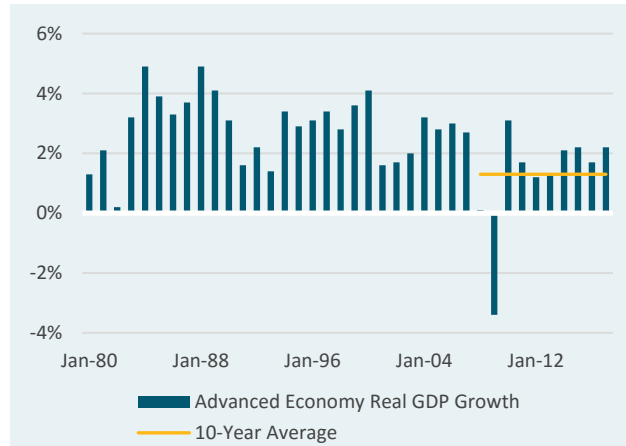
Due to the discount rate effect, infrastructure asset valuations would generally be negatively affected by material increases in interest rates. Because leverage is used in this space, higher interest rates would also impact investors in the form of higher borrowing costs.

## 5-YR ROLLING RETURN COMPOSITION



Source: S&P Global Infrastructure Index, as of 12/31/17

## ADVANCED ECONOMY REAL GDP GROWTH



Source: IMF, as of 10/31/17

## FORECAST

	10-Year Forecast
Inflation	1.9%
Yield	3.9%
Income Growth	1.3%
Nominal Return	7.1%
Intl. Inflation Forecast	-1.9%
Real Return	5.2%

Source: Verus, as of 12/31/17

# Commodities

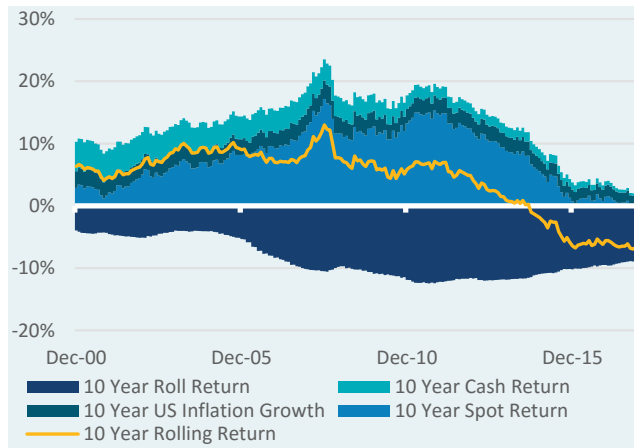
Commodity returns can be decomposed into four sources: collateral return (cash), spot changes, and roll yield.

Roll return is generated by either backwardation or contango present in futures markets. Backwardation occurs when the futures price is below the spot price, which results in positive yield. Contango occurs when the futures price is above the spot price, and this results in a loss to commodity investors. Historically, futures markets have fluctuated between backwardation and contango but with a zero net effect over the very long-term (since 1877). Therefore, roll return is assumed to

be zero in our forecast. Over the most recent 10-year period, roll return has been negative, though this is likely the result of multiple commodity crises and a difficult market environment.

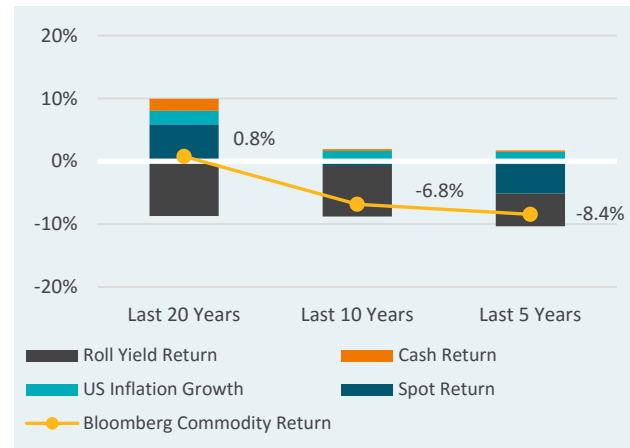
Our 10-year commodity forecast combines collateral (cash) return with spot return (inflation) to arrive at the nominal return, and subtracts out inflation to arrive at the real return.

