

AGENDA

A REGULAR MEETING OF THE BOARD OF INVESTMENTS
LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION
300 N. LAKE AVENUE, SUITE 810, PASADENA, CALIFORNIA 91101

9:00 A.M., WEDNESDAY, SEPTEMBER 12, 2018

*The Board may take action on any item on the agenda,
and agenda items may be taken out of order.*

I. CALL TO ORDER

II. PLEDGE OF ALLEGIANCE

III. APPROVAL OF MINUTES

A. Approval of the Minutes of the Regular Meeting of August 8, 2018

IV. PUBLIC COMMENT

V. INTERIM CHIEF EXECUTIVE OFFICER'S REPORT
(Memo dated August 31, 2018)

VI. CHIEF INVESTMENT OFFICER'S REPORT
(Memo dated August 30, 2018)

VII. CONSENT ITEMS

A. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the approve attendance of Board members at the Association for Asian American Investment Managers' National Conference on September 19 –20, 2018 in Los Angeles, California and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy.
(Placed on the agenda at the request of Mr. Santos)
(Memo dated September 4, 2018)

VII. CONSENT ITEMS (Continued)

- B. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve attendance of Board members at the AVCJ's 31st Annual Private Equity & Venture Forum on November 13–15, 2018 in Hong Kong, China and ChrysCapital Annual Investor Conference on November 15–16, 2018 Hong Kong, China and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy. (Placed on the agenda at the request of Mr. Green) (Memo dated August 31, 2018)

- C. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve attendance of Board members at The Harvard Business School – Executive Education: Women on Boards: Succeeding as a Corporate Director on November 26 – 30, 2018 in Boston, Massachusetts, and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy. (Placed on the agenda at the request of Mrs. Sanchez) (Memo dated September 4, 2018)

- D. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve attendance of Board members at the 2018 Crypto Invest Summit on October 22 – 24, 2018 in Los Angeles, California and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy. (Placed on the agenda at the request of Mr. Kehoe) (Memo dated September 4, 2018)

VIII. NON-CONSENT ITEMS

- A. Recommendation as submitted by John Grabel, Chief Investment Officer: That the Board approve Meketa's benchmarks for LACERA Pension Trust's New Asset Allocation. (Memo dated August 28, 2018)

- B. Recommendation as submitted by John McClelland, Principal Investment Officer: That the Board adopt the proposed Manager-Specific return objectives. (Memo dated August 23, 2018)

IX. REPORTS

- A. Draft Investment Policy Statement
Jude Perez, Principal Investment Officer
(Memo dated August 31, 2018)
- B. Fund Performance Review as of June 30, 2018
Meketa Performance Report as of June 30, 2018
Leandro Festino, Managing Principal
Timothy Filla, Managing Principal
- C. State Street Update
Andrew Erickson, Executive Vice President
- D. Secured Oversight Financing Rate
Adam Cheng, Senior Investment Analyst
(For Information Only) (Memo dated August 23, 2018)
- E. OPEB Master Trust
Jude Perez, Principal Investment Officer
(For Information Only) (Memo Dated August 6, 2018)
- F. Implementation Update on LACERA Pension Trust Strategic Asset Allocation
Jonathan Grabel, Chief Investment Officer
(For Information Only) (Memo dated August 30, 2018)
- G. Hedge Fund Performance Report – 2018 Second Quarter
James Rice, Principal Investment Officer
(For Information Only) (Memo dated August 30, 2018)
- H. CEO Search Update
CEO Search Ad-Hoc Committee and Korn Ferry
(For Information Only) (Memo dated September 5, 2018)
- I. Monthly Status Report on Board of Investments Legal Projects
Steven P. Rice, Chief Counsel
(For Information Only) (Memo dated August 31, 2018)
- J. August 2018 Fiduciary Counsel Contact and Billing Report
Steven P. Rice, Chief Counsel
(Memo dated September 4, 2018) (Privileged and Confidential)
(Attorney-Client Communication/Attorney Work Product)

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X. REPORT ON STAFF ACTION ITEMS

XI. GOOD OF THE ORDER
(For information purposes only)

XII. EXECUTIVE SESSION

A. Conference with Staff and Legal Counsel to Consider the Purchase or Sale of Particular, Specific Pension Fund Investments
(Pursuant to California Government Code Section 54956.81)

1. PIMCO TACTICAL OPPORTUNITIES ONSHORE FUND, L.P.
2. RIVERSIDE MICRO-CAP FUND V, L.P.
3. TRITON FUND V, L.P.
4. TPG REAL ESTATE PARTNERS III
5. Other Managers/Assets: 11
6. GGV DISCOVERY II L.P., GGV CAPITAL VII L.P., AND GGV CAPITAL VII PLUS L.P. (For Information Only)
7. HELLMAN & FRIEDMAN CAPITAL PARTNERS IX, L.P. (For Information Only)

B. Conference with Legal Counsel - Anticipated Litigation Initiation of Litigation (Pursuant to Paragraph (4) of Subdivision (d) of California Government Code Section 54956.9)

Number of Potential Cases: One

XIII. ADJOURNMENT

Documents subject to public disclosure that relate to an agenda item for an open session of the Board of Investments that are distributed to members of the Board of Investments less than 72 hours prior to the meeting will be available for public inspection at the time they are distributed to a majority of the Board of Investments Members at LACERA's offices at 300 N. Lake Avenue, Suite 820, Pasadena, CA 91101, during normal business hours of 9:00 a.m. to 5:00 p.m. Monday through Friday.

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MINUTES OF THE REGULAR MEETING OF THE BOARD OF INVESTMENTS

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

300 N. LAKE AVENUE, SUITE 810, PASADENA, CALIFORNIA 91101

9:00 A.M., WEDNESDAY, AUGUST 8, 2018

*The Board may take action on any item on the agenda,
and agenda items may be taken out of order.*

PRESENT: David Green, Chair

Shawn Kehoe, Vice Chair

Wayne Moore, Secretary

Joseph Kelly

David Muir

Ronald Okum

Gina V. Sanchez

Herman B. Santos

Michael Schneider

STAFF ADVISORS AND PARTICIPANTS

Robert Hill, Interim Chief Executive Officer

Jonathan Grabel, Chief Investment Officer

Steven P. Rice, Chief Counsel

Christine Roseland, Senior Staff Counsel

Christopher Wagner, Principal Investment Officer

Ted Wright, Principal Investment Officer

STAFF ADVISORS AND PARTICIPANTS (Continued)

Vache Mahseredjian, Principal Investment Officer

John McClelland, Principal Investment Officer

James Rice, Senior Investment Officer

Amit Aggarwal, Investment Officer

Shelly P. Tilaye, Senior Investment Analyst

Adam Cheng, Senior Investment Analyst

Reed Smith, LLP
Harvey L. Leiderman

Meketa Investment Group
Stephen McCourt, Managing Principal
Timothy Filla, Managing Principal

StepStone Group LP
Jose Fernandez, Partner

The Townsend Group
Micolyn Magee, Principal

Matarin Capital Management
Valerie Malter, Co-founder, Managing Principal
Nili Gilbert, Co-founder, Portfolio Manager

CornerCap Investment Counsel
J. Cannon Carr, Jr., Chief Investment Officer
Jeff P. Moeller, Director of Research

Global Alpha Capital Management
Robert Beauregard, Chief Investment Officer & Portfolio
Manager
Qing Ji, Portfolio Manager
David Savignac, Portfolio Manager

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I. CALL TO ORDER

The meeting was called to order by Chair Green at 9:00 a.m., in the Board Room of Gateway Plaza.

II. PLEDGE OF ALLEGIANCE

Mr. Okum led the Board Members and staff in reciting the Pledge of Allegiance.

III. APPROVAL OF MINUTES

A. Approval of the Minutes of the Special Meeting of July 9, 2018

Mr. Santos made a motion, Mr. Okum seconded, to approve the minutes of the special meeting of July 9, 2018. The motion passed unanimously.

B. Approval of the Minutes of the Special Meeting of July 10, 2018

Mr. Santos made a motion, Mrs. Sanchez seconded, to approve the minutes of the special meeting of July 10, 2018. The motion passed unanimously.

IV. PUBLIC COMMENT

Mr. Fred Massey addressed the Board regarding item VIII.E.

Mrs. Sanchez addressed the Board stating, "As Chair Green reported at the July 2018 Offsite my company Chantico Global LLC is in negotiations with Lazard concerning a potential business transaction. Lazard is a non-US equities manager for LACERA. Lazard has also submitted RFP responses for additional work, and

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IV. PUBLIC COMMENT (Continued)

periodically has other contact with LACERA. When our negotiations with Lazard began, I spoke to LACERA's counsel to discuss the appropriate course of action. I also advised the Chief Investment Officer, the Board officers, and the Equities Committee Chair. Based on advice from counsel, while the negotiations are in progress, and in compliance with California conflict law, I will recuse myself and leave the Board room during all matters that involve or could affect Lazard or its interests, including all action items and reports. I request that the Board and staff maintain an ethical wall between me and them with regard to any communications or documents that in any manner whatsoever relate to Lazard, until I am able to advise further as to any relationship I may or may not have with Lazard. Finally, I request this statement be included in the minutes for this meeting."

V. INTERIM CHIEF EXECUTIVE OFFICER'S REPORT
(Memo dated July 30, 2018)

Mr. Hill discussed the upcoming 8th floor renovations.

VI. CHIEF INVESTMENT OFFICER'S REPORT
(Memo dated July 30, 2018)

Mr. Grabel provided a brief discussion on the Chief Investment Officer's Report.

VII. CONSENT ITEMS

Mr. Okum made a motion, Mrs. Sanchez seconded, to approve the following agenda items. The motion passed with Mr. Kelly voting no on agenda item VII. F.

- A. Recommendation as submitted by Shawn Kehoe, Chair, Corporate Governance Committee: That the Board approve LACERA formally signing onto the Climate Action 100+ initiative as a supporter.
(Memo dated July 26, 2018)
- B. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve attendance of Board members at the National Association of Corporate Directors - Master Class on August 20 – 21, 2018 in Newport Coast, California and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy.
(Placed on the agenda at the request of Mr. Kelly)
(Memo dated July 23, 2018)
- C. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve attendance of Board members at the 2018 LAVCA Summit and Investor Roundtable on September 24 – 26, 2018 in New York, New York and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy.
(Placed on the agenda at the request of Mr. Santos)
(Memo dated July 12, 2018)
- D. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve attendance of Board members at the Public Pension Trustees Fiduciary Conference: Gaining the Tools for Innovation on October 2-3, 2018 in New York, New York and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy.
(Placed on the agenda at the request of Mr. Moore)
(Memo dated June 4, 2018)

VII. CONSENT ITEMS (Continued)

- E. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board Approve attendance of Board Members at the 2018 PPI Executive Seminar on October 14–16, 2018 in Melbourne, Australia and PPI's Asia Roundtable on October 17–19 in Sydney, Australia and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy. (Placed on the agenda at the request of Mr. Kelly)
(Memo dated July 16, 2018)
- F. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board waive LACERA's Education and Travel Policy Section 705.07 D. 2, and authorize attendance of a fourth member to the 2018 PPI Executive Seminar on October 14–16, 2018 in Melbourne, Australia and PPI's Asia Roundtable on October 17–19 in Sydney, Australia and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy. (Placed on the agenda at the request of Mr. Kehoe)
(Memo dated July 16, 2018)
- G. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve attendance of Board members at the 2018 Milken Institute Asia Summit on September 12–14, 2018 in Singapore and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy. (Placed on the agenda at the request of Mr. Kehoe)
(Memo dated July 18, 2018)
- H. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board Approve attendance of Board members at the 2018 USC Marshall Corporate Directors Symposium on November 8, 2018 in Los Angeles, California and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy. (Placed on the agenda at the request of Mr. Kelly)
(Memo dated July 12, 2018)

VII. CONSENT ITEMS (Continued)

- I. Recommendation as submitted by Jill Rawal, Staff Counsel: That the Board (1) Adopt the revised Conflict of Interest Code; and (2) Authorize staff to file the revised Code with the County of Los Angeles Board of Supervisors, which is the code reviewing authority. (Memo dated July 30, 2018)

VIII. NON-CONSENT ITEMS

- A. Recommendation as submitted by Ted Wright, Principal Investment Officer; Brenda Cullen, Investment Officer and Mel Tsao, Investment Analyst: That the Board hire CornerCap Investment Counsel, Global Alpha Capital Management, and Matarin Capital Management for direct active public equity emerging manager mandates with the following allocations using separate account vehicles: CornerCap Fundametrics® Small Cap Equity, \$60 million; Global Alpha International Small Cap, \$160 million; and Matarin North America Small Cap, \$125 million. (Memo dated July 30, 2018)

Mr. Wright was present and answered questions from the Board.

CornerCap Investment Counsel, Global Alpha Capital Management, and Matarin Capital Management were present and answered questions from the Board.

Mr. Santos made a motion, Mr. Moore seconded, to approve staff's recommendation.

Mr. Kehoe made a substitute motion, Mr. Kelly seconded, to vote on each manager individually. The motion passed (roll call) with Messrs. Kehoe, Kelly, Muir, Okum and Schneider voting yes and Messrs. Green, Moore, Santos, and Mrs. Sanchez voting no.

VIII. NON-CONSENT ITEMS (Continued)

Mrs. Sanchez made a motion, Mr. Moore seconded, to hire Matarin Capital Management and allocate \$125 million. The motion passed (roll call) with Messrs. Green, Kelly, Moore, Muir, Okum, Santos, Schneider and Mrs. Sanchez voting yes and Mr. Kehoe voting no.

Mrs. Sanchez made a motion, Mr. Kelly seconded, to hire CornerCap Investment Counsel and allocate \$60 million. The motion passed (roll call) with Messrs. Green, Kelly, Moore, Muir, Okum, Santos, Schneider and Mrs. Sanchez voting yes and Mr. Kehoe voting no.

Mr. Kelly made a motion, Mrs. Sanchez seconded, to hire Global Alpha Capital Management and allocate \$160 million. The motion passed (roll call) with Messrs. Green, Kelly, Moore, Muir, Okum, Santos, Schneider and Mrs. Sanchez voting yes and Mr. Kehoe voting no.

- B. Recommendation as submitted by Adam Cheng, Senior Investment Analyst: That the Board authorize a targeted search for a Treasury Inflation Protected Securities manager. (Memo dated July 26, 2018)

Messrs. Grabel, Mahseredjian and Cheng and Mr. Filla of Meketa

Investment Group were present and answered questions from the Board.

VIII. NON-CONSENT ITEMS (Continued)

Mr. Kehoe made a motion, Mrs. Sanchez seconded, to accept staff's recommendation, in addition, the Board directed staff to provide within six months an action plan in converting this process in-house. The motion passed unanimously.

- C. Recommendation as submitted by James Rice, Senior Investment Officer and Shelly P. Tilaye, Senior Investment Analyst: That the Board (1) Approve the minimum qualifications for the Real Assets completion portfolio manager search, and (2) Authorize staff to initiate the Request for Information process for a separate account manager for the Real Assets completion portfolio. (Memo dated July 27, 2018)

Messrs. Grabel and Jim Rice and Mrs. Tilaye were present and answered questions from the Board.

Mr. Santos made a motion, Mr. Okum seconded, to approve staff's recommendation. The motion passed unanimously.

- D. Recommendation as submitted by Christopher Wagner, Principal Investment Officer, David Chu, Senior Investment Officer, and David E. Simpson, Investment Officer: That the Board approve the proposed Minimum Qualifications Evaluation Criteria, and Scope of Work thereby authorizing staff to initiate the Request for Proposal process for specialized consultant services in Hedge Funds, Illiquid Credit, and Real Assets. (Memo dated July 30, 2018)

Messrs. Grabel and Wagner were present and answered questions from the Board.

VIII. NON-CONSENT ITEMS (Continued)

- E. Recommendation as submitted by Amit Aggarwal, Investment Officer: That the Board approve a commitment of up to €50 million to Aermont Fund IV. (Memo dated July 25, 2018)

Messrs. Grabel, McClelland and Aggarwal and Mrs. Micolyn Magee

of Townsend Group were present and answered questions from the Board.

Mr. Santos made a motion, Mr. Kehoe seconded, to approve staff's recommendation. The motion passed unanimously.

- F. Recommendation as submitted by Jonathan Grabel, Chief Investment Officer and John McClelland, Principal Investment Officer: That the Board modify the investment strategies covered by each Standing Committee. (Memo dated July 24, 2018)

Messrs. Grabel and McClelland were present and answered questions

from the Board.

Mr. Santos made a motion, Mr. Muir seconded, to modify the investment strategies covered by each Standing Committee to better match the new functional asset class overlay categories. The motion passed unanimously.

- G. Recommendation as submitted by Joseph Kelly, Board Member:

That the Board:

- (1) Reconstitute the Joint Organizational Governance Committee (JOGC) as a standing joint committee of both the Board of Retirement (BOR) and Board of Investments (BOI) and reassign to the JOGC all matters

VIII. NON-CONSENT ITEMS (Continued)

currently being considered by Ad Hoc Committees, with the exception of the Ad Hoc Committee overseeing the recruitment of the Retirement Administrator/Chief Executive Officer which will remain responsible for this recruitment at this time;

- (2) Revise the JOGC Charter, Section 8 Membership, Quorum, and Rules, as follows.

There will be eight (8) members with no designated alternates. The JOGC will be comprised of the BOR and BOI Chairs and Vice-Chairs plus one member appointed by each Chair and one member elected by each Board. If there is one JOGC member who represents both Boards (one overlap), then an additional appointment will be made by the BOR Chair in even years and by the BOI Chair in odd years. If there is more than one overlap, the BOR and BOI Chairs will make an equal number of additional appointments; if there are an odd number of overlaps, the final appointment, after the Board Chairs make their separate appointments, will be made following the rule as stated in the preceding sentence that applies in the case of one overlap. **In selecting their appointments, the Chairs will endeavor to include an overall mix of trustees who are appointed by the Board of Supervisors, elected by active employees (general and safety), elected by retired employees, and who serve in an ex-officio capacity. The Chairs will also consider continuity of service when selecting Committee members, so that development of expertise and familiarity with the subject matters jurisdictional to the JOGC are encouraged, and to benefit Committee goals.**

- (3) Elect a JOGC Member.

- (4) Request the Interim Chief Executive Officer (CEO) engage Funston Consultants, the consultants who assisted the BOR and the BOI Ad Hoc Committee that recommended the formation of the JOGC, to undertake an evaluation of the JOGC's effectiveness in the fall 2019. Funston should allow for input by all trustees in the evaluation processes. When completed, the evaluation should be placed on a BOR and BOI agenda for discussion. (Memo dated July 31, 2018)

VIII. NON-CONSENT ITEMS (Continued)

Mr. Kelly made a motion, Mr. Muir seconded.

Mr. Moore made a substitute motion, Mr. Kelly seconded, to (1) Constitute a Brown Act Ad-Hoc Committee (Committee) to evaluate the JOGC concerns listed in the January memo authored by both Board Chairs; (2) Provide solutions to the concerns listed and report back to both Boards with recommendations; and (3) Be made up of members, excluding the Chair.

The motion passed (roll call) unanimously by Messrs. Green, Kehoe, Kelly, Moore, Muir, Okum, Santos, Schneider and Mrs. Sanchez voting yes.

IX. REPORTS

The Following items were received and filed:

- A. Asset Allocation Benchmarks
Jonathan Grabel, Chief Investment Officer
Stephen McCourt, Managing Principal, Meketa Investment Group
Timothy Filla, Managing Principal, Meketa Investment Group
(Memo dated July 26, 2018)
- B. Update on Conversion of Designated Public Equity and Fixed Income
Commingled Trust Funds to Separate Accounts
Jonathan Grabel, Chief Investment Officer
(For Information Only) (Memo dated July 12, 2018)
- C. Delivery Date of Second Quarter 2018 Performance Materials
Jonathan Grabel, Chief Investment Officer
(For Information Only) (Memo dated July 24, 2018)

IX. REPORTS (Continued)

- D. Performance Review of Private Equity Consultant StepStone Group
Christopher Wagner, Principal Investment Officer
(For Information Only) (Memo dated July 17, 2018)

- E. Performance Review of Real Estate Consultant Townsend Group
John McClelland, Principal Investment Officer
(For Information Only) (Memo dated July 24, 2018)

- F. State Street Incident Report – Update #2
Jonathan Grabel, Chief Investment Officer
(For Information Only) (Memo dated July 30, 2018)

Mr. Grabel was present and answered questions from the Board.

- G. Oaktree Capital Management
Robert Z. Santos, Investment Officer
(For Information Only) (Memo dated July 18, 2018)

- H. Mandatory Arbitration of Securities Claims
Steven Rice, Chief Counsel
(For Information Only) (Memo dated July 30, 2018)

- I. LACERA Comment Letter on Market-Based Rules Regulation
Barry W. Lew, Legislative Affairs Officer
(For Information Only) (Memo dated July 27, 2018)

- J. Semi-Annual Interest Crediting for Reserves as of June 30, 2018
(Unaudited)
Beulah Auten, Chief Financial Officer
(For Information Only) (Memo dated July 27, 2018)

- K. Implementation Update on LACERA Pension Trust Strategic Asset
Allocation
Jonathan Grabel, Chief Investment Officer
(For Information Only) (Memo dated July 30, 2018)

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IX. REPORTS (Continued)

L. Monthly Status Report on Board of Investments Legal Projects
Steven P. Rice, Chief Counsel
(For Information Only) (Memo dated August 1, 2018)

M. July 2018 Fiduciary Counsel Contact and Billing Report
Steven P. Rice, Chief Counsel
(Memo dated August 1, 2018) (Privileged and Confidential)
(Attorney-Client Communication/Attorney Work Product)

X. REPORT ON STAFF ACTION ITEMS

The Board requested that staff evaluate whether Financial Accounting Services Division or Investments office should manage the State Street relationship and report back to the Boards.

The Board requested that staff request FPPC opinion regarding Trustee Sanchez's Lazard conflict issues.

XI. GOOD OF THE ORDER
(For information purposes only)

Mr. Kelly thanked and acknowledged the people assisting with the California fires.

Mr. Grabel announced that Esmeralda Del Bosque has been promoted to Senior Investment Officer in the Portfolio Analytics team focused on performance, risk and compliance.

Mr. Grabel also announced that Quoc Nguyen joined the Investment office as a Financial Analyst II focused on Hedge Funds.

XII. EXECUTIVE SESSION

- A. Conference with Staff and Legal Counsel to Consider the Purchase or Sale of Particular, Specific Pension Fund Investments
(Pursuant to California Government Code Section 54956.81)

1. ACCEL-KKR GROWTH CAPITAL PARTNERS III, L.P.

Messrs. Wagner, and Chu, and Jose Fernandez of StepStone Group LP, provided a brief presentation and answered questions from the Board.

Mr. Kehoe made a motion, Mr. Santos seconded, to approve staff's recommendation. The motion passed (roll call) with Messrs. Green, Kelly, Kehoe, Moore, Okum, Santos, Schneider and Mrs. Sanchez voting yes.

The Board's decision and vote to approve an investment of up to \$50 million in ACCEL-KKR Growth Capital Partners III, L.P., was reported out in open session. It was also reported that ACCEL-KKR Growth Capital Partners III, L.P., is a primarily U.S. based lower middle market private equity investment targeting business software and technology-enabled services companies.

XIII. ADJOURNMENT

There being no further business to come before the Board, the meeting was adjourned at 1:00 p.m.

August 8, 2018

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Green Folder Information (Information distributed in each Board Members Green Folder at the beginning of the meeting)

1. LACERA's Long Term Returns (CIO Presentation)
2. 2018 Latin America Private Equity & Venture Capital Association (LAVCA) Summit and Investor Roundtable September 24 – 27, 2018 in New York City, New York (Memo dated July 12, 2018)


WAYNE MOORE, SECRETARY

DAVID GREEN, CHAIR



August 31, 2018

TO: Each Member
Board of Retirement
Board of Investments

FROM: Robert R. Hill 
Interim Chief Executive Officer

SUBJECT: **CHIEF EXECUTIVE OFFICER'S REPORT**

I am pleased to present the Interim Chief Executive Officer's Report that highlights a few of the operational activities that have taken place during the past month, key business metrics to monitor how well we are meeting our performance objectives, and an educational calendar.

Survivor Income Benefit Mailing

LACERA will be mailing our annual Survivor Income Benefit reminder to all eligible Plan E participants in mid-September.

Plan E members who are MegaFlex participants have the option of electing the County-administered Survivor Income Benefit (SIB), an optional life insurance plan available only to Plan E MegaFlex participants.

This is important as Plan E does not include pre-retirement death benefits through LACERA and MegaFlex participants are not eligible for continuing survivor benefits administered through the County. Members interested in enrolling in the County's Survivor Income Benefit may do so only during the annual enrollment period, October 1 through October 31. For additional information, members are to refer to the County's *MegaFlex 2019 Enrollment Highlights Guide*, mailed by the County to its employees, and to the County's online benefit web portal - mylacountybenefits.com.

Although LACERA does not administer the Survivor Income Benefit, we partner with the County in mailing the annual reminder to Plan E members before the enrollment period begins. A copy of this letter is attached.

<Month> <Day>, 2018

[Member's Full Name]
[Member's Mailing Address]
[City, State ZIP code]

SURVIVOR INCOME BENEFIT: ANNUAL ENROLLMENT FOR PLAN E MEMBERS

Choose Your Insurance Wisely; Your Choices Can Impact the Financial Security of Your Loved Ones

It is important that all Plan E members who are MegaFlex participants fully understand their insurance options. Therefore, we are taking this opportunity to prepare you for the October 2018 annual enrollment by reviewing the advantages of the Survivor Income Benefit (SIB), an optional life insurance plan *available only to Plan E members*.

Plan E does not include pre-retirement death benefits. Therefore, should you die while in County service, *your survivors would not be eligible for continuing benefits through LACERA*. Additionally, MegaFlex participants are *not eligible* for any continuing survivor benefits administered through the County.

As a Plan E member, you have the option of electing the SIB plan under your MegaFlex benefit plan during annual enrollment.

SIB pays a lifetime benefit to your surviving spouse or domestic partner should you die in active service. Your eligible surviving spouse or domestic partner will receive a monthly cash benefit for the rest of their life. If there is no surviving spouse or domestic partner, the benefit will be split equally among your unmarried dependent children under age 18, or until age 22 if enrolled full time in an accredited school.

Watch for your 2019 MegaFlex benefits enrollment packet in the mail in late September. As you select your benefits, we encourage you to consider the impact the SIB could have on your family. The rates for the SIB plan can be found on your personalized worksheet, which is included in your packet. *Remember, if you decide to enroll in the SIB, you may only do so during the annual enrollment period, October 1 through October 31.*

Refer to your MegaFlex annual enrollment materials for instructions on enrolling online or by phone.

For questions regarding tax matters or issues involving your individual financial situation, consult a professional advisor; LACERA does not offer tax or financial advice.



Striving for Excellence in Service



Outreach Attendance
32

32 Year-to-Date



Outreach Events
2,515

2,515 Year-to-Date



Outreach Satisfaction
94.3%

0.7% Change Since Last Mo.



Member Service Center
100.0%

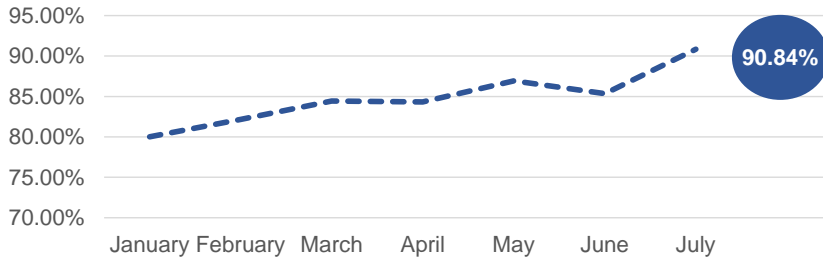
0.0% Change Since Last Mo.



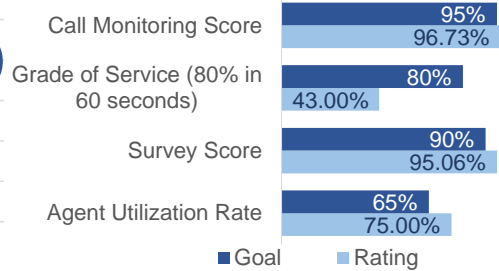
Member Services Calls
10,288

10,542 3 Mo. Avg.

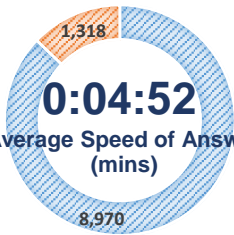
Key Performance Indicator (Overall Performance)



Key Performance Indicator (Components)



Member Services



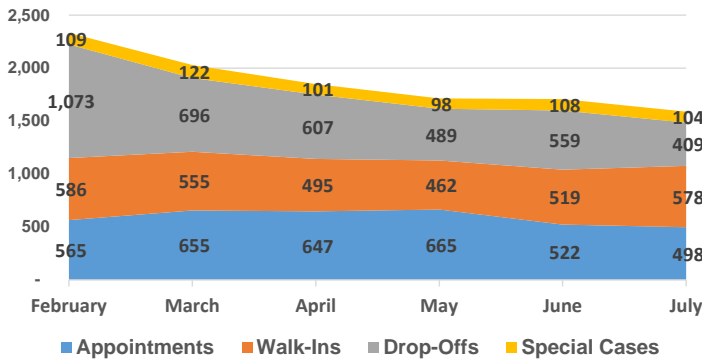
Top Calls

1. Workshop Info/Appointments Inquiry
2. Retirement Counseling: Estimate
3. Benefit Payments: Gen. Inquiry/Payday

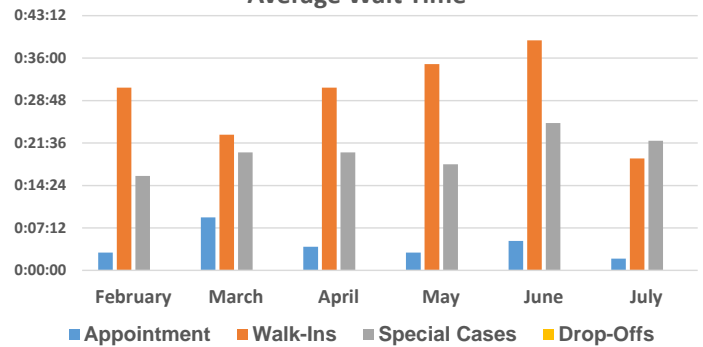


318 Emails
8:24 hours
Avg. Response Time (ART)

Member Service Center Visits



Member Service Center Average Wait Time



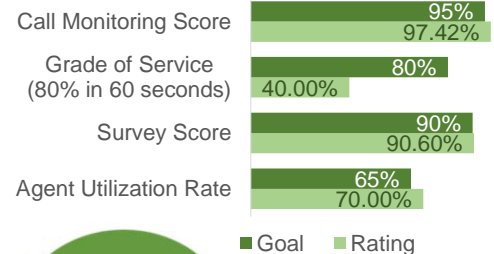
*Drop Off Wait Time: No Waiting

Retiree Healthcare



Top Calls

1. New Enrollment/Change/Cancel
2. General Inquiries (RHC)
3. Turning Age 65



152 Emails
5 day
Avg. Response Time (ART)

Striving for Excellence in Service (Continued)

Applications

578

On Hand

46 Received
 46 Year-to-Date
 0 Re-opened
 0 Year-to-Date
 38 To Board - Initial
 38 Year-to-Date
 13 Closed
 13 Year-to-Date
 573 In Process
 573 Year-to-Date

Appeals

105

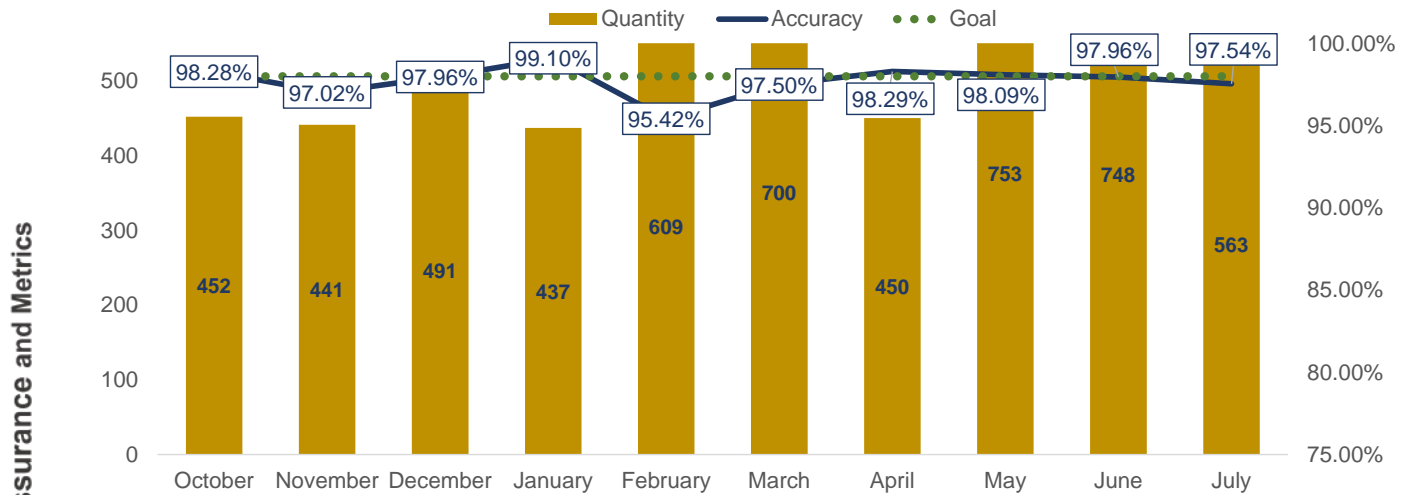
On Hand

1 Received
 1 Year-to-Date
 4 Admin Closed/Rule 32
 4 Year-to-Date
 1 Referee Recommended
 1 Year-to-Date
 0 Revised/Reconsidered for Granting
 0 Year-to-Date
 101 In Process
 101 Year-to-Date

Disability

Striving for Excellence in Quality

Audits of Retirement Elections, Payment Contracts, and Data Entry



Quality Assurance and Metrics

July 2018



97.54%

Retirement Elections

186 Samples
98.19% Accuracy

Payment Contracts

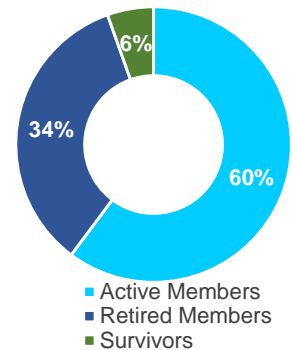
305 Samples
97.68% Accuracy

Data Entry

90 Samples
96.76% Accuracy

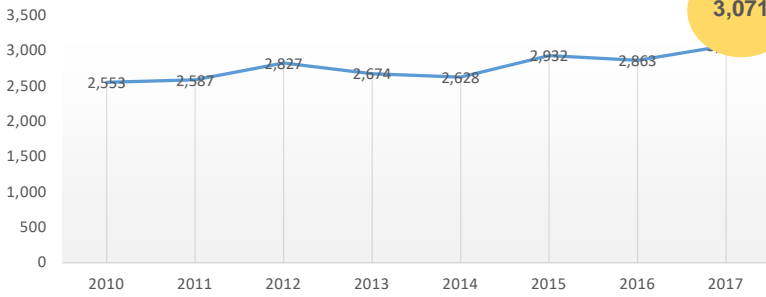
Member Snapshot

		Members as of 08/31/18				
		Plan	Active	Retired	Survivors	Total
General	Plan A		134	17,573	4,518	22,225
	Plan B		43	684	68	795
	Plan C		54	425	65	544
	Plan D		43,357	14,390	1,304	59,051
	Plan E		18,316	12,467	1,099	31,882
	Plan G		24,021	13	1	24,035
	Total General			85,925	45,552	7,055
Safety	Plan A		5	5,440	1,588	7,033
	Plan B		10,242	5,379	263	15,884
	Plan C		2,598	5	0	2,603
	Total Safety			12,845	10,824	1,851
TOTAL MEMBERS			98,770	56,376	8,906	164,052



Member Snapshot (Continued)

Retirements Per Year



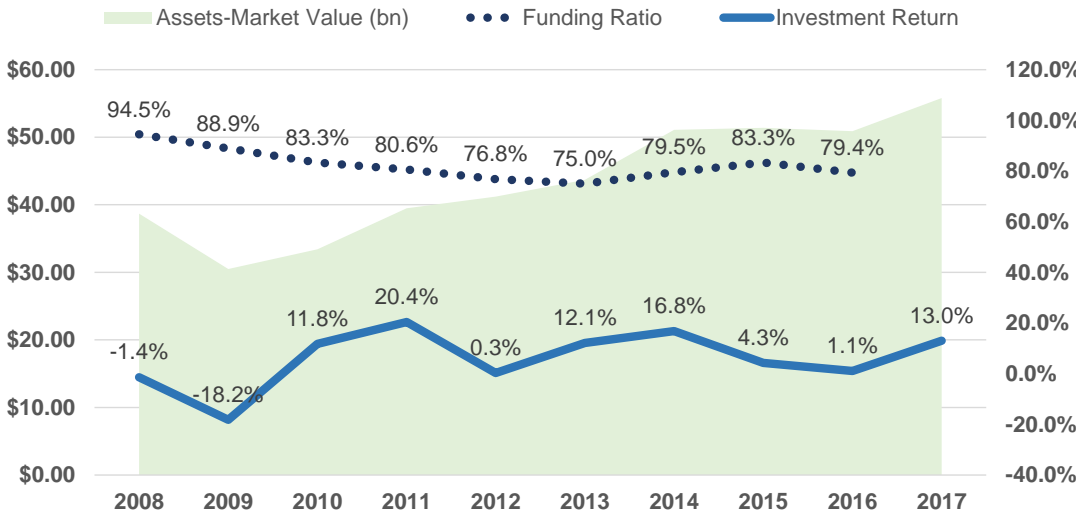
Healthcare Program (YTD)

	Employer	Member
Medical	\$42.7m	\$3.6m
Dental	\$3.6m	\$368,014
Part B	\$5.3m	xxxx
Total	\$51.5m	\$3.9m

Healthcare Enrollments (Monthly)

Medical	50,056
Dental	51,228
Part B	33,506
LTC	676
Total	135,466

Key Financial Metrics



Funding Metrics (as of 6/30/17)

Employer NC	9.97%*
UAAL	9.73%*
Assumed Rate	7.25%*
Star Reserve	\$614m*
Total Assets	\$52.7b*

Contributions (as of 6/30/17)

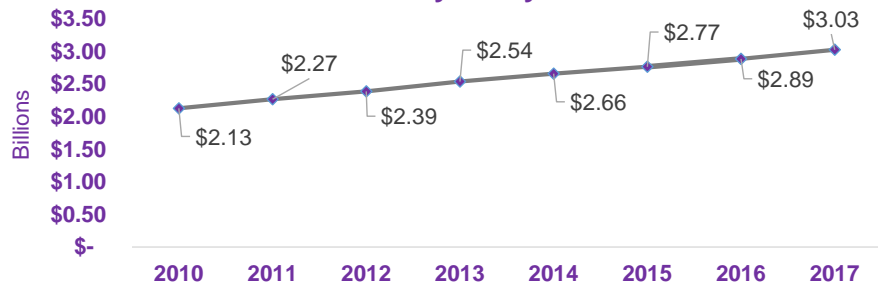
	Employer	Member
Annual Add	\$1,331.4m	\$526.6m
% of Payroll	19.7%*	6.65%*

*Effective July 1, 2017, as of 06/30/16 actuarial valuation

Retired Members Payroll

Monthly Payroll	\$275.65m
Payroll YTD	.3b
New Retired Payees Added	278
Seamless %	97.12%
New Seamless Payees Added	278
Seamless YTD	97.12%
By Check %	4.00%
By Direct Deposit %	96.00%

Retiree Payroll by Year

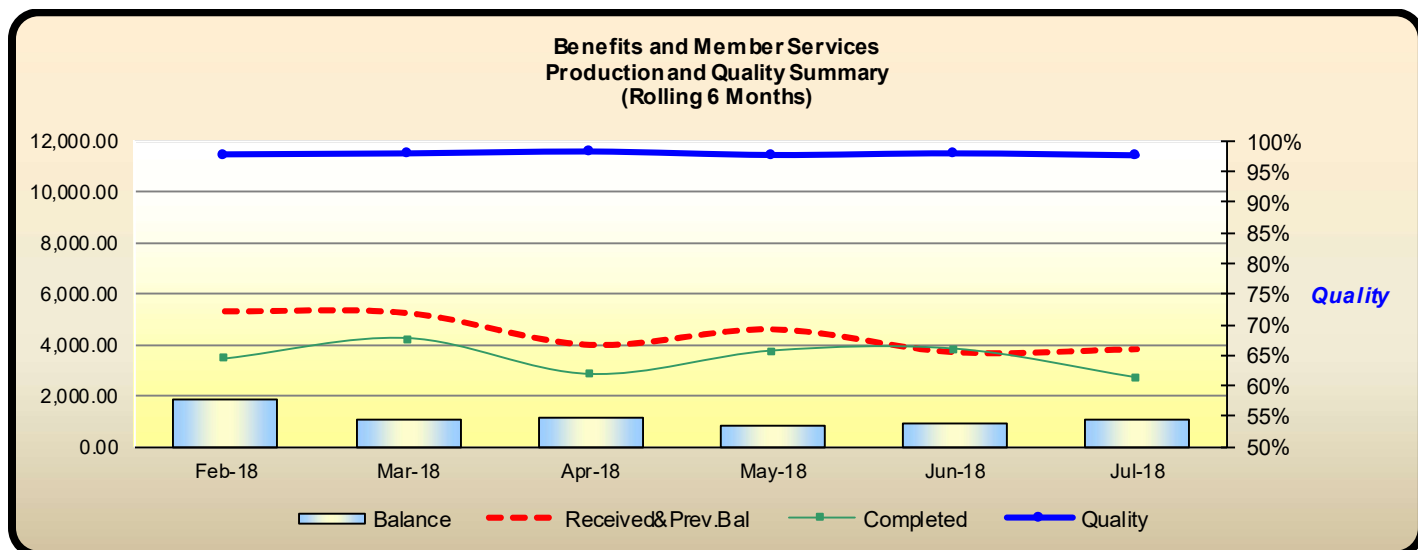
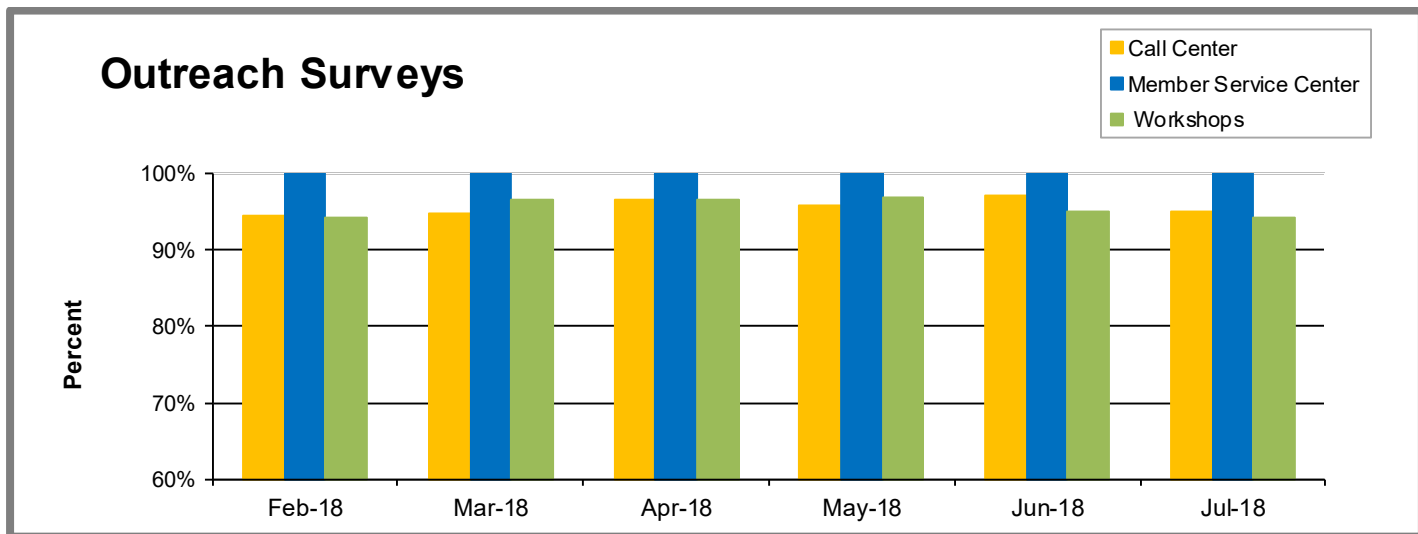


MORE COMING SOON!

LACERA's KEY BUSINESS METRICS

OUTREACH EVENTS AND ATTENDANCE

Type	# of WORKSHOPS		# of MEMBERS	
	Monthly	YTD	Monthly	YTD
Benefit Information	13	13	442	442
Mid Career	2	2	35	35
New Member	11	11	318	318
Pre-Retirement	5	5	116	116
General Information	1	1	15	15
Retiree Events	0	0	0	0
Member Service Center	Daily	Daily	1,589	1,589
TOTALS	32	32	2,515	2,515



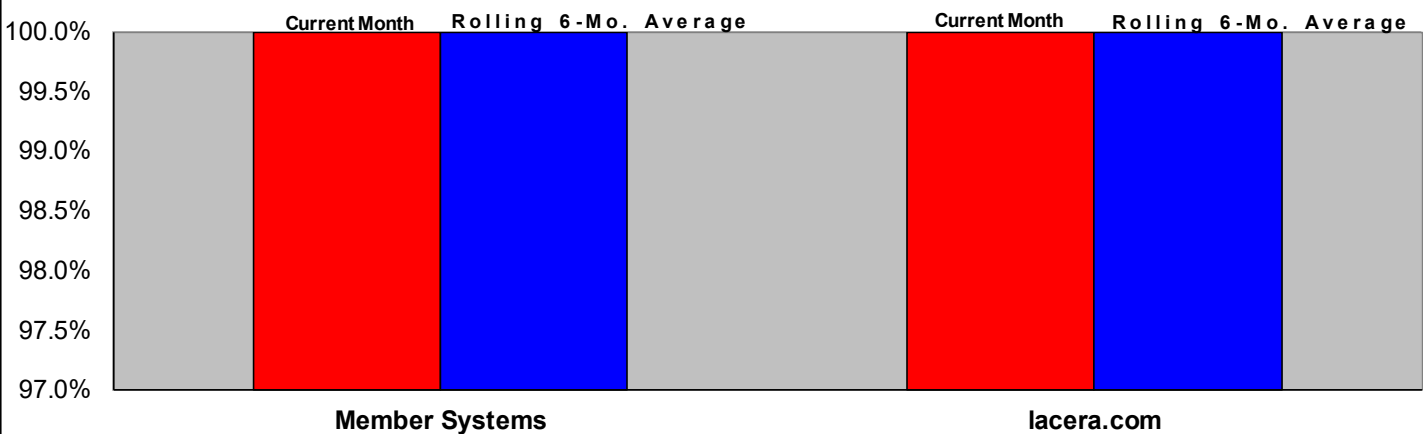
Member Services Contact Center			RHC Call Center	Top Calls
Overall Key Performance Indicator (KPI)	90.84%			
Category	Goal	Rating		Member Services
Call Center Monitoring Score	95%	96.73%	97.42%	1) Workshop Info./Appointments: Inquiry
Grade of Service (80% in 60 seconds)	80%	43%	40%	2) Retirement Counseling: Estimate
Call Center Survey Score	90%	95.06%	90.60%	3) Benefit Pmts.-Gen. Inq./Payday Info
Agent Utilization Rate	65%	75%	70%	
Number of Calls	10,288		4,142	Retiree Health Care
Number of Calls Answered	8,970		3,648	1) New Enrollment/Change/Cancel
Number of Calls Abandoned	1,318		494	2) General Inquiries (RHC)
Calls-Average Speed of Answer (hh:mm:ss)	00:04:52		00:04:56	3) Turning Age 65
Number of Emails	318		152	
Emails-Average Response Time (hh:mm:ss)	08:24:00		(Days) 5	Adjusted for weekends

LACERA's KEY BUSINESS METRICS

Fiscal Years	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Assets-Market Value	\$38.7	\$30.5	\$33.4	\$39.5	\$41.2	\$43.7	\$51.1	\$51.4	\$50.9	\$55.8
Funding Ratio	94.5%	88.9%	83.3%	80.6%	76.8%	75.0%	79.5%	83.3%	79.4%	n/a
Investment Return	-1.4%	-18.2%	11.8%	20.4%	0.3%	12.1%	16.8%	4.3%	1.1%	13.0%

DISABILITY INVESTIGATIONS						
APPLICATIONS	TOTAL	YTD		APPEALS	TOTAL	YTD
On Hand	578	xxxxxxx		On Hand	105	xxxxxxx
Received	46	46		Received	1	1
Re-opened	0	0		Administratively Closed/Rule 32	4	4
To Board – Initial	38	38		Referee Recommendation	1	1
Closed	13	13		Revised/Reconsidered for Granting	0	0
In Process	573	573		In Process	101	101

SYSTEMS AVAILABILITY - JULY 2018



Active Members as of 9/4/18		Retired Members/Survivors as of 9/4/18			Retired Members		
		Retirees	Survivors	Total			
General-Plan A	134	17,573	4,518	22,091	Monthly Payroll	275.65 Million	
General-Plan B	43	684	68	752	Payroll YTD	0.3 Billion	
General-Plan C	54	425	65	490	No. Monthly Added	278	
General-Plan D	43,357	14,390	1,304	15,694	Seamless %	97.12%	
General-Plan E	18,316	12,467	1,099	13,566	No. YTD Added	278	
General-Plan G	24,021	13	1	14	Seamless YTD %	97.12%	
Total General	85,925	Total General	45,552	7,055	52,607	Direct Deposit %	96.00%
Safety-Plan A	5	Safety-Plan A	5,440	1,588	7,028		
Safety-Plan B	10,242	Safety-Plan B	5,379	263	5,642		
Safety-Plan C	2,598	Safety-Plan C	5	0	5		
Total Safety	12,845	Total Safety	10,824	1,851	12,675		
TOTAL ACTIVE	98,770	TOTAL RETIRED	56,376	8,906	65,282		

Health Care Program (YTD Totals)		
	Employer Amount	Member Amount
Medical	42,653,920	3,571,793
Dental	3,620,888	368,014
Med Part B	5,256,314	xxxxxxxxxx
Total Amount	\$51,531,122	\$3,939,807

Health Care Program Enrollments (Monthly)	
Medical	50.056
Dental	51.228
Med Part B	33.506
Long Term Care (LTC)	676

Funding Metrics as of 6/30/17	
Employer Normal Cost	9.97%*
UAAL	9.73%*
Assumed Rate	7.25%*
Star Reserve	\$614 million
Total Assets	\$52.7 billion

Member Contributions as of 6/30/17	
Annual Additions	\$526.6 million
% of Payroll	6.65%*

Employer Contributions as of 6/30/17	
Annual Addition	\$1,331.4 million
% of Payroll	19.70%*

*Effective July 1, 2017, as of 6/30/16 actuarial valuation.

Date	Conference
October, 2018	
2-3	Public Pension Trustees Fiduciary Conference-Gaining the Tools for Innovation New York, NY
3-5	PREA (Pension Real Estate Association) Annual Institutional Investor Real Estate Conference Boston, MA
14-16	AHIP (America's Health Insurance Plans) Medicare Conference Washington D.C.
14-16	2018 Pacific Pension Institute (PPI) Executive Seminar Melbourne, Australia
14-17	IFEBC (International Foundation of Employment Benefit Plans) Annual Employee Benefits Conference New Orleans, LA
15-17	CRCEA (California Retired County Employees Association) Fall Conference San Rafael, CA
17-19	Pacific Pension Institute (PPI) Asia Roundtable Sydney, Australia
22	International Corporate Governance Network (ICGN) New York Event New York, NY
22-24	Cyber Security Summit – 8 th Annual Leadership Event Minneapolis, MN
22-26	Investment Strategies & Portfolio Management (<i>prev. Pension Fund & Investment Mgmt.</i>) Wharton School, University of Pennsylvania
24-26	Council of Institutional Investors (CII) Fall Conference Boston, MA
26	CALAPRS (California Association of Public Retirement Systems) Round Table – Trustees Hilton Los Angeles North/Glendale
28-31	NCPERS (National Conference on Public Employee Retirement Systems) Public Safety Conference Las Vegas, NV
November, 2018	
7-8	Institutional Limited Partners Association (ILPA) Summit New York, NY
8	2018 USC Marshall Corporate Directors Symposium Los Angeles, CA
13-16	SACRS Indian Wells, CA

August 30, 2018

TO: Each Member
Board of Investments

FROM: Jon Grabel 
Chief Investment Officer

SUBJECT: **CHIEF INVESTMENT OFFICER'S REPORT—JULY 2018**

The following memorandum and attachments constitute the CIO report for July 2018. **Attachment 1** presents summary investment information including market values, actual and target allocations, and returns. **Attachment 2** is a summary investment report for the OPEB Master Trust. A list of all current applicants for public investment-related searches is included as **Attachment 3** and will be provided on a monthly basis to identify firms with whom LACERA is in a quiet period.

PERFORMANCE

The Total Fund finished the month with an investment balance of approximately \$56.5 billion.¹ The month had a positive net return of 1.3%. For fiscal year to date, the Total Fund gained 1.3% net of fees.

The OPEB Master Trust generated a positive return in July. For the month, the L.A. County and LACERA funds had net gains of 1.5% and the Superior Court fund had a net gain of 1.4%. Fiscal year to date, the L.A. County and LACERA funds had net gains of 1.5% and the Superior Court fund had a net gain of 1.4%.

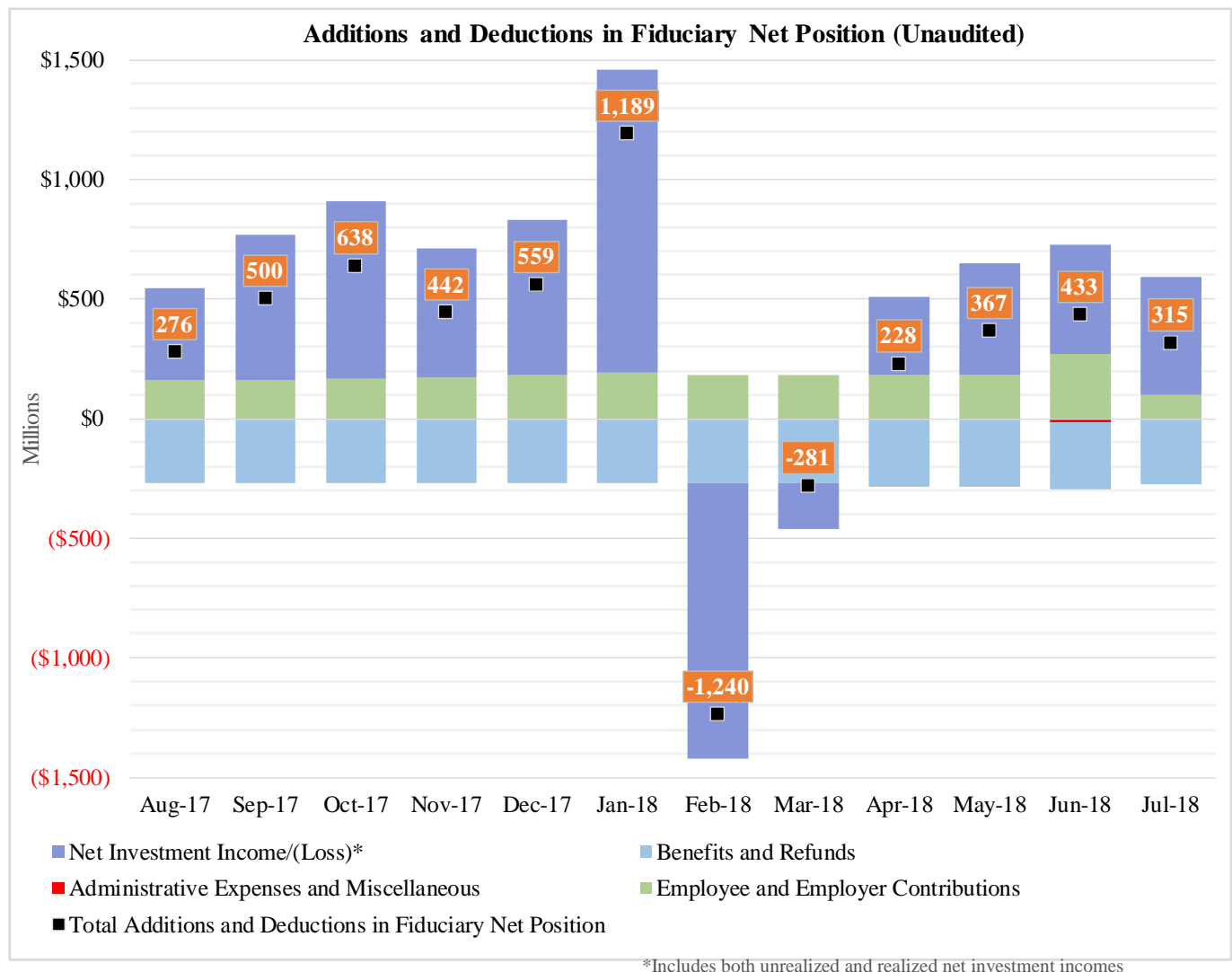
CASH FLOWS, CASH BALANCES, AND FIDUCIARY NET POSITION²

As illustrated in Chart 1 below, included to provide detail on the sources of monthly transactional flows, the Plan's Fiduciary Net Position increased by \$315 million during the month of July. Over the last twelve months, the Plan's net position has increased by \$3.4 billion.

¹ For months that coincide with calendar quarter end, the Total Fund value is calculated using the custodian's quarter-end market values for all asset classes. For inter-quarter periods, the Total Fund value is calculated using the custodian's month-end market value for all asset classes except for private equity and real estate. Private equity and real estate market values are calculated by adjusting the preceding quarter-end market value for subsequent cash flows.

² LACERA's fiduciary net position is an unaudited snapshot of account balances as of the preceding month end and reflects assets available for future payments to retirees and their beneficiaries, including investment fund assets, as well as any liabilities owed as of the report date. The Plan's net position is inclusive of both investment and operational net assets, while the Total Fund's position includes investment net assets only.

Chart 1: Additions and Deductions in Fiduciary Net Position (Unaudited)



With respect to cash, LACERA finished the month of July with approximately \$1.0 billion in the Fund’s primary operating account, as reported by the master custodian and identified as “cash” on various Total Fund reports. There was additional cash held in internal accounts dedicated to asset categories with frequent cash flows as well as cash held by select external managers. As illustrated in Chart 2 below, LACERA held a total of \$1.0 billion of internal operating cash and short-term investments across all of its operating accounts and LACERA’s external investment managers held a further \$438 million in cash and short-term investments.

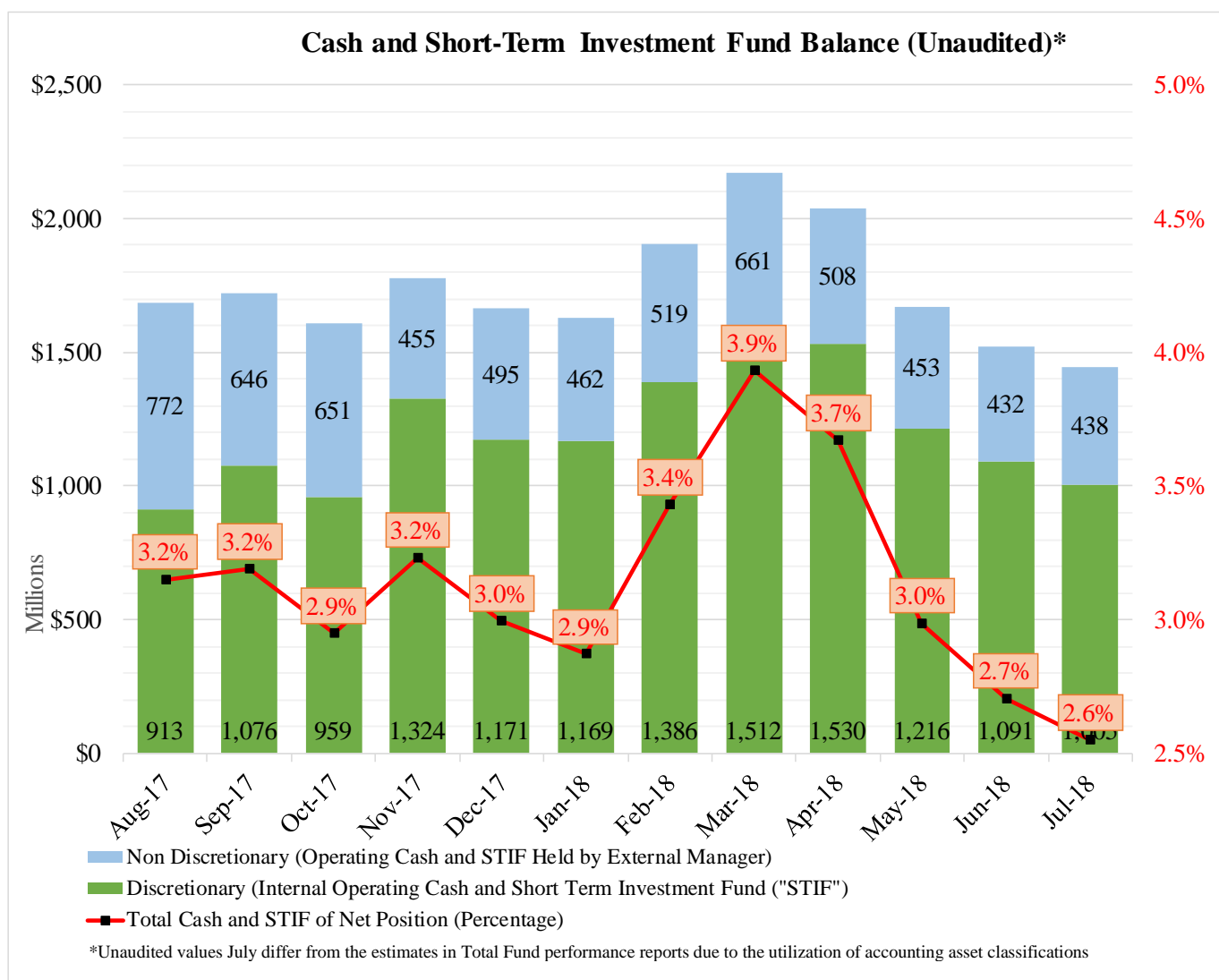
In total, LACERA held approximately \$1.4 billion in cash and short-term investment funds at the end of July, which can be categorized as follows:

- Non-discretionary (operating cash and Short Term Investment Fund (“STIF”) balances held by external investment managers): \$438 million

- Discretionary (internal operating cash and STIF balances accessible for the daily operating needs of the Plan): \$1.0 billion

The Fund's total cash and short-term investment fund balance represented 2.6% of the Plan's unaudited net position, while its discretionary cash and short-term investment fund balance represented 1.8% of the Plan's unaudited net position.

Chart 2: Cash and Short-Term Investment Fund Balance (Unaudited)



The following table (Table 1) provides a summary of cash flows at the asset category level. For the month of July, the Total Fund had net investment outflows totaling -\$9.5 million.

Table 1: Asset Category Cash Flows

Asset Category and Activity	\$ in Millions	Cash Impact
<u>Private Equity</u>		
Distributions	\$83.1	Inflow
Capital calls	<u>-\$144.0</u>	<u>Outflow</u>
<i>Private Equity</i>	<i>-\$60.9</i>	<i>Net Outflow</i>
<u>Public Equity: U.S.</u>		
Distributions	\$0.0	Inflow
Contributions	<u>-\$5.3</u>	<u>Outflow</u>
<i>U.S. Equity</i>	<i>-\$5.3</i>	<i>Net Outflow</i>
<u>Public Equity: Non-U.S.</u>		
Distributions	\$0.0	Inflow
Contributions	<u>-\$0.3</u>	<u>Outflow</u>
Currency hedge	<u>\$84.9</u>	<u>Inflow</u>
<i>Non-U.S. Equity</i>	<i>\$84.6</i>	<i>Net Inflow</i>
<u>Fixed Income</u>		
Distributions	\$0.0	Inflow
Contributions	<u>-\$10.0</u>	<u>Outflow</u>
<i>Fixed Income</i>	<i>-\$10.0</i>	<i>Net Outflow</i>
<u>Commodities</u>		
No activity	<u>\$0.0</u>	<u>n/m</u>
<i>Commodities</i>	<i>\$0.0</i>	<i>n/m</i>
<u>Hedge Funds</u>		
No activity	<u>\$0.0</u>	<u>n/m</u>
<i>Hedge Funds</i>	<i>\$0.0</i>	<i>n/m</i>
<u>Real Estate</u>		
Separate account net activity	<u>-\$10.1</u>	<u>Outflow</u>
Commingled fund net activity	<u>-\$7.8</u>	<u>Outflow</u>
<i>Real Estate</i>	<i>-\$17.9</i>	<i>Net Outflow</i>

The Public Equity asset class realized an \$84.9 million cash inflow from the Non-U.S. Equity currency-hedging program. LACERA's Non-U.S. Equity Investment Policy requires that the developed markets Non-U.S. Equity allocation, currently \$9.6 billion, maintain a passive currency hedge overlay on 50% of its investment value. Note that when the currency overlay program sustains a loss due to a depreciating U.S. dollar, underlying Non-U.S. equity values should be positively impacted. Conversely, in an appreciating U.S. dollar environment, the currency-hedging program will have a gain, while underlying

Non-U.S. equity values should be negatively impacted. Due to currency market movements in the previous three months, the currency hedges maturing in early July realized a gain and \$84.9 million was transferred to cash from LACERA's passive currency overlay account. The hedged Non-U.S. Equity portfolio gained 2.1% net of fees, or approximately \$204.6 million during the month. A change in currency valuation is one of many variables that influences returns for a hedged Non-U.S. Equity portfolio. Cash flow from the currency-hedging program and the related equity portfolio can both deliver positive or negative results in a given period due to the staggered rolling of multiple futures contracts across three months.

ACTIVE SEARCHES

This section is intended to keep the Board of Investments apprised of active investment-related searches that include Requests for Proposal (RFP), Information (RFI), and Quote (RFQ). At this time, there are six searches currently underway.

The first is a targeted search requesting information from select investment management firms that have an offering in the relative value hedge fund category. Staff expects to make recommendations in September and October.

The second is a targeted search requesting information from select investment management firms that have an offering in the hedged equity hedge fund category. Responses have been received and are being reviewed.

The third is a targeted search requesting information from select investment management firms that have an offering in the macro or tactical trading hedge fund category. Responses have been received and are being reviewed.

The fourth is a targeted search for passive exposure to Treasury Inflation Protected Securities (TIPS) through a separate account. The targeted search was issued in August 2018 with responses due in September 2018.

The fifth search is an RFP issued for a liquid real assets completion portfolio manager. The Board has approved minimum qualifications for this search and the RFP was released in August 2018. Response for this mandate are expected in October 2018.

The sixth search is an RFP issued for specialized consultant services in hedge funds, illiquid credit and real assets. The Board has approved minimum qualifications for this search and the RFP was released in August 2018. Response for this mandate are expected in September 2018.

UPDATES

This section provides a brief synopsis of recent developments, near-term work priorities and upcoming projects.

Total Fund

- Staff, in conjunction with Meketa and the Legal Office, is working on updating the Total Fund Investment Policy Statement to reflect the new strategic asset allocation.
- An asset allocation implementation plan and glide path are under development.
- A Total Fund and composite benchmark recommendation by Meketa is scheduled for the September BOI.
- A program to utilize MBA interns within the Investment Division is in development and anticipated to be finalized with schools' career centers in September.
- Staff is working with State Street to re-onboard the custodial bank relationship. Internal processes are being reevaluated with and between different LACERA divisions.
- A procurement procedure for investment-related searches is in development.

Growth

- Public Equity
 - Staff has begun the process of moving assets from public market commingled strategies to separate account structures. The Domestic Equity portion of this transition was completed in July with the international portion of the transition scheduled to begin in Q3.
 - Staff is in legal negotiations with the Public Equity Emerging Managers that were approved at the August BOI Meeting.
- Private Equity
 - A personnel search has been launched for an Investment Officer to focus on venture capital fund investments.
 - Staff and JPMorgan are working on finalizing the business plan and legal documents for the next tranche of the Emerging Manager Program.
 - Staff will review the co-investment program structure in the second half of 2018 and provide results to the Equity Committee and BOI by the end of the calendar year.

Credit

- Staff is developing a structure review to realign sub strategy weights with targets and resize current liquid managers.

Real Assets and Inflation Hedges

- Real Estate
 - Staff is developing an implementation plan for the structure review and annual investment plan that was approved at the July 2018 BOI meeting.

- Staff is underwriting several potential commingled fund opportunities.
- Natural Resources, Infrastructure and Commodities
 - Staff is preparing to transition the commodities exposure to the new functional asset allocation framework.

Risk Reducing and Mitigating

- Fixed Income
 - Subject to Board approval, staff anticipates launching an RFP for an Emerging Manager in the fourth quarter.
 - Consistent with the goal of reducing credit risk attributable to out-of-benchmark sectors, staff anticipates recommending changes to manager allocations in October.
- Hedge Funds
 - A direct portfolio is being built with individual manager recommendations occurring throughout 2018.

Portfolio Analytics

- Staff concluded executing proxy votes for FY2018 and the results and trends will be reported to the Corporate Governance Committee in October.
- Assessment of public markets managers' ESG practices continues to be refined, with takeaways integrated into LACERA's public market manager searches and monitoring.
- A personnel search is in process for a Financial Analyst II.
- Staff is working on enhancing the risk and return attribution reporting at the Total Fund level.

OPEB

- Transition to the updated asset allocation was completed.

COMPLIANCE MONITOR

Evaluating the Fund's investment portfolios against established policies and guidelines is an integral part of the ongoing portfolio management process and is commonly referred to as compliance. The Fund's portfolio is implemented in a nuanced way across multiple asset categories, so LACERA utilizes a multi-faceted approach to evaluate compliance. A summary of compliance activities across the Total Fund identifying advisory notifications where appropriate is provided on a calendar quarter basis. Compliance categories include allocation target weights, portfolio policies such as the use of leverage, and guidelines for various items such as types of permissible holdings. The next report is scheduled to be provided as part of the September CIO Report.

INVESTMENT MANAGER MEETINGS

The purpose of this section is to promote transparency and governance best practices through the timely listing of manager meeting requests that the staff and/or consultant(s) receive from either the Chief Executive Officer (CEO) or a member of the Board of Investments.

In the normal course of business, the CEO or a Board member might recommend that staff meet with a specific manager; there might even be a subsequent discussion regarding a specific manager. If a third communication about the manager takes place within a rolling one-year period, LACERA's Investment Policy Statement directs that the full Board be notified of the requests. This process is designed to preserve the integrity of the decision-making process. Such contact would be reported in this section.

There are no contacts to report this month.

AUGUST FORECAST

The Conference Board (“TCB”) was founded in 1916 with an agenda to provide business insights to the public. Among the research and insights that TCB publishes is a Leading Economic Index (“LEI”). The LEI aggregates economic data across components such as initial claims for unemployment, manufacturer’s new orders, building permits, and interest rate spreads. The U.S. LEI increased 0.6% in July and has increased every month in 2018 with widespread contribution from the underlying components (nine of ten indicators increased in July). The LEI has consistently risen since 2009. While leading economic indicators cannot predict the future for asset prices, they provide useful data.

In August, U.S. equity markets continued to establish all-time highs. The broad S&P 500 index has risen 289% since February 2009. The technology-heavy Nasdaq index has increased 477% since February 2009. These market gains have weathered headwinds over the past couple of years that include rising rates, a flattening yield curve, global trade tensions and geopolitical uncertainty. As corporate earnings and economic data are key determinants of asset prices over longer periods, the LEI provides context regarding economic fundamentals and may be a useful forecasting tool with respect to the direction of the economy.

As of publication of this report, during the month of August, the S&P 500 stock index was up 3.5% while the Bloomberg Barclays Global Aggregate bond index was up by 0.4%. The Total Fund will likely have a positive month.

Attachments

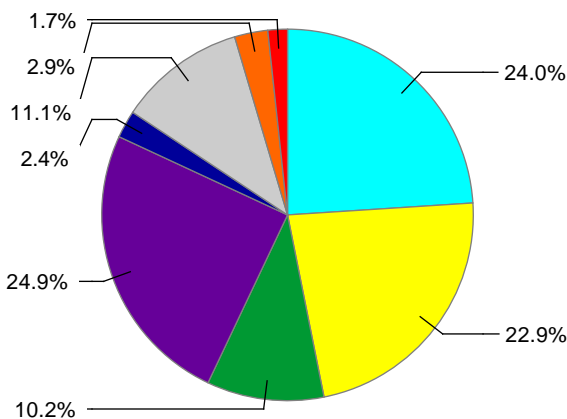
LACERA'S ESTIMATED TOTAL FUND

July 31, 2018



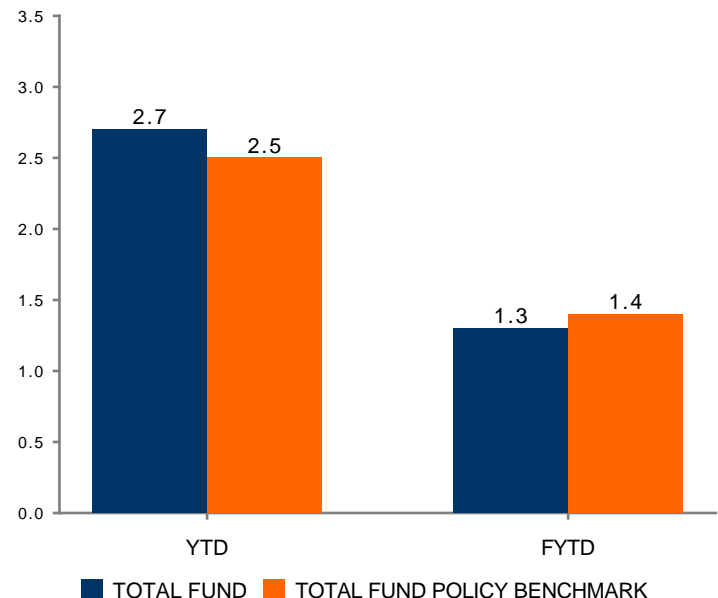
	Market Value (millions)	Actual % Total Fund	Target % Total Fund	VUVOCSÄJÖVMÜPÜÄP ÖVD				
				YTD	FYTD	3 Year	5 Year	10 Year
U.S. EQUITY	13,574.6	24.0	23.1	6.2	3.2	11.8	12.6	10.6
RUSSELL 3000 (DAILY)				6.6	3.3	12.2	12.8	10.7
Non-U.S. EQUITY (Hedged)	12,917.9	22.9	20.3	-0.1	2.1	7.4	7.7	4.5
CUSTOM MSCI ACWI IMI N 50%H				-0.3	2.2	6.8	7.3	4.3
PRIVATE EQUITY ^[1]	5,758.3	10.2	10.0	9.8	0.0			
PRIVATE EQUITY TARGET ^[2]				8.2	1.1			
FIXED INCOME	14,043.0	24.9	26.6	-0.6	0.4	3.1	3.3	5.3
FI CUSTOM INDEX				-1.5	0.2	2.0	2.6	4.2
REAL ESTATE ^[1]	6,273.7	11.1	11.0	4.2	0.0			
REAL ESTATE TARGET				4.7	0.6			
COMMODITIES	1,379.4	2.4	2.8	-1.5	-2.2	0.1	-5.7	-6.6
Bloomberg Commodity Index Total Return				-2.1	-2.1	-1.6	-7.1	-8.1
HEDGE FUNDS ^[3]	1,610.7	2.9	4.2	2.6	-0.0	2.9	4.1	
HEDGE FUND CUSTOM INDEX ^[3]				3.8	0.6	5.7	5.4	
CASH	952.9	1.7	2.0	1.1	0.2	1.0	0.7	0.8
FTSE 6 M Treasury Bill Index				1.0	0.2	0.8	0.5	0.4
TOTAL FUND ^[1]	56,510.4	100.0	100.0	2.7	1.3			
TOTAL FUND POLICY BENCHMARK				2.5	1.4			

Asset Allocation



■ U.S. EQUITY
 ■ Non-U.S. EQUITY
 ■ PRIVATE EQUITY
 ■ FIXED INCOME
■ COMMODITIES
 ■ REAL ESTATE
 ■ HEDGE FUNDS
 ■ CASH

Net Returns



[1] Returns for private equity and real estate are calculated on a quarterly basis and are not updated intra quarter. Therefore, 3-, 5- and 10-year returns are only calculated at quarter-end for private equity and real estate. In addition, the Total Fund's returns are based on the latest available quarterly returns for these two asset classes.

[2] Rolling ten-year return of the Russell 3000 plus 500 basis points (one-quarter lag).

[3] One-month lag. Performance included in the Total Fund beginning 10/31/11

These are preliminary returns

Limited Access
08/14/2018 05:12:44 PM

Periods greater than 1-year are annualized

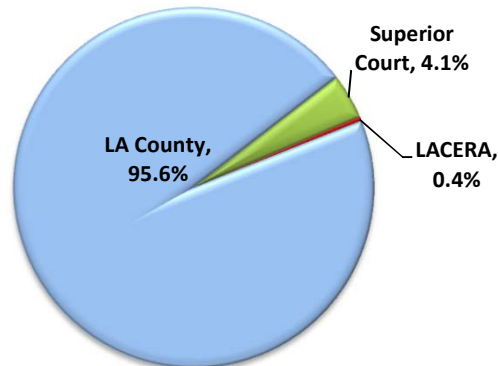
OPEB MASTER TRUST

July 31, 2018



Fund Name		Inception Date	Market Value (millions)	Trust Ownership	Month	3 Month	FYTD	1 Year	3 Year	5 Year	Since Incept.
Los Angeles County:	Gross	Feb-2013	\$912.8	95.6%	1.50	2.14	1.50	9.46	8.10	6.65	6.09
	Net				1.49	2.13	1.49	9.41	8.06	6.60	6.05
	Net All				1.49	2.12	1.49	9.38	7.99	6.56	6.00
LACERA:	Gross	Feb-2013	\$3.5	0.4%	1.50	2.13	1.50	9.51	8.16	6.68	6.12
	Net				1.49	2.12	1.49	9.46	8.11	6.64	6.08
	Net All				1.47	2.06	1.47	8.91	7.41	6.22	5.69
Superior Court:	Gross	Jul-2016	\$38.7	4.1%	1.45	2.08	1.45	9.40	---	---	10.92
	Net				1.44	2.06	1.44	9.35	---	---	10.89
	Net All				1.43	2.04	1.43	9.21	---	---	10.07
TRUST OWNERSHIP TOTAL:			\$955.0	100.0%							

Trust Ownership



Fund Name		Inception Date	Market Value (millions)	Trust Ownership	Month	3 Month	FYTD	1 Year	3 Year	5 Year	Since Incept.
OPEB Growth	Gross	Jul-2016	\$470.3	49.2%	2.79	2.63	2.79	11.51	---	---	16.22
	Net				2.78	2.63	2.78	11.47	---	---	16.18
OPEB Credit	Gross	Jul-2018	\$191.3	20.0%	0.90	---	---	---	---	---	0.90
	Net				0.87	---	---	---	---	---	0.87
OPEB Risk Reduction & Mitigation	Gross	Jul-2018	\$100.7	10.5%	0.17	---	---	---	---	---	0.17
	Net				0.17	---	---	---	---	---	0.17
OPEB Inflation Hedges	Gross	Jul-2018	\$192.7	20.2%	-0.27	---	---	---	---	---	-0.27
	Net				-0.28	---	---	---	---	---	-0.28
Uninvested Cash			\$0.0	0.0%	---	---	---	---	---	---	---
TRUST OWNERSHIP TOTAL:			\$955.0	100.0%							

PUBLIC INVESTMENT-RELATED SEARCHES APPLICANTS

This document identifies firms who have pro-actively submitted an application to LACERA in response to a publicly posted request. These publicly posted requests are commonly referred to as searches and may include minimum qualifications. When an external firm submits an application to a search, LACERA is in a quiet period with the applying firm while the search is active.

The following firms have responded to a request for proposal regarding an active emerging manager equity mandate:

361 Capital
AltraVue Capital
AMP Wealth Management
Applied Research Investments
Arabesque Asset Management
Ativo Capital Management
Blackcrane Capital, LLC
Bowling Portfolio Management
Bridge City Capital, LLC (BBC)
Business Technology Associates
Cedar Street Asset Management
Compass Group LLC
CornerCap Investment Counsel
Decatur Capital Management
Denali Advisors
Dundas Global Investors
Eastern Shore Capital Management
Empiric Institutional LLC
Global Alpha Capital Management
Goelzer Investment Management, Inc.
Granahan Investment Management
Granite Investment Partners
High Pointe Capital Management LLC
Hillcrest Asset Management
Isthmus Partners, LLC
Marietta Investment Partners
Mark Asset Management
Martin Investment Management LLC
Maryland Capital Management (MCM)
Matarin Capital Management
Metis Global Partners
Monarch Partners
New Amsterdam Partners LLC
Oak Associates LTD

Each Member, Board of Investments

July 5, 2018

Page 2 of 2

OakBrook Investments LLC
Osmosis Investment Management US LLC
Pacific Ridge Capital Partners, LLC
Pacific View Asset Management LLC
Redwood Investments
RVX Asset Management, LLC
Seamans Capital Management
Semper Augustus Investments Group LLC
Spyglass Capital Management LLC
Summit Global Investments
Sustainable Insight Capital Management
Union Square Park Capital Management LLC

JG: cq



September 4, 2018

TO: Each Member
Board of Investments

FROM: Robert R. Hill *RRH*
Interim Chief Executive Officer

FOR: Board of Investments Meeting of September 12, 2018

SUBJECT: Association for Asian American Investment Managers' National Conference
September 19 –20, 2018 in Los Angeles, California

The Association for Asian American Investment Managers' National (AAAIM) Conference will be held on September 19 –20, 2018 at the Luxe Sunset Boulevard Hotel in Los Angeles, California. AAAIM's annual conference is the national platform for Asian American investment managers across the major asset classes of private equity, hedge funds, public equities, fixed income and real assets to meet, conduct business and learn from insightful leaders and each other. The event gathers a broad range of investment professionals with common interests from public pension funds, other institutional limited partners, emerging managers and large investment firms.

Main conference highlights include the following:

- High Level Optimization – Vantage Point from Powerful Women at the Top
- Roundtable: Optimizing the Largest Portfolios
- Asset Class Spotlight

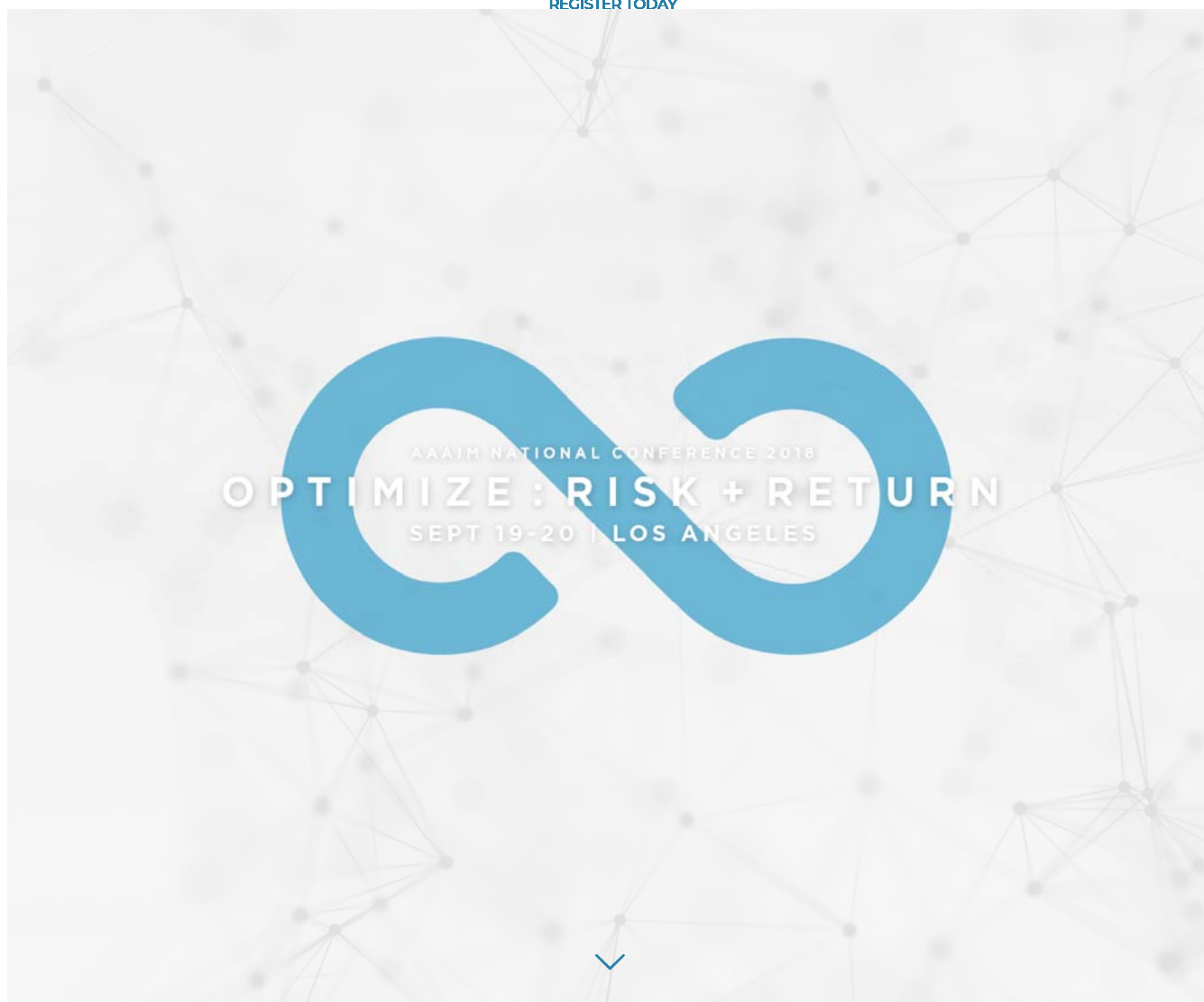
The conference meets LACERA's policy of an average of five (5) hours of substantive educational content per day. The hotel group rate at the Luxe Sunset Boulevard hotel is \$330.00 per night plus applicable taxes. The registration fee for Board members is \$300.00.