**TRAILING 10YR BLOOMBERG COMMODITY RETURN COMPOSITION (%)**



Source: MPI, Bloomberg, as of 12/31/17

**BLOOMBERG COMMODITY RETURN COMPOSITION (%)**



Source: MPI, Bloomberg, as of 12/31/17

**FORECAST**

	10-Year Forecast
Collateral Return (Cash)	+2.15%
Roll Return	+0.00%
Inflation	+2.11%
Nominal Return	4.26%
Inflation Forecast	-2.11%
Real Return	2.15%

Source: Verus



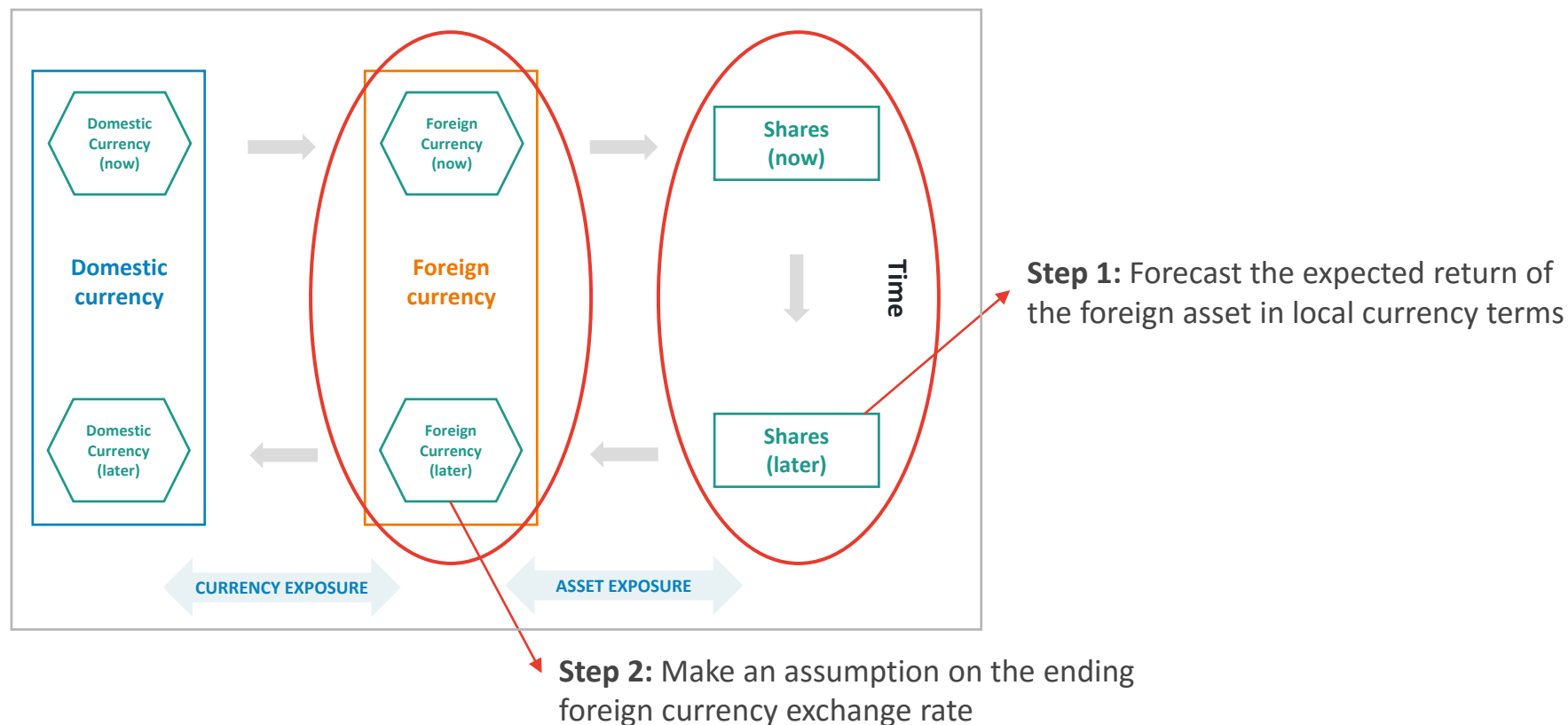
# Correlation assumptions

	Cash	US Large	US Small	Intl Large	Intl Large Hdg	Intl Small	Intl Small Hdg	EM	Global Equity	PE	US TIPS	US Treasury	Global Sovereign ex US	Global Sovereign ex US Hdg	US Core	US Core Plus	ST Govt/Credit	Short-Term Credit	Long-Term Credit	US HY	Bank Loans	Global Credit	Global Credit Hdg	EMD USD	EMD Local	Commodities	Hedge Funds	Real Estate	REITs	Infra-structure	Risk Parity	Currency Beta	Inflation			
Cash	1.0																																			
US Large	-0.3	1.0																																		
US Small	-0.2	0.9	1.0																																	
Intl Large	-0.3	0.9	0.8	1.0																																
Intl Large Hdg	-0.4	0.9	0.8	0.9	1.0																															
Intl Small	-0.3	0.9	0.8	1.0	0.9	1.0																														
Intl Small Hdg	-0.4	0.8	0.8	0.9	1.0	0.9	1.0																													
EM	-0.3	0.8	0.7	0.9	0.8	0.9	0.8	1.0																												
Global Equity	-0.3	1.0	0.9	1.0	0.9	0.9	0.9	0.9	1.0																											
PE	-0.2	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.7	1.0																										
US TIPS	0.0	0.2	0.1	0.3	0.1	0.3	0.2	0.4	0.3	0.1	1.0																									
US Treasury	0.1	-0.3	-0.3	-0.2	-0.3	-0.2	-0.3	-0.2	-0.2	-0.2	0.6	1.0																								
Global Sovereign ex US	0.1	0.3	0.1	0.4	0.1	0.4	0.1	0.4	0.4	0.0	0.6	0.5	1.0																							
Global Sovereign ex US Hdg	0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.1	0.4	0.8	0.4	1.0																						
US Core	0.0	0.0	-0.1	0.2	0.0	0.2	0.0	0.2	0.1	-0.1	0.8	0.9	0.6	0.7	1.0																					
US Core Plus	-0.2	0.4	0.3	0.5	0.4	0.5	0.4	0.5	0.5	0.1	0.7	0.5	0.5	0.4	0.8	1.0																				
ST Govt/Credit	0.3	-0.1	-0.1	0.1	-0.1	0.1	-0.1	0.1	0.0	-0.1	0.6	0.6	0.6	0.5	0.7	0.6	1.0																			
Short-Term Credit	-0.1	0.3	0.3	0.5	0.4	0.5	0.4	0.5	0.4	0.1	0.6	0.2	0.4	0.2	0.5	0.8	0.7	1.0																		
Long-Term Credit	-0.2	0.3	0.2	0.4	0.3	0.4	0.4	0.4	0.4	0.0	0.6	0.5	0.5	0.5	0.8	1.0	0.5	0.6	1.0																	
US HY	-0.3	0.7	0.7	0.8	0.7	0.8	0.8	0.8	0.4	0.5	-0.2	0.3	-0.2	0.2	0.6	0.2	0.6	0.5	1.0																	
Bank Loans	-0.4	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.4	0.3	-0.4	0.0	-0.3	0.0	0.4	-0.1	0.5	0.3	0.9	1.0															
Global Credit	-0.2	0.6	0.5	0.8	0.6	0.8	0.6	0.8	0.7	0.2	0.7	0.2	0.7	0.2	0.6	0.8	0.5	0.7	0.8	0.8	0.5	1.0														
Global Credit Hdg	-0.2	0.5	0.4	0.6	0.6	0.6	0.6	0.7	0.6	0.2	0.7	0.3	0.5	0.4	0.7	1.0	0.5	0.8	0.9	0.8	0.6	0.9	1.0													
EMD USD	-0.2	0.6	0.5	0.7	0.6	0.7	0.6	0.7	0.7	0.3	0.7	0.3	0.5	0.2	0.6	0.8	0.4	0.7	0.7	0.8	0.6	0.9	0.9	1.0												
EMD Local	0.0	0.6	0.6	0.7	0.6	0.7	0.6	0.8	0.7	0.3	0.6	0.2	0.7	0.1	0.5	0.6	0.4	0.5	0.6	0.7	0.4	0.8	0.7	0.8	1.0											
Commodities	-0.1	0.5	0.4	0.6	0.4	0.6	0.4	0.7	0.6	0.3	0.4	-0.2	0.4	-0.3	0.1	0.3	0.2	0.4	0.2	0.5	0.5	0.6	0.4	0.5	0.6	1.0										
Hedge Funds	-0.4	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.5	0.3	-0.3	0.1	-0.2	0.0	0.4	-0.1	0.5	0.3	0.7	0.7	0.6	0.5	0.5	0.6	1.0										
Real Estate	-0.1	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.1	-0.1	0.1	0.0	0.0	0.2	0.0	0.1	0.1	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.4	1.0								
REITs	-0.1	0.7	0.7	0.7	0.6	0.7	0.6	0.6	0.7	0.4	0.3	0.0	0.4	0.1	0.3	0.5	0.1	0.3	0.4	0.7	0.5	0.6	0.6	0.6	0.6	0.3	0.4	0.6	1.0							
Infrastructure	-0.3	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.2	0.4	-0.1	0.5	-0.1	0.2	0.5	0.1	0.5	0.5	0.7	0.5	0.8	0.7	0.7	0.7	0.6	0.6	0.1	0.6	1.0						
Risk Parity	-0.1	0.5	0.4	0.6	0.4	0.6	0.5	0.6	0.6	0.3	0.7	0.3	0.6	0.3	0.6	0.7	0.5	0.6	0.6	0.6	0.3	0.8	0.7	0.7	0.7	0.6	0.5	-0.1	0.5	0.7	1.0					
Currency Beta	-0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.2	-0.2	-0.2	-0.1	0.0	-0.1	-0.1	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-0.1	0.0	0.1	0.0	0.0	1.0			
Inflation	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.1	-0.3	0.0	-0.3	-0.2	-0.1	-0.2	0.0	-0.2	0.3	0.4	0.1	0.0	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.1	-0.1	1.0		