If the registration fee is insufficient to pay the cost of the meals provided by the conference sponsor, LACERA must reimburse the sponsor for the actual cost of the meals, less any registration fee paid. Otherwise, the attendee will be deemed to have received a gift equal to the value of the meals, less any registration fee paid, under California's Political Reform Act.

IT IS THEREFORE RECOMMENDED THAT YOUR BOARD:

Approve attendance of Board members at the Association for Asian American Investment Managers' National Conference on September 19 –20, 2018 in Los Angeles, California and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy.

REGISTER TODAY



20  18

JOIN US

EXPLORE WAYS TO OPTIMIZE YOUR RISK AND RETURN

Join us for the Association for Asian American Investment Managers' (AAAAM) 2018 National Conference taking place at the beautiful Luxe Sunset Boulevard Hotel in Los Angeles, California.

AAAAM's annual conference is the national platform for Asian American investment managers across the major asset classes of private equity, hedge funds, venture capital, public equities, fixed income, and real assets to meet, conduct business and learn from insightful leaders and each other. The event gathers a broad range of investment professionals with common interests from public pension funds, other institutional limited partners, emerging managers and large investment firms. The pre-conference activities on September 19th include the signature 'Emerging Leaders Initiative (ELI) Session' (previously Young Professionals), a half-day discussion focused on professional development; and the new 'Emerging Managers Assembly Day,' a half-

day discussion for GP's and LP's that will focus on opportunities within the EM niche. The main conference day, September 20th, will be a fast-paced and focused day to learn about domestic and global opportunities and network with world class speakers and panelists.

20  18
AGENDA

WEDNESDAY
SEPT 19TH
EMERGING LEADERS INITIATIVE
LUXE SUNSET BOULEVARD HOTEL
11461 Sunset Blvd
Los Angeles, California 90049

12:00PM
REGISTRATION OPENS

12:00PM - 1:00PM
NETWORKING LUNCHEON

1:00PM - 1:15PM
WELCOME REMARKS
[READ MORE >](#)

1:15PM - 2:15PM
SUCCESS AND WAR STORIES PANEL
[READ MORE >](#)

2:15PM - 2:30PM
BREAK

2:30PM - 3:30PM
WOMEN MOVERS & SHAKERS
[READ MORE >](#)

3:30PM - 3:45PM
BREAK

WEDNESDAY
SEPT 19TH
EMERGING MANAGERS ASSEMBLY DAY
LUXE SUNSET BOULEVARD HOTEL
11461 Sunset Blvd
Los Angeles, California 90049

12:00PM
REGISTRATION OPENS

12:00PM - 1:00PM
NETWORKING LUNCHEON

1:00PM - 1:15PM
WELCOME REMARKS
[READ MORE >](#)

1:15PM - 2:15PM
SUCCESS AND WAR STORIES PANEL
[READ MORE >](#)

2:15PM - 2:30PM
BREAK

2:30PM - 3:30PM
ROUNDTABLE DISCUSSIONS
[READ MORE >](#)

3:30PM - 3:45PM
BREAK

3:45PM - 4:45PM
PLAN SPONSOR EM PANEL
[READ MORE >](#)

THURSDAY
SEPT 20TH
AAAIM NATIONAL CONFERENCE
LUXE SUNSET BOULEVARD HOTEL
11461 Sunset Blvd
Los Angeles, California 90049

7:30AM
REGISTRATION OPENS

8:15AM - 8:30AM
WELCOME REMARKS
[READ MORE >](#)

8:30AM - 9:30AM
HIGH LEVEL OPTIMIZATION - VANTAGE POINT FROM POWERFUL WOMEN AT THE TOP
[READ MORE >](#)

9:30AM - 9:45AM
BREAK

9:45AM - 10:45AM
AM INSTITUTIONAL INVESTOR ROUNDTABLE: OPTIMIZING THE LARGEST PORTFOLIOS
[READ MORE >](#)

10:45AM - 11:00AM
BREAK

11:00AM - 11:45AM
AM BREAKOUT SESSIONS - ASSET CLASS SPOTLIGHT

3:45PM - 4:45PM

PLAN SPONSOR EM PANEL

[READ MORE >](#)

4:45PM - 5:30PM

**CLOSING RECEPTION &
NETWORKING**

4:45PM - 5:30PM

**CLOSING RECEPTION &
NETWORKING**

8:00PM - 10:00PM

POOLSIDE DESSERT RECEPTION

Track 1: Venture Capital

[READ MORE >](#)

Track 2: Hedge Funds

[READ MORE >](#)

Track 3: Real Assets

[READ MORE >](#)

12:00AM - 1:15PM

LUNCHEON

12:05PM - 12:10PM

LUNCHEON WELCOME

[READ MORE >](#)

12:30PM - 1:15PM

**FIRESIDE CHAT WITH CHARLIE
COOK**

[READ MORE >](#)

1:15PM - 1:45PM

FIRESIDE CHAT WITH ROB PARK

[READ MORE >](#)

1:30PM - 2:00PM

BREAK

2:00PM - 2:45PM

**PM BREAKOUT SESSIONS - ASSET
CLASS SPOTLIGHT**

Track 1: Private Equity

[READ MORE >](#)

Track 2: Public Equity

[READ MORE >](#)

Track 3: Private Credit / Fixed Income

[READ MORE >](#)

2:45PM - 3:00PM

BREAK

3:00PM - 4:00PM

**IMPACT OF BLOCKCHAIN,
CRYPTOCURRENCIES AND ICOS**

[READ MORE >](#)

4:00PM - 5:00PM

**PM INSTITUTIONAL INVESTOR
ROUNDTABLE: BLANK CANVAS**

[READ MORE >](#)

5:00PM - 6:00PM

**CLOSING RECEPTION &
NETWORKING**



August 31, 2018

TO: Each Member
Board of Investments

FROM: Robert R. Hill *RRH*
Interim Chief Executive Officer

FOR: Board of Investments Meeting of September 12, 2018

SUBJECT: AVCJ's 31st Annual Private Equity & Venture Forum on November 13–15, 2018 in Hong Kong, China and ChrysCapital Annual Investor Conference on November 15–16, 2018 in Hong Kong, China

The AVCJ 31st Annual Private Equity & Venture Forum will take place on November 13–15, 2018 and the ChrysCapital Annual Investor Conference will take place on November 15–16, 2018 in Hong Kong, China at the Four Seasons Hotel. The AVCJ Forum is the premier private equity and venture capital event in Asia. Now in its 31st year, this annual conference brings together over 1,000 GPs, LPs and other professionals to Hong Kong for three days of meetings, discussions and deal making. The AVCJ Forum combines editorially driven topics, knowledgeable speakers, industry insights, and superb organization into a highly anticipated event that predicts trends, hones strategies, and develops lasting partnerships. For 2018, the AVCJ Forum will focus on the theme of how the industry can reinvent its ecosystem as a means to deliver superior returns in the long term.

Main conference highlights include the following:

- Investment Summit – Big Picture Themes, Investments, Fundraising, LP/GP Relationship
- VC Summit – Venture Capital, Entrepreneurism and Technology Trends
- PE Leaders Summit – The Day-To-Day Business of Running a Private Equity Firm

The conference meets LACERA's policy of an average of five (5) hours of substantive educational content per day. The hotel group rate at the Four Seasons Hotel is \$535.00 per night plus applicable taxes. The registration fee for the AVCJ 31st Annual Private Equity & Venture Forum is \$4,495.00. There is no registration fee for the ChrysCapital Annual Investor Conference however, the food & beverage costs range from \$300.00 to \$400.00.

If the registration fee is insufficient to pay the cost of the meals provided by the conference sponsor, LACERA must reimburse the sponsor for the actual cost of the meals, less any registration fee paid. Otherwise, the attendee will be deemed to have received a gift equal to the value of the meals, less any registration fee paid, under California's Political Reform Act.

IT IS THEREFORE RECOMMENDED THAT YOUR BOARD:

Approve attendance of Board members at the AVCJ's 31st Annual Private Equity & Venture Forum on November 13–15, 2018 in Hong Kong, China and ChrysCapital Annual Investor Conference on November 15–16, 2018 Hong Kong, China and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy.

RH/lg
Attachment

31st Annual AVCJ Private Equity & Venture Forum

13-15 NOV 2018 HONG KONG

Global Perspective, Local Opportunity

CONFIRMED HEADLINE SPEAKERS THIS YEAR INCLUDE:



Clara Chan
Chief Investment Officer
(Private Markets)
HONG KONG
MONETARY AUTHORITY



Jonathan Lavine
Co-Managing Partner
BAIN CAPITAL



Nikos Stathopoulos
Managing Partner
BC PARTNERS



Ravi Thakran
Chairman and
Managing Partner
L CATTERTON ASIA



Kok Yew Tang
Chairman and
Managing Partner
AFFINITY EQUITY
PARTNERS



Ming Lu
Head of Asia Pacific
KKR ASIA LIMITED

“The AVCJ Forum is one of the most important conferences in the world especially in Asia. Everybody knows about it and it’s an important place where you can maintain your cutting-edge knowledge of what’s going on in the investing world. I think there’s a great mix of people that come here from all types of investment firms whether they’d be venture or buyouts and that’s good to understand the market more deeply.”

Daniel D’Aniello, Co-Founder, THE CARLYLE GROUP

LPS CHOOSE AVCJ FORUM

250+
LPs in 2013

270+
LPs in 2014

310+
LPs in 2015

330+
LPs in 2016

410+
LPs in 2017

avcjforum.com



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Gala Dinner Sponsor



Co-Sponsors



VC Summit Sponsors



VC Summit Legal Sponsor



PE Leaders' Summit



LP Summit Sponsors



Awards Sponsor



Exhibitors



Sponsorship opportunities

The AVCJ Forum offers a range of standard and bespoke sponsorship packages that can be tailored to suit your company's budget and business objectives.

For more information please contact **Darryl Mag** on **+852 2158 9639** or **sponsorship@avcj.com**

Reinventing Asian private equity: building an ecosystem for sustainable returns

ABOUT THE AVCJ FORUM

The **AVCJ Forum** is the premier private equity and venture capital event in Asia. Now in its 31st year, this annual conference brings together over 1,000 GPs, LPs and other professionals to Hong Kong for three days of meetings, discussions and deal making. The AVCJ Forum combines editorially driven topics, knowledgeable speakers, industry insights, and superb organization into a highly anticipated event that predicts trends, hones strategies, and develops lasting partnerships. For 2018, the AVCJ Forum will focus on the theme of how the industry can reinvent its ecosystem as a means to deliver superior returns in the long term.

The four distinct summits of the AVCJ Forum will each cover a different facet of the private equity and venture capital industry that gives attendees a complete perspective on their particular business needs.

Investment Summit – Big picture themes, investments, fundraising, LP/GP relationship

VC Summit – Venture capital, entrepreneurship and technology trends

PE Leaders Summit – The day-to-day business of running a private equity firm

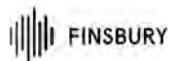
LP Summit – Closed-door LP only sessions

2017 Forum key statistics:

1,100+ Attendees	554 Organisations	410 Limited Partners	160 Expert Speakers	34 Countries
----------------------------	-----------------------------	--------------------------------	-------------------------------	------------------------

Partners & Supporting Organisations

Official PR Partner



Supporting organisations



Media partners



Register online: avcjforum.com

2018 AVCJ FORUM

SCHEDULE
AT A GLANCE

Monday, 12 November

Asian Private Equity & Venture Capital Awards

Island Shangri-La Hotel (by invitation only)

18:15 Cocktail reception

19:15 AVCJ Awards dinner & presentation

Sponsored by



Tuesday, 13 November

PE Leaders' Summit

Venture Capital Summit

Limited Partners' Summit

Four Seasons Hotel

09:00 Summits start

18:00 Summits conclude

Forum Welcome Cocktails

Four Seasons Hotel

18:15 Networking cocktails

Wednesday, 14 November

Investment Summit (Day I)

Four Seasons Hotel

09:00 Summit starts

18:10 Summit concludes

Gala Cocktail and Dinner

Four Seasons Hotel

18:15 Gala cocktail reception

Sponsored by



19:00 Gala dinner

Sponsored by



Thursday, 15 November

Investment Summit (Day II)

Four Seasons Hotel

09:00 Summit starts

16:30 Summit concludes

SPEAKERS

Leading GPs and LPs confirmed are:



Amit Anand
Founding Partner
JUNGLE VENTURES



Kirk M. Beaton
Partner
LEXINGTON PARTNERS



Nicholas Bloy
Co-Founder & Managing Partner
NAVIS CAPITAL PARTNERS



Joe Bryant
Investment Director
UCLA INVESTMENT COMPANY



Clara Chan
Chief Investment Officer
(Private Markets)
HONG KONG MONETARY
AUTHORITY



Lorna Chen
Head of Greater China
SHEARMAN & STERLING LLP



Jeffrey Chi
Vice Chairman - Asia
VICKERS FINANCIAL PARTNERS



Jeremy Collier
CIO and Chairman
COLLER CAPITAL



Michelle Deaker
Managing Partner
ONEVENTURES



Juan Delgado-Moreira
Managing Director
HAMILTON LANE



Lucas Deter
Managing Principal
CARVAL INVESTORS



Paul DiGiacomo
Managing Director
BDA PARTNERS



Alicia Gregory
Head of Private Equity
MLC



Zhipeng Gu
CEO and Member of the Investment
Committee
JD CAPITAL



Mounir Guen
Chief Executive Officer
MVISION STRATEGIC (ASIA)
LIMITED



Melissa Guzy
Founder and Managing Partner
ARBOR VENTURES



Gregory Jania
Head of Fund Investments, Global
Private Equity
APG ASSET MANAGEMENT



Tony Jiang
Co-Founder and Partner
OCEAN LINK



Xiaodong Jiang
Managing Partner
LONG HILL CAPITAL



Tatsuo Kawasaki
Founding Partner
UNISON CAPITAL



Ralph Keitel
Principal Investment Officer and Regional
Lead East Asia, Private Equity Funds
INTERNATIONAL FINANCE
CORPORATION



Yup S. Kim
Senior Portfolio Manager
Private Equity and Special Opportunities
ALASKA PERMANENT FUND
CORPORATION



T. J. Kono
Partner
UNISON CAPITAL



Dennis Kwan
Managing Director
MVISION STRATEGIC (ASIA)
LIMITED



Jonathan S. Lavine
Co-Managing Partner
BAIN CAPITAL



Chris Lerner
Partner and Head of Asia
EATON PARTNERS



Bernard Liautaud
Managing Partner
BALDERTON CAPITAL

For the latest confirmed speakers visit: www.avcjforum.com

Register online: avcjforum.com

SPEAKERS

Leading GPs and LPs confirmed are:



Paul Liu
Founder and CEO
HUI SHENG CONSULTING



Ming Lu
Head of Asia Pacific
KKR ASIA LIMITED



Mark McCombe
Head of Americas
BLACKROCK



Hemal Mirani
Managing Director
HARBOURVEST PARTNERS
(ASIA)



Gabriel Morrow
Senior Investment Officer
NEW YORK CITY RETIREMENT
SYSTEMS



Rodney Muse
Co-Managing Partner
NAVIS CAPITAL PARTNERS



Robert Ohrenstein
Global Head of Private Equity
KPMG



James D. C. Pitt
Partner
LEXINGTON PARTNERS



Katja Salovaara
Senior PE Portfolio Manager
ILMARINEN



Rakesh Saraf
Head of Private Investments
ALBERTA TEACHERS'
RETIREMENT FUND



Ranjit Shah
Managing Partner and Co-Founder
GAJA CAPITAL



Kyle Shaw
Founder & Managing Partner
SHAWKWEI & PARTNERS



Jason Shin
Managing Partner
VIG PARTNERS



Jordan Silber
Partner
COOLEY LLP



Padmanabh (Paddy) Sinha
Managing Partner
TATA OPPORTUNITIES FUND



Nikos Stathopoulos
Managing Partner
BC PARTNERS



Oliver Stratton
Managing Director
ALVAREZ & MARSAL



Derek Sulger
Partner
LUNAR



Kok Yew Tang
Chairman and
Managing Partner
AFFINITY EQUITY
PARTNERS



Ravi Thakran
Chairman and Managing Partner
L CATTERTON ASIA



Sean R. Warrington
Director of Private Markets
ALFRED I. DUPONT TRUST



Maverick Wong
Managing Director and the Head of
Private Equity
CHINA PING AN INSURANCE
OVERSEAS (HOLDINGS) LIMITED



Wei Zhou
Founding and Managing Partner
CHINA CREATION VENTURES
(CCV)

For the latest confirmed speakers visit: www.avcjforum.com

Register online: avcjforum.com

Private Equity Leaders' Summit

Tuesday, 13 November 2018

08:00 **Registration**

08:50 **Opening remarks**

09:00 **Opening Address** *(Joint session with the Venture Capital and Limited Partners' Summits)*

09:30 **Asian private equity: A new maturity** *(Joint session with the Venture Capital and Limited Partners' Summits)*

Private equity investment and exits both hit record highs in Asia last year, despite an abundance of capital entering the asset class, which has driven up competition and valuations. For leading managers at the top end of the market, staying ahead means increasing product offerings, widening team skillsets, innovative deal sourcing, driving value creation, utilizing technology in portfolio management, and carefully considering exit options. Our panel will share their tips for achieving success.

- What are GPs doing to differentiate themselves as the industry matures?
- How are technology trends impacting private equity?
- How is the exit market developing in Asia?
- What are the implications of ever larger pan-regional funds?

10:30  **Networking coffee break**

11:00 **Best practices: Fund structuring and management**

Global tax and regulatory developments are forcing private equity firms to look more closely at their choice of fund domicile. Even though many choose to remain in the Cayman Islands, they are reviewing governance and operational protocols for fear of doing more than is permitted in a particular jurisdiction and triggering anti-avoidance mechanisms. It is just one of various threats to conventional thinking on setting up funds. Our experts assess the options for GPs.

- For what reasons would a manager stop using Cayman as a fund domicile?
- How are parallel and feeder structures used to meet the needs of different LPs?
- What are the latest developments regarding BEPS and AIFMD?
- What will the industry look like in five years based on the current policy trajectory?

11:45 **Threats and opportunities: Future-proofing your portfolio**

Technology is redefining industry boundaries and business models, at times playing havoc with investment theses and value creation strategies. As part of their due diligence and portfolio monitoring, private equity firms must develop capabilities to assess the potential for disruption in different industries and devise appropriate responses. In this session a diverse group of industry experts share their views on how private equity firms should address the threats and opportunities presented by technology.

- How is technology factored into initial investment theses?
- In what ways has technology impacted value creation plans?
- What are the talent requirements at the fund and portfolio level?
- Should private equity firms share ideas with venture capital investors?

12:30 **Plenary address** *(Joint session with the Venture Capital and Limited Partners' Summits)*

13:00  **Networking lunch break**

14:00 **Due diligence: Keeping pace with change**

Doing business in Asia can be a complex process and GPs need strong due diligence systems in place to support investment decisions. In addition to sourcing accurate financial information, operating practices and the people tasked with executing them must be scrutinized. Companies have arguably never been more vulnerable given the rise in cybercrime. And for some investors, due diligence is no longer just a pre-investment consideration; it continues, in some form, throughout the holding period.

- How do you evaluate reputational risk?
- What are the best practices for making valuation assessments?
- What systems can be employed to monitor investments on a continuous basis?
- How have the different risk factors evolved in Asia?

Private Equity Leaders' Summit

Tuesday, 13 November 2018

14:45 **A matter of compliance: Building a strong back office**

Private equity firms need to have the systems and processes in place to meet the information needs of stakeholders based in different geographies and with their own ideas of what constitutes best-in-class reporting. This is particularly important for GPs that are trying to broaden their LP bases and become more institutionalized, but back office competence is increasingly regarded as a baseline industry requirement. Our panel of experts consider how the landscape is evolving.

- How are GPs responding to LP demands for clearer and more frequent reporting?
- What back office functions could and should be outsourced?
- Are GPs prepared for sustainability reporting?
- What tools can be used to enhance data gathering, analysis and reporting?

15:30 **The debt portion: Getting deal financing**

With dry powder at record levels globally and in Asia, valuations are being driven up and leverage is becoming increasingly prevalent in Asia on regional control buy-outs. As GPs look to enhance returns through recapitalisations and minority back-leverage, how should sponsors go about arranging finance for their deals? A panel of experts will highlight the current trends and discuss the options and relevant challenges in financing private equity deals in Asia.

- Which markets will be the most active for leveraged buyouts in the next five years?
- What are the sources of capital? How to choose the best option/combination for a deal?
- What challenges do sponsors face in securing financing?
- How to structure your deal to maximize the chance of securing financing?

16:15 **Networking coffee break**

16:30 **Asian venture capital: Moving to the next level** *(Joint session with the Venture Capital and Limited Partners' Summits)*

There is already evidence of differentiation in Asia's venture capital industry, whether it involves sector specialization, pursuing distinct early or late-stage strategies, or teams with local agendas spinning out from international firms. But can this conviction about an approach to investment and the expectation that it will deliver rich deal flow translate into consistent and meaningful returns? Investors from across the region share their views on how to build a sustainable industry.

- When will Asia's unicorns deliver on their heady valuations?
- What strategies are being used to achieve rapid scale across multiple markets?
- How do investors make themselves the partner-of-choice for local entrepreneurs?
- In what ways is the quality of start-up founders and teams improving?

17:15 **The LP view on Asia: Can performance be sustained?** *(Joint session with the Venture Capital and Limited Partners' Summits)*

As the private equity industry continues to mature in Asia, there is more differentiation in what GPs are trying to do and LPs have the information to say with greater certainty what works and what does not. Nevertheless, there is general concern about the amount of capital being raised and whether it can be deployed efficiently in a climate of high valuations. Our panel of leading investors discuss the role of Asia in their portfolios.

- What are the pros and cons of larger fund sizes in Asia?
- Does the consolidation of LP relationships create space in funds for smaller investors?
- How technology contributing to investment decision making?
- What about Asian private equity keeps investors awake at night?

18:00 **Close of summit**

18:15 **Cocktail reception**



Venture Capital Summit

Tuesday, 13 November 2018

08:00 **Registration**

08:50 **Opening remarks**

09:00 **Opening Address** *(Joint session with the PE Leaders' and Limited Partners' Summits)*

09:30 **Asian private equity: A new maturity** *(Joint session with the PE Leaders' and Limited Partners' Summits)*

Private equity investment and exits both hit record highs in Asia last year, despite an abundance of capital entering the asset class, which has driven up competition and valuations. For leading managers at the top end of the market, staying ahead means increasing product offerings, widening team skillsets, innovative deal sourcing, driving value creation, utilizing technology in portfolio management, and carefully considering exit options. Our panel will share their tips for achieving success.

- What are GPs doing to differentiate themselves as the industry matures?
- How are technology trends impacting private equity?
- How is the exit market developing in Asia?
- What are the implications of ever larger pan-regional funds?

10:30  **Networking coffee break**

11:00 **Follow the money: VC fundraising in 2018**

Robust demand for exposure to Asian venture capital has driven up fund sizes to levels that would have seemed unrealistic a few years ago. Led by China, some GPs are raising multiple vehicles intended to back companies from seed through later growth rounds. This has been accompanied by greater emphasis on the ways in which investors can support start-ups that are expanding rapidly. Our leading GPs and LPs look at how fundraising trends have evolved.

- How are fund structures and strategies changing?
- What areas does LP due diligence tend to focus on?
- What new types of LPs are focusing on venture capital?
- Is too much capital being raised?

11:45 **Capital inflows: The evolving deal environment**

From SoftBank's Vision Fund to private equity firms to sovereign wealth funds, large-cap investors are looking to deploy more capital in technology. The amount of money entering the sector has never been higher, but it is increasingly concentrated on later stage rounds for companies that are staying private for longer. What do these dynamics mean for early-stage players? Our panelists discuss the realities of working with – or exiting to – larger investors.

- How early must investors go to access the best opportunities?
- Are late-stage investors an exit opportunity or a strategic headache?
- What issues make alignment of interest break down within a broad investor base?
- What impact will initial coin offerings (ICOs) have on the investment landscape?

12:30 **Plenary address** *(Joint session with the PE Leaders' and Limited Partners' Summits)*

13:00  **Networking lunch break**

14:00 **Investing in disruption: Backing the winners**

Autonomous vehicles, artificial intelligence, big data, augmented and virtual reality, robotics – all of these are routinely cited as the next great technology investment opportunity. There are countless start-ups within each segment and in many cases business models touch on several of these areas. What can investors do to ensure the next game-changing innovation is in their portfolio? Our experts offer insights into the complex technology development journey and how they pick the likely winners.

- What are the most exciting areas of disruption?
- How fully formed must an idea or business model be to make it investable?
- What lessons have been learned from investments that didn't work out?
- What technologies currently off the radar will break through in the next five years?

Venture Capital Summit

Tuesday, 13 November 2018

15:00 **The exit conundrum: Finding liquidity**

Venture capital investors are under pressure to generate returns – or at least illustrate paths to liquidity – from the impressive growth stories they are telling. While exit options are gradually widening, the availability of IPOs and the number of larger players capable of M&A varies considerably across different Asian markets. Our panel of fund managers share real-life examples that illustrate the challenges involved in exiting companies and how they can be overcome.

- How is the exit environment developing in China, India, and Southeast Asia?
- Can Hong Kong become a regional hub for technology IPOs?
- How are trade sale options evolving in the region?
- What is the exit outlook for the next 12 months?

16:15 **Networking coffee break**

16:30 **Asian venture capital: Moving to the next level** *(Joint session with the PE Leaders' and Limited Partners' Summits)*

There is already evidence of differentiation in Asia's venture capital industry, whether it involves sector specialization, pursuing distinct early or late-stage strategies, or teams with local agendas spinning out from international firms. But can this conviction about an approach to investment and the expectation that it will deliver rich deal flow translate into consistent and meaningful returns? Investors from across the region share their views on how to build a sustainable industry.

- When will Asia's unicorns deliver on their heady valuations?
- What strategies are being used to achieve rapid scale across multiple markets?
- How do investors make themselves the partner-of-choice for local entrepreneurs?
- In what ways is the quality of start-up founders and teams improving?

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- What about Asian private equity keeps investors awake at night?

18:00 **Close of summit**

18:15 **Cocktail reception**

“This is my 6th year in a row coming to Hong Kong in November just because I find the content very strong, the attendance really good and it's an opportunity to really network and meet with a lot of people all in the same place... it's just an efficient way to conduct a variety of things that I want to do on my trip.”

Josh Stern, Director, Private Investment, ROBERT WOOD JOHNSON FOUNDATION



Limited Partners' Summit

Tuesday, 13 November 2018

08:00 **Registration**

08:50 **Opening remarks**

09:00 **Opening Address** *(Joint session with the PE Leaders' and Venture Capital Summits)*

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- What are GPs doing to differentiate themselves as the industry matures?
- How are technology trends impacting private equity?
- How is the exit market developing in Asia?
- What are the implications of ever larger pan-regional funds?

10:30  **Networking coffee break**

11:00 **LP insights: How to approach Asia**

Asia is not a one-size-fits-all region, and the same can be said for how LPs choose to invest here: fund-of-funds, separately managed accounts, pan-regional funds, sector and single-country focused managers, co-investment, or direct investment. Choice of strategy is a function of resources but the key is to have a clearly defined approach and then find the right partners. Our experts discuss what works and what doesn't when investing in Asia.

- Are LPs become more diverse in their approaches to Asia?
- Which sectors and geographies are most interesting for LPs?
- What are the merits of multi-product GPs versus specialist GPs?
- Have return expectations changed for Asia?

11:45 **Portfolio construction: Optimal allocation**

The ideal private equity portfolio can neutralize cyclical factors by virtue of its long horizon and its geographical and vintage diversification. However, in an Asian context, there are still many questions to be answered. LPs must consider the merits of developed versus developing markets, assess the impact of macroeconomic unrest, and decide how important ESG is to their investment decisions, to name but a few. Our panel goes in-depth on portfolio construction.

- What strategies are used to build a globally diversified portfolio?
- What should active portfolio management entail?
- How is currency risk best addressed?
- To what extent is technology changing approaches to portfolio construction?

12:30 **Plenary address** *(Joint session with the PE Leaders' and Venture Capital Summits)*

13:00  **Networking lunch break**

14:00 **Roundtable discussions: Updates on key industry issues**

We will once again be hosting roundtable discussions on issues that are important to the investor community. Each table will be led by a topic leader who will encourage frank discussion and debate. (Registration is required.) Topics:

- **ESG**
- **Co-investment**
- **Secondaries**
- **Credit**



Limited Partners' Summit

Tuesday, 13 November 2018

16:15  Networking coffee break

16:30 **Asian venture capital: Moving to the next level** *(Joint session with the PE Leaders' and Venture Capital Summits)*

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18:00 **Close of summit**

18:15  Cocktail reception

“AVCJ. It's really the first conference, I would say. It was the first real forum where all the large LPs, our large LPs, came together and this was obviously before we raised our first fund, the first conference that we went to, and we thought that it was a terrific gathering.”

Joseph Y. Bae, Co-President & Co-Chief Operating Officer, KKR



Investment Summit (Day 1)

Wednesday, 14 November 2018

08:00 **Registration**

08:50 **Welcome remarks**

09:00 **Opening address**

09:30 **Global big picture: Will the golden age continue?**

With dry powder and valuation multiples at record highs, and fund sizes becoming ever larger, concerns about the amount of capital entering private markets are rife. But fund managers argue that they are no longer wedded to traditional cycles as evidenced by product offerings becoming more diversified, greater variety in fund terms and time horizons, and more innovative approaches to returning capital. Our experts contemplate the state of the market and what happens next.

- How are global macro developments likely to impact private markets?
- What represents the most significant step forward in product innovation?
- How can private equity take advantage of technological change?
- What will be the biggest changes in the investment landscape over the next five years?

10:30  **Networking coffee break**

11:00 **Fireside Chat**

11:30 **Private equity in Asia: The view from the top**

Investment in the region reached a new high in 2017 due to a surge in mega deals, with corporate divestments, public-to-privates, and late-stage rounds for technology start-ups the major trends. However, intensifying competition in certain segments means GPs are paying more for assets. They must therefore drive greater transformation during the ownership period – through aggressive value-creation initiatives and ambitious bolt-on acquisition strategies – to meet return expectations. Our Asia experts share their secrets for success.

- What is behind the rise in large buyouts and is it sustainable?
- What skills are most useful to a GP when valuations are high?
- Are firms' internal structures changing to deliver a sharper operational focus?
- What are the biggest threats to the current bullish investment climate?

12:25 **Middle market: Being a preferred partner**

Asia's middle-market remains an attractive proposition for buyout and growth capital investors. Opportunities, almost regardless of country, are based on founders and management teams recognizing that third-party capital and expertise can help them address a challenge: it might be succession planning, cross-border expansion, modernization, or product line revitalization. Success in this space is contingent on being able to identify the right companies and then forge strong partnerships with them. Our panel discusses industry best practices.

- How does the middle market differ by country within Asia?
- What qualities does a founder value most in a private equity partner?
- How do mid-size GPs develop strong operating capabilities?
- Are sales to larger PE firms becoming a prevalent exit channel?

13:15  **Networking lunch break**

14:15 **Track 1: Global venture capital: Riding the wave**

Venture capital has a loyal following among LPs globally, but the prospect of getting early exposure to technologies that have the potential to be both lucrative and life-changing is drawing capital from a wider variety of sources. At the same time, deal sizes and company valuations have increased across all stages, raising questions as to whether managers can match the performance of previous vintages. Our panel of investors assess the current state of affairs.

- Is there a bifurcation in the industry between mega managers and the rest?
- How are strategies changing in terms of support for portfolio companies?
- What is the IPO outlook like globally?
- How will the role of strategic investors evolve in venture capital?



Investment Summit (Day 1)

Wednesday, 14 November 2018

Track 2: Asia distress: The expectations game

Investors anticipate a proliferation of distress and restructuring opportunities in Asia, notably as China and India seek remedies to their non-performing loan (NPL) problems. It's not just a developing markets story, with greater interest in the likes of South Korea, Australia and Japan as well, but the execution challenges are similar wherever one goes. Local knowledge is vital in navigating the regulatory environment and finding the right partners. Our panel debates how to access opportunities.

- Is China living up to expectations in terms of NPL deal flow?
- What needs to happen to kickstart the market in India?
- What on-the-ground resources are required for different strategies?
- Is Asia distress delivering strong returns?

15:00 **Fireside Chat**

15:30  **Networking coffee break**

16:00 **Plenary address**

16:30 **Track 1: China private equity: Transition time**

As the Chinese economy matures, so does the private equity opportunity set. Technology, consumer, and services – including hotspots like healthcare and education – are the primary areas of interest, and valuations reflect that. But the real draw for investors is the greater availability of buyouts as founders retire, corporates divest, and management teams seek third-party assistance. GPs must demonstrate they have the skills to take advantage of a changing economy. Our panellists offer their insights.

- How has the investment environment evolved in the last 12 months?
- Can managers make US dollar and renminbi funds work in tandem?
- To what extent are GPs collaborating with strategic investors?
- Is China closer to solving its exits problem?

Track 2: Healthcare: The China story

The underlying fundamentals that make China's healthcare sector attractive are unchanged: rising disposable incomes, changing demographics, and supportive government policy. As a result, it remains popular among investors, even though valuations and a limited number of quality assets have made areas such as hospitals more complicated. GPs are also looking more closely at the pharmaceutical segment, with a handful of drug developers raising sizeable rounds as their products edge towards commercialisation. Our sector specialists discuss.

- Which is the most attractive segment – devices, services or pharmaceuticals?
- Where is valuation pressure the greatest?
- To what extent has the type of investors participating in the market changed?
- How significant is the move to allow zero-revenue biotech firms to list in Hong Kong?

17:15 **The LP landscape: Generating robust returns**

The institutional landscape has become distorted in recent years as the size and scope of the investor community has widened, but the primary consideration for all LPs is still generating returns. They have to decide what is the best fit for their resources and risk appetite, whether it is small commitments to a range of funds or a concentrated portfolio with a focus on co-investment. Our panelists offer insights into their decision-making processes.

- How difficult is it to build a truly diversified Asian portfolio?
- Which types of partnerships between LPs and GPs have been most successful?
- To what extent is ESG playing a larger role in allocation decisions?
- How is the LP community likely to evolve over the next five years?

18:10 **Closing remarks**

18:15  **Gala cocktail reception**

Sponsor

SHEARMAN & STERLING

19:00  **Gala dinner**

Sponsor

AFFINITY EQUITY
PARTNERS

Networking lounge

available to registered delegates from
8.00am to 4.00pm on **13-15 November**

Level 5
Boardroom

Investment Summit (Day 2)

Thursday, 15 November 2018

09:00 **Opening keynote address**

09:30 **Operations: Seizing the initiative**

In a climate of high valuations and intense competition, having the ability to drive operational improvement is crucial. GPs must move quickly, identifying problems and growth opportunities during the due diligence process and acting soon after the deal closes. From sourcing bolt-on acquisitions to matching talent with business objectives to conducting technology impact audits, approaches to value-add are being sharpened. Our panel looks at how investors get it right – and wrong.

- How is the operating partner model evolving?
- Is the 100-day plan approach still relevant?
- How are operating teams adding digital competencies?
- Are LPs satisfied with how GPs are approaching value creation in Asia?

10:30 **Networking coffee break**

11:00 **Track 1: India: Gradual evolution**

A measure of India's development as a private equity market is the emergence of more deals of significant size. There were two dozen investments of \$200 million or above in 2017; the average for the five years before that was nine. It means there is more for pan-regional GPs to feed on, but managers across the spectrum are developing their India strategies, focusing more heavily on value creation. Our country specialists share their expertise.

- To what extent are control transactions becoming more available?
- What are the main obstacles to implementing operational improvement strategies?
- How is the industry doing in terms of exits?
- What will Indian private equity look like in five years' time?

Track 2: Japan: Ready to deliver?

The overriding question for Japanese private equity is can the reality live up to the hype. A string of corporate carve-outs confirmed the longstanding divestment thesis and now investors want to see more. Similarly, a flurry of activity in the middle market around succession planning has created a level of expectation. In both segments, even if assets are available, pricing is likely to be a challenge. Our Japanese stalwarts discuss the market.

- What level of competition is there in different market segments?
- How are GPs helping portfolio companies with outbound M&A?
- What is the right approach to value creation in Japan?
- How do middle-market GPs differentiate themselves?

11:45 **Track 1: Credit strategies: A firm favourite**

Credit managers see ample investment opportunities in Asia while there is healthy appetite for the strategy among LPs seeking portfolio diversification and to combat the j-curve. These dynamics are responsible for an expansion in the number of players in this space, with private equity firms adding credit offerings and new specialist players emerging. Whatever the approach – multi-product solutions or single credit niches – competition is likely to intensify. Our panel explores the key market themes.

- How are GPs building up their resources across the region?
- Which segments of the market are most attractive?
- How do returns in Asia compare with the US and Europe?
- What questions should LPs be asking about different strategies?

Track 2: Technology: Still on top

Technology remains a focal point for investors of all kinds, receiving more capital than any other sector as companies raise ever larger private funding rounds. Some private equity firms are now active participants in this space, while others hang back – but there is no escaping innovation. If GPs aren't actively investing in technology, they need to understand how it might enhance or impede their portfolio companies. Our specialists discuss how best to build up competency.

- Are large highly visible deals distorting the landscape?
- How do PE firms get comfortable with limited voting rights and board seats?
- How is digital transformation driving value creation?
- What impact is SoftBank's Vision Fund making on the sector?



Investment Summit (Day 2)

Thursday, 15 November 2018

12:30 **Track 1: Cross-border expansion: Southeast Asia and beyond**

The pull of Asia's emerging markets is largely based on consumer growth that in some cases has barely been realized. This is arguably no more apparent than in Southeast Asia. Domestic GPs across nearly every market are looking for scalable assets with multi-jurisdictional appeal, while companies from elsewhere in Asia see it as a natural expansion target. However, going cross-border strategy requires deep local knowledge. Our panelists discuss how they see the opportunity set developing. How can private equity investors participate in chaebol restructuring?

- What business models are best suited to a multiple-market approach?
- How difficult is it to find good local partners or employees?
- What are the execution challenges in cross-border deals?
- Is Southeast Asia's risk profile changing?

Track 2: South Korea: Consistent performer

South Korea enjoyed a record year for exits in 2017, driven by sales to strategic and private equity buyers plus some relatively small but significant IPO activity. With some investors showing that they can get money out of Korea, others are happy to put more in. Divestments by local conglomerates are the big-ticket opportunity, but there are also plenty of middle-market deals involving succession planning and modernization. Our panelists assess the investment landscape.

- How can private equity investors participate in chaebol restructuring?
- Are cross-border strategies playing out as expected?
- How much of a competitive threat is posed by local strategic and financial investors?
- What does the state of relations between the North and South mean for investors?

13:15 **Networking lunch break**

14:15 **Wheel of commitments**

Don't miss out on this light-hearted look at the market as managers play to win or lose it all on the spin of a wheel.

15:00 **Exits: An evolving landscape**

Private equity exits reached a record high in Asia last year, largely on the back of substantial trade sale activity as strategic investors – and increasingly GPs – aggressively pursued Asian assets. As a result, distributions from funds in Asia once again exceeded capital calls, with the returns from top-quartile managers exceeding many LPs' expectations. However, it remains to be seen whether performance can be maintained in more recent vintages. Our panelists consider what the future holds.

- Which exit routes have proved most fruitful in 2018?
- Will Asia inevitably see more secondary buyouts?
- What can investors do in the early stages of ownership to maximize exit options?
- How do fund managers address the currency risk issue with LPs?

15:45 **Family offices: Finding the right fit**

Able to respond quickly to opportunities, unafraid to discard traditional institutional investor mindsets, and sometimes making valuable strategic input, a family office can be a very useful LP. The challenge for GPs is finding groups that are a good fit for their strategy. Family offices vary enormously in terms of resources, risk appetite, professionalization, and appreciation for blind pool funds. Our panel discusses the ways in which private equity firms can work with them.

- What do family offices really mean when they say they want to be partners?
- How should GPs go about cultivating these groups as potential investors?
- What sectors, geographies, and strategies are most appealing in Asia?
- How are Asian family offices evolving in terms of structure and professionalisation?

16:30 **Close of summit**

“I look forward to the AVCJ conference, because it is always a collection of some of the best minds and some of the most interesting investors in the region. As the markets are providing loads of opportunities these days, it will be interesting to hear the varieties of approaches people are taking and to share ideas with others at the conference.”

Jonathan S. Lavine, Co-Managing Partner, BAIN CAPITAL

Networking lounge

available to registered delegates from
8.00am to 4.00pm on **13-15 November**

Level 5
Boardroom

AVCJ Private Equity & Venture Forum

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3 Days: PE Leaders / VC Summit & 2-Day Investment Summit ONLY & all social events during this period

Registration details

Please complete your details below in BLOCK CAPITALS or attach your business card.

Mr/Mrs/Ms First name Last name

Job title

Company

Address

City Country Post/zip code

Telephone Fax E-mail

I plan to attend the **Welcome reception** on Tuesday, 13 November at 18:15 (Grand ballroom, Four Seasons Hotel) Yes No

I plan to attend the **Gala cocktail and dinner** on Wednesday, 14 November at 18:15 (Grand ballroom, Four Seasons Hotel) Yes No

Payment details

Cheque payable to Mergermarket Consulting Ltd.

Bank transfer to HSBC, Basement 1 HSBC Main Building, 1 Queen's Road, Central, Hong Kong : A/C# 808104160838(US\$/HK\$)(SWIFT code: HSBCHKHKKH)

Any bank charges must be prepaid. Please fax a copy of the transfer slip to +852 2158 9701.

Credit card: (US\$) Visa MasterCard American Express

Card no. Credit card country issue

Expiry date Security code

Credit card billing address

Name on card Signature

Cancellation/refund policy: A cancellation charge of US\$300 is applicable to written cancellations received on or before **23 October 2018**. No refund will be made for cancellations after the date due to our advance guaranty obligations and administration costs. If you do not attend the event or notify us of your intention to cancel, the full fee will still be payable. A substitute delegate is welcome but the organiser **MUST** be notified in advance of the meeting to avoid incurring a charge. Substitutions may **NOT** be made at the meeting.

Pay in advance: We will include registrants' names on the official delegate list if we have received your registration fees on or before **6 November 2018**. All payments should be made within 14 days from your invoice date. Regrettably, no entrance will be permitted for payments not received before the events takes place.

Venue and Accommodation

Four Seasons Hotel

Address: 8 Finance Street, Central, Hong Kong / Tel : +852 3196 8357 / Fax : +852 3196 8899 / Email: groupres.hkg@fourseasons.com

Please book your room directly with the hotel and identify yourself as an AVCJ Forum participant to qualify for the rate.

For details on how to secure a room and take advantage of our discounted room rates, please email the Four Seasons at groupres.hkg@fourseasons.com

(Please note AVCJ Private Equity & Venture Forum does not bear the responsibility for participants' travel and accommodation arrangements.)

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CHRYSCAPITAL

PLEASE SAVE THE DATES

The 2018 ChrysCapital Annual Cocktails and Investor Conference will be held in Hong Kong.

We request you to please save the following dates:

November 15, 2018: Annual Cocktails at SEVVA, Hong Kong

November 16, 2018: Annual Investor Conference at the Four Seasons Hotel, Hong Kong

Additional details to follow

Agenda: 2018 ChrysCapital Annual Investor Conference

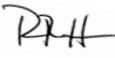
TIME	SUBJECT
8:30 – 9:00	Breakfast and Registration
9:00 – 9:45	Keynote Speech
9:45 – 10:05	Macro and PE Environment
10:05 – 11:00	State of the Firm
11:00 – 11:15	Coffee Break
11:15 – 12:00	ChrysCapital Investment Approach
12:00 – 12:30	Portfolio Company Presentation: Varthana
12:30 – 13:00	Q&A with Mankind Pharma
13:00 – 14:00	Lunch and Networking
14:00 – 14:45	Business Services Review
14:45 – 15:15	Fund NAVs
15:15 – 15:30	Coffee Break
15:30 – 17:00	<p style="text-align: center;"><u>Sector Reviews</u></p> <ul style="list-style-type: none"> • Track A: Financial Services • Track B: Healthcare • Track C: Consumer





September 4, 2018

TO: Each Member
Board of Investments

FROM: Robert R. Hill 
Interim Chief Executive Officer

FOR: Board of Investments Meeting of September 12, 2018

SUBJECT: Harvard Business School – Executive Education: Women on Boards: Succeeding as a Corporate Director on November 26 – 30, 2018 in Boston, Massachusetts

The Harvard Business School – Executive Education: Women on Boards: Succeeding as a Corporate Director will be held on November 26 – 30, 2018 at the Harvard Business School in Boston, Massachusetts. This program will provide senior female executives with the opportunity to navigate the board selection process and to explore ways to effectively govern as a corporate director. Tailored to high-achieving women who seek to contribute to corporate governance at the highest level, this program will also serve as a valuable convening platform for women to explore topics of boardroom diversity among accomplished peers.

The main conference highlights include the following:

- Roles and Responsibilities of Board Members
- The Informal Dynamics that Drive How Boards Function
- How Legal and Regulatory Frameworks Affect Boards
- The Board's Role in Relation to Senior Management
- Successfully Communicating with Diverse Stakeholders

The conference meets LACERA's policy of an average of five (5) hours of substantive educational content per day. The registration fee to attend is \$12,250.00 and the fee covers tuition, books, case materials, accommodations, and most meals.

If the registration fee is insufficient to pay the cost of the meals provided by the conference sponsor, LACERA must reimburse the sponsor for the actual cost of the meals, less any registration fee paid. Otherwise, the attendee will be deemed to have received a gift equal to the value of the meals, less any registration fee paid, under California's Political Reform Act.

IT IS THEREFORE RECOMMENDED THAT YOUR BOARD:

Approve attendance of Board members at The Harvard Business School – Executive Education: Women on Boards: Succeeding as a Corporate Director on November 26 – 30, 2018 in Boston, Massachusetts, and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy.



WOMEN ON BOARDS: SUCCEEDING AS A CORPORATE DIRECTOR

➔ WWW.EXED.HBS.EDU/PROGRAMS/WOB/

Program Objectives

This program provides high-achieving women with the opportunity to navigate the board selection process and to explore ways to effectively govern as a corporate director. Tailored to senior female professionals who seek to contribute to corporate governance at the highest level, this program will also serve as a valuable convening platform for women to explore topics of boardroom diversity among accomplished peers.

Curriculum

Through case study discussions, expert panel discussions, presentations, and individual coaching sessions, the program provides the deep background knowledge you need to become an effective board member. In addition, because all program participants are women in senior executive roles, you'll have a unique opportunity not only to network and share what's worked and what to avoid, but to make lasting connections. The program will provide ongoing resources for participants as they research and pursue board opportunities.

Curriculum topics include:

- Roles and responsibilities of board members
- The informal dynamics that drive how boards function
- How legal and regulatory frameworks affect boards
- The board's role in relation to senior management
- What the next generation of board members needs to know
- Successfully communicating with diverse stakeholders
- How you can prepare to respond effectively to risks and crises
- What you need to win the board appointment you seek
- How to raise your profile with elite search firms

To allow for productive discussion on day one, participants will receive case studies and other course materials in advance.

Participant Mix

Women on Boards is intended for senior female executives of large, publicly held companies who seek to better understand how boards work, prepare themselves for a board role, and meet and network with other senior women.

Anticipated Faculty

William W. George, Boris Groysberg (faculty cochair), Paul M. Healy, F. Warren McFarlan, Cynthia A. Montgomery, David A. Moss, Lynn S. Paine (faculty cochair), and Debora L. Spar



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September 4, 2018

TO: Each Member
Board of Investments

FROM: Robert R. Hill *RH*
Interim Chief Executive Officer

FOR: Board of Investments Meeting of September 12, 2018
Board of Retirement Meeting of September 13, 2018

SUBJECT: Crypto Invest Summit
October 22 – 24, 2018 in Los Angeles, California

The 2018 Crypto Invest Summit will take place on October 22 – 24, 2018 at the Los Angeles Convention Center in Los Angeles, California. The Crypto Invest Summit is the leading conference & summit focused on sustainable investing in blockchain technologies. An exclusive, curated, high-impact, informative and thought-provoking event presented by some of the world's foremost innovators, change makers and prominent leaders in the blockchain and crypto ecosystem. This is the preeminent crypto conference that cannot be missed – presented on two stages featuring insightful fireside chats with the most accomplished, powerful and astounding list of industry leaders and speakers.

The main conference highlights include the following:

- The Past, Present and Future of Blockchain & Crypto
- Successful Crypto Investing
- Centralized vs. Decentralized Exchanges

The conference meets LACERA's policy of an average of five (5) hours of substantive educational content per day. The standard hotel rates range between \$199.00 to \$289.00 per night plus applicable taxes and registration fee to attend is \$349.00.

If the registration fee is insufficient to pay the cost of the meals provided by the conference sponsor, LACERA must reimburse the sponsor for the actual cost of the meals, less any registration fee paid. Otherwise, the attendee will be deemed to have received a gift equal to the value of the meals, less any registration fee paid, under California's Political Reform Act.

IT IS THEREFORE RECOMMENDED THAT YOUR BOARD:

Approve attendance of Board members at the 2018 Crypto Invest Summit on October 22 – 24, 2018 in Los Angeles, California and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy.

Crypto Invest Summit
Sustainable Investing in BLOCKCHAIN TECHNOLOGIES
October 22 – 24, 2018
Los Angeles Convention Center

Monday, October 22, 2018

Load-In Day and Kickoff Party

Tuesday, October 23, 2018

8:55 AM – 9:00 AM: Opening Remarks

Main Stage (Petree Hall)

The founders of Crypto Invest Summit welcome all attendees and give a summary overview of the day ahead

9:00 AM – 9:30 AM Keynote TBD

Main Stage (Petree Hall)

9:30 AM – 10:30 AM: The Past, Present and Future of Blockchain & Crypto

Main Stage (Petree Hall)

12:15 PM – 1:00 PM: Successful Crypto Investing

Main Stage (Petree Hall)

1:00 PM – 1:45 PM: Blockchain for Social Good

Main Stage (Petree Hall)

2:30 PM – 3:15 PM: ICO and STO Legal and Regulatory Overview

Main Stage (Petree Hall)

3:15 PM – 4:00 PM: Healthcare on the Blockchain

Main Stage (Petree Hall)

4:15 PM – 5:00 PM: Entertainment on the Blockchain

Main Stage (Petree Hall)

Wednesday, October 24, 2018

9:30 AM – 10:00 AM: Tim Draper Fireside Chat

Main Stage (Petree Hall)

Billionaire investor and crypto champion Tim Draper talks about smart crypto investing and why getting in early matters

10:00 AM – 11:00 AM: CNBC Crypto Trader Show - Live Taping

Main Stage (Petree Hall)

11:00 AM – 11:15 AM: Decentralized Trading Doesn't Have to Suck

Main Stage (Petree Hall)

11:15 AM – 12:00 PM: Centralized vs. Decentralized Exchanges

Main Stage (Petree Hall)

1:00 PM – 1:45 PM: Real Estate on the Blockchain

Main Stage (Petree Hall)

1:45 PM – 2:30 PM: Disruptive Blockchain & Distributed Ledger Innovations

Main Stage (Petree Hall)

2:30 PM – 2:45 PM: Decentralization Makes Sense: How to Take Back your Privacy and Self-Sovereignty in a Digital World

Main Stage (Petree Hall)

2:45 PM – 3:30 PM: ICO Marketing & PR Insights


Main Stage (Petree Hall)

3:30 PM – 4:15 PM: Gaming & eSports on the Blockchain

Main Stage (Petree Hall)

August 28, 2018

TO: Each Member
Board of Investments

FROM: Jonathan Grabel 
Chief Investment Officer

FOR: September 12, 2018 Board of Investments

SUBJECT: **LACERA PENSION TRUST ASSET ALLOCATION BENCHMARKS**

BACKGROUND

Attached is a presentation from Meketa Investment Group (“Meketa”) on the recommended benchmarks for LACERA Pension Trust’s new Asset Allocation. Subsequent to Meketa’s presentations on benchmarks during the July 10, 2018 Board Offsite and August 8, 2018 Board meeting, staff collaborated with Meketa to evaluate and identify the appropriate benchmarks based on previous feedback from the Board. Subject to Board approval, staff will start the process of shifting to the new asset allocation and benchmarks subsequent to the quarter ending after the ratification of changes to Investment Policy Statement (anticipated later this year). The asset allocation weight changes will be executed in phases with interim policy targets progressively shifting to the approved asset allocation target.

A proposed schedule for implementing the new asset allocation target ranges and the associated benchmarks is also provided in the presentation and summarized in **Table 1** for your reference:

Table 1
Proposed Implementation Schedule for Strategic Asset Allocation

Functional Category Asset Class	1Q 2018 Actual Allocation	3Q 2018 Previous Policy Target	Interim Policy ¹ Target Effective 2Q 2019	New Final Policy ¹ Effective 4Q 2019
Growth	57.2	55	52	47
Global Equity	46.3	43	41	35
Private Equity	9.1	10	10	10
Opportunistic Real Estate	1.8	2	1	2
Credit	9.0	7	10	12
High Yield	4.7	3	4	3
Bank Loans	1.0	2	3	4
EM Debt	0.8	1	1	2
Illiquid Credit	2.5	1	2	3
Real Assets and Inflation Hedges	11.5	12	15	17
Core and Value Added Real Estate	8.7	9	8	7
Natural Resources and Commodities	2.8	3	3	4
Infrastructure	0.0	0	2	3
TIPS	0.0	0	2	3
Risk Reduction and Mitigation	22.2	26	23	24
Investment Grade Bonds	17.9	21	19	19
Diversified Hedge Fund Portfolio	1.7	3	3	4
Cash	2.6	2	1	1

¹ Subject to Board of Investments Approval

RECOMMENDATION

Staff has reviewed Meketa's presentation and concurs with Meketa that the Board should assess the asset allocation benchmarks more regularly and re-evaluate these benchmarks when all asset classes are within target ranges. Staff recommends that the Board approve the proposed benchmarks and schedule for implementing the new asset allocation.

Attachment



Los Angeles County Employees Retirement Association

Benchmark Recommendations Phase I of Strategic Asset Allocation Implementation

M E K E T A I N V E S T M E N T G R O U P

5796 ARMADA DRIVE SUITE 110 CARLSBAD CA 92008
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Table of Contents

- 1. Background**
- 2. Benchmark Review**
- 3. Benchmark Recommendations**
- 4. Benchmark Alignment with Strategic Asset Allocation Implementation**

Background

- The Board of Investments is responsible for reviewing LACERA's investment performance. The Board shall monitor investment returns on both an absolute basis and relative to appropriate benchmarks.
- The Board of Investments approved a new asset allocation at the May 9, 2018 meeting. The new policy allocation adds several new asset classes. It also restructures the allocation into a functional framework.
- Given the addition of new asset classes and the new classification of asset classes, it is appropriate to update the Pension Trust's Total Fund and aggregate benchmarks. In addition, it is appropriate to review the remaining asset classes' benchmarks to ensure they are still relevant and appropriate.
- Consistent with LACERA's Investment Belief that asset allocation will be the primary determinant of LACERA's risk/return outcomes, LACERA's primary focus should be matters that facilitate the implementation of the new strategic asset allocation.
- Benchmarking is an important tool for risk and performance measurement. The benchmarking process should be used to help ensure that the approved strategic asset allocation is reflected in the portfolio and not as a mechanism to determine policy.
- Over the course of the next 12 to 18 months, LACERA will conduct a structure review for each asset category, which will provide forums for detailed discussion and analysis of all LACERA benchmarks. Meketa believes that LACERA's benchmarks should be reviewed on a regular basis to ensure that they are appropriately aligned with the structure of the portfolio and the stages of implementation process.
- At the July off-site, Meketa made a presentation and facilitated a discussion on benchmarking. Meketa then responded to questions from the Board of Investments with a report at the August BOI meeting.
- Also at the off-site, LACERA staff detailed a multiphase implementation plan for the strategic asset allocation.
- This presentation contains recommendations for benchmarks that correspond to Phase I of the implementation plan.

Benchmark Review

Current¹ Policy Benchmark Components

Current Asset Class	Current Policy Benchmark
Total Fund	22.4% Russell 3000 / 21% Custom MSCI ACWI IMI net 50% Hedge / 26.6% BBgBarc U.S. Universal TR / 10% Private Equity Target / 11% NFI ODCE +40 bps / 4.2% Hedge Fund Custom Index / 2.8% Bloomberg Commodity Index / 2% Citi 6-Month T-Bill
U.S. Equity	Russell 3000
Non-U.S. Equity	MSCI ACWI IMI ex-U.S., with 50% Developed Markets currency hedge
Fixed Income	Bloomberg Barclays U.S. Universal Bond Index
Real Estate	NFI ODCE Index + 40 bps
Private Equity	Russell 3000 +500 bps, rolling 10 year
Commodities	Bloomberg Commodity Index
Hedge Funds	3-Month U.S. Treasury Bill + 500 bps
Cash	Citigroup 6-Month Treasury Bill Index

- LACERA's current policy utilizes a dynamic benchmark, adjusted quarterly to measure Plan level performance.
- Public Equities are divided into regional sub-components and benchmarked against relevant indexes.
- The illiquid asset categories all employ a passive index plus a premium approach for measuring performance.
- Private Equity is the only category using a benchmark with a rolling return.

¹ Current benchmarks as per the standing IPS.

Forward Looking Benchmark Considerations

- Do the benchmarks from LACERA's current Investment Policy Statement align with LACERA's current and future implementation plans?
- The newly approved asset allocation adds several asset classes to the Trust's portfolio. What benchmarks are most relevant for the new categories?
 - Global Equity
 - High Yield Bonds
 - Emerging Market Debt
 - Core and Value-Added Real Estate
 - Infrastructure
 - Opportunistic Real Estate
 - Bank Loans
 - Illiquid Credit
 - Natural Resources
 - TIPS
- Illiquid Asset Categories:
 - How relevant are public market benchmarks for each category?
 - What level of return premium is required to account for illiquidity?
 - How should reporting lag be handled in each category?
- The following pages will identify some of the key areas for discussion in each of the functional categories, provide potential benchmark options, and offer guidance on selecting a benchmark for each category.

Benchmark Recommendations

Growth

Asset Category	Recommended Benchmark
Growth	Custom Blended Benchmark - Static

- Meketa believes that using a static benchmark is appropriate for LACERA at the asset category level for Growth.
 - A static benchmark is transparent from a stakeholder perspective and simple from an operational aspect.
 - A static benchmark allows for measurement of allocation/implementation decisions in addition to manager selection.

Growth – Global Equity

Sub Asset Class	% of aggregate	Recommended Benchmark
Global Equity	74.5	80% MSCI ACWI IMI / 20% MSCI World IMI ex U.S. currency hedged

- Meketa recommends using a blended benchmark that reflects LACERA’s global equity exposure.
 - Meketa recommends the MSCI ACWI IMI Index as the main component of the equity benchmark.
 - The remaining portion of the benchmark is a reflection of LACERA’s foreign developed market exposure with a 50% currency hedge. Meketa recommends using the MSCI World IMI ex. U.S. Index currency hedged.

Growth – Private Equity

Sub Asset Class	% of aggregate	Recommended Benchmark
Private Equity	21.3	MSCI ACWI IMI Index + 200 bps (three month lag)

- Meketa recommends using a premium of 200 basis points over the MSCI ACWI IMI Index with a three month lag.
 - Consistent with the Global Equity benchmark
 - The premium reflects Meketa’s capital market expectations
 - The three month lag should better align the benchmark with private equity partnership reporting

Growth – Opportunistic Real Estate

Sub Asset Class	% of aggregate	Recommended Benchmark
Opportunistic Real Estate	4.2	NFI ODCE+300 bps ¹

- Meketa recommends using a premium of 300 basis points over the NFI ODCE Index.
 - Uses the same base as LACERA’s current Real Estate benchmark and is consistent with the recommendation for Core and Value-Added Real Estate
 - The premium reflects Meketa’s capital market expectations

¹ Per the LACERA Real Estate Objectives, Policies and Procedures.

Credit

Asset Category	Recommended Benchmark
Credit	Custom Blended Benchmark – Static

- Meketa believes that using a static benchmark is appropriate for LACERA at the asset category level for Credit.
 - A static benchmark is transparent from a stakeholder perspective and simple from an operational aspect.
 - A static benchmark allows for measurement of allocation/implementation decisions in addition to manager selection.

Credit – High Yield

Sub Asset Class	% of aggregate	Recommended Benchmark
High Yield	25.0	Bloomberg Barclays U.S. High Yield

- Meketa recommends using the Bloomberg Barclays U.S. High Yield Index for the High Yield benchmark.

Credit – Bank Loans

Sub Asset Class	% of aggregate	Recommended Benchmark
Bank Loans	33.3	Credit Suisse Leveraged Loans

- Meketa recommends using the Credit Suisse Leveraged Loans Index for the Bank Loans benchmark.

Credit – Emerging Market Debt

Sub Asset Class	% of aggregate	Recommended Benchmark
Emerging Market Debt	16.7	50% JP Morgan EMBI (USD) / 25% JP Morgan GBI-EM (LC) / 25% JP Morgan CEMBI

- Meketa recommends using a blended benchmark for Emerging Markets Debt with the following weights;
 - 50% JP Morgan EMBI
 - 25% JP Morgan GBI-EM
 - 25% JP Morgan CEMBI

Credit – Illiquid Credit

Sub Asset Class	% of aggregate	Recommended Benchmark
Illiquid Credit ¹	25.0	Bloomberg Barclays U.S. Aggregate Index+250 bps

- Meketa recommends using a premium of 250 basis points over the Bloomberg Barclays U.S. Aggregate Index.
 - Consistent with Investment Grade Bond benchmark
 - The premium reflects Meketa’s capital market expectations and LACERA’s expected exposures

¹ Illiquid Credit contains credit hedge funds, real estate debt, and private debt strategies. The private debt composite is composed of 40% Mezzanine, 40% Distressed, and 20% Direct Lending.

Real Assets and Inflation Hedges

Asset Category	% of aggregate	Recommended Benchmark
Real Assets and Inflation Hedges	100	Custom Blended Benchmark – Static

- Meketa believes that using a static benchmark is appropriate for LACERA at the asset category level for Real Assets and Inflation Hedges.
 - A static benchmark is transparent from a stakeholder perspective and simple from an operational aspect.
 - A static benchmark allows for measurement of allocation/implementation decisions in addition to manager selection.

Real Assets and Inflation Hedges – Core and Value-Added Real Estate

Sub Asset Class	% of aggregate	Recommended Benchmark
Core and Value-Added Real Estate	41.2	NFI ODCE + 50 bps

- Meketa recommends using the NFI ODCE Index plus a 50 basis point premium as the benchmark for Core and Value-Added Real Estate.
- This benchmark reflects a 75/25 weighting of Core and Value-Added Real Estate.
 - Meketa believes the NFI ODCE Index is an appropriate benchmark for Core Real Estate
 - Meketa recommends using the NFI ODCE Index plus 200 basis points as the benchmark for Value-Real Estate.
- The relative weights in the benchmark can be adjusted over time to reflect LACERA's investment structure review.

Real Assets and Inflation Hedges – Natural Resources/Commodities

Sub Asset Class	% of aggregate	Recommended Benchmark
Natural Resources/ Commodities	23.5	50% Bloomberg Commodity Index / 50% S&P Global LargeMidCap Commodity and Resources Index

- Meketa recommends using a blended benchmark for Natural Resources/Commodities.
- Meketa believes the Bloomberg Commodity Index is an appropriate benchmark for Commodities.
- Meketa recommends using the S&P Global LargeMidCap Commodity and Resources Index for Natural Resources during Phase I of LACERA's strategic asset allocation implementation.
- The relative weight in the blended benchmark can be adjusted over time to reflect LACERA's implementation plans.

Real Assets and Inflation Hedges - Infrastructure

Sub Asset Class	% of aggregate	Recommended Benchmark
Infrastructure	17.7	Dow Jones Brookfield Global Infrastructure Index

- Meketa recommends using the Dow Jones Brookfield Global Infrastructure Index for Infrastructure during Phase I of LACERA's strategic asset allocation implementation.

Real Assets and Inflation Hedges - TIPS

Sub Asset Class	% of aggregate	Recommended Benchmark
TIPS	17.7	Bloomberg Barclays U.S. TIPS Index

- Meketa recommends using the Bloomberg Barclays U.S. TIPS Index for TIPS.

Risk Reducing and Mitigating

Asset Category	Recommended Benchmark
Risk Reducing and Mitigating	Custom Blended Benchmark - Static

- Meketa believes that using a static benchmark is appropriate for LACERA at the asset category level for Risk Reducing and Mitigating Assets.
 - A static benchmark is transparent from a stakeholder perspective and simple from an operational aspect.
 - A static benchmark allows for measurement of allocation/implementation decisions in addition to manager selection.

Risk Reducing and Mitigating – Investment Grade Bonds

Sub Asset Class	% of aggregate	Recommended Benchmark
Investment Grade Bonds	79.2	Bloomberg Barclays U.S. Aggregate Index

- Meketa recommends using the Bloomberg Barclays U.S. Aggregate Index for Investment Grade Bonds.

Risk Reducing and Mitigating – Diversified Hedge Fund Portfolio

Sub Asset Class	% of aggregate	Recommended Benchmark
Diversified Hedge Fund Portfolio	16.7	Citigroup 3-Month U.S. Treasury Bill Index + 250 bps

- Meketa recommends using a premium of 250 basis points over the Citigroup 3-Month U.S. Treasury Bill Index with a three month lag as the benchmark for the Diversified Hedge Fund Portfolio.
 - The premium reflects Meketa’s capital market expectations and LACERA’s expected exposures.

Risk Reducing and Mitigating - Cash

Sub Asset Class	% of aggregate	Recommended Benchmark
Cash	4.1	Citigroup 3-Month U.S. Treasury Bill Index

- Meketa recommends using the Citigroup 3-Month U.S. Treasury Bill Index for Cash.

Potential Total Fund Benchmark

Total Policy Weight	Aggregate Category
47	Growth
12	Credit
17	Real Assets and Inflation Hedges
24	Risk Reducing and Mitigating
Total Fund Benchmark	47% Growth Custom Benchmark / 12% Credit Custom Benchmark / 17% Real Assets and Inflation Hedges Custom Benchmark / 24% Risk Reducing and Mitigating Custom Benchmark

- Meketa believes that using a static benchmark is appropriate for LACERA at the total fund level.
 - The static benchmark should be adjusted to reflect interim targets as LACERA executes on the strategic asset allocation implementation plan.
 - A static benchmark allows for measurement of allocation/implementation decisions in addition to manager selection.

Benchmark Alignment with Strategic Asset Allocation Implementation

Strategic Asset Allocation Implementation Phase I: Target Weights

Functional Category Asset Class	1Q 2018 Actual Allocation	3Q 2018 Previous Policy Target	Interim Policy ¹ Target Effective 2Q 2019	New Final Policy ¹ Effective 4Q 2019
Growth	57.2	55	52	47
Global Equity	46.3	43	41	35
Private Equity	9.1	10	10	10
Opportunistic Real Estate	1.8	2	1	2
Credit	9.0	7	10	12
High Yield	4.7	3	4	3
Bank Loans	1.0	2	3	4
EM Debt	0.8	1	1	2
Illiquid Credit	2.5	1	2	3
Real Assets and Inflation Hedges	11.5	12	15	17
Core and Value Added Real Estate	8.7	9	8	7
Natural Resources and Commodities	2.8	3	3	4
Infrastructure	0.0	0	2	3
TIPS	0.0	0	2	3
Risk Reduction and Mitigation	22.2	26	23	24
Investment Grade Bonds	17.9	21	19	19
Diversified Hedge Fund Portfolio	1.7	3	3	4
Cash	2.6	2	1	1

¹ Subject to Board of Investments Approval.



Strategic Asset Allocation Implementation Phase I: Benchmarks

Functional Category Asset Class	Current Benchmarks ¹	Recommended Benchmarks
Growth	N/A	Custom Blended Benchmark - Static
Global Equity	Russell 3000, MSCI ACWI IMI ex-U.S. with 50% Developed Market currency hedged	80% MSCI ACWI IMI + 20% MSCI World IMI ex U.S. currency hedged
Private Equity	Russell 3000 +500 bps, rolling 10 yr	MSCI ACW IMI Index + 200 bps (3 month lag)
Opportunistic Real Estate	N/A	NFI ODCE + 300 bps
Credit	N/A	Custom Blended Benchmark – Static
High Yield	N/A	Bloomberg Barclays U.S. High Yield
Bank Loans	N/A	Credit Suisse Leveraged Loans
EM Debt	N/A	50% JP Morgan EMBI / 25% JP Morgan GBI-EM / 25% JP Morgan CEMBI
Illiquid Credit	N/A	Bloomberg Barclays U.S. Aggregate Index + 250 bps
Real Assets and Inflation Hedges	N/A	Custom Blended Benchmark – Static
Core and Value Added Real Estate	NFI ODCE Index + 40 bps	NFI ODCE + 50 bps
Natural Resources and Commodities	Bloomberg Commodity Index TR	50% Bloomberg Commodity Index / 50% S&P Global LargeMidCap Commodity and Resources Index
Infrastructure	N/A	Dow Jones Brookfield Global Infrastructure Index
TIPS	N/A	Bloomberg Barclays U.S. TIPS Index
Risk Reduction and Mitigation	N/A	Custom Blended Benchmark - Static
Investment Grade Bonds	Bloomberg Barclays U.S. Universal Bond Index	Bloomberg Barclays U.S. Aggregate TR
Diversified Hedge Fund Portfolio	Citigroup 3-Month U.S. Treasury Bill Index + 500bps	Citigroup 3-Month U.S. Treasury Bill Index + 250 bps
Cash	Citigroup 6-Month U.S. Treasury Bill Index	Citigroup 3-Month U.S. Treasury Bill Index

¹ Current benchmarks as per the standing IPS.



August 23, 2018

TO: Each Member
Board of Investments

FROM: John McClelland, Principal Investment Officer 

FOR: September 12, 2018 Board of Investments Meeting

SUBJECT: **REAL ESTATE INVESTMENT PLAN
MANAGER RETURN OBJECTIVES**

RECOMMENDATION

Adopt the proposed Manager-Specific return objectives.

BACKGROUND

The Real Estate Structure Review presented to the Board in May 2018 called for manager-specific return objectives to be incorporated into each of the agreements that LACERA has with its separate account managers. Manager return objectives were also integrated into the updated Real Estate Objectives, Policies and Procedures that was approved by the Board in July 2018.

Manager return objectives are intended to supplement the asset class performance benchmark by identifying a specific return objective for each manager. The return objectives will provide a shorter term, five-year, period over which to more closely monitor a manager's continued contribution to the portfolio.

DISCUSSION

Staff has identified manager-specific return objectives for approval by the Board. Seven of the managers should have broad return objectives that correspond to the breadth of the mandates assigned them. The proposed general return objective is the NCREIF Open-end Diversified Core Equity index, or ODCE.¹ Each manager's net-of-fee return over a trailing five-year period would be compared to ODCE.

TABLE 1 identifies the separate account managers for which the ODCE return objective is recommended.

¹ NCREIF is the National Council of Real Estate Investment Professionals.

TABLE 1
ODCE-BASED RETURN OBJECTIVES
LIST OF MANAGERS

Manager	Specific Return Objective
Barings Real Estate	ODCE
Clarion Partners	ODCE
Heitman	ODCE
Invesco Real Estate	ODCE
RREEF	ODCE
TA Associates Realty	ODCE
Vanbarton Group	ODCE

Since ODCE permits up to 20% of the investments in its participating commingled funds to be non-core, the managers performance will be aggregated among their core and non-core for comparison to ODCE. It is unlikely that the non-core portion of any one manager will exceed 20% of their LACERA portfolio. However, if that were to happen, a quantitative adjustment to the return objective could be made.²

The other two separate account managers have mandates that are property-type specific to apartments. Thus, a property types specific return objective was identified. Staff proposes that the Apartment sub-index of the NCREIF Property Index, or NPI be utilized. Since NPI is an unlevered index, manager returns would be compared on an unlevered basis. The NPI is a gross-of-fee index, therefore, manager returns will be compared on a gross-of-fee basis.

TABLE 2 lists the managers and specific NPI return objective for apartments.

TABLE 2
NPI-BASED RETURN OBJECTIVES
LIST OF MANAGERS

Manager	Specific Return Objective
Capri Capital	NPI-Apartments, All U.S.
Cityview	NPI-Apartments, Western Region

Staff recommends that a return premium, 100 basis points for value-add and 300 basis points for high-return, be added to the NPI-based return objective for non-core investments. A dollar-weighted quantitative adjustment could be made each quarter to match the non-core activity.

² For example, if 30% of a manager's portfolio is non-core, which is 10% more than the 20% included in ODCE, a dollar-weighted upward adjustment to the return objective would be made using the return premiums identified in the Objectives, Policies and Procedures.

Each Member, Board of Investments

August 23, 2018

Page 3 of 3

Five-year periods will be used to compare actual manager performance to the manager return objectives. Failure to meet or exceed the return objective for two consecutive one-year periods will lead to a mandatory review with staff and the Board.

The Board's real estate consultant, The Townsend Group, has reviewed this recommendation and concurs. **ATTACHMENT 1** is the consultants supporting memo.

CONCLUSION

Staff has completed one of the tasks identified in the Real Estate Structure Review presented to the Board in May 2018 which was to identify manager-specific return objectives that can be incorporated into each of the agreements that LACERA has with its separate account managers. The intent of creating manager return objectives is to enhance ongoing performance attribution and hold managers more accountable for performance. When combined with the updated manager review policy, the return objectives provide a quantitative basis for manager reviews with the Board.

Active managers are expected to outperform a passive alternative over a reasonable period of time on a net-of-fee basis. Failure to do so should cause serious consideration for termination or other mandate adjustments. Unfortunately, there is no net-of-fee index for apartments, so a gross-of-fee objective is being proposed. While private real estate does not have a true passive alternative and "reasonable period of time" requires a qualitative judgement, staff suggests that the recommended ODCE- and NPI-based return objectives are fair. A five-year period should provide sufficient time for a manager to perform and the policy provides LACERA flexibility to extend the time period if merited.

Therefore, staff recommends the Board approve the manager return objectives.

Attachment

NOTED AND REVIEWED:



Jonathan Grabel
Chief Investment Officer

JM/dr



TO: LACERA Board of Investments
FROM: The Townsend Group
SUBJECT: LACERA Manager Return Objectives – Townsend Concurrence
DATE September 12, 2018

Pursuant to the Statement of Work incorporated into the Real Estate Consulting Services Agreement between LACERA and Townsend Holdings LLC, Townsend has reviewed the Staff recommendations for establishing return objectives for separate account managers. Based on our review, Townsend concurs with all Staff recommendations and recommends approval by the Board of Investments.

REVIEW

As the Board is aware, Townsend completed a thorough and detailed analysis of performance attribution for the core portfolio and for each manager within that portfolio. One finding of that analysis was that the absence of manager specific return targets made it difficult to determine relative manager performance. The practice was established to allow the total portfolio to take priority over individual manager performance. For example, at points in time, managers were provided property type and geographic limitations. When reviewing performance, it became difficult to determine the accountability for performance.

Staff is now recommending that each separate account manager be assigned a manager-specific benchmark based on their investment mandate. This is consistent with current best practices for separate account portfolios and is reflective of industry advancements in the provision of a semi-investable index. Managers who cannot reasonably track the Open-end Diversified Open Equity Index, or ODCE represent an opportunity cost to LACERA given the investable alternatives and should therefore be terminated. Managers who exceed market performance can also be more readily rewarded with additional capital and/or expanded mandates.

Townsend agrees with the adoption of these return objectives and supports the Staff recommendation. Townsend is available to answer any questions and will be present at the September Board meeting.

August 31, 2018

TO: Each Member
Board of Investments

FROM: Jude Perez 
Principal Investment Officer

FOR: September 12, 2018 Board of Investments Meeting

SUBJECT: **DRAFT INVESTMENT POLICY STATEMENT**

The Board of Investments (“Board”) approved a new asset allocation for LACERA’s Pension Trust Assets at the May 2018 Board meeting. The revised asset allocation adopted the use of a functional risk framework, divided into four categories: Growth, Credit, Inflation Hedges, and Risk Reduction and Mitigation.

At the July 2018 Board offsite, staff discussed a series of steps necessary to implement the new asset allocation including a presentation on the planned approach to revise the Investment Policy Statement (“IPS”). At the time, staff provided three reasons for completing a comprehensive review of the IPS:

1) To Enhance the clarity of fund objectives and policy by elevating the IPS as the Board’s primary guiding document; 2) Facilitate the implementation of the new strategic asset allocation and its new asset categories; and 3) Extract procedural language across various investment policies into a separate manual.

A working group comprised of LACERA investment staff has been drafting changes to the IPS with input from LACERA’s legal division and Meketa. In addition, the IPS has been updated to reflect the majority of current Board Policies, best practices in the industry, and generally complies with the IPS standards published by the CFA Institute. Once a comprehensive review of all policies and procedures is completed, additional sections, such as liquidity and CIO delegated authority, will be incorporated into the IPS. As a reminder, a similar approach was undertaken for the OPEB Master Trust which the Board approved in April 2018.

Attached to this memo are three documents which will be used to facilitate a discussion with the Board on the proposed IPS changes: **Attachment 1** is a presentation on the rationale and approach for conducting a comprehensive review and revision of LACERA’s IPS. **Attachment 2** contains a clean version of the draft revised IPS. **Attachment 3** contains the color-coded version of the changes.

Attachments

Noted and Reviewed:



Jonathan Grabel
Chief Investment Officer

JP:EDB

Revising LACERA's Investment Policy Statement

Board of Investments
September 12, 2018

Jon Gabel, Chief Investment Officer
Jude Perez, Principal Investment Officer
Esmeralda V. del Bosque, Senior Investment Officer



LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

Outline for Discussion

- I. Review of project objectives & rationale**
- II. Suggested revisions to the IPS**
- III. Address questions & receive feedback**

I. Project Objectives and Rationale



I. Review of Project Objectives & Rationale

1. Enhance clarity of fund objectives and policy

- Elevate IPS and affirm as primary guiding document
- Incorporate key aspects of investment program in line with best practices (e.g. risk)
- Improve accessibility of the LACERA investment policy
 - into a streamlined document (*from current 106 pages to 20-25 pages*)
 - for all stakeholders (current and new Board and staff members, service providers, and plan constituents)

2. Facilitate implementation of newly-adopted asset allocation

- Reflect new categories and targets
- Guide implementation and adherence by using consistent nomenclature

3. Extract, unify, and harmonize procedural guidance

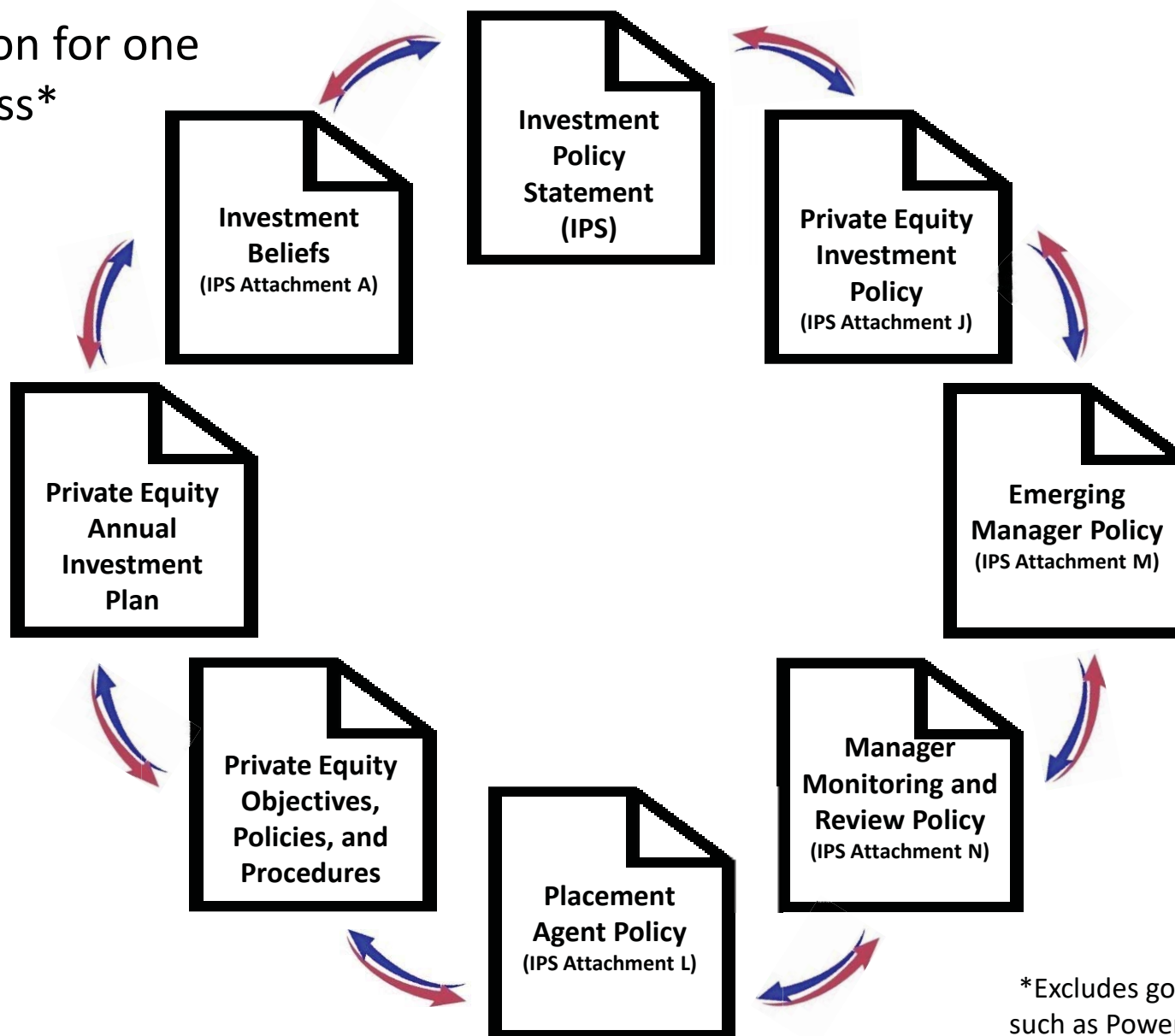
- Consolidate investment procedures into a “Procedural Manual”
- Address redundancies
- Avoid unintended consequences of policy proliferation

*IPS should serve as unified source for fundamental guidance
of LACERA’s investment program*



Which Policy Guides LACERA's Investments?

Illustration for one asset class*



*Excludes governing policies, such as Powers Reserved, etc.