Note: Correlation assumptions are based on the last ten years. Private Equity and Real Estate correlations are especially difficult to model – we have therefore used BarraOne correlation data to strengthen these correlation estimates.

# Explanation of the currency adjustment

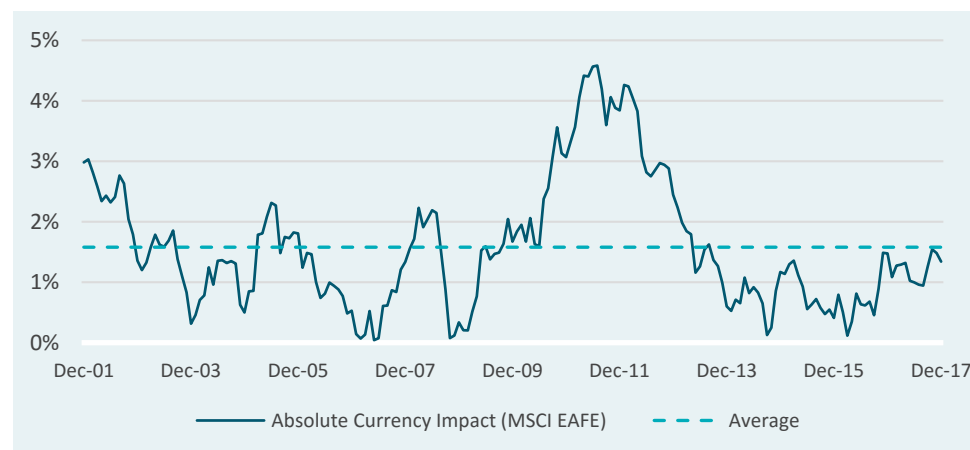
Our fundamental building block approach produces a return forecast in local currency. In order to create useable forecasts for non-U.S. dollar-denominated assets, we must make an assumption about future foreign exchange rates.



# Explanation of the currency adjustment

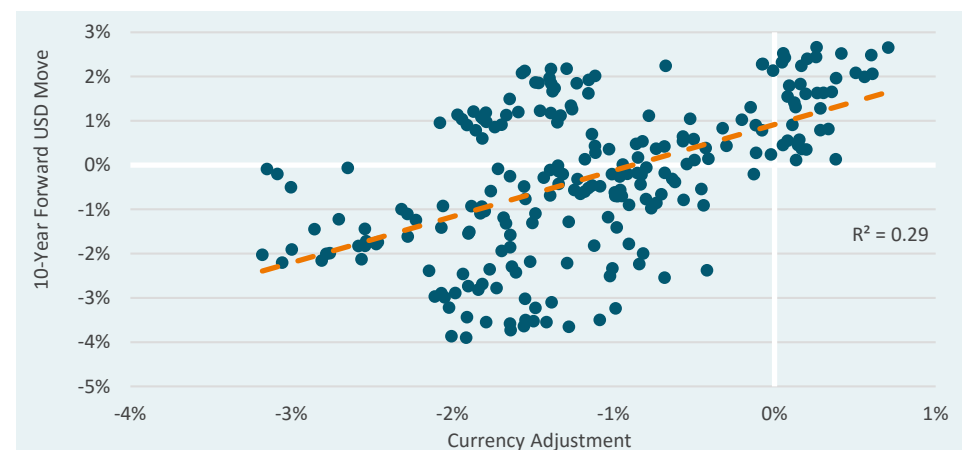
- There are two options to adjust a local currency return forecast to a U.S. dollar forecast: make a specific exchange rate forecast or take market pricing based on the forward curve
  - It is important to note that ignoring currency is making a specific assumption that the current exchange rate will be unchanged over the next 10 years, which has rarely been the case throughout history
- Markets price future exchange rates in the forward market, which represents the SPOT currency price for FORWARD delivery
- Forward currency contracts are priced based on the interest rate differential between two currencies – interest rate differentials reflect a significant amount of information, including growth, inflation, and monetary policy expectations
- A currency with a higher interest rate is priced to depreciate relative to a currency with a lower interest rate
- We adjust our local currency return forecasts based on forward market pricing because we believe this is the neutral, “no opinion” position, rather than making a specific forecast
- Historically, this currency adjustment has had a positive relationship with 10-year forward exchange rate movements

## 10-YEAR ROLLING ABSOLUTE CURRENCY IMPACT



Source: Verus, MSCI, as of 12/31/17

## CURRENCY ADJUSTMENT VS. FORWARD USD MOVEMENT



Source: Verus, Bloomberg, using data since 1989, based on the MSCI EAFE Index

# Domestic vs. international equities

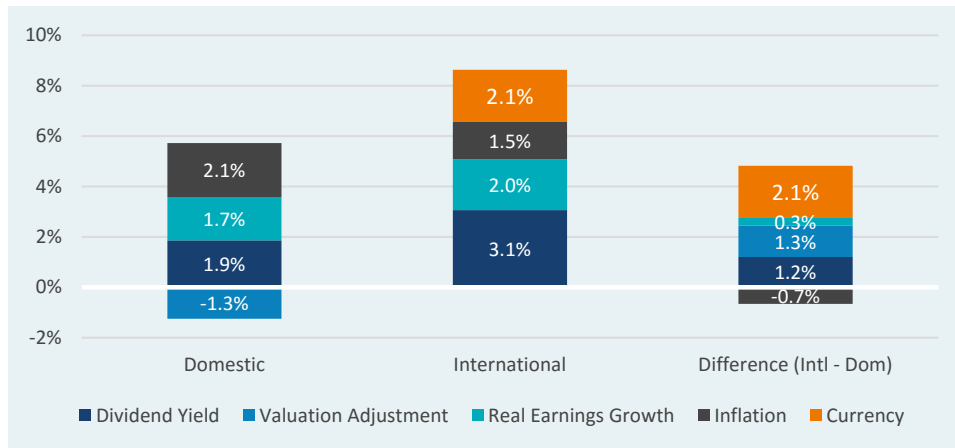
In recent years, the gap between our U.S. large cap and international large cap equity forecasts has widened – 2018 expected returns are 4.5% and 8.6%, respectively. Half of this gap is caused by differences in market fundamentals, while the other half is a result of the currency adjustment (see the previous pages for a detailed explanation of this adjustment).

This gap is fundamental and has been driven primarily by valuation differences. In the U.S., valuations are elevated based on both the Shiller and trailing 12-month P/E ratio, which results in a 1.25% deduction from return expectations since high valuations have

historically been followed by some mean reversion over the longer-term, on average. In international equities, valuations are within a normal range relative to history, implying no valuation movement. Higher valuations reduce our expectations for U.S. equities in two ways – a lower current dividend yield (1.9% vs. 3.1%) and expectations for some mean reversion (lower future valuation levels).