Addressing Policy Proliferation – Alleviates Unintended Consequences and Governance Risks

- Confusion of which policies govern
 - Policies and procedures have different purpose & frequency of review
 - Policy revisions risk rendering related language in other policies outdated (*e.g. Board Powers Reserved* document)
- Compliance risks
 - Parties may identify policy guidance in one policy and inadvertently overlook guidance on a related topic in other policies, resulting in inconsistency and compliance risks
- Redundancies and inconsistencies exist with differing levels of specificity

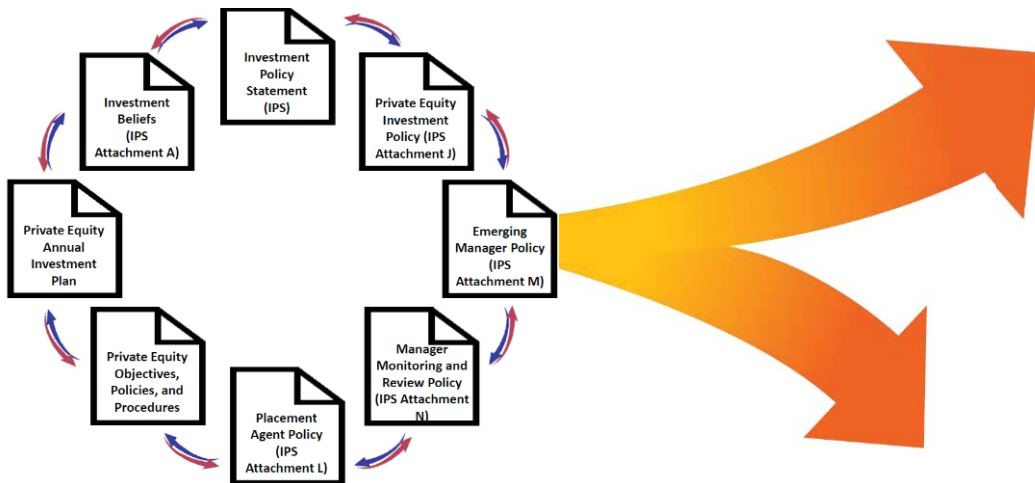


II. Suggested Revisions to the IPS



Summary of Prospective Policy Structure

Elevate IPS as the Fund's primary guiding policy



Create a centralized binder of procedures describing how to implement governing IPS statements

Investment
Policy
Statement
(IPS)

Incorporating attachments and new language, such as:



Comprehensive
Procedural
Manual

Prospective Outline

- I. Purpose of Manual
- II. Asset Class Specific Procedures and Guidelines
- III. Glossary and Definitions

Process and Input

Staff's draft IPS was derived from many sources:

- CFA Institute template and guidance
- Review of peer plans' IPS statements
- Meketa template and input
- Legal Office consultation

*The CFA Institute provides institutional investors guidance on the desirable components of an IPS**

CFA Institute's Elements of an IPS

- I. Scope and Purpose
- II. Governance
- III. Investment, Return, and Risk Objectives
- IV. Risk Management

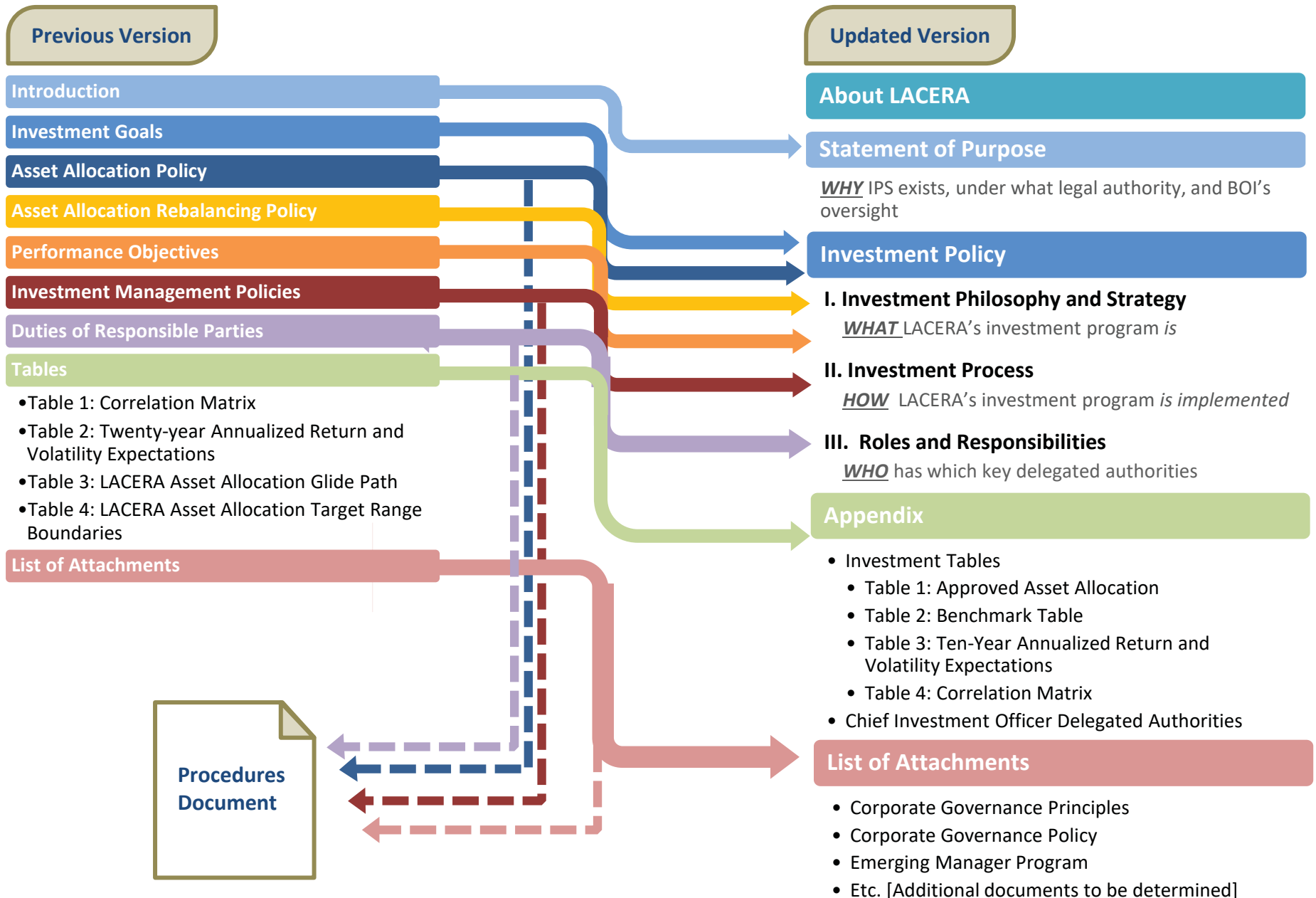


Revisions are Color-Coded

- The proposed revised LACERA IPS is a fusion of documents; the source of the language used is color-coded
 - Original LACERA IPS (black font)
 - New LACERA language (blue font)
 - External Sources including Meketa, the CFA Institute, and other public pension plans (green font)
 - Changes to existing LACERA IPS language (red font)
 - New language sourced from other LACERA documents (purple font)



Overview: Table of Contents



High-Level Pertinent Changes

The six items listed below describe significant changes to LACERA's IPS. These changes were made to advance the organization's IPS to be in-line with industry best practices and improve its utility and accessibility.

Item Changed	Detail
1. Investment Beliefs	Elevated to first section of IPS; no longer separate attachment
2. Legal Authority	Added section per recommendation of LACERA Counsel
3. Adopted Meketa's Language for Functional Asset Categories	Comprised of functional groupings, applicable asset classes, risk, and implementation
4. Risk Policy	Revised and moved to the body of the IPS; no longer a separate document
5. Roles and Responsibilities	BOI <i>Powers Reserved</i> previously not referenced; BOI is named fiduciary
6. Procedural Language Relocated	Sections will be consolidated into a procedural manual (Prohibited Transactions, Manager Selection/Termination Criteria, Duties of Responsible Parties, etc.).



Prospective Next Steps and Timeline

2018
Q2

Established Staff-Level
"IPS Working Group"

Board Approved
Strategic Asset Allocation

Previewed IPS and
Proposed Policy Structure
with Board Leadership

July 2018
Board Offsite

Preview Prospective
Policy Structure for IPS

Receive Feedback,
Identify Questions, and
Deliberate Next Steps

2018
Q3

**Present IPS for
First Formal Board Review**

**Receive Feedback,
Identify Questions, and
Deliberate Next Steps**

2018
Q4

Present IPS for
Formal Board Consideration

Consolidate Policies Defining
Procedural Guidance into
"Comprehensive Manual"

2019
Q1

Present Procedural Manual

Receive Feedback,
Identify Questions, and
Deliberate Next Steps



III. Questions & Feedback



INVESTMENT POLICY STATEMENT

Revised draft version

28 August 2018

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- A. Legal Authority
- B. Ethics and Code of Conflict

Investment Policy

I. Investment Philosophy and Strategy

- A. Objectives of Investment Program
- B. Investment Beliefs
- C. Strategic Asset Allocation
- D. Overview of Strategic Asset Allocation
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 - ii. Credit
 - iii. Real Assets and Inflation Hedges
 - iv. Risk Reduction and Mitigation
- E. Performance Objectives
- F. Rebalancing
- G. Responsible Stewardship and Beneficial Ownership Rights

II. Investment Process

- A. Investment Management
 - i. Selection and Monitoring
 - ii. Costs
- B. Liquidity Management and Other Investment Functions
- C. Risk Management
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 - ii. Approach

III. Roles and Responsibilities

- A. Board of Investments
 - i. Board
 - ii. Committees
- B. Staff
 - i. Chief Executive Officer
 - ii. Chief Investment Officer and Investment Staff
 - iii. Chief Counsel and Legal Staff
- C. Third Party Service Providers
 - i. Investment Consultants
 - ii. Custodian Bank
 - iii. Investment Managers
 - iv. Other Third Party Service Providers

Appendix

A. Investment Tables

- Table 1: Approved Asset Allocation
- Table 2: Benchmark Table
- Table 3: Ten-Year Annualized Return and Volatility Expectations
- Table 4: Correlation Matrix

B. Chief Investment Officer Delegated Authorities

List of Attachments

Corporate Governance Principles
Corporate Governance Policy
Responsible Contractor Policy
Emerging Manager Policy

[Other attached policies to be determined and filled in]

About LACERA

The Los Angeles County Employees Retirement Association (“LACERA”) administers a defined benefit retirement plan (the “Fund”) and other post-employment benefits (“OPEB” or the “Trust”) for employees of Los Angeles County and certain other districts.

The Los Angeles County Board of Supervisors established LACERA in 1937. LACERA began operations in 1938 and today, serves over 165,000 active and retired members.

LACERA’s mission is to “produce, protect, and provide the promised benefits.” LACERA aims to fulfill its mission through prudent investment and conservation of plan assets, in accordance with its *Investment Beliefs* and in consideration of actuarial analysis.

LACERA’s Board of Investments (the “Board”) is responsible for establishing LACERA’s investment policy and objectives, as well as exercising oversight of the investment management for both the Fund and the Trust.

LACERA Mission Statement:

***We Produce, Protect,
and Provide
the Promised Benefits***

Statement of Purpose

LACERA's Investment Policy Statement (the "IPS") defines the framework by which LACERA manages the assets of the Fund in order to fulfil its mission. The document provides the primary guidance for LACERA's investment activities by outlining the philosophy and structure of LACERA's investment program, describing the general process by which assets are managed, and defining the key roles and responsibilities in LACERA's investment process.

A. Legal Authority

LACERA is governed by the California Constitution (Article XVI, Section 17), the California County Employees Retirement Act of 1937 (CERL), and the California Public Employees' Pension Reform Act of 2013 (PEPRA).

LACERA's Board of Investments is responsible for establishing LACERA's investment policy and objectives, as well as exercising oversight of the investment management of the Fund. Under the Constitution, the Board of Investments has "plenary authority and fiduciary responsibility for investment of moneys." (Article XVI, Section 17.) The Board has "the sole and exclusive fiduciary responsibility over the assets of" the system, as provided by the California Constitution (Article XVI, Section 17(a)). CERL (Section 31595) reiterates that the Board of Investments has "exclusive control of investment of the employees retirement fund." The Board's broad authority includes the matters described in this IPS.

In exercising its responsibilities, including under this IPS, the Board of Investments' fiduciary duty has two principal components:

Duty of Loyalty. Under the duty of loyalty, Board members have the sole and exclusive responsibility to administer the system in a manner that will assure prompt delivery of benefits and related services to the participants and their beneficiaries. (Article XVI, Section 17(a).) Board members "shall discharge their duties with respect to the system solely in the interest of, and for the exclusive purposes of providing benefits to, participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the system. A retirement board's duty to its participants and their beneficiaries shall take precedence over any other duty." (Article XVI, Section 17(b).) CERL provides the same. (Section 31595(a).)

Duty of Prudence. Under the duty of prudence, Board members shall discharge their duties with respect to the system with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims. (Article XVI, Section 17(c); CERL, Section 31595(b).) The Board of Investments "[s]hall diversify the investments of the system so as to minimize risk of loss and to maximize the rate of return, unless under the circumstances it is clearly prudent not to do so." (CERL Section 31595(c).) The Board may, "in its discretion, invest or delegate the authority to invest, the assets of the fund through the purchase, holding, or sale of any form or type of investment, financial instrument, or financial transaction when prudent in the informed opinion of the Board." (CERL Section 31595.)

CERL recognizes that the Board of Investments may utilize the resources of staff to perform its duties. Under CERL, the appointment of personnel, including investment staff, is exercised by the Board of Investments and LACERA's Board of Retirement, jointly (collectively, the "Boards"). In this regard, the Boards have the joint authority and discretion to "appoint such administrative, technical, and clerical staff personnel as are required to accomplish the necessary work" of the Board[s]. (Section 31522.1.) The Boards' appointment authority includes the discretion to appoint a chief investment officer and investment officers next in line to the chief investment officer. (Section 31522.4.) The Board of Investments may also engage consultants to assist in its work.

While the authority to invest may be delegated and while the Board of Investments may engage the assistance of staff and consultants, the Board's fiduciary duty cannot be delegated and always resides with the Board and its trustees.

B. Ethics and Code of Conflicts

The Board and LACERA staff are obliged to refrain from personal business activity that could conflict with the proper execution and management of the investment program, or that could impair their ability to make decisions in accordance with LACERA's mission statement. Further details are defined in LACERA's Code of Ethical Conduct, Conflict of Interest Code, the Political Reform Act, Fair Political Practices Commission regulations, and other applicable law.

Investment Policy

I. Investment Philosophy and Strategy

A. Objectives of the Investment Program

LACERA follows a carefully planned and executed strategic investment program in order to:

- i. Achieve the Fund's assumed rate of return on a total return basis over the long-term, consistent with LACERA's mission, in order to *produce* the promised benefits for LACERA members and beneficiaries;
- ii. Mitigate investment risks through Fund diversification and other means, consistent with LACERA's mission, in order to *protect* the promised benefits on behalf of LACERA members and beneficiaries; and
- iii. Ensure adequate liquidity, consistent with LACERA's mission, in order to *provide* the promised benefits for LACERA members and beneficiaries.

B. Investment Beliefs

The Board has adopted the following investment beliefs ("Investment Beliefs") to describe its core beliefs and underlying assumptions about how capital markets operate. Collectively, the Investment Beliefs provide a framework to guide LACERA's investment decisions in a manner consistent with the Fund's nature as an institutional investor with a long-term investment horizon in order to achieve the Fund's objectives defined above.

i. Strategic Asset Allocation

Long-term strategic asset allocation will be the primary determinant of LACERA's risk/return outcomes.

- a. It is important that LACERA be forward looking as its investment horizon spans decades, if not indefinitely into the future.
- b. Asset allocation has a greater effect on return variability than asset class investment structure or manager selection. It is essential to account for LACERA's liabilities in setting long-term investment strategy.
- c. Rebalancing the portfolio is a key aspect of prudent long-term asset allocation policy.

ii. Market Efficiency

Markets are largely efficient over the long term (10 – 20 years); however, during certain economic and financial environments markets may not be efficient in setting prices.

- a. Consequently, LACERA will allow for modest tactical asset allocation adjustments during times of disruption.

iii. Active versus Passive Management

As markets are largely efficient, passive management, when available, is the preferred structure for investment management; however, the Board recognizes that some asset classes may justify the higher fees and/or expected enhanced returns associated with active management.

- a. Consequently, active strategies will be used only when there is strong conviction that they can be expected to add value net of their higher fees, and adjusted for risk.

iv. Private Markets and Liquidity

Private markets assets can add value to a portfolio, providing opportunities for excess returns.

- a. The total capital allocated to illiquid strategies must be kept at a prudent level.
- b. The high return potential of these assets needs to be balanced with LACERA's need for liquidity.

Liquid assets serve a critical role to fund benefit payments and rebalance the portfolio.

v. Risk

Risk is a broad term used to capture the concept of uncertainty. Since no single metric adequately conveys risk, LACERA will evaluate risk holistically, incorporating quantitative measures and qualitative assessments in managing its portfolio.

- a. LACERA operates in a global financial marketplace, and as such, LACERA believes that in order to diversify its risk broadly, it is vital that LACERA possess a global perspective.
- b. Diversification across different risk factors is necessary for risk reduction.
- c. Markets are cyclical; risk premia, volatility and correlations vary over time.
- d. The pattern of returns matters because volatility levels and the sequence of gains and losses can impact funded status and contribution rates.
- e. Risk that is not expected to be rewarded over the long-term, or mitigated through diversification, will be minimized.
- f. For LACERA, not taking enough risk is risky; therefore, LACERA will accept a prudent amount of risk to achieve its long-term target returns.
- g. LACERA considers the risks of environmental, social, and governance ("ESG") factors as relevant to its investment process.
- h. LACERA believes that conflicts of interest may pose risk; therefore, any perceived conflicts should be identified and explored as a material factor in risk analysis.

vi. Costs and Fees

Investment outcomes are determined by risk, returns, and costs. All three must be managed, and cost is the most certain.

- a. Consideration of net-of-fees returns is an integral part of a successful long-term investment strategy.
- b. Costs and fees should be actively monitored and negotiated to the greatest extent possible.

vii. Education

In an increasingly complex and dynamic investment universe, continued education on new concepts and strategies is essential for long-term success.

C. Strategic Asset Allocation

LACERA fundamentally believes long-term strategic asset allocation will be the primary determinant of risk/return outcomes, therefore establishes a strategic asset allocation to meet its mission and investment objectives.

LACERA's strategic asset allocation categorizes capital outlays into four groups, defined by the function each allocation is intended to serve in the portfolio: (1) Growth; (2) Credit; (3) Real Assets and Inflation Hedges; and, (4) Risk Reduction and Mitigation. The functional categories include various asset classes that represent the risk/return characteristics of each area. Collectively, LACERA expects the four functional categories diversify the Fund to optimize upside growth while mitigating downside risk. The asset allocation determines what proportion of the Fund is allocated to each functional category and underlying asset class, including target weights and set ranges as a percentage of the Fund.

In order to determine its strategic asset allocation, LACERA conducts a comprehensive asset allocation study every three to five years, or at the Board's request. The asset allocation study considers a number of factors, such as:

- A projection of actuarial assets, liabilities, benefits payments, contributions, and LACERA's actuarial rate of return, as well as the current and projected funded status of the Fund.
- Historical behavior and expected long-term capital market risk, return and correlation forecasts.
- An assessment of future economic conditions, including inflation and interest rate levels.
- Various risk/return scenarios.
- The Fund's liquidity requirements.

LACERA's current market assumptions, strategic asset allocation targets and ranges, and correlation estimates are detailed in the tables of the Appendix.

D. Overview of Strategic Asset Allocation

LACERA categorizes defined investible asset classes into the following functions and investment guidelines:

i. Growth

- a. Role in the portfolio: The role of assets in this category is to be the primary driver of long-term total returns for the Fund.
- b. Asset Classes: Global Equity, Private Equity, Opportunistic Real Estate
- c. Investment Approach: Growth assets generally represent equity or equity-like interests in current and future income streams. Growth assets include public and private market strategies that include both liquid and illiquid mandates. LACERA utilizes passive strategies in relatively efficient segments of the market for global equity. LACERA employs active strategies relatively less efficient market segments of global equities, as well as in private equity and opportunistic real estate.

- d. Risk Factors: Growth assets primarily are equity ownership positions that tend to perform well in times of positive economic growth. They are highly sensitive to economic factors, however, and are subject to potential loss in value based on a number of factors. For example, growth assets may be sensitive to inflation and generally perform poorly in times of high and unexpected inflation. To a lesser extent, growth assets may be sensitive to interest rates due to the use of leverage in certain strategies as well as the relationship between interest rates and the discount rates used to price securities.

ii. Credit

- a. Role in the portfolio: LACERA expects assets categorized as Credit to produce current income and moderate long-term total returns at more moderate levels of risk than assets categorized as Growth, and, accordingly, provide incremental diversification to the total Fund.
- b. Asset Classes: High Yield, Bank Loans, Emerging Market Debt, and Illiquid Credit.
- c. Investment Approach: Credit assets are generally fixed claims on assets or income streams of an issuer (e.g. government, company, asset), plus associated interest payments. The category is composed of certain fixed income, hedge funds, real estate, and private debt investments. Investment strategies within this category may have a specific mandate (e.g. high yield or emerging market debt) or be multi-strategy. The investment strategy may be liquid or illiquid, depending on the nature and terms of the specific investment vehicle. LACERA employs active strategies across all asset classes within the Credit category, but may employ passive strategies in certain segments that are relatively more efficient.
- d. Risk Factors: The primary risk for owners of Credit assets is a failure of the borrower to make required payments. Credit assets are sensitive to economic factors as well as fluctuations in the level of interest rates. Credit assets tend to perform well in times of positive economic growth and periods of stable or declining interest rates. Credit assets are also sensitive to inflation and generally perform poorly in times of high and unexpected inflation.

iii. Real Assets and Inflation Hedges

- a. Role in the portfolio: LACERA expects assets in this category to provide income as well as a hedge against inflation, while diversifying the Fund due to the assumed low correlation of returns between these assets and other asset classes.
- b. Asset classes: Core and Value-Added Real Estate, Natural Resources/Commodities, Infrastructure, and Treasury Inflation Protected Securities (“TIPS”).
- c. Investment Approach: Real Assets generally include physical assets, such as real estate and infrastructure, or securities whose value is derived from a physical asset, such as commodities or natural resources. The category is composed of core and value-added real estate, natural resources and commodities investments, infrastructure, and TIPS. Assets in this category may be invested in both public and private investments and may be liquid or illiquid, as well as passive or actively-managed.
- d. Risk Factors: Real Assets and Inflation Hedges are sensitive to inflation. The primary risk for owners of real assets/inflation hedges is that they fail to provide a hedge against long-term changes in inflation. A secondary risk is loss of principal. The value of real estate and natural resources assets may fall, particularly during an economic downturn, but also

due to idiosyncratic aspects of each asset. Diversification may offset asset specific risk. Foreign assets are also subject to currency movements against the U.S. dollar. TIPS are exposed to liquidity risk, as they tend to be less liquid than nominal U.S. Treasuries, particularly during a market environment in which there is a flight to safety.

iv. Risk Reduction and Mitigation

- a. Role in the portfolio: LACERA expects assets in this category to provide moderate amounts of current income by generating a modest level of return while also reducing total Fund risks in part by preserving capital in the event of a downturn in equities markets. LACERA anticipates that assets in this category will have a low-level of volatility and/or a negative correlation to Growth assets, thereby providing downside protection. In the event of a market correction, LACERA expects that these assets would also provide a source of liquidity for beneficiary payments.
- b. Asset classes: Investment Grade Bonds, Diversified Hedge Fund Portfolio, Cash
- c. Investment Approach: The category is composed of investment grade bonds, diversified hedge funds, and cash. Cash is the least volatile asset class from a valuation perspective, as well as the most liquid; the optionality it provides during periods of market decline helps to mitigate risk. Investment grade bonds comprise a mix of U.S. Treasuries, corporate debt, and other bonds of high quality, typically rated “BBB” or above by rating agencies. High quality bonds would be expected to retain, or even increase, their value, during a market correction. As such, they would be expected to protect the portfolio during a broad market correction. Diversified hedge funds comprise a variety of hedged strategies, such as relative value, arbitrage and long/short strategies, typically in a diversified portfolio. They would be expected to produce returns at or above high grade bond portfolios, with equal or lower volatility. Furthermore, they would be expected to be largely uncorrelated with other portfolio assets.
- d. Risk Factors: The primary risk factor for Risk Reduction and Mitigation Assets is that they will fail to provide the anticipated level of protection during market downturns. Assets in this category are subject to additional risks. For example, investment grade bonds are sensitive to fluctuations in interest rates and have some risk of default. Specific hedge fund investments are subject to a variety of risk factors including equity risk, credit risk, interest rate risk, and leverage risk. Cash can include short-term instruments and vehicles where there is a possibility of loss of principal.

E. Performance Objectives

The Fund’s long-term performance objective is to generate risk-adjusted returns that meet or exceed its defined actuarial target as well as the its policy benchmark, net-of-fees, over the Fund’s designated investment time horizon. LACERA’s policy benchmarks at the total Fund level, the functional category level, and the asset class level can be found in the Appendix.

F. Rebalancing

LACERA rebalances the Fund’s portfolio in accordance with established guidelines and procedures to adhere to its approved strategic asset allocation. The approved ranges for each functional asset category and underlying asset class are defined in the Appendix. LACERA considers rebalancing the Fund a key aspect of prudent long-term portfolio management.

G. Responsible Stewardship and Beneficial Ownership Rights

In pursuing the investment program articulated above, and as part of mitigating risks associated with LACERA's investments, LACERA seeks to manage its investments in a manner that promotes and safeguards the economic interests of LACERA and its members, consistent with LACERA's mission. LACERA prudently exercises its rights as an investor to support policies and practices at companies in which LACERA invests, as well as public policies governing financial markets, that are consistent with LACERA's economic interests. In doing so, LACERA aims to promote sustainable, long-term value on behalf of LACERA's members and enhance LACERA's ability to fulfill its mission. LACERA has therefore adopted *Corporate Governance Principles* and a *Corporate Governance Policy* (see Attachments). Beneficial ownership rights pertaining to LACERA's investments, including but not limited to proxy voting, are managed in accordance with LACERA's *Corporate Governance Principles* and consistent with LACERA's *Corporate Governance Policy*.

II. Investment Process

A. Investment Management

The following sections articulate the general parameters and processes by which LACERA executes its investment strategy, in adherence to established policies and procedures.

i. Selection and Monitoring

LACERA may utilize internal resources or externally managed portfolios implemented by asset management firms and service providers to effectuate LACERA's investment program. In determining whether to use internal or external services and resources to implement a specific investment mandate, strategy, or investment-related service, LACERA takes into consideration numerous factors, including, but not limited to, the return expectations, associated risks, compliance requirements, and expenses related to the specific strategy or service.

LACERA has adopted formal procedures to guide the selection, appointment, and monitoring of external managers and services providers. LACERA expects any external party that manages Fund assets on behalf of LACERA to serve as a fiduciary.

ii. Costs

LACERA considers the costs and expenses related to executing its investment program to be a crucial component of its fiduciary duty and an important element in determining its strategic asset allocation. In all aspects and functions of its investment program, LACERA seeks to actively identify, assess, and monitor expenses. LACERA expects that the economic terms and conditions by which any external party is compensated for investment-related services should promote an alignment of interests between LACERA and the external party in fulfilling LACERA's mission and investment objectives. Accordingly, LACERA diligently attends to and negotiates the economic terms of investment services rendered to the Fund.

B. Liquidity Management and Other Investment Functions

[Placeholder for comprehensive review of all investment policies and procedures (e.g. liquidity/cash management, derivatives, securities lending).]

C. Risk Management

LACERA manages risk by establishing and adhering to investment guidelines, pursuing multiple approaches to diversification (such as asset class, geography, liquidity profile, and level of active management), and regular measurement and analytical exercises. LACERA assumes certain risks to achieve sufficient returns to meet the Fund's financial obligations and investment objectives. At the core, investment risks pertain to the prospect for a permanent loss of capital or of not meeting objectives within the designated timeframe. LACERA seeks to mitigate the likelihood of a drawdowns to the Fund in order to accomplish its investment objectives and avoid volatility or undesired changes to employer or employee contributions to the Fund. Risk is therefore a consideration in the management of the Fund's assets.

i. Philosophy and Objectives

LACERA considers risk multi-faceted and, therefore, views risk from multiple perspectives. Risk may vary and evolve over time, across geographic or sectoral investment exposures, and depending on the nature and terms of the investment vehicle that LACERA deploys to implement the Fund's investment strategy. Risk may be systematic (e.g. present across the

market) or unsystematic (e.g. specific to a particular investment strategy). A risk may pertain to and potentially bear upon the total Fund, a functional asset class level, or individual underlying asset classes, as defined in LACERA's strategic asset allocation described herein. Alternatively, risk or risks may be relevant to all of the above.

LACERA seeks to diligently identify, assess, and monitor relevant investment risks throughout the investment process, from determining its strategic asset allocation to ongoing evaluation and monitoring of Fund performance, in order to ensure that risks assumed by the Fund are intentional and to assess whether LACERA is being adequately compensated.

ii. Approach

LACERA's strategic asset allocation attempts to position the Fund to capture growth while mitigating large drawdowns. LACERA's investment strategy is designed to take intentional risk, called active risk, and achieve commensurate investment results. LACERA may define expectations for active return earned per unit of active risk taken for various investment strategies and portfolios.

LACERA seeks to identify and acknowledge the sources and types of risk inherent to each investment strategy. However, LACERA also recognizes that even sophisticated risk measurement techniques may not detect certain risks, including extreme events, in advance. Accordingly, risk models may only provide limited predictive qualities. LACERA endeavors to test and challenge investment strategies and assumptions prior to a capital outlay as well as for on-going monitoring.

LACERA measures investment risk using multiple metrics on both an absolute and relative basis at all relevant levels (i.e. total Fund, functional asset categories, and underlying asset classes). LACERA also strives to employ stress testing, scenario analyses, and broader financial and economic analyses to understand current and potential risks related to its investment strategy and decisions. LACERA selects appropriate benchmarks to assess and determine whether investment risks taken by the Fund are appropriate in order to achieve expected investment rewards.

LACERA may establish a risk budget set active risk targets for each function asset category and underlying asset classes. LACERA aims to minimize unintended risk caused by asset allocation drift or other factors.

III. Roles and Responsibilities

LACERA has established the following roles and responsibilities to implement its investment program. The duties explained below apply to the Board, staff, and various external parties who collectively oversee and administer the functions necessary for LACERA to accomplish its investment objectives. The overview outlined below is further complemented by the following documents: “Board of Investments Charter,” “Board of Investments Powers Reserved Defined,” “Board of Investments Powers Reserved and Delegated Authorities,” and the “Board of Investments Regulations” (previously referred to as “Bylaws”).

A. Board of Investments

i. Board

The exclusive fiduciary responsibility of the Board is to ensure prudent investment and management of the Fund so as to provide for the payment of benefits to members and their beneficiaries, minimize employer contributions, and defray the reasonable cost of administration, with the duty to members being paramount. It is the responsibility of the Board to ensure that LACERA employees administer Fund investments at reasonable cost, while preserving the quality of investments. The Board exercises oversight of all aspects of the investment program. The Board oversees the management of the Fund in compliance with all aspects of this Investment Policy Statement and all applicable federal and state laws and regulations concerning the administration of a government pension plan. The Board may request staff and Investment Consultants to inform and make recommendations to it on matters pertinent to LACERA’s investment operations. The Board may also delegate specific authorities to the Chief Investment Officer (“CIO”), as further outlined in the Appendix.

ii. Committees

To assist the Board in carrying out its duties, it may establish one or more committees (“Committee”). A Committee makes recommendations to the Board on investment actions related to its area of focus. A Committee may request staff and Investment Consultants to inform and make recommendations to it on matters pertinent to LACERA’s investment program.

B. Staff

i. Chief Executive Officer

The Board of Retirement and Board of Investments jointly appoint the Chief Executive Officer (“CEO”). The CEO is responsible for planning, organizing, and administering the operations of LACERA under policy guidance and direction from the Board of Investments and the Board of Retirement. The CEO exercises administrative oversight of the Chief Investment Officer, excluding investment decisions delegated to the Chief Investment Officer.

ii. Chief Investment Officer and Investment Staff

The CIO and staff assist the Board in performing its fiduciary responsibility. The internal investment staff reports to the Chief Investment Officer (the CIO), who in turn reports to the CEO, with the input of the Board. The CIO, with the assistance of staff, has the responsibility and authority to assist the Board in establishing investment and administrative policies. The CIO and staff are responsible for implementing the policies and programs established by the Board. The CIO has primary responsibility for the implementation of the Board’s investment decisions. The CIO and staff manage the portfolio according to the Board’s policies, advise and inform the Board about investments, assist with development and review of investment policies and procedures, report on the progress of the Fund in meeting its investment objectives, and monitor and report to the Board on the performance of the Fund against the appropriate benchmarks. The Board has delegated specific investment authority and

responsibility directly to the CIO as described in the Appendix. The CIO is authorized to interact with and communicate directly with the Board in all investment-related matters. The CEO shall not have any authority over any and all investment decisions that are delegated to the CIO.

iii. Chief Counsel and Legal Staff

The Office of Chief Counsel and legal staff (Legal Counsel) are primarily responsible for legal compliance of the investment program and advises the Board, the CEO, the CIO, and staff on investment-related legal matters. Legal Counsel advises the Board in performing its fiduciary responsibility. In addition to reliance upon internal resources for such matters, the Chief Counsel may retain external legal counsel, when deemed necessary and appropriate, to advise staff and negotiate and prepare contracts on investment related matters, individual transactions, and provide other investment legal advice to protect LACERA's interests and status as a tax-exempt government plan.

C. Third Party Service Providers

LACERA may engage external service providers, as described below, to implement its investment program. All service providers, unless otherwise not applicable, are expected to serve as fiduciaries to the Fund in fulfilling their contracted services.

i. Investment Consultants

An Investment Consultant works with the Board and staff in the oversight and implementation of investment objectives. The Board's general Investment Consultant provides advice and recommendations to the Board or Committee regarding LACERA's strategic objectives, risks, oversight and implementation of investment objectives. Investment Consultants, both general and specialized consultants, provide advice and recommendations regarding strategic asset allocation, portfolio implementation and oversight of the Fund to the Board, CIO, and staff. Investment Consultants report to the Board or the Committee, as directed, and are accountable to the Board.

ii. Custodian Bank

The Custodian Bank ("Bank") serves as a fiduciary in the safekeeping of Fund assets. The Bank is responsible for maintaining the official accounting book of record including the ongoing pricing and valuation of all assets, collection of income generated by those assets, any corporate action notification, and performance calculation. The Bank cooperates with and provides assistance to staff and Investment Managers in the reconciliation process. LACERA may opt to designate other duties to the Bank as stipulated in the professional services agreement.

iii. Investment Managers

Investment Managers are selected by the Board and, subject to the terms and conditions of this IPS, serve LACERA through contracts that specify in principal part: investment guidelines, administrative requirements, responsibilities, and performance expectations for management of each mandate. Investment Managers provide reporting to LACERA on the performance of specific investment mandates in adherence to established guidelines and agreements. Staff and Consultants synthesize performance information for presentation to the Board in accordance with established performance monitoring and oversight procedures.

iv. Other Third Party Service Providers

Other third party service providers, not mentioned above, may be retained, subject to the terms and conditions of LACERA's established policies and procedures, in order to perform other duties to assist in the administration of the Fund.

Appendix

A. Investment Tables

Table 1: Approved Asset Allocation

Asset Class	Target Allocation (%)	Allocation Range +/- (%)
Growth	47.0	+/- 7
Global Equity	35.0	+/- 7
Private Equity	10.0	+/-3
Opportunistic Real Estate	2.0	+1/-2
Credit-Oriented Fixed Income	12.0	+/- 3
High Yield Bonds	3.0	+/-3
Bank Loans	4.0	+2/-4
Emerging Market Debt	2.0	+/-2
Illiquid Credit	3.0	+2/-3
Real Assets & Inflation Hedges	17.0	+/- 3
Core & Value-Added Real Estate	7.0	+/-3
Natural Resources/Commodities	4.0	+/-2
Infrastructure	3.0	+1/-3
TIPS	3.0	+2/-3
Risk Reducing & Mitigating	24.0	+/-6
Investment Grade Bonds	19.0	+/-6
Diversified Hedge Fund Portfolio	4.0	+2/-4
Cash	1.0	+2/-1
TOTAL FUND	100.0	

Table 2: Benchmark Table

Asset Class	Benchmark
Growth	Custom Blend
Global Equity	TBD
Private Equity	TBD
Opportunistic Real Estate	TBD
Credit-Oriented Fixed Income	Custom Blend
High Yield Bonds	TBD
Bank Loans	TBD
Emerging Market Debt	TBD
Illiquid Credit	TBD
Real Assets & Inflation Hedges	Custom Blend
Core & Value-Added Real Estate	TBD
Natural Resources/Commodities	TBD
Infrastructure	TBD
TIPS	TBD
Risk Reducing & Mitigating	Custom Blend
Investment Grade Bonds	TBD
Diversified Hedge Fund Portfolio	TBD
Cash	TBD
TOTAL FUND	Custom Blended Policy Benchmark

Table 3: Ten-Year Annualized Return and Volatility Expectations

Asset Class	Expected Return (%)	Volatility (%)
Growth		
Global Equity	6.7	19.0
Private Equity	9.3	26.0
Opportunistic Real Estate	7.5	25.0
Credit-Oriented Fixed Income		
High Yield	5.0	12.5
Bank Loans	5.1	10.0
Emerging Markets Debt	5.1	13.3
Illiquid Credit	6.1	18.0
Real Assets & Inflation Hedges		
Core & Value-Added Real Estate	4.0/6.0	12.5/19.0
Natural Resources/Commodities	7.9	23.0
Infrastructure	6.6	17.4
TIPS	3.0	7.5
Risk Reducing & Mitigating		
Investment Grade Bonds	2.5	4.0
Diversified Hedge Fund Portfolio	4.0	9.9
Cash	1.5	1.0

Table 4: Correlation Matrix

	Cash	IG Corp Bonds	TIPS	High Yield Bonds	EM Debt	US Large Cap	Developed Market Equity	50% Hedged DM Equity	Emerging Market Equity	Private Equity	Real Estate	Commodities	Core Infra	Hedge Funds
Cash	1.00													
IG Corp Bonds	0.00	1.00												
TIPS	0.05	0.70	1.00											
High Yield Bonds	0.00	0.65	0.30	1.00										
EM Debt	0.05	0.55	0.50	0.70	1.00									
US Large Cap	0.00	0.25	0.00	0.70	0.60	1.00								
DM Equity	0.00	0.40	0.15	0.70	0.60	0.90	1.00							
50% Hedged DM Equity	0.00	0.00	0.10	0.75	0.60	0.95	0.97	1.00						
EM Equity	0.00	0.40	0.15	0.70	0.65	0.80	0.90	0.95	1.00					
Private Equity	0.10	0.20	0.04	0.68	0.44	0.87	0.81	0.81	0.77	1.00				
Real Estate	0.15	0.35	0.10	0.50	0.30	0.50	0.45	0.45	0.40	0.43	1.00			
Commodities	0.00	0.25	0.35	0.40	0.40	0.35	0.55	0.55	0.60	0.28	0.15	1.00		
Core Infra	0.20	0.45	0.30	0.60	0.50	0.55	0.55	0.55	0.50	0.44	0.60	0.35	1.00	
Hedge Funds	0.10	0.35	0.20	0.70	0.55	0.80	0.85	0.85	0.85	0.61	0.45	0.65	0.60	1.00

B. Chief Investment Officer Delegated Authorities

The Board has delegated to the CIO the following authorities. In the event the CIO is not available, and time is of the essence in making a decision, the CEO shall have the authorities identified below. In the event neither the CIO or CEO are available, a committee comprised of all available Principal and Senior Investment Officers and Assistant Executive Officers shall have these powers, provided that the committee is comprised of at least one Principal or Senior Investment Officer and one Assistant Executive Officer. The Board will receive written notification of all such actions.

- Authority to approve real estate co-investments according to the Real Estate Co-Investment Policy found in LACERA's Real Estate Objectives, Policies, and Procedures.
- Authority to approve the purchase or sale of any existing fund investment within the Private Equity portfolio in accordance with the LACERA's Private Equity Objectives, Policies and Procedures.
- Authority to sign all investment-related consultant contracts and agreements, subsequent to Board approval. Thereafter, authority to sign all amendments and modifications with respect to such contracts and agreements, and make all decisions with respect to their day-to-day operation and implementation where the investment mandate remains substantially unchanged.
- Authority to approve temporary variances from public market investment manager guidelines.
- Authority to approve reductions to investment manager fee schedules.
- Authority to approve variances from LACERA's Fund of Funds sub-manager selection and compliance criteria on a case-by-case basis.
- Authority to limit or freeze manager trading activity pending discussion and action by the Board of Investments. Such actions shall be reported as an informational item as reasonably practicable to the Board of Investments, and no later than the next scheduled meeting of the Board
- Authority to take actions not otherwise specifically delegated, in concurrence with the CEO and the Chair of the Board of Investments, when deemed necessary in the best interest of the Fund and there is not time to take the action to the full Board of Investments. Such actions shall be reported as an informational item as soon as reasonably practicable to the full Board, and no later than the next scheduled meeting of the Board of Investments.
- [Placeholder for additional authority once the comprehensive review of all investment policies and procedures is complete (e.g. rebalancing, secondary PE transactions, PE re-ups, etc.)]

List of Attachments

Corporate Governance Principles
Corporate Governance Policy
Responsible Contractor Policy
Emerging manager Policy

[Other attached policies to be determined]

INVESTMENT POLICY STATEMENT

Revised draft version – Color Coded

28 August 2018

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[Other attached policies to be determined and filled in]

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About LACERA

The Los Angeles County Employees Retirement Association (“LACERA”) administers a defined benefit retirement plan (the “Fund”) and other post-employment benefits (“OPEB” or the “Trust”) for employees of Los Angeles County and certain other districts.

The Los Angeles County Board of Supervisors established LACERA in 1937. LACERA began operations in 1938 and today, serves over 165,000 active and retired members.

LACERA’s mission is to “produce, protect, and provide the promised benefits.” LACERA aims to fulfill its mission through prudent investment and conservation of plan assets, in accordance with its *Investment Beliefs* and in consideration of actuarial analysis.

LACERA’s Board of Investments (the “Board”) is responsible for establishing LACERA’s investment policy and objectives, as well as exercising oversight of the investment management for both the Fund and the Trust.

LACERA
Mission Statement:

***We Produce, Protect,
and Provide
the Promised Benefits***

INTRODUCTION

~~This document provides the framework for the management of LACERA's assets (the Plan). The purpose of the Investment Policy is to assist the Board of Investments and Staff in effectively supervising and monitoring the LACERA assets. Specifically, it addresses the following issues:~~

- ~~• The general goals of the investment program.~~
- ~~• Specific asset class allocations, targets, and ranges.~~
- ~~• Performance objectives.~~
- ~~• The investment policies and structures for the management of the assets.~~
- ~~• Responsible parties and their duties.~~

~~The Board establishes this investment policy in accordance with applicable Local, State, and Federal laws. The Board members exercise authority and control over the management of the Plan, by setting policy which the Investment Staff executes either internally or through the use of external prudent experts. The Board oversees and guides the Plan subject to the following basic fiduciary responsibilities:~~

- ~~• Solely in the interest of, and for the exclusive purposes of providing benefits to, participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the system. The Board's duty to participants and their beneficiaries shall take precedence over any other duty.~~
- ~~• With the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would~~

~~use in the conduct of an enterprise of a like character with like objectives.~~

- ~~• Diversify the investments of the Plan so as to minimize the risk of loss and to maximize the rate of return, unless under the circumstances, it is clearly prudent not to do so.~~

~~LACERA has a long-term investment horizon, and utilizes an asset allocation which encompasses a strategic, long-term perspective of capital markets. It is generally recognized that a strategic long-term asset allocation plan implemented in a consistent and disciplined manner will be the major determinant of the Plan's investment performance. This policy statement is designed to allow for sufficient flexibility in the management oversight process to take advantage of investment opportunities as they arise while setting forth reasonable parameters to ensure prudence and care in the execution of the investment program. A Statement of Investment Beliefs is included as Attachment A to this Policy.~~

~~All transactions undertaken will be for the sole economic benefit of LACERA's members and beneficiaries and for the exclusive purpose of providing retirement benefits.~~

Statement of Purpose

LACERA's Investment Policy Statement (the "IPS") defines the framework by which LACERA manages the assets of the Fund in order to fulfil its mission. The document provides the primary guidance for LACERA's investment activities by outlining the philosophy and structure of LACERA's investment program, describing the general process by which assets are managed, and defining the key roles and responsibilities in LACERA's investment process.

A. Legal Authority

LACERA is governed by the California Constitution (Article XVI, Section 17), the California County Employees Retirement Act of 1937 (CERL), and the California Public Employees' Pension Reform Act of 2013 (PEPRA).

LACERA's Board of Investments is responsible for establishing LACERA's investment policy and objectives, as well as exercising oversight of the investment management of the Fund. Under the Constitution, the Board of Investments has "plenary authority and fiduciary responsibility for investment of moneys." (Article XVI, Section 17.) The Board has "the sole and exclusive fiduciary responsibility over the assets of" the system, as provided by the California Constitution (Article XVI, Section 17(a)). CERL (Section 31595) reiterates that the Board of Investments has "exclusive control of investment of the employees retirement fund." The Board's broad authority includes the matters described in this IPS.

In exercising its responsibilities, including under this IPS, the Board of Investments' fiduciary duty has two principal components:

Duty of Loyalty. Under the duty of loyalty, Board members have the sole and exclusive responsibility to administer the system in a manner that will assure prompt delivery of benefits and related services to the participants and their beneficiaries. (Article XVI, Section 17(a).) Board members "shall discharge their duties with respect to the system solely in the interest of, and for the exclusive purposes of providing benefits to, participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the system. A retirement board's duty to its participants and their beneficiaries shall take precedence over any other duty." (Article XVI, Section 17(b).) CERL provides the same. (Section 31595(a).)

Duty of Prudence. Under the duty of prudence, Board members shall discharge their duties with respect to the system with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims. (Article XVI, Section 17(c); CERL, Section 31595(b).) The Board of Investments "[s]hall diversify the investments of the system so as to minimize risk of loss and to maximize the rate of return, unless under the circumstances it is clearly prudent not to do so." (CERL Section 31595(c).) The Board may, "in its discretion, invest or delegate the authority to invest, the assets of the fund through the purchase, holding, or sale of any form or type of investment, financial instrument, or financial transaction when prudent in the informed opinion of the Board." (CERL Section 31595.)

CERL recognizes that the Board of Investments may utilize the resources of staff to perform its duties. Under CERL, the appointment of personnel, including investment staff, is exercised by the Board of Investments and LACERA's Board of Retirement, jointly (collectively, the "Boards"). In this regard, the Boards have the joint authority and discretion to "appoint such administrative, technical, and clerical staff personnel as are required to accomplish the necessary work" of the Board[s]. (Section 31522.1.) The Boards' appointment authority includes the discretion to appoint a chief investment officer and investment officers next in line to

the chief investment officer. (Section 31522.4.) The Board of Investments may also engage consultants to assist in its work.

While the authority to invest may be delegated and while the Board of Investments may engage the assistance of staff and consultants, the Board's fiduciary duty cannot be delegated and always resides with the Board and its trustees.

B. Ethics and Code of Conflicts

The Board and LACERA staff are obliged to refrain from personal business activity that could conflict with the proper execution and management of the investment program, or that could impair their ability to make decisions in accordance with LACERA's mission statement. Further details are defined in LACERA's Code of Ethical Conduct, Conflict of Interest Code, the Political Reform Act, Fair Political Practices Commission regulations, and other applicable law.

Investment Policy

I. Investment Philosophy and Strategy

A. Objectives of the Investment Program

LACERA follows a carefully planned and executed strategic investment program in order to:

- i. Achieve the Fund's assumed rate of return on a total return basis over the long-term, consistent with LACERA's mission, in order to *produce* the promised benefits for LACERA members and beneficiaries;
- ii. Mitigate investment risks through Fund diversification and other means, consistent with LACERA's mission, in order to *protect* the promised benefits on behalf of LACERA members and beneficiaries; and
- iii. Ensure adequate liquidity, consistent with LACERA's mission, in order to *provide* the promised benefits for LACERA members and beneficiaries.

~~INVESTMENT GOALS~~

~~The Plan's investment goals are broad in nature. The objective is to efficiently allocate and manage the assets dedicated to the payment of Plan benefits and administrative expenses. The following goals, consistent with the above-described purpose, are adopted:~~

- ~~• The overall goal of LACERA's investment program is to provide the Plan participants with retirement benefits as promised. This will be accomplished through a carefully planned and executed long-term investment program.~~
- ~~• LACERA's assets will be managed on a total return basis. While LACERA recognizes the importance of the preservation of capital, it also adheres to the principle that varying degrees of investment risk are generally rewarded with compensating returns in the long term.~~
- ~~• The total portfolio return over the long term is directed toward achieving and maintaining a fully funded status for the Plan.~~

~~LACERA's Investment Policy has been designed to allow the Plan to achieve a long-term total return. Consequently, prudent risk-taking is warranted within the context of overall portfolio diversification to meet this goal. The investment activities are designed and executed in a manner that serves the best interests of the members and beneficiaries of the Plan.~~

~~Investment recommendations and subsequent actions are expected to comply with "prudent expert" standards.~~

B. Investment Beliefs

The Board has adopted the following investment beliefs (“Investment Beliefs”) to describe its core beliefs and underlying assumptions about how capital markets operate. Collectively, the Investment Beliefs provide a framework to guide LACERA’s investment decisions in a manner consistent with the Fund’s nature as an institutional investor with a long-term investment horizon in order to achieve the Fund’s objectives defined above.

i. Strategic Asset Allocation

Long-term strategic asset allocation will be the primary determinant of LACERA’s risk/return outcomes.

- a. It is important that LACERA be forward looking as its investment horizon spans decades, if not indefinitely into the future.
- b. Asset allocation has a greater effect on return variability than asset class investment structure or manager selection. It is essential to account for LACERA’s liabilities in setting long-term investment strategy.
- c. Rebalancing the portfolio is a key aspect of prudent long-term asset allocation policy.

ii. Market Efficiency

Markets are largely efficient over the long term (10 – 20 years); however, during certain economic and financial environments markets may not be efficient in setting prices.

- a. Consequently, LACERA will allow for modest tactical asset allocation adjustments during times of disruption.

iii. Active versus Passive Management

As markets are largely efficient, passive management, when available, is the preferred structure for investment management; however, the Board recognizes that some asset classes may justify the higher fees and/or expected enhanced returns associated with active management.

- a. Consequently, active strategies will be used only when there is strong conviction that they can be expected to add value net of their higher fees, and adjusted for risk.

iv. Private Markets and Liquidity

Private markets assets can add value to a portfolio, providing opportunities for excess returns.

- a. The total capital allocated to illiquid strategies must be kept at a prudent level.
- b. The high return potential of these assets needs to be balanced with LACERA’s need for liquidity.

Liquid assets serve a critical role to fund benefit payments and rebalance the portfolio.

v. Risk

Risk is a broad term used to capture the concept of uncertainty. Since no single metric adequately conveys risk, LACERA will evaluate risk holistically, incorporating quantitative measures and qualitative assessments in managing its portfolio.

- a. LACERA operates in a global financial marketplace, and as such, LACERA believes that in order to diversify its risk broadly, it is vital that LACERA possess a global perspective.
- b. Diversification across different risk factors is necessary for risk reduction.
- c. Markets are cyclical; risk premia, volatility and correlations vary over time.
- d. The pattern of returns matters because volatility levels and the sequence of gains and losses can impact funded status and contribution rates.
- e. Risk that is not expected to be rewarded over the long-term, or mitigated through diversification, will be minimized.
- f. For LACERA, not taking enough risk is risky; therefore, LACERA will accept a prudent amount of risk to achieve its long-term target returns.
- g. LACERA considers the risks of environmental, social, and governance (“ESG”) factors as relevant to its investment process.
- h. LACERA believes that conflicts of interest may pose risk; therefore, any perceived conflicts should be identified and explored as a material factor in risk analysis.

vi. Costs and Fees

Investment outcomes are determined by risk, returns, and costs. All three must be managed, and cost is the most certain.

- a. Consideration of net-of-fees returns is an integral part of a successful long-term investment strategy.
- b. Costs and fees should be actively monitored and negotiated to the greatest extent possible.

vii. Education

In an increasingly complex and dynamic investment universe, continued education on new concepts and strategies is essential for long-term success.

C. Strategic Asset Allocation **Policy**

LACERA fundamentally believes long-term strategic asset allocation will be the primary determinant of risk/return outcomes, therefore establishes a strategic asset allocation to meet its mission and investment objectives.

LACERA's strategic asset allocation categorizes capital outlays into four groups, defined by the function each allocation is intended to serve in the portfolio: (1) Growth; (2) Credit; (3) Real Assets and Inflation Hedges; and, (4) Risk Reduction and Mitigation. The functional categories include various asset classes that represent the risk/return characteristics of each area. Collectively, LACERA expects the four functional categories diversify the Fund to optimize upside growth while mitigating downside risk. The asset allocation determines what proportion of the Fund is allocated to each functional category and underlying asset class, including target weights and set ranges as a percentage of the Fund.

In order to determine its strategic asset allocation, LACERA conducts a comprehensive asset allocation study every three to five years, or at the Board's request. The asset allocation study considers a number of factors, such as:

- A projection of actuarial assets, liabilities, benefits payments, contributions, and LACERA's actuarial rate of return, as well as the current and projected funded status of the Fund.
- Historical behavior and expected long-term capital market risk, return and correlation forecasts.
- An assessment of future economic conditions, including inflation and interest rate levels.
- ~~The current and projected funded status of the Plan.~~
- Various risk/return scenarios.
- The Fund's liquidity requirements.

LACERA's current market assumptions, strategic asset allocation targets and ranges, and correlation estimates are detailed in the tables of the Appendix.

~~The asset allocation policy provides for diversification of assets in an effort to maximize the total return of the Plan consistent with market conditions and risk control. An asset liability study should be conducted every three to five years, or after a significant change in the liability structure or significant change in capital market assumptions. The asset allocation modeling process identifies asset classes the Plan will utilize and the percentage that each class represents of the total fund. Due to the fluctuation of market values, positioning within a specified range is acceptable and constitutes compliance with the policy. It is anticipated that an extended period of time may be required to fully implement the asset allocation policy, and that periodic revisions will occur. LACERA's investments in private equity and real estate are implemented gradually, recognizing their long term nature. LACERA's Investment Staff will monitor and assess the actual asset allocation versus policy ranges and will evaluate any variation deemed significant.~~

~~The Board will implement the asset allocation policy through the use of active and passive investment managers, as well as internal Staff, who will invest the assets of the portfolios. All investments are subject to investment guidelines incorporated into the executed investment management agreements or the policies established by the Board¹. The strategic asset allocation targets and ranges for the investments of the Plan's assets are shown below:~~

Asset Class	Index	2018Q4 Target Allocation	2016Q2¹ Target Range
Global Equity		41.4	31.4-51.4
–U.S. Equity	Russell 3000		
–Non-U.S. Equity	MSCI ACWI ex-U.S.		
Private Equity	Russell 3000 +(3-5% rolling 10 year)	10.0	7-14
Total Equity		51.4	
Fixed Income	Barclay's Capital U.S. Universal Bond Index	27.8	24.8-30.8
Total Fixed Income		27.8	
Real Estate	NCREIF ODCE +40 basis points	11.0	8-16
Hedge Funds	3-Month T-Bill plus 5%	5.0	2-7
Commodities	Bloomberg Commodity Index	2.8	0-4.8
Other Opportunities	LACERA blended benchmark	0.0	0-5
Total Alternatives		18.8	
Cash	Citi 6-month T-Bills Index	2.0	0-4

The target allocation yields an expected 7.5% average annualized (geometric, or compounded) 20-year return projection, with a standard deviation of 12.8%. These projections are based on the General Investment Consultant's 20-year return, volatility, and correlation estimates for each asset class, which are included in Tables 1 and 2 at the end of the document. The estimates for each asset class are arrived at by incorporating both quantitative and qualitative factors, and are reviewed and updated no less frequently than annually. The portfolio return and volatility estimates are based on the aggregation of these projections and LACERA's target allocation. The probability of achieving a return of 7.5% over a twenty year period is 50%, and is the result of a mathematical calculation, of which the volatility of the portfolio is a key determinant.

*The U.S. and Non-U.S. target allocations within Global Public Equity are determined quarterly based on MSCI ACWI index weights.

D. Overview of Strategic Asset Allocation

LACERA categorizes defined investible asset classes into the following functions and investment guidelines:

¹ See Appendix — for target range bounds for individual asset classes.

i. Growth

- a. Role in the portfolio: The role of assets in this category is to be the primary driver of long-term total returns for the Fund.
- b. Asset Classes: Global Equity, Private Equity, Opportunistic Real Estate
- c. Investment Approach: Growth assets generally represent equity or equity-like interests in current and future income streams. Growth assets include public and private market strategies that include both liquid and illiquid mandates. LACERA utilizes passive strategies in relatively efficient segments of the market for global equity. LACERA employs active strategies relatively less efficient market segments of global equities, as well as in private equity and opportunistic real estate.
- d. Risk Factors: Growth assets primarily are equity ownership positions that tend to perform well in times of positive economic growth. They are highly sensitive to economic factors, however, and are subject to potential loss in value based on a number of factors. For example, growth assets may be sensitive to inflation and generally perform poorly in times of high and unexpected inflation. To a lesser extent, growth assets may be sensitive to interest rates due to the use of leverage in certain strategies as well as the relationship between interest rates and the discount rates used to price securities.

ii. Credit

- a. Role in the portfolio: LACERA expects assets categorized as Credit to produce current income and moderate long-term total returns at more moderate levels of risk than assets categorized as Growth, and, accordingly, provide incremental diversification to the total Fund.
- b. Asset Classes: High Yield, Bank Loans, Emerging Market Debt, and Illiquid Credit.
- c. Investment Approach: Credit assets are generally fixed claims on assets or income streams of an issuer (e.g. government, company, asset), plus associated interest payments. The category is composed of certain fixed income, hedge funds, real estate, and private debt investments. Investment strategies within this category may have a specific mandate (e.g. high yield or emerging market debt) or be multi-strategy. The investment strategy may be liquid or illiquid, depending on the nature and terms of the specific investment vehicle. LACERA employs active strategies across all asset classes within the Credit category, but may employ passive strategies in certain segments that are relatively more efficient.
- d. Risk Factors: The primary risk for owners of Credit assets is a failure of the borrower to make required payments. Credit assets are sensitive to economic factors as well as fluctuations in the level of interest rates. Credit assets tend to perform well in times of positive economic growth and periods of stable or declining interest rates. Credit assets are also sensitive to inflation and generally perform poorly in times of high and unexpected inflation.

iii. Real Assets and Inflation Hedges

- a. Role in the portfolio: LACERA expects assets in this category to provide income as well as a hedge against inflation, while diversifying the Fund due to the assumed low correlation of returns between these assets and other asset classes.
- b. Asset classes: Core and Value-Added Real Estate, Natural Resources/Commodities, Infrastructure, and Treasury Inflation Protected Securities (“TIPS”).
- c. Investment Approach: Real Assets generally include physical assets, such as real estate and infrastructure, or securities whose value is derived from a physical asset, such as commodities or natural resources. The category is composed of core and value-added real estate, natural resources and commodities investments, infrastructure, and TIPS. Assets in this category may be invested in both public and private investments and may be liquid or illiquid, as well as passive or actively-managed.
- d. Risk Factors: Real Assets and Inflation Hedges are sensitive to inflation. The primary risk for owners of real assets/inflation hedges is that they fail to provide a hedge against long-term changes in inflation. A secondary risk is loss of principal. The value of real estate and natural resources assets may fall, particularly during an economic downturn, but also due to idiosyncratic aspects of each asset. Diversification may offset asset specific risk. Foreign assets are also subject to currency movements against the U.S. dollar. TIPS are exposed to liquidity risk, as they tend to be less liquid than nominal U.S. Treasuries, particularly during a market environment in which there is a flight to safety.

iv. Risk Reduction and Mitigation

- a. Role in the portfolio: LACERA expects assets in this category to provide moderate amounts of current income by generating a modest level of return while also reducing total Fund risks in part by preserving capital in the event of a downturn in equities markets. LACERA anticipates that assets in this category will have a low-level of volatility and/or a negative correlation to Growth assets, thereby providing downside protection. In the event of a market correction, LACERA expects that these assets would also provide a source of liquidity for beneficiary payments.
- b. Asset classes: Investment Grade Bonds, Diversified Hedge Fund Portfolio, Cash
- c. Investment Approach: The category is composed of investment grade bonds, diversified hedge funds, and cash. Cash is the least volatile asset class from a valuation perspective, as well as the most liquid; the optionality it provides during periods of market decline helps to mitigate risk. Investment grade bonds comprise a mix of U.S. Treasuries, corporate debt, and other bonds of high quality, typically rated “BBB” or above by rating agencies. High quality bonds would be expected to retain, or even increase, their value, during a market correction. As such, they would be expected to protect the portfolio during a broad market correction. Diversified hedge funds comprise a variety of hedged strategies, such as relative value, arbitrage and long/short strategies, typically in a diversified portfolio. They would be expected to produce returns at or above high grade bond portfolios, with equal or lower volatility. Furthermore, they would be expected to be largely uncorrelated with other portfolio assets.
- d. Risk Factors: The primary risk factor for Risk Reduction and Mitigation Assets is that they will fail to provide the anticipated level of protection during market downturns. Assets in

this category are subject to additional risks. For example, investment grade bonds are sensitive to fluctuations in interest rates and have some risk of default. Specific hedge fund investments are subject to a variety of risk factors including equity risk, credit risk, interest rate risk, and leverage risk. Cash can include short-term instruments and vehicles where there is a possibility of loss of principal.

E. Performance Objectives

The Fund's long-term performance objective is to generate risk-adjusted returns that meet or exceed its defined actuarial target as well as the its policy benchmark, net-of-fees, over the Fund's designated investment time horizon. LACERA's policy benchmarks at the total Fund level, the functional category level, and the asset class level can be found in the Appendix.

~~The long-term performance objective of LACERA's total fund is to exceed its Policy benchmark by 10 to 15 basis points net of fees with a tracking error (volatility of the excess return) of less than two percent. Public market asset class returns will be reviewed over rolling five to seven year periods by an amount appropriate to the amount of risk assumed. Private market asset class performance evaluation requires a longer time horizon (e.g. five to ten years) due to the nature of the asset class.~~

F. Asset Allocation Rebalancing Policy

LACERA rebalances the Fund's portfolio in accordance with established guidelines and procedures to adhere to its approved strategic asset allocation. The approved ranges for each functional asset category and underlying asset class are defined in the Appendix. LACERA considers rebalancing the Fund a key aspect of prudent long-term portfolio management.

~~The purpose of rebalancing back to asset class targets is to ensure that the Plan's actual asset allocation does not drift from the strategic asset allocation policy. The strategic asset allocation policy has been developed after a rigorous analysis of the Board's objectives and risk tolerance. Rebalancing ensures that the Plan's desired asset allocation policy is maintained consistently over time. It, therefore, ensures that a major policy decision of the Board is implemented effectively.~~

~~In the absence of any other considerations, the optimal strategy would be to rebalance continually back to the Board approved target asset allocation. However, rebalancing involves costs such as brokerage and other trading costs.~~

~~It shall be the policy of the Board that:~~

- ~~• Cash flows, into and out of the fund, will be used to rebalance back to asset class targets whenever possible.~~
- ~~• The Fund's actual asset allocation should be reviewed at the end of each month when asset valuations become available. More frequent reviews may be undertaken, if appropriate. Rebalancing may take place if the weight to any asset class deviates materially from its~~

~~Board-approved target weight. Rebalancing must take place when Board-approved ranges are breached. Rebalancing should be implemented by the most cost-effective means available and without market disruption.~~

- ~~• When rebalancing occurs, the portfolio will be rebalanced toward the Board-approved asset allocation policy targets.~~

~~At least monthly, the Board shall be notified of any rebalancing that has taken place. Additionally, LACERA's quarterly investment performance report will include a direct comparison of the portfolio's actual asset allocation to the target allocation. The implementation of the rebalancing program will be undertaken by the Chief Investment Officer.~~

G. Responsible Stewardship and Beneficial Ownership Rights

In pursuing the investment program articulated above, and as part of mitigating risks associated with LACERA's investments, LACERA seeks to manage its investments in a manner that promotes and safeguards the economic interests of LACERA and its members, consistent with LACERA's mission. LACERA prudently exercises its rights as an investor to support policies and practices at companies in which LACERA invests, as well as public policies governing financial markets, that are consistent with LACERA's economic interests. In doing so, LACERA aims to promote sustainable, long-term value on behalf of LACERA's members and enhance LACERA's ability to fulfill its mission. LACERA has therefore adopted *Corporate Governance Principles* and a *Corporate Governance Policy* (see Attachments). Beneficial ownership rights pertaining to LACERA's investments, including but not limited to proxy voting, are managed in accordance with LACERA's *Corporate Governance Principles* and consistent with LACERA's *Corporate Governance Policy*.

II. Investment Process ~~Management Policies~~

A. Investment Management

The following sections articulate the general parameters and processes by which LACERA executes its investment strategy, in adherence to established policies and procedures.

i. Selection and Monitoring

LACERA may utilize internal resources or externally managed portfolios implemented by asset management firms and service providers to effectuate LACERA's investment program. In determining whether to use internal or external services and resources to implement a specific investment mandate, strategy, or investment-related service, LACERA takes into consideration numerous factors, including, but not limited to, the return expectations, associated risks, compliance requirements, and expenses related to the specific strategy or service.

LACERA has adopted formal procedures to guide the selection, appointment, and monitoring of external managers and services providers. LACERA expects any external party that manages Fund assets on behalf of LACERA to serve as a fiduciary.

~~LACERA may utilize both internally and externally managed portfolios based on specific mandates and methodologies. The external managers will be expected to acknowledge in writing that they are Plan fiduciaries, and they will have discretion and authority to determine investment strategy, security selection and timing, subject to the Policy guidelines and investment guidelines specific to their portfolio.~~

~~Investment managers, as prudent experts, will be expected to know LACERA's specific investment guidelines for their portfolios, and to comply with these guidelines. It is each manager's responsibility to identify guidelines that may have an adverse impact on performance, and to initiate discussion with Staff toward possible improvement of said guidelines.~~

~~As outlined in LACERA's Manager Monitoring and Annual Review Policy (**Attachment N**), Staff, under Board supervision, is responsible for monitoring investment managers' adherence to their investment mandate, and any material changes in the managers' organization. The investment managers retained by LACERA will be responsible for informing Staff of all such material changes on a timely basis. Further, Staff is responsible for monitoring and evaluating manager performance on a regular basis relative to each portfolio's benchmark return and relative to a peer group of managers with similar investment mandates.~~

~~Investment managers under contract to LACERA shall have discretion to establish and execute transactions with any securities broker/dealers as needed. However, LACERA reserves the right to preclude investment managers from directing trades through brokerage subsidiaries of LACERA contractors. The investment managers must obtain the most favorable executions with respect to all of the portfolio transactions as market conditions permit.~~

Prohibited Transactions

The following transactions will be prohibited unless stated otherwise in the investment manager guidelines:

- ~~Short sales.~~
- ~~Selling or buying on margin.~~
- ~~"Prohibited transactions" as defined under the Employee Retirement Income Security Act of 1974 (ERISA).~~
- ~~Transactions that involve a broker acting as a "principal", where such broker is also the investment manager (or an entity related to the investment manager) who is making the transaction.~~
- ~~Any or all investment activities forbidden by SEC or other applicable governing bodies.~~
- ~~With the exception of hedge funds, real estate and private equity, no investment manager or trustee may leverage the LACERA portfolio by investing more than 100% of the total market value. This measure must reflect the effective exposure associated with derivative securities. The exposure for options, when permitted by contract, must be based on an appropriate options pricing model.~~

Selection Criteria for Investment Managers

Criteria will be established for each manager search undertaken by LACERA and will be tailored to LACERA's needs in such a search. In general, eligible managers will possess attributes including, but not limited to, the following:

- ~~The firm must be experienced in managing investments for institutional clients in the asset class/product category/investment style specified by LACERA.~~
- ~~The firm must display a record of stability in retaining and attracting qualified investment professionals, as well as a record of managing asset growth effectively, both in gaining and retaining clients.~~
- ~~The firm must have an asset base sufficient to accommodate LACERA's portfolio. In general, LACERA's portfolio should make up no more than 25% of the firm's total asset base at funding. Exceptions may be made on a case-by-case basis.~~
- ~~The firm must demonstrate adherence to the investment mandate sought by LACERA, and adherence to the firm's stated investment discipline.~~
- ~~The firm's fees should be competitive with industry standards for the product category.~~
- ~~The firm must comply with the "Duties of the Investment Managers" outlined herein.~~
- ~~For the Equity and Fixed Income Asset Classes, the firm must conform to Global~~

~~Investment Performance Standards (GPS) for performance reporting.~~

~~In addition, LACERA's assessment of investment managers will take into account the degree to which the manager's qualified investment professionals exhibit diversity, including such considerations as background, age, experience, race, sexual orientation, gender, ethnicity, and culture.~~

~~The following minimum qualifications will be used for public market investment manager searches and will not require Board approval:~~

- ~~• LACERA's expected allocation to the mandate must be limited to 25% of the manager's assets in the proposed product at funding.~~
- ~~• Manager's proposed product must have at least a seven year track record.²~~

~~At least 60% of the quarterly rolling one year excess returns for the last seven years³ (15 of 25 observations) must exceed the appropriate benchmark by at least the net of fees excess return expectations for LACERA's managers in the same mandate.~~

~~In the event that these minimum qualifications need to be modified to meet the particular needs of a manager search, Staff will submit the appropriate search criteria to the Board of Investments for approval.~~

Termination Criteria for Investment Managers

~~LACERA reserves the right to terminate an investment manager for any reason. Grounds for investment manager termination may include, but are not limited to, the following:~~

- ~~• Failure to comply with the guidelines agreed upon for management of LACERA's portfolio, including holding restricted issues.~~
- ~~• Failure to achieve performance objectives specified in the manager's guidelines.~~
- ~~• Significant deviation from the manager's stated investment philosophy and/or process.~~
- ~~• Loss of key personnel.~~
- ~~• Evidence of illegal or unethical behavior by the investment management firm or key employees.~~
- ~~• Lack of willingness to cooperate with reasonable requests by LACERA for information, meetings or other material related to its portfolios.~~
- ~~• Loss of confidence by Staff and the Board in the investment manager.~~
- ~~• A change in the Fund's asset allocation program which necessitates a shift of assets to~~

²~~With the exception of high yield, opportunistic fixed income, emerging markets, and U.S. and international small cap managers: at least a three year track record.~~

³~~With the exception of high yield, opportunistic fixed income, emerging markets, and U.S. and international small cap managers: quarterly rolling one year excess returns for the last three years.~~

~~another sector.~~

~~The presence of any one of these factors will be carefully reviewed by LACERA Staff, but will not necessarily result in an automatic termination.~~

ii. Costs

LACERA considers the costs and expenses related to executing its investment program to be a crucial component of its fiduciary duty and an important element in determining its strategic asset allocation. In all aspects and functions of its investment program, LACERA seeks to actively identify, assess, and monitor expenses. LACERA expects that the economic terms and conditions by which any external party is compensated for investment-related services should promote an alignment of interests between LACERA and the external party in fulfilling LACERA's mission and investment objectives. Accordingly, LACERA diligently attends to and negotiates the economic terms of investment services rendered to the Fund.

B. Liquidity Management and Other Investment Functions

[Placeholder for comprehensive review of all investment policies and procedures (e.g. liquidity/cash management, derivatives, securities lending).]

C. Risk Management

LACERA manages risk by establishing and adhering to investment guidelines, pursuing multiple approaches to diversification (such as asset class, geography, liquidity profile, and level of active management), and regular measurement and analytical exercises. LACERA assumes certain risks to achieve sufficient returns to meet the Fund's financial obligations and investment objectives. At the core, investment risks pertain to the prospect for a permanent loss of capital or of not meeting objectives within the designated timeframe. LACERA seeks to mitigate the likelihood of a drawdowns to the Fund in order to accomplish its investment objectives and avoid volatility or undesired changes to employer or employee contributions to the Fund. Risk is therefore a consideration in the management of the Fund's assets.

i. Philosophy and Objectives

LACERA considers risk multi-faceted and, therefore, views risk from multiple perspectives. Risk may vary and evolve over time, across geographic or sectoral investment exposures, and depending on the nature and terms of the investment vehicle that LACERA deploys to implement the Fund's investment strategy. Risk may be systematic (e.g. present across the market) or unsystematic (e.g. specific to a particular investment strategy). A risk may pertain to and potentially bear upon the total Fund, a functional asset class level, or individual underlying asset classes, as defined in LACERA's strategic asset allocation described herein. Alternatively, risk or risks may be relevant to all of the above.

LACERA seeks to diligently identify, assess, and monitor relevant investment risks throughout the investment process, from determining its strategic asset allocation to ongoing evaluation and monitoring of Fund performance, in order to ensure that risks assumed by the Fund are intentional and to assess whether LACERA is being adequately compensated.

ii. Approach

LACERA's strategic asset allocation attempts to position the Fund to capture growth while mitigating large drawdowns. LACERA's investment strategy is designed to take intentional risk, called active risk, and achieve commensurate investment results. LACERA may define expectations for active return earned per unit of active risk taken for various investment strategies and portfolios.

LACERA seeks to identify and acknowledge the sources and types of risk inherent to each investment strategy. However, LACERA also recognizes that even sophisticated risk measurement techniques may not detect certain risks, including extreme events, in advance. Accordingly, risk models may only provide limited predictive qualities. LACERA endeavors to test and challenge investment strategies and assumptions prior to a capital outlay as well as for on-going monitoring.

LACERA measures investment risk using multiple metrics on both an absolute and relative basis at all relevant levels (i.e. total Fund, functional asset categories, and underlying asset classes). LACERA also strives to employ stress testing, scenario analyses, and broader financial and economic analyses to understand current and potential risks related to its investment strategy and decisions. LACERA selects appropriate benchmarks to assess and determine whether investment risks taken by the Fund are appropriate in order to achieve expected investment rewards.

LACERA may establish a risk budget set active risk targets for each function asset category and underlying asset classes. LACERA aims to minimize unintended risk caused by asset allocation drift or other factors.

III. Roles and Responsibilities ~~Duties of Responsible Parties~~

LACERA has established the following roles and responsibilities to implement its investment program. The duties explained below apply to the Board, staff, and various external parties who collectively oversee and administer the functions necessary for LACERA to accomplish its investment objectives. The overview outlined below is further complemented by the following documents: “Board of Investments Charter,” “Board of Investments Powers Reserved Defined,” “Board of Investments Powers Reserved and Delegated Authorities,” and the “Board of Investments Regulations” (previously referred to as “Bylaws”).

A. Board of Investments

i. Board

The exclusive fiduciary responsibility of the Board is to ensure prudent investment and management of the Fund so as to provide for the payment of benefits to members and their beneficiaries, minimize employer contributions, and defray the reasonable cost of administration, with the duty to members being paramount. It is the responsibility of the Board to ensure that LACERA employees administer Fund investments at reasonable cost, while preserving the quality of investments. The Board exercises oversight of all aspects of the investment program. The Board oversees the management of the Fund in compliance with all aspects of this Investment Policy Statement and all applicable federal and state laws and regulations concerning the administration of a government pension plan. The Board may request staff and Investment Consultants to inform and make recommendations to it on matters pertinent to LACERA’s investment operations. The Board may also delegate specific authorities to the Chief Investment Officer (“CIO”), as further outlined in the Appendix.

ii. Committees

To assist the Board in carrying out its duties, it may establish one or more committees (“Committee”). A Committee makes recommendations to the Board on investment actions related to its area of focus. A Committee may request staff and Investment Consultants to inform and make recommendations to it on matters pertinent to LACERA’s investment program.

B. Staff

i. Chief Executive Officer

The Board of Retirement and Board of Investments jointly appoint the Chief Executive Officer (“CEO”). The CEO is responsible for planning, organizing, and administering the operations of LACERA under policy guidance and direction from the Board of Investments and the Board of Retirement. The CEO exercises administrative oversight of the Chief Investment Officer, excluding investment decisions delegated to the Chief Investment Officer.

ii. Chief Investment Officer and Investment Staff

The CIO and staff assist the Board in performing its fiduciary responsibility. The internal investment staff reports to the Chief Investment Officer (the CIO), who in turn reports to the CEO, with the input of the Board. The CIO, with the assistance of staff, has the responsibility and authority to assist the Board in establishing investment and administrative policies. The CIO and staff are responsible for implementing the policies and programs established by the

Board. The CIO has primary responsibility for the implementation of the Board's investment decisions. The CIO and staff manage the portfolio according to the Board's policies, advise and inform the Board about investments, assist with development and review of investment policies and procedures, report on the progress of the Fund in meeting its investment objectives, and monitor and report to the Board on the performance of the Fund against the appropriate benchmarks. The Board has delegated specific investment authority and responsibility directly to the CIO as described in the Appendix. The CIO is authorized to interact with and communicate directly with the Board in all investment-related matters. The CEO shall not have any authority over any and all investment decisions that are delegated to the CIO.

iii. Chief Counsel and Legal Staff

The Office of Chief Counsel and legal staff (Legal Counsel) are primarily responsible for legal compliance of the investment program and advises the Board, the CEO, the CIO, and staff on investment-related legal matters. Legal Counsel advises the Board in performing its fiduciary responsibility. In addition to reliance upon internal resources for such matters, the Chief Counsel may retain external legal counsel, when deemed necessary and appropriate, to advise staff and negotiate and prepare contracts on investment related matters, individual transactions, and provide other investment legal advice to protect LACERA's interests and status as a tax-exempt government plan.

C. Third Party Service Providers

LACERA may engage external service providers, as described below, to implement its investment program. All service providers, unless otherwise not applicable, are expected to serve as fiduciaries to the Fund in fulfilling their contracted services.

i. Investment Consultants

An Investment Consultant works with the Board and staff in the oversight and implementation of investment objectives. The Board's general Investment Consultant provides advice and recommendations to the Board or Committee regarding LACERA's strategic objectives, risks, oversight and implementation of investment objectives. Investments Consultants, both general and specialized consultants, provide advice and recommendations regarding strategic asset allocation, portfolio implementation and oversight of the Fund to the Board, CIO, and staff. Investment Consultants report to the Board or the Committee, as directed, and are accountable to the Board.

ii. Custodian Bank

The Custodian Bank ("Bank") serves as a fiduciary in the safekeeping of Fund assets. The Bank is responsible for maintaining the official accounting book of record including the ongoing pricing and valuation of all assets, collection of income generated by those assets, any corporate action notification, and performance calculation. The Bank cooperates with and provides assistance to staff and Investment Managers in the reconciliation process. LACERA may opt to designate other duties to the Bank as stipulated in the professional services agreement.

iii. Investment Managers

Investment Managers are selected by the Board and, subject to the terms and conditions of this IPS, serve LACERA through contracts that specify in principal part: investment guidelines, administrative requirements, responsibilities, and performance expectations for management of each mandate. Investment Managers provide reporting to LACERA on the performance of specific investment mandates in adherence to established guidelines and

agreements. Staff and Consultants synthesize performance information for presentation to the Board in accordance with established performance monitoring and oversight procedures.

iv. Other Third Party Service Providers

Other third party service providers, not mentioned above, may be retained, subject to the terms and conditions of LACERA's established policies and procedures, in order to perform other duties to assist in the administration of the Fund.