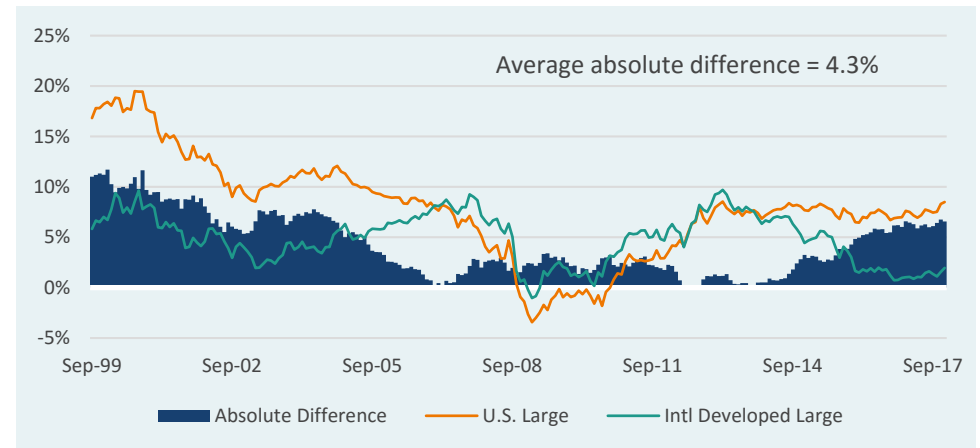
Surprisingly, it is not unusual for U.S. and international equities to exhibit large differences in performance, even over longer periods. Since 1989, the average absolute difference between S&P 500 and MSCI EAFE 10-year returns has been 4.3%.

## DOMESTIC VS. INTERNATIONAL RETURN FORECASTS



Source: Verus, as of 12/31/17

## 10-YEAR TRAILING RETURNS



Source: MSCI, S&P, as of 12/31/17

# Autocorrelation adjustment

- We adjust all volatility forecasts that use the long-term historical volatility for autocorrelation.
- Autocorrelation occurs when the future returns of a time series are described (positively correlated) by past returns.
- Time series with positive autocorrelation exhibit artificially low volatility, while time series with negative autocorrelation exhibit artificially high volatility.
- Many asset classes that we tested showed positive autocorrelation, meaning the volatility forecasts that we use in the forecasting process are too low for those asset classes.
- The result of this process was that several asset classes have higher volatility forecasts than if we had made no adjustment for autocorrelation.

Russell 2000 autocorrelation, among many asset classes, is statistically significant

# Notices & disclosures

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SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
Board of Retirement

March 27, 2018

Agenda Item 7.1

**TO:** Board of Retirement   
**FROM:** Scott Hood, Chief Executive Officer  
**SUBJECT:** Educational Presentation on Strategic Planning

**Recommendation**

Receive an educational presentation on Strategic Planning.

**Background**

SamCERA has retained Cortex Applied Research to design and facilitate two sessions for the Board on Strategic Planning. The first will be an educational session and the second will be a workshop. These events will lay the groundwork for the Board to take a long-term and strategic approach to its strategic planning efforts. In addition, they will provide an opportunity for an in-depth strategic discussions between the Board and Management regarding the future direction of SamCERA.

**Discussion**

At today's meeting, Tom Iannucci, President of Cortex Applied Research, will provide an educational session on Strategic Planning which will set the stage for a Strategic Planning Workshop scheduled for the April Board/Staff retreat in April. He will provide an overview of strategic planning in general with a focus on public retirement systems and will confirm the specific planning process to be used by SamCERA. His presentation will generally cover:

- Traditional strategic planning approaches for private sector and charitable organizations
- Strategic planning for public retirement systems
- Practical examples and discussion of how public funds can engage in strategic thinking for aspects of their businesses



SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
Board of Retirement

March 27, 2018

Agenda Item 7.2

**TO:** Board of Retirement  
**FROM:** Scott Hood, Chief Executive Officer  
**SUBJECT:** 2018 Board-Staff Retreat Topics



**Recommendation**

Provide direction to staff regarding the topics and schedule for the April 2018 Board-Staff Retreat.

**Background**

This item will give the Board its final opportunity to discuss the upcoming retreat in April. Following this meeting, staff will finalize scheduling the presenters.

**Discussion**

Attached is a proposed schedule which reflects input from the Board over the last few meetings. This version condenses the retreat to one day and starts with a shortened regular Board meeting. In addition, to our kick-off speaker, Sonal Desai, PhD, from Franklin Templeton, and other investment related topics, Tom Iannucci, from Cortex Applied Research, along with staff, will conduct a "Strategic Planning Workshop." At the Workshop, we'll discuss the results of a trustee survey of strategic priorities and any further input from the Board. The results from the Workshop will provide direction for staff's preparation of a draft strategic plan for the Board's future discussion.