Duties of LACERA's Board of Investments

~~The Board or its designee(s) will adhere to the following in the management of LACERA's assets:~~

- ~~• Shall approve Policies for the execution of LACERA's investment program. Only the Board in its sole discretion can delegate its decision-making authority regarding the investment program. Staff will be responsible for the timely implementation and administration of these decisions.~~
- ~~• Shall review LACERA's investment structure, asset allocation and financial performance annually or more frequently as the need arises. The review will include recommended adjustments to the long term asset allocation to reflect any changes in applicable regulations, long term capital market assumptions, actuarial assumptions or LACERA's financial condition.~~
- ~~• Shall review LACERA's investment performance quarterly⁴⁻ or as needed. The Board shall monitor investment returns on both an absolute basis and relative to appropriate benchmarks and peer group comparisons. The source of information for these reviews shall come from Staff, consultants, the custodian and LACERA's investment managers.~~
- ~~• May retain investment consultants to provide such services as conducting performance reviews, asset allocation, manager reviews and investment research. The comments and recommendations of the consultants will be considered in conjunction with other available information to aid the Board in making informed, prudent decisions.~~
- ~~• Shall be responsible for taking appropriate action if investment objectives are not being met or if policies and guidelines are not being followed. Reviews for separate portfolios managed by external managers are defined in LACERA's Manager Monitoring and Annual Review Policy (**Attachment N**).~~
- ~~• Shall direct Staff to administer LACERA's investments in a cost effective manner subject to Board approval. These costs include, but are not limited to, management, consulting and custodial fees, transaction costs and other administrative costs~~

⁴⁻ ~~Private Equity and Real Estate assets are reviewed semi-annually.~~

~~chargeable to LACERA.~~

- ~~• Shall be responsible for selecting a qualified custodian with advice from Staff.~~
- ~~• Shall strive to avoid conflicts of interests.~~

Duties of the Investment Staff

~~The Investment Staff plays a significant role in the management and oversight of the Fund. Investment Staff shall be responsible for the following:~~

- ~~• Manage the strategic asset allocation of the fund in accordance with agreed upon target ranges and rebalancing policies.~~
- ~~• Establish investment guidelines for manager portfolios that are consistent with existing policies and with Board approved investment structure.~~
- ~~• Monitor external managers for adherence to appropriate policies and guidelines. Ensure that investment managers conform to the terms of their contracts.~~
- ~~• Ensure that due diligence and oversight of the Investment portfolios is conducted.~~
- ~~• Assist the Board in the evaluation of consultants to ensure that they are providing all necessary assistance to LACERA, as set forth in their service contracts.~~
- ~~• Conduct the manager search process, as set forth in this document, with assistance from consultants as directed by the Board.~~
- ~~• Manage portfolio restructurings resulting from external manager terminations with the assistance of consultants and managers, as needed.~~
- ~~• As directed by the Board, conduct special research required to manage the Fund more effectively.~~
- ~~• Assist the Board in the development of the private market (e.g., Real Estate, Private Equity and Hedge Funds) Investment Plans; implement and monitor the Plans.~~
- ~~• Report on investment activity and matters of significance at least monthly.~~
- ~~• Rebalance the portfolio to maintain asset allocation and/or to provide liquidity for cash needs or benefit payments. This requires delegating authority to the Chief Investment Officer to shift up to 3% of Fund's assets without Board approval. Any such action by the CIO will require notification to the Board of Investments via the monthly CIO Report.~~
- ~~• Maintain control over all wire transfers or movement of monies to or from all investment accounts.~~
- ~~• Strive to avoid conflicts of interest.~~

- ~~Authorize consent to assignments of Investment Manager Agreements that are technical assignments under the Investment Advisors Act of 1940 with subsequent notification to the Board.~~
- ~~Report to the entire Board if either the Chief Executive Officer (CEO) or a member of the Board of Investments has contacted the Investment Staff on three separate occasions over a rolling one year period regarding a potential investment manager.~~

~~In addition to these core responsibilities, LACERA's Board of Investments has delegated to the Chief Investment Officer the following authorities. In the event the CIO is not available, and time is of the essence in making a decision, the CEO shall have the authorities identified below. In the event neither the CIO or CEO are available, a committee comprised of all available Principal and Senior Investment Officers and Assistant Executive Officers shall have these powers, provided that the committee is comprised of at least one Principal or Senior Investment Officer and one Assistant Executive Officer. The Board will receive written notification of all such actions.~~

- ~~Authority to approve real estate co-investments according to the Real Estate Co-Investment Policy found in LACERA's Real Estate Objectives, Policies, and Procedures.~~
- ~~Authority to approve the purchase or sale of any existing fund investment within the Private Equity portfolio in accordance with the LACERA's Private Equity Objectives, Policies and Procedures.~~
- ~~Authority to sign all investment related consultant contracts and agreements, subsequent to Board approval. Thereafter, authority to sign all amendments and modifications with respect to such contracts and agreements, and make all decisions with respect to their day to day operation and implementation where the investment mandate remains substantially unchanged.~~
- ~~Authority to approve temporary variances from public market investment manager guidelines.~~
- ~~Authority to approve reductions to investment manager fee schedules.~~
- ~~Authority to approve variances from LACERA's Fund of Funds sub-manager selection and compliance criteria on a case-by-case basis.~~
- ~~Authority to limit or freeze manager trading activity pending discussion and action by the Board of Investments. Such actions shall be reported as an informational item as reasonably practicable to the Board of Investments, and no later than the next scheduled meeting of the Board~~
- ~~Authority to take actions not otherwise specifically delegated, in concurrence with the CEO and the Chair of the Board of Investments, when deemed necessary in the best~~

~~interest of the Fund and there is not time to take the action to the full Board of Investments. Such actions shall be reported as an informational item as soon as reasonably practicable to the full Board, and no later than the next scheduled meeting of the Board of Investments.~~

~~All investment related contracts and agreements and all amendments and modifications to them are subject to review and approval by LACERA's Legal Office.~~

Duties of the Investment Managers

~~The investment managers shall have designated discretion to direct and manage the investment and reinvestment of assets allocated to their accounts in accordance with this document; applicable Local, State and Federal statutes and regulations; and individual management investment plans and executed contracts. The investment managers shall be responsible for the following:~~

- ~~• Execution of a contractual agreement to invest within the guidelines established by the Board.~~
- ~~• Provide LACERA with proof of liability and fiduciary insurance coverage.~~
- ~~• Be a SEC Registered Investment Advisor under the 1940 Act, unless LACERA has previously approved an exemption from registration, and be recognized as providing demonstrated expertise over a number of years in the management of institutional, tax exempt assets within a defined investment specialty.~~
- ~~• Adhere to the investment management style and principles for which they were retained, including, but not limited to, developing portfolio strategy, performing research, developing buy, hold and sell lists, and purchasing and selling securities.~~
- ~~• Execute all transactions for the benefit of LACERA with brokers and dealers qualified to execute institutional orders on an ongoing basis at the best net cost to LACERA.~~
- ~~• Reconcile monthly accounting, transaction and asset summary data with custodian valuations, and communicate and resolve any significant discrepancies with the custodian (excludes real estate and private equity), or hedge funds, the reconciliation function with the hedge fund managers will be performed by the fund of funds manager or an alternative asset third party administrator.~~
- ~~• Maintain frequent and open communication with Staff on all significant matters that affect the Fund, including, but not limited to, the following:
 - ~~1. Major changes in the Investment Manager's investment outlook, investment strategy and portfolio structure.~~~~

- ~~2.— Significant changes in ownership, organizational structure, financial condition or senior personnel.~~
- ~~3.— Any changes in the Portfolio Manager or other key personnel assigned to the Plan.~~
- ~~4.— Each significant client which terminates its relationship with the Investment Manager, within 30 days of such termination.~~
- ~~5.— All pertinent issues which the Investment Manager deems to be of significant interest or material importance.~~
- ~~6.— Meet with the Board or its designee(s) on an as needed basis.~~

Duties of the Master Custodian

The Master Custodian shall be responsible for the following:

- ~~• Provide complete global custody and depository services for the designated accounts.~~
- ~~• Manage, if directed by the Board, a Short Term Investment Fund (STIF) for investment of any cash not invested by managers, and ensure that all available cash is invested. ——— If the cash reserves are managed externally, full cooperation must be provided.~~
- ~~• Provide Staff with portfolio performance in a timely manner, and reconcile differences with managers.~~
- ~~• Provide, in a timely and effective manner, a monthly report of the investment activities implemented by the investment managers.~~
- ~~• Calculate all income and principal realized and properly report the results in periodic statements.~~
- ~~• Provide monthly and fiscal year end accounting statements for the portfolio, including all transactions; these should be based on accurate security values for both cost and market. These reports should be provided within acceptable time frames.~~
- ~~• Report to LACERA situations where accurate security pricing, valuation and accrued income is either not possible or subject to considerable uncertainty.~~
- ~~• Provide assistance to LACERA to complete such activities as the annual audit, transaction verification, corporate actions, securities litigation, or unique issues as required by the Board.~~
- ~~• Manage a securities lending program to enhance income if directed by the Board. If the securities lending program is managed externally, full cooperation must be provided.~~
- ~~• Deliver all U.S. and non-U.S. proxy voting materials to LACERA, including meeting notices, voting instruction forms, proxy statements, quarterly and annual shareholder~~

~~reports and miscellaneous proxy voting materials.~~

Duties of Consultants

~~The Board and Staff will consider the comments and recommendations of consultants in conjunction with other available information to make informed, prudent decisions.~~

General Investment Consultant

~~The General Investment Consultant shall be responsible for the following:~~

- ~~• **Conduct an asset liability study** work closely with LACERA's actuaries and senior investment Staff to prepare a comprehensive asset liability study, no less frequently than every three to five years.~~
- ~~• **Assist LACERA with its strategic investment decisions** focus on "big picture" total fund investment policy and structure issues.~~
- ~~• **Provide independent reviews** when requested, provide independent reviews via reports to the Board on Staff projects and recommendations in areas including, the investment policy and guidelines, asset class structures, and investment manager searches.~~
- ~~• **Calculate performance measurement independently** from LACERA's custodian and provide quarterly Fund performance reports. Once a year the Consultant will make a performance presentation to the Board of Investments.~~
- ~~• **Research investment ideas** provide independent, thorough research on current industry issues.~~
- ~~• **Educate LACERA's Investment Board** provide educational presentations to the Board on specific issues. Education will range from informational items to critical investment policy issues.~~

Real Estate Consultant

~~The Real Estate consultant shall be responsible for the following:~~

- ~~• **Independently review and make recommendations to the Investment Board** regarding: 1) the Real Estate Objectives, Policies, and Procedures, 2) strategic asset allocation, and 3) asset class strategy.~~
- ~~• **Provide independent evaluation and assist LACERA in the selection of qualified real estate investment managers.**~~
- ~~• **Prepare a quarterly performance report including performance attribution for LACERA's real estate managers and the total real estate Composite.**~~

- ~~Provide topical research and education on investment subjects that are relevant to LACERA.~~

Private Equity Consultant

The Private Equity Investment Consultant shall be responsible for the following:

- ~~Independently review and make recommendations in the preparation of the Private Equity Objectives, Policies and Procedures and Annual Investment Plans.~~
- ~~Independently review and make recommendations in the implementation of the Private Equity Investment Plan.~~
- ~~Assist Staff in the preparation of a semi-annual performance report including portfolio investments.~~
- ~~Provide topical research and education on Private Equity subjects relevant to LACERA.~~

Proxy Voting Consultant

The Proxy Voting Consultant(s) shall be responsible for the following:

- ~~Provide Staff with on-going proxy voting research and analyses consistent with LACERA's investment goals and in accordance with the Corporate Governance Policy (Attachment F of the Investment Policy Statement.~~
- ~~Assist Staff with the preparation and/or revisions of LACERA's proxy voting guidelines.~~
- ~~Provide Staff with company-specific corporate governance profiles, pertinent statistical reporting and yearly review of the results of corporate annual meetings.~~

Appendix

A. Investment Tables

Table 1: Approved Asset Allocation

Asset Class	Target Allocation (%)	Allocation Range +/- (%)
Growth	47.0	+/- 7
Global Equity	35.0	+/- 7
Private Equity	10.0	+/-3
Opportunistic Real Estate	2.0	+1/-2
Credit-Oriented Fixed Income	12.0	+/- 3
High Yield Bonds	3.0	+/-3
Bank Loans	4.0	+2/-4
Emerging Market Debt	2.0	+/-2
Illiquid Credit	3.0	+2/-3
Real Assets & Inflation Hedges	17.0	+/- 3
Core & Value-Added Real Estate	7.0	+/-3
Natural Resources/Commodities	4.0	+/-2
Infrastructure	3.0	+1/-3
TIPS	3.0	+2/-3
Risk Reducing & Mitigating	24.0	+/-6
Investment Grade Bonds	19.0	+/-6
Diversified Hedge Fund Portfolio	4.0	+2/-4
Cash	1.0	+2/-1
TOTAL FUND	100.0	

Color Key: Black – Original LACERA IPS Blue – New LACERA language
 Red – Changes to existing language Green – New language from external sources
 Purple – New language to IPS from other LACERA sources

Table 2: Benchmark Table

Asset Class	Benchmark
Growth	Custom Blend
Global Equity	TBD
Private Equity	TBD
Opportunistic Real Estate	TBD
Credit-Oriented Fixed Income	Custom Blend
High Yield Bonds	TBD
Bank Loans	TBD
Emerging Market Debt	TBD
Illiquid Credit	TBD
Real Assets & Inflation Hedges	Custom Blend
Core & Value-Added Real Estate	TBD
Natural Resources/Commodities	TBD
Infrastructure	TBD
TIPS	TBD
Risk Reducing & Mitigating	Custom Blend
Investment Grade Bonds	TBD
Diversified Hedge Fund Portfolio	TBD
Cash	TBD
TOTAL FUND	Custom Blended Policy Benchmark

Table 3: Ten-Year Annualized Return and Volatility Expectations

Asset Class	Expected Return (%)	Volatility (%)
Growth		
Global Equity	6.7	19.0
Private Equity	9.3	26.0
Opportunistic Real Estate	7.5	25.0
Credit-Oriented Fixed Income		
High Yield	5.0	12.5
Bank Loans	5.1	10.0
Emerging Markets Debt	5.1	13.3
Illiquid Credit	6.1	18.0
Real Assets & Inflation Hedges		
Core & Value-Added Real Estate	4.0/6.0	12.5/19.0
Natural Resources/Commodities	7.9	23.0
Infrastructure	6.6	17.4
TIPS	3.0	7.5
Risk Reducing & Mitigating		
Investment Grade Bonds	2.5	4.0
Diversified Hedge Fund Portfolio	4.0	9.9
Cash	1.5	1.0

Table 4: Correlation Matrix

	Cash	IG Corp Bonds	TIPS	High Yield Bonds	EM Debt	US Large Cap	Developed Market Equity	50% Hedged DM Equity	Emerging Market Equity	Private Equity	Real Estate	Commodities	Core Infra	Hedge Funds
Cash	1.00													
IG Corp Bonds	0.00	1.00												
TIPS	0.05	0.70	1.00											
High Yield Bonds	0.00	0.65	0.30	1.00										
EM Debt	0.05	0.55	0.50	0.70	1.00									
US Large Cap	0.00	0.25	0.00	0.70	0.60	1.00								
DM Equity	0.00	0.40	0.15	0.70	0.60	0.90	1.00							
50% Hedged DM Equity	0.00	0.00	0.10	0.75	0.60	0.95	0.97	1.00						
EM Equity	0.00	0.40	0.15	0.70	0.65	0.80	0.90	0.95	1.00					
Private Equity	0.10	0.20	0.04	0.68	0.44	0.87	0.81	0.81	0.77	1.00				
Real Estate	0.15	0.35	0.10	0.50	0.30	0.50	0.45	0.45	0.40	0.43	1.00			
Commodities	0.00	0.25	0.35	0.40	0.40	0.35	0.55	0.55	0.60	0.28	0.15	1.00		
Core Infra	0.20	0.45	0.30	0.60	0.50	0.55	0.55	0.55	0.50	0.44	0.60	0.35	1.00	
Hedge Funds	0.10	0.35	0.20	0.70	0.55	0.80	0.85	0.85	0.85	0.61	0.45	0.65	0.60	1.00

B. Chief Investment Officer Delegated Authorities

The Board has delegated to the CIO the following authorities. ~~In addition to these core responsibilities, LACERA's Board of Investments has delegated to the Chief Investment Officer the following authorities.~~ In the event the CIO is not available, and time is of the essence in making a decision, the CEO shall have the authorities identified below. In the event neither the CIO or CEO are available, a committee comprised of all available Principal and Senior Investment Officers and Assistant Executive Officers shall have these powers, provided that the committee is comprised of at least one Principal or Senior Investment Officer and one Assistant Executive Officer. The Board will receive written notification of all such actions.

- Authority to approve real estate co-investments according to the Real Estate Co-Investment Policy found in LACERA's Real Estate Objectives, Policies, and Procedures.
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- Authority to sign all investment-related consultant contracts and agreements, subsequent to Board approval. Thereafter, authority to sign all amendments and modifications with respect to such contracts and agreements, and make all decisions with respect to their day-to-day operation and implementation where the investment mandate remains substantially unchanged.
- Authority to approve temporary variances from public market investment manager guidelines.
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- Authority to approve variances from LACERA's Fund of Funds sub-manager selection and compliance criteria on a case-by-case basis.
- Authority to limit or freeze manager trading activity pending discussion and action by the Board of Investments. Such actions shall be reported as an informational item as reasonably practicable to the Board of Investments, and no later than the next scheduled meeting of the Board
- Authority to take actions not otherwise specifically delegated, in concurrence with the CEO and the Chair of the Board of Investments, when deemed necessary in the best interest of the Fund and there is not time to take the action to the full Board of Investments. Such actions shall be reported as an informational item as soon as reasonably practicable to the full Board, and no later than the next scheduled meeting of the Board of Investments.
- [Placeholder for additional authority once the comprehensive review of all investment policies and procedures is complete (e.g. rebalancing, secondary PE transactions, PE re-ups, etc.)]

List of Attachments

Corporate Governance Principles
Corporate Governance Policy
Responsible Contractor Policy
Emerging manager Policy

[Other attached policies to be determined]

PERFORMANCE REVIEW



AS OF JUNE 30, 2018

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Glossary

State Street TruView Risk

EXECUTIVE SUMMARY

for the quarter ended June 30, 2018



TOTAL FUND PERFORMANCE

LACERA's Total Fund rose 1.5% in the second quarter and outperformed its policy benchmark return of 1.3% by 20 basis points (bps). All asset classes outperformed their respective benchmarks except U.S. Equity and Hedge Funds. For the fiscal year, the Total Fund returned 9.0% outperforming the policy benchmark by 120 bps. All asset classes generated positive returns for the fiscal year.

LACERA's U.S. Equity composite returned 3.6% for the quarter and trailed its benchmark by 30 bps as three of five active managers underperformed their respective benchmarks.

LACERA's Non-U.S. equity composite outperformed its benchmark return of -0.8% by 50 bps for the quarter. Results were broad-based with outperformance from developed markets managers and emerging markets managers.

LACERA's Fixed Income composite outperformed its benchmark by 20 bps for the quarter. This outperformance was primarily attributable to LACERA's allocation to High Yield and Opportunistic strategies.

LACERA's Real Estate portfolio outperformed its benchmark return of 2.1% by 50 bps. LACERA's Private Equity portfolio exceeded its benchmark return of 3.6% by 70 bps. The Hedge Funds portfolio returned 0.6%, 100 bps below its benchmark return. As a reminder, short-term results are not very meaningful for these three categories.

LACERA's Commodities composite outperformed by 50 bps. One manager accounted for the relative gain in the quarter.

NET-OF-FEES

	Qtr	FYTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
U.S. Equity	3.6	14.1	14.1	11.1	13.1	10.1
RUSSELL 3000 (DAILY)	3.9	14.8	14.8	11.6	13.3	10.2
Non-U.S. Eq 50% Dev Mkt Hdg'd	-0.3	8.8	8.8	6.7	8.1	3.9
CUSTOM MSCI ACWI IMI N 50%H	-0.8	8.2	8.2	6.1	7.7	3.7
Fixed Income*	-0.1	0.8	0.8	3.1	3.4	5.2
FI CUSTOM INDEX	-0.3	-0.3	-0.3	2.1	2.6	4.1
BBG BC U.S. Universal	-0.3	-0.3	-0.3	2.1	2.6	4.1
Real Estate**	2.6	8.2	8.2	9.3	9.5	3.3
REAL ESTATE TARGET	2.1	7.5	7.5	9.4	10.7	6.3
Private Equity**	4.3	21.2	21.2	13.3	15.2	11.4
PRIVATE EQUITY TARGET	3.6	13.7	13.7	13.1	13.3	10.6
Commodities	0.9	10.0	10.0	-2.8	-5.0	-7.6
Bloomberg Commodity Index Total Return	0.4	7.3	7.3	-4.5	-6.4	-9.0
Hedge Funds***	0.6	5.6	5.6	2.6	3.8	
HEDGE FUND CUSTOM INDEX	1.6	6.3	6.3	5.6	5.4	
Cash	0.5	1.4	1.4	1.0	0.7	0.8
FTSE 6 M Treasury Bill Index	0.4	1.3	1.3	0.7	0.5	0.4
Total Fund	1.5	9.0	9.0	7.4	8.5	6.3
TOTAL FUND POLICY BENCHMARK	1.3	7.8	7.8	7.0	8.1	6.3

EXECUTIVE SUMMARY

for the quarter ended June 30, 2018

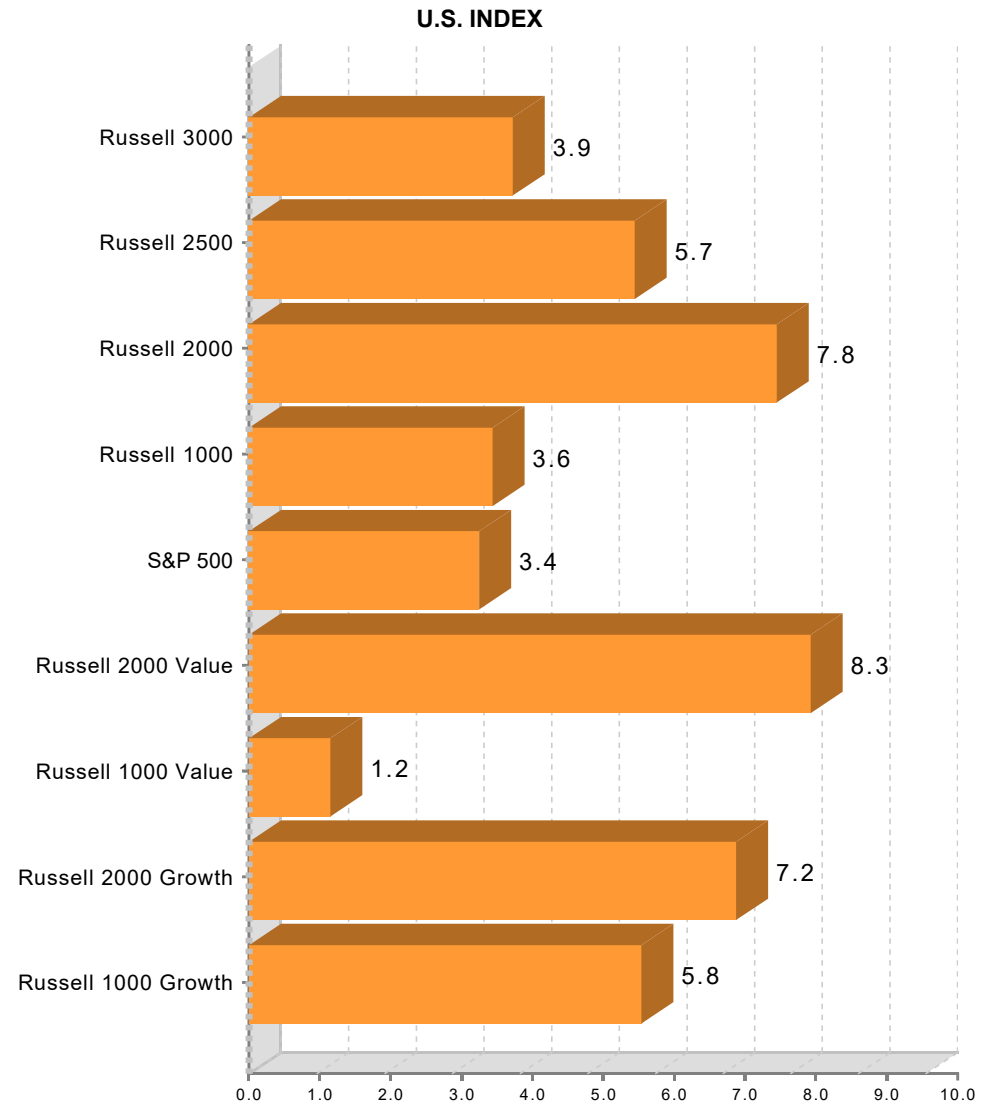


EQUITY MARKET REVIEW

After posting negative returns in the first quarter, global equities rebounded in the second quarter, despite escalating trade-war rhetoric, geopolitical tensions, rising U.S. interest rates, and an increase in oil prices. Results were mixed across regions as U.S. equity markets generated positive returns while Non-U.S. equity markets retreated. The MSCI ACWI IMI index rose 0.7% in the second quarter.

U.S. stocks rose in each month of the quarter, driven by a positive economic backdrop. Data released in the quarter highlighted an improving economy with record low unemployment rates, strong consumer spending, positive manufacturing and production activity, and modest inflation. The Fed raised interest rates by 0.25% and signaled two more rate hikes for the year.

LACERA's U.S. equity benchmark, the Russell 3000 Index, returned 3.9%. In continuation of last quarter, small capitalization (cap) stocks outperformed large caps. The small cap Russell 2000 Index rose 7.8% compared to a 3.6% increase in the large cap Russell 1000 Index. Large growth stocks outperformed their value counterparts, however, small value stocks outperformed small growth stocks.



EXECUTIVE SUMMARY

for the quarter ended June 30, 2018



EQUITY MARKET REVIEW

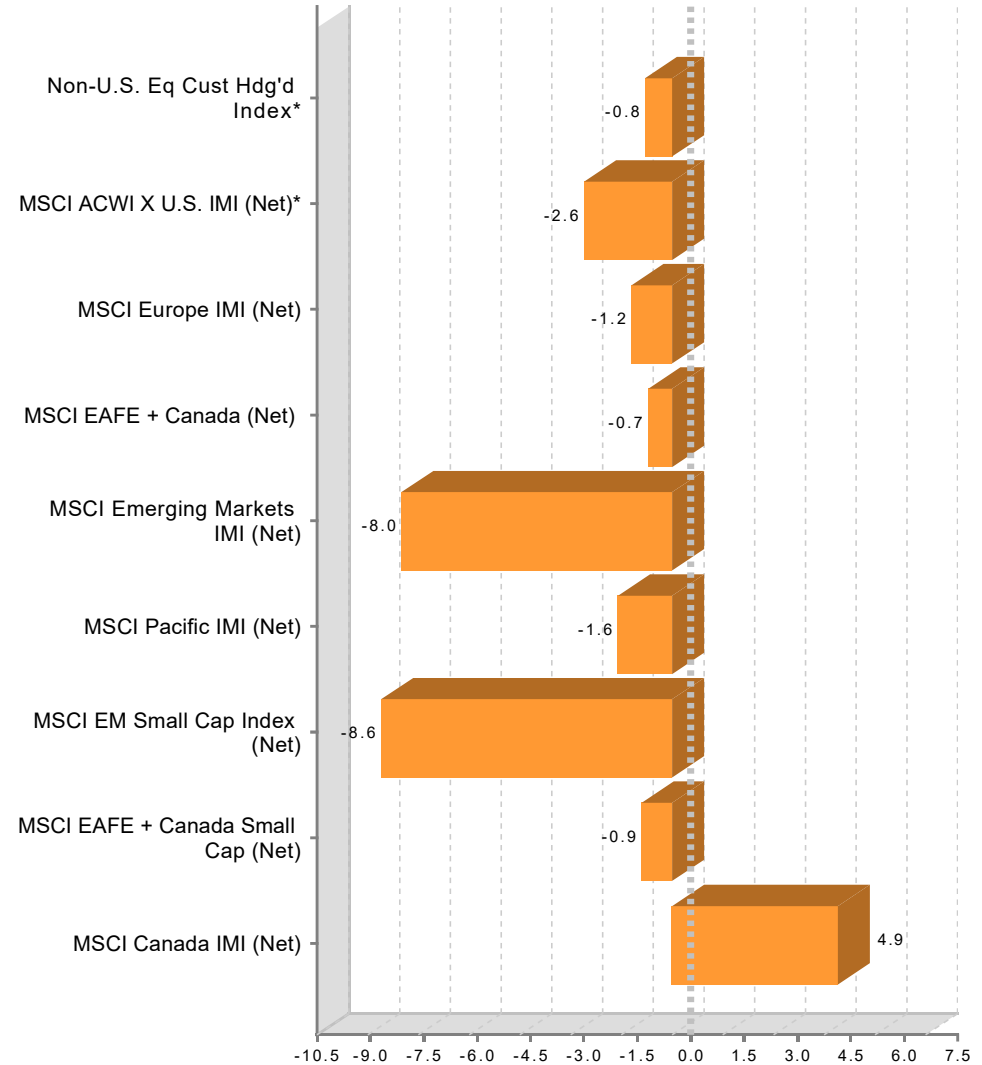
Non-U.S. equity markets, as represented by the MSCI ACWI ex-U.S. IMI (unhedged) Index, fell 2.6% for the quarter. Emerging markets posted the weakest returns in the second quarter, declining 8.0%. The Pacific region and Europe, returned -1.6%, and -1.2% respectively. Canada was the only region that generated positive returns, rising 4.9%.

The U.S. dollar (USD) appreciated versus most major currencies. The USD strengthened 5.8% versus the British pound, 5.0% versus the euro, 4.1% versus the Japanese yen, and 1.9% versus the Canadian dollar. Changes in the USD relative to other currencies can impact returns for dollar-based investors that own non-dollar denominated securities. LACERA's passive 50% developed markets currency hedge into USD returned 2.5% for the quarter.

European equities posted back-to-back losses, falling 1.2% in USD terms; however, results were positive in local terms with the MSCI Europe IMI Index rising 4.2%. European stocks rallied despite the unveiling of U.S. tariffs on major trading partners as investors were encouraged by generally positive economic news. Eurozone GDP data showed continued growth in the first quarter, albeit at a slower pace from the prior quarter. The European Central Bank left rates unchanged at its June meeting and announced that it would reduce asset purchases from 30 billion euros to 15 billion euros at the end of September 2018, and end its asset purchase program in December 2018.

Pacific Basin stocks declined for the second consecutive quarter, driven by the negative results in Japan. Japan's GDP contracted by 0.2% in the first quarter after posting positive figures in the prior eight quarters. A depreciating yen relative to the USD also detracted from results for U.S. based investors. After registering gains in the prior five quarters, emerging markets fell in the second quarter amid escalating global trade tensions and currency weakness versus the USD. At a country level, Brazil was down 26% during the quarter mainly due to a national truckers strike in May over rising fuel costs.

NON-U.S. INDEX



* See Glossary

EXECUTIVE SUMMARY

for the quarter ended June 30, 2018



EQUITY MANAGER REVIEW

Large Cap

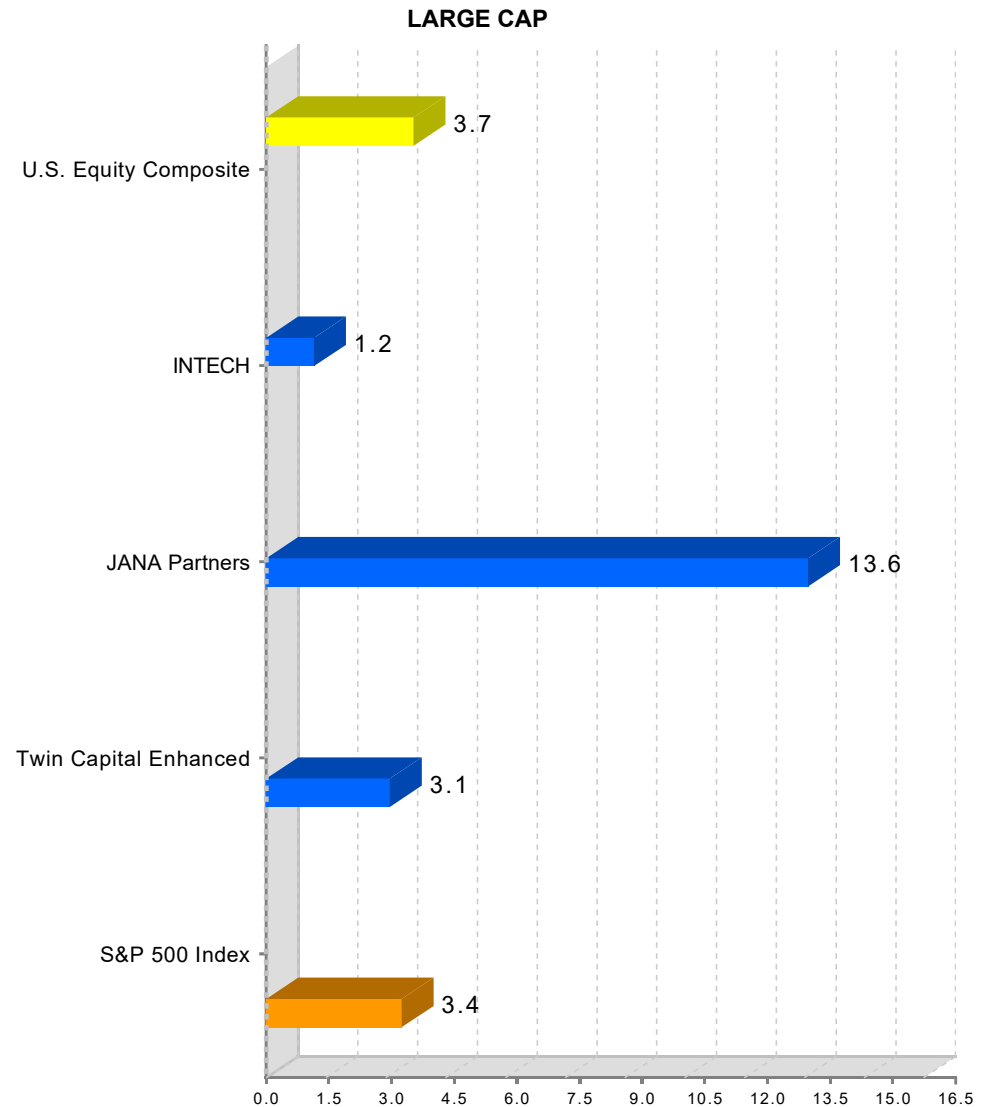
LACERA's active U.S. Large Cap managers underperformed as a group during the quarter as the two broad market managers who benefit from higher levels of volatility underperformed as volatility subsided.

INTECH, a quantitative manager that seeks to exploit volatility, underperformed the benchmark by 220 bps as the market instability witnessed in the first quarter declined. From a sector perspective, the industrials, information technology, and consumer discretionary sectors were the largest detractors from the portfolio's performance. The first sector suffered from an overweight in capital-intensive companies with tariff exposure, while the latter two sectors were hurt by an underweight in the large cap technology stocks and internet retailers that have been driving the recent rally.

Twin, LACERA's other quantitative manager, underperformed its benchmark by 30 bps. As it identifies investments using reliable and predictable factors, this strategy will typically underperform in periods of low market breadth or dispersion, similar to that which existed during the quarter. From a sector perspective, the majority of the portfolio's underperformance originated in financials and energy, two sectors where the portfolio's value tilt caused the most harm in a period where growth was in favor.

JANA Partners, LACERA's U.S. focused activist manager, outperformed its benchmark by 1,020 bps as portfolio holdings in specialty retail, food products, and industrials experienced significant price appreciation.

As of the quarter end, none of LACERA's large cap managers had observations* outside of their calculated performance bands.



EXECUTIVE SUMMARY

for the quarter ended June 30, 2018



EQUITY MANAGER REVIEW (...cont.)

Small/Mid Cap

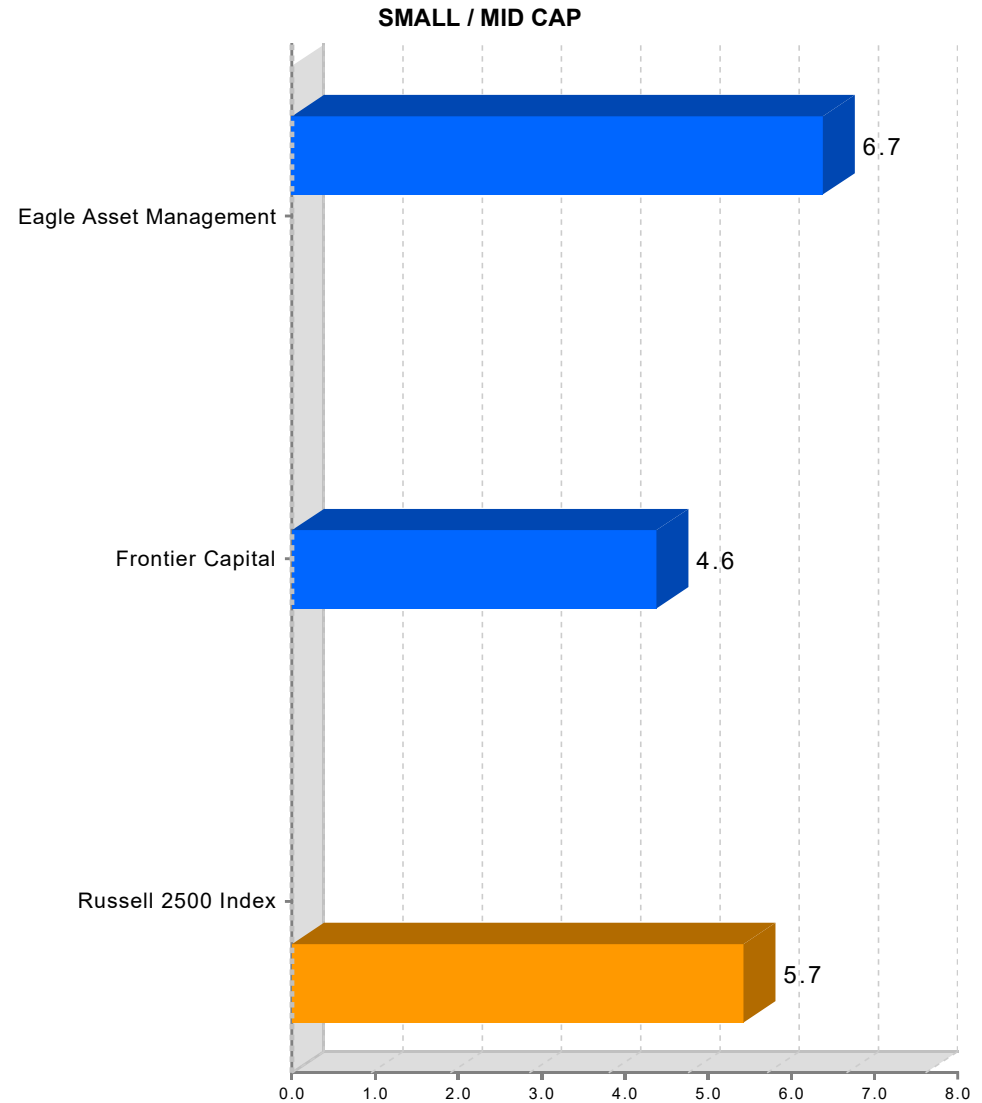
LACERA's small/mid cap managers experienced mixed results during the quarter.

Eagle outperformed its benchmark by 100 bps primarily due to stock selection in the financials and industrials sectors. Within financials, the portfolio benefited from an overweight in regional banks that appreciated disproportionately due to scarce sell side coverage and a material improvement in fundamentals. Positive relative performance in the industrial sector was generated by a higher relative weight in companies less sensitive to rising, tariff-impacted input costs.

Frontier lagged the index, underperforming by 110 bps due to unfavorable security selection in the electronic equipment instrumentation and software industries. Additional underperformance can be attributed to an overweight in North American airlines and an out-of-benchmark position in a non-U.S. metals company, both of which declined on tariff-related concerns.

As a reminder, LACERA's other two Small/Mid Cap managers, **CRM** and **Westwood**, were terminated in May. **QMA** and **Systematic** were funded in June with a performance of July 2018.

As of the quarter end, none of LACERA's small/mid cap managers had observations* outside of their calculated performance bands.



* Each quarterly observation is based on trailing one year excess returns.

EXECUTIVE SUMMARY

for the quarter ended June 30, 2018



EQUITY MANAGER REVIEW (...cont.)

Non-U.S.

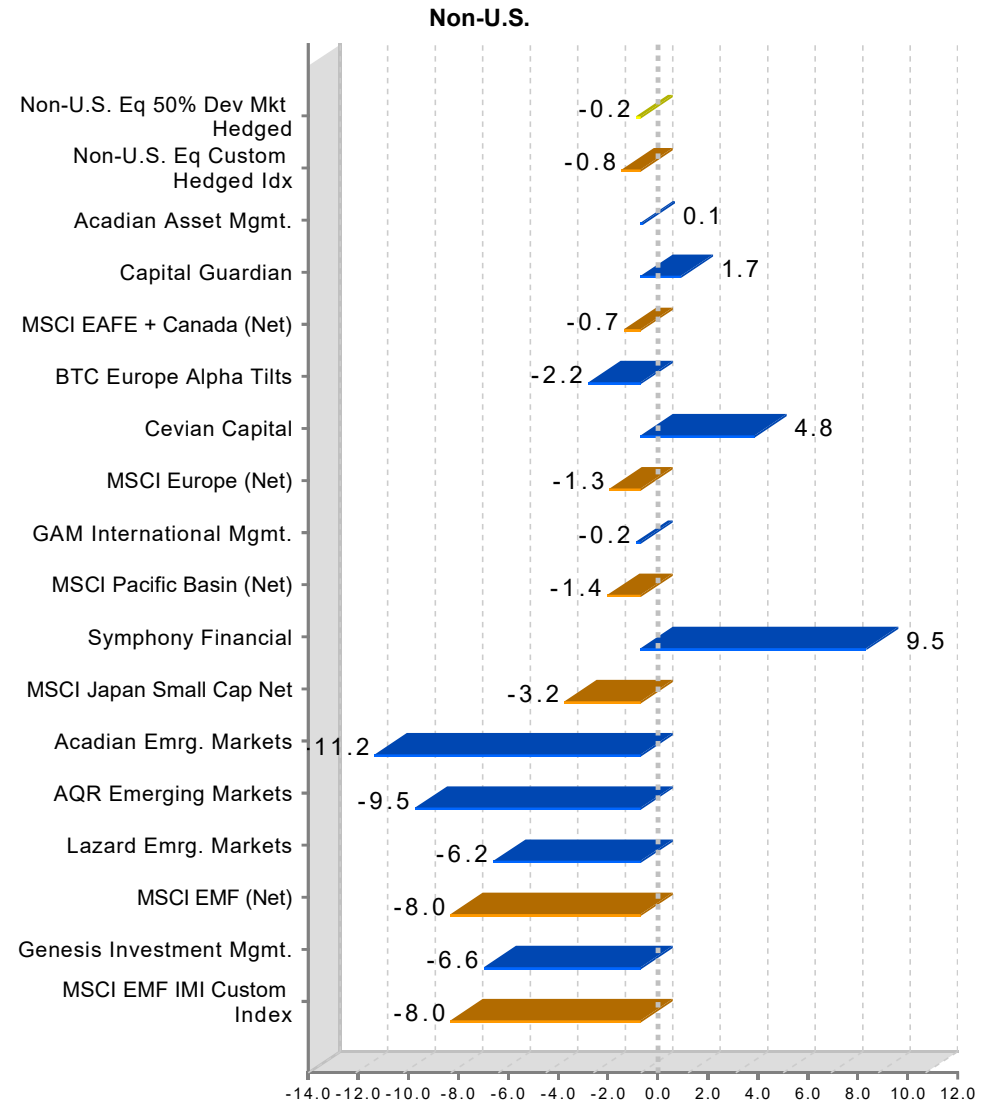
LACERA's Non-U.S. equity managers outperformed the composite benchmark as a group as seven of ten active managers outperformed their respective benchmarks.

Among the developed markets managers, **Acadian** exceeded its benchmark by 80 bps due to stock selection in Switzerland and the United Kingdom, and in the financials sector. **Capital Guardian's** EAFE+Canada strategy outperformed its benchmark by 240 bps due to stock selection in the United Kingdom and within the consumer discretionary sector.

BlackRock Europe Tilts' underperformance of 90 bps was driven by negative stock selection in France and in the consumer discretionary sector. **Cevian** surpassed its benchmark by 610 bps as stock selection in Sweden and Germany yielded positive results. Stock selection within the information technology and industrials sectors also contributed to the outperformance. **GAM** outpaced its benchmark by 120 bps due to an underweight allocation to Japan and stock selection within the information technology and materials sectors. **Symphony's** excess return of 1,270 bps was mostly attributable to stock selection in the information technology sector.

In emerging markets, **Acadian** trailed its benchmark by 320 bps as a result of stock selection in India and Taiwan. Stock selection within the consumer discretionary and financial sectors also detracted from performance. **AQR** underperformed by 150 bps mainly due to country and currency positioning. **Lazard's** closed-end fund strategy outperformed its index by 180 bps due to an underweight allocation to Latin American funds and selection among Asian funds. **Genesis** generated 140 bps of relative returns driven by an underweight to China and stock selection in the financials sector.

As of quarter end, no non-U.S. equity managers had observations* outside their calculated performance bands.



See Glossary for all Custom Index definitions.

* Each quarterly observation is based on trailing one year excess returns.

EXECUTIVE SUMMARY

for the quarter ended June 30, 2018



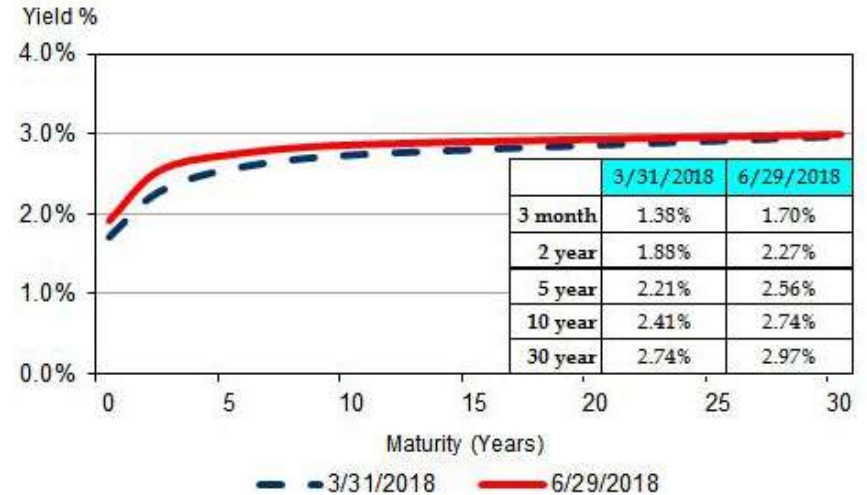
FIXED INCOME MARKET REVIEW

The U.S. fixed income market returned -0.3% for the second quarter and -1.7% YTD (measured by the Bloomberg Barclays U.S. Universal Index). Credit spreads widened during the quarter despite modestly improving fundamentals in the economy. Bond markets were volatile due to various geopolitical events. In April, the Trump administration allowed tariff exemptions on steel and aluminum imported from the European Union, Canada, and Mexico to expire. Trade tensions escalated further with China in June as the administration announced tariffs on an additional \$50 billion worth of goods as the market waited for retaliatory measures.

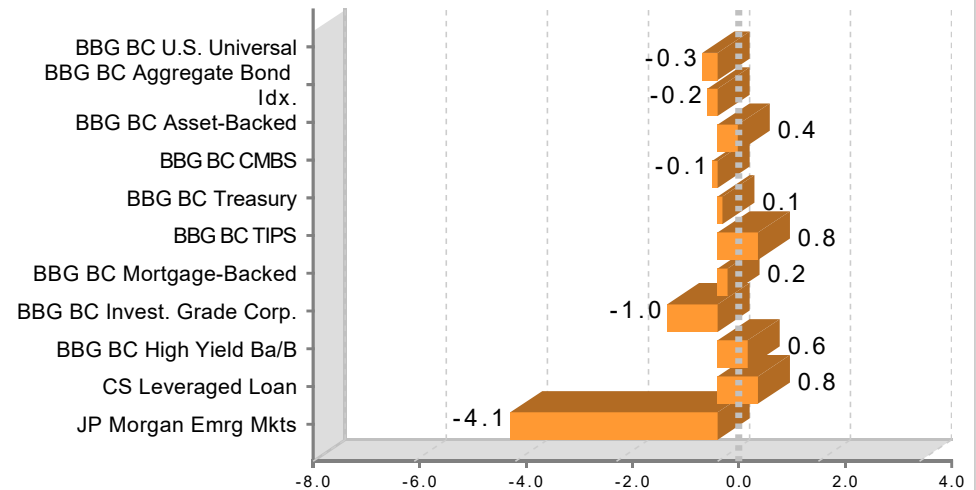
Despite the yield curve flattening, shorter-term bonds generally outperformed longer-term bonds as shorter bonds were less affected by rising rates. In June, the Fed hiked rates by 25 bps for the second time this year, bringing the Fed Funds Target range to 1.75% - 2.00%, while suggesting the potential for a quicker pace in coming months. The current expectation is for two more hikes this year. This caused concerns that the yield curve would invert, signaling a possible recession. The closely watched two and 10-year Treasury spread finished the quarter at 33 bps marking its lowest level since 2007.

Leveraged loans were among the best performers for the quarter (0.8%) along with TIPS¹ (0.8%). Credit spreads widened as investment grade corporates underperformed Treasuries (-1.0% vs 0.1%). High yield, however, performed better (0.6%) due to their lower sensitivity to rates as well as historically low net new issue supply. TIPS outperformed nominal Treasuries (0.8% vs 0.1%) as inflation expectations increased. Among securitized sectors, ABS¹ outperformed MBS¹ (0.4% vs 0.2%) and CMBS¹ (-0.1%) for the quarter mainly due to its shorter duration. EMD¹ was the worst performer (-4.1%) as escalating U.S.- China trade tensions as well as dollar strength hurt the sector.

U.S. Treasury Yield Curve



Total Returns



¹ ABS = asset-backed securities; EMD = emerging market debt; MBS = mortgage-backed securities; CMBS = commercial mortgage-backed securities; TIPS = Treasury Inflation Protected Securities.

EXECUTIVE SUMMARY

for the quarter ended June 30, 2018



FIXED INCOME MANAGER REVIEW

Core

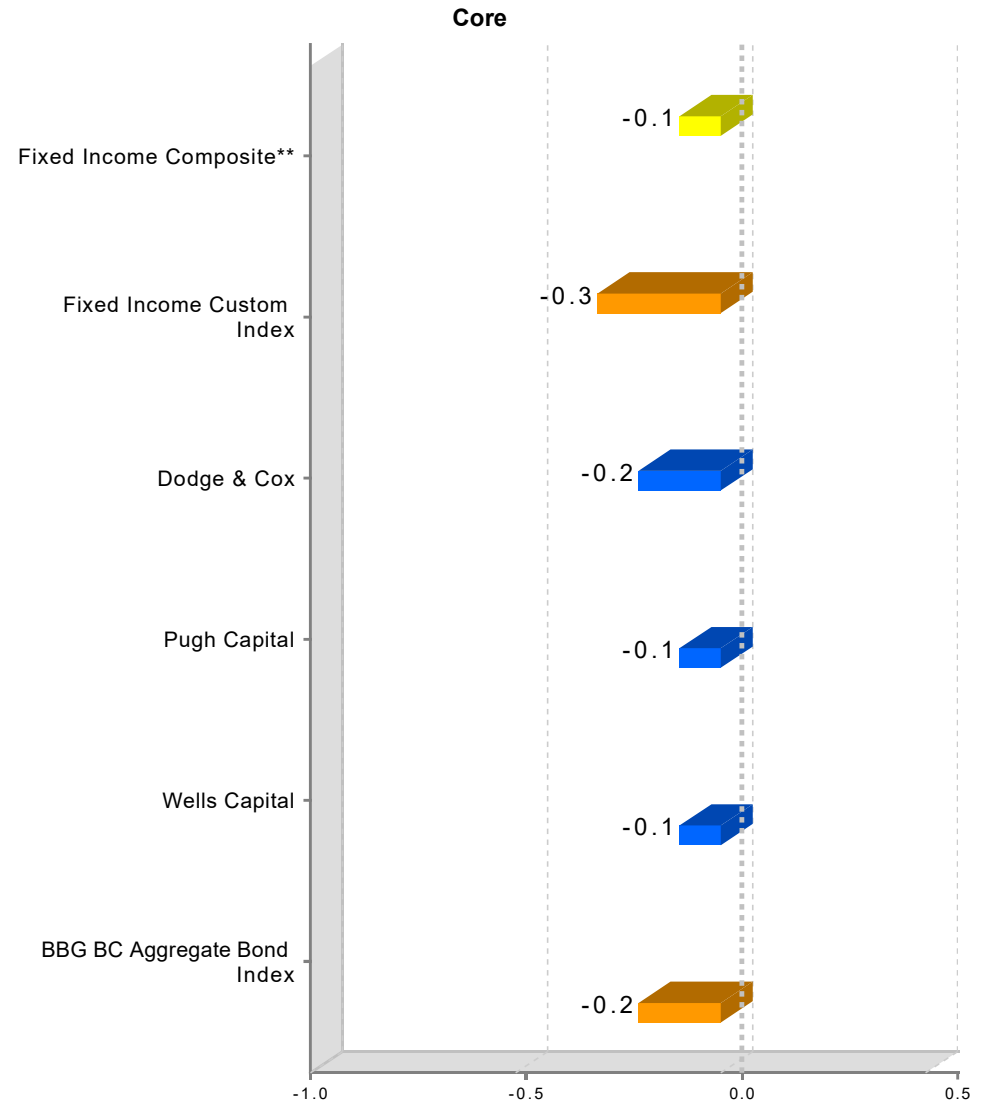
All but one of LACERA's three core managers performed in line with the Bloomberg Barclays Aggregate Index for the quarter.

Wells Capital outperformed the benchmark by 10 bps for the quarter, as security selection within MBS and an overweight allocation to ABS contributed to performance.

Pugh Capital also surpassed the index by 10 bps. Positive contributions from corporate security selection, primarily within industrials and utilities sub-sectors, offset an overweight allocation to corporates.

Dodge & Cox matched the index as the portfolio's shorter-than benchmark duration was a positive contributor, while an overweight allocation to corporates offset the gains.

As of quarter end, Dodge & Cox had one observation* above its calculated performance bands.



* Each quarterly observation is based on trailing one year excess returns.

** The performance and market values of two opportunistic portfolios are reported with a one-month lag.

EXECUTIVE SUMMARY

for the quarter ended June 30, 2018



FIXED INCOME MANAGER REVIEW (...cont.)

Core Plus

One of LACERA's four core plus managers outperformed its benchmark for the quarter. **PIMCO** performed best among the managers, outperforming by 80 bps. The relative gain was due to the portfolio's shorter-than-benchmark duration, corporate security selection with investment grade and high yield, and an out-of-benchmark allocation to Non-Agency MBS.

Loomis Sayles matched the Aggregate Index for the quarter. Positive security selection within corporates (investment grade and high yield) and an allocation to TIPS was erased by underperformance from an exposure to the Mexican peso, out-of-benchmark allocation to EMD, and security selection within securitized sectors (MBS, ABS, and CMBS).

Dolan McEniry (LACERA's sole fixed income emerging manager), lagged its custom benchmark by 20 bps for the quarter. Dolan's credit selection within corporates (investment grade and high yield), primarily within consumer cyclicals, technology, and capital goods sectors were the strategy's detractors of performance.

Western Asset lagged the benchmark by 110 bps for the quarter. The portfolio's longer-than-benchmark duration was the primary detractor of performance, combined with security selection within corporates and an out-of-benchmark allocation to EMD.

As of quarter end, three core plus managers had observations* outside their calculated performance bands: Loomis Sayles (eight observations above), PIMCO (six observations above), and Western (one observation below).



See Glossary for all Custom Index definitions.

* Each quarterly observation is based on trailing one year excess returns.

EXECUTIVE SUMMARY

for the quarter ended June 30, 2018



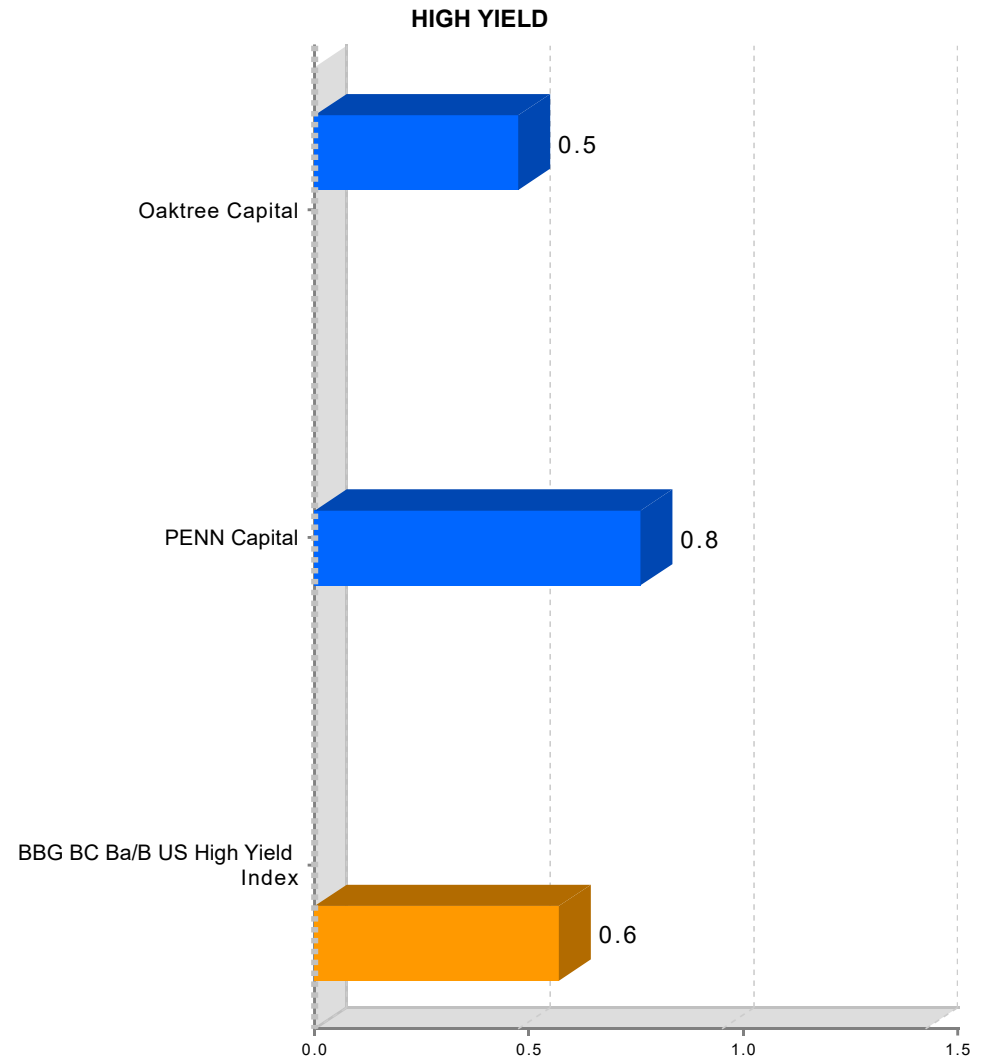
FIXED INCOME MANAGER REVIEW (...cont.)

High Yield

LACERA's high yield managers produced mixed results for the quarter. **PENN Capital** outperformed the Bloomberg Barclays High Yield Ba/B Index by 20 bps. The portfolio benefited from an overweight to single B-rated credits, security selection in telecommunications, retail & apparel, and building materials sectors.

Oaktree Capital trailed the index by 10 bps. This underperformance was the result of an underweight to and security selection within the pharmaceuticals sector, combined with an overweight to and security selection within the healthcare sector. Oaktree's defensive posture detracted from performance as riskier issues outperformed in the quarter.

As of quarter end, no high yield manager had observations* outside its calculated performance bands.



* Each quarterly observation is based on trailing one year excess returns.

EXECUTIVE SUMMARY

for the quarter ended June 30, 2018



FIXED INCOME MANAGER REVIEW (...cont.)

Opportunistic

LACERA's Opportunistic sub-composite includes managers that specialize in or invest across three segments: 1) Corporate Credit, 2) Securitized Credit, and 3) Non-U.S. bonds. Eligible investments include sectors such as bank loans, high yield corporate bonds, distressed securities, structured securities, EMD, and private debt. Collectively, the opportunistic managers continued to surpass the Core and Core Plus sub-composites, outperforming by approximately 30 bps.

Brigade surpassed its index by 90 bps with the largest contributors to performance being bank debt and high yield. **Tennenbaum** outperformed the benchmark by 80 bps due to successful security selection within the electric utility and leisure sectors.

Bain outperformed the index by 50 bps through security selection within Metals & Mining. **Beach Point's** 20 bps of relative outperformance came from a number of sectors including pharmaceuticals, wirelines, healthcare, and leisure.

Western's portfolio beat its benchmark by 10 bps. Positions in structured products, especially non-agency RMBS and CMBS, contributed to performance as spreads generally tightened. **Principal's** portfolio matched its benchmark, helped by security selection in EMD while being hurt by security selection within investment grade credit.

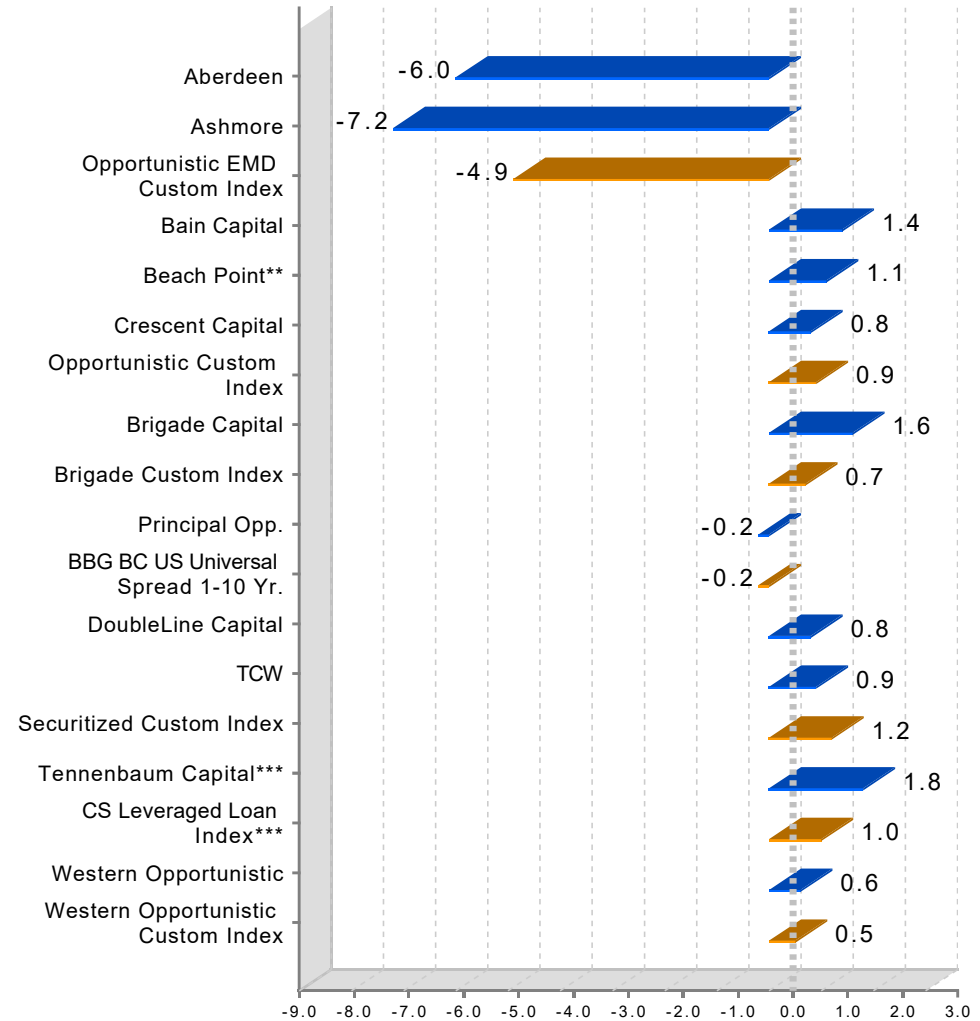
Crescent's portfolio underperformed by 10 bps, hurt by an underweight to energy as oil prices rallied.

TCW and **DoubleLine** underperformed their benchmarks by 30 and 40 bps, respectively. TCW's overweights to CMBS and ABS were the largest detractors for the quarter. DoubleLine's holdings in structured Agency mortgage securities were a drag on performance.

LACERA's EMD managers, **Ashmore** and **Aberdeen**, registered the worst absolute and relative returns amongst the Opportunistic fixed income line-up. Ashmore underperformed the index by 230 bps due to its allocations to local currency bonds, external debt and corporate debt. Aberdeen lagged its benchmark by 110 bps, due to a position in Argentinean local currency bonds as well as holdings in the Brazilian real.

As of quarter end, three opportunistic managers had observations* outside their calculated performance bands: Tennenbaum (eleven observations above), Western Opportunistic (three observations above), and DoubleLine (one observation below).

OPPORTUNISTIC



See Glossary for all Custom Index definitions.

* Each quarterly observation is based on trailing one year excess returns.

** Represents the combined performance of two portfolios, one of which is reported with a one-month lag.

*** One-month lag.

EXECUTIVE SUMMARY

for the quarter ended June 30, 2018



COMMODITIES MARKET REVIEW

The Bloomberg Commodity Index (BCOM) was nearly flat this quarter, returning 0.4%. Performance for the index was impacted by the dispersion in returns of the two largest sectors in the benchmark, Energy and Agriculture.

Energy, the largest sector in the index, surged 10.7% in the second quarter. Stricter U.S. sanctions on Iran along with disciplined OPEC production cuts lifted returns of petroleum commodities. Brent crude was the best performer, rallying 16.7%, followed by WTI crude (+13.2%), diesel (+10.5%), and unleaded gasoline (+7.7%). Natural gas also fared well, returning 4.2%. Increased demand for air conditioning across the U.S. supported natural gas prices.

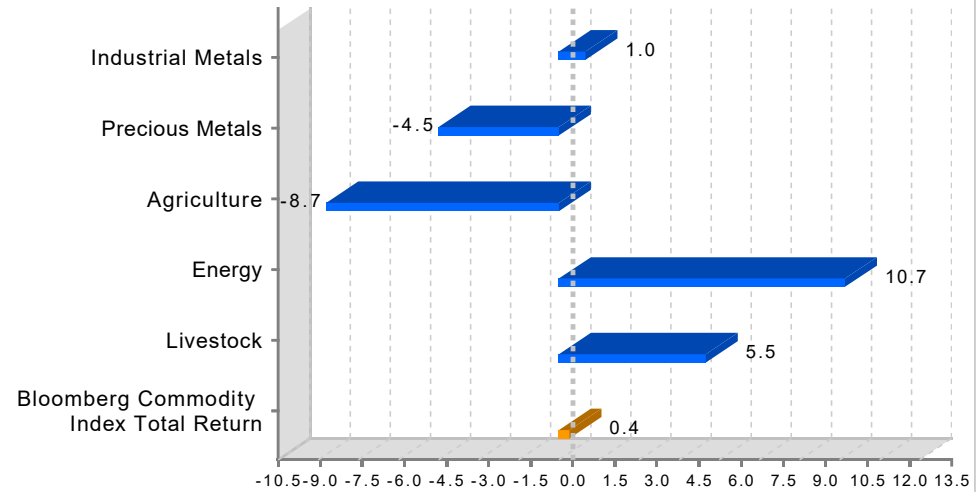
Agriculture, the second largest sector, was the worst performing group, declining 8.7%. Grain related products experienced the worst drawdowns: Soybeans, soybean meal, corn, and soybean oil fell 18.0%, 15.4%, 11.0%, and 9.3%, respectively. Each of these grain products declined due to excess supply prospects and retaliatory tariffs from China. Supply shocks from poor weather boosted the price for cotton (+6.1%) and Chicago wheat (+4.7%).

Industrial Metals returned 1.0% as commodities within the group posted mixed results. At quarter end, zinc and copper represented 55% of the industrial metals group. Both were impacted by growing U.S. - China trade tensions, weak global manufacturing data, and a strong U.S. dollar: Zinc dropped 12.1% and copper fell 2.7%. In contrast, nickel and aluminum both had positive returns. Nickel is a key component of electric vehicle batteries, and gained 12.1% as the global demand for electric vehicles rose. Aluminum increased by 8.7% due to a Brazilian refinery outage.

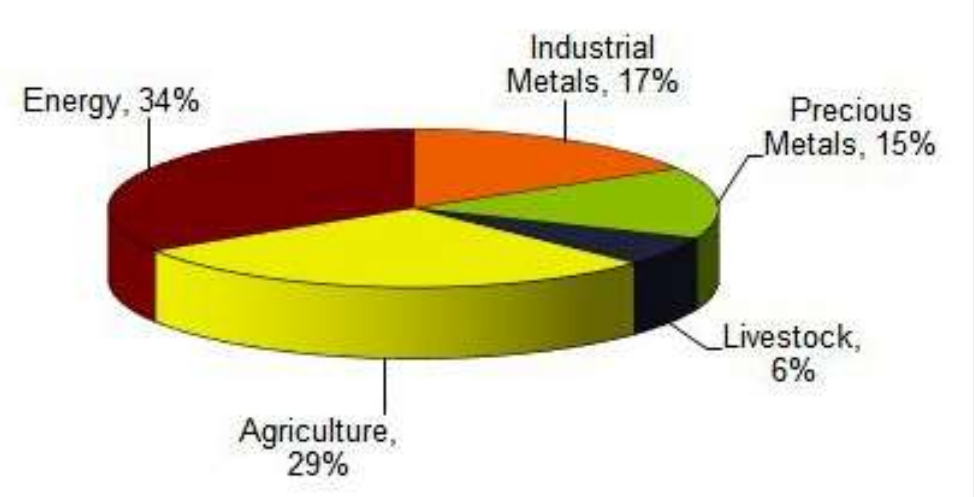
Precious Metals fell 4.5% mostly as a result of the performance of gold, which dropped 5.5%. Gold prices fell as indications of moderate U.S. economic growth persisted through the quarter. The other metal in the sector, silver, declined by 0.9%.

Livestock recovered half the loss from the previous quarter, returning 5.5% in the second quarter. The sector has two constituents, live cattle and lean hogs. Both increased off of declining inventories and the potential impact of trade tariffs on protein. Cattle rose 6.9% and hogs gained 3.0% in the quarter.

Bloomberg Commodity Index Total Returns



Bloomberg Commodity Index Sector Weights



EXECUTIVE SUMMARY

for the quarter ended June 30, 2018



COMMODITIES MANAGER REVIEW

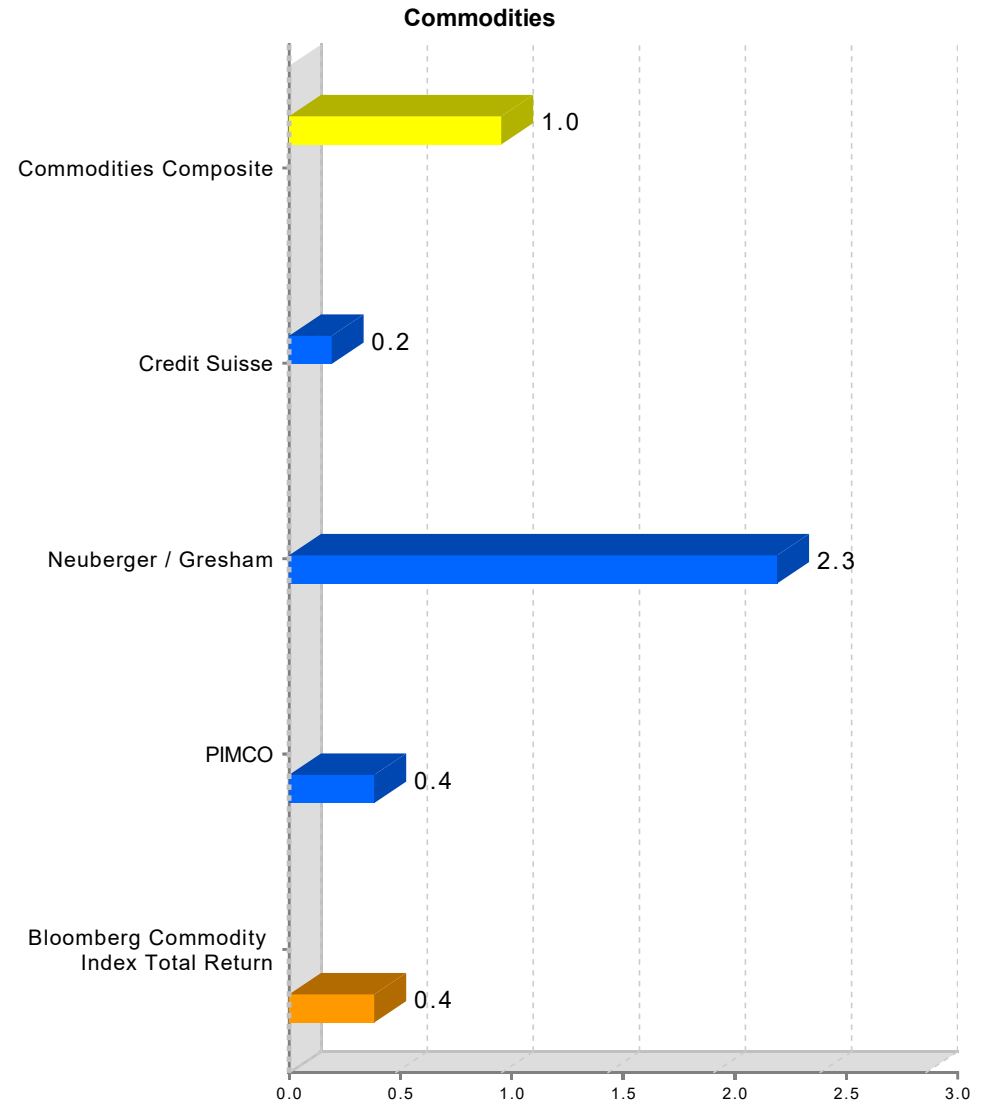
LACERA's Commodities composite outperformed the benchmark, the Bloomberg Commodity Index, by 60 bps for the quarter, with a return of 1.0% versus the index return of 0.4%. Performance of the three underlying portfolio managers was mixed.

The **Gresham/Neuberger** portfolio outperformed the benchmark by 190 bps. Active commodities management was the main contributor, adding 170 bps over the benchmark. Gresham positioned the portfolio to overweight energy and underweight agriculture which benefitted the portfolio as the BCOM Index returns for energy and agriculture were 10.7% and -8.7%, respectively. Out-of-benchmark allocations to feeder cattle, palladium, and gas oil also contributed to return. Neuberger's management of the cash collateral accounted for another 20 bps of return for the quarter.

PIMCO matched the BCOM for the quarter. Management of the cash collateral provided 10 bps of return, but this was offset by PIMCO's commodity management. Energy was the largest detractor, as holding longer-dated crude futures as well as substituting Midland crude for WTI crude weighed on results.

Credit Suisse, the most risk-averse of the three managers, lagged the index by 20 bps. Credit Suisse employs a conservative investment strategy wherein sector weights match the benchmark and fixed income collateral is invested in high-quality, liquid, short-term investments. Excess return for commodities is derived through commodities trading strategies (futures contract selection and roll timing). However, futures positioning was the main detractor for the second quarter. Specifically, holding longer dated futures positions within industrial metals and energy commodities accounted for the majority of underperformance.

As of quarter end, two managers had observations* that fell outside their calculated performance bands: Gresham Neuberger (four observations above) and PIMCO (eight observations above).



* Each quarterly observation is based on trailing one year excess returns.

TOTAL FUND

ANNUALIZED & ANNUAL RETURNS

for the quarter ended June 30, 2018
Gross-of-Fees



	<u>Qtr End</u>	<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>7 Years</u>	<u>10 Years</u>	<u>Dec 31 2017</u>	<u>Dec 31 2016</u>	<u>Dec 31 2015</u>	<u>Dec 31 2014</u>
U.S. Equity	3.7	14.2	11.3	13.2	12.9	10.3	21.1	12.6	0.4	12.6
RUSSELL 3000 (DAILY)	3.9	14.8	11.6	13.3	13.0	10.2	21.1	12.7	0.5	12.6
Non-U.S. Eq 50% Dev Mkt Hdg	-0.2	9.1	7.0	8.4	6.2	4.1	25.6	7.2	-1.9	0.8
CUSTOM MSCI ACWI IMI N 50%H	-0.8	8.2	6.1	7.7	5.6	3.7	24.6	6.2	-2.0	0.1
Fixed Income*	-0.1	1.1	3.3	3.6	4.0	5.4	5.5	6.6	-0.1	5.3
FI CUSTOM INDEX	-0.3	-0.3	2.1	2.6	2.9	4.1	4.1	3.9	0.4	5.6
BBG BC U.S. Universal	-0.3	-0.3	2.1	2.6	2.9	4.1	4.1	3.9	0.4	5.6
Real Estate**	2.9	9.1	10.2	10.5	10.1	4.0	7.9	9.2	15.0	11.2
REAL ESTATE TARGET	2.1	7.5	9.4	10.7	10.9	6.3	7.1	9.5	14.3	11.8
Private Equity**	4.3	21.2	13.3	15.2	13.9	11.4	17.6	7.9	10.8	19.6
PRIVATE EQUITY TARGET	3.6	13.7	13.1	13.3	12.7	10.6	12.8	12.7	13.6	13.5
Commodities	1.0	10.4	-2.5	-4.7	-6.0	-7.2	4.4	14.9	-24.1	-16.2
Bloomberg Commodity Index Total Return	0.4	7.3	-4.5	-6.4	-7.8	-9.0	1.7	11.8	-24.7	-17.0
Hedge Funds***	0.6	5.7	2.7	3.9			5.9	2.2	-0.1	5.4
HEDGE FUND CUSTOM INDEX	1.6	6.3	5.6	5.4			5.8	5.3	5.0	5.0
Cash	0.5	1.5	1.0	0.8	0.7	0.8	1.2	0.9	0.4	0.3
FTSE 6 M Treasury Bill Index	0.4	1.3	0.7	0.5	0.4	0.4	0.9	0.4	0.1	0.1
Total Fund (Gross-of-Fees)	1.6	9.3	7.7	8.8	8.0	6.5	15.2	8.6	1.6	7.0
TOTAL FUND POLICY BENCHMARK	1.3	7.8	7.0	8.1	7.5	6.3	13.4	8.3	2.1	6.6

See Glossary for all benchmark definitions.

* The performance and market values of two opportunistic portfolios are reported with a one-month lag.

** Portfolio and benchmark are reported with a one-quarter lag. Preliminary returns.

*** Portfolio and benchmark are reported with a one-month lag. Performance included in Total Fund beginning 10/31/11.

TOTAL FUND

ANNUALIZED & ANNUAL RETURNS

for the quarter ended June 30, 2018
Net-of-Fees



	<u>Qtr End</u>	<u>1Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>7 Years</u>	<u>10 Years</u>	<u>Dec 31 2017</u>	<u>Dec 31 2016</u>	<u>Dec 31 2015</u>	<u>Dec 31 2014</u>
U.S. Equity	3.6	14.1	11.1	13.1	12.7	10.1	20.9	12.5	0.2	12.4
RUSSELL 3000 (DAILY)	3.9	14.8	11.6	13.3	13.0	10.2	21.1	12.7	0.5	12.6
Non-U.S. Eq 50% Dev Mkt Hdg	-0.3	8.8	6.7	8.1	6.0	3.9	25.3	7.0	-2.1	0.6
CUSTOM MSCI ACWI IMI N 50%H	-0.8	8.2	6.1	7.7	5.6	3.7	24.6	6.2	-2.0	0.1
Fixed Income*	-0.1	0.8	3.1	3.4	3.8	5.2	5.2	6.3	-0.3	5.0
FI CUSTOM INDEX	-0.3	-0.3	2.1	2.6	2.9	4.1	4.1	3.9	0.4	5.6
BBG BC U.S. Universal	-0.3	-0.3	2.1	2.6	2.9	4.1	4.1	3.9	0.4	5.6
Real Estate**	2.6	8.2	9.3	9.5	9.2	3.3	7.2	8.4	14.1	10.0
REAL ESTATE TARGET	2.1	7.5	9.4	10.7	10.9	6.3	7.1	9.5	14.3	11.8
Private Equity**	4.3	21.2	13.3	15.2	13.9	11.4	17.6	7.9	10.8	19.6
PRIVATE EQUITY TARGET	3.6	13.7	13.1	13.3	12.7	10.6	12.8	12.7	13.6	13.5
Commodities	0.9	10.0	-2.8	-5.0	-6.4	-7.6	4.1	14.5	-24.4	-16.6
Bloomberg Commodity Index Total Return	0.4	7.3	-4.5	-6.4	-7.8	-9.0	1.7	11.8	-24.7	-17.0
Hedge Funds (Net All) ***	0.6	5.6	2.6	3.8			5.8	2.0	-0.2	5.4
HEDGE FUND CUSTOM INDEX	1.6	6.3	5.6	5.4			5.8	5.3	5.0	5.0
Cash	0.5	1.4	1.0	0.7	0.7	0.8	1.1	0.8	0.3	0.2
FTSE 6 M Treasury Bill Index	0.4	1.3	0.7	0.5	0.4	0.4	0.9	0.4	0.1	0.1
Total Fund (Net-of-Fees)	1.5	9.0	7.4	8.5	7.7	6.3	14.9	8.3	1.5	6.7
TOTAL FUND POLICY BENCHMARK	1.3	7.8	7.0	8.1	7.5	6.3	13.4	8.3	2.1	6.6

See Glossary for all benchmark definitions.

* The performance and market values of two opportunistic portfolios are reported with a one-month lag.

** Portfolio and benchmark are reported with a one-quarter lag. Preliminary returns.

*** Portfolio and benchmark are reported with a one-month lag. Performance included in Total Fund beginning 10/31/11.

TOTAL FUND FISCAL YEAR RETURNS



	<u>FYTD</u>	<u>Jun 30 2017</u>	<u>Jun 30 2016</u>	<u>Jun 30 2015</u>	<u>Jun 30 2014</u>	<u>Jun 30 2013</u>
U.S. Equity	14.2	18.7	1.6	7.4	25.8	21.8
RUSSELL 3000 (DAILY)	14.8	18.5	2.1	7.3	25.2	21.5
Non-U.S. Eq 50% Dev Mkt Hdg	9.1	23.0	-8.7	1.1	20.9	16.9
CUSTOM MSCI ACWI IMI N 50%H	8.2	21.7	-9.4	0.9	20.3	16.1
Fixed Income*	1.1	4.3	4.7	1.6	6.6	2.6
FI CUSTOM INDEX	-0.3	0.9	5.8	1.6	5.2	0.2
BBG BC U.S. Universal	-0.3	0.9	5.8	1.6	5.2	0.2
Real Estate**	9.1	8.4	13.2	12.8	9.1	8.7
REAL ESTATE TARGET	7.5	7.8	13.1	12.8	12.2	10.2
Private Equity**	21.2	12.5	6.7	13.2	23.5	10.9
PRIVATE EQUITY TARGET	13.7	12.7	13.0	13.8	13.3	13.2
Commodities	10.4	-3.6	-12.7	-23.0	10.2	-5.5
Bloomberg Commodity Index Total Return	7.3	-6.5	-13.3	-23.7	8.2	-8.0
Hedge Funds***	5.7	7.0	-4.2	3.1	8.3	13.5
HEDGE FUND CUSTOM INDEX	6.3	5.4	5.1	5.0	5.0	5.1
Cash	1.5	1.0	0.6	0.4	0.4	0.5
FTSE 6 M Treasury Bill Index	1.3	0.5	0.2	0.1	0.1	0.1
Total Fund (Gross-of-Fees)	9.3	13.0	1.1	4.3	16.8	12.1
TOTAL FUND POLICY BENCHMARK	7.8	11.2	2.2	4.5	15.3	11.4
Total Fund (Net-of-Fees)	9.0	12.7	0.8	4.1	16.5	11.9

See Glossary for all benchmark definitions.

* The performance and market values of two opportunistic portfolios are reported with a one-month lag.

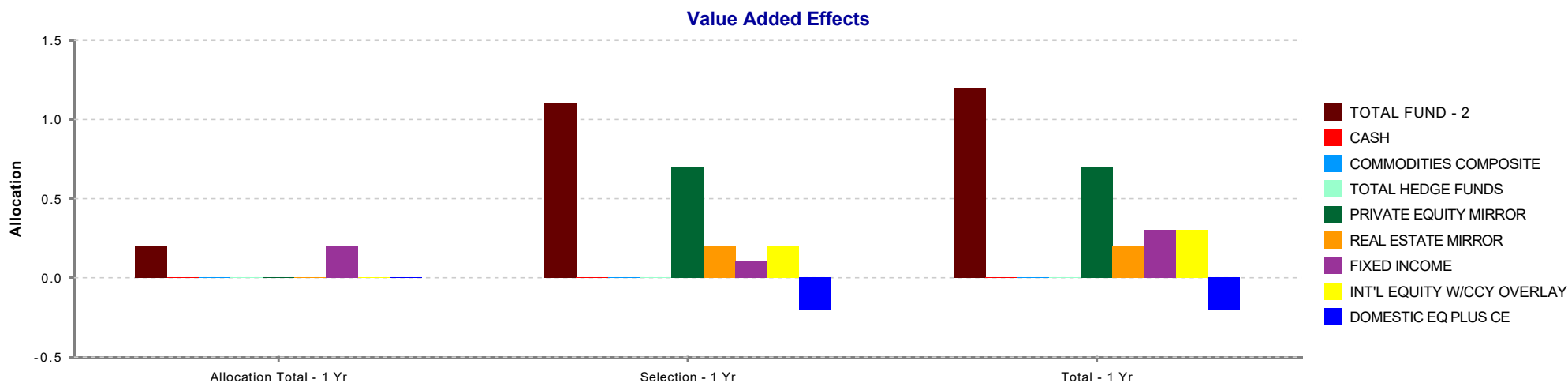
** Portfolio and benchmark are reported with a one-quarter lag. Preliminary returns.

*** Portfolio and benchmark are reported with a one-month lag. Performance included in Total Fund beginning 10/31/11.

TOTAL FUND ATTRIBUTION

TOTAL FUND vs. BENCHMARK

for the one-year ended June 30, 2018



	Fund Weight	Target Weight	Relative	Fund Return	Benchmark Return	Return Difference	Allocation Effect*	Selection Effect**	BM Impact	Residual	Total Value Add
TOTAL FUND - 2	100.0	100.0	-0.0	9.3	7.8	1.5	0.2	1.1	-0.0	0.3	1.2
CASH	1.8	2.0	-0.2	1.5	1.3	0.1	-0.0	0.0	-	-	0.0
COMMODITIES COMPOSITE	2.5	2.8	-0.3	10.4	7.3	3.0	-0.0	0.0	-	-	0.0
TOTAL HEDGE FUNDS	2.9	4.2	-1.3	5.7	6.3	-0.6	-0.0	0.0	-	-	0.0
PRIVATE EQUITY MIRROR	10.3	10.0	0.3	21.2	13.7	7.5	-0.0	0.7	-	-	0.7
REAL ESTATE MIRROR	11.2	11.0	0.2	9.1	7.5	1.6	-0.0	0.2	-	-	0.2
FIXED INCOME	25.0	26.6	-1.6	1.1	-0.3	1.4	0.2	0.1	-	-	0.3
INT'L EQUITY W/CCY OVERLAY	22.8	21.0	1.8	9.1	8.2	0.9	0.0	0.2	-	-	0.3
DOMESTIC EQ PLUS CE	23.5	22.4	1.1	14.2	14.8	-0.6	0.0	-0.2	-	-	-0.2

* Allocation decision reflects the asset class over or underweight (versus the policy weight) multiplied by the difference between the asset class benchmark and Fund Policy benchmark return.

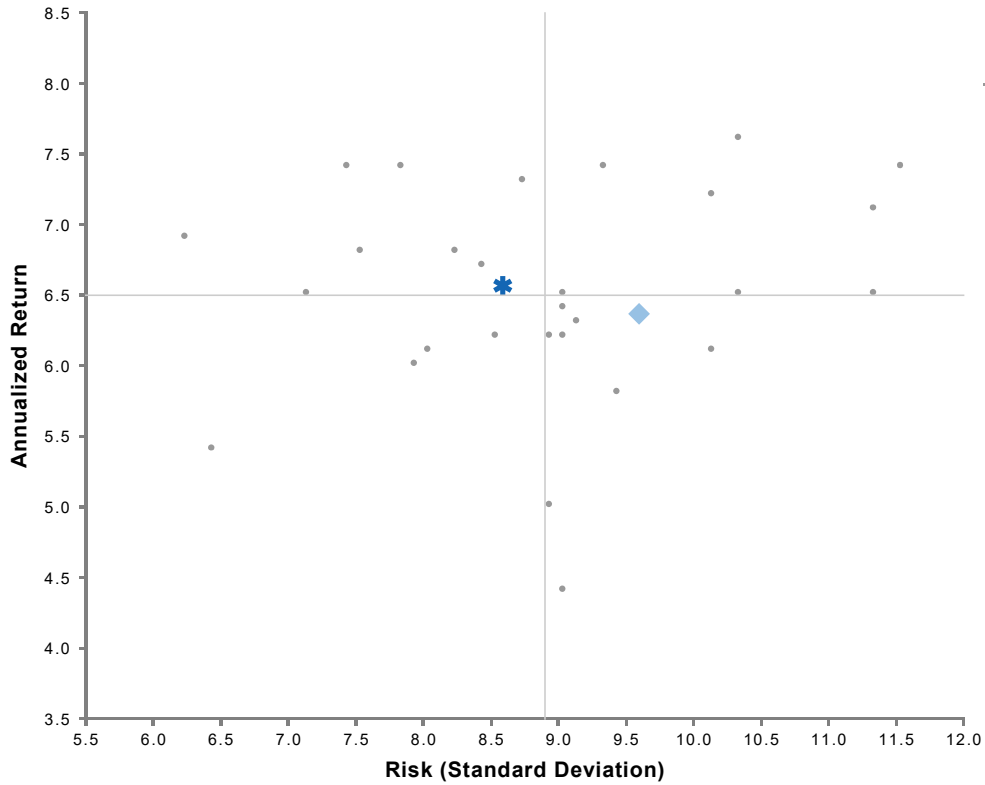
** Selection decision reflects the Fund's asset class return minus the asset class benchmark return, multiplied by the asset class weight.

TOTAL FUND RISK-ADJUSTED RETURN

for the quarter ended June 30, 2018



10 Year Risk vs Return



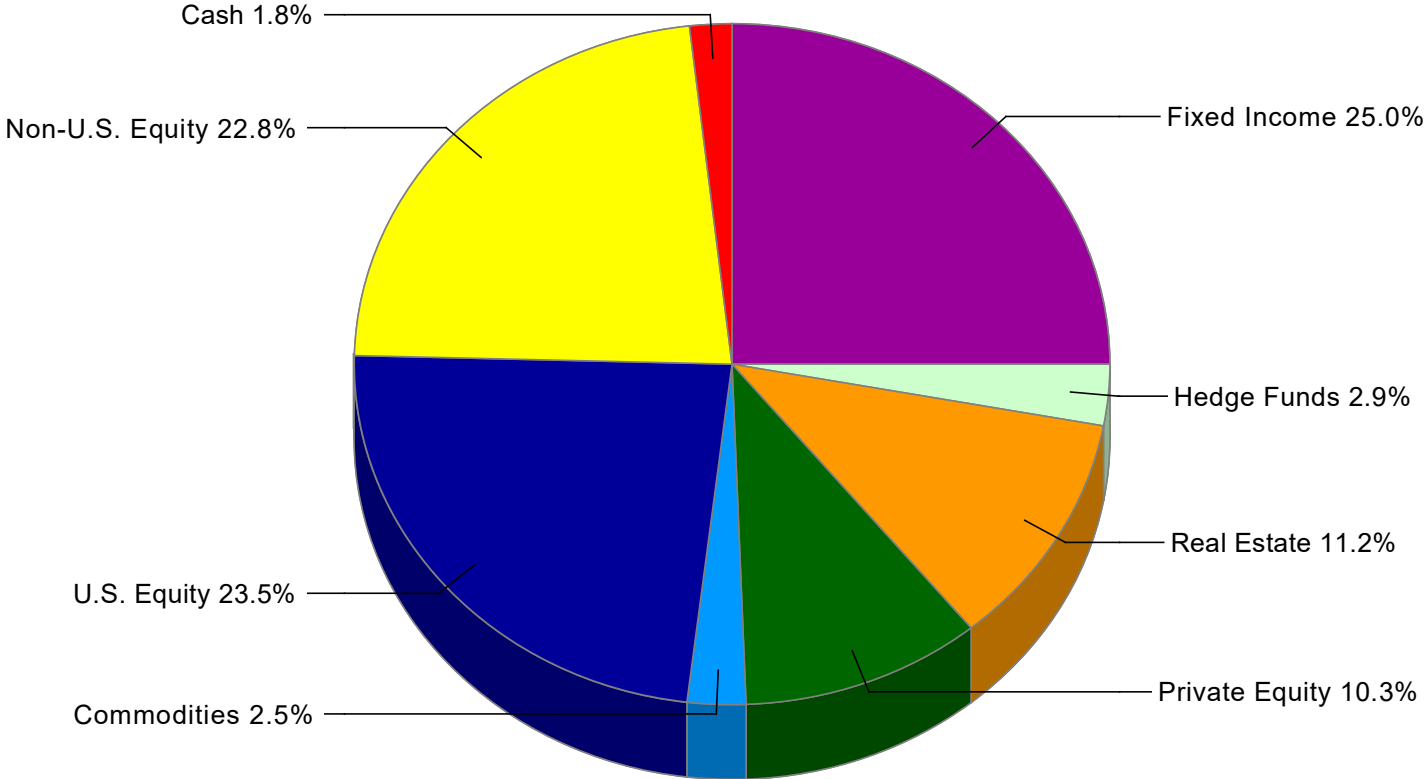
	Rate of Return 10 Years	Standard Deviation 10 Years
* TOTAL FUND	6.5 47	8.5 40
◆ TOTAL FUND POLICY BENCHMARK	6.3 59	9.5 74
5th Percentile	7.5	6.3
25th Percentile	7.2	8.0
50th Percentile	6.5	8.9
75th Percentile	6.1	9.6
95th Percentile	4.8	11.3
Number of Observations	29	29

◆ TOTAL FUND ◆ TOTAL FUND POLICY BENCHMARK

	<u>Rate of Return 10 Years</u>	<u>Standard Deviation 10 Years</u>	<u>Tracking Error 10 Years</u>
Public Funds (DB) > \$1 Billion			
TOTAL FUND - 2	6.5 47	8.5 40	1.1
TOTAL FUND POLICY BENCHMARK	6.3 59	9.5 74	

ASSET ALLOCATION TOTAL FUND

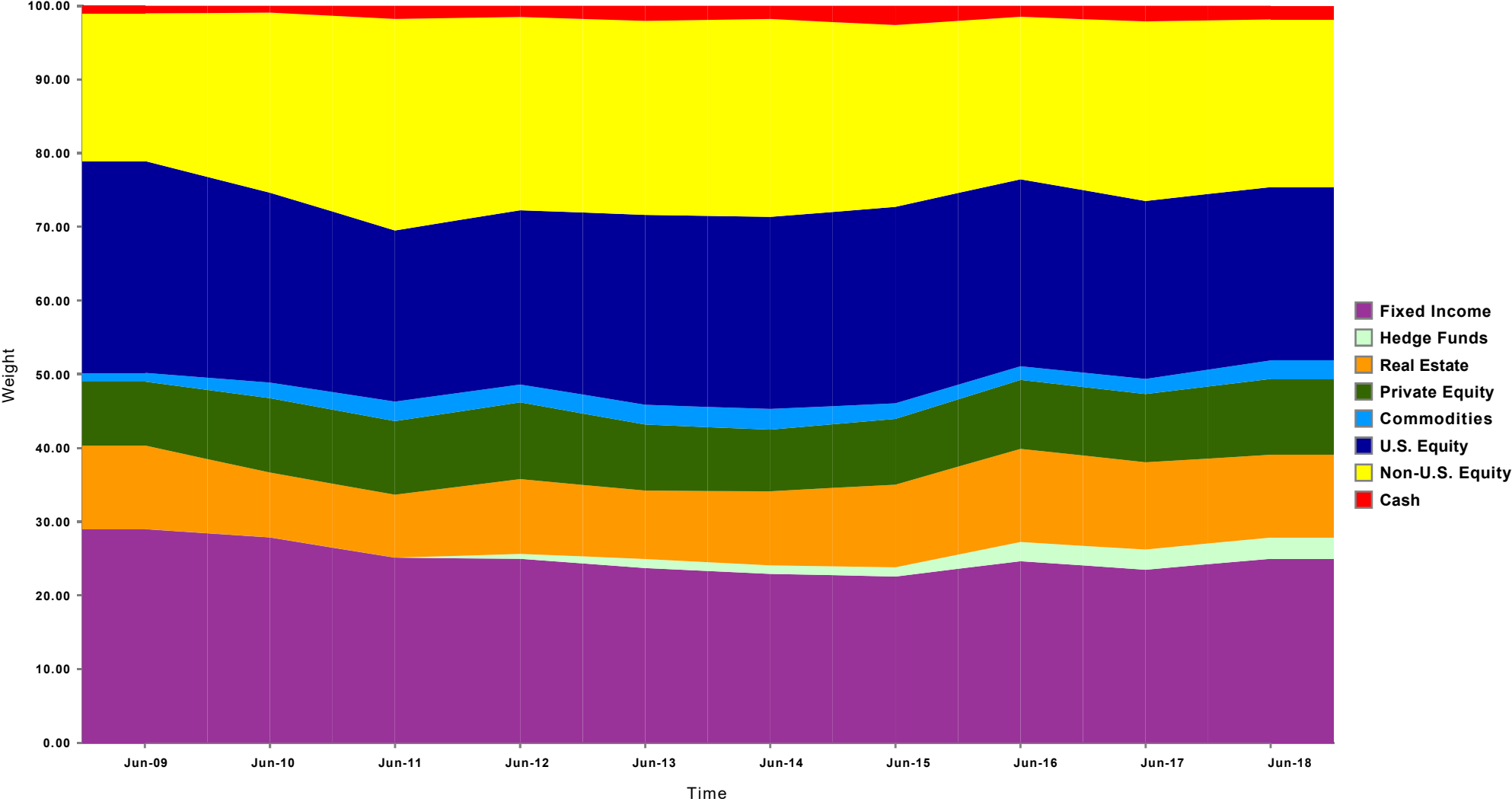
for the quarter ended June 30, 2018



ASSET ALLOCATION

TOTAL FUND

for the quarter ended June 30, 2018



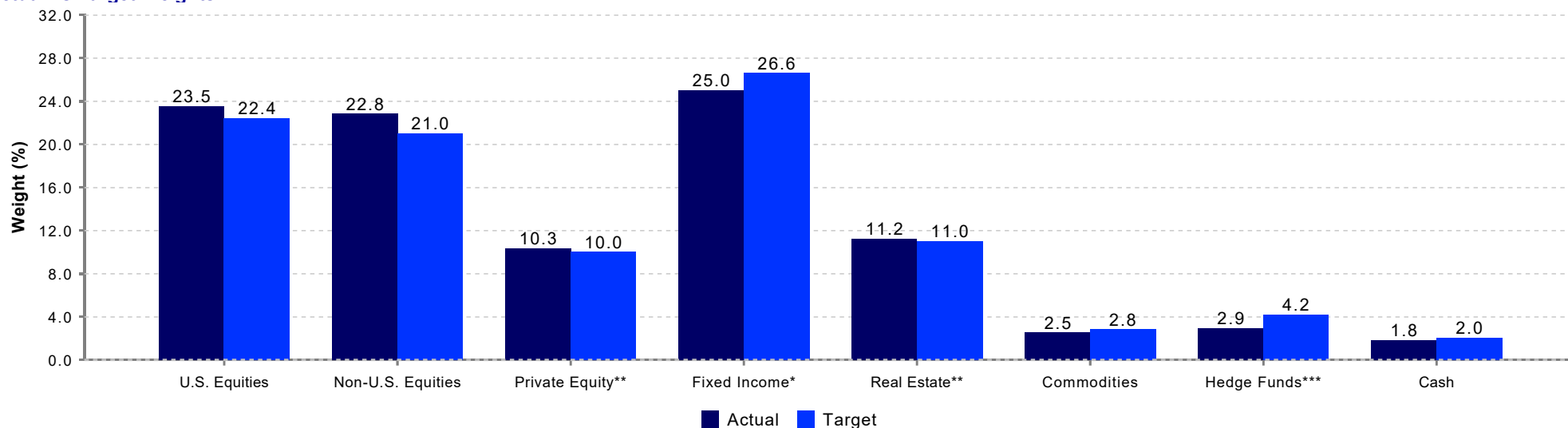
ASSET ALLOCATION

ACTUAL vs. TARGET

for the quarter ended June 30, 2018



Actual vs Target Weights



	Ending Market Value	Actual	Target	Relative	Min	Max
Total Equity	25,887,322,349	46.3	43.4	2.9	33.4	53.4
U.S. Equities	13,152,907,447	23.5	22.4	1.1		
Non-U.S. Equities	12,734,414,902	22.8	21.0	1.8		
Fixed Income*	13,981,579,578	25.0	26.6	-1.6	23.6	29.6
Real Estate**	6,273,667,682	11.2	11.0	0.2	8.0	16.0
Private Equity**	5,758,338,534	10.3	10.0	0.3	7.0	14.0
Commodities	1,410,505,526	2.5	2.8	-0.3	0.0	4.8
Hedge Funds***	1,611,185,591	2.9	4.2	-1.3	1.2	6.2
Cash	1,030,696,876	1.8	2.0	-0.2	0.0	4.0
Total Fund	55,953,296,137	100.0	100.0	0.0		

* The performance and market values of two opportunistic portfolios are reported with a one-month lag.

** Portfolio and benchmark are reported with a one-quarter lag. Preliminary returns.

*** Portfolio and benchmark are reported with a one-month lag.

ASSET ALLOCATION

U.S. EQUITY MANAGERS

for the quarter ended June 30, 2018



	<i>June 30, 2018</i>			<i>March 31, 2018</i>	
	Assets (\$ millions)	% of Composite		Assets (\$ millions)	% of Composite
PASSIVE			PASSIVE		
BTC Russell 3000 Index	10,031.6	76.3	BTC Russell 1000 Index	9,221.7	71.2
			BTC Russell 2000 Index	101.4	0.8
LOW RISK			BTC Russell 3000 Index	588.5	4.5
INTECH	878.4	6.7	LOW RISK		
Twin Capital	541.5	4.1	INTECH	868.3	6.7
MODERATE / HIGH RISK			Twin Capital	525.6	4.1
Eagle Asset Mgmt.	364.4	2.8	MODERATE / HIGH RISK		
Frontier Capital Mgmt.	704.0	5.4	Cramer Rosenthal McGlynn	274.3	2.1
JANA Partners	93.4	0.7	Eagle Asset Mgmt.	341.9	2.6
QMA	294.4	2.2	Frontier Capital Mgmt.	674.3	5.2
Systematic	245.2	1.9	JANA Partners	94.3	0.7
TOTAL U.S. EQUITY	13,152.9	100.0	Westwood Mgmt. Corp.	256.9	2.0
			TOTAL U.S. EQUITY	12,947.3	100.0

ASSET ALLOCATION

NON-U.S. EQUITY MANAGERS (cont's...)

for the quarter ended June 30, 2018



	<i>June 30, 2018</i>			<i>March 31, 2018</i>	
	Assets (\$ millions)	% of Composite		Assets (\$ millions)	% of Composite
PASSIVE			PASSIVE		
BTC Canada Index IMI	716.9	5.7	BTC Canada Index IMI	682.3	5.3
BTC EAFE Index IMI	4,705.2	37.4	BTC EAFE Index IMI	4,747.0	37.0
BTC EAFE Small Cap	207.4	1.7	BTC EAFE Small Cap	209.8	1.6
BTC Emerging Markets Index	1,188.7	9.5	BTC Emerging Markets Index	1,290.1	10.1
BTC Europe Index	373.1	3.0	BTC Europe Index	376.6	2.9
BTC Emerging Markets Small Cap Index	135.8	1.1	BTC Emerging Markets Small Cap Index	148.5	1.2
NON-US DEVELOPED			NON-US DEVELOPED		
Acadian Asset Mgmt.	886.7	7.1	Acadian Asset Mgmt.	886.2	6.9
Capital Guardian	388.5	3.1	Capital Guardian	382.4	3.0
REGIONAL DEVELOPED			REGIONAL DEVELOPED		
BTC Europe Alpha Tilts	976.8	7.8	BTC Europe Alpha Tilts	999.4	7.8
Cevian Capital	301.0	2.4	Cevian Capital	288.3	2.2
GAM International Mgmt.	879.3	7.0	GAM International Mgmt.	882.0	6.9
Symphony Financial Partners	150.3	1.2	Symphony Financial Partners	137.3	1.1
EMERGING MARKETS			EMERGING MARKETS		
Acadian Emrg. Markets	383.8	3.1	Acadian Emrg. Markets	432.9	3.4
AQR Emerging Markets	250.0	2.0	AQR Emerging Markets	276.6	2.2
Genesis Investment Mgmt.	676.4	5.4	Genesis Investment Mgmt.	725.5	5.7
Lazard	347.7	2.8	Lazard	371.5	2.9
TOTAL NON-U.S. EQUITY (Unhedged)	12,567.6	100.0	TOTAL NON-U.S. EQUITY (Unhedged)	12,836.3	100.0

ASSET ALLOCATION

NON-U.S. EQUITY MANAGERS (...cont'd)

for the quarter ended June 30, 2018



June 30, 2018

March 31, 2018

	Assets (\$ millions)		Assets (\$ millions)
PASSIVE HEDGE		PASSIVE HEDGE	
Currency Hedge Gain/Loss	166.8	Currency Hedge Gain/Loss	-42.8
TOTAL NON-U.S. EQUITY (Hedged)	12,734.4	TOTAL NON-U.S. EQUITY (Hedged)	12,793.5

ASSET ALLOCATION

FIXED INCOME MANAGERS & PROGRAMS (cont's...)

for the quarter ended June 30, 2018



	<i>June 30, 2018</i>			<i>March 31, 2018</i>	
	Assets (\$ millions)	% of Composite		Assets (\$ millions)	% of Composite
CORE			CORE		
BTC US Debt Index	3,845.0	27.5	BTC US Debt Index	3,238.2	23.6
Dodge & Cox	1,282.9	9.2	BlackRock*	8.3	0.1
Pugh Capital Mgmt.	134.8	1.0	Dodge & Cox	1,285.6	9.4
Wells Capital Mgmt.	1,338.1	9.6	Pugh Capital Mgmt.	135.0	1.0
TOTAL CORE	6,600.8	47.2	Wells Capital Mgmt.	1,340.2	9.8
			TOTAL CORE	6,007.2	43.8
CORE PLUS			CORE PLUS		
Dolan McEniry Capital Mgmt.	343.6	2.5	Dolan McEniry Capital Mgmt.	344.1	2.5
LM Capital Group*	0.3	0.0	LM Capital Group*	298.5	2.2
Loomis, Sayles & Co.	1,074.8	7.7	Loomis, Sayles & Co.	1,077.8	7.9
PIMCO	1,053.0	7.5	PIMCO	1,047.1	7.6
Western Asset Mgmt.	1,118.8	8.0	Western Asset Mgmt.	1,133.4	8.3
TOTAL CORE PLUS	3,590.4	25.7	TOTAL CORE PLUS	3,900.9	28.5

Policy Ranges

Core: 35% - 55%

Core Plus: 15% - 35%

High Yield & Opportunistic: 20% - 40%

* Manager was terminated and market value reflects residual value.

ASSET ALLOCATION

FIXED INCOME MANAGERS & PROGRAMS (...cont'd)

for the quarter ended June 30, 2018



<i>June 30, 2018</i>			<i>March 31, 2018</i>		
	Assets (\$ millions)	% of Composite		Assets (\$ millions)	% of Composite
HIGH YIELD			HIGH YIELD		
Oaktree Capital Mgmt.	405.0	2.9	Oaktree Capital Mgmt.	403.4	2.9
PENN Capital Mgmt.	109.1	0.8	PENN Capital Mgmt.	108.3	0.8
TOTAL HIGH YIELD	514.1	3.7	TOTAL HIGH YIELD	511.8	3.7
OPPORTUNISTIC			OPPORTUNISTIC		
Aberdeen	193.1	1.4	Aberdeen	205.7	1.5
Ashmore	196.7	1.4	Ashmore	212.3	1.5
Bain Capital	304.7	2.2	Bain Capital	301.1	2.2
Beach Point Capital*	388.7	2.8	Beach Point Capital*	384.9	2.8
Brigade Capital Mgmt.	497.9	3.6	Brigade Capital Mgmt.	490.8	3.6
Crescent Capital	273.8	2.0	Crescent Capital	272.1	2.0
DoubleLine Capital	268.1	1.9	DoubleLine Capital	266.5	1.9
Principal Opportunistic	266.4	1.9	Principal Opportunistic	266.9	1.9
TCW Asset Mgmt.	273.9	2.0	TCW	271.9	2.0
Tennenbaum Capital**	273.9	2.0	Tennenbaum Capital**	269.6	2.0
Western Opportunistic	306.3	2.2	Western Opportunistic	304.7	2.2
TOTAL OPPORTUNISTIC	3,243.5	23.2	TOTAL OPPORTUNISTIC	3,246.3	23.7
MORTGAGE PROGRAM			MORTGAGE PROGRAM		
Member Home Loan Program (MHLP)	32.8	0.2	Member Home Loan Program (MHLP)	33.7	0.2
TOTAL FIXED INCOME***	13,981.6	100.0	TOTAL FIXED INCOME***	13,699.9	100.0

Policy Ranges

Core: 35% - 55%

Core Plus: 15% - 35%

High Yield & Opportunistic: 20% - 40%

* Represents the combined assets of three portfolios, one of which is reported with a one-month lag.

** Reported with a one-month lag.

*** Does not include cash. The performance and market values of two opportunistic portfolios are reported with a one-month lag.

ASSET ALLOCATION COMMODITIES MANAGERS

for the quarter ended June 30, 2018



	<i>June 30, 2018</i>			<i>March 31, 2018</i>	
	Assets (\$ millions)	% of Composite		Assets (\$ millions)	% of Composite
Credit Suisse	455.6	32.3	Credit Suisse	454.8	32.5
Neuberger Berman/Gresham	482.2	34.2	Neuberger Berman/Gresham	471.7	33.7
PIMCO	472.7	33.5	PIMCO	471.5	33.7
TOTAL COMMODITIES	1,410.5	100.0	TOTAL COMMODITIES	1,398.0	100.0

ANNUALIZED TOTAL RETURNS

U.S. EQUITY MANAGERS

for the quarter ended June 30, 2018



	<i>Gross-of-Fees</i>						<i>Net-of-Fees</i>				
	<u>Mkt Value (\$Mil)</u>	<u>Qtr</u>	<u>1 Yr</u>	<u>3 Yrs</u>	<u>5 Yrs</u>		<u>Mkt Value (\$Mil)</u>	<u>Qtr</u>	<u>1 Yr</u>	<u>3 Yrs</u>	<u>5 Yrs</u>
LARGE CAP						LARGE CAP					
INTECH	878.4	1.2	13.9	11.5	13.9	INTECH	878.4	1.2	13.7	11.2	13.6
JANA Partners	93.4	13.6	7.1			JANA Partners	93.4	12.5	3.8		
Twin Capital	541.5	3.1	14.3	11.5	13.5	Twin Capital	541.5	3.0	14.1	11.4	13.3
S&P 500		3.4	14.4	11.9	13.4	S&P 500		3.4	14.4	11.9	13.4
BTC Russell 3000	10,031.6	3.9				BTC Russell 3000	10,031.6	3.9			
Russell 3000		3.9	14.8	11.6	13.3	Russell 3000		3.9	14.8	11.6	13.3
SMALL / MID CAP						SMALL / MID CAP					
Eagle Asset Management	364.4	6.7	15.7	13.0	14.1	Eagle Asset Management	364.4	6.6	15.1	12.4	13.5
Frontier Capital Management	704.0	4.6	11.7	9.7	13.5	Frontier Capital Management	704.0	4.4	10.8	8.9	12.6
Russell 2500		5.7	16.2	10.3	12.3	Russell 2500		5.7	16.2	10.3	12.3

* Performance inception as of July, 2018.

ANNUALIZED TOTAL RETURNS

NON-U.S. EQUITY MANAGERS (cont's...)

for the quarter ended June 30, 2018



	<i>Gross-of-Fees</i>						<i>Net-of-Fees</i>				
	<u>Mkt Value (\$Mil)</u>	<u>Qtr</u>	<u>1 Yr</u>	<u>3 Yrs</u>	<u>5 Yrs</u>		<u>Mkt Value (\$Mil)</u>	<u>Qtr</u>	<u>1 Yr</u>	<u>3 Yrs</u>	<u>5 Yrs</u>
NON U.S.						NON U.S.					
Acadian Asset Management	886.7	0.1	12.4	12.3	11.2	Acadian Asset Management	886.7	0.1	12.0	11.9	10.8
Capital Guardian	388.5	1.7	13.7	7.9	8.4	Capital Guardian	388.5	1.6	13.3	7.6	8.0
MSCI EAFE + CANADA Net (Daily)		-0.7	7.0	4.9	6.2	MSCI EAFE + Canada Net (Daily)		-0.7	7.0	4.9	6.2
BTC EAFE IMI*	4,705.2	-0.9	8.1	6.0	7.5	BTC EAFE IMI*	4,705.2	-0.9	8.1	6.0	7.5
MSCI EAFE IMI Custom Index		-1.3	7.7	5.6	7.1	MSCI EAFE IMI Custom Index		-1.3	7.7	5.6	7.1
BTC EAFE Small Cap	207.4	-1.1	13.0			BTC EAFE Small Cap	207.4	-1.1	12.9		
MSCI EAFE Small Cap Net		-1.6	12.4	10.1	11.3	MSCI EAFE Small Cap Net		-1.6	12.4	10.1	11.3
BTC Canada IMI*	716.9	5.1	9.5	5.1	4.4	BTC Canada IMI*	716.9	5.1	9.4	5.1	4.4
MSCI Canada Custom IMI (Net)		4.9	8.6	4.3	3.7	MSCI Canada Custom IMI (Net)		4.9	8.6	4.3	3.7
PACIFIC BASIN						PACIFIC BASIN					
GAM Pacific Basin	879.3	-0.2	12.6	6.9	7.7	GAM Pacific Basin	879.3	-0.3	12.1	6.4	7.3
MSCI Pacific (Net)		-1.4	9.9	6.4	6.9	MSCI Pacific (Net)		-1.4	9.9	6.4	6.9
Symphony Financial Partners	150.3	9.5	28.4			Symphony Financial Partners	150.3	9.3	25.4		
MSCI Japan Small Cap Net		-3.2	14.2	12.1	12.3	MSCI Japan Small Cap Net		-3.2	14.2	12.1	12.3

See Glossary for all Custom index definitions.

* BTC EAFE & Canada Funds; 8/31/08 - Present: BTC EAFE & Canada IMI Funds.

ANNUALIZED TOTAL RETURNS

NON-U.S. EQUITY MANAGERS (...cont'd)

for the quarter ended June 30, 2018



	<i>Gross-of-Fees</i>						<i>Net-of-Fees</i>				
	<u>Mkt Value (\$Mil)</u>	<u>Qtr</u>	<u>1 Yr</u>	<u>3 Yrs</u>	<u>5 Yrs</u>		<u>Mkt Value (\$Mil)</u>	<u>Qtr</u>	<u>1 Yr</u>	<u>3 Yrs</u>	<u>5 Yrs</u>
EUROPE						EUROPE					
BTC Euro Tilts	976.8	-2.2	5.5	5.9	8.7	BTC Euro Tilts	976.8	-2.3	5.0	5.5	8.2
BTC Europe Index	373.1	-0.9	5.8	4.8	6.7	BTC Europe Index	373.1	-0.9	5.8	4.7	6.7
Cevian Capital	301.0	4.8	4.7			Cevian Capital	301.0	4.4	3.0		
MSCI Europe (Net)		-1.3	5.3	4.2	6.2	MSCI Europe (Net)		-1.3	5.3	4.2	6.2
EMERGING MARKETS						EMERGING MARKETS					
Acadian Emerging Markets	383.8	-11.2	4.6	5.5	5.0	Acadian Emerging Markets	383.8	-11.3	4.2	5.0	4.5
AQR Emerging Markets	250.0	-9.5	5.6	6.2		AQR Emerging Markets	250.0	-9.7	4.9	5.5	
Lazard Emerging Markets	347.7	-6.2	8.4	5.7	6.6	Lazard Emerging Markets	347.7	-6.4	7.5	4.9	5.7
BTC - Emerging Markets	1,188.7	-7.8	8.1	5.5	4.9	BTC - Emerging Markets	1,188.7	-7.9	8.0	5.4	4.8
MSCI EM Standard (Net)		-8.0	8.2	5.6	5.0	MSCI EM Standard (Net)		-8.0	8.2	5.6	5.0
BTC Emerging Markets Small Cap	135.8	-8.5	5.5	2.5	4.3	BTC Emerging Markets Small Cap	135.8	-8.6	5.3	2.3	4.1
MSCI EM Small Cap - Net Return		-8.6	5.6	2.5	4.3	MSCI EM Small Cap - Net Return		-8.6	5.6	2.5	4.3
Genesis	676.4	-6.6	9.8	6.8	5.8	Genesis	676.4	-6.8	9.1	6.0	5.1
MSCI EM IMI Custom Index		-8.0	7.9	5.2	4.9	MSCI EM IMI Custom Index		-8.0	7.9	5.2	4.9
PASSIVE HEDGE						PASSIVE HEDGE					
BTC Passive Currency Hedge	166.8	2.5	0.5	0.5	1.3	BTC Passive Currency Hedging	166.8	2.5	0.5	0.5	1.3
50% FX Hedge Index		2.5	0.5	0.6	1.4	50% FX Hedge Index		2.5	0.5	0.6	1.4

See Glossary for all Custom index definitions.

ANNUALIZED TOTAL RETURNS

FIXED INCOME MANAGERS & PROGRAMS (cont's...)

for the quarter ended June 30, 2018



	<i>Gross-of-Fees</i>						<i>Net-of-Fees</i>				
	<u>Mkt Value (\$Mil)</u>	<u>Qtr</u>	<u>1 Yr</u>	<u>3 Yrs</u>	<u>5 Yrs</u>		<u>Mkt Value (\$Mil)</u>	<u>Qtr</u>	<u>1 Yr</u>	<u>3 Yrs</u>	<u>5 Yrs</u>
CORE						CORE					
BTC US Debt Index	3,845.0	-0.1	-0.3	1.8	2.4	BTC US Debt Index	3,845.0	-0.1	-0.3	1.8	2.4
Dodge & Cox	1,282.9	-0.2	0.6	2.9	3.5	Dodge & Cox	1,282.9	-0.2	0.5	2.8	3.4
Pugh Capital Mgmt.	134.8	-0.1	-0.3	2.0	2.6	Pugh Capital Mgmt.	134.8	-0.2	-0.5	1.8	2.4
Wells Capital Mgmt.	1,338.1	-0.1	-0.2	2.1	2.8	Wells Capital Mgmt.	1,338.1	-0.2	-0.3	2.0	2.7
BBG BC Aggregate Bond Index		-0.2	-0.4	1.7	2.3	BBG BC Aggregate Bond Index		-0.2	-0.4	1.7	2.3
CORE PLUS						CORE PLUS					
Loomis, Sayles & Co.	1,074.8	-0.2	1.3	2.8	3.6	Loomis, Sayles & Co.	1,074.8	-0.3	1.1	2.7	3.4
PIMCO	1,053.0	0.6	1.6	3.4	3.2	PIMCO	1,053.0	0.6	1.4	3.2	3.0
Western Asset Mgmt.	1,118.8	-1.3	-1.3	2.8	3.4	Western Asset Mgmt.	1,118.8	-1.3	-1.4	2.7	3.2
BBG BC Aggregate Bond Index		-0.2	-0.4	1.7	2.3	BBG BC Aggregate Bond Index		-0.2	-0.4	1.7	2.3
Dolan McEniry Capital Mgmt.	343.6	-0.1	0.7	3.7	4.0	Dolan McEniry Capital Mgmt.	343.6	-0.1	0.4	3.4	3.7
Dolan McEniry Custom Index		0.1	-0.0	2.1	2.7	Dolan McEniry Custom Index		0.1	-0.0	2.1	2.7
LM Capital Group*	0.3					LM Capital Group*	0.3				

* Manager was terminated and market value reflects residual value.
See Glossary for all Custom index definitions.

ANNUALIZED TOTAL RETURNS

FIXED INCOME MANAGERS & PROGRAMS (...cont'd)

for the quarter ended June 30, 2018



	<i>Gross-of-Fees</i>						<i>Net-of-Fees</i>				
	<u>Mkt Value (\$Mil)</u>	<u>Qtr</u>	<u>1 Yr</u>	<u>3 Yrs</u>	<u>5 Yrs</u>		<u>Mkt Value (\$Mil)</u>	<u>Qtr</u>	<u>1 Yr</u>	<u>3 Yrs</u>	<u>5 Yrs</u>
HIGH YIELD						HIGH YIELD					
Oaktree Capital Mgmt.	405.0	0.5	1.3	4.3	4.9	Oaktree Capital Mgmt.	405.0	0.4	0.9	3.9	4.4
PENN Capital Mgmt.	109.1	0.8	2.8	4.9	4.9	PENN Capital Mgmt.	109.1	0.7	2.3	4.4	4.4
BBG BC Ba/B US High Yield Index		0.6	1.8	4.8	5.2	BBG BC Ba/B US High Yield Index		0.6	1.8	4.8	5.2
OPPORTUNISTIC						OPPORTUNISTIC					
Aberdeen	193.1	-6.0	-2.2			Aberdeen	193.1	-6.1	-2.6		
Ashmore	196.7	-7.2	-0.9			Ashmore	196.7	-7.4	-1.5		
Opportunistic EMD Custom Index		-4.9	-1.4			Opportunistic EMD Custom Index		-4.9	-1.4		
Bain Capital	304.7	1.4	4.1	5.2		Bain Capital	304.7	1.2	3.0	4.4	
Beach Point Capital*	388.7	1.1	5.7	8.7		Beach Point Capital*	388.7	0.9	4.2	6.9	
Crescent Capital Group	273.8	0.8	3.7	4.4		Crescent Capital Group	273.8	0.6	3.1	3.8	
Opportunistic Custom Index		0.9	3.6	4.9	4.9	Opportunistic Custom Index		0.9	3.6	4.9	4.9
Brigade Capital Mgmt.	497.9	1.6	4.5	6.7	6.2	Brigade Capital Mgmt.	497.9	1.4	3.8	5.9	5.3
Brigade Custom Index		0.7	3.2	4.6	4.7	Brigade Custom Index		0.7	3.2	4.6	4.7
Principal Opportunistic	266.4	-0.2	1.0	3.2	3.9	Principal Opportunistic	266.4	-0.2	0.8	3.0	3.7
BBG BC US Universal Spread 1-10 Yr.		-0.2	0.1	2.8	3.2	BBG BC US Universal Spread 1-10 Yr.		-0.2	0.1	2.8	3.2
DoubleLine Capital	268.1	0.8	3.4			DoubleLine Capital	268.1	0.6	2.6		
TCW	273.9	0.9	3.9			TCW	273.9	0.7	3.3		
Securitized Custom Index		1.2	4.1			Securitized Custom Index		1.2	4.1		
Tennenbaum Capital**	273.9	1.8	8.5	8.9		Tennenbaum Capital**	273.9	1.6	7.5	7.8	
CS Leveraged Loan Index**		1.0	4.8	4.3		CS Leveraged Loan Index**		1.0	4.8	4.3	
Western Opportunistic	306.3	0.6	2.8	3.7	3.4	Western Opportunistic	306.3	0.5	2.8	3.6	3.4
Western Opportunistic Custom Index		0.5	4.6	3.2	2.8	Western Opportunistic Custom Index		0.5	4.6	3.2	2.8

See Glossary for all Custom index definitions.

* Represents the combined assets & performance of two portfolios, one of which is reported with a one-month lag.

** Reported with a one-month lag.

ANNUALIZED TOTAL RETURNS COMMODITIES MANAGERS

for the quarter ended June 30, 2018



Gross-of-Fees

	<u>Mkt Value (\$Mil)</u>	<u>Qtr</u>	<u>1 Yr</u>	<u>3 Yrs</u>	<u>5 Yrs</u>
COMMODITIES MANAGERS					
Credit Suisse	455.6	0.2	6.7	-3.8	-5.7
Neuberger Berman/Gresham	482.2	2.3	13.9	-2.3	-4.6
PIMCO	472.7	0.4	10.4	-1.6	-3.9
Bloomberg Commodity Index Total Return		0.4	7.3	-4.5	-6.4

Net-of-Fees

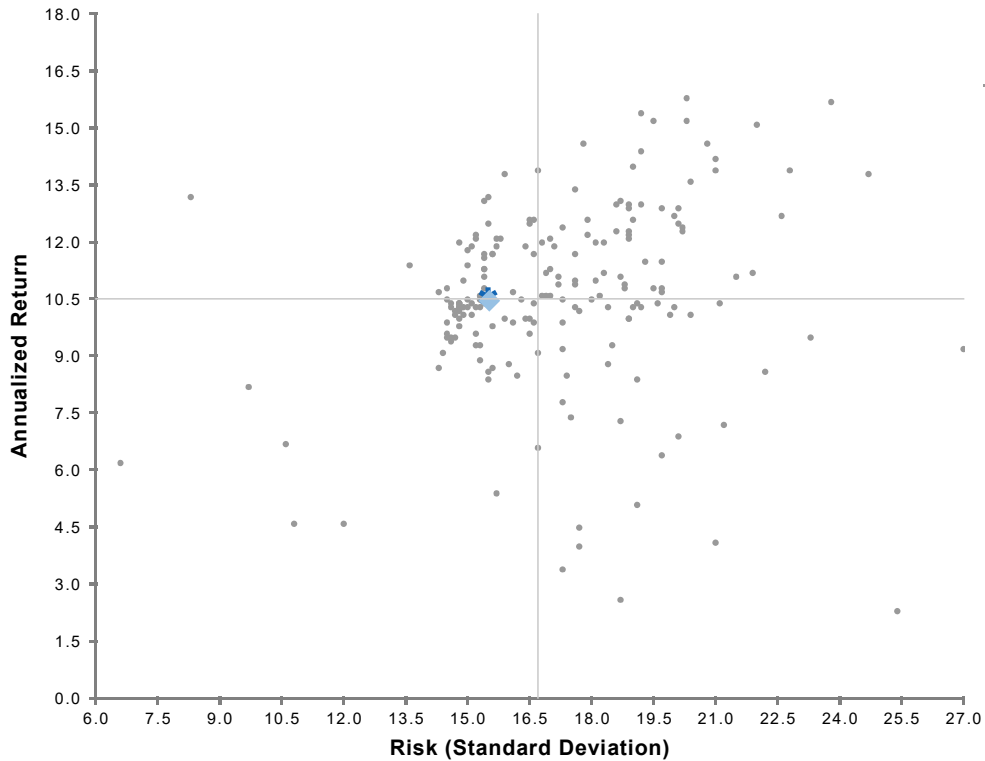
	<u>Mkt Value (\$Mil)</u>	<u>Qtr</u>	<u>1 Yr</u>	<u>3 Yrs</u>	<u>5 Yrs</u>
COMMODITIES MANAGERS					
Credit Suisse	455.6	0.2	6.4	-4.0	-6.0
Neuberger Berman/Gresham	482.2	2.2	13.4	-2.6	-4.9
PIMCO	472.7	0.3	10.0	-2.0	-4.3
Bloomberg Commodity Index Total Return		0.4	7.3	-4.5	-6.4

U.S. EQUITY RISK ADJUSTED RETURN

for the quarter ended June 30, 2018



10 Year Risk vs Return



	Rate of Return 10 Years	Standard Deviation 10 Years
* U.S. Equity	10.3 58	15.2 27
◆ RUSSELL 3000 (DAILY)	10.2 62	15.2 29
5th Percentile	14.1	14.3
25th Percentile	12.0	15.1
50th Percentile	10.5	16.7
75th Percentile	9.9	18.8
95th Percentile	5.5	21.8
Number of Observations	215	215

* U.S. Equity
 ◆ RUSSELL 3000 (DAILY)

	<u>Rate of Return 10 Years</u>	<u>Standard Deviation 10 Years</u>	<u>Tracking Error 10 Years</u>
U.S. Equity	10.3 58	15.2 27	0.4
RUSSELL 3000 (DAILY)	10.2 62	15.2 29	

U.S. EQUITY - LARGE CAP

INTECH INVESTMENT MANAGEMENT LLC

for the quarter ended June 30, 2018



Manager Profile

Firm: INTECH Investment Management LLC
 Location: West Palm Beach, FL
 Year Founded: 1987
 Contact: Nancy Holden, Sr. Managing Director
 Inception Date: December 2006
 Assigned Role: Enhanced Index
 Benchmark: S&P 500
 Investment Style: Core

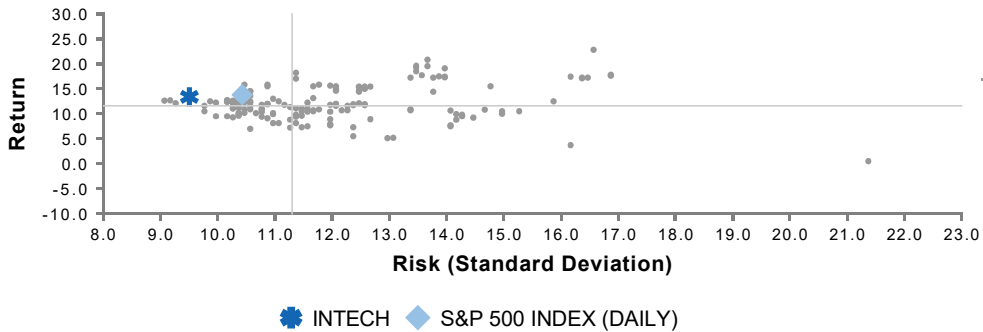
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
INTECH	878.4	1.21	13.92	11.50	13.91	8.71
S&P 500 INDEX (DAILY)		3.43	14.37	11.93	13.42	8.17

Universe

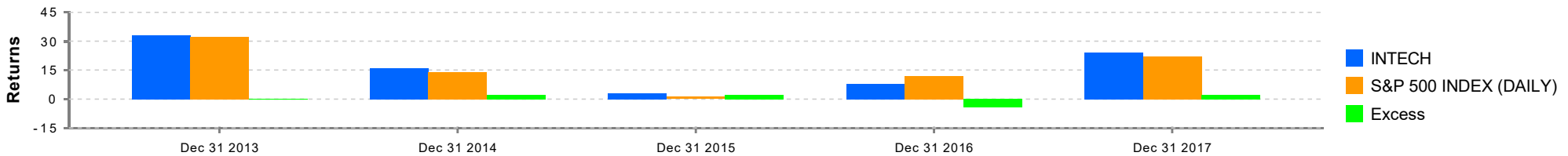
	1 Qtr	1 Year	3 Years	5 Years
US Equity Funds - Large Cap				
Median	3.39	14.32	11.56	13.32
Number of Observations	184.00	184.00	179.00	164.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
INTECH	11.5	52	9.3	2
S&P 500 INDEX (DAILY)	11.9	34	10.2	12
5th Percentile			17.6	9.9
25th Percentile			13.2	10.3
50th Percentile			11.6	11.3
75th Percentile			9.8	12.5
95th Percentile			6.9	16.1

Calendar Year Returns as of June 30, 2018



U.S. EQUITY - LARGE CAP

JANA PARTNERS LLC

for the quarter ended June 30, 2018



Manager Profile

Firm: JANA Partners LLC
 Location: New York, NY
 Year Founded: 2001
 Contact: Jordan Gershuny, Head of Client Adv. Group
 Inception Date: October 2016
 Assigned Role: Large Cap Equity
 Benchmark: S&P 500
 Investment Style: Activist

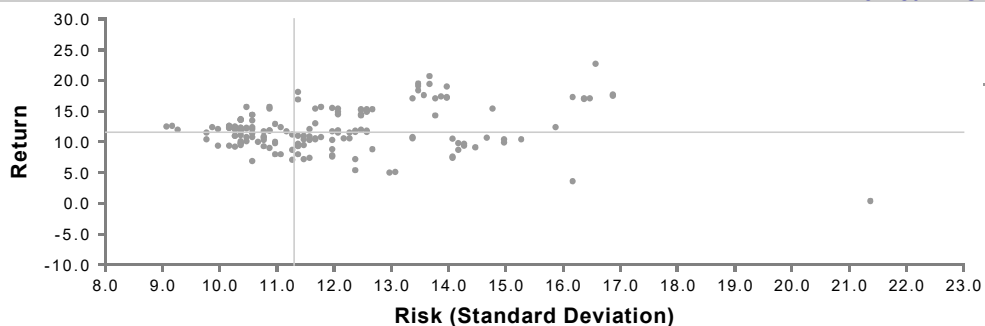
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
JANA Partners	93.4	13.64	7.10			36.24
S&P 500 INDEX (DAILY)		3.43	14.37			16.11

Universe

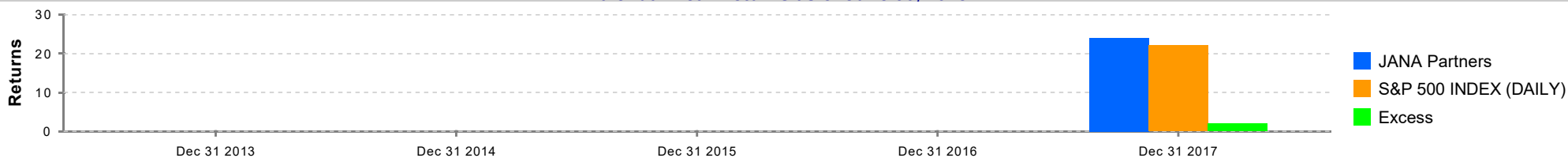
	1 Qtr	1 Year	3 Years	5 Years
US Equity Funds - Large Cap				
Median	3.39	14.32	11.56	13.32
Number of Observations	184.00	184.00	179.00	164.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
5th Percentile	17.6	9.9
25th Percentile	13.2	10.3
50th Percentile	11.6	11.3
75th Percentile	9.8	12.5
95th Percentile	6.9	16.1

Calendar Year Returns as of June 30, 2018



U.S. EQUITY - LARGE CAP

TWIN CAPITAL MANAGEMENT, INC.

for the quarter ended June 30, 2018



Manager Profile

Firm: Twin Capital Management, Inc.
 Location: McMurray, PA
 Year Founded: 1990
 Contact: Geoffrey Gerber, Ph.D., President
 Inception Date: December 2006
 Assigned Role: Enhanced Index
 Benchmark: S&P 500
 Investment Style: Core

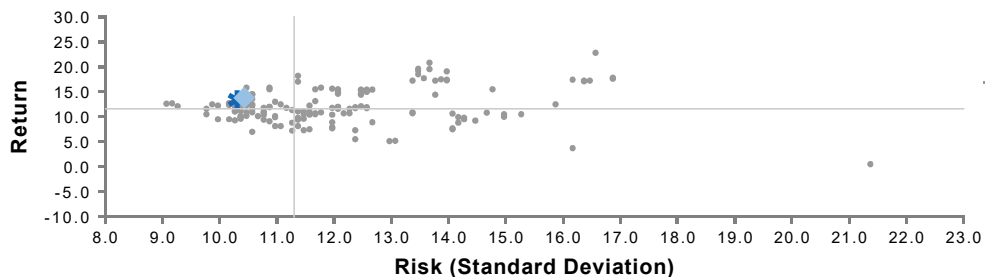
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Twin Capital Management	541.5	3.06	14.25	11.53	13.49	8.52
S&P 500 INDEX (DAILY)		3.43	14.37	11.93	13.42	8.17

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Equity Funds - Large Cap				
Median	3.39	14.32	11.56	13.32
Number of Observations	184.00	184.00	179.00	164.00

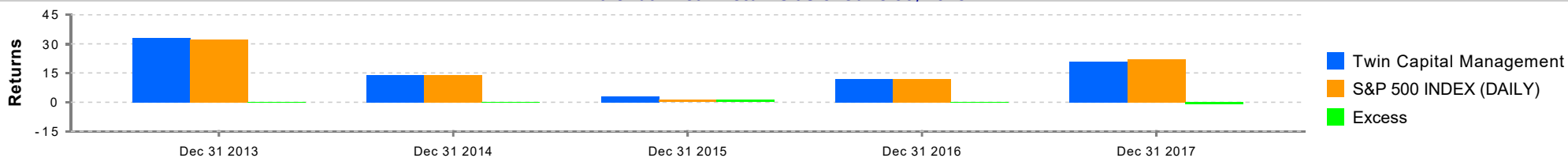
3 Year Risk vs Return



* Twin Capital Management
 ◆ S&P 500 INDEX (DAILY)

	3 Year Return		3 Year Standard Deviation	
* Twin Capital Management	11.5	52	10.1	6
◆ S&P 500 INDEX (DAILY)	11.9	34	10.2	12
5th Percentile	17.6		9.9	
25th Percentile	13.2		10.3	
50th Percentile	11.6		11.3	
75th Percentile	9.8		12.5	
95th Percentile	6.9		16.1	

Calendar Year Returns as of June 30, 2018



U.S. EQUITY - SMALL/MID CAP

EAGLE ASSET MANAGEMENT, INC.

for the quarter ended June 30, 2018



Manager Profile

Firm: Eagle Asset Management, Inc.
 Location: St. Petersburg, FL
 Year Founded: 1976
 Contact: Ed Rick, CFA, Senior Vice President
 Inception Date: February 2005
 Assigned Role: Small/Mid Cap Equity
 Benchmark: Russell 2500
 Investment Style: Core / Growth

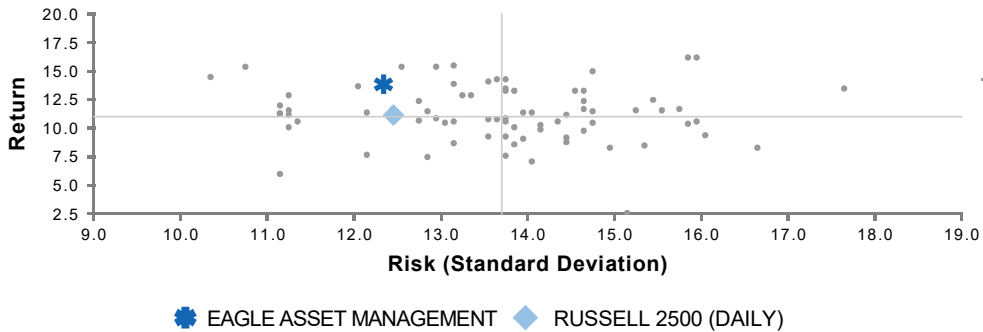
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Eagle Asset Management	364.4	6.74	15.73	12.99	14.12	10.72
RUSSELL 2500 (DAILY)		5.71	16.24	10.30	12.29	9.45

Universe

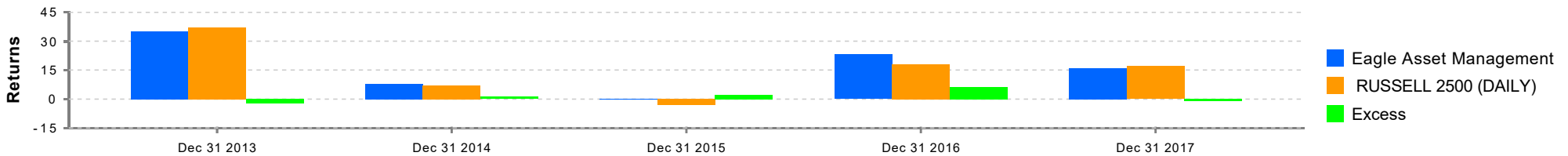
	1 Qtr	1 Year	3 Years	5 Years
US Equity Funds - SMID				
Median	6.33	14.67	10.96	12.73
Number of Observations	85.00	82.00	81.00	73.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
* EAGLE ASSET MANAGEMENT	13.0 22	12.2 21
◆ RUSSELL 2500 (DAILY)	10.3 65	12.3 21
5th Percentile	15.1	11.1
25th Percentile	12.6	12.7
50th Percentile	11.0	13.7
75th Percentile	9.8	14.6
95th Percentile	7.3	15.9

Calendar Year Returns as of June 30, 2018



U.S. EQUITY - SMALL/MID CAP

FRONTIER CAPITAL MANAGEMENT COMPANY, LLC

for the quarter ended June 30, 2018



Manager Profile

Firm: Frontier Capital Mgmt. Company, LLC
 Location: Boston, MA
 Year Founded: 1980
 Contact: Michael Cavarretta, Chairman-Portf. Manager
 Inception Date: June 2002
 Assigned Role: Small/Mid Cap Equity
 Benchmark: Russell 2500
 Investment Style: Core / Growth

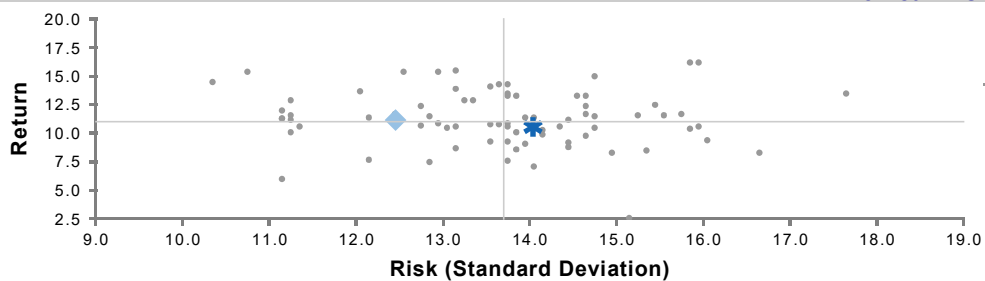
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Frontier Capital Management	704.0	4.60	11.68	9.70	13.46	11.85
RUSSELL 2500 (DAILY)		5.71	16.24	10.30	12.29	9.91

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Equity Funds - SMID				
Median	6.33	14.67	10.96	12.73
Number of Observations	85.00	82.00	81.00	73.00

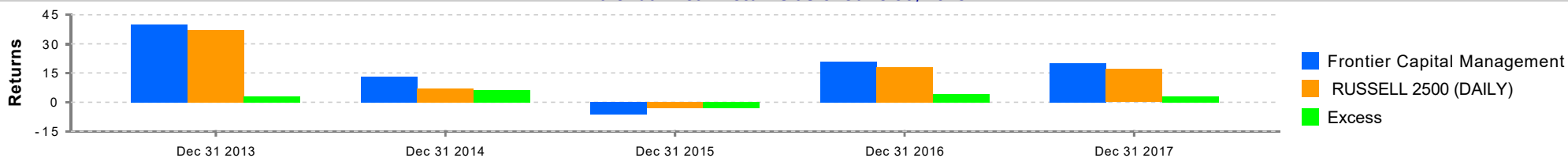
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
FRONTIER CAPITAL MANAGEMENT	9.7 77	13.9 63
RUSSELL 2500 (DAILY)	10.3 65	12.3 21
5th Percentile	15.1	11.1
25th Percentile	12.6	12.7
50th Percentile	11.0	13.7
75th Percentile	9.8	14.6
95th Percentile	7.3	15.9

FRONTIER CAPITAL MANAGEMENT (blue star) RUSSELL 2500 (DAILY) (blue diamond)

Calendar Year Returns as of June 30, 2018

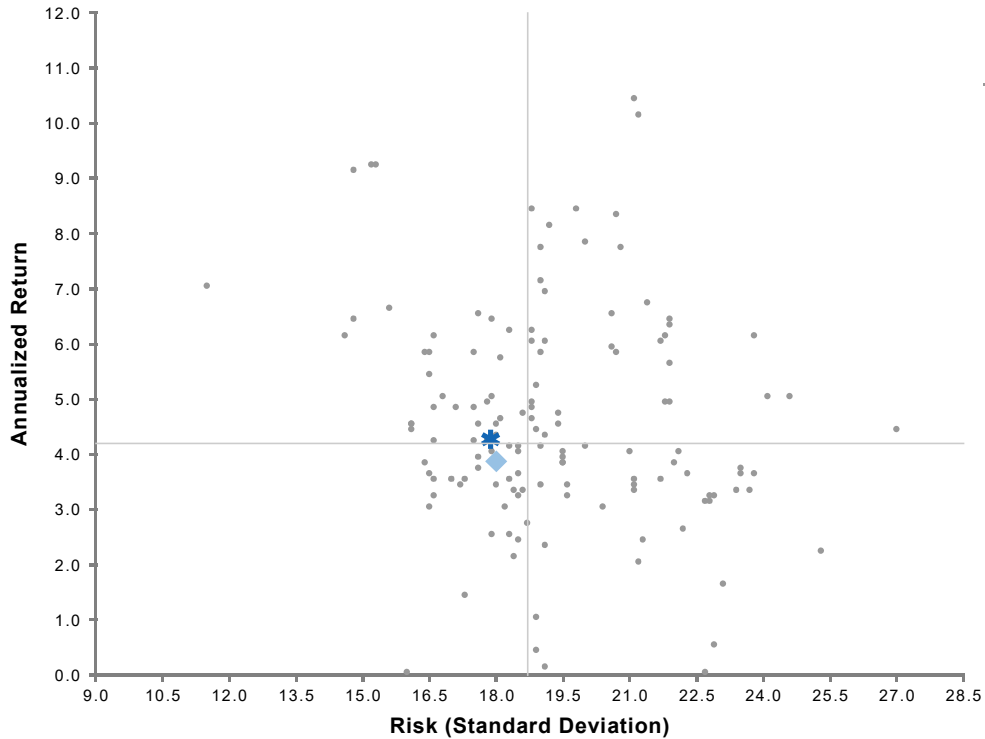


NON-U.S. EQUITY RISK ADJUSTED RETURN

for the quarter ended June 30, 2018



10 Year Risk vs Return



	Rate of Return 10 Years	Standard Deviation 10 Years
* Non-U.S. Equity (Hedged)	4.1 53	17.6 28
◆ CUSTOM MSCI ACWI IMI N 50%H	3.7 65	17.7 28
5th Percentile	8.4	15.2
25th Percentile	5.8	17.4
50th Percentile	4.2	18.7
75th Percentile	3.4	21.0
95th Percentile	1.0	23.6
Number of Observations	144	147

◆ Non-U.S. Equity (Hedged) ◆ CUSTOM MSCI ACWI IMI N 50%H

	<u>Rate of Return 10 Years</u>	<u>Standard Deviation 10 Years</u>	<u>Tracking Error 10 Years</u>
Non-U.S. Equity (Hedged)	4.1 53	17.6 28	0.5
CUSTOM MSCI ACWI IMI N 50%H	3.7 65	17.7 28	

NON-U.S. EQUITY

ACADIAN ASSET MANAGEMENT, LLC

for the quarter ended June 30, 2018



Manager Profile

Firm: Acadian Asset Management, LLC
 Location: Boston, MA
 Year Founded: 1986
 Contact: Julia Khan, Associate Relationship Manager
 Inception Date: April 2006
 Assigned Role: Non-U.S. Equity
 Benchmark: MSCI EAFE + Canada (Net)
 Investment Style: Core / Value

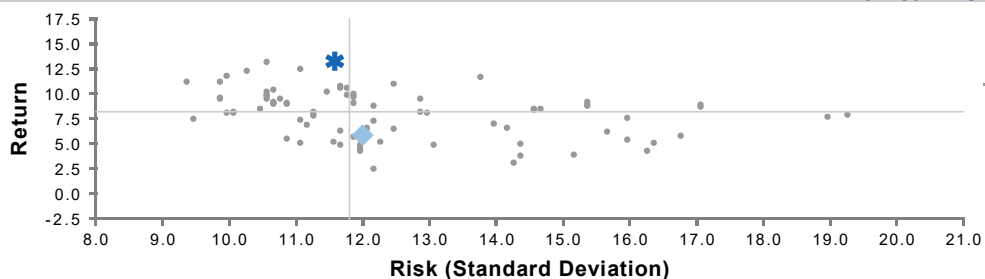
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Acadian Developed Markets	886.7	0.15	12.44	12.32	11.23	5.03
MSCI EAFE + Canada Net Index		-0.75	7.04	4.87	6.23	3.44

Universe

	1 Qtr	1 Year	3 Years	5 Years
Intl/Global Equity Funds - Core				
Median	-0.67	9.12	8.19	9.68
Number of Observations	101.00	102.00	91.00	67.00

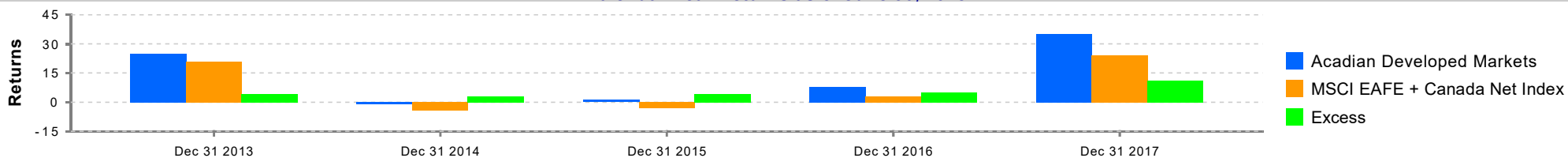
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
Acadian Developed Markets	12.3 3	11.4 40
MSCI EAFE + Canada Net Index	4.9 86	11.8 52
5th Percentile	11.5	9.8
25th Percentile	9.3	10.6
50th Percentile	8.2	11.8
75th Percentile	6.0	13.9
95th Percentile	4.0	16.7

Acadian Developed Markets MSCI EAFE + Canada Net Index

Calendar Year Returns as of June 30, 2018



NON-U.S. EQUITY CAPITAL GUARDIAN TRUST COMPANY

for the quarter ended June 30, 2018



Manager Profile

Firm: Capital Guardian Trust Company
 Location: Los Angeles, CA
 Year Founded: 1968
 Contact: Michael Bowman, Relationship Manager
 Funding / Inception Date: October 1987 / November 1994*
 Assigned Role: Non-U.S. Equity
 Benchmark: EAFE Custom Index
 Investment Style: Core / Growth

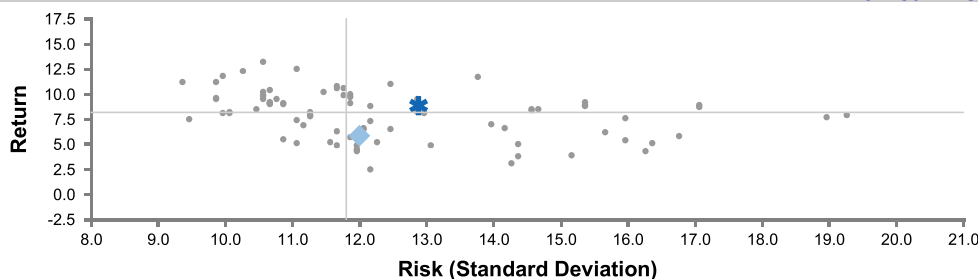
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Capital Guardian Non-U.S.	388.5	1.69	13.65	7.94	8.44	7.75
EAFE CUSTOM INDEX		-0.75	7.04	4.87	6.23	4.91

Universe

	1 Qtr	1 Year	3 Years	5 Years
Intl/Global Equity Funds - Core				
Median	-0.67	9.12	8.19	9.68
Number of Observations	101.00	102.00	91.00	67.00

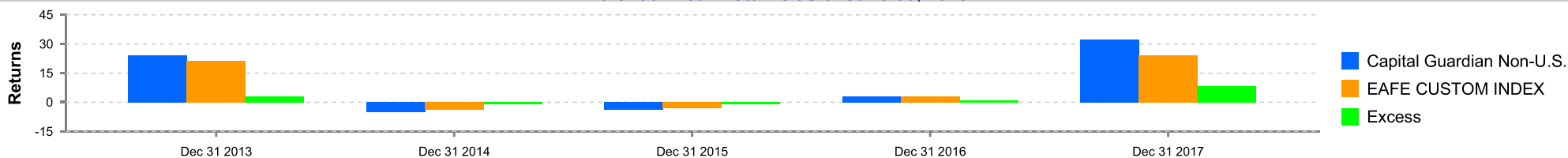
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
* Capital Guardian Non-U.S.	7.9 53	12.7 69
◆ EAFE CUSTOM INDEX	4.9 86	11.8 52
5th Percentile	11.5	9.8
25th Percentile	9.3	10.6
50th Percentile	8.2	11.8
75th Percentile	6.0	13.9
95th Percentile	4.0	16.7

◆ Capital Guardian Non-U.S. ◆ EAFE CUSTOM INDEX

Calendar Year Returns as of June 30, 2018



* State Street performance data begins November 1994.
 Universe data: International Equity Funds Core

NON-U.S. EQUITY - PACIFIC BASIN

GAM INTERNATIONAL MANAGEMENT LTD.

for the quarter ended June 30, 2018



Manager Profile

Firm: GAM International Management Ltd.
 Location: London, England
 Year Founded: 1993
 Contact: Michael Bunker, Portfolio Manager
 Inception Date: April 1994
 Assigned Role: Pacific Basin
 Benchmark: MSCI Pacific Basin Net
 Investment Style: Core

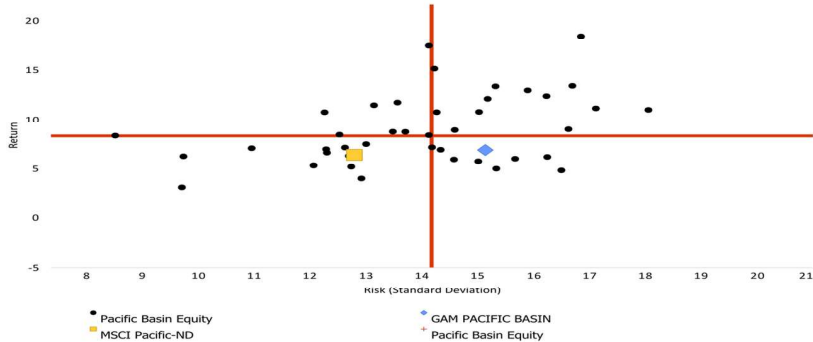
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
GAM Pacific Basin	879.3	-0.21	12.57	6.86	7.73	7.26
MSCI PACIFIC \$ (DAILY)		-1.35	9.91	6.37	6.93	2.74

Universe

	1 Qtr	1 Year	3 Years	5 Years
Pacific Basin Equity				
Median	-2.57	9.87	8.31	9.22
Number of Observations	44	44	43	39

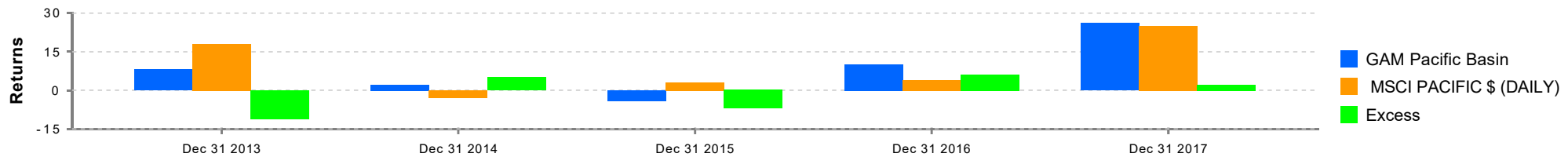
3 Year Risk vs Return



3 Year Risk vs Return

	3 Year Return		3 Year Standard Deviation (Qtr)	
GAM PACIFIC BASIN	6.9	66	15.2	31
MSCI PACIFIC \$ (DAILY)	6.4	71	12.8	72
5th Percentile	15.0		16.8	
25th Percentile	11.0		15.3	
50th Percentile	8.3		14.2	
75th Percentile	6.3		12.7	
95th Percentile	4.9		9.9	

Calendar Year Returns as of June 30, 2018



NON-U.S. EQUITY - PACIFIC BASIN

SYMPHONY FINANCIAL PARTNERS PTE. LTD.

for the quarter ended June 30, 2018



Manager Profile

Firm: Symphony Financial Partners Pte. Ltd.
 Location: Singapore, Singapore
 Year Founded: 2001
 Contact: David Baran, Co-CEO/Co-Founder
 Inception Date: November 2016
 Assigned Role: Pacific Basin
 Benchmark: MSCI Japan Small Cap Net
 Investment Style: Activist

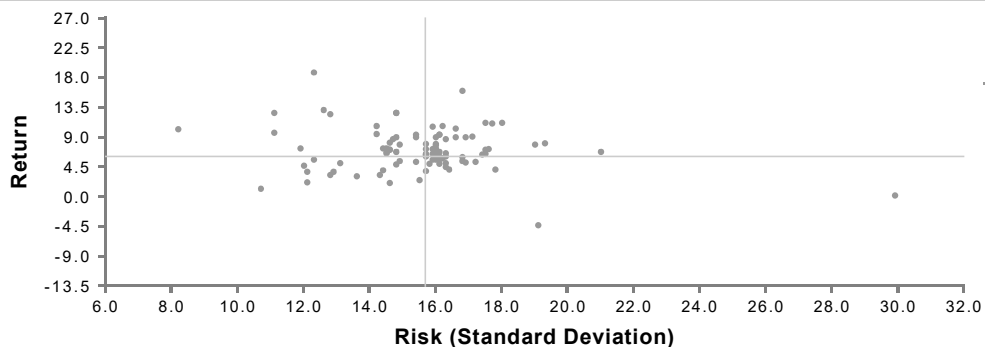
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Symphony Financial Partners	150.3	9.48	28.44			27.75
MSCI JAPAN SMALL CAP NET		-3.15	14.20			14.86

Universe

	1 Qtr	1 Year	3 Years	5 Years
Intl Equity Emerging Mkt Funds				
Median	-8.30	7.43	6.13	5.40

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
5th Percentile	12.2	11.0
25th Percentile	8.5	14.4
50th Percentile	6.1	15.7
75th Percentile	4.8	16.2
95th Percentile	2.0	17.9

Calendar Year Returns as of June 30, 2018



NON-U.S. EQUITY - EUROPE

BLACKROCK INSTITUTIONAL TRUST COMPANY, N.A. - EUROPE ALPHA TILTS

for the quarter ended June 30, 2018



Manager Profile

Firm: BlackRock Institutional Trust Company, N.A.
 Location: San Francisco, CA
 Year Founded: 1985
 Contact: Lilian Wan, Managing Director
 Inception Date: January 2007
 Assigned Role: Non-U.S. Equity Enhanced Index
 Benchmark: MSCI Europe Net
 Investment Style: Core

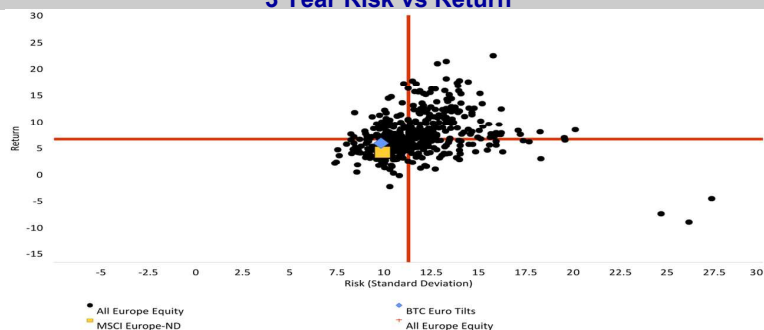
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
BTC Euro Tilts	976.8	-2.16	5.47	5.93	8.67	3.38
MSCI EUROPE (DAILY)		-1.27	5.28	4.22	6.21	2.03

Universe

	1 Qtr	1 Year	3 Years	5 Years
Europe Equity				
Median	-1.52	6.83	6.71	8.42
Number of Observations	516	516	497	458

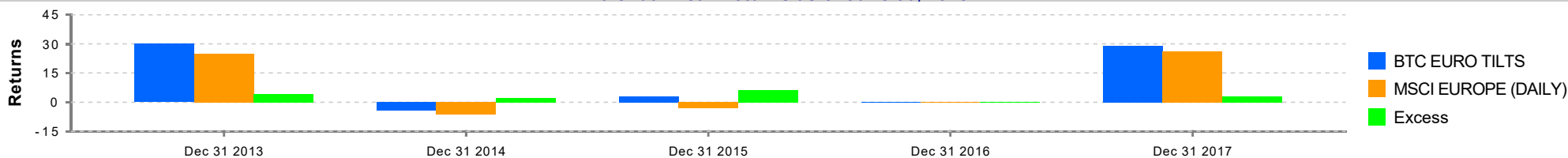
3 Year Risk vs Return



3 Year Risk vs Return

	3 Year Return		3 Year Standard Deviation	
BTC EURO TILTS	5.9	60	9.9	87
MSCI EUROPE (DAILY)	4.2	83	9.9	79
5th Percentile	14.8		15.6	
25th Percentile	9.1		12.7	
50th Percentile	6.7		11.3	
75th Percentile	4.7		10.1	
95th Percentile	2.7		9.1	

Calendar Year Returns as of June 30, 2018



NON-U.S. EQUITY - EUROPE

CEVIAN CAPITAL

for the quarter ended June 30, 2018



Manager Profile

Firm: Cevian Capital
 Location: Stockholm, Sweden
 Year Founded: 2002
 Contact: David Henderson, Director
 Inception Date: October 2016
 Assigned Role: Europe
 Benchmark: MSCI Europe Net
 Investment Style: Activist

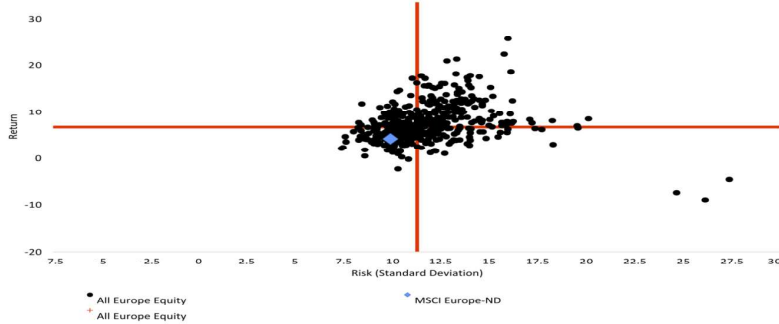
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Cevian Capital	301.0	4.83	4.68			12.75
MSCI EUROPE (DAILY)		-1.27	5.28			11.50

Universe

	1 Qtr	1 Year	3 Years	5 Years
Europe Equity				
Median	-1.52	6.83	6.71	8.42
Number of Observations	516	516	497	458

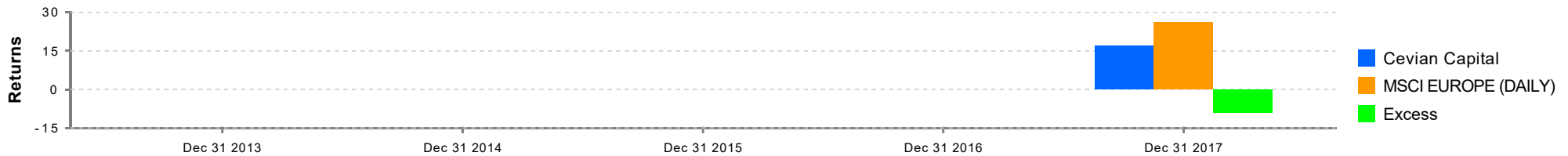
3 Year Risk vs Return



3 Year Risk vs Return

	3 Year Return	3 Year Standard Deviation
CEVIAN CAPITAL	N/A	N/A
MSCI EUROPE (DAILY)	4.2	9.9
5th Percentile	14.8	15.6
25th Percentile	9.1	12.7
50th Percentile	6.7	11.3
75th Percentile	4.7	10.1
95th Percentile	2.7	9.1

Calendar Year Returns as of June 30, 2018



NON-U.S. EQUITY - EMERGING MARKETS

ACADIAN ASSET MANAGEMENT, LLC

for the quarter ended June 30, 2018



Manager Profile

Firm	Acadian Asset Management, LLC
Location	Boston, MA
Year Founded	1986
Contact	Julia Khan, Associate Relationship Manager
Inception Date	January 2013
Assigned Role	Emerging Markets
Benchmark	MSCI EMF (Net)
Investment Style	Core / Value

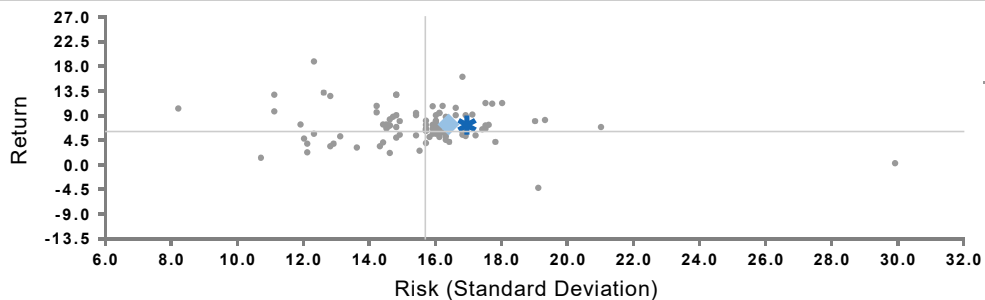
Manager vs. Benchmark Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Incept
Acadian Asset Management	383.8	-11.24	4.63	5.52	5.03	3.31
MSCI EMERGING MARKETS		-7.96	8.20	5.60	5.01	2.66

Universe

	1 Qtr	1 Year	3 Years	5 Years
<u>Intl Equity Emerging Mkt Funds</u>				
Median	-8.30	7.43	6.13	5.40
Number of Observations	119.00	113.00	104.00	86.00

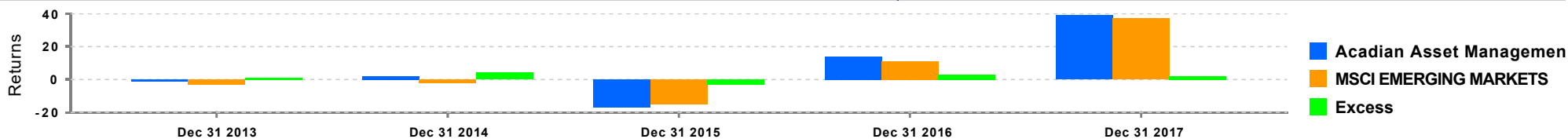
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
Acadian Asset Management	5.5 65	16.6 80
MSCI EMERGING MARKETS	5.6 64	16.0 71
5th Percentile	12.2	11.0
25th Percentile	8.5	14.4
50th Percentile	6.1	15.7
75th Percentile	4.8	16.2
95th Percentile	2.0	17.9

Acadian Asset Management MSCI EMERGING MARKETS

Calendar Year Returns as of June 30, 2018



NON-U.S. EQUITY - EMERGING MARKETS

AQR CAPITAL MANAGEMENT, LLC

for the quarter ended June 30, 2018



Manager Profile

Firm: AQR Capital Management, LLC
 Location: Greenwich, CT
 Year Founded: 1998
 Contact: Joey Lee, Vice President
 Inception Date: February 2014
 Assigned Role: Emerging Markets
 Benchmark: MSCI EMF (Net)
 Investment Style: Core

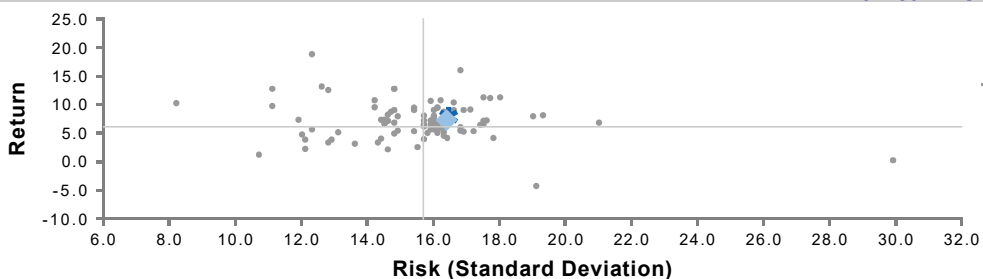
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Incept
AQR Emerging Markets	250.0	-9.45	5.59	6.24		5.93
MSCI EMERGING MARKETS		-7.96	8.20	5.60		5.53

Universe

	1 Qtr	1 Year	3 Years	5 Years
Intl Equity Emerging Mkt Funds				
Median	-8.30	7.43	6.13	5.40
Number of Observations	119.00	113.00	104.00	86.00

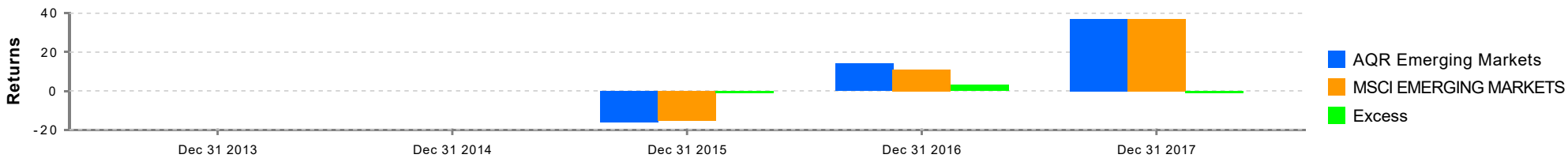
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
AQR EMERGING MARKETS	6.2 49	16.1 71
MSCI EMERGING MARKETS	5.6 64	16.0 71
5th Percentile	12.2	11.0
25th Percentile	8.5	14.4
50th Percentile	6.1	15.7
75th Percentile	4.8	16.2
95th Percentile	2.0	17.9

* AQR EMERGING MARKETS
 ◆ MSCI EMERGING MARKETS

Calendar Year Returns as of June 30, 2018



NON-U.S. EQUITY - EMERGING MARKETS

GENESIS INVESTMENT MANAGEMENT, LLP

for the quarter ended June 30, 2018



Manager Profile

Firm: Genesis Investment Management, LLP
 Location: London, England
 Year Founded: 1989
 Contact: Jonathan Snow, Director
 Inception Date: September 2007
 Assigned Role: Emerging Markets
 Benchmark: MSCI EMF IMI Custom
 Investment Style: Core

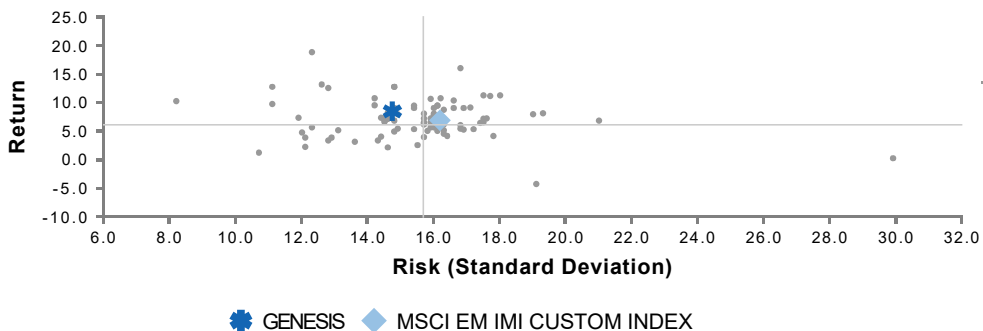
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Genesis	676.4	-6.61	9.82	6.80	5.82	5.42
MSCI EM IMI CUSTOM INDEX		-8.02	7.90	5.19	4.93	2.44

Universe

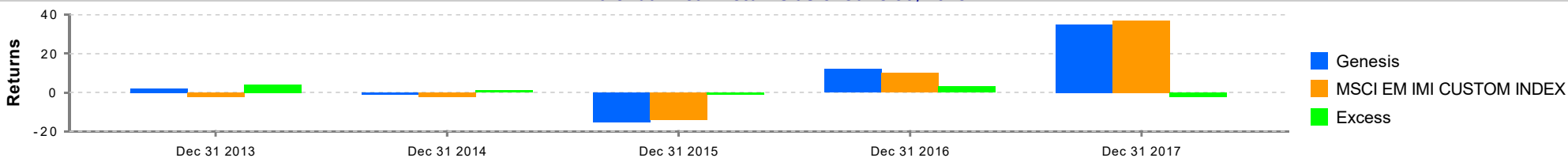
	1 Qtr	1 Year	3 Years	5 Years
Intl Equity Emerging Mkt Funds				
Median	-8.30	7.43	6.13	5.40
Number of Observations	119.00	113.00	104.00	86.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
GENESIS	6.8 39	14.4 23
MSCI EM IMI CUSTOM INDEX	5.2 68	15.8 53
5th Percentile	12.2	11.0
25th Percentile	8.5	14.4
50th Percentile	6.1	15.7
75th Percentile	4.8	16.2
95th Percentile	2.0	17.9

Calendar Year Returns as of June 30, 2018



NON-U.S. EQUITY - EMERGING MARKETS

LAZARD ASSET MANAGEMENT, LLC

for the quarter ended June 30, 2018



Manager Profile

Firm: Lazard Asset Management, LLC
 Location: New York, NY
 Year Founded: 1970
 Contact: Tony Dote, Managing Director
 Inception Date: February 2013
 Assigned Role: Emerging Markets
 Benchmark: MSCI EMF (Net)
 Investment Style: Core

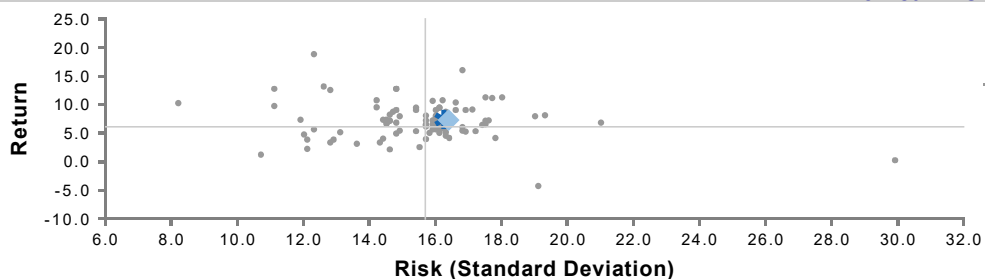
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Incept
Lazard Emerging Markets	347.7	-6.22	8.35	5.72	6.55	2.96
MSCI EMERGING MARKETS		-7.96	8.20	5.60	5.01	2.44

Universe

	1 Qtr	1 Year	3 Years	5 Years
Intl Equity Emerging Mkt Funds				
Median	-8.30	7.43	6.13	5.40
Number of Observations	119.00	113.00	104.00	86.00

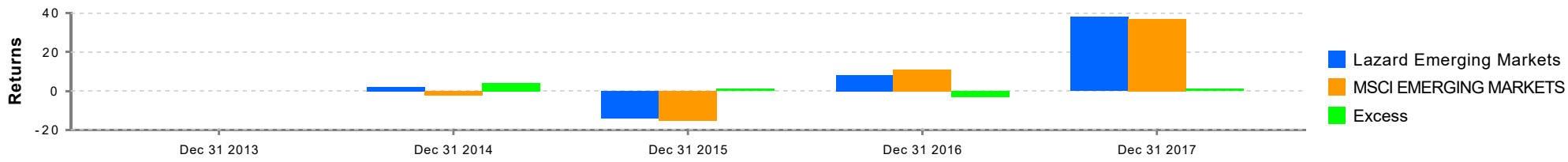
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
* Lazard Emerging Markets	5.7 61	15.9 62
◆ MSCI EMERGING MARKETS	5.6 64	16.0 71
5th Percentile	12.2	11.0
25th Percentile	8.5	14.4
50th Percentile	6.1	15.7
75th Percentile	4.8	16.2
95th Percentile	2.0	17.9

* Lazard Emerging Markets ◆ MSCI EMERGING MARKETS

Calendar Year Returns as of June 30, 2018

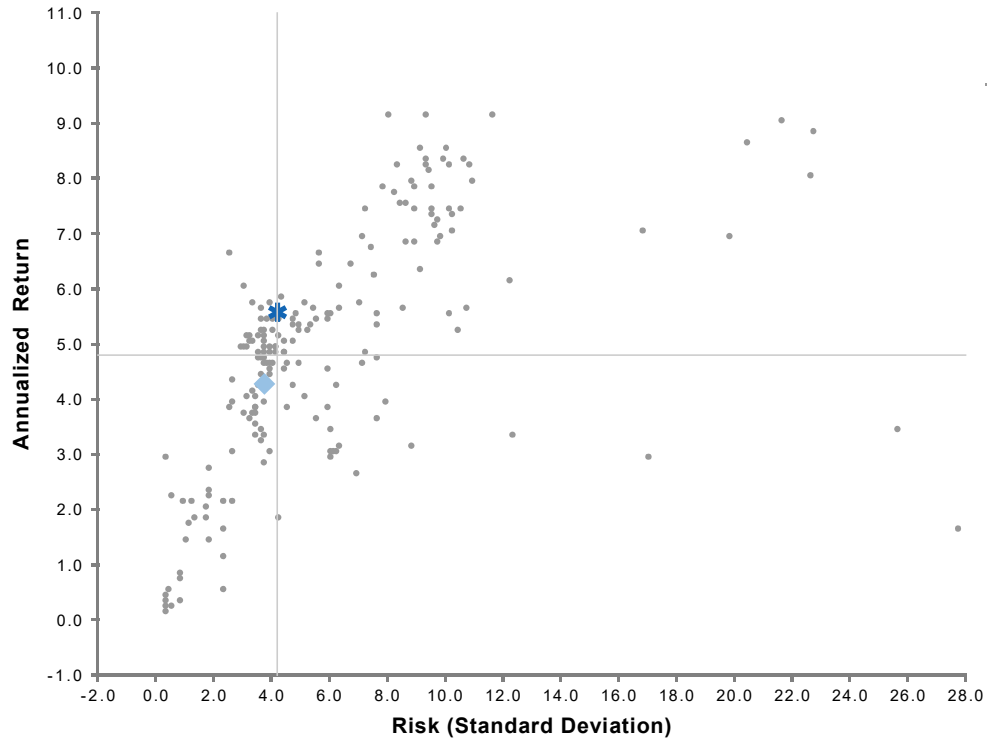


FIXED INCOME RISK ADJUSTED RETURN

for the quarter ended June 30, 2018



10 Year Risk vs Return



	Rate of Return 10 Years	Standard Deviation 10 Years
* FIXED INCOME	5.4 34	3.8 44
◆ FI CUSTOM INDEX	4.1 63	3.3 28
5th Percentile	8.3	0.7
25th Percentile	5.7	3.2
50th Percentile	4.8	4.2
75th Percentile	3.6	7.5
95th Percentile	1.1	10.8
Number of Observations	217	217