The 2018 SamCERA Board-Staff Retreat is scheduled along the same lines as prior years:

Days: One day  
Timing: Leaves time in the presentations for discussion  
Location: SamCERA Boardroom  
Speakers: Outside professionals as well as SamCERA's consultants and staff  
Regular Business: The Board's regular monthly business will be the first scheduled event in the morning  
Date: **Tuesday, April 24**  
Start Time: **8:30 a.m.**

**Attachment**

Draft 2018 Board-Staff Retreat Agenda



*Agenda & Presenters*

# Board / Staff Retreat

April 24, 2018



San Mateo County Employees'  
Retirement Association


**BOARD / STAFF RETREAT AGENDA**  
**Tuesday, April 24, 2018**

<u>TIME</u>	<u>TOPIC AND PRESENTER</u>
<b>8:00 a.m.</b>	<b>Coffee and Refreshments</b>
<b>8:30 a.m.</b>	<b>Beginning of Regular Board Meeting Agenda</b>
<b>9:00 a.m.</b>	<b>High level look at the Global Economy</b> Presenter: Sonal Desai, PH.D., Senior Vice President, Portfolio Manager Director of Research Templeton Global Macro Franklin Advisers, Inc.
<b>10:00 a.m.</b>	<b>Break</b>
<b>10:15 a.m.</b>	<b>Deep Dive</b> Led by Mike Coultrip. Assess longer-term drivers of fund returns and risks. Investigate longer-term manager performance and other characteristics vs indexes and peer groups. Review Risk Dashboard. Presenters: Michael Coultrip, SamCERA Chief Investment Officer and Margaret Jadallah, Managing Director, Verus
<b>11:30 a.m.</b>	<b>Lunch</b>
<b>12:00 p.m.</b>	<b>Portfolio Risk and Discussion</b> Presenter: Jeff MacLean, CEO, Verus
<b>1:00 p.m.</b>	<b>Break</b>
<b>1:15 p.m.</b>	<b>Strategic Planning Workshop</b> Presenter: Scott Hood, SamCERA and Tom Iannucci, President, Cortex Applied Research
<b>2:30 p.m.</b>	<b>End of Retreat</b>

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

March 27, 2018

Agenda Item 7.3

**TO:** Board of Retirement   
**FROM:** Scott Hood, Chief Executive Officer  
**SUBJECT:** Approval of SACRS Voting Delegate and Alternates for the SACRS Spring 2018 Business Meeting and direction to Voting Delegate.

**Staff Recommendation**

Staff recommends the Board designate Sandie Arnott as the Voting Delegate, Alma Salas as the First Delegate Alternate and Scott Hood, CEO, as the Second Delegate Alternate to cast SamCERA's votes at the SACRS Spring 2018 Conference.

Staff further recommends that the Board provide direction to the Voting Delegate that is in the best interest of SamCERA.

**Background**

Prior to each SACRS conference, each of the county Retirement Boards are asked to select the individuals from its system who are authorized to serve as voting delegate and alternate voting delegates at the conference business meeting.

**Discussion**

SamCERA normally selects the highest-ranking Board officer who will attend the conference as the voting delegate. Delegates can be either trustees or staff. We typically recommend the CEO be the final alternate.

At the time of Board packet mailing, neither the SACRS recommended slate of candidates for SACRS Board of Directors nor the SACRS business meeting items were available. It is anticipated that this material will be received by the time of the Board meeting. The Board will have the opportunity to discuss the recommended slate of candidates and the business meeting topics and provide direction to the Voting Delegate.

The business meeting will occur on the last morning of the conference, at 10:00 a.m., Friday, May 18, 2018.

SAN MATEO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
Board of Retirement

March 27, 2018

Agenda Item 7.4

**TO:** Board of Retirement  
**FROM:** Scott Hood, Chief Executive Officer  
**SUBJECT:** Ethics Training



**Recommendation**

Receive an educational presentation covering the statutorily mandated topics for Ethics Training.

**Background**

By statute and Board policy, every two years each Board member must receive two hours of Ethics Training that covers specific topics.

**Discussion**

The Board satisfies its Ethics Training by receiving one hour of training every year. Usually, the training is given at the annual Board Retreat in April, but this year due to the shortened retreat schedule, we have moved the training to today's meeting. Brenda Carlson, SamCERA Chief Legal Counsel, will provide the training.