◆ FIXED INCOME ◆ FI CUSTOM INDEX

	<u>Rate of Return 10 Years</u>	<u>Standard Deviation 10 Years</u>	<u>Tracking Error 10 Years</u>
FIXED INCOME	5.4 34	3.8 44	1.7
FI CUSTOM INDEX	4.1 63	3.3 28	

FIXED INCOME - CORE

DODGE & COX

for the quarter ended June 30, 2018



Manager Profile

Firm: Dodge & Cox
 Location: San Francisco, CA
 Year Founded: 1930
 Contact: Terrill Armstrong, Client Relationship Mngr.
 Inception Date: March 1997
 Assigned Role: Full Mandate
 Benchmark: BBG BC Aggregate Bond Index
 Investment Style: Core Fixed Income

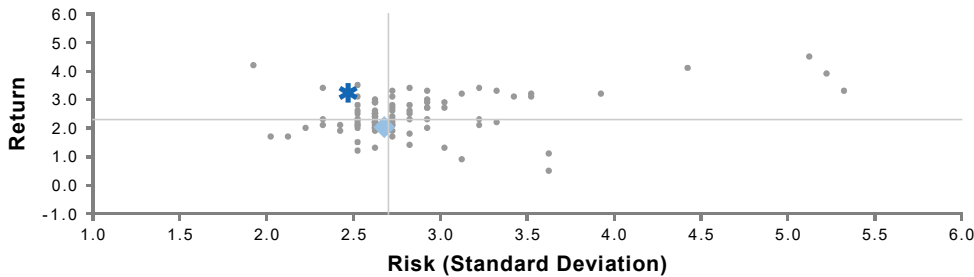
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Dodge & Cox	1,282.9	-0.18	0.61	2.94	3.53	6.05
BBG BC Aggregate Bond Index		-0.16	-0.40	1.72	2.27	5.01

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core				
Median	-0.06	0.04	2.26	2.78
Number of Observations	104.00	104.00	105.00	101.00

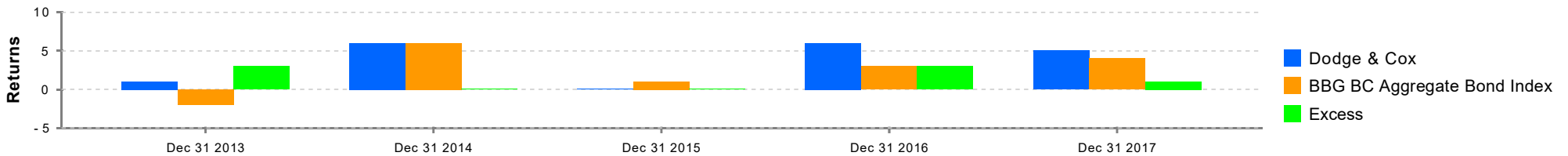
3 Year Risk vs Return



* DODGE & COX
 ◆ BBG BC Aggregate Bond Index

	3 Year Return	3 Year Standard Deviation
* DODGE & COX	2.9 20	2.4 9
◆ BBG BC Aggregate Bond Index	1.7 90	2.6 49
5th Percentile	3.3	2.3
25th Percentile	2.8	2.6
50th Percentile	2.3	2.7
75th Percentile	2.0	2.9
95th Percentile	1.2	3.5

Calendar Year Returns as of June 30, 2018



FIXED INCOME - CORE

PUGH CAPITAL MANAGEMENT, INC.

for the quarter ended June 30, 2018



Manager Profile

Firm: Pugh Capital Management, Inc.
 Location: Seattle, WA
 Year Founded: 1991
 Contact: Mary E. Pugh, President
 Inception Date: July 2005
 Assigned Role: Emerging Manager
 Benchmark: BBG BC Aggregate Bond Index
 Investment Style: Core Fixed Income

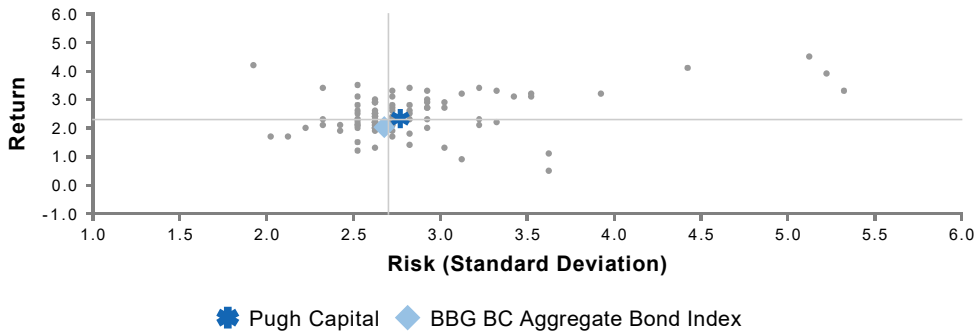
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Pugh Capital	134.8	-0.13	-0.28	1.97	2.58	4.37
BBG BC Aggregate Bond Index		-0.16	-0.40	1.72	2.27	3.80

Universe

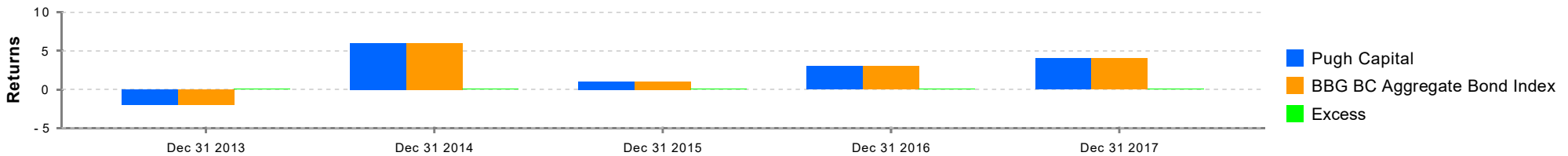
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core				
Median	-0.06	0.04	2.26	2.78
Number of Observations	104.00	104.00	105.00	101.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
* Pugh Capital	2.0 77	2.7 63
◆ BBG BC Aggregate Bond Index	1.7 90	2.6 49
5th Percentile	3.3	2.3
25th Percentile	2.8	2.6
50th Percentile	2.3	2.7
75th Percentile	2.0	2.9
95th Percentile	1.2	3.5

Calendar Year Returns as of June 30, 2018



FIXED INCOME - CORE

WELLS CAPITAL MANAGEMENT

for the quarter ended June 30, 2018



Manager Profile

Firm: Wells Capital Management
 Location: Walnut Creek, CA
 Year Founded: 1981
 Contact: Daniel Anderson, Client Relations Director
 Inception Date: March 2004
 Assigned Role: Full Mandate
 Benchmark: BBG BC Aggregate Bond Index
 Investment Style: Core Fixed Income

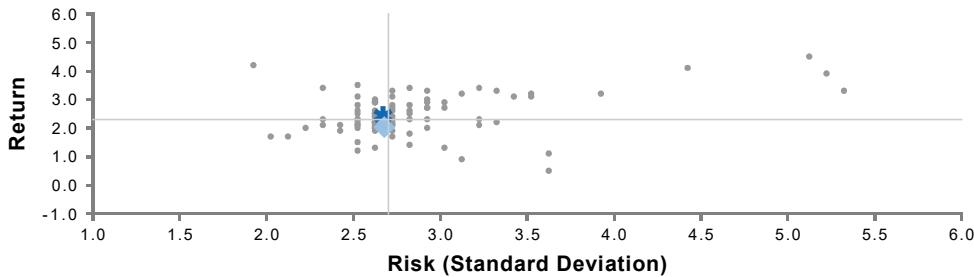
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Wells Capital	1,338.1	-0.12	-0.19	2.08	2.81	4.85
BBG BC Aggregate Bond Index		-0.16	-0.40	1.72	2.27	3.80

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core				
Median	-0.06	0.04	2.26	2.78
Number of Observations	104.00	104.00	105.00	101.00

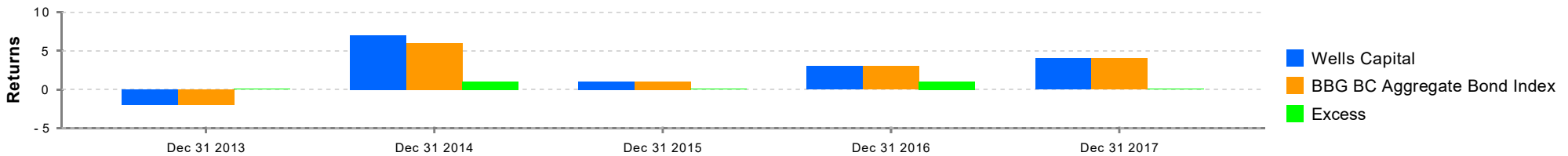
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
WELLS CAPITAL	2.1 67	2.6 38
BBG BC Aggregate Bond Index	1.7 90	2.6 49
5th Percentile	3.3	2.3
25th Percentile	2.8	2.6
50th Percentile	2.3	2.7
75th Percentile	2.0	2.9
95th Percentile	1.2	3.5

WELLS CAPITAL BBG BC Aggregate Bond Index

Calendar Year Returns as of June 30, 2018



FIXED INCOME - CORE PLUS

DOLAN McENIRY CAPITAL MANAGEMENT, LLC

for the quarter ended June 30, 2018



Manager Profile

Firm: Dolan McEniry Capital Management, LLC
 Location: Chicago, IL
 Year Founded: 1997
 Contact: Daniel Dolan Jr., Principal
 Inception Date: July 2005
 Assigned Role: Emerging Manager
 Benchmark: Dolan McEniry Custom Index
 Investment Style: Core Plus Fixed Income

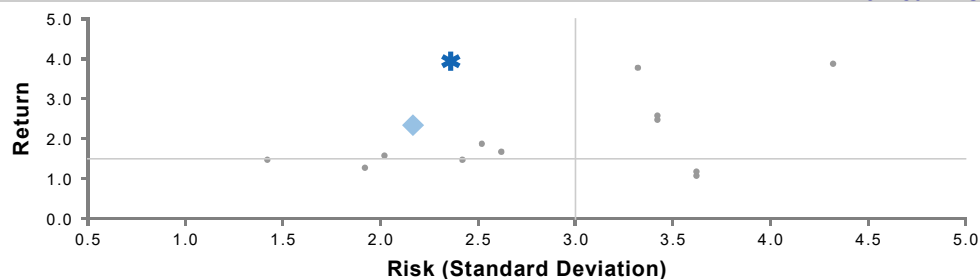
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Dolan McEniry	343.6	-0.08	0.65	3.69	3.99	6.01
DOLAN CUSTOM INDEX		0.07	-0.02	2.13	2.72	4.36

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core Plus				
Median	-0.12	-0.21	1.52	2.32
Number of Observations	63.00	61.00	12.00	10.00

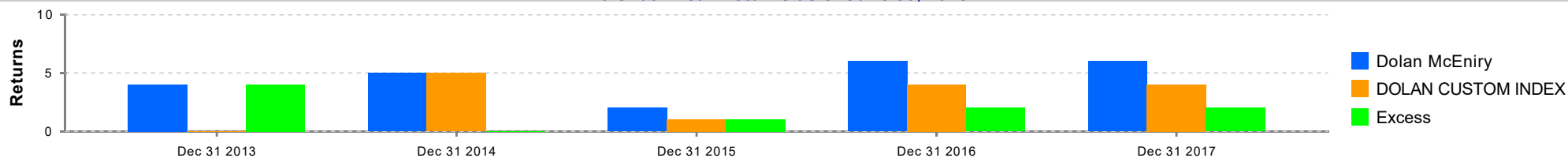
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
* Dolan McEniry	3.7 17	2.3 29
◆ DOLAN CUSTOM INDEX	2.1 35	2.1 25
5th Percentile	3.8	1.4
25th Percentile	2.5	2.1
50th Percentile	1.5	3.0
75th Percentile	1.3	3.5
95th Percentile	1.0	4.3

* Dolan McEniry ◆ DOLAN CUSTOM INDEX

Calendar Year Returns as of June 30, 2018



FIXED INCOME - CORE PLUS

LOOMIS, SAYLES & COMPANY, LP

for the quarter ended June 30, 2018



Manager Profile

Firm: Loomis, Sayles & Company, LP
 Location: Boston, MA
 Year Founded: 1926
 Contact: Stephanie S. Lord, Vice President
 Inception Date: March 1997
 Assigned Role: Full Mandate
 Benchmark: BBG BC Aggregate Bond Index
 Investment Style: Core Plus Fixed Income

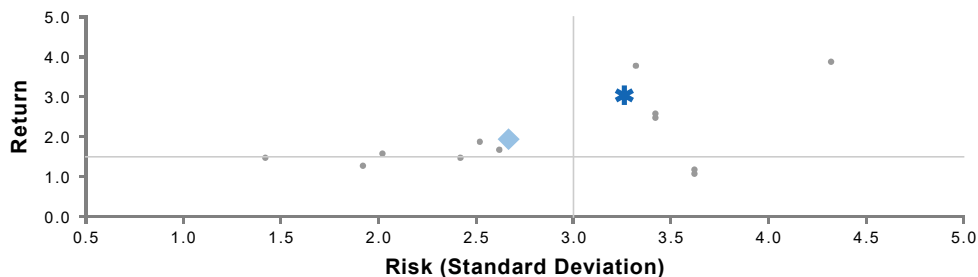
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Loomis Sayles	1,074.8	-0.25	1.26	2.84	3.55	5.89
BBG BC Aggregate Bond Index		-0.16	-0.40	1.72	2.27	5.01

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core Plus				
Median	-0.12	-0.21	1.52	2.32
Number of Observations	63.00	61.00	12.00	10.00

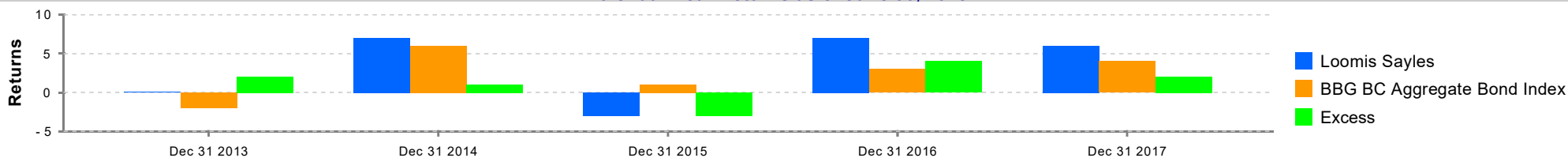
3 Year Risk vs Return



* LOOMIS SAYLES
 ◆ BBG BC Aggregate Bond Index

	3 Year Return		3 Year Standard Deviation	
* LOOMIS SAYLES	2.8	22	3.2	53
◆ BBG BC Aggregate Bond Index	1.7	42	2.6	47
5th Percentile	3.8		1.4	
25th Percentile	2.5		2.1	
50th Percentile	1.5		3.0	
75th Percentile	1.3		3.5	
95th Percentile	1.0		4.3	

Calendar Year Returns as of June 30, 2018



FIXED INCOME - CORE PLUS

PACIFIC INVESTMENT MANAGEMENT COMPANY

for the quarter ended June 30, 2018



Manager Profile

Firm: Pacific Investment Management Company
 Location: Newport Beach, CA
 Year Founded: 1971
 Contact: Stephanie King, Executive Vice President
 Inception Date: March 2004
 Assigned Role: Full Mandate
 Benchmark: BBG BC Aggregate Bond Index
 Investment Style: Core Plus Fixed Income

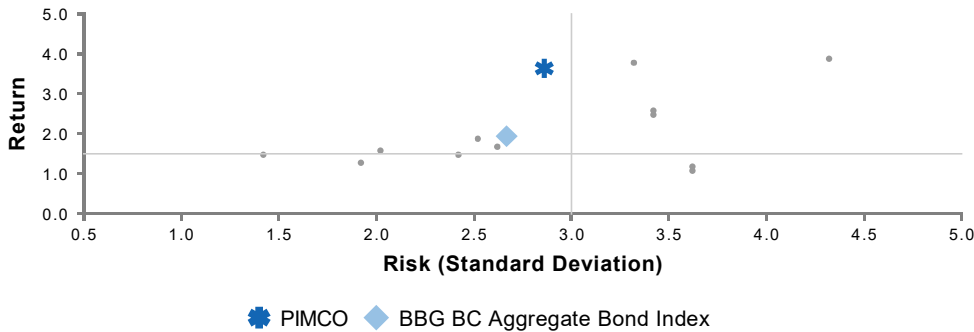
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
PIMCO	1,053.0	0.61	1.58	3.41	3.24	5.03
BBG BC Aggregate Bond Index		-0.16	-0.40	1.72	2.27	3.80

Universe

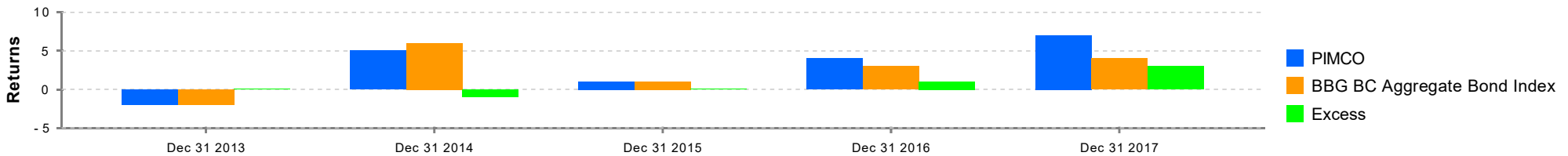
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core Plus				
Median	-0.12	-0.21	1.52	2.32
Number of Observations	63.00	61.00	12.00	10.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
* PIMCO	3.4 18	2.8 48
◆ BBG BC Aggregate Bond Index	1.7 42	2.6 47
5th Percentile	3.8	1.4
25th Percentile	2.5	2.1
50th Percentile	1.5	3.0
75th Percentile	1.3	3.5
95th Percentile	1.0	4.3

Calendar Year Returns as of June 30, 2018



FIXED INCOME - CORE PLUS

WESTERN ASSET MANAGEMENT COMPANY

for the quarter ended June 30, 2018



Manager Profile

Firm: Western Asset Management Company
 Location: Pasadena, CA
 Year Founded: 1971
 Contact: Veronica Amici, Head of Public Funds
 Inception Date: March 1997
 Assigned Role: Full Mandate
 Benchmark: BBG BC Aggregate Bond Index
 Investment Style: Core Plus Fixed Income

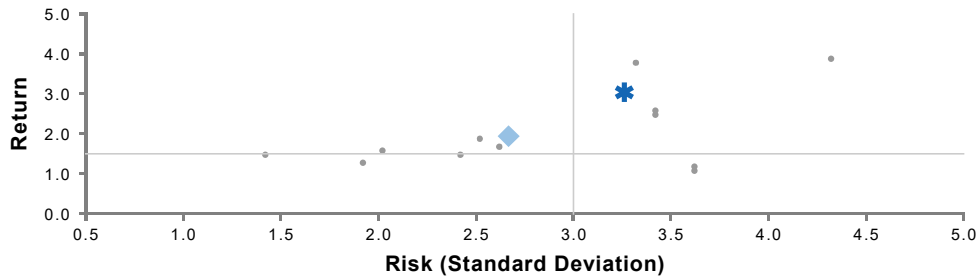
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Western Asset	1,118.8	-1.25	-1.32	2.82	3.38	6.29
BBG BC Aggregate Bond Index		-0.16	-0.40	1.72	2.27	5.01

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core Plus				
Median	-0.12	-0.21	1.52	2.32
Number of Observations	63.00	61.00	12.00	10.00

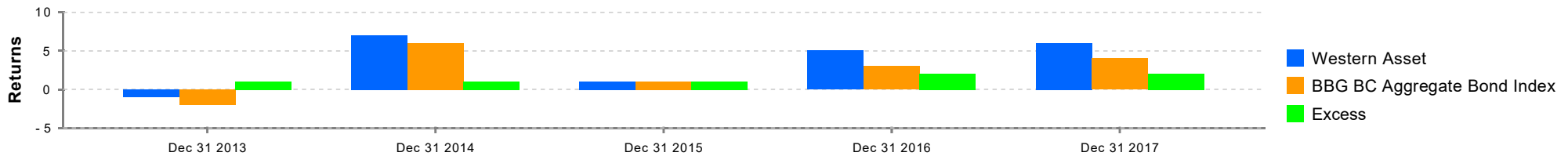
3 Year Risk vs Return



Western Asset BBG BC Aggregate Bond Index

	3 Year Return		3 Year Standard Deviation	
Western Asset	2.8	22	3.2	53
BBG BC Aggregate Bond Index	1.7	42	2.6	47
5th Percentile	3.8		1.4	
25th Percentile	2.5		2.1	
50th Percentile	1.5		3.0	
75th Percentile	1.3		3.5	
95th Percentile	1.0		4.3	

Calendar Year Returns as of June 30, 2018



FIXED INCOME - HIGH YIELD

OAKTREE CAPITAL MANAGEMENT, L.P.

for the quarter ended June 30, 2018



Manager Profile

Firm: Oaktree Capital Management, L.P.
 Location: Los Angeles, CA
 Year Founded: 1995
 Contact: Sheldon M. Stone, Principal
 Inception Date: July 1997
 Assigned Role: Full Mandate
 Benchmark: BBG BC Ba/B US High Yield Index
 Investment Style: High Yield

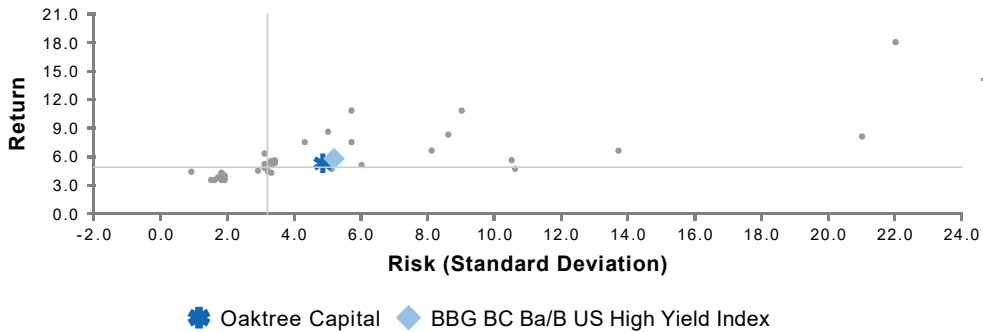
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Oaktree Capital	405.0	0.49	1.30	4.34	4.87	7.05
BBG BC Ba/B US High Yield Index		0.61	1.77	4.77	5.20	6.43

Universe

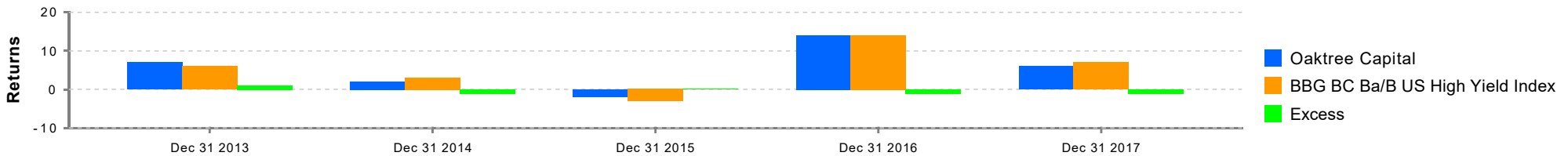
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	0.67	2.22	4.89	5.85
Number of Observations	48.00	49.00	46.00	43.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
★ Oaktree Capital	4.3 68	4.5 70
◆ BBG BC Ba/B US High Yield Index	4.8 56	4.8 70
5th Percentile	10.5	1.4
25th Percentile	5.7	1.8
50th Percentile	4.9	3.2
75th Percentile	4.0	5.0
95th Percentile	3.2	17.3

Calendar Year Returns as of June 30, 2018



FIXED INCOME - HIGH YIELD

PENN CAPITAL MANAGEMENT COMPANY, INC.

for the quarter ended June 30, 2018



Manager Profile

Firm: PENN Capital Management Co., Inc.
 Location: Philadelphia, PA
 Year Founded: 1987
 Contact: Steve Leming, Director
 Inception Date: July 2005
 Assigned Role: Emerging Manager Program
 Benchmark: BBG BC Ba/B US High Yield Index
 Investment Style: High Yield

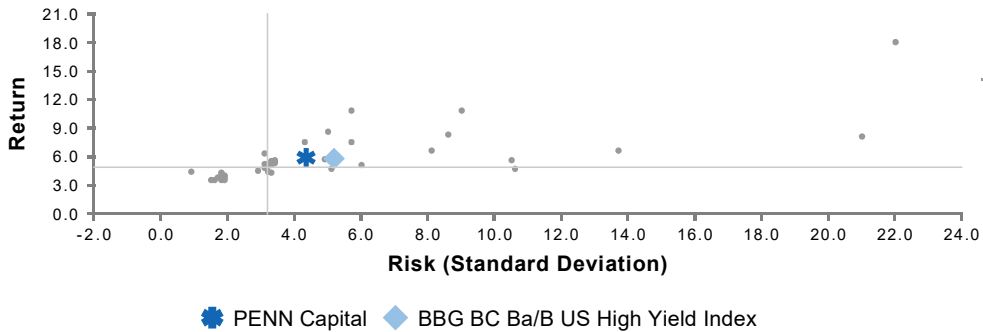
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
PENN Capital	109.1	0.78	2.77	4.88	4.92	6.63
BBG BC Ba/B US High Yield Index		0.61	1.77	4.77	5.20	6.79

Universe

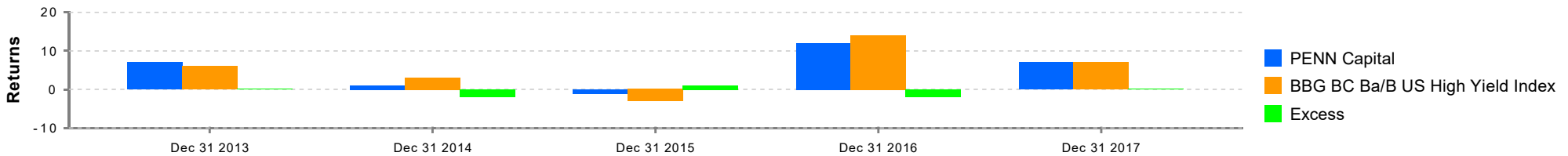
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	0.67	2.22	4.89	5.85
Number of Observations	48.00	49.00	46.00	43.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
* PENN Capital	4.9 51	4.0 68
◆ BBG BC Ba/B US High Yield Index	4.8 56	4.8 70
5th Percentile	10.5	1.4
25th Percentile	5.7	1.8
50th Percentile	4.9	3.2
75th Percentile	4.0	5.0
95th Percentile	3.2	17.3

Calendar Year Returns as of June 30, 2018



FIXED INCOME - OPPORTUNISTIC

ABERDEEN ASSET MANAGEMENT INC.

for the quarter ended June 30, 2018



Manager Profile

Firm: Aberdeen Asset Management Inc.
 Location: London, England
 Year Founded: 1983
 Contact: Teri Smith, Senior Relationship Manager
 Inception Date: July 2017
 Assigned Role: Full Mandate
 Benchmark: Opportunistic EMD Custom
 Investment Style: Opportunistic Credit – Emerging Mkt. Debt

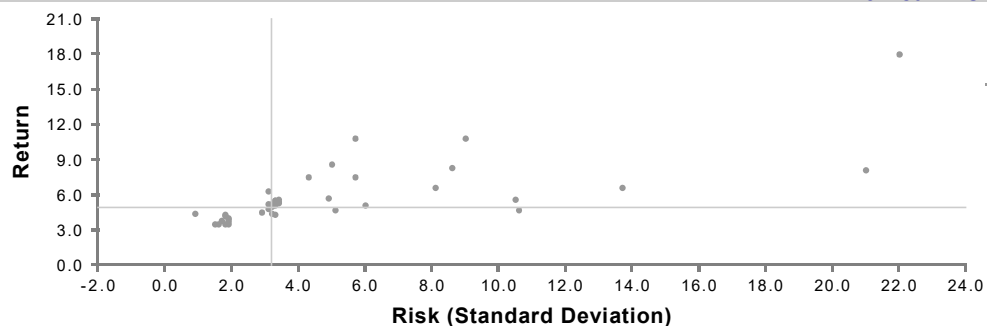
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Aberdeen	193.1	-6.02	-2.25			-2.25
Opportunistic EMD Custom		-4.85	-1.36			-1.36

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	0.67	2.22	4.89	5.85
Number of Observations	48.00	49.00	46.00	43.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
5th Percentile	10.5	1.4
25th Percentile	5.7	1.8
50th Percentile	4.9	3.2
75th Percentile	4.0	5.0
95th Percentile	3.2	17.3

Calendar Year Returns as of June 30, 2018



FIXED INCOME - OPPORTUNISTIC

ASHMORE INVESTMENT MANAGEMENT LIMITED

for the quarter ended June 30, 2018



Manager Profile

Firm: Ashmore Investment Management Limited
 Location: London, England
 Year Founded: 1999
 Contact: John Ricketts, Inst. Business Development
 Inception Date: June 2017
 Assigned Role: Full Mandate
 Benchmark: Opportunistic EMD Custom
 Investment Style: Opportunistic Credit – Emerging Mkt. Debt

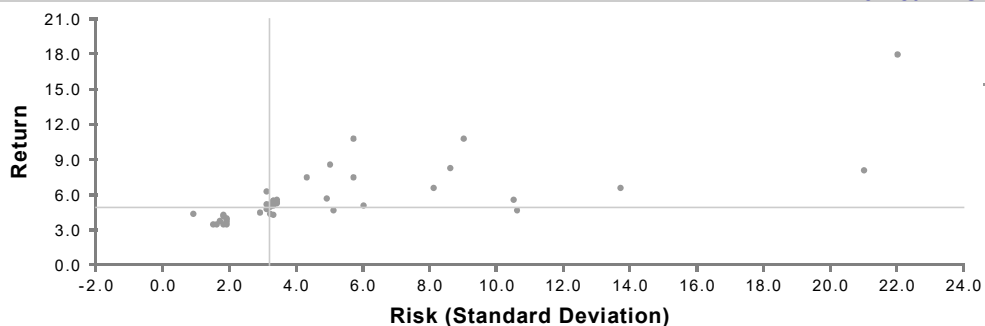
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Ashmore	196.7	-7.21	-0.89			-0.96
Opportunistic EMD Custom		-4.85	-1.36			-1.17

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	0.67	2.22	4.89	5.85
Number of Observations	48.00	49.00	46.00	43.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
5th Percentile	10.5	1.4
25th Percentile	5.7	1.8
50th Percentile	4.9	3.2
75th Percentile	4.0	5.0
95th Percentile	3.2	17.3

Calendar Year Returns as of June 30, 2018



FIXED INCOME - OPPORTUNISTIC

BAIN CAPITAL CREDIT, LP

for the quarter ended June 30, 2018



Manager Profile

Firm: Bain Capital Credit, LP
 Location: Boston, MA
 Year Founded: 1998
 Contact: Kyle Betty, Managing Director
 Inception Date: June 2014
 Assigned Role: Full Mandate
 Benchmark: Opportunistic Custom Index
 Investment Style: Opportunistic Credit – Multi Strategy

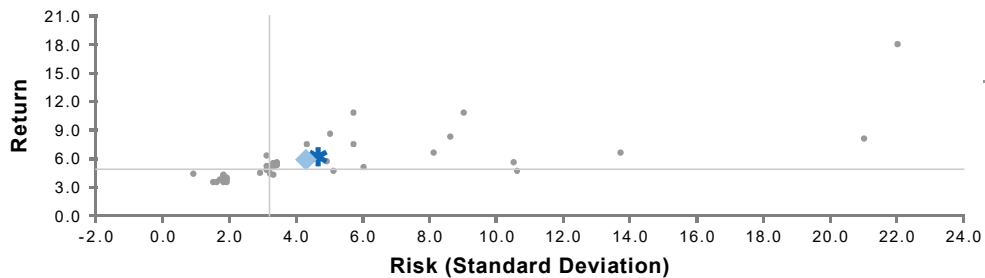
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Bain Capital	304.7	1.40	4.10	5.21		4.04
OPPORTUNISTIC CUSTOM INDEX		0.91	3.64	4.94		4.02

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	0.67	2.22	4.89	5.85
Number of Observations	48.00	49.00	46.00	43.00

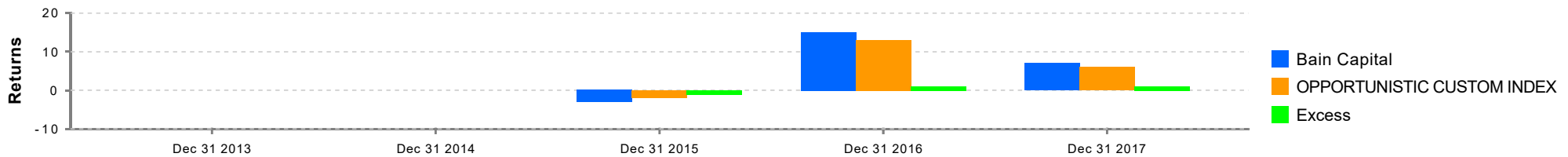
3 Year Risk vs Return



✱ Bain Capital
 ◆ OPPORTUNISTIC CUSTOM INDEX

	3 Year Return	3 Year Standard Deviation
✱ Bain Capital	5.2 35	4.3 69
◆ OPPORTUNISTIC CUSTOM INDEX	4.9 48	3.9 67
5th Percentile	10.5	1.4
25th Percentile	5.7	1.8
50th Percentile	4.9	3.2
75th Percentile	4.0	5.0
95th Percentile	3.2	17.3

Calendar Year Returns as of June 30, 2018



FIXED INCOME - OPPORTUNISTIC

BEACH POINT CAPITAL

for the quarter ended June 30, 2018



Manager Profile

Firm: Beach Point Capital
 Location: Santa Monica, CA
 Year Founded: 2008
 Contact: Larissa Chapin, Director
 Inception Date: March 2014
 Assigned Role: Full Mandate
 Benchmark: Opportunistic Custom Index
 Investment Style: Opportunistic – Credit

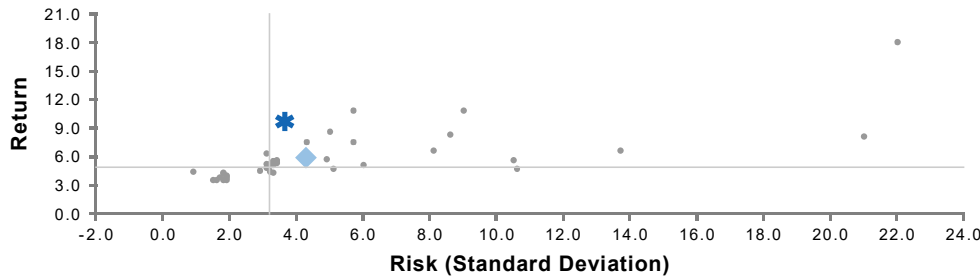
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Beach Point*	388.7	1.05	5.65	8.73		7.89
OPPORTUNISTIC CUSTOM INDEX		0.91	3.64	4.94		4.14

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	0.67	2.22	4.89	5.85
Number of Observations	48.00	49.00	46.00	43.00

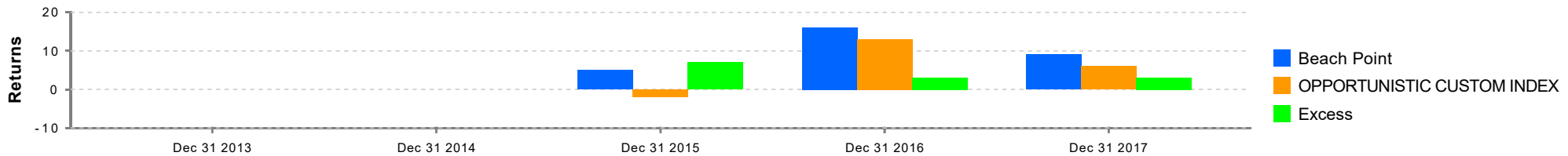
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
* BEACH POINT - TOTAL	8.7 9	3.3 64
◆ OPPORTUNISTIC CUSTOM INDEX	4.9 48	3.9 67
5th Percentile	10.5	1.4
25th Percentile	5.7	1.8
50th Percentile	4.9	3.2
75th Percentile	4.0	5.0
95th Percentile	3.2	17.3

* BEACH POINT - TOTAL ◆ OPPORTUNISTIC CUSTOM INDEX

Calendar Year Returns as of June 30, 2018



Universe data: U.S. Fixed Income Funds High Yield

* Represents the combined assets & performance of two portfolios, one of which is reported with a one-month lag.

FIXED INCOME - OPPORTUNISTIC

BRIGADE CAPITAL MANAGEMENT

for the quarter ended June 30, 2018



Manager Profile

Firm: Brigade Capital Management
 Location: New York, NY
 Year Founded: 2006
 Contact: Rob Brady, Director
 Inception Date: July 2010
 Assigned Role: Full Mandate
 Benchmark: Brigade Custom Index
 Investment Style: Opportunistic – Credit

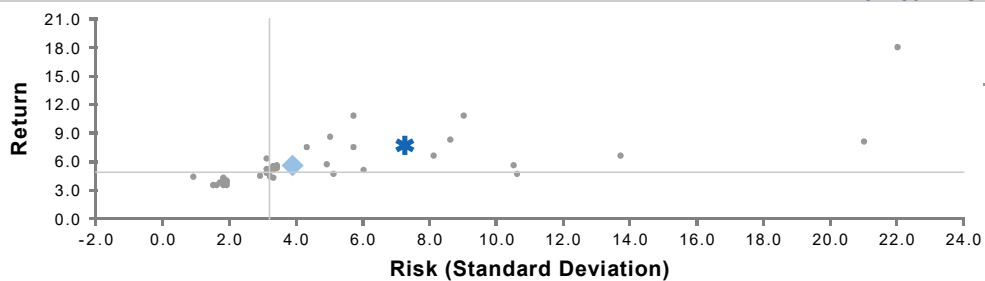
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Brigade Capital	497.9	1.64	4.54	6.68	6.16	8.60
BRIGADE CUSTOM INDEX		0.70	3.21	4.56	4.73	6.19

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	0.67	2.22	4.89	5.85
Number of Observations	48.00	49.00	46.00	43.00

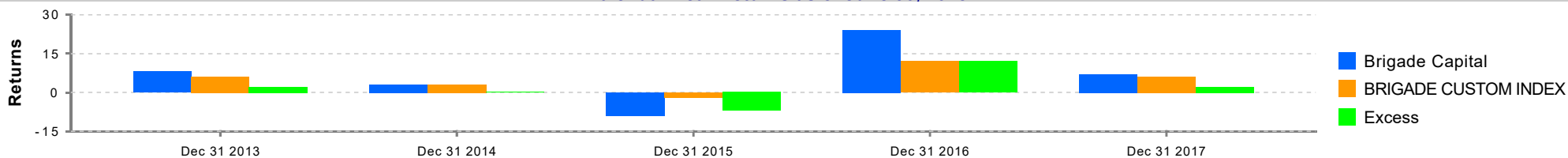
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
Brigade Capital	6.7 20	6.9 81
BRIGADE CUSTOM INDEX	4.6 62	3.5 66
5th Percentile	10.5	1.4
25th Percentile	5.7	1.8
50th Percentile	4.9	3.2
75th Percentile	4.0	5.0
95th Percentile	3.2	17.3

Brigade Capital BRIGADE CUSTOM INDEX

Calendar Year Returns as of June 30, 2018



FIXED INCOME - OPPORTUNISTIC

CRESCENT CAPITAL GROUP LP

for the quarter ended June 30, 2018



Manager Profile

Firm: Crescent Capital Group LP
 Location: Los Angeles, CA
 Year Founded: 1991
 Contact: John Fekete, Managing Director
 Inception Date: May 2014
 Assigned Role: Full Mandate
 Benchmark: Opportunistic Custom Index
 Investment Style: Opportunistic Credit – Direct Lending

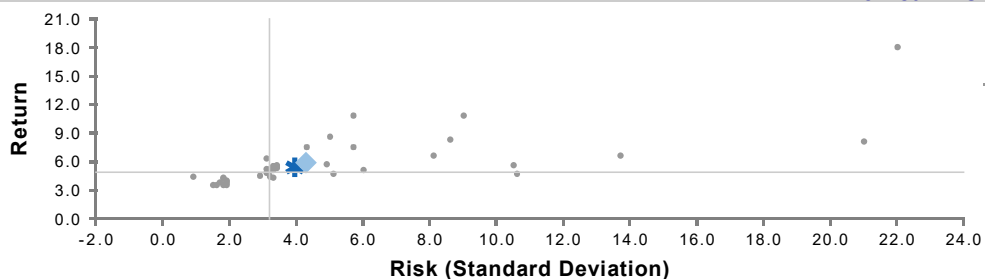
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Crescent Capital	273.8	0.76	3.71	4.38		3.22
OPPORTUNISTIC CUSTOM INDEX		0.91	3.64	4.94		4.12

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	0.67	2.22	4.89	5.85
Number of Observations	48.00	49.00	46.00	43.00

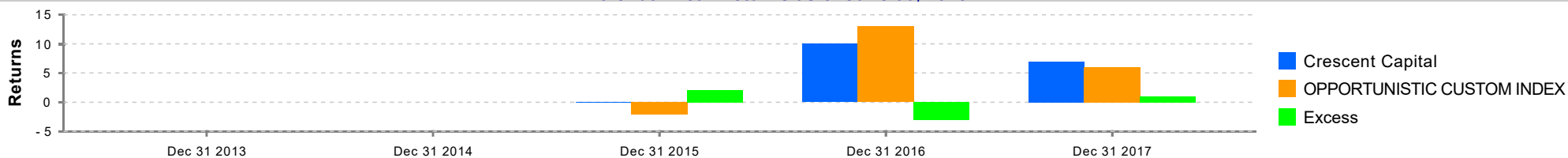
3 Year Risk vs Return



* CRESCENT CAPITAL
 ◆ OPPORTUNISTIC CUSTOM INDEX

	3 Year Return	3 Year Standard Deviation
* CRESCENT CAPITAL	4.4 67	3.6 66
◆ OPPORTUNISTIC CUSTOM INDEX	4.9 48	3.9 67
5th Percentile	10.5	1.4
25th Percentile	5.7	1.8
50th Percentile	4.9	3.2
75th Percentile	4.0	5.0
95th Percentile	3.2	17.3

Calendar Year Returns as of June 30, 2018



FIXED INCOME - OPPORTUNISTIC

DOUBLELINE CAPITAL LP

for the quarter ended June 30, 2018



Manager Profile

Firm: DoubleLine Capital LP
 Location: Los Angeles, CA
 Year Founded: 2009
 Contact: Aaron Prince, Sr. Product Specialist
 Inception Date: February 2016
 Assigned Role: Full Mandate
 Benchmark: Securitized Custom Index
 Investment Style: Opportunistic FI - Securitized Credit

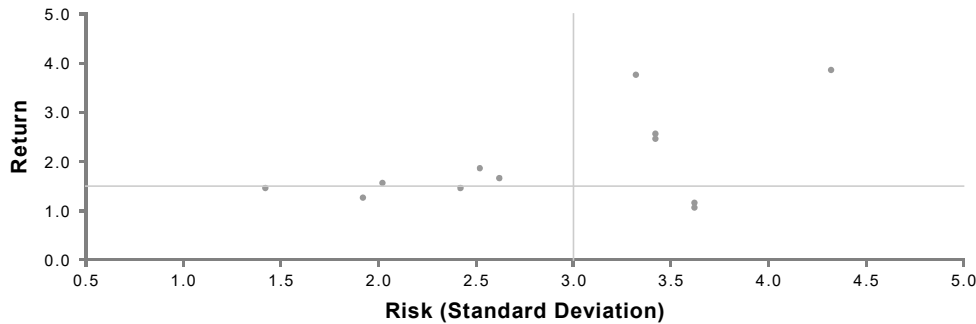
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
DoubleLine Capital	268.1	0.81	3.38			4.46
Securitized Custom Index		1.21	4.13			4.86

Universe

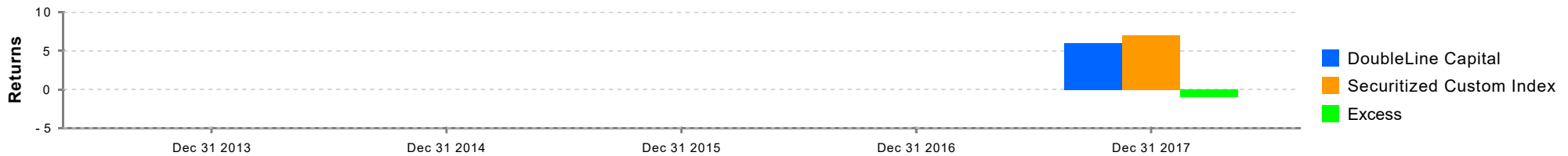
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core Plus				
Median	-0.12	-0.21	1.52	2.32
Number of Observations	63.00	61.00	12.00	10.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
5th Percentile	3.8	1.4
25th Percentile	2.5	2.1
50th Percentile	1.5	3.0
75th Percentile	1.3	3.5
95th Percentile	1.0	4.3

Calendar Year Returns as of June 30, 2018



FIXED INCOME - OPPORTUNISTIC

PRINCIPAL GLOBAL INVESTORS, LLC

for the quarter ended June 30, 2018



Manager Profile

Firm: Principal Global Investors, LLC
 Location: Des Moines, IA
 Year Founded: 1879
 Contact: Paul Stover, Relationship Manager
 Inception Date: February 2011
 Assigned Role: Full Mandate
 Benchmark: BBG BC US Universal Spread 1-10 Yr.
 Investment Style: Opportunistic – Credit

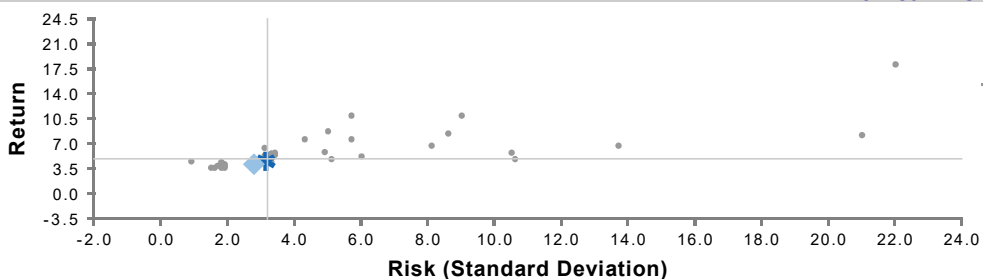
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Principal Opportunistic	266.4	-0.16	0.95	3.17	3.89	4.62
BBG BC US Universal Spread 1-10 Yr.		-0.22	0.08	2.75	3.20	3.83

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	0.67	2.22	4.89	5.85
Number of Observations	48.00	49.00	46.00	43.00

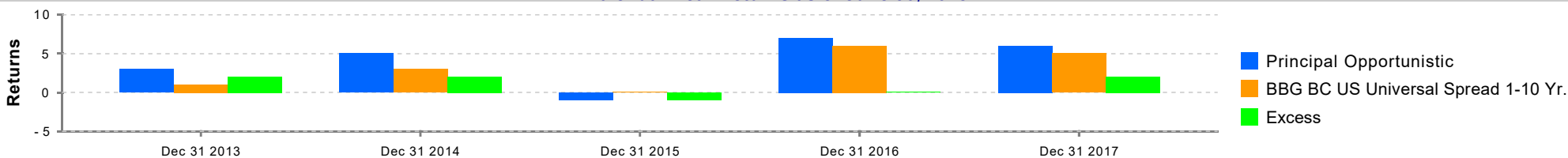
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
★ PRINCIPAL OPPORTUNISTIC	3.2 97	2.8 27
◆ BBG BC US Universal Spread 1-10 Yr.	2.8 100	2.4 27
5th Percentile	10.5	1.4
25th Percentile	5.7	1.8
50th Percentile	4.9	3.2
75th Percentile	4.0	5.0
95th Percentile	3.2	17.3

★ PRINCIPAL OPPORTUNISTIC ◆ BBG BC US Universal Spread 1-10 Yr.

Calendar Year Returns as of June 30, 2018



FIXED INCOME - OPPORTUNISTIC

TCW ASSET MANAGEMENT COMPANY

for the quarter ended June 30, 2018



Manager Profile

Firm: TCW Asset Management Company
 Location: Los Angeles, CA
 Year Founded: 1971
 Contact: Jeffrey Katz, Sr. Vice President
 Inception Date: October 2015
 Assigned Role: Full Mandate
 Benchmark: Securitized Custom Index
 Investment Style: Opportunistic FI – Securitized Credit

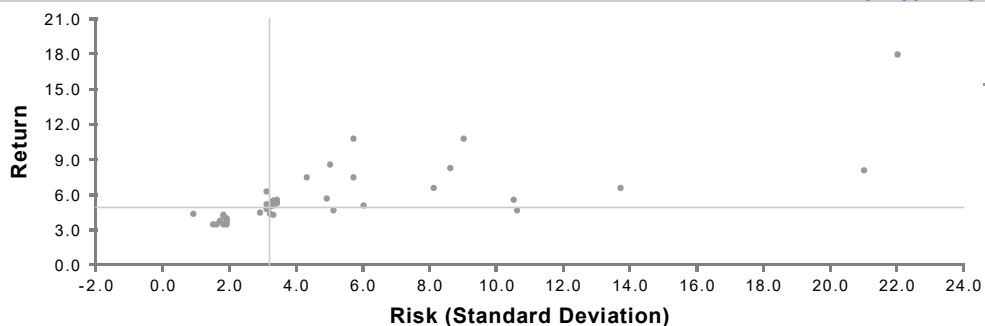
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
TCW	273.9	0.89	3.90			4.57
Securitized Custom Index		1.21	4.13			5.18

Universe

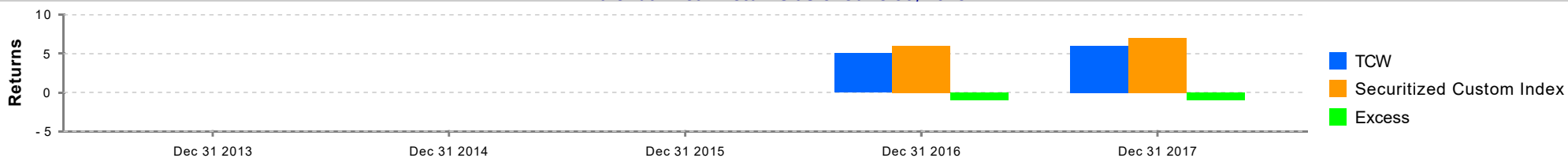
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	0.67	2.22	4.89	5.85
Number of Observations	48.00	49.00	46.00	43.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
5th Percentile	10.5	1.4
25th Percentile	5.7	1.8
50th Percentile	4.9	3.2
75th Percentile	4.0	5.0
95th Percentile	3.2	17.3

Calendar Year Returns as of June 30, 2018



FIXED INCOME - OPPORTUNISTIC

TENNENBAUM CAPITAL PARTNERS, LLC

for the quarter ended June 30, 2018



Manager Profile

Firm: Tennenbaum Capital Partners, LLC
 Location: Santa Monica, CA
 Year Founded: 1999
 Contact: Lee R. Landrum, Partner
 Inception Date: November 2014
 Assigned Role: Full Mandate
 Benchmark: Credit Suisse Leveraged Loan Index
 Investment Style: Opportunistic Credit – Direct Lending

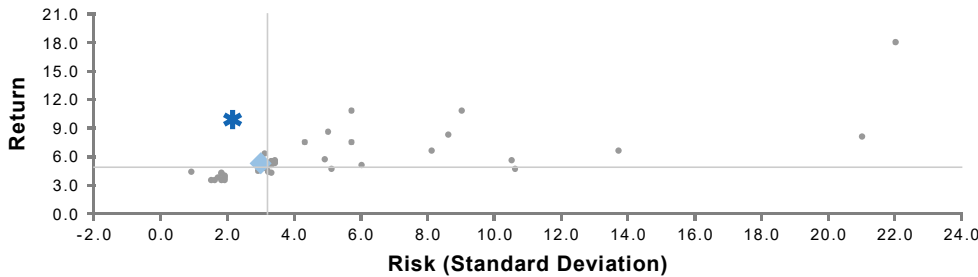
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Tennenbaum Capital*	273.9	1.85	8.45	8.85		8.32
CSFB Lev Loan Index 1 Month Lag		1.00	4.78	4.28		4.28

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	0.67	2.22	4.89	5.85
Number of Observations	48.00	49.00	46.00	43.00

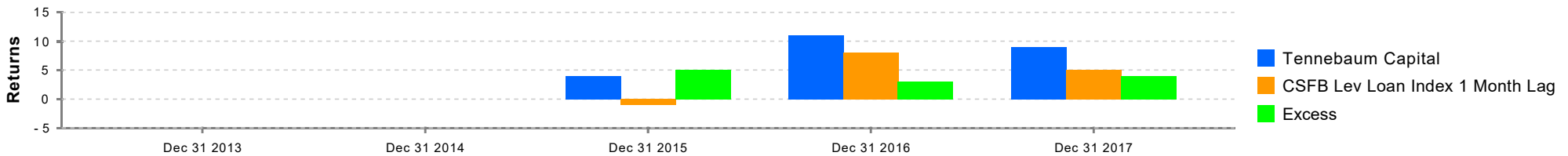
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
* Tennenbaum Capital	8.9 9	1.8 17
◆ CSFB Lev Loan Index 1 Month Lag	4.3 69	2.6 27
5th Percentile	10.5	1.4
25th Percentile	5.7	1.8
50th Percentile	4.9	3.2
75th Percentile	4.0	5.0
95th Percentile	3.2	17.3

* Tennenbaum Capital ◆ CSFB Lev Loan Index 1 Month Lag

Calendar Year Returns as of June 30, 2018



Universe data: U.S. Fixed Income Funds High Yield
 * One-month lag.

FIXED INCOME - OPPORTUNISTIC

WESTERN ASSET MANAGEMENT COMPANY

for the quarter ended June 30, 2018



Manager Profile

Firm: Western Asset Management Company
 Location: Pasadena, CA
 Year Founded: 1971
 Contact: Veronica Amici, Head of Public Funds
 Inception Date: February 2009
 Assigned Role: Full Mandate
 Benchmark: Western Opp. Custom Index
 Investment Style: Opportunistic - Structured Credit

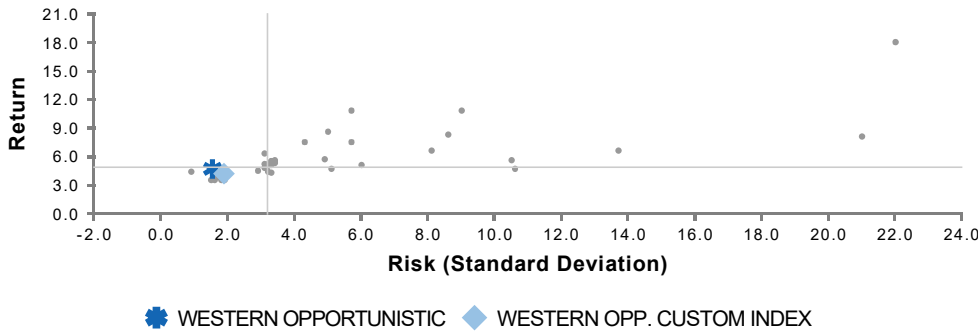
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Western Opportunistic	306.3	0.55	2.84	3.69	3.45	7.56
WESTERN OPP. CUSTOM INDEX		0.49	4.57	3.22	2.80	5.92

Universe

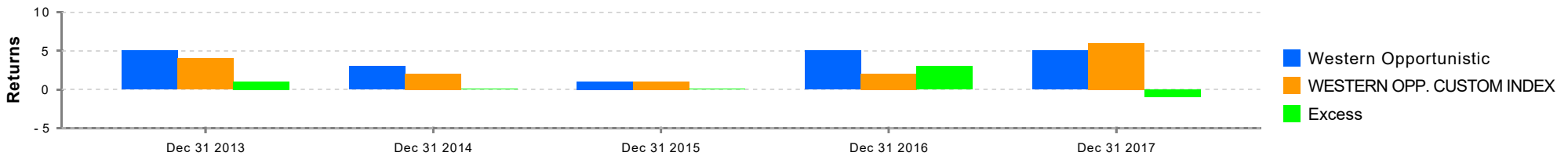
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	0.67	2.22	4.89	5.85
Number of Observations	48.00	49.00	46.00	43.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
WESTERN OPPORTUNISTIC	3.7 82	1.2 4
WESTERN OPP. CUSTOM INDEX	3.2 93	1.5 6
5th Percentile	10.5	1.4
25th Percentile	5.7	1.8
50th Percentile	4.9	3.2
75th Percentile	4.0	5.0
95th Percentile	3.2	17.3

Calendar Year Returns as of June 30, 2018



FIXED INCOME - CASH

J.P. MORGAN ASSET MANAGEMENT

for the quarter ended June 30, 2018



Manager Profile

Firm: J.P. Morgan Asset Management
 Location: New York, NY
 Year Founded: 1871
 Contact: Kyongsoo Noh (KNoh), Executive Director
 Inception Date: September 2012
 Assigned Role: Full Mandate
 Benchmark: FTSE 6-month T-Bill
 Investment Style: Enhanced Cash

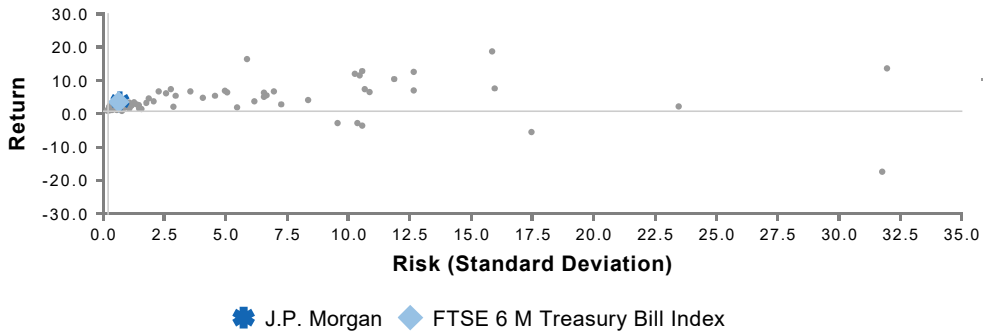
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
J.P. Morgan	1,445.1	0.53	1.49	1.03	0.78	0.72
FTSE 6 M Treasury Bill Index		0.44	1.35	0.71	0.45	0.41

Universe

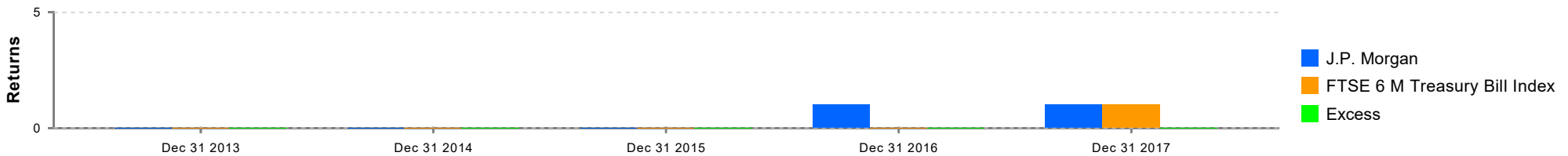
	1 Qtr	1 Year	3 Years	5 Years
Cash Funds				
Median	0.43	1.36	0.81	0.58
Number of Observations	274.00	256.00	233.00	173.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
J.P. Morgan	1.0 29	0.2 31
FTSE 6 M Treasury Bill Index	0.7 57	0.1 18
5th Percentile	6.5	0.0
25th Percentile	1.2	0.2
50th Percentile	0.8	0.2
75th Percentile	0.6	0.6
95th Percentile	0.0	10.4

Calendar Year Returns as of June 30, 2018



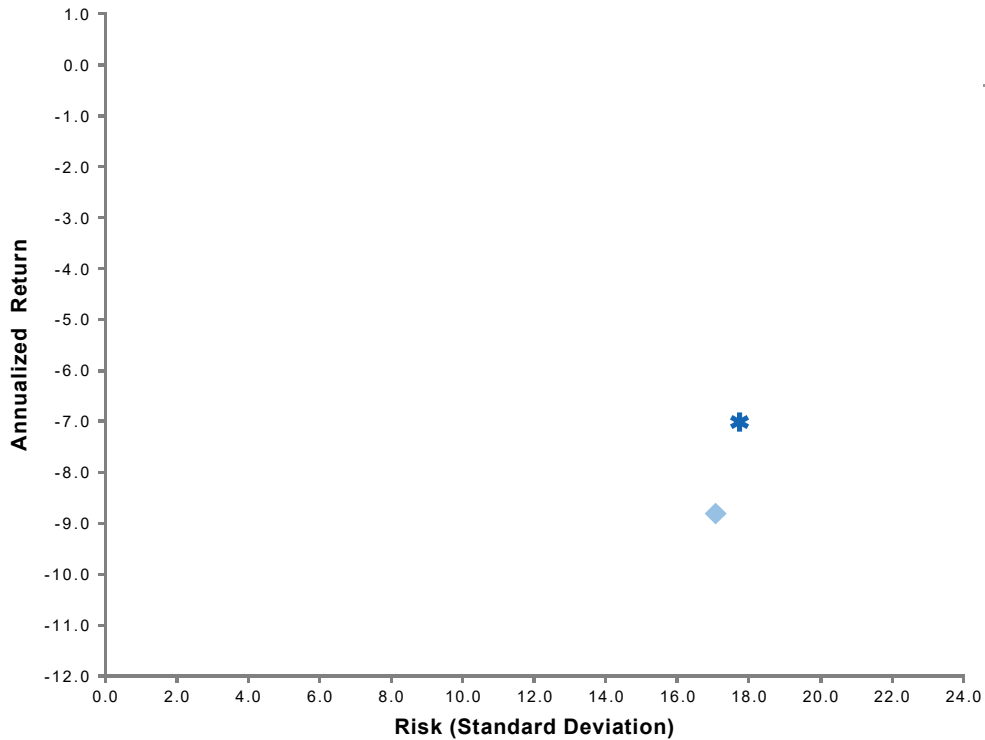
COMMODITIES

RISK ADJUSTED RETURN

for the quarter ended June 30, 2018



7 Year Risk vs Return



	Rate of Return 10 Years	Standard Deviation 10 Years
* COMMODITIES	-7.2	17.4
◆ Bloomberg Commodity Index Total Return	-9.0	16.7

* COMMODITIES ◆ Bloomberg Commodity Index Total Return

	<u>Rate of Return 10 Years</u>	<u>Standard Deviation 10 Years</u>	<u>Tracking Error 10 Years</u>
COMMODITIES	-7.2	17.4	2.1
Bloomberg Commodity Index Total Return	-9.0	16.7	

COMMODITIES

CREDIT SUISSE ASSET MANAGEMENT, LLC

for the quarter ended June 30, 2018



Manager Profile

Firm: Credit Suisse Asset Management, LLC
 Location: New York, NY
 Year Founded: 1935
 Contact: Nelson Louie, Managing Director
 Inception Date: March 2011
 Assigned Role: Commodities
 Benchmark: Bloomberg Commodity Index Total Return
 Investment Style: Active Commodities

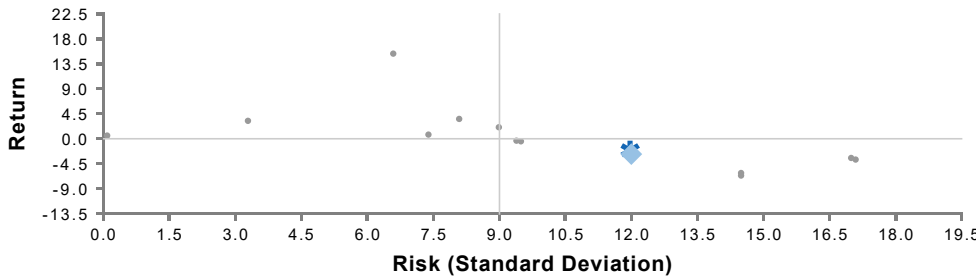
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Credit Suisse Commodity	455.6	0.19	6.65	-3.76	-5.74	-7.47
Bloomberg Commodity Index Total Return		0.40	7.35	-4.54	-6.40	-8.08

Universe

	1 Qtr	1 Year	3 Years	5 Years
Commodity Funds				
Median	0.90	7.32	0.00	-0.64
Number of Observations	30.00	28.00	13.00	7.00

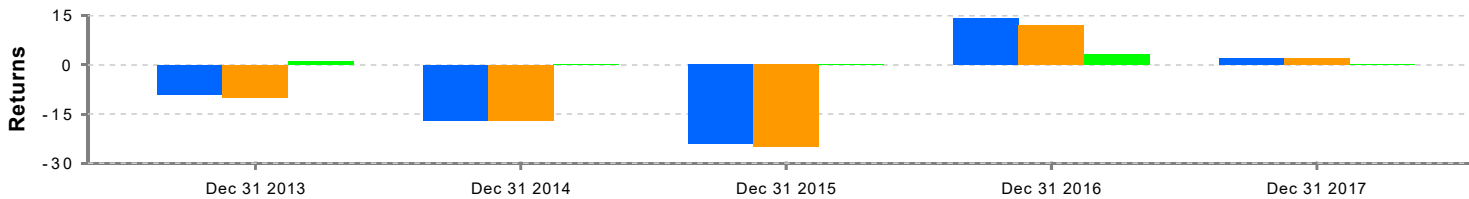
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
* CREDIT SUISSE COMMODITY	-3.8 72	11.7 68
◆ Bloomberg Commodity Index Total Return	-4.5 80	11.7 68
5th Percentile	14.8	0.0
25th Percentile	2.2	4.6
50th Percentile	0.0	9.0
75th Percentile	-4.2	14.4

* CREDIT SUISSE COMMODITY ◆ Bloomberg Commodity Index Total Return

Calendar Year Returns as of June 30, 2018



■ Credit Suisse Commodity
 ■ Bloomberg Commodity Index Total Return
 ■ Excess

COMMODITIES

NEUBERGER BERMAN ALTERNATIVE FUND MANAGEMENT LLC/GRESHAM

for the quarter ended June 30, 2018



Manager Profile

Firm: Neuberger Berman/Gresham
 Location: New York, NY
 Year Founded: 1850/1987
 Contact: Jonathan Spencer, President (Gresham)
 Inception Date: July 2007
 Assigned Role: Commodities
 Benchmark: Bloomberg Commodity Index Total Return
 Investment Style: Active Commodities

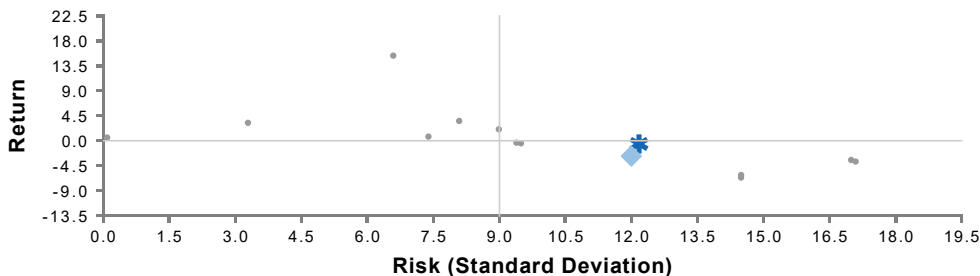
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Neuberger Berman/Gresham	482.2	2.31	13.86	-2.26	-4.56	-3.15
Bloomberg Commodity Index Total Return		0.40	7.35	-4.54	-6.40	-5.31

Universe

	1 Qtr	1 Year	3 Years	5 Years
Commodity Funds				
Median	0.90	7.32	0.00	-0.64
Number of Observations	30.00	28.00	13.00	7.00

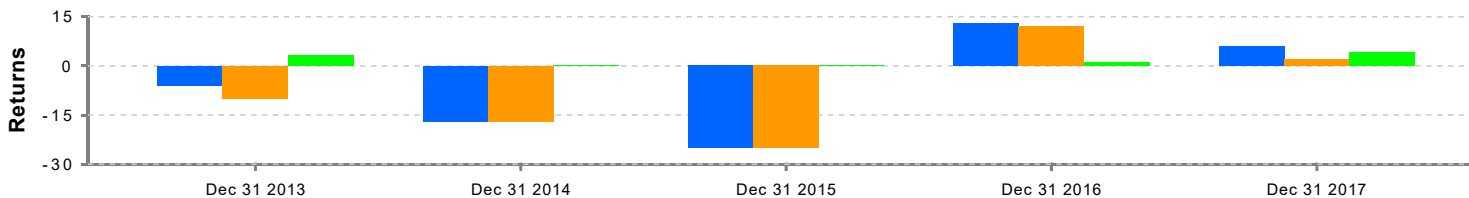
3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
NEUBERGER BERMAN/GRESHAM	-2.3 68	11.9 68
Bloomberg Commodity Index Total Return	-4.5 80	11.7 68
5th Percentile	14.8	0.0
25th Percentile	2.2	4.6
50th Percentile	0.0	9.0
75th Percentile	-4.2	14.4

NEUBERGER BERMAN/GRESHAM (Blue Asterisk) Bloomberg Commodity Index Total Return (Blue Diamond)

Calendar Year Returns as of June 30, 2018



Blue: Neuberger Berman/Gresham
 Orange: Bloomberg Commodity Index Total Return
 Green: Excess

COMMODITIES

PACIFIC INVESTMENT MANAGEMENT COMPANY

for the quarter ended June 30, 2018



Manager Profile

Firm: Pacific Investment Management Company
 Location: Newport Beach, CA
 Year Founded: 1971
 Contact: Stephanie King, Executive Vice President
 Inception Date: July 2007
 Assigned Role: Commodities
 Benchmark: Bloomberg Commodity Index Total Return
 Investment Style: Active Commodities

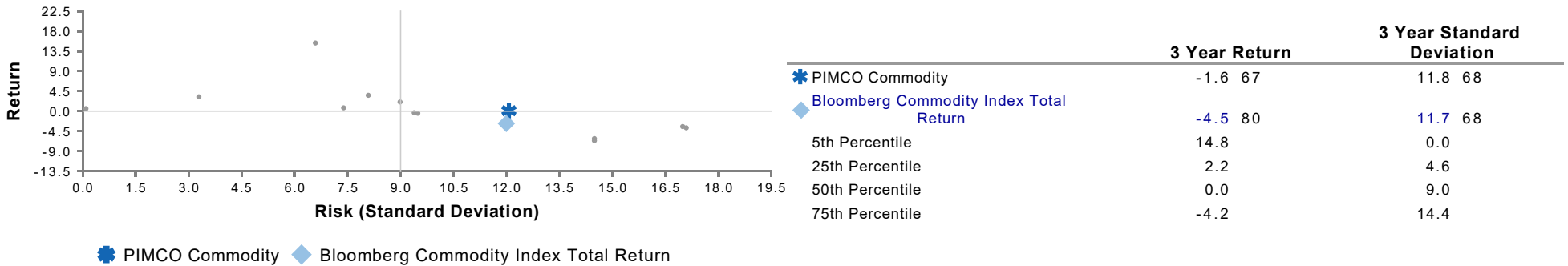
Manager vs. Benchmark: Return through June 30, 2018 (not annualized if less than 1 year)

	Ending Mkt Val (\$mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
PIMCO Commodity	472.7	0.35	10.39	-1.57	-3.86	-3.33
Bloomberg Commodity Index Total Return		0.40	7.35	-4.54	-6.40	-5.31

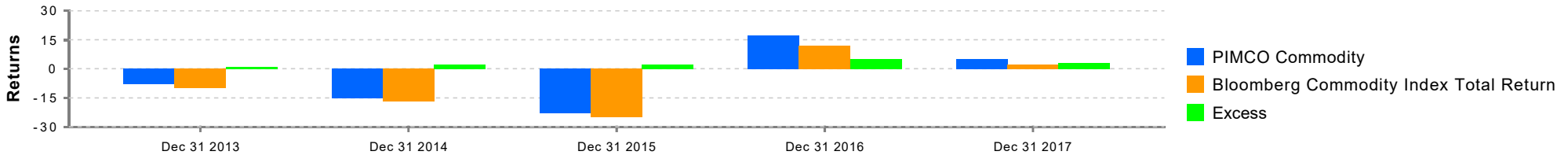
Universe

	1 Qtr	1 Year	3 Years	5 Years
Commodity Funds				
Median	0.90	7.32	0.00	-0.64
Number of Observations	30.00	28.00	13.00	7.00

3 Year Risk vs Return



Calendar Year Returns as of June 30, 2018



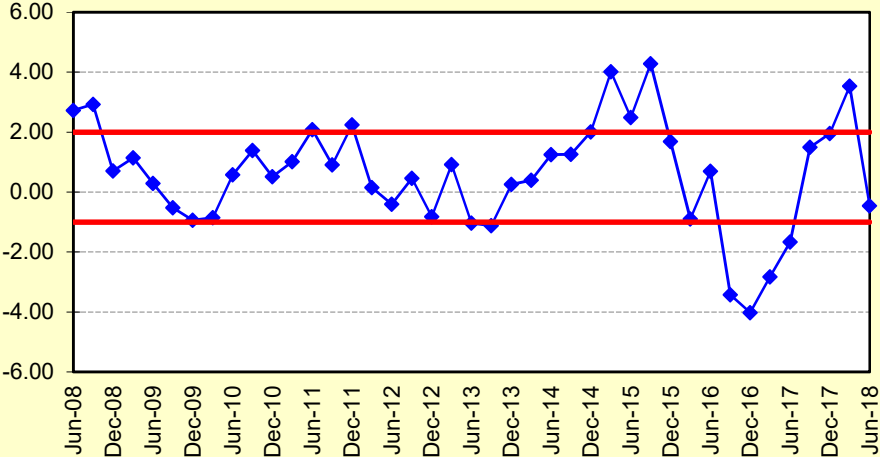
U.S. EQUITY - LARGE CAP

ONE-YEAR ROLLING EXCESS RETURNS

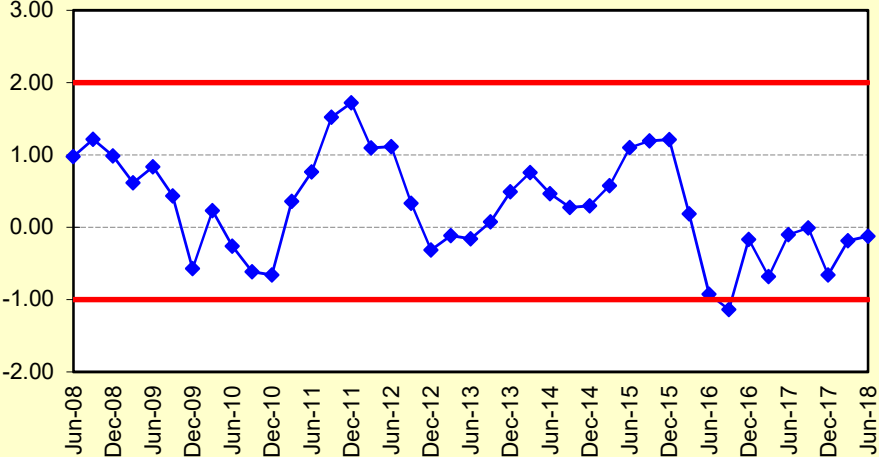
for the quarter ended June 30, 2018



INTECH



Twin Capital



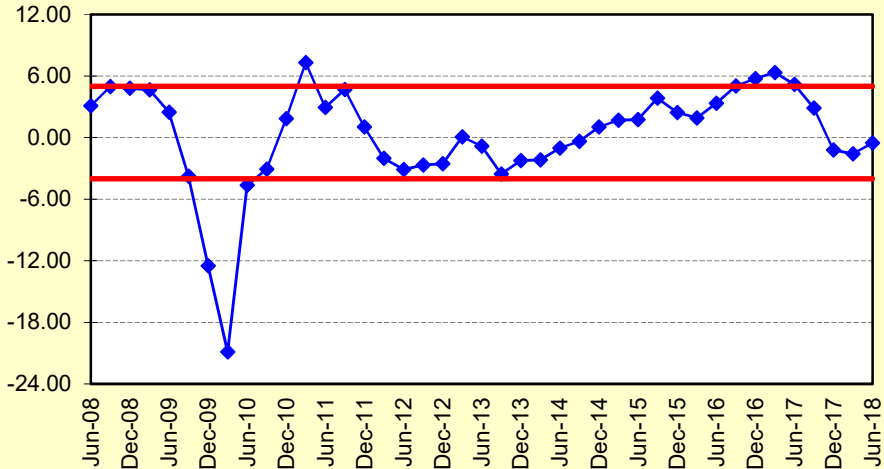
U.S. EQUITY - SMALL/MID CAP

ONE-YEAR ROLLING EXCESS RETURNS

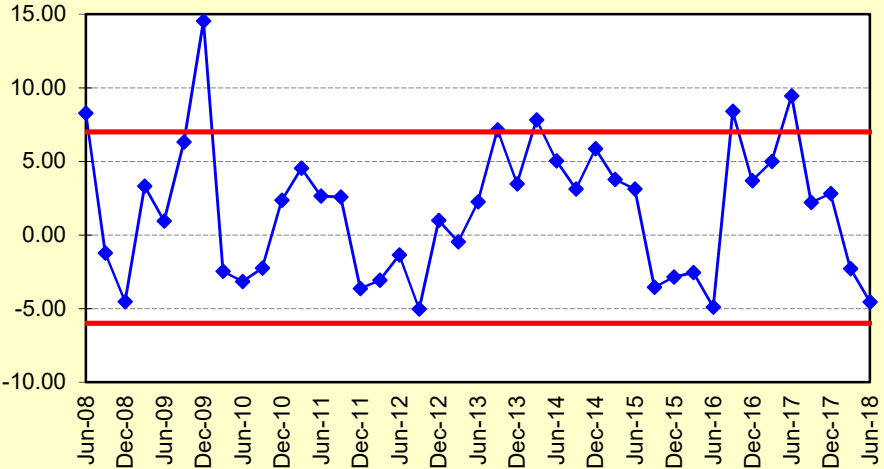
for the quarter ended June 30, 2018



Eagle



Frontier



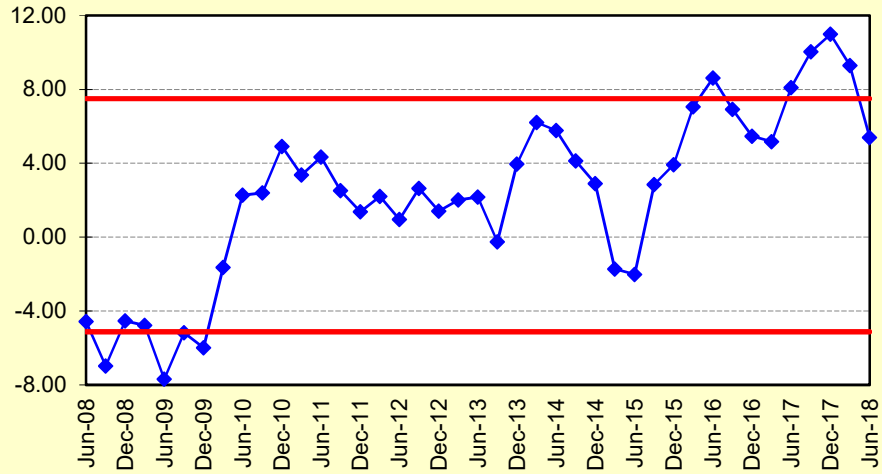
NON-U.S. EQUITY

ONE-YEAR ROLLING EXCESS RETURNS

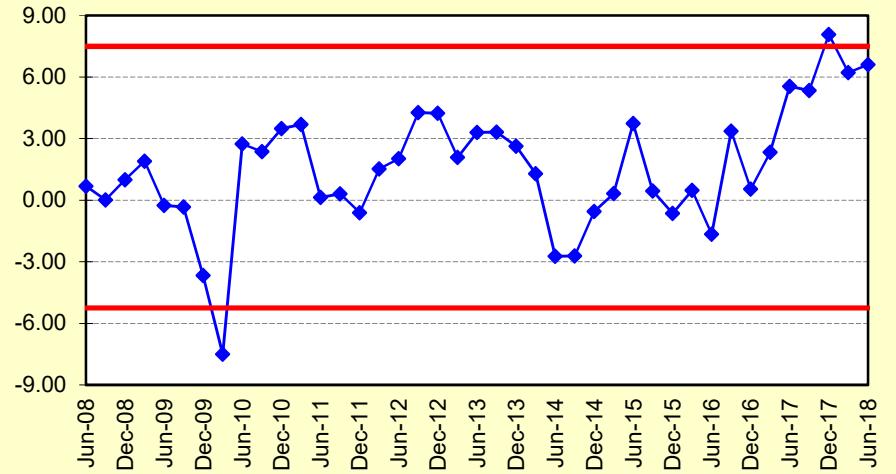
for the quarter ended June 30, 2018



Acadian



Capital Guardian Non-U.S.



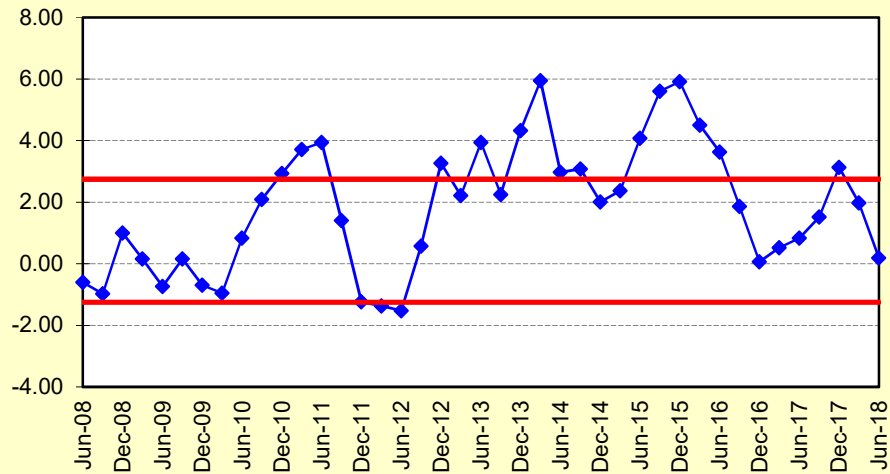
NON-U.S. EQUITY - PACIFIC BASIN & EUROPE

ONE-YEAR ROLLING EXCESS RETURNS

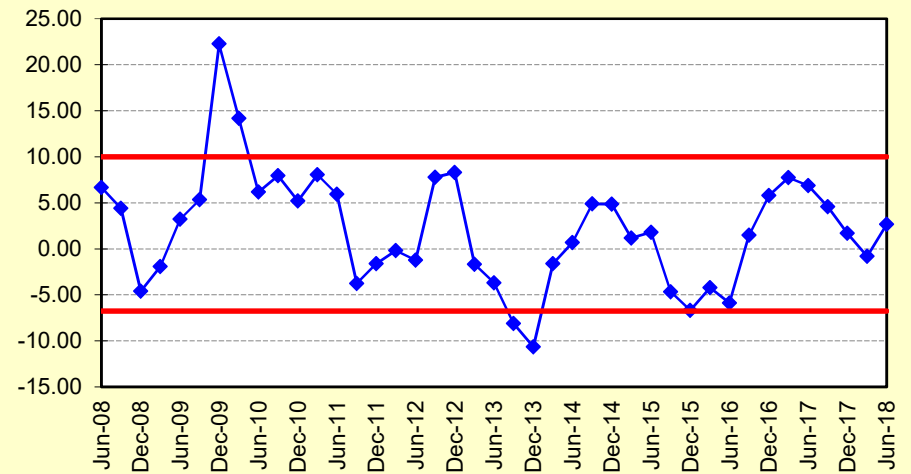
for the quarter ended June 30, 2018



BTC Europe Alpha Tilts



GAM



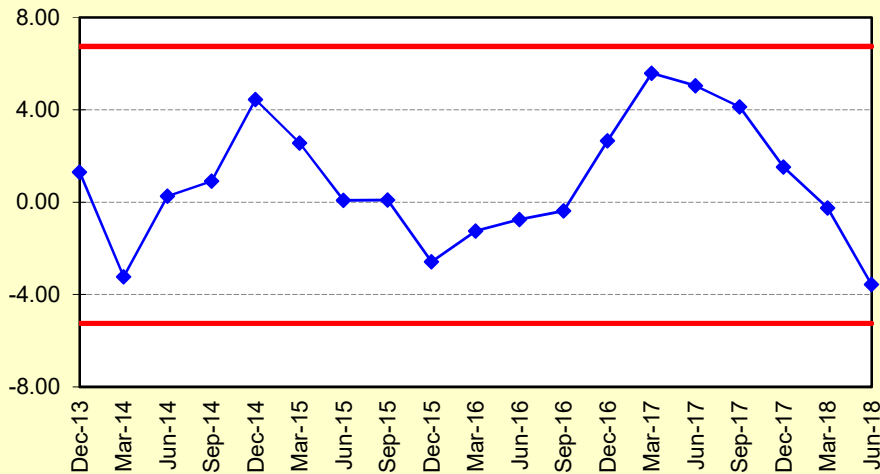
NON-U.S. EQUITY - EMERGING MARKETS

ONE-YEAR ROLLING EXCESS RETURNS

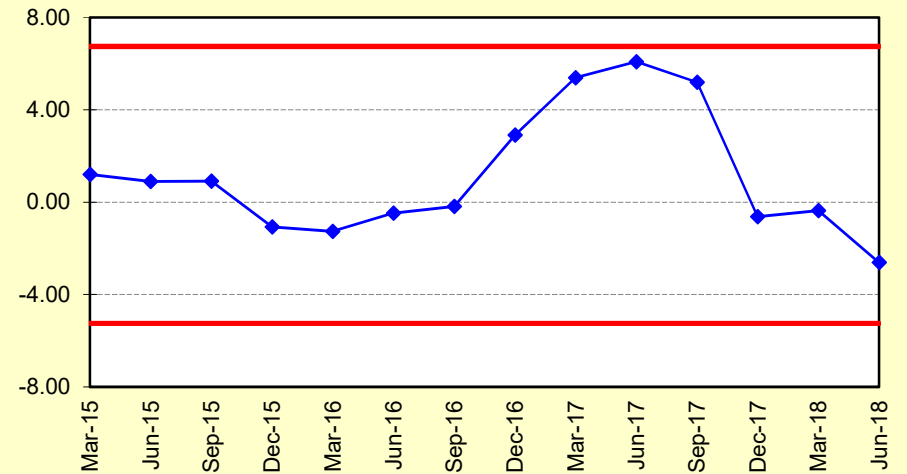
for the quarter ended June 30, 2018



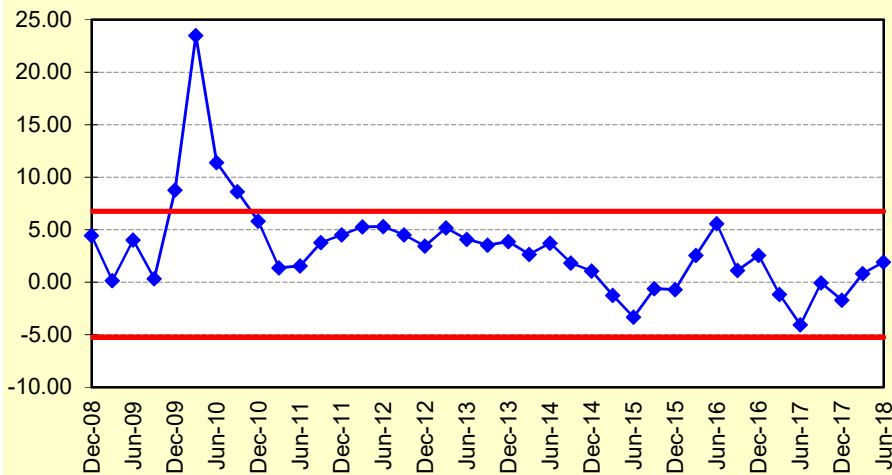
Acadian Emerging



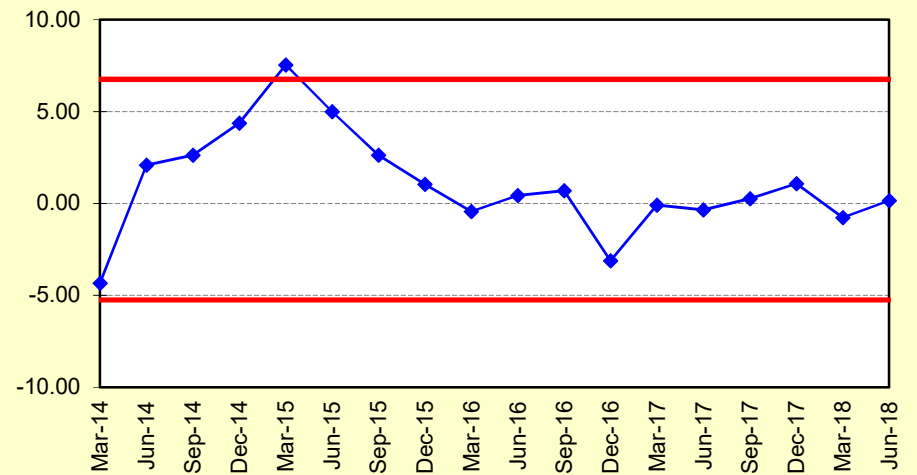
AQR



Genesis



Lazard



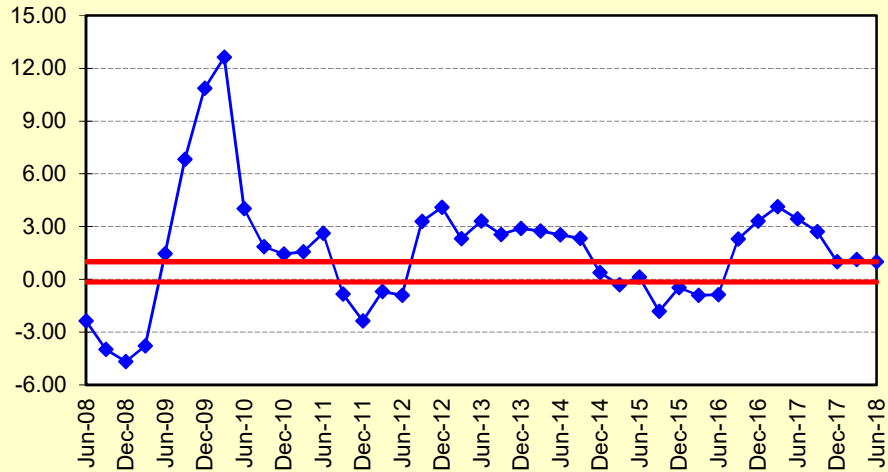
FIXED INCOME - CORE

ONE-YEAR ROLLING EXCESS RETURNS

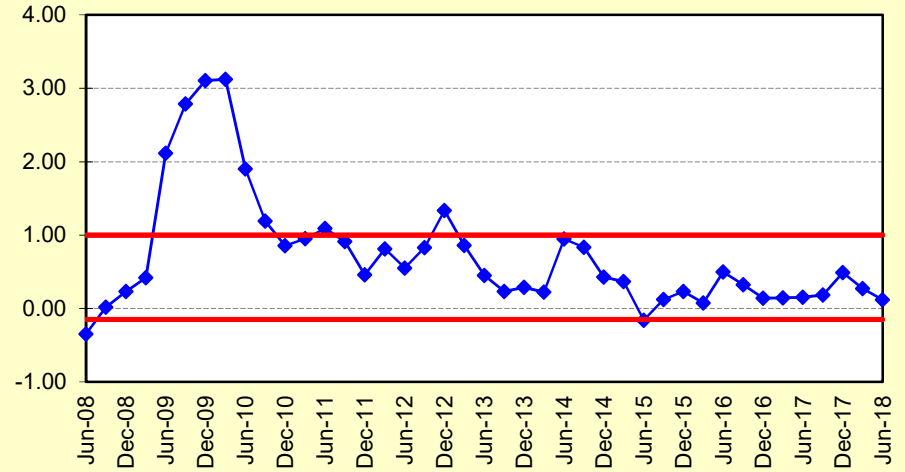
for the quarter ended June 30, 2018



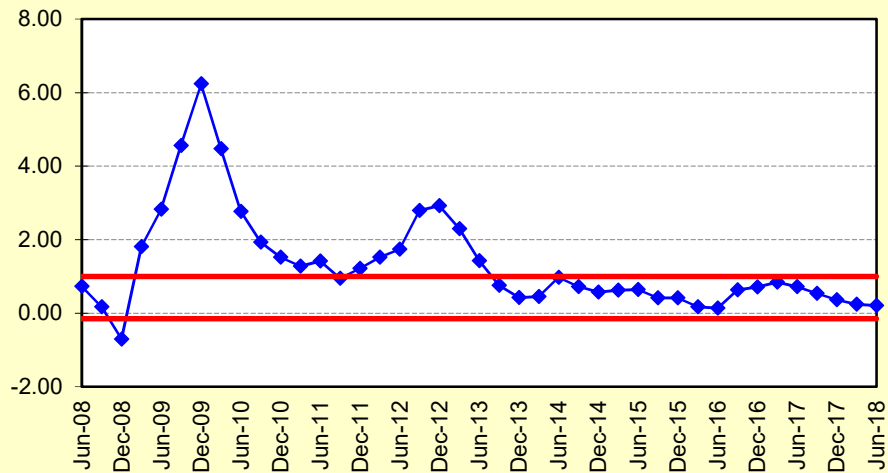
Dodge & Cox



Pugh Capital (Emerging)



Wells Capital



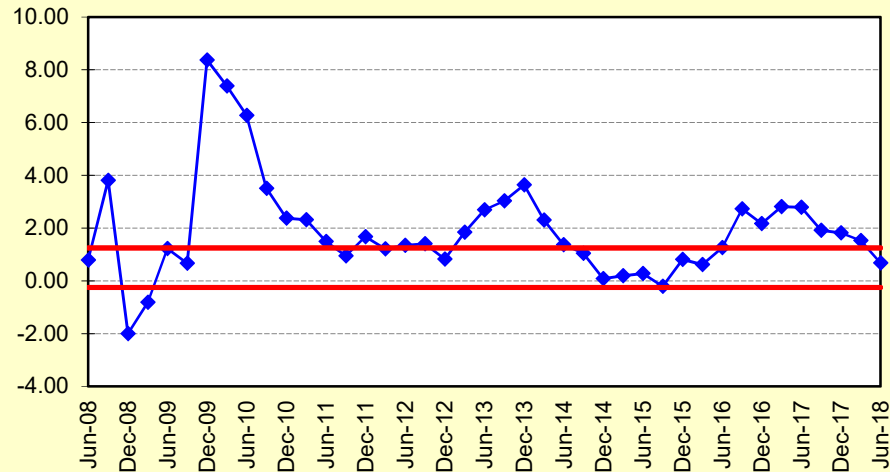
FIXED INCOME - CORE PLUS

ONE-YEAR ROLLING EXCESS RETURNS

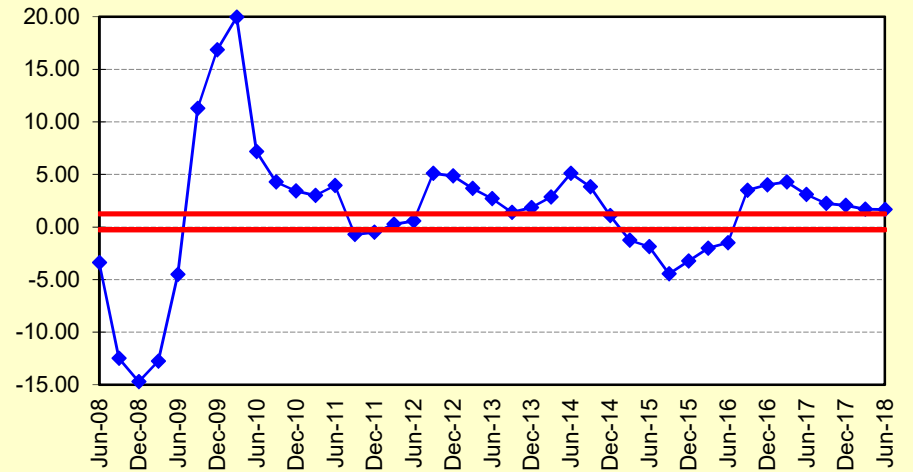
for the quarter ended June 30, 2018



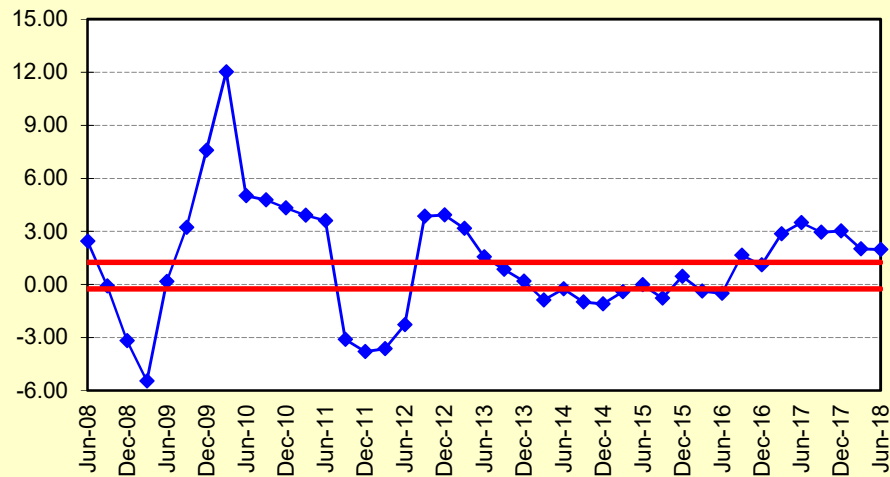
Dolan McEnery (Emerging)



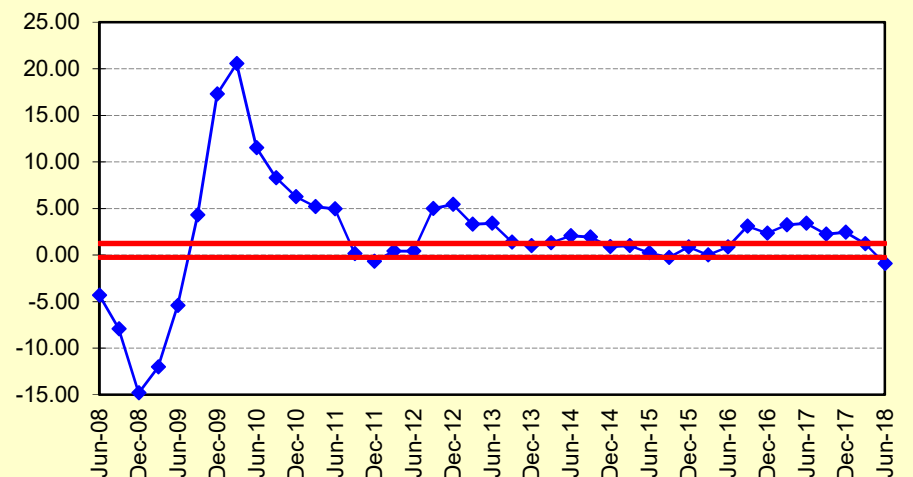
Loomis, Sayles



PIMCO



Western Asset - Core Plus



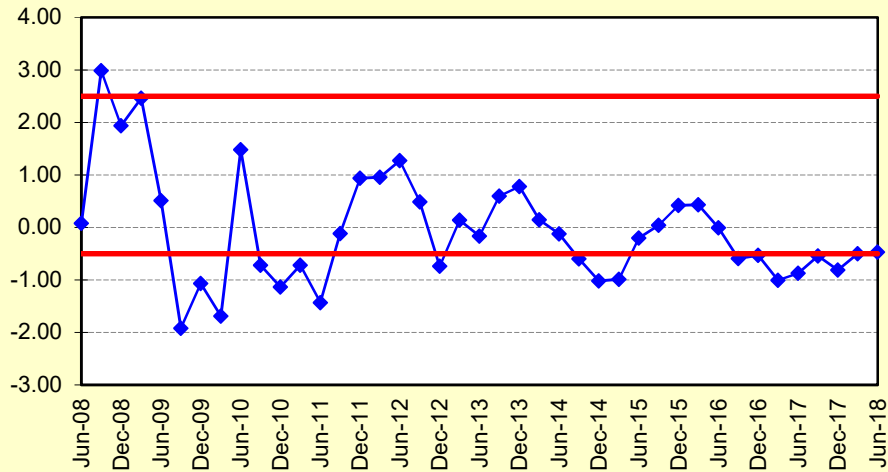
FIXED INCOME - HIGH YIELD

ONE-YEAR ROLLING EXCESS RETURNS

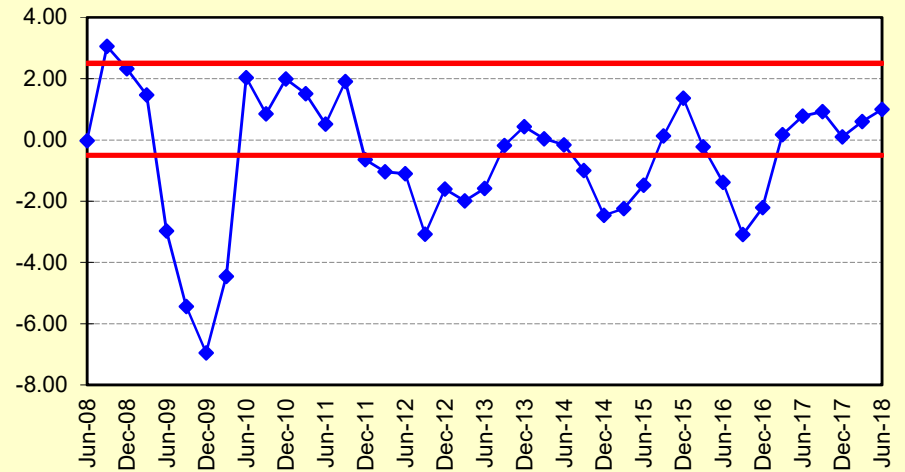
for the quarter ended June 30, 2018



Oaktree Capital



PENN Capital (Emerging)



FIXED INCOME - OPPORTUNISTIC

ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended June 30, 2018



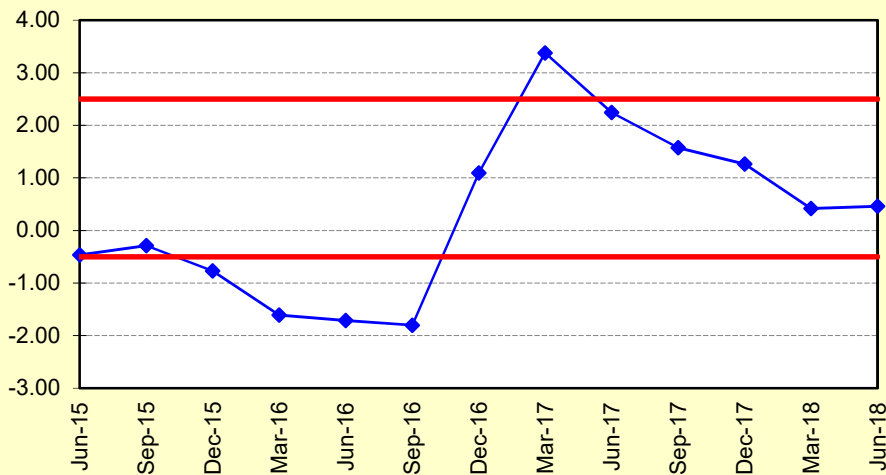
Aberdeen

Insufficient Data

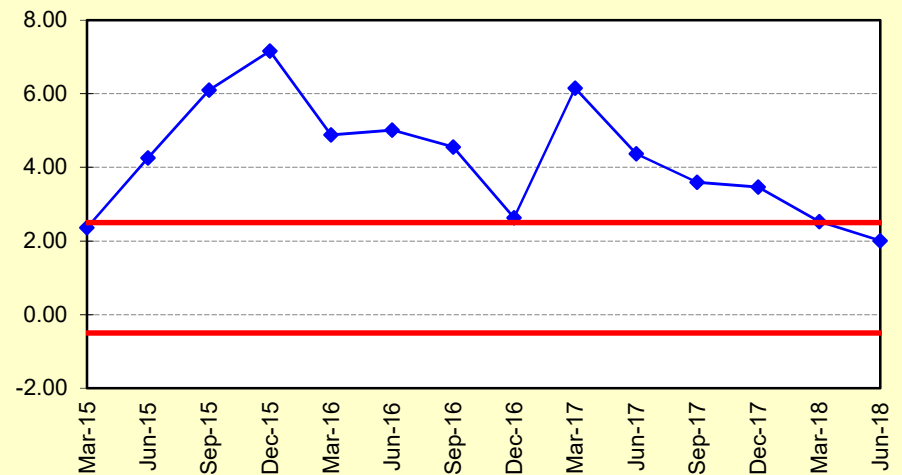
Ashmore

Insufficient Data

Bain Capital



Beach Point



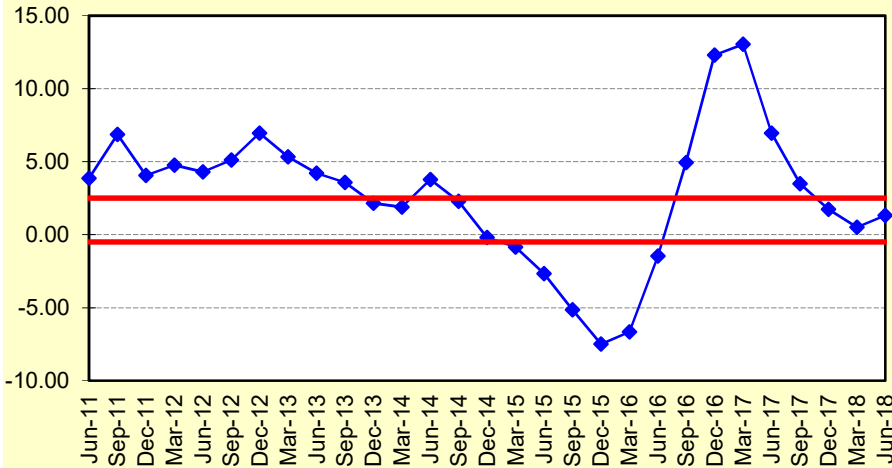
FIXED INCOME - OPPORTUNISTIC

ONE-YEAR ROLLING EXCESS RETURNS

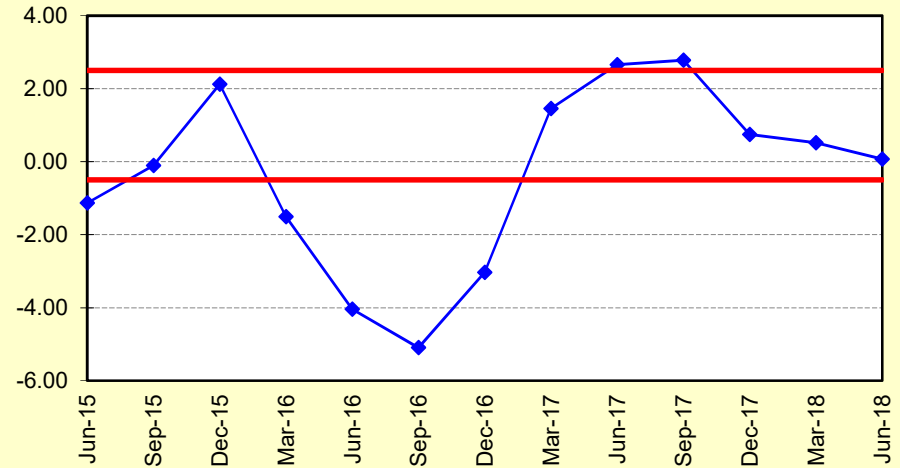
for the quarter ended June 30, 2018



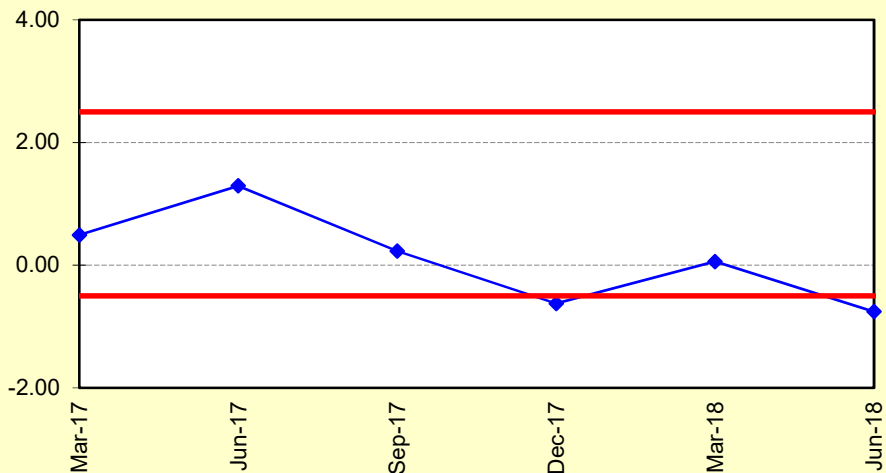
Brigade Capital



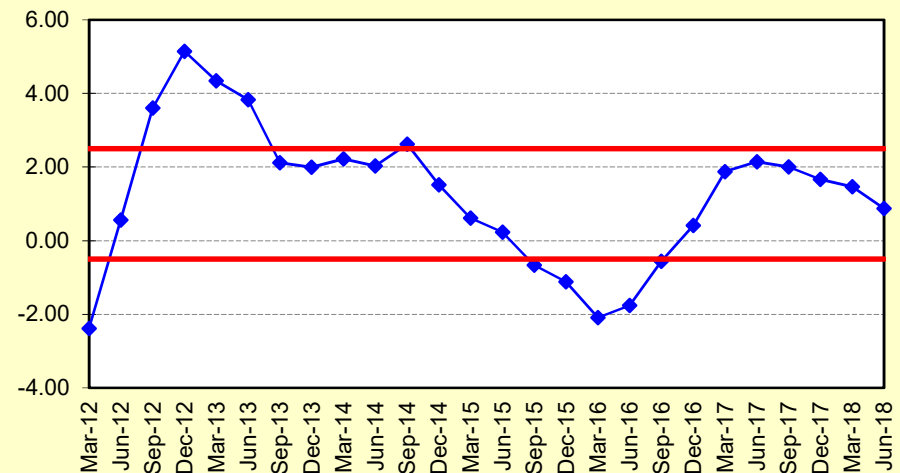
Crescent



DoubleLine



Principal Global Investors - Opportunistic



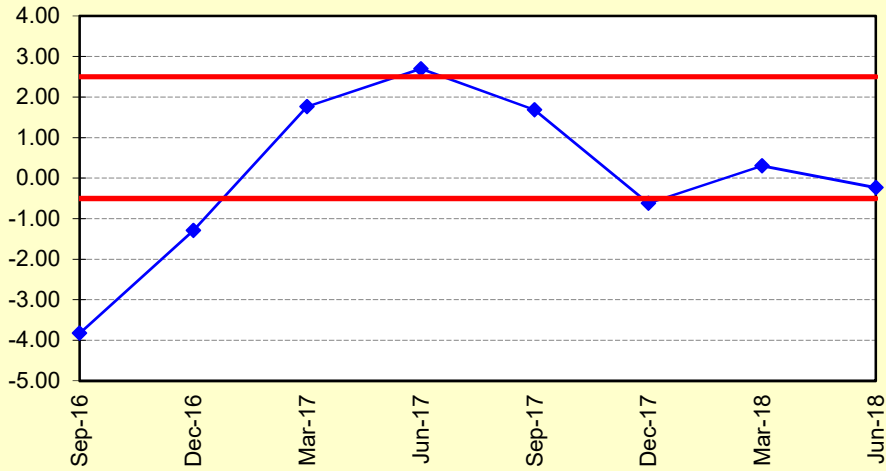
FIXED INCOME - OPPORTUNISTIC

ONE-YEAR ROLLING EXCESS RETURNS

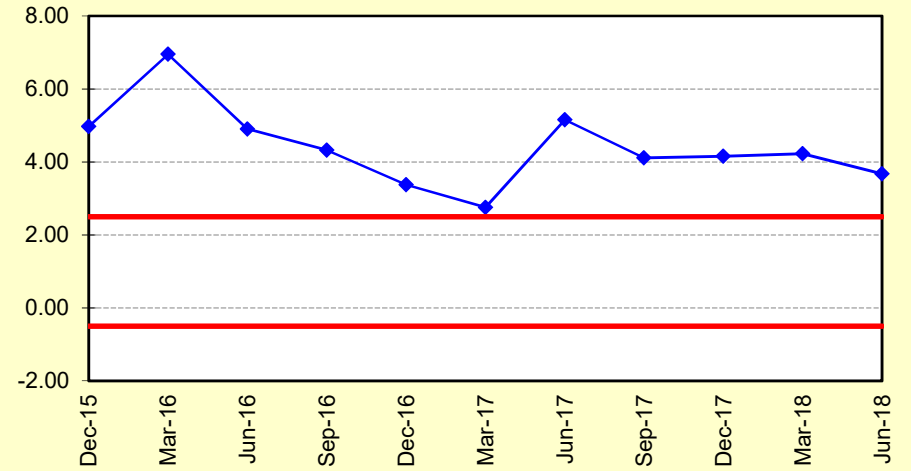
for the quarter ended June 30, 2018



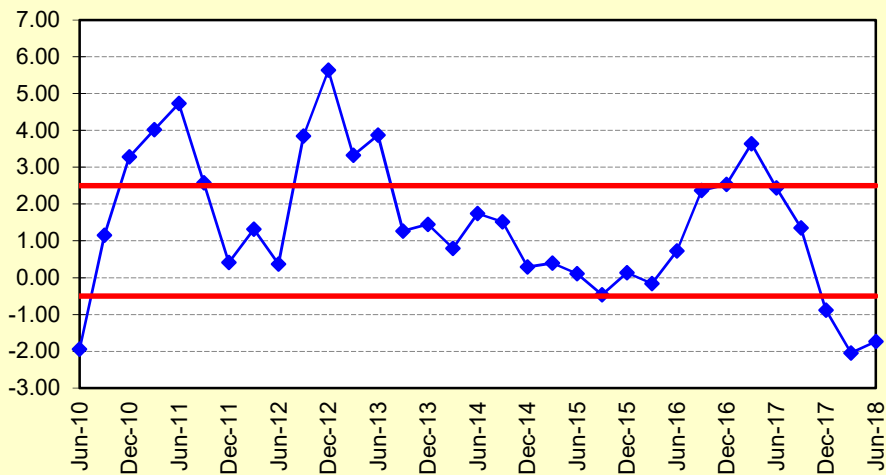
TCW



Tennenbaum



Western - Opportunistic



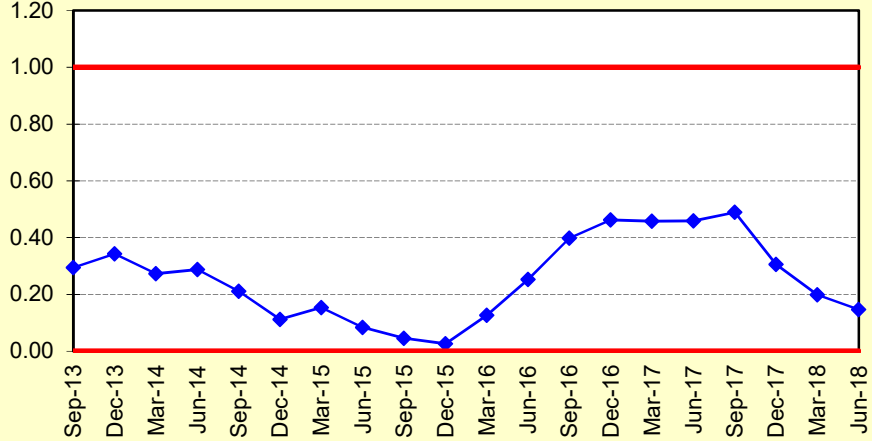
FIXED INCOME - CASH

ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended June 30, 2018



J.P. Morgan Asset Management



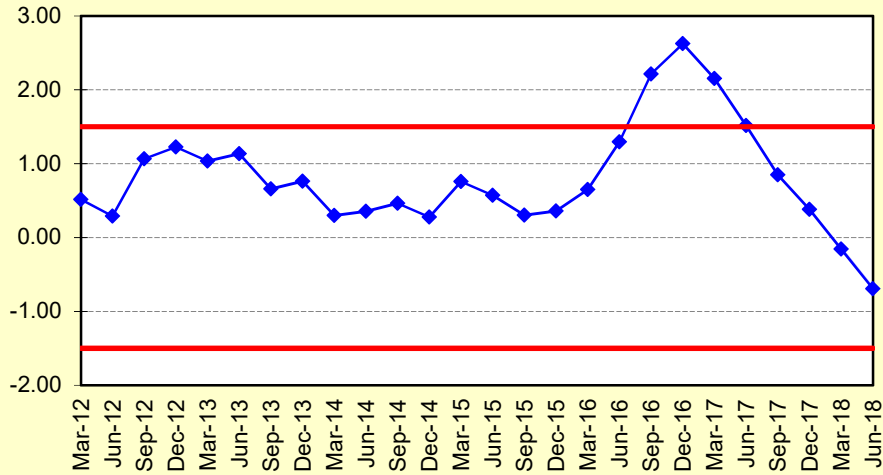
COMMODITIES

ONE-YEAR ROLLING EXCESS RETURNS

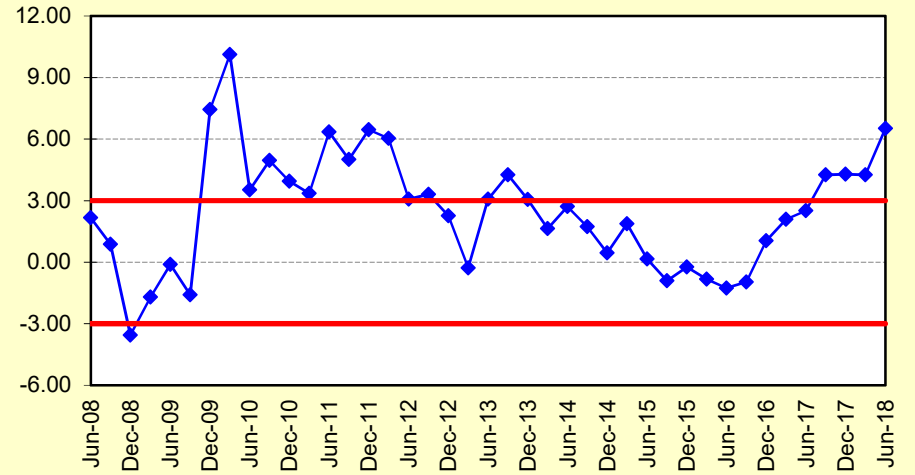
for the quarter ended June 30, 2018



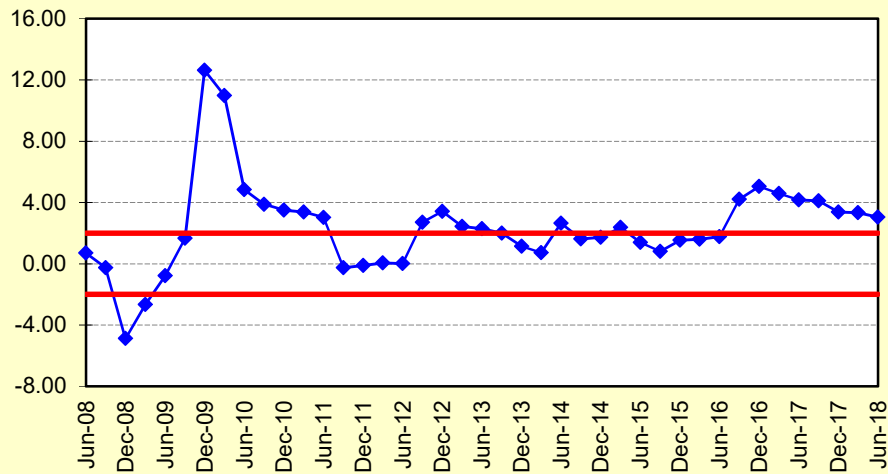
Credit Suisse



Neuberger Berman/Gresham



PIMCO



ESTIMATED FEES¹

EQUITIES

for the quarter ended June 30, 2018



<u>U.S. EQUITY</u>	<u>Avg. Market Value (Millions)</u>	<u>Fees</u>	<u>Annualized Effective Rate</u>
Active			
Eagle Asset Mgmt.	\$355.1	\$468,874	52.8 bps
Frontier Capital Mgmt.	\$691.1	\$1,295,757	75.0 bps
INTECH	\$876.5	\$489,978	22.4 bps
JANA Partners ²	\$102.7	\$300,000	100.0 bps
Twin Capital Mgmt.	\$535.4	\$200,760	15.0 bps
Subtotal:	\$2,561	\$2,755,369	43.0 bps
Passive			
BTC Russell 3000 Index ³	\$10,254.7	\$256,368	1.0 bps
Subtotal:	\$10,255	\$256,368	1.0 bps
Total U.S. Equity:	\$12,815.5	\$3,011,738	9.4 bps

¹ Estimations may not match net-of-fee returns on "Annualized Total Returns" pages; reflects investment management fee only.

² Fees are based on committed capital of \$120 million.

³ The BlackRock Russell 1000 and Russell 2000 index funds were consolidated into the Russell 3000 at the end of June 30, 2018.

ESTIMATED FEES¹

EQUITIES

for the quarter ended June 30, 2018



<u>NON-U.S. EQUITY</u>	<u>Avg. Market Value (Millions)</u>	<u>Fees</u>	<u>Annualized Effective Rate</u>
Active			
Acadian Asset Mgmt.	\$901.8	\$839,117	37.2 bps
Acadian Emrg. Markets	\$415.9	\$485,629	46.7 bps
AQR Capital Mgmt.	\$262.1	\$464,079	70.8 bps
BTC Europe Alpha Tilts	\$993.9	\$1,006,379	40.5 bps
Capital Guardian	\$371.5	\$330,874	35.6 bps
Cevian Capital	\$301.4	\$1,174,251	155.8 bps
GAM International Mgmt.	\$870.4	\$914,164	42.0 bps
Genesis Investment Mgmt.	\$699.2	\$1,233,458	70.6 bps
Lazard Asset Mgmt.	\$357.6	\$669,478	74.9 bps
Symphony Financial	\$141.7	\$256,731	72.5 bps
Subtotal:	\$5,316	\$7,374,160	55.5 bps
Passive			
BTC Canada Index IMI	\$710.6	\$26,648	1.5 bps
BTC EAFE Index IMI	\$4,779.0	\$179,211	1.5 bps
BTC EAFE Small Cap Index	\$210.8	\$21,081	4.0 bps
BTC Emerging Markets Index	\$1,238.6	\$278,690	9.0 bps
BTC Emrg. Mkt. Small Cap Index	\$143.4	\$71,688	20.0 bps
BTC Europe Index	\$378.8	\$9,374	1.0 bps
Subtotal:	\$7,461	\$586,693	3.1 bps
Total Non-U.S. Equity:	\$12,776.8	\$7,960,853	24.9 bps
Currency Hedge			
50% Developed Mkt. Currency Hedge	\$9,566.3	\$358,735	1.5 bps

¹ Estimations may not match net-of-fee returns on "Annualized Total Returns" pages; reflects investment management fee only.

ESTIMATED FEES¹

FIXED INCOME

for the quarter ended June 30, 2018



<u>FIXED INCOME</u>	<u>Avg. Market Value (Millions)</u>	<u>Fees</u>	<u>Annualized Effective Rate</u>
Core			
BTC US Debt Index	\$3,605.5	\$89,235	1.0 bps
Dodge & Cox	\$1,283.3	\$316,030	9.9 bps
Pugh Capital Mgmt.	\$134.6	\$62,974	18.7 bps
Wells Capital Mgmt.	\$1,335.9	\$379,494	11.4 bps
Subtotal:	\$6,359	\$847,733	5.3 bps
Core Plus			
Dolan McEniry Capital Mgmt.	\$343.6	\$221,024	25.7 bps
Loomis Sayles	\$1,075.1	\$345,649	12.9 bps
PIMCO	\$1,048.8	\$542,516	20.7 bps
Western Asset Mgmt.	\$1,121.1	\$365,140	13.0 bps
Subtotal:	\$3,589	\$1,474,330	16.4 bps
High Yield			
Oaktree Capital Mgmt.	\$404.8	\$401,486	39.7 bps
PENN Capital Mgmt.	\$108.9	\$122,566	45.0 bps
Subtotal:	\$514	\$524,052	40.8 bps
Opportunistic			
Aberdeen	\$199.2	\$198,597	39.9 bps
Ashmore	\$201.7	\$342,560	67.9 bps
Bain Capital	\$304.7	\$495,064	65.0 bps
Beach Point Capital	\$387.9	\$1,147,706	118.3 bps
Brigade Capital Mgmt.	\$495.0	\$928,210	75.0 bps
Crescent Capital Group	\$272.9	\$378,653	55.5 bps
Doubleline Capital	\$267.4	\$501,298	75.0 bps
Principal Global Investors	\$266.4	\$92,425	13.9 bps
TCW	\$273.1	\$403,882	59.2 bps
Tennenbaum Capital Partners	\$272.9	\$621,534	91.1 bps
Western Asset Mgmt.	\$306.1	\$38,258	5.0 bps
Subtotal:	\$3,247	\$5,148,186	63.4 bps
Total Fixed Income:	\$13,708.9	\$7,994,301	23.3 bps
Cash			
J.P. Morgan Asset Mgmt.	\$1,656.6	\$207,080	5.0 bps

¹ Estimations may not match net-of-fee returns on "Annualized Total Returns" pages; reflects investment management fee only.

ESTIMATED FEES¹

COMMODITIES

for the quarter ended June 30, 2018



<u>COMMODITIES</u>	<u>Avg. Market Value (Millions)</u>	<u>Fees</u>	<u>Annualized Effective Rate</u>
Credit Suisse	\$464.9	\$301,459	25.9 bps
Neuberger Berman/Gresham	\$487.8	\$456,657	37.4 bps
PIMCO	\$481.5	\$435,851	36.2 bps
Total Commodities:	\$1,434	\$1,193,967	33.3 bps

¹ Estimations may not match net-of-fee returns on "Annualized Total Returns" pages; reflects investment management fee only.

ALLOCATION RANGES

STRATEGIC vs. ACTUAL

for the quarter ended June 30, 2018



U.S. EQUITY:

Mandate	Strategic Allocation Range	Actual Allocation
Passive	35-75%	76.3%
Low Risk	0-25%	10.8%
Moderate/High Risk	10-30%	12.8%

U.S. Equity Managers:

Passive – BTC Russell 3000.

Low Risk – INTECH, Twin Capital.

Moderate/High Risk – JANA, Eagle, Frontier, QMA, Systematic.

NON-U.S. EQUITY:

Mandate	Strategic Allocation Range	Actual Allocation
Passive Non-U.S.	40-70%	58.3%
Active Non-U.S.	0-40%	10.1%
Active Regional	0-20%	18.4%
Active Emerging Markets	10-30%	13.2%

Non-U.S. Equity Managers:

Passive – BTC Canada IMI, BTC EAFE IMI, BTC Emerging Markets, BTC EAFE - Euro Cons, BTC EAFE Small Cap, BTC Emrg Mkt Small Cap.

Non-U.S. Developed – Acadian, Capital Guardian.

Regional Developed – BTC Europe Tilts, Cevian Capital, Global Asset Management, Symphony Financial.

Emerging Markets – Acadian Emerging, AQR, Genesis, Lazard.

	Market Value (In Millions)	% of Total Market Value
50% Passive Currency Hedge Overlay	\$ 4,676	49.4%
Total Non-US Developed Markets	\$ 9,436	

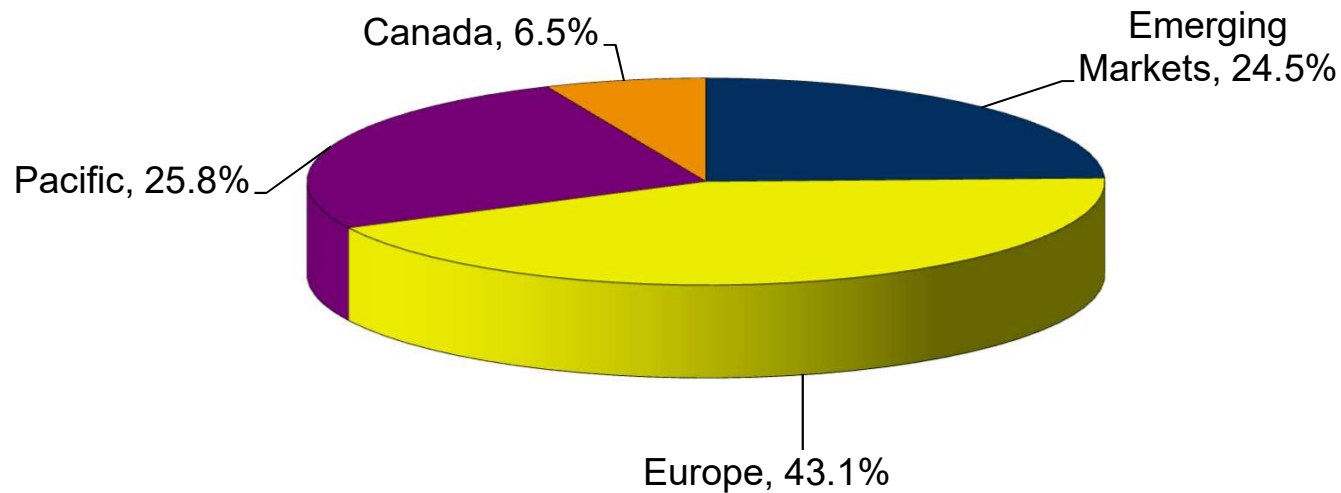
ALLOCATION RANGES

STRATEGIC vs. ACTUAL (Cont'd)

for the quarter ended June 30, 2018



	Non-U.S. Composite	ACWI X U.S. IMI Net	Difference
Emerging Markets	24.5%	24.3%	0.2%
Europe	43.1%	43.5%	-0.3%
Pacific	25.8%	25.6%	0.3%
Canada	6.5%	6.7%	-0.2%
	100.0%	100.0%	0.0%



ALLOCATION RANGES

STRATEGIC vs. ACTUAL

for the quarter ended June 30, 2018



FIXED INCOME STRUCTURE:

Strategy	Strategic Allocation Range	Actual Allocation	Strategic Target
Core ¹	35-55%	47.4%	45%
Core Plus	15-35%	25.7%	25%
Opportunistic & High Yield	20-40%	26.9%	30%

CASH:

Strategy	Strategic Allocation Range	Actual Allocation	Strategic Target
Cash	0-4%	1.8%	2%

COMMODITIES STRUCTURE:

Strategy	Strategic Allocation Range	Actual Allocation	Strategic Target
Commodities	0-4.8%	2.5%	2.8%

¹ Includes Member Home Loan Program (MHLP).

Glossary

A

Alpha: Alpha is an estimate of the contribution to investment performance attributable to the manager's selection of securities. It is calculated by subtracting the manager's return from the benchmark return.

Annual Return: The total return of a security over a specified period, expressed as an annual rate of interest.

Annualized: A figure (as in a percentage) calculated by a formula to find the "average" performance per year for a period greater than one year.

B

Barbell Strategy: Fixed income portfolio structuring technique using a mix of short and long-term securities to achieve a targeted average maturity or duration.

BBG BC (Bloomberg Barclays) U.S. Universal Index: The Barclays U.S. Universal Index represents the union of the U.S. Aggregate Index, U.S. Corporate High-Yield, Investment Grade 144A Index, Eurodollar Index, U.S. Emerging Markets Index, and the non-ERISA eligible portion of the CMBS Index.

Basis Points (bps): One one-hundredth of one percent. One hundred basis points equal one percent.

Bear Market: A market characterized by a trend of falling prices.

Bearish: Pessimistic about the market; anticipating a decline in prices

Beta: A measure of the volatility of a stock relative to the overall market. A beta of less than one indicates lower risk than the market; a beta of more than one indicates higher risk than the market.

Brigade Custom Index: 50% Barclays U.S. Corporate High Yield Ba/B & 50% Credit Suisse Leveraged Loan Index.

Bull Market: A market characterized by a trend of rising prices.

Bullet: Fixed Income portfolio structuring technique focusing on a particular maturity or duration.

Bullish: Optimistic about the market; anticipating a rise in prices.

C

Capital Structure: The division of a company's capitalization among bonds, debentures, preferred and common stock, earned surplus and retained income.

Carried Interest: Share of profits or common stock ownership (beyond pro-rata investment) granted to a venture fund or promoter for its/his role in originating and structuring an investment. The general partner's carried interest is his share of the partnership profits.

Carrying Value: A venture capital limited partnership must list on its balance sheet a value for every investment it holds. These valuations are called the carrying values.

Cash-On-Cash Return: The return to limited partners. Cash inflows are the capital calls of the partnership. Cash outflows are all distributions to limited partners. Note that stock distributions are considered cash for this calculation.

Citigroup 6-month T-Bill: The Citigroup 6-Month T-Bill Index is a market value-weighted index of public obligations of the U.S. Treasury with maturities of six month.

Committed Capital: When a venture capital limited partnership is formed, each limited partner agrees to contribute a certain amount of capital to the partnership. Once the agreement is signed, the dollar amount is said to be capital committed to the partnership.

Common Stock: Ordinary capital stock (representing ownership) in a company. Common stock does not enjoy the special privileges of preferred stock, but has voting rights.

Convertible Bond: A bond which, at the option of the holder, is convertible into other types of securities.

Convexity: A measure of how the duration of a bond portfolio changes with interest rate movements. Higher convexity means that if interest rates rise, bond prices fall by relatively small amounts and when interest rates fall, bond prices rise by higher relative amounts. Therefore, for either direction of interest rate movements, the greater the convexity the more beneficial the impact on bond prices.

Coupon Income (Average Coupon): The annual coupon payments of a bond divided by the par value.

Current Yield: The annual coupon payments of a bond divided by the market price.

Current Ratio: The ratio of current assets over current liabilities. A measure of a company's ability to pay its bills.

Custom MSCI ACWI IMI N 50%H:
7/31/10 – Present MSCI ACWI X U.S. IMI (Net) with 50% hedged Developed Markets; 8/31/08 – 7/31/10 MSCI ACWI X U.S. IMI (Net); Inception – 8/31/08 MSCI ACWI X U.S. (Net), except the ten-year return (Gross).

D

50% Developed Market Currency Hedge Index: A custom index based on a MSCI FX Hedged Index return.

Deflation: A progressive reduction in the price level, which would make real interest rates greater than nominal rates.

Discount Rate: The interest rate used in present value calculations to “discount” or convert future cash flows into terms of present dollars.

Dividend: A cash or other distribution to preferred or common stockholders.

Bloomberg Commodity Index Total Return: The Bloomberg Commodity Index Total Return is composed of futures contracts on physical commodities.

Dolan McEniry Custom Index: Barclays Credit Intermediate (65%) and Barclays Mortgage Backed (25%) and Barclays High Yield Ba/B (10%).

Duration: A measure of the price sensitivity of a bond portfolio to changes in interest rates. It is calculated as the weighted average time to receive a bond's coupon and principal payments. The closer the coupon and principal payments, the shorter the duration. The more distant the coupon and principal payments, the longer the duration. Portfolios with longer maturity bonds will normally have longer duration and will, therefore, have greater price sensitivities to changes in interest rates.

E

EAFE Custom Index:
Inception - 6/30/06 MSCI EAFE (Net);
6/30/06 - Present MSCI EAFE + Canada (Net).

Earnings per Share: Latest reported earnings for the last 12-month period divided by the current number of shares of common stock outstanding.

Earnings Yield: The percentage found by dividing the earnings per share by the market price of a stock.

Equity: Ownership or proprietary rights and interests in a company. Synonymous with common stock.

EBITDA: Earnings before Interest, Taxes, Depreciation and Amortization.

Enterprise Value: Enterprise value represents the Equity + Debt value of the company.

F

Federal Funds Rate: The interest rate at which federal funds are traded. It is monitored by the Fed in the process of regulating the growth of bank reserves and money supply in the execution of its monetary policy. As such, it is closely watched by market participants.

Fiscal Policy: Federal Government policies affecting government spending, taxation, and deficits (or surpluses), viewed from a macroeconomics standpoint.

Fixed Income Custom Index:

Inception-3/31/09: A combination of the Barclays US Aggregate Bond Index and the Barclays US High Yield Ba/B Index. The weights have varied over time, but as of 9/30/06, the mix was 93% Aggregate and 7% high yield. 3/31/09-Present : 100% Barclays U.S. Universal.

Fully-Diluted Ownership: Proportionate ownership assuming the exercise of all common stock options, warrants, and the conversion of any convertible securities.

Futures Contract: Agreement to buy or sell a specific amount of a commodity or financial instrument at a particular price and a stipulated future date.

H

Hedging: The temporary purchase or sale of a contract calling for future delivery of a specific security at an agreed upon price to offset a present or anticipated position in the cash market.

Hedge Fund Custom Index: The Citigroup 3-Month U.S. T-Bill Index plus 500 bps.

High Yield Bond: A bond with a low investment quality and credit worthiness, usually with a rating of BB or less.

I

Immunization: A process for designing fixed income portfolios to obtain a target rate of return over a specified time period, within a narrow range, despite market conditions.

Index: A statistical yardstick composed of a basket of securities with a set of characteristics. An example of this would include the "S&P 500" which is an index of 500 stocks.

Inflation: A general rise in prices, usually measured by changes in prices of major indices, such as the Consumer Price Index. An increase in a particular price may or may not be inflationary, depending on how it affects other prices and on how promptly it brings to market additional supplies of a product.

Inflation Index Bond: Fixed income securities whose principal value is periodically adjusted according to the rate of inflation. The interest rate on these bonds is fixed at issuance, but over the life of the bond this interest is paid on an increasing principal value, which has been adjusted for inflation.

Information Ratio: The information ratio is the excess return (alpha) per unit of active risk (tracking error). It is measured by dividing alpha by the tracking error.

Interest-Rate Risk: When interest rates rise, the market value of fixed-income securities (such as bonds) declines. Similarly, when interest rates decline, the market value of fixed-income securities increases.

Internal Rate of Return: The Internal rate of return is a total rate of return that gives full weight to the size and time of cash flows over the period measured and fully reflects unrealized gains and losses in addition to realized gains and losses, interest and dividend income.

J

J-Curve: Most venture partnerships go through their first few years with write-offs/write-downs exceeding write-ups, after which value increases rapidly as successful companies emerge. The plot of partnership values versus time, therefore, resembles a "J".

L

Laddering: A fixed income portfolio strategy in which assets are distributed evenly over a range of maturities.

LBO (Leveraged Buyout): The purchase of a business using the debt capacity of the business to borrow funds (sometimes by issuing notes to the seller) to finance the purchase.

Limited Partner: The main investment subscribers to a Limited Partnership Fund. They have limited liability and no executive or management control of the Partnership. As defined by the IRS code, any investor in a venture capital limited partnership.

M

Market Capitalization: The market value of all outstanding shares of common stock of a company. Derived by multiplying the number of shares outstanding at month-end by the month-end closing price of the security.

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

Mezzanine Stage: The last private round of financing before an anticipated public offering. Implies substantial revenues and usually the expectation of imminent profitability.

Modern Portfolio Theory: The theoretical framework for designing investment portfolios based upon the risk and reward characteristics of the entire portfolio. The major tenet of the theory holds that reward is directly related to risk, which can be divided into two basic parts: 1) systematic risk (portfolios' behavior as a function of the market's behavior), and 2) unsystematic risk (portfolios' behavior attributable to selection of individual securities). Because un-systematic risk can be largely eliminated through diversification, the portfolio will be subject principally to systematic risk.

Mortgage-Backed Securities: Bonds which are a general obligation of the issuing institution but are collateralized by a pool of mortgages.

MSCI Canada IMI Custom Index (Net):
Inception – 8/31/08 MSCI Canada (Net);
8/31/08 - Present MSCI Canada IMI (Net).

MSCI EMF IMI Custom Index:
Inception – 12/31/00 MSCI EMF (Gross);
12/31/00 – 8/31/08 MSCI EMF (Net);
8/31/08 – Present MSCI EMF IMI (Net).

MSCI EAFE IMI Custom Index (Net):
Inception – 8/31/08 MSCI EAFE (Net);
8/31/08 - Present MSCI EAFE IMI (Net).

O

Opportunistic Custom Index:
50% Barclays U.S. Corporate High Yield Index & 50% Credit Suisse Leveraged Loan Index.

Opportunistic EMD Custom Index: 50% EMBI Global Diversified + 25% GBI-EM GD + 25% CEMBI BD.

P

Private Equity Target: Rolling ten-year return of the Russell 3000 Index plus 500 bps.

Payout Ratio: A measurement of the percent of a firm's earnings that is paid out to Shareholders in dividends. Calculated by dividing most recently reported fiscal year-end dividends per share by most recently reported annual primary earnings per share.

Preferred Stock: Securities or shares representing an ownership interest in a business, but which have "preference" over common shares, in regards to dividends and distribution of assets in the event of liquidation.

Present Value: The discounted value of a series of future cash flows so as to account for the time value of money. Alternatively, the value of a future series of cash flows stated in terms of current dollars.

Price/Book Ratio: Calculated by dividing the current month-end stock price by the book value per share.

Price/Earnings Ratio: A popular measure of relative stock value and investor expectations of future earnings growth. Calculated by dividing the current month-end stock price by the latest 12-months reported earnings per share.

R

Real Estate Target:
7/1/13-Present: Open End Diversified Core Equity (ODCE) Index + 40 basis points.
Inception-6/30/13: NCREIF Property Index (NPI) minus 25 basis points.

Recession: A decline in total physical output that lasts six consecutive months or more. A growth recession is marked by a six-month or longer slowdown (but no decline) in the growth rate.

Reflation: A fiscal or monetary policy that is designed to expand a country's output and curb the effects of deflation. Reflation is usually accomplished by increasing the money supply or by reducing taxes.

Return Correlation: The relationship between the returns on investments. A negative return correlation between two investments means that most of the time when investment A has a positive return, investment B will have a negative return.

Return on Equity: A measurement of return on stockholders' investment. Calculated by dividing the most recently reported fiscal year-end Net Income by the most recently reported fiscal year-end Common Equity (Common Stock outstanding + Capital Surplus + Retained Earnings).

Risk-vs.-Return: Risk measures the probability of financial loss. Investors often compare risk, as measured by standard deviation of returns, to historical or expected return when making investment decisions. Typically, investors demand higher returns for investments they consider more risky.

ROI: Return on investment. For limited partnership investments the IRR serves as the measure of return on investment.

Rule 144: An SEC rule permitting the sale of restricted investment letter stock by affiliated persons in small amounts without first registering the stock with the SEC. It is designed to prohibit the creation of public

markets in securities of issuers for which adequate current information is not available to the public. (The rule permits the public sale in ordinary trading transactions of limited amounts of securities owned by persons controlling, controlled by, or under common control with the issuer and by persons who have acquired restricted securities of the issuer).

Russell 3000 Index: The Russell 3000 Index measures the performance of the largest 3000 U.S. companies representing approximately 98% of the investable U.S. equity market.

S

Secular Trend: A long-term movement in the price of a security or of interest rates, either upward or downward, which is not related to seasonal or technical factors.

Securitized Custom Index:
Barclays Securitized Index + 400 bps.

Stages of Venture Capital Investing: Seed Capital: Financing provided to enable an entrepreneur to establish a business plan and undertake market research etc., to the point where they can seek first round financing to establish a business. First Round and Early Stage: Financing a company that will have a net cash outflow, maybe with only a prototype product. It will still need to establish prices, employ staff and develop the product with often little or no sales.

Middle Stage or 'Market Entry: Financing a growing company whose income may still be below expenses but sales will be generating revenue. Equity finance will normally be required to enlarge the working capital base and to extend marketing activity.

Late Stage or Development Capital: Equity capital required for major growth, acquisition, product development, etc.

Mezzanine and Bridge: Financing the equity capital required by rapidly expanding companies who hold off from a public offering until the public marketplace is prime.

Standard Deviation: Statistical measure of the degree to which an individual value in a probability distribution tends to vary from the mean of the distribution. In portfolio theory, the past performance of securities is used to determine the range of possible future performances and a probability is attached to each performance. The standard deviation of performance can then be calculated for each security and for the portfolio as a whole. The greater the degree of dispersion, the greater the risk.

T

Time-Weighted Rate of Return: The "time-weighted" rate of return is the investment performance (return), measured from beginning market value, of a unit of assets held continuously for the entire time period measured. This rate provides a standard for comparing the performance of different funds in which the size and timing of

contributions and payouts could vary considerably. Consequently, the time-weighted rate of return is a mathematical measure that eliminates the effects of fund cash flows.

TIPS: Inflation-indexed securities issued by the U.S. Treasury Department (commonly known as Treasury Inflation-Protection Securities). TIPS have been issued in the U.S. since January 1997. These securities adjust both their principal and coupon payments upward with any rise in inflation. Like all Treasuries, they enjoy the full guarantee of the U.S. government.

Total Fund Policy Benchmark: Uses the fund's Board approved target asset allocations.

Total Return: The aggregate increase or decrease in the value of the portfolio resulting from the net appreciation or depreciation of the principal of the fund, plus or minus the net income or loss experienced by the fund during the period.

Tracking Error: Tracking error is the volatility of a manager's excess return. It is measured by subtracting the benchmark return from the manager's return and calculating the standard deviation.

Treasury Bill: A non-interest bearing obligation, fully guaranteed by the U.S. Government, payable to the bearer. Bills are sold on a discount basis so that the income is the difference between the purchase price and the face value.

Treasury Bond: A coupon security of the U.S. Treasury which may be issued with any maturity but generally carries a maturity of more than 10 years.

Treasury Note: A coupon security issued by the U.S. Treasury with a maturity of not less than one year not more than 10 years.

U

Universe Data Source: State Street utilizing Wilshire Associates' TUCS Universe Data.

V

Vintage Year: The Vintage Year benchmark approach assumes that there is a definite and unique life cycle to a group of venture capital funds formed in the same year. Venture Economics has maintained that a fund can be compared fairly on an interim basis only to other funds in its vintage year. A fund's vintage year is defined as the year of first investment or capital call. In some cases funds that were formed in the last three months of the year but did not have a capital call until the next year or those funds that made their first investment more than six months after the closing are categorized by the date of their first investment.

W

Warrant: An option to purchase stock in a corporation, typically over a specified period of time and under preset conditions.

Western Opportunistic Custom:
60% BofA Merrill Lynch US Floating Rate Home Equity Loan ABS Index & 40% Barclays US Credit 1-3 Credit Index.

Y

Years to Maturity: Market value weighted average time to stated maturity for all securities held in the portfolio.

Yield: The rate of annual income return on an investment expressed as a percentage. Income yield is obtained by dividing the current dollar income by the current market price of the security.

Yield Curve: A graphic depiction of interest rates across all maturities, 0-30 years. The shape of the curve is largely influenced by the Federal Reserve Policy.

Yield to Maturity: The return a bond earns on the price at which it was purchased if it were held to maturity. It assumes that coupon payments can be reinvested at the yield to maturity.

Yield to Worst: The yield resulting from the most adverse set of circumstances from the investor's point of view; the lowest of all possible yields.

SOURCE: www.nasdaq.com & www.pimco.com

Last updated: 4/19/18

Total Plan Analytics Board Report

Prepared for LACERA

30 June 2018

Total Plan Asset Allocation & Analytics

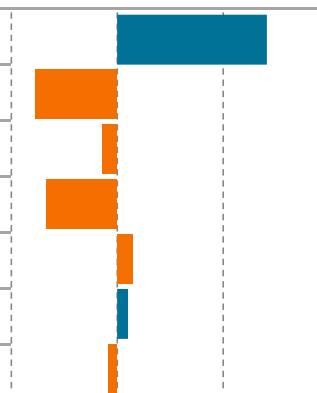
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30-Jun-2018

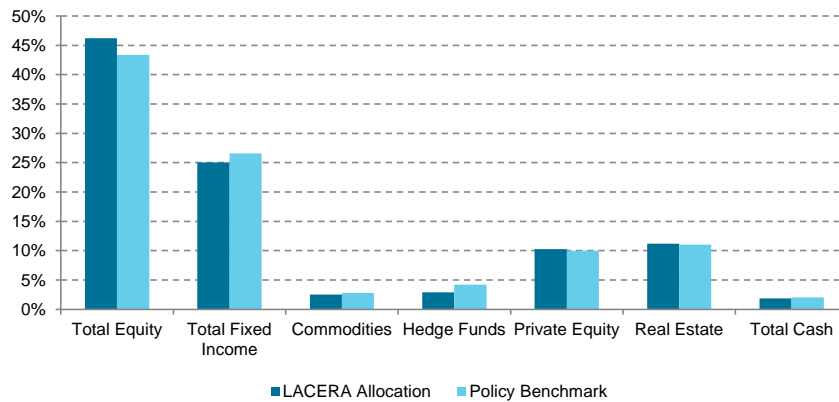
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Total Plan Allocation vs Policy Benchmark

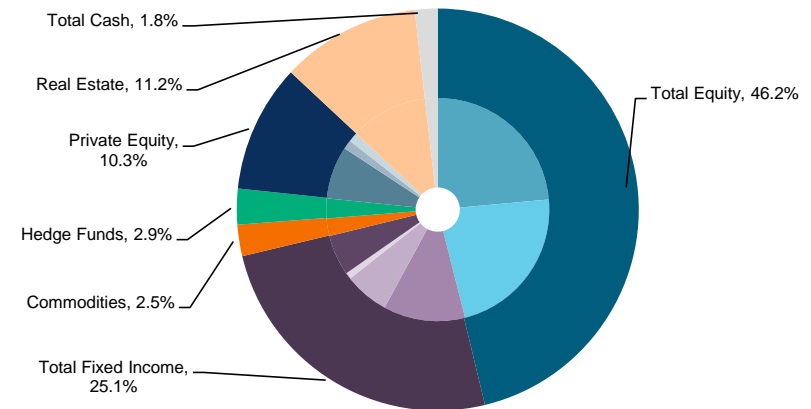
	Market Value (Millions)	Allocation (%)	Policy Benchmark (%)	Benchmark	Relative (%)
Total Equity	25,886	46.2%	43.4%	Equity Composite	2.8%
Total Fixed Income	14,030	25.1%	26.6%	Barclays US Universal	-1.5%
Commodities	1,415	2.5%	2.8%	Bloomberg Commodity Index	-0.3%
Hedge Funds (Proxy)	1,611	2.9%	4.2%	Hedge Fund Composite	-1.3%
Private Equity (Proxy)	5,758	10.3%	10.0%	Private Equity Composite	0.3%
Real Estate (Proxy)	6,274	11.2%	11.0%	Real Estate Composite	0.2%
Total Cash	1,031	1.8%	2.0%	Citigroup 6M Treas. Bill	-0.2%
TOTAL	56,004	100.0%	100.0%		0.0%



Total Plan Allocation vs Policy Benchmark



Asset Class Detail



Total Plan Analytics, Volatility & Tracking Error

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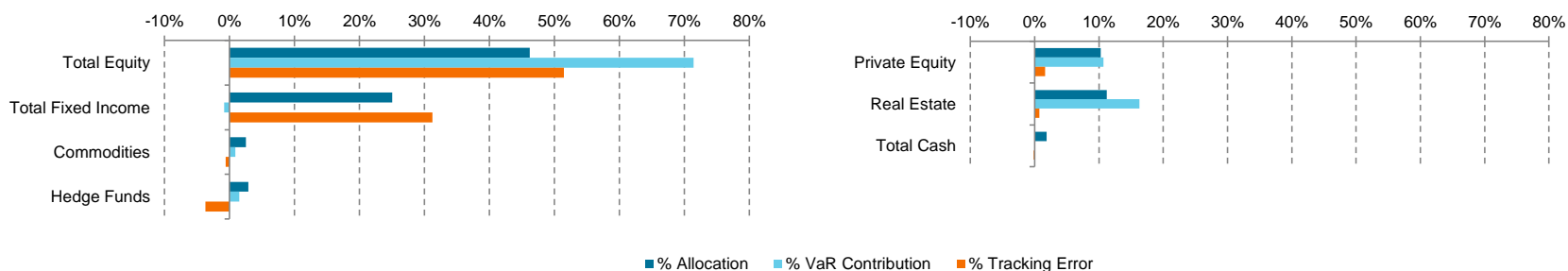
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Reporting Currency: USD

Total Plan Risk Measures

	Benchmark	Market Value (Millions)	Allocation (%)	Volatility (% per annum) ¹	Standalone VaR (% of MV) ²	Total VaR Contribution (% of Total MV) ³	Tracking Error Contribution (% of Total MV) ⁴
Total Equity	Equity Composite	25,886	46.2%	11.69%	20.55%	9.17%	0.40%
Total Fixed Income	Barclays US Universal	14,030	25.1%	2.41%	4.40%	-0.11%	0.24%
Commodities	Bloomberg Commodity Index	1,415	2.5%	13.03%	22.95%	0.11%	0.00%
Hedge Funds (Proxy)	Hedge Fund Composite	1,611	2.9%	3.46%	6.80%	0.19%	-0.03%
Private Equity (Proxy)	Private Equity Composite	5,758	10.3%	7.16%	12.78%	1.37%	0.01%
Real Estate (Proxy)	Real Estate Composite	6,274	11.2%	11.50%	18.68%	2.09%	0.01%
Total Cash	Citigroup 6M Treas. Bill	1,031	1.8%	0.12%	0.27%	0.00%	0.00%
TOTAL		56,004	100.0%	7.28%	12.83%	12.83%	0.77%
	<i>Weighted Average Benchmark⁵</i>			7.25%	12.42%	12.42%	
Benchmark	Policy Benchmark			6.87%	11.99%	11.99%	0.62%
					<i>Aggregate Benchmark Structural Risk⁶</i>		-0.15%

Dollar vs Risk Allocation



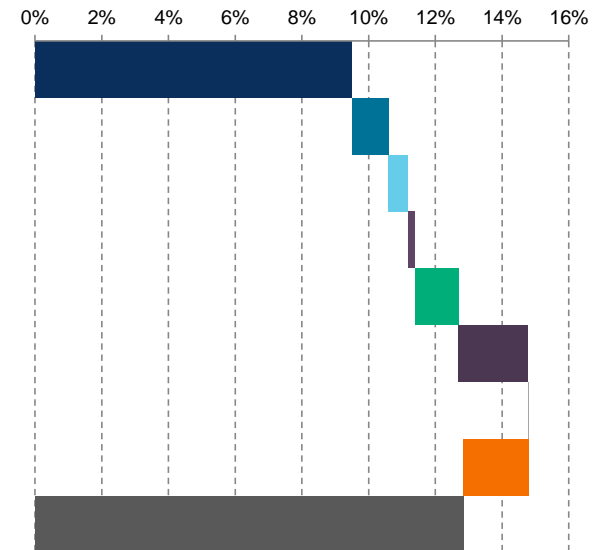
1: Volatility at the asset class level is calculated using parametric VaR at 84th percentile, annualized and expressed as a percentage of the market value of each asset class.
 2: Standalone VaR is the annualized Value-at-Risk at the 95th percentile expressed as a percentage of the market value of each asset class.
 3: Total VaR Contribution is calculated using historic VaR at 95th percentile, 1 month horizon, annualized excluding the mean, and expressed as a percentage of the total plan assets.
 4: Tracking Error is calculated using relative parametric VaR at 84th percentile (assets less benchmark), annualized and expressed as a percentage of the total plan assets.
 5: Weighted average benchmark is the market value weighted average of the asset class benchmarks.
 6: Aggregate Benchmark Structural Risk = [Tracking Error of the Total Plan to the policy benchmark] - [Tracking Error of the Total Plan to the weighted average of asset class benchmarks]

Total Plan Analytics, Volatility & Tracking Error
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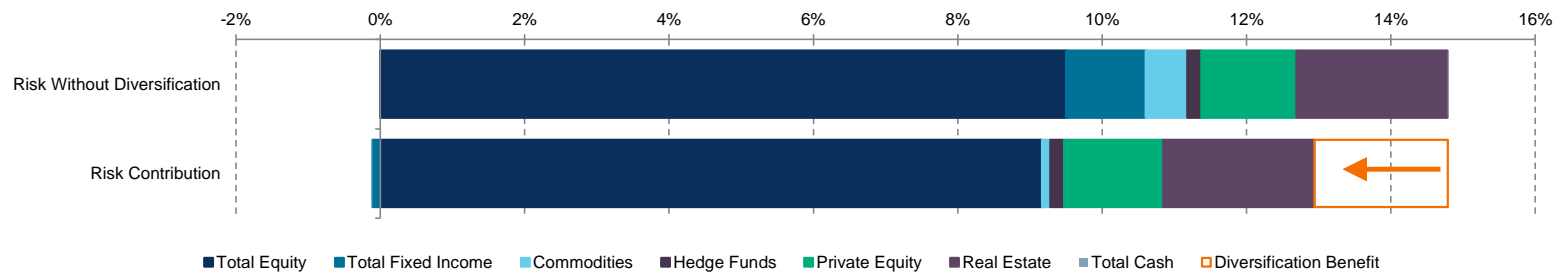
30-Jun-2018
Reporting Currency: USD

Total Plan Risk & Diversification

	Allocation (%)	Weighted Standalone VaR (% of Total MV) ¹	
		Monthly	Annual
Total Equity	46.2%	2.7%	9.5%
Total Fixed Income	25.1%	0.3%	1.1%
Commodities	2.5%	0.2%	0.6%
Hedge Funds (Proxy)	2.9%	0.1%	0.2%
Private Equity (Proxy)	10.3%	0.4%	1.3%
Real Estate (Proxy)	11.2%	0.6%	2.1%
Total Cash	1.8%	0.0%	0.0%
Diversification Benefit ²	-	-0.6%	-2.0%
TOTAL	100.0%	3.7%	12.8%



Risk Contribution and Diversification



1: Standalone risk (historical VaR 95) of each asset class is weighted and expressed as a percent of total plan assets, i.e. contribution to risk without diversification benefit.
2: Diversification benefit is calculated as the sum of the standalone VaR at 95th percentile for each asset class less the total plan VaR.

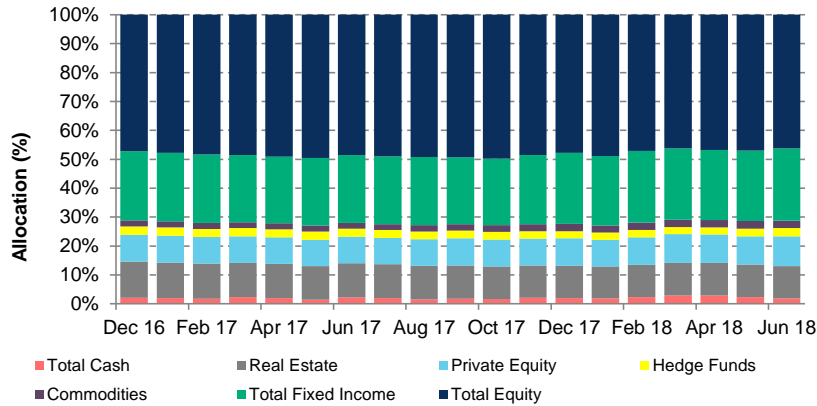
Total Plan Analytics, Volatility & Tracking Error

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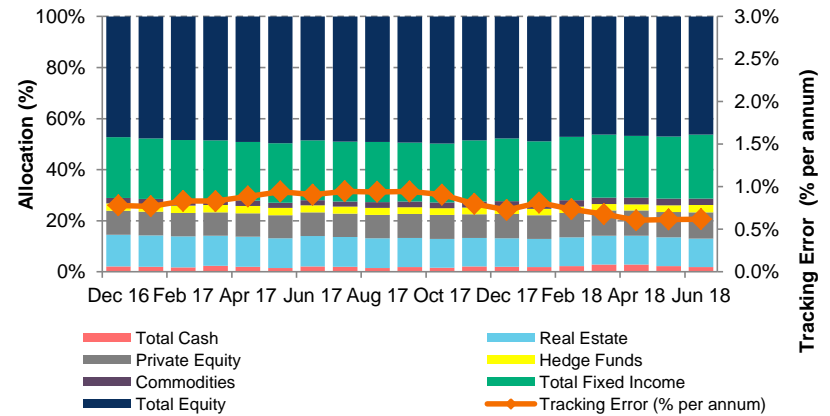
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Reporting Currency: USD

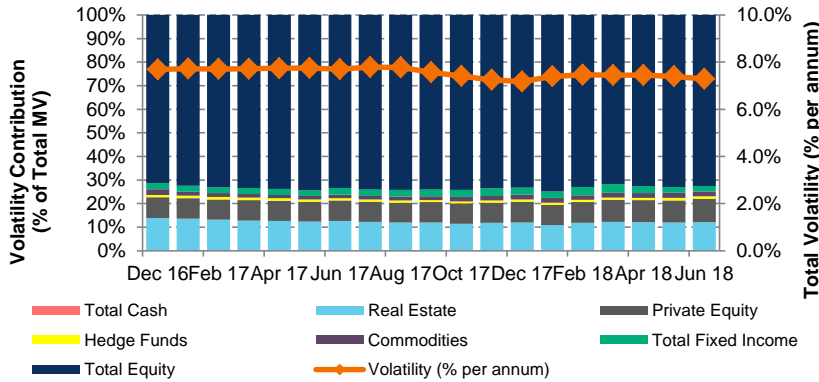
Total Plan Allocation Trend



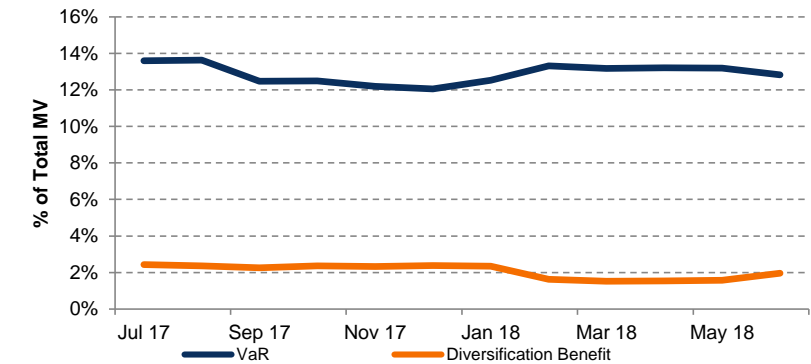
Total Plan Allocation & Tracking Error Trend¹



Total Plan Volatility & Contribution to Volatility Trend²



Total Plan Risk & Diversification Trend³



1: Tracking Error is calculated using relative parametric VaR at 84th percentile (assets less benchmark), annualized and expressed as a percentage of the total plan assets.

2: Volatility at the asset class level is calculated using parametric VaR at 84th percentile, annualized and expressed as a percentage of the market value of each asset class.

3: Diversification benefit is calculated as the sum of the standalone VaR at 95th percentile for each asset class less the total plan VaR.

Total Plan Stress Testing

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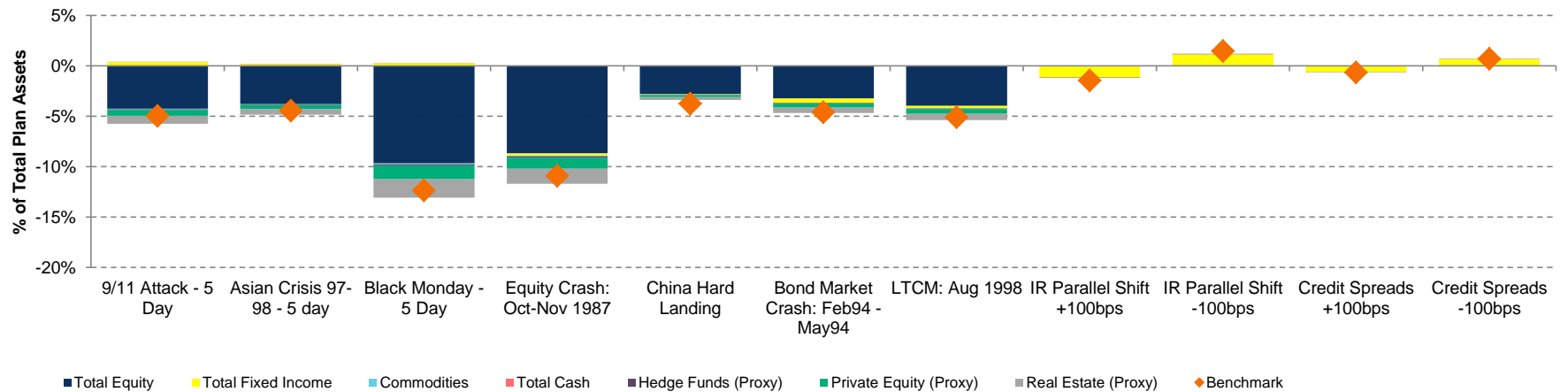
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Reporting Currency: USD

Stress Test - % of Total Plan Assets

	Allocation (%)	9/11 Attack - 5 Day	Asian Crisis 97-98 - 5 day	Black Monday - 5 Day	Equity Crash: Oct-Nov 1987	China Hard Landing	Bond Market Crash: Feb94 - May94	LTCM: Aug 1998	IR Parallel Shift +100bps	IR Parallel Shift -100bps	Credit Spreads +100bps	Credit Spreads -100bps
Total Equity	46.2%	-4.3%	-3.8%	-9.7%	-8.7%	-2.8%	-3.2%	-4.0%	0.0%	-0.0%	0.0%	0.0%
Total Fixed Income	25.1%	0.4%	0.2%	0.3%	-0.2%	-0.0%	-0.4%	-0.2%	-1.1%	1.2%	-0.6%	0.7%
Commodities	2.5%	-0.0%	-0.0%	-0.1%	-0.1%	-0.0%	-0.0%	-0.0%	0.0%	-0.0%	-0.0%	0.0%
Hedge Funds (Proxy)	2.9%	-0.1%	-0.1%	-0.1%	-0.1%	-0.0%	-0.1%	-0.1%	-0.0%	0.0%	0.0%	0.0%
Private Equity (Proxy)	10.3%	-0.6%	-0.4%	-1.4%	-1.1%	-0.2%	-0.4%	-0.5%	0.0%	0.0%	0.0%	0.0%
Real Estate (Proxy)	11.2%	-0.8%	-0.6%	-1.8%	-1.5%	-0.3%	-0.5%	-0.6%	0.0%	0.0%	0.0%	0.0%
Total Cash	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.0%	0.0%	-0.0%	0.0%	-0.0%	0.0%
TOTAL		-5.3%	-4.7%	-12.8%	-11.7%	-3.4%	-4.7%	-5.4%	-1.2%	1.2%	-0.6%	0.7%
Benchmark		-5.0%	-4.5%	-12.4%	-10.9%	-3.7%	-4.6%	-5.1%	-1.4%	1.5%	-0.6%	0.7%

Stress Test Chart



Public Market (Equities & Fixed Income) Analytics By Top 10 Country & Sector

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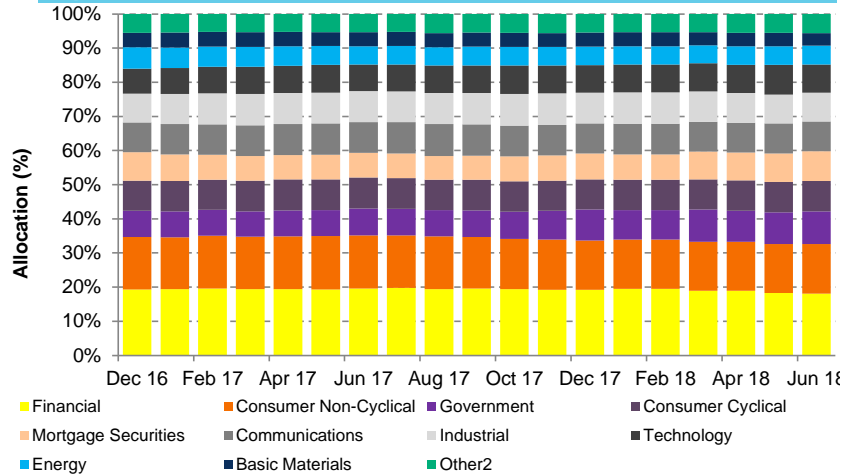
30-Jun-2018

Reporting Currency: USD

Top 10 Sector Analysis

	Market Value (Millions)	Allocation (%)	Volatility (% per annum) ¹
Financial	6,960	18.1%	10.87%
Consumer Non-Cyclical	5,617	14.6%	9.07%
Government	3,683	9.6%	3.85%
Consumer Cyclical	3,402	8.8%	9.93%
Mortgage Securities	3,364	8.7%	2.09%
Communications	3,359	8.7%	10.79%
Industrial	3,251	8.4%	11.42%
Technology	3,189	8.3%	13.60%
Energy	2,107	5.5%	16.11%
Basic Materials	1,430	3.7%	17.98%
Other ²	2,147	5.6%	-
TOTAL	38,509	100.0%	7.93%

Top 10 Sector Market Value Trend



Top 10 Country Analysis - Public Market Equities

	Market Value (Millions)	Allocation (%)	Volatility (% per annum) ¹
United States	12,823	51.4%	12.34%
Japan	2,025	8.1%	11.92%
United Kingdom	1,487	6.0%	13.98%
Canada	850	3.4%	16.29%
France	754	3.0%	14.69%
Germany	707	2.8%	14.37%
Switzerland	662	2.7%	11.74%
China	642	2.6%	21.80%
Australia	528	2.1%	16.15%
Hong Kong	458	1.8%	15.68%
Other ²	4,022	16.1%	-
TOTAL	24,957	100.0%	12.04%

Top 10 Country Analysis - Public Market Fixed Income

	Market Value (Millions)	Allocation (%)	Volatility (% per annum) ¹
United States	12,033	88.8%	2.35%
United Kingdom	232	1.7%	2.38%
Canada	163	1.2%	3.55%
Netherlands	150	1.1%	4.60%
Mexico	126	0.9%	10.57%
Cayman Islands	103	0.8%	1.29%
Luxembourg	94	0.7%	3.16%
France	77	0.6%	2.65%
Japan	48	0.4%	2.69%
Ireland	45	0.3%	2.39%
Other ²	479	3.5%	-
TOTAL	13,552	100.0%	2.35%

1: Volatility of each category is calculated using parametric VaR at 84th percentile, annualized and expressed as a percentage of the market value of each category.

2: Other category contains remaining categories if displaying top 10, excluding securities that cannot be modeled.

Glossary

Appendix - Glossary

LACERA

30-Jun-2018

Reporting Currency: USD

Terms and Definitions

Analytics

Value-at-Risk 95% (VaR)	Value-at-risk or VaR quantifies the potential loss in a portfolio at a certain level of confidence. VaR 95th percentile means there is a 5% chance of losing more than X%. Alternatively, it can be expressed as there is a 1 in 20 chance of losing more than X% in the next month (or year if it is an annual measure).
Volatility	Volatility is another measure quantifying the potential variability in a portfolio's asset value. Volatility means there is a 1 in 3 chance the portfolio will change in value by +/- X% in 1 year. Alternatively, it can be expressed that 1 year in 3 years, the portfolio will change in value by +/- X% per annum.
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Diversification Benefit	Diversification benefit is calculated as the sum of the standalone VaR at 95th percentile for each asset class/strategy less the total plan VaR, 1 month horizon, annualized. This measures the reduction of risk due to the benefits of diversification.
Duration	The sensitivity of a bond's price to changes in the interest rate usually measured in years. The higher the duration, the more sensitive the portfolio is to changes in interest rates.
Expected Yield	This measures the projected annual yield on the portfolio adjusting for option-adjusted probabilities.
Beta	Beta estimates the risk of the portfolio to a single market risk factor, i.e. systematic risk.

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9/11 Attack - 5 Day	Historic stress scenario observed from 9/17/2001 to 9/21/2001 where the US faced an act of terrorism. Trading was suspended on the NYSE and only resumed on 9/17/2001. The US stock market (S&P 500) declined 12%.
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IR Parallel Shift +100bps	All interest rate curves are shifted up 100bps, and the portfolio is revalued to assess the impact in dollar terms.
IR Parallel Shift -100bps	All interest rate curves are shifted down 100bps, and the portfolio is revalued to assess the impact in dollar terms.
Credit Spreads +100bps	All credit spread curves are shifted up 100bps, and the portfolio is revalued to assess the impact in dollar terms.
Credit Spreads -100bps	All credit spread curves are shifted down 100bps, and the portfolio is revalued to assess the impact in dollar terms.
FX +5%	All exchange rate curves are shifted up 5%, and the portfolio is revalued to assess the impact in dollar terms.
FX -5%	All exchange rate curves are shifted down 5%, and the portfolio is revalued to assess the impact in dollar terms.

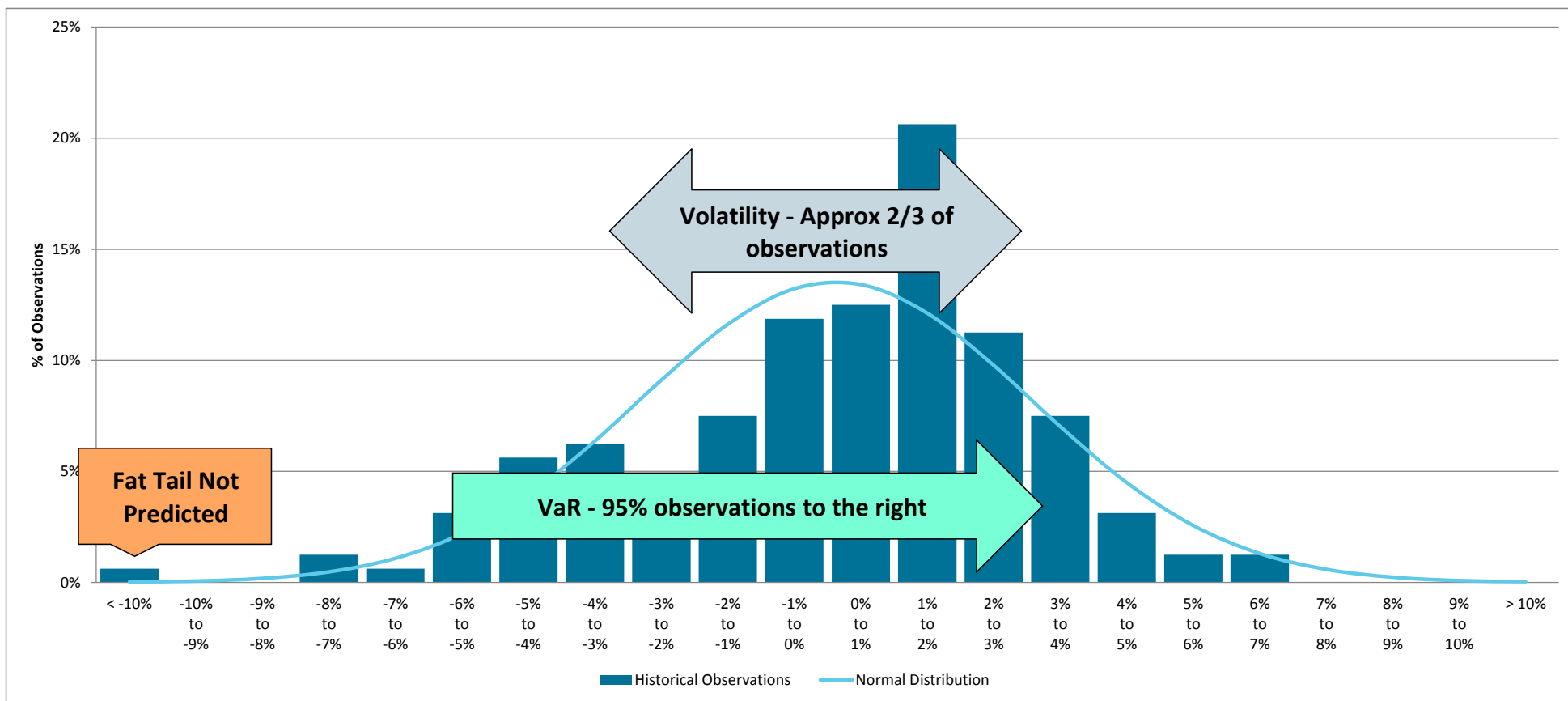
VaR and Volatility

Example Illustration of VaR and Volatility

VaR = 5.6%

Volatility = 2.9%

Mean = 0.1%



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Detailed Analytics Board Report

Prepared for LACERA

30 June 2018

Total Fixed Income

Fixed Income Analytics, Volatility & Tracking Error by Manager Category

LACERA

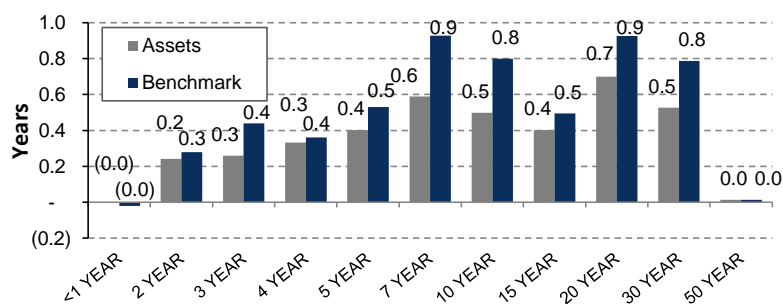
30-Jun-2018

Reporting Currency: USD

Fixed Income Analytics

	Benchmark	Market Value (Millions)	Allocation (%)	Duration (Years)	Expected Yield (% per annum)	Credit Spread (OAS) (%)	Volatility (% per annum) ¹	Standalone VaR (% of MV) ²	Tracking Error (% per annum) ³
Core Managers		6,616	47.2%	5.65	3.45%	0.42%	2.82%	5.14%	0.25%
	<i>Barclays US Aggregate</i>			6.00	3.46%	0.26%	3.04%	5.44%	
Core Plus Managers		3,612	25.7%	5.42	3.45%	1.05%	3.06%	5.79%	1.10%
	<i>Barclays US Aggregate</i>			6.00	3.46%	0.26%	3.04%	5.44%	
High Yield Managers		521	3.7%	3.90	6.13%	2.82%	3.69%	6.47%	0.80%
	<i>Barclays US High Yield Ba to B</i>			4.44	6.22%	2.91%	3.85%	7.10%	
Opportunistic Managers		3,281	23.4%	1.83	4.30%	3.47%	2.70%	4.43%	1.45%
	<i>Barclays US High Yield Ba to B</i>			4.44	6.22%	2.91%	3.85%	7.10%	
TOTAL		14,030	100.0%	4.63	3.75%	1.31%	2.41%	4.40%	0.39%
	<i>Weighted Average Benchmark⁴</i>			5.58	4.21%	0.98%	2.70%	5.06%	
Benchmark	Barclays US Universal			5.84	3.78%	0.63%	2.90%	5.43%	0.98%
									<i>Aggregate Benchmark Structural Risk⁵</i> 0.59%

Fixed Income Contribution to Duration By Period



Fixed Income Correlations

	Core Managers	Core Plus Managers	High Yield Managers	Opportunistic Managers	TOTAL
Core Managers	1.00	0.94	0.34	0.12	0.91
Core Plus Managers	0.94	1.00	0.60	0.40	0.99
High Yield Managers	0.34	0.60	1.00	0.93	0.69
Opportunistic Managers	0.12	0.40	0.93	1.00	0.51
TOTAL	0.91	0.99	0.69	0.51	1.00

1: Volatility at each subcomposite is calculated using parametric VaR at 84th percentile, annualized and expressed as a percentage of the market value of each subcomposite.

2: Standalone VaR is calculated using historic Value-at-Risk at 95th percentile, 1 month horizon, annualized, and expressed as a percentage of the market value of each subcomposite, i.e. row.

3: Tracking Error is calculated using relative parametric VaR at 84th percentile (assets less benchmark), annualized and expressed as a percentage of the market value of each subcomposite.

4: Weighted average benchmark is the market value weighted average of the manager category benchmarks.

5: Aggregate Benchmark Structural Risk = [Tracking Error of Total Fixed Income to the Barclays US Universal] - [Tracking Error of Total Fixed Income to the weighted average of manager category benchmarks]

Total Equity

Total Equity Analytics, Volatility & Tracking Error by Manager Category

LACERA

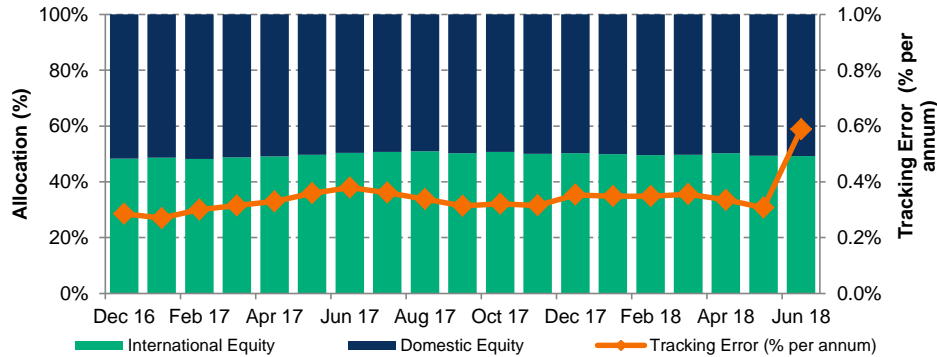
30-Jun-2018

Reporting Currency: USD

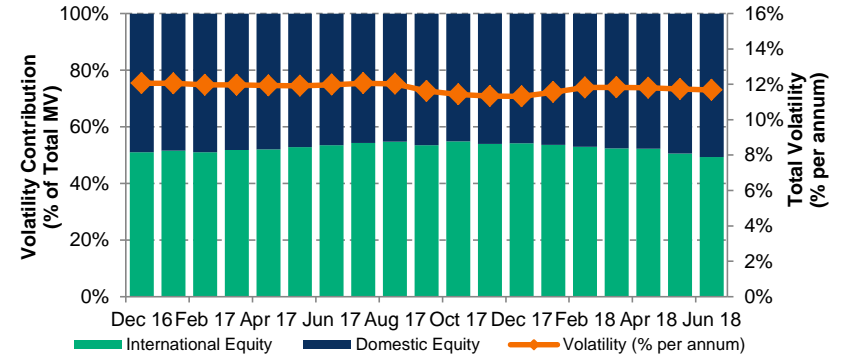
Total Equity Analytics excluding Currency Hedge

	Benchmark	Market Value (Millions)	Allocation (%)	Beta S&P 500 ¹	Beta Russell 3000 ¹	Beta MSCI ACWIxUS ¹	Volatility (% per annum) ²	Standalone VaR (% of MV) ³	Tracking Error (% per annum) ⁴
Domestic Equity	Russell 3000	13,153	51.1%	1.07	1.05	0.75	12.11%	19.72%	0.90%
Moderate/High Risk		1,701	6.6%	1.24	1.26	0.84	15.72%	21.66%	
Passive		10,032	39.0%	1.04	1.02	0.74	11.78%	19.91%	
Total Low Risk		1,420	5.5%	1.05	1.03	0.76	11.79%	19.50%	
International Equity	MSCI ACWI IMI exUS	12,568	48.9%	0.95	0.91	1.01	12.37%	20.80%	0.64%
Passive		7,327	28.5%	0.93	0.90	0.99	16.12%	19.97%	
Total Active Emerging Markets		1,658	6.4%	1.08	1.03	1.20	16.51%	25.28%	
Total Active Non-U.S.		1,275	5.0%	0.94	0.91	0.96	12.42%	19.20%	
Total Active Regional		2,307	9.0%	0.91	0.88	0.94	12.19%	22.37%	
TOTAL⁵		25,721	100.0%	1.01	0.99	0.88	11.76%	20.68%	0.59%

Total Equity Allocation & Tracking Error Trend



Total Equity Volatility & Contribution to Volatility Trend



1: Ex-ante beta from truView®

2: Volatility at the subcomposite is calculated using parametric VaR at 84th percentile, annualized and expressed as a percentage of the market value of each subcomposite.

3: Standalone VaR is calculated using historic Value-at-Risk at 95th percentile, 1 month horizon, annualized, and expressed as a percentage of the market value of each subcomposite, i.e. row.

4: Tracking Error is calculated using relative parametric VaR at 84th percentile (assets less benchmark), annualized and expressed as a percentage of either the market value of each equity strategy or Total Equity assets.

5: Total Equity Tracking Error is calculated using the market value weighted average of the Domestic Equity and International Equity benchmarks.

Total Equity Analytics, Volatility & Tracking Error by Manager Category

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30-Jun-2018

Reporting Currency: USD

Domestic Equity Analytics

	Benchmark	Market Value (Millions)	Allocation (%)	Beta S&P 500 ¹	Beta Russell 3000 ¹	Beta MSCI ACWIxUS ¹	Volatility (% per annum) ²	Standalone VaR (% of MV) ³	Tracking Error (% per annum) ⁴
Moderate/High Risk	Weighted Average Manager Benchmarks	1,701	12.9%	1.24	1.26	0.84	15.72%	21.66%	2.44%
Passive	Weighted Average Manager Benchmarks	10,032	76.3%	1.04	1.02	0.74	11.78%	19.91%	0.03%
Total Low Risk	Weighted Average Manager Benchmarks	1,420	10.8%	1.05	1.03	0.76	11.79%	19.50%	1.87%
TOTAL	Weighted Average Manager Benchmarks	13,153	100.0%	1.07	1.05	0.75	12.11%	19.72%	0.39%
Benchmark	Russell 3000			1.06	-	0.75	11.79%	19.95%	0.90%
								<i>Aggregate Benchmark Structural Risk⁵</i>	0.50%

International Equity Analytics excluding Currency Hedge

	Benchmark	Market Value (Millions)	Allocation (%)	Beta S&P 500 ¹	Beta Russell 3000 ¹	Beta MSCI ACWIxUS ¹	Volatility (% per annum) ²	Standalone VaR (% of MV) ³	Tracking Error (% per annum) ⁴
Total Active Emerging Markets	Weighted Average Manager Benchmarks	1,658	13.2%	1.08	1.03	1.20	16.51%	25.28%	1.93%
Total Active Non-U.S.	Weighted Average Manager Benchmarks	1,275	10.1%	0.94	0.91	0.96	12.42%	19.20%	2.63%
Total Active Regional	Weighted Average Manager Benchmarks	2,307	18.4%	0.91	0.88	0.94	12.19%	22.37%	2.11%
Passive	Weighted Average Manager Benchmarks	7,327	58.3%	0.93	0.90	0.99	12.61%	19.97%	0.13%
TOTAL	Weighted Average Manager Benchmarks	12,568	100.0%	0.95	0.91	1.01	12.79%	20.84%	0.50%
Benchmark	MSCI ACWI ex US IMI			0.97	0.93	-	13.01%	20.70%	0.64%
								<i>Aggregate Benchmark Structural Risk⁵</i>	0.14%

1: Ex-ante beta from truView®

2: Volatility at the subcomposite is calculated using parametric VaR at 84th percentile, annualized and expressed as a percentage of the market value of each subcomposite.

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5: Aggregate Benchmark Structural Risk = [Tracking Error of Domestic/International Equity to the Russell 3000/MSCI ACWI ex US IMI] - [Tracking Error of Domestic/International Equity to the weighted average of manager benchmarks]

Commodities

Commodity Analytics, Volatility & Tracking Error

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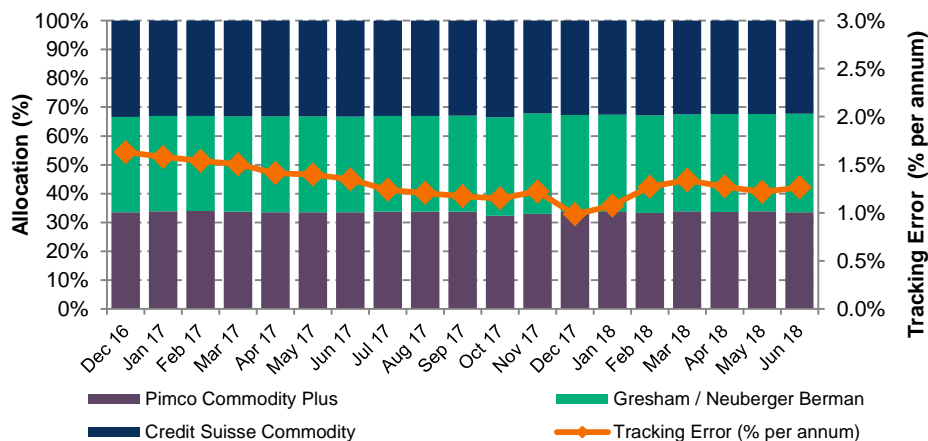
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Reporting Currency: USD

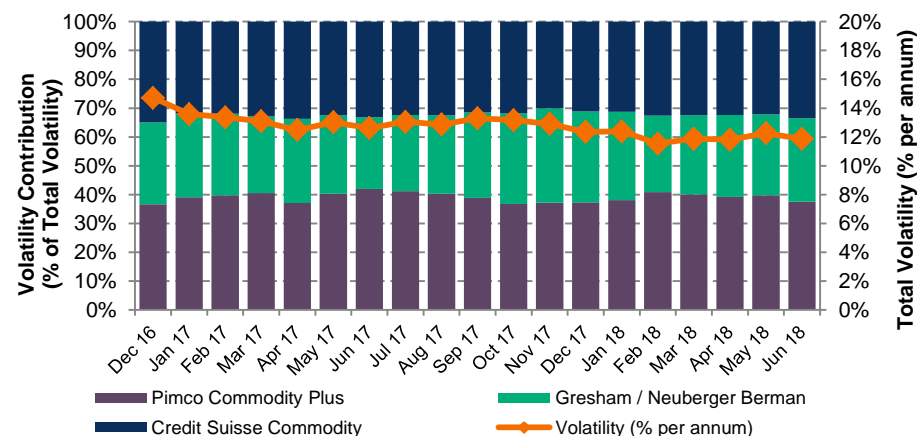
Commodity Analysis

	Market Value (Millions)	Allocation (%)	Net ¹	Beta BCOM	Volatility (% per annum) ²	Standalone VaR (% of MV) ³	Tracking Error (% per annum) ⁴
Credit Suisse Commodity	457	32.3%	99.8%	1.01	12.35%	20.32%	0.34%
Gresham / Neuberger Berman	484	34.2%	99.7%	1.10	13.59%	22.06%	2.25%
Pimco Commodity Plus	475	33.6%	85.4%	0.81	10.00%	21.07%	3.89%
TOTAL	1,415	100.0%	94.9%	0.97	11.86%	20.68%	1.26%
Benchmark			100.0%		12.55%	20.61%	

Commodity Allocation & Tracking Error Trend



Commodity Volatility & Contribution to Volatility Trend



1: Net exposure excludes basis swaps which generally have no net exposure to the underlying commodities

2: Volatility at the asset class level is calculated using parametric VaR at 84th percentile, annualized and expressed as a percentage of the market value of each manager or total Commodity assets.

3: VaR is calculated using historical Value-at-Risk at 95th percentile, 1 month horizon annualized and expressed as a percentage of each manager or total Commodity assets

4: Tracking Error is calculated using relative parametric VaR at 84th percentile (assets less benchmark), annualized and expressed as a percentage of either the market value of each manager or

Private Equity, Real Estate & Hedge Funds

Private Equity Analytics & Volatility by Strategy

LACERA

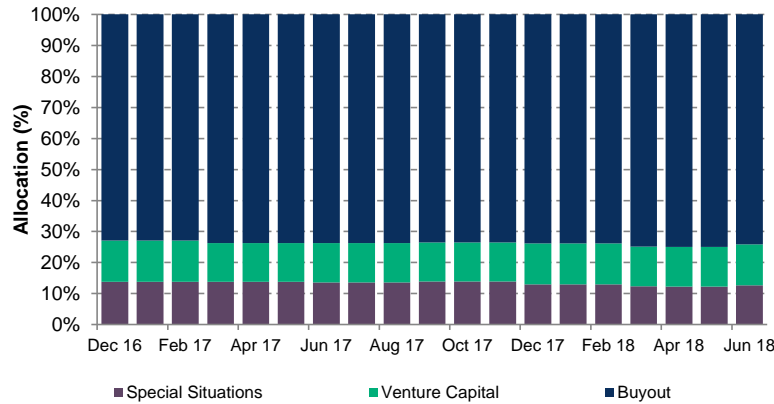
30-Jun-2018

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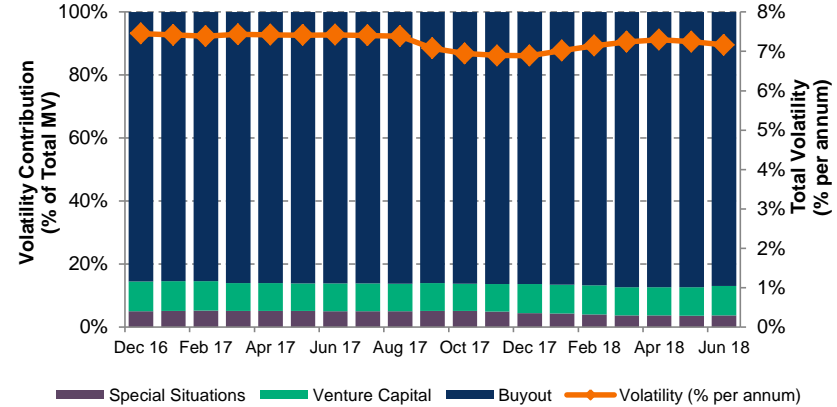
Private Equity Analytics

	Market Value (Millions)	Allocation (%)	Beta S&P 500 ¹	Beta Russell 3000 ¹	Beta MSCI ACWIxUS ¹	Volatility (% per annum) ²
Buyout	4,269	74.1%	0.73	0.64	0.70	8.42%
Special Situations	731	12.7%	0.15	0.15	0.15	3.84%
Venture Capital	758	13.2%	0.49	0.34	0.48	5.41%
TOTAL	5,758	100.0%	0.62	0.54	0.60	7.16%

Private Equity Allocation Trend



Private Equity Volatility & Contribution to Volatility Trend



1: Ex-ante beta from truView®

2: Volatility at the asset class level is calculated using parametric VaR at 84th percentile, annualized and expressed as a percentage of the market value of each private equity strategy.

Real Estate Analytics & Volatility

LACERA

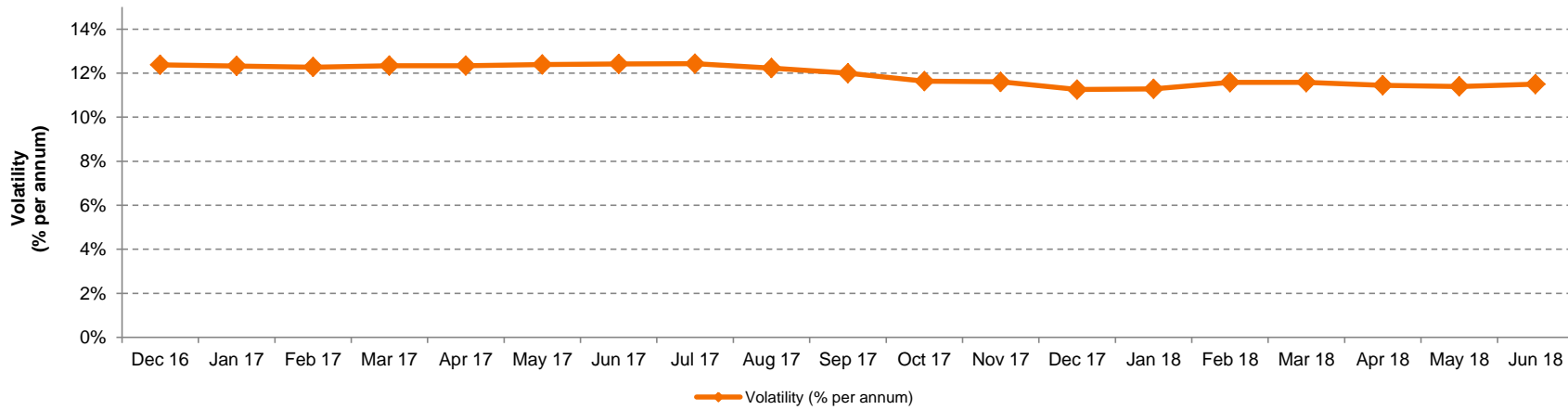
30-Jun-2018

Reporting Currency: USD

Real Estate Analytics

	Market Value (Millions)	Beta S&P 500 ¹	Beta Russell 3000 ¹	Beta MSCI ACWIxUS ¹	Volatility (% per annum) ²
TOTAL	6,274	0.59	0.43	0.58	11.50%

Real Estate Volatility Trend



1: Ex-ante beta from truView®

2: Volatility at the asset class level is calculated using parametric VaR at 84th percentile, annualized and expressed as a percentage of the market value of the real estate allocation.

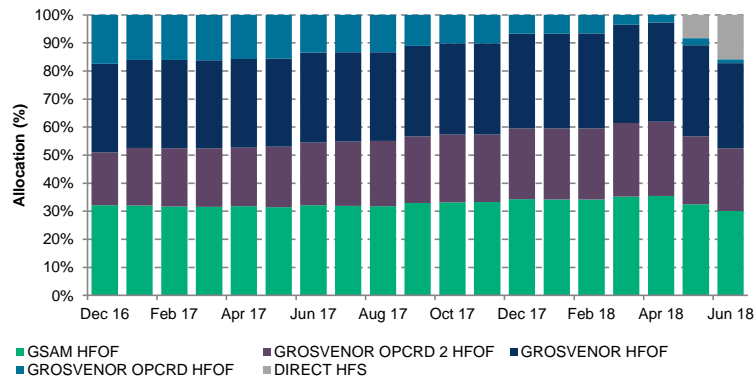
Hedge Funds Analytics & Volatility by Strategy
LACERA

30-Jun-2018
Reporting Currency: USD

Hedge Funds Analytics

	Market Value (Millions)	Allocation (%)	Beta MSCI ACWI ¹	Beta Barclays US HY Ba to B ¹	Beta BCOM ¹	Volatility (% per annum) ²
GROSVENOR HFOF	489	30.4%	0.26	0.45	0.13	3.49%
GROSVENOR OPCRD 2 HFOF	359	22.3%	0.20	0.47	0.14	3.40%
GROSVENOR OPCRD HFOF	22	1.4%	0.19	0.47	0.14	3.36%
GSAM HFOF	485	30.1%	0.29	0.42	0.12	3.91%
DIRECT HFS	256	15.9%	0.26	0.35	0.12	4.27%
TOTAL	1,611	100.0%	0.26	0.43	0.13	3.46%

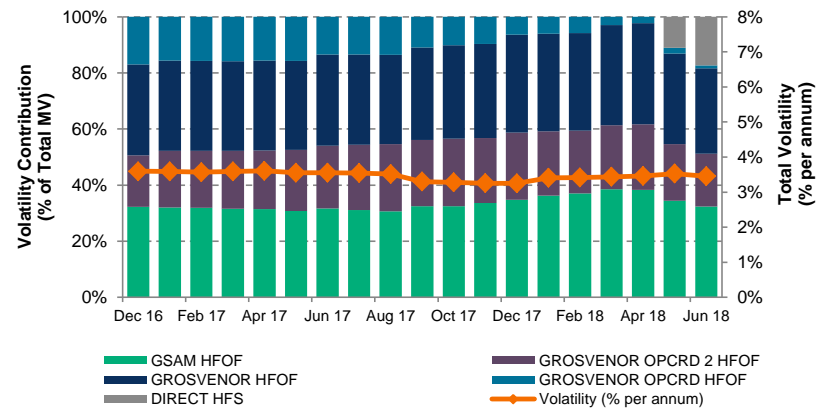
Hedge Fund Allocation Trend



1: Ex-ante beta from truView®

2: Volatility at the asset class level is calculated using parametric VaR at 84th percentile, annualized and expressed as a percentage of the market value of each hedge fund.

Hedge Fund Volatility & Contribution to Volatility Trend



Glossary

Appendix - Glossary

LACERA

30-Jun-2018

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LTCM: Aug 1998	Historic stress scenario observed from 08/03/1998 to 08/31/1998 where LTCM's failure triggered a wide spread concern of potential catastrophic losses throughout the financial system.
IR Parallel Shift +100bps	All interest rate curves are shifted up 100bps, and the portfolio is revalued to assess the impact in dollar terms.
IR Parallel Shift -100bps	All interest rate curves are shifted down 100bps, and the portfolio is revalued to assess the impact in dollar terms.
Credit Spreads +100bps	All credit spread curves are shifted up 100bps, and the portfolio is revalued to assess the impact in dollar terms.
Credit Spreads -100bps	All credit spread curves are shifted down 100bps, and the portfolio is revalued to assess the impact in dollar terms.
FX +5%	All exchange rate curves are shifted up 5%, and the portfolio is revalued to assess the impact in dollar terms.
FX -5%	All exchange rate curves are shifted down 5%, and the portfolio is revalued to assess the impact in dollar terms.

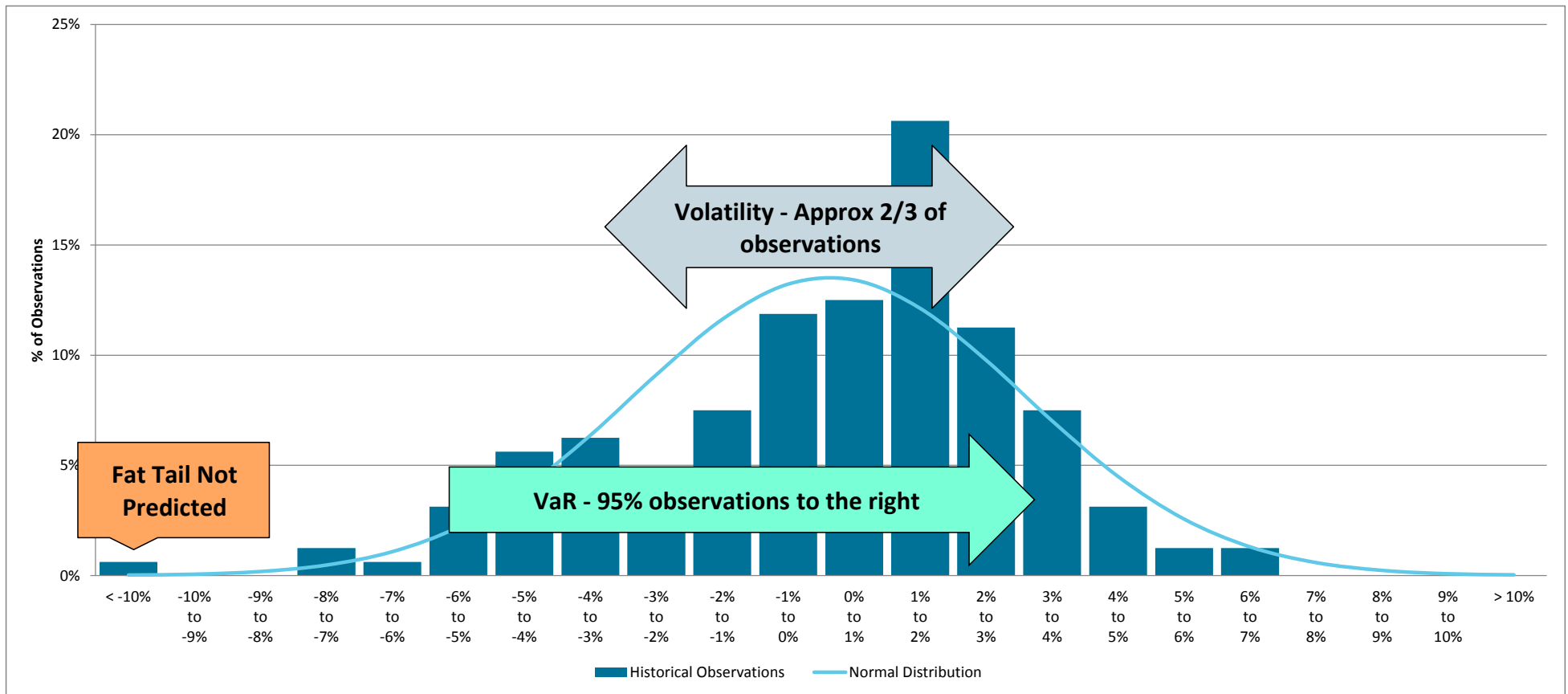
VaR and Volatility

Example Illustration of VaR and Volatility

VaR = 5.6%

Volatility = 2.9%

Mean = 0.1%



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FUND EVALUATION REPORT

Los Angeles County Employees Retirement Association

June 30, 2018



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M E K E T A I N V E S T M E N T G R O U P

BOSTON
MASSACHUSETTS

CHICAGO
ILLINOIS

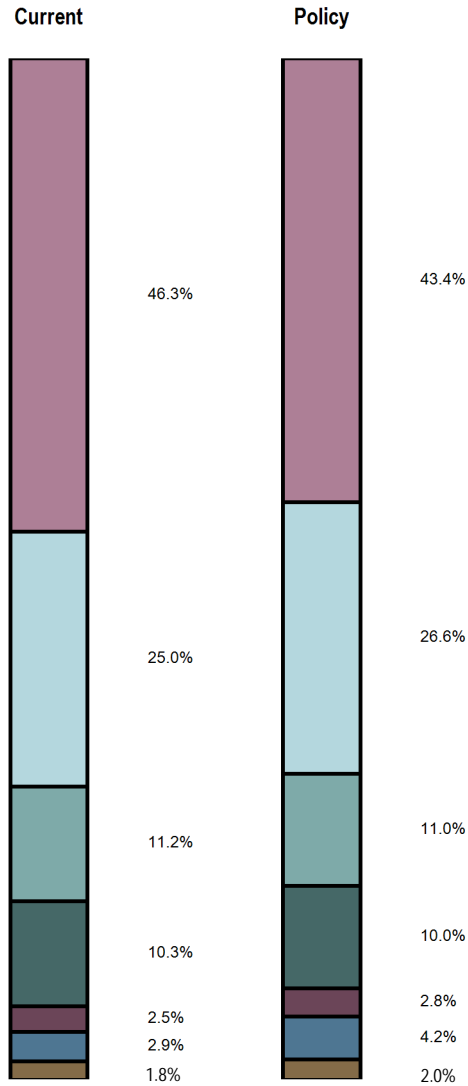
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Allocation vs. Target							
	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?	
Total Equity	\$25,887,322,349	46.3%	43.4%	2.9%	33.4% - 53.4%	Yes	
U.S. Equity	\$13,152,907,447	23.5%	22.4%	1.1%	0.0% - 100.0%	Yes	
Non-U.S. Equity	\$12,734,414,902	22.8%	21.0%	1.8%	0.0% - 100.0%	Yes	
Fixed Income	\$13,981,579,578	25.0%	26.6%	-1.6%	23.6% - 29.6%	Yes	
Fixed Income	\$13,981,579,578	25.0%	26.6%	-1.6%	23.6% - 29.6%	Yes	
Real Estate	\$6,273,667,682	11.2%	11.0%	0.2%	8.0% - 16.0%	Yes	
Real Estate	\$6,273,667,682	11.2%	11.0%	0.2%	8.0% - 16.0%	Yes	
Private Equity	\$5,758,338,534	10.3%	10.0%	0.3%	7.0% - 14.0%	Yes	
Private Equity	\$5,758,338,534	10.3%	10.0%	0.3%	7.0% - 14.0%	Yes	
Commodities	\$1,410,505,526	2.5%	2.8%	-0.3%	0.0% - 4.8%	Yes	
Commodities	\$1,410,505,526	2.5%	2.8%	-0.3%	0.0% - 4.8%	Yes	
Hedge Funds	\$1,611,185,591	2.9%	4.2%	-1.3%	1.2% - 6.2%	Yes	
Hedge Funds	\$1,611,185,591	2.9%	4.2%	-1.3%	1.2% - 6.2%	Yes	
Cash	\$1,030,696,876	1.8%	2.0%	-0.2%	0.0% - 4.0%	Yes	
Cash	\$1,030,696,876	1.8%	2.0%	-0.2%	0.0% - 4.0%	Yes	
Other Opportunities	--	--	0.0%	0.0%	0.0% - 5.0%	Yes	
Total	\$55,953,296,137	100.0%	100.0%				

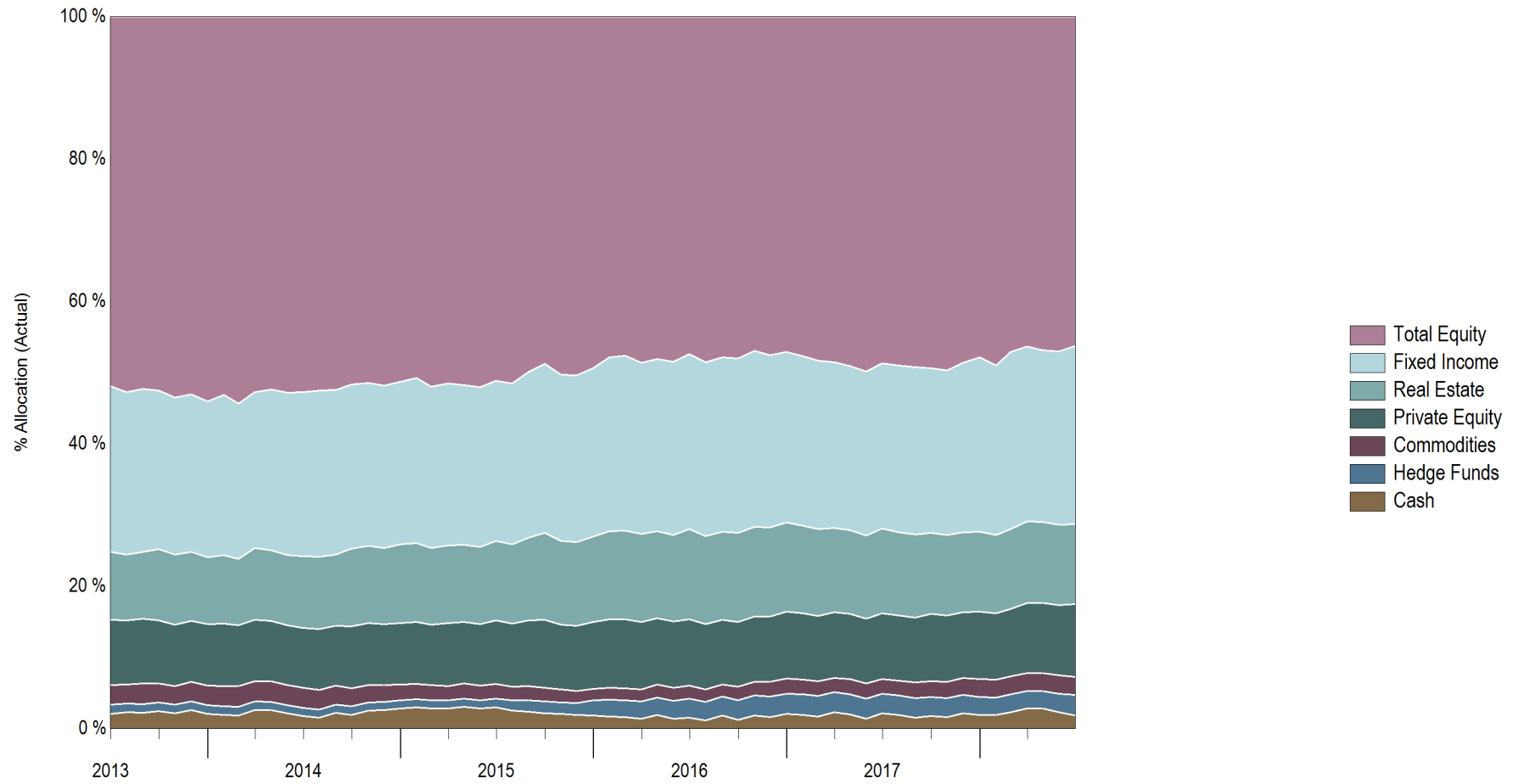
¹ The performance and market values of two opportunistic managers are reported with a one-month lag.

² Portfolio and benchmark are reported with a one-quarter lag. Preliminary returns.

³ Portfolio and benchmark are reported with a one-month lag.



Asset Allocation History
5 Years Ending June 30, 2018



As of June 30, 2018

Sources of Fund Growth						
Quarter ending June 30, 2018						
Manager Name	Beginning Market Value (\$000's)	Net Cash Flow (\$000's)	Investment Fees & Expenses (\$000's)	Net Investment Change (\$000's)	Ending Market Value (\$000's)	Quarter Return (%)
U.S. Equity	12,947,258	-262,645	4,026	468,295	13,152,907	3.6
BTC Russell 1000	9,221,651	-9,587,689	211	366,038	-	-
Frontier Capital Management	674,335	-	1,319	29,687	704,022	4.4
Eagle Asset Management	341,870	-	464	22,563	364,433	6.6
Twin Capital	525,644	-	200	15,857	541,501	3.0
Cramer Rosenthal McGlynn	274,308	-287,467	163	13,160	1	-
Jana Partners	94,266	-13,066	949	12,204	93,404	12.5
Intech	868,349	-	496	10,012	878,361	1.2
Westwood Management	256,853	-262,528	124	5,676	1	-
BTC Russell 2000	101,441	-104,965	11	3,524	-	-
BTC Russell 3000	588,541	9,444,127	-24	-1,074	10,031,594	3.9
Systematic Financial Management	-	250,000	53	-4,815	245,185	-
Quantitative Management Associates	-	300,000	60	-5,604	294,396	-
Non-U.S. Equity	12,793,501	-24,389	8,498	-34,696	12,734,415	-3
BTC Passive Currency Hedge	-42,751	-24,809	369	234,327	166,766	2.5
BTC Canada IMI	682,312	-	35	34,629	716,941	5.1
Symphony Financial Partners	137,289	257	257	12,759	150,305	9.3
Cevian Capital	288,287	-	1,200	12,729	301,016	4.4
Capital Guardian	382,376	-	352	6,105	388,480	1.6
Acadian Developed Markets	886,168	-	846	485	886,654	.1
BTC EAFE Small Cap	209,791	-	32	-2,350	207,440	-1.1
GAM Pacific Basin	882,020	-	917	-2,721	879,299	-3
BTC Europe Index	376,561	-	9	-3,472	373,089	-9
BTC Emerging Markets Small Cap	148,533	-	75	-12,703	135,830	-8.6
BTC Euro Tilts	999,407	-	1,056	-22,591	976,816	-2.3
Lazard Emerging Markets	371,457	-	692	-23,766	347,691	-6.4
AQR Emerging Markets	276,597	163	464	-26,748	250,012	-9.7
BTC EAFE IMI	4,746,965	-	179	-41,781	4,705,184	-9
Acadian Emerging Markets	432,879	-	499	-49,120	383,759	-11.3
Genesis	725,479	-	1,233	-49,124	676,355	-6.8
BTC Emerging Markets	1,290,078	-	283	-101,353	1,188,725	-7.9



Sources of Fund Growth

Quarter ending June 30, 2018

Manager Name	Beginning Market Value (\$000's)	Net Cash Flow (\$000's)	Investment Fees & Expenses (\$000's)	Net Investment Change (\$000's)	Ending Market Value (\$000's)	Quarter Return (%)
Fixed Income	13,699,946	300,504	7,441	-18,871	13,981,580	-1
Brigade Capital Management	490,833	3	933	7,085	497,921	1.4
PIMCO	1,047,130	-	548	5,821	1,052,951	.6
Tennenbaum Capital	269,561	-	621	4,349	273,911	1.6
Bain Capital	301,057	-126	619	3,724	304,654	1.2
Beach Point Capital	384,877	211	420	3,624	388,711	.9
TCW	271,887	-	395	2,016	273,903	.7
Crescent Capital Group	272,078	-	383	1,675	273,753	.6
Western Opportunistic	304,659	-	30	1,650	306,309	.5
Doubleline Capital	266,458	-	502	1,644	268,102	.6
Oaktree Capital Management	403,446	-	409	1,579	405,024	.4
Member Home Loan Program Mirror (MHLP)	33,730	-2,465	21	1,555	32,820	4.8
PENN Capital Management	108,327	-	123	724	109,051	.7
Blackrock	8,329	-8,444	-50	150	35	-
Pugh Capital Management	135,013	-	63	-240	134,773	-2
Dolan McEniry Capital Management	344,067	-	223	-487	343,580	-1
Principal Opportunistic	266,922	-	93	-521	266,401	-2
LM Capital Group	298,498	-296,875	62	-1,345	279	-
BTC Aggregate Index	3,238,169	608,200	85	-1,388	3,844,981	-1
Wells Capital Management	1,340,153	-	383	-2,049	1,338,104	-2
Dodge & Cox	1,285,558	-	320	-2,636	1,282,922	-2
Loomis, Sayles & Co.	1,077,810	-	349	-3,035	1,074,775	-3
Aberdeen Asset Management	205,670	-	199	-12,581	193,089	-6.1
Western Asset Management	1,133,377	-	369	-14,548	1,118,829	-1.3
Ashmore Investment Management	212,338	-	343	-15,637	196,701	-7.4

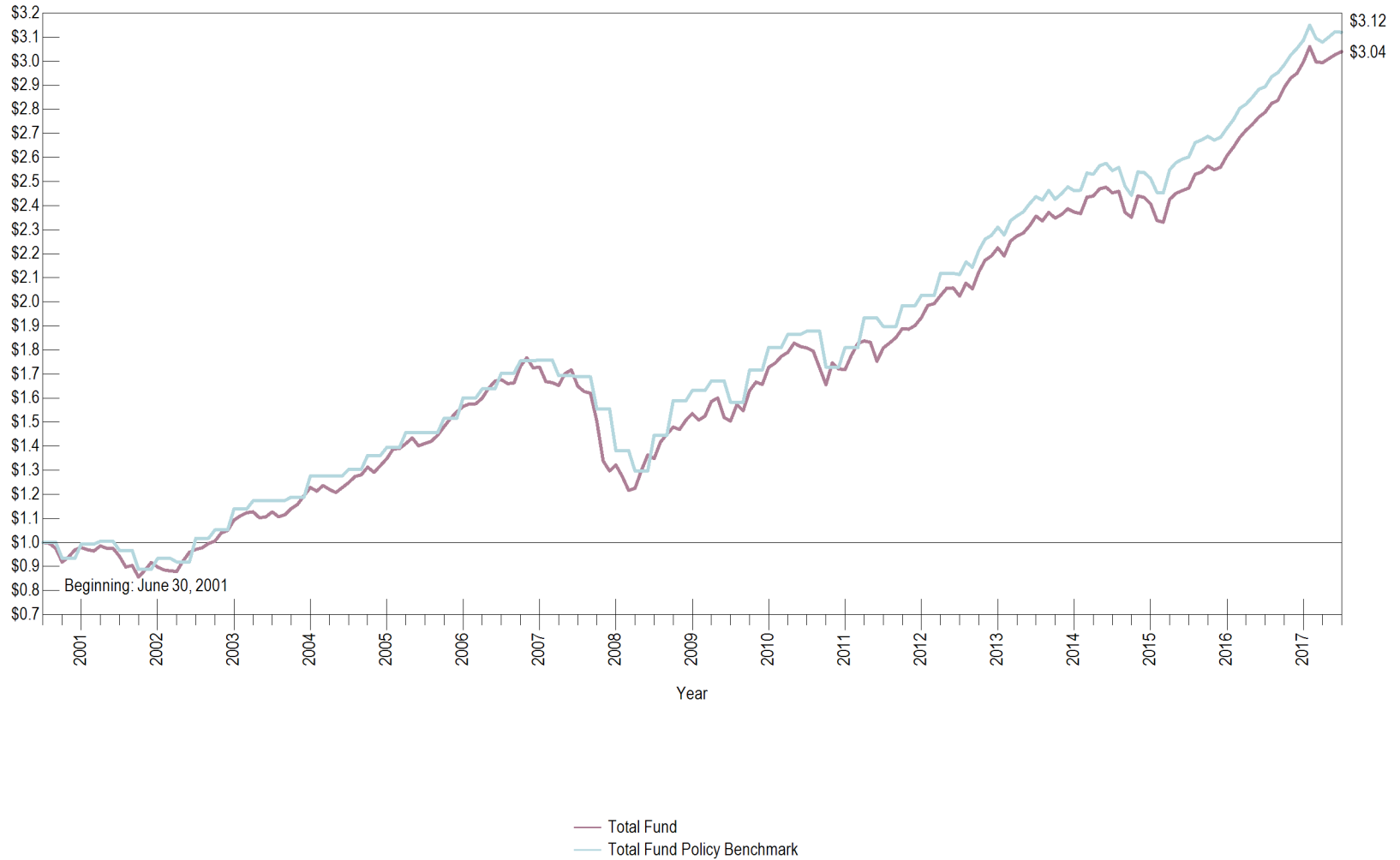
As of June 30, 2018

Sources of Fund Growth

Quarter ending June 30, 2018

Manager Name	Beginning Market Value (\$000's)	Net Cash Flow (\$000's)	Investment Fees & Expenses (\$000's)	Net Investment Change (\$000's)	Ending Market Value (\$000's)	Quarter Return (%)
Real Estate	6,330,243	-220,500	14,887	163,924	6,273,668	2.6
Private Equity	5,504,620	18,701	-	235,018	5,758,339	4.3
Commodities	1,397,984	-	926	12,522	1,410,506	.9
Neuberger Berman/Gresham	471,734	-	467	10,434	482,168	2.2
PIMCO Commodities	471,460	-	426	1,252	472,712	.3
Credit Suisse	454,790	-	33	835	455,626	.2
Total Hedge Funds	1,366,535	234,543	532	10,108	1,611,186	.6
Grosvenor HFOF	479,464	-	-	9,954	489,418	2.1
GSAM HFOF	481,243	-36	511	3,857	485,063	.8
Grosvenor OPCRD 2 HFOF	358,360	-	-	922	359,282	.3
Grosvenor OPCRD HFOF	47,468	-25,400	-	-291	21,777	-6
LACERA HF Direct	-	259,979	21	-4,333	255,646	-
Cash	1,564,845	-543,182	941	9,034	1,030,697	.5
Cash	1,450,745	-429,082	941	9,034	1,030,697	-
GSAM HFOF Uninvested Mirror	114,100	-114,100	-	-	-	-
Total Fund	55,604,931	-496,968	37,251	845,333	55,953,296	1.5

Growth of a Dollar



As of June 30, 2018

Asset Class Performance Summary (Gross)

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Fund	55,953,296,137	100.0	1.6	9.3	7.7	8.8	6.5
<i>Total Fund Policy Benchmark</i>			1.3	7.8	7.0	8.1	6.3
U.S. Equity	13,152,907,447	23.5	3.7	14.2	11.3	13.2	10.3
<i>Russell 3000</i>			3.9	14.8	11.6	13.3	10.2
Non-U.S. Equity	12,734,414,902	22.8	-0.2	9.1	7.0	8.4	4.1
<i>Custom MSCI ACWI IMI Net 50% Hedge</i>			-0.8	8.2	6.1	7.7	3.7
Fixed Income	13,981,579,578	25.0	-0.1	1.1	3.3	3.6	5.4
<i>FI Custom Index</i>			-0.3	-0.3	2.1	2.6	4.1
<i>BBgBarc US Universal TR</i>			-0.3	-0.3	2.1	2.6	4.1
Real Estate	6,273,667,682	11.2	2.9	9.1	10.2	10.5	4.0
<i>Real Estate Target</i>			2.1	7.5	9.4	10.7	6.3
Private Equity	5,758,338,534	10.3	4.3	21.2	13.3	15.2	11.4
<i>Private Equity Target</i>			3.6	13.7	13.1	13.3	10.6
Commodities	1,410,505,526	2.5	1.0	10.4	-2.5	-4.7	-7.2
<i>Bloomberg Commodity Index TR USD</i>			0.4	7.3	-4.5	-6.4	-9.0
Total Hedge Funds	1,611,185,591	2.9	0.6	5.7	2.7	3.9	--
<i>Hedge Fund Custom Index</i>			1.6	6.3	5.6	5.4	--
Cash	1,030,696,876	1.8	0.5	1.5	1.0	0.8	0.8
<i>Citi 6 Month T-Bill</i>			0.4	1.3	0.7	0.5	0.4

See Glossary for all Custom index definitions. Yearly returns are annualized.

¹ The performance and market values of two opportunistic managers are reported with a one-month lag.

² Portfolio and benchmark are reported with a one-quarter lag. Preliminary returns.

³ Portfolio and benchmark are reported with a one-month lag.



As of June 30, 2018

Trailing Performance

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Fund (Net)	55,953,296,137	100.0	1.5	9.0	7.4	8.5	6.3
Total Fund (Gross)			1.6	9.3	7.7	8.8	6.5
<i>Total Fund Policy Benchmark</i>			<u>1.3</u>	<u>7.8</u>	<u>7.0</u>	<u>8.1</u>	<u>6.3</u>
Excess Return (vs. Net)			0.2	1.2	0.4	0.4	0.0
U.S. Equity (Net)	13,152,907,447	23.5	3.6	14.1	11.1	13.1	10.1
U.S. Equity (Gross)			3.7	14.2	11.3	13.2	10.3
<i>Russell 3000</i>			<u>3.9</u>	<u>14.8</u>	<u>11.6</u>	<u>13.3</u>	<u>10.2</u>
Excess Return (vs. Net)			-0.3	-0.7	-0.5	-0.2	-0.1
Passive (Net)	10,031,593,973	17.9					
Passive (Gross)							
BTC Russell 3000 (Net)	10,031,593,973	17.9	3.9	--	--	--	--
BTC Russell 3000 (Gross)			3.9	--	--	--	--
<i>Russell 3000</i>			<u>3.9</u>	--	--	--	--
Excess Return (vs. Net)			0.0				
Low Risk (Net)	1,419,861,507	2.5					
Low Risk (Gross)							
Intech (Net)	878,360,849	1.6	1.2	13.7	11.2	13.6	10.2
Intech (Gross)			1.2	13.9	11.5	13.9	10.5
<i>S&P 500</i>			<u>3.4</u>	<u>14.4</u>	<u>11.9</u>	<u>13.4</u>	<u>10.2</u>
Excess Return (vs. Net)			-2.2	-0.7	-0.7	0.2	0.0
Twin Capital (Net)	541,500,658	1.0	3.0	14.1	11.4	13.3	10.3
Twin Capital (Gross)			3.1	14.3	11.5	13.5	10.5
<i>S&P 500</i>			<u>3.4</u>	<u>14.4</u>	<u>11.9</u>	<u>13.4</u>	<u>10.2</u>
Excess Return (vs. Net)			-0.4	-0.3	-0.5	-0.1	0.1

See Glossary for all Custom index definitions.



As of June 30, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Moderate / High Risk (Net)	1,701,440,766	3.0					
Moderate / High Risk (Gross)							
Eagle Asset Management (Net)	364,432,916	0.7	6.6	15.1	12.4	13.5	10.8
Eagle Asset Management (Gross)			6.7	15.7	13.0	14.1	11.4
<i>Russell 2500</i>			<u>5.7</u>	<u>16.2</u>	<u>10.3</u>	<u>12.3</u>	<u>10.7</u>
Excess Return (vs. Net)			0.9	-1.1	2.1	1.2	0.1
Quantitative Management Associates (Net)	294,396,026	0.5	--	--	--	--	--
Quantitative Management Associates (Gross)			--	--	--	--	--
Systematic Financial Management (Net)	245,184,874	0.4	--	--	--	--	--
Systematic Financial Management (Gross)			--	--	--	--	--
Frontier Capital Management (Net)	704,022,041	1.3	4.4	10.8	8.9	12.6	10.6
Frontier Capital Management (Gross)			4.6	11.7	9.7	13.5	11.4
<i>Russell 2500</i>			<u>5.7</u>	<u>16.2</u>	<u>10.3</u>	<u>12.3</u>	<u>10.7</u>
Excess Return (vs. Net)			-1.3	-5.4	-1.4	0.3	-0.1
Jana Partners (Net)	93,403,690	0.2	12.5	3.8	--	--	--
Jana Partners (Gross)			13.6	7.1	--	--	--
<i>S&P 500</i>			<u>3.4</u>	<u>14.4</u>	--	--	--
Excess Return (vs. Net)			9.1	-10.6			
Non-U.S. Equity (Net)	12,734,414,902	22.8	-0.3	8.8	6.7	8.1	3.9
Non-U.S. Equity (Gross)			-0.2	9.1	7.0	8.4	4.1
<i>Custom MSCI ACWI IMI Net 50% Hedge</i>			<u>-0.8</u>	<u>8.2</u>	<u>6.1</u>	<u>7.7</u>	<u>3.7</u>
Excess Return (vs. Net)			0.5	0.6	0.6	0.4	0.2

See Glossary for all Custom index definitions.



As of June 30, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Passive (Net)	7,327,208,603	13.1					
Passive (Gross)							
BTC Canada IMI (Net)	716,940,885	1.3	5.1	9.4	5.1	4.4	1.3
BTC Canada IMI (Gross)			5.1	9.5	5.1	4.4	1.3
<i>MSCI Canada IMI Custom Index</i>			<u>4.9</u>	<u>8.6</u>	<u>4.3</u>	<u>3.7</u>	<u>0.6</u>
Excess Return (vs. Net)			0.2	0.8	0.8	0.7	0.7
BTC EAFE IMI (Net)	4,705,183,880	8.4	-0.9	8.1	6.0	7.5	3.7
BTC EAFE IMI (Gross)			-0.9	8.1	6.0	7.5	3.7
<i>MSCI EAFE IMI Custom Index</i>			<u>-1.3</u>	<u>7.7</u>	<u>5.6</u>	<u>7.1</u>	<u>3.3</u>
Excess Return (vs. Net)			0.4	0.4	0.4	0.4	0.4
BTC EAFE Small Cap (Net)	207,440,145	0.4	-1.1	12.9	--	--	--
BTC EAFE Small Cap (Gross)			-1.1	13.0	--	--	--
<i>MSCI EAFE Small Cap</i>			<u>-1.6</u>	<u>12.4</u>	--	--	--
Excess Return (vs. Net)			0.5	0.5			
BTC Emerging Markets (Net)	1,188,724,537	2.1	-7.9	8.0	5.4	4.8	2.0
BTC Emerging Markets (Gross)			-7.8	8.1	5.5	4.9	2.1
<i>MSCI Emerging Markets</i>			<u>-8.0</u>	<u>8.2</u>	<u>5.6</u>	<u>5.0</u>	<u>2.3</u>
Excess Return (vs. Net)			0.1	-0.2	-0.2	-0.2	-0.3
BTC Emerging Markets Small Cap (Net)	135,830,062	0.2	-8.6	5.3	2.3	4.1	--
BTC Emerging Markets Small Cap (Gross)			-8.5	5.5	2.5	4.3	--
<i>MSCI Emerging Markets Small Cap</i>			<u>-8.6</u>	<u>5.6</u>	<u>2.5</u>	<u>4.3</u>	--
Excess Return (vs. Net)			0.0	-0.3	-0.2	-0.2	

¹ BTC EAFE & Canada Funds from 11/1999 - 8/2008; and BTC EAFE & Canada IMI Funds from 8/2008 - Present.
See Glossary for all Custom index definitions.

As of June 30, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
BTC Europe Index (Net)	373,089,094	0.7	-0.9	5.8	4.7	6.7	2.9
BTC Europe Index (Gross)			-0.9	5.8	4.8	6.7	2.9
<i>MSCI Europe</i>			<u>-1.3</u>	<u>5.3</u>	<u>4.2</u>	<u>6.2</u>	<u>2.4</u>
Excess Return (vs. Net)			0.4	0.5	0.5	0.5	0.5
Non-US Developed (Net)	1,275,134,101	2.3					
Non-US Developed (Gross)							
Acadian Developed Markets (Net)	886,653,693	1.6	0.1	12.0	11.9	10.8	4.2
Acadian Developed Markets (Gross)			0.1	12.4	12.3	11.2	4.6
<i>EAFE Custom Benchmark</i>			<u>-0.7</u>	<u>7.0</u>	<u>4.9</u>	<u>6.2</u>	<u>2.6</u>
Excess Return (vs. Net)			0.8	5.0	7.0	4.6	1.6
Capital Guardian (Net)	388,480,408	0.7	1.6	13.3	7.6	8.0	4.1
Capital Guardian (Gross)			1.7	13.7	7.9	8.4	4.5
<i>EAFE Custom Benchmark</i>			<u>-0.7</u>	<u>7.0</u>	<u>4.9</u>	<u>6.2</u>	<u>2.6</u>
Excess Return (vs. Net)			2.3	6.3	2.7	1.8	1.5
Regional Developed (Net)	2,307,436,302	4.1					
Regional Developed (Gross)							
BTC Euro Tilts (Net)	976,816,466	1.7	-2.3	5.0	5.5	8.2	3.5
BTC Euro Tilts (Gross)			-2.2	5.5	5.9	8.7	4.0
<i>MSCI Europe</i>			<u>-1.3</u>	<u>5.3</u>	<u>4.2</u>	<u>6.2</u>	<u>2.4</u>
Excess Return (vs. Net)			-1.0	-0.3	1.3	2.0	1.1
Cevian Capital (Net)	301,016,078	0.5	4.4	3.0	--	--	--
Cevian Capital (Gross)			4.8	4.7	--	--	--
<i>MSCI Europe</i>			<u>-1.3</u>	<u>5.3</u>	--	--	--
Excess Return (vs. Net)			5.7	-2.3			

See Glossary for all Custom index definitions.



As of June 30, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
GAM Pacific Basin (Net)	879,298,784	1.6	-0.3	12.1	6.4	7.3	4.9
GAM Pacific Basin (Gross)			-0.2	12.6	6.9	7.7	5.4
<i>MSCI Pacific</i>			<u>-1.4</u>	<u>9.9</u>	<u>6.4</u>	<u>6.9</u>	<u>4.0</u>
Excess Return (vs. Net)			1.1	2.2	0.0	0.4	0.9
Symphony Financial Partners (Net)	150,304,973	0.3	9.3	25.4	--	--	--
Symphony Financial Partners (Gross)			9.5	28.4	--	--	--
<i>MSCI Japan Small Cap NR USD</i>			<u>-3.2</u>	<u>14.2</u>	--	--	--
Excess Return (vs. Net)			12.5	11.2			
Emerging Markets (Net)	1,657,817,686	3.0					
Emerging Markets (Gross)							
Acadian Emerging Markets (Net)	383,759,305	0.7	-11.3	4.2	5.0	4.5	--
Acadian Emerging Markets (Gross)			-11.2	4.6	5.5	5.0	--
<i>MSCI Emerging Markets</i>			<u>-8.0</u>	<u>8.2</u>	<u>5.6</u>	<u>5.0</u>	--
Excess Return (vs. Net)			-3.3	-4.0	-0.6	-0.5	
AQR Emerging Markets (Net)	250,012,085	0.4	-9.7	4.9	5.5	--	--
AQR Emerging Markets (Gross)			-9.5	5.6	6.2	--	--
<i>MSCI Emerging Markets</i>			<u>-8.0</u>	<u>8.2</u>	<u>5.6</u>	--	--
Excess Return (vs. Net)			-1.7	-3.3	-0.1		
Genesis (Net)	676,355,186	1.2	-6.8	9.1	6.0	5.1	4.8
Genesis (Gross)			-6.6	9.8	6.8	5.8	5.6
<i>MSCI EM IMI Custom Index</i>			<u>-8.0</u>	<u>7.9</u>	<u>5.2</u>	<u>4.9</u>	<u>2.5</u>
Excess Return (vs. Net)			1.2	1.2	0.8	0.2	2.3
Lazard Emerging Markets (Net)	347,691,110	0.6	-6.4	7.5	4.9	5.7	--
Lazard Emerging Markets (Gross)			-6.2	8.4	5.7	6.6	--
<i>MSCI Emerging Markets</i>			<u>-8.0</u>	<u>8.2</u>	<u>5.6</u>	<u>5.0</u>	--
Excess Return (vs. Net)			1.6	-0.7	-0.7	0.7	

See Glossary for all Custom index definitions.



As of June 30, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Passive Hedge (Net)	166,765,868	0.3					
Passive Hedge (Gross)							
BTC Passive Currency Hedge (Net)	166,765,868	0.3	2.5	0.5	0.5	1.3	--
BTC Passive Currency Hedge (Gross)			2.5	0.5	0.5	1.3	--
50% FX Hedge Index			2.5	0.5	0.6	1.4	--
Excess Return (vs. Net)			0.0	0.0	-0.1	-0.1	
Fixed Income (Net)	13,981,579,578	25.0	-0.1	0.8	3.1	3.4	5.2
Fixed Income (Gross)			-0.1	1.1	3.3	3.6	5.4
FI Custom Index			-0.3	-0.3	2.1	2.6	4.1
Excess Return (vs. Net)			0.2	1.1	1.0	0.8	1.1
BBgBarc US Universal TR			-0.3	-0.3	2.1	2.6	4.1
Core (Net)	6,600,814,708	11.8					
Core (Gross)							
BTC US Debt Index (Net)	3,844,980,979	6.9	-0.1	-0.3	1.8	2.4	3.8
BTC US Debt Index (Gross)			-0.1	-0.3	1.8	2.4	3.8
BBgBarc US Aggregate TR			-0.2	-0.4	1.7	2.3	3.7
Excess Return (vs. Net)			0.1	0.1	0.1	0.1	0.1
Dodge & Cox (Net)	1,282,922,411	2.3	-0.2	0.5	2.8	3.4	5.3
Dodge & Cox (Gross)			-0.2	0.6	2.9	3.5	5.4
BBgBarc US Aggregate TR			-0.2	-0.4	1.7	2.3	3.7
Excess Return (vs. Net)			0.0	0.9	1.1	1.1	1.6

¹ Does not include cash. The performance and market values of two opportunistic managers are reported with a one-month lag.
See Glossary for all Custom index definitions.

As of June 30, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Pugh Capital Management (Net)	134,772,789	0.2	-0.2	-0.5	1.8	2.4	4.2
Pugh Capital Management (Gross)			-0.1	-0.3	2.0	2.6	4.5
<i>BBgBarc US Aggregate TR</i>			<u>-0.2</u>	<u>-0.4</u>	<u>1.7</u>	<u>2.3</u>	<u>3.7</u>
Excess Return (vs. Net)			0.0	-0.1	0.1	0.1	0.5
Wells Capital Management (Net)	1,338,103,869	2.4	-0.2	-0.3	2.0	2.7	4.9
Wells Capital Management (Gross)			-0.1	-0.2	2.1	2.8	5.0
<i>BBgBarc US Aggregate TR</i>			<u>-0.2</u>	<u>-0.4</u>	<u>1.7</u>	<u>2.3</u>	<u>3.7</u>
Excess Return (vs. Net)			0.0	0.1	0.3	0.4	1.2
Core Plus (Net)	3,590,414,608	6.4					
Core Plus (Gross)							
Dolan McEniry Capital Management (Net)	343,580,431	0.6	-0.1	0.4	3.4	3.7	6.1
Dolan McEniry Capital Management (Gross)			-0.1	0.7	3.7	4.0	6.4
<i>BBgBarc US Credit Int TR</i>			<u>-0.1</u>	<u>-0.4</u>	<u>2.0</u>	<u>2.5</u>	<u>4.4</u>
Excess Return (vs. Net)			0.0	0.8	1.4	1.2	1.7
Loomis, Sayles & Co. (Net)	1,074,774,925	1.9	-0.3	1.1	2.7	3.4	5.2
Loomis, Sayles & Co. (Gross)			-0.2	1.3	2.8	3.6	5.3
<i>BBgBarc US Aggregate TR</i>			<u>-0.2</u>	<u>-0.4</u>	<u>1.7</u>	<u>2.3</u>	<u>3.7</u>
Excess Return (vs. Net)			-0.1	1.5	1.0	1.1	1.5
PIMCO (Net)	1,052,951,154	1.9	0.6	1.4	3.2	3.0	4.8
PIMCO (Gross)			0.6	1.6	3.4	3.2	5.0
<i>BBgBarc US Aggregate TR</i>			<u>-0.2</u>	<u>-0.4</u>	<u>1.7</u>	<u>2.3</u>	<u>3.7</u>
Excess Return (vs. Net)			0.8	1.8	1.5	0.7	1.1

See Glossary for all Custom index definitions.



As of June 30, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Western Asset Management (Net)	1,118,828,869	2.0	-1.3	-1.4	2.7	3.2	5.5
Western Asset Management (Gross)			-1.3	-1.3	2.8	3.4	5.7
<i>BBgBarc US Aggregate TR</i>			<u>-0.2</u>	<u>-0.4</u>	<u>1.7</u>	<u>2.3</u>	<u>3.7</u>
Excess Return (vs. Net)			-1.1	-1.0	1.0	0.9	1.8
High Yield (Net)	514,075,378	0.9					
High Yield (Gross)							
Oaktree Capital Management (Net)	405,024,387	0.7	0.4	0.9	3.9	4.4	7.0
Oaktree Capital Management (Gross)			0.5	1.3	4.3	4.9	7.5
<i>BBG BARC Ba to B US HY</i>			<u>0.6</u>	<u>1.8</u>	<u>4.8</u>	<u>5.2</u>	<u>7.5</u>
Excess Return (vs. Net)			-0.2	-0.9	-0.9	-0.8	-0.5
PENN Capital Management (Net)	109,050,991	0.2	0.7	2.3	4.4	4.4	6.5
PENN Capital Management (Gross)			0.8	2.8	4.9	4.9	7.0
<i>BBG BARC Ba to B US HY</i>			<u>0.6</u>	<u>1.8</u>	<u>4.8</u>	<u>5.2</u>	<u>7.5</u>
Excess Return (vs. Net)			0.1	0.5	-0.4	-0.8	-1.0
Opportunistic (Net)	3,243,454,767	5.8					
Opportunistic (Gross)							
Aberdeen Asset Management (Net)	193,089,256	0.3	-6.1	-2.6	--	--	--
Aberdeen Asset Management (Gross)			-6.0	-2.2	--	--	--
<i>Opportunistic EMD Custom</i>			<u>-4.9</u>	<u>-1.4</u>	--	--	--
Excess Return (vs. Net)			-1.2	-1.2			
Ashmore Investment Management (Net)	196,701,132	0.4	-7.4	-1.5	--	--	--
Ashmore Investment Management (Gross)			-7.2	-0.9	--	--	--
<i>Opportunistic EMD Custom</i>			<u>-4.9</u>	<u>-1.4</u>	--	--	--
Excess Return (vs. Net)			-2.5	-0.1			

See Glossary for all Custom index definitions.



As of June 30, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Bain Capital (Net)	304,654,484	0.5	1.2	3.0	4.4	--	--
Bain Capital (Gross)			1.4	4.1	5.2	--	--
<i>Opportunistic Custom Index</i>			<u>0.9</u>	<u>3.6</u>	<u>4.9</u>	--	--
Excess Return (vs. Net)			0.3	-0.6	-0.5		
Beach Point Capital (Net)	388,711,315	0.7	0.9	4.2	6.9	--	--
Beach Point Capital (Gross)			1.1	5.7	8.7	--	--
<i>Opportunistic Custom Index</i>			<u>0.9</u>	<u>3.6</u>	<u>4.9</u>	--	--
Excess Return (vs. Net)			0.0	0.6	2.0		
Brigade Capital Management (Net)	497,921,121	0.9	1.4	3.8	5.9	5.3	--
Brigade Capital Management (Gross)			1.6	4.5	6.7	6.2	--
<i>Brigade Custom Index</i>			<u>0.7</u>	<u>3.2</u>	<u>4.6</u>	<u>4.7</u>	--
Excess Return (vs. Net)			0.7	0.6	1.3	0.6	
Crescent Capital Group (Net)	273,753,144	0.5	0.6	3.1	3.8	--	--
Crescent Capital Group (Gross)			0.8	3.7	4.4	--	--
<i>Opportunistic Custom Index</i>			<u>0.9</u>	<u>3.6</u>	<u>4.9</u>	--	--
Excess Return (vs. Net)			-0.3	-0.5	-1.1		
Doubleline Capital (Net)	268,101,543	0.5	0.6	2.6	--	--	--
Doubleline Capital (Gross)			0.8	3.4	--	--	--
<i>Securitized Custom Index</i>			<u>1.2</u>	<u>4.1</u>	--	--	--
Excess Return (vs. Net)			-0.6	-1.5			
Principal Opportunistic (Net)	266,400,974	0.5	-0.2	0.8	3.0	3.7	--
Principal Opportunistic (Gross)			-0.2	1.0	3.2	3.9	--
<i>BBgBarc U.S. Universal Spread 1-10 Year</i>			<u>-0.2</u>	<u>0.1</u>	<u>2.8</u>	<u>3.2</u>	--
Excess Return (vs. Net)			0.0	0.7	0.2	0.5	

See Glossary for all Custom index definitions.



As of June 30, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
TCW (Net)	273,902,509	0.5	0.7	3.3	--	--	--
TCW (Gross)			0.9	3.9	--	--	--
<i>Securitized Custom Index</i>			<u>1.2</u>	<u>4.1</u>	--	--	--
Excess Return (vs. Net)			-0.5	-0.8			
Tennenbaum Capital (Net)	273,910,519	0.5	1.6	7.5	7.8	--	--
Tennenbaum Capital (Gross)			1.8	8.5	8.9	--	--
<i>Credit Suisse Leveraged Loan (1 month lagged)</i>			<u>1.0</u>	<u>4.8</u>	<u>4.3</u>	--	--
Excess Return (vs. Net)			0.6	2.7	3.5		
Western Opportunistic (Net)	306,308,770	0.5	0.5	2.8	3.6	3.4	--
Western Opportunistic (Gross)			0.6	2.8	3.7	3.4	--
<i>Western Opportunistic Custom Index</i>			<u>0.5</u>	<u>4.6</u>	<u>3.2</u>	<u>2.8</u>	--
Excess Return (vs. Net)			0.0	-1.8	0.4	0.6	
Mortgage Program (Net)	32,820,117	0.1					
Mortgage Program (Gross)							
Member Home Loan Program Mirror (MHLP) (Net)	32,820,117	0.1	4.8	19.9	7.7	5.9	5.9
Member Home Loan Program Mirror (MHLP) (Gross)			4.9	20.2	8.0	6.2	6.1
Real Estate (Net)	6,273,667,682	11.2	2.6	8.2	9.3	9.5	3.3
Real Estate (Gross)			2.9	9.1	10.2	10.5	4.0
<i>Real Estate Target</i>			<u>2.1</u>	<u>7.5</u>	<u>9.4</u>	<u>10.7</u>	<u>6.3</u>
Excess Return (vs. Net)			0.5	0.7	-0.1	-1.2	-3.0
Private Equity (Net)	5,758,338,534	10.3	4.3	21.2	13.3	15.2	11.4
Private Equity (Gross)			4.3	21.2	13.3	15.2	11.4
<i>Private Equity Target</i>			<u>3.6</u>	<u>13.7</u>	<u>13.1</u>	<u>13.3</u>	<u>10.6</u>
Excess Return (vs. Net)			0.7	7.5	0.2	1.9	0.8

See Glossary for all Custom index definitions.

¹ Represents the combined assets of three portfolios, two of which are reported with a one-month lag.

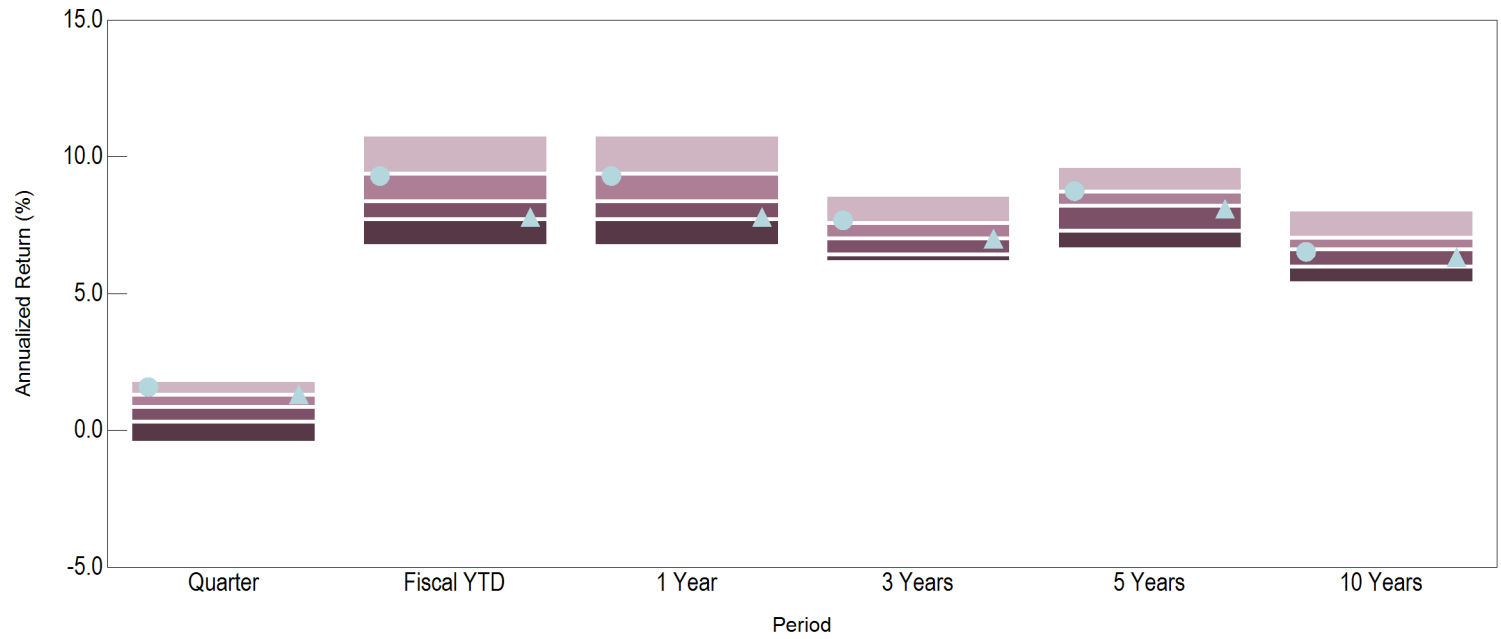
As of June 30, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Commodities (Net)	1,410,505,526	2.5	0.9	10.0	-2.8	-5.0	-7.6
Commodities (Gross)			1.0	10.4	-2.5	-4.7	-7.2
<i>Bloomberg Commodity Index TR USD</i>			<u>0.4</u>	<u>7.3</u>	<u>-4.5</u>	<u>-6.4</u>	<u>-9.0</u>
Excess Return (vs. Net)			0.5	2.7	1.7	1.4	1.4
Credit Suisse (Net)	455,625,516	0.8	0.2	6.4	-4.0	-6.0	--
Credit Suisse (Gross)			0.2	6.7	-3.8	-5.7	--
<i>Bloomberg Commodity Index TR USD</i>			<u>0.4</u>	<u>7.3</u>	<u>-4.5</u>	<u>-6.4</u>	--
Excess Return (vs. Net)			-0.2	-0.9	0.5	0.4	
Neuberger Berman/Gresham (Net)	482,167,867	0.9	2.2	13.4	-2.6	-4.9	-7.1
Neuberger Berman/Gresham (Gross)			2.3	13.9	-2.3	-4.6	-6.8
<i>Bloomberg Commodity Index TR USD</i>			<u>0.4</u>	<u>7.3</u>	<u>-4.5</u>	<u>-6.4</u>	<u>-9.0</u>
Excess Return (vs. Net)			1.8	6.1	1.9	1.5	1.9
PIMCO Commodities (Net)	472,712,143	0.8	0.3	10.0	-2.0	-4.3	-7.6
PIMCO Commodities (Gross)			0.4	10.4	-1.6	-3.9	-7.1
<i>Bloomberg Commodity Index TR USD</i>			<u>0.4</u>	<u>7.3</u>	<u>-4.5</u>	<u>-6.4</u>	<u>-9.0</u>
Excess Return (vs. Net)			-0.1	2.7	2.5	2.1	1.4
Total Hedge Funds (Net)	1,611,185,591	2.9	0.6	5.6	2.6	3.8	--
Total Hedge Funds (Gross)			0.6	5.7	2.7	3.9	--
<i>Hedge Fund Custom Index</i>			<u>1.6</u>	<u>6.3</u>	<u>5.6</u>	<u>5.4</u>	--
Excess Return (vs. Net)			-1.0	-0.7	-3.0	-1.6	
Cash (Net)	1,030,696,876	1.8	0.5	1.4	1.0	0.7	0.8
Cash (Gross)			0.5	1.5	1.0	0.8	0.8
<i>Citi 6 Month T-Bill</i>			<u>0.4</u>	<u>1.3</u>	<u>0.7</u>	<u>0.5</u>	<u>0.4</u>
Excess Return (vs. Net)			0.1	0.1	0.3	0.2	0.4

See Glossary for all Custom index definitions. Yearly returns are annualized.

¹ Portfolio and benchmark are reported with a one-month lag.² Portfolio reported on a quarterly basis with a one quarter lag. Benchmark is reported with a one quarter lag.

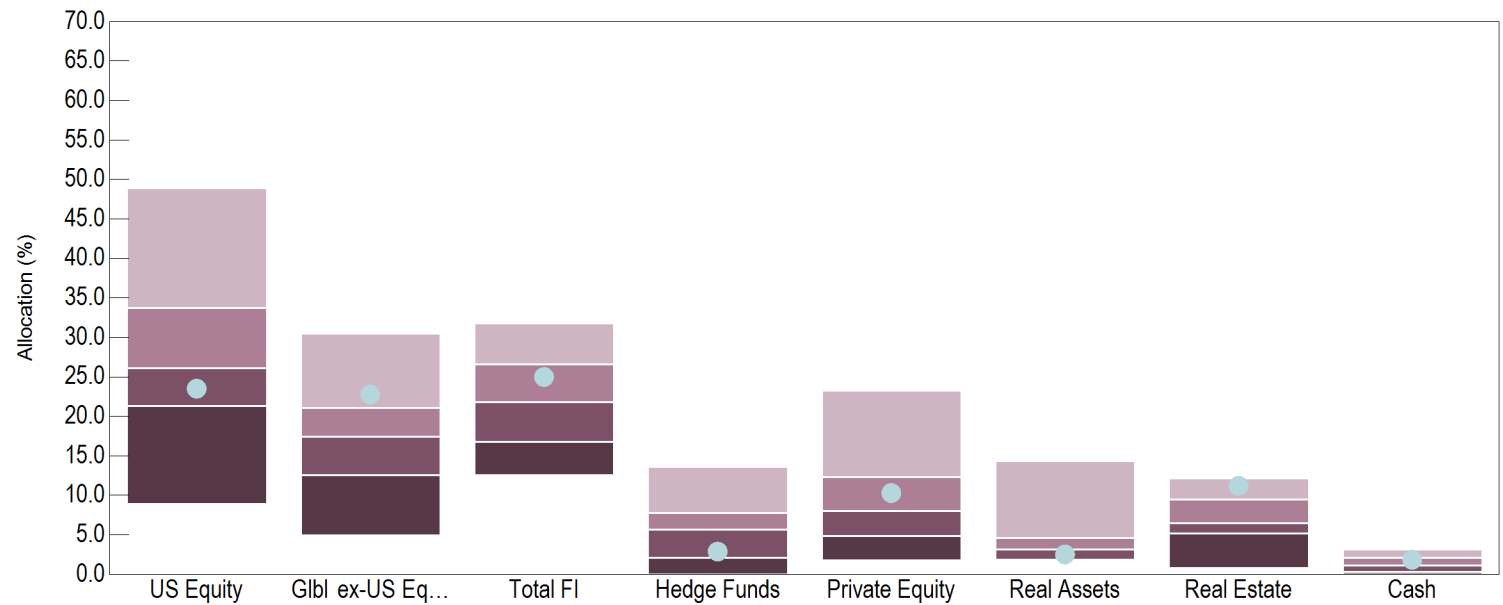
InvestorForce Public DB > \$1B Gross Return Comparison



	Quarter		Fiscal YTD		1 Year		3 Years		5 Years		10 Years	
Return (Rank)	1.8		10.8		10.8		8.6		9.7		8.1	
5th Percentile	1.3		9.4		9.4		7.6		8.7		7.1	
25th Percentile	0.9		8.4		8.4		7.0		8.2		6.6	
Median	0.3		7.7		7.7		6.5		7.3		6.0	
75th Percentile	-0.4		6.8		6.8		6.2		6.6		5.4	
95th Percentile												
# of Portfolios	51		51		51		51		50		47	
● Total Fund	1.6	(14)	9.3	(26)	9.3	(26)	7.7	(22)	8.8	(25)	6.5	(55)
▲ Total Fund Policy Benchmark	1.3	(26)	7.8	(73)	7.8	(73)	7.0	(53)	8.1	(58)	6.3	(61)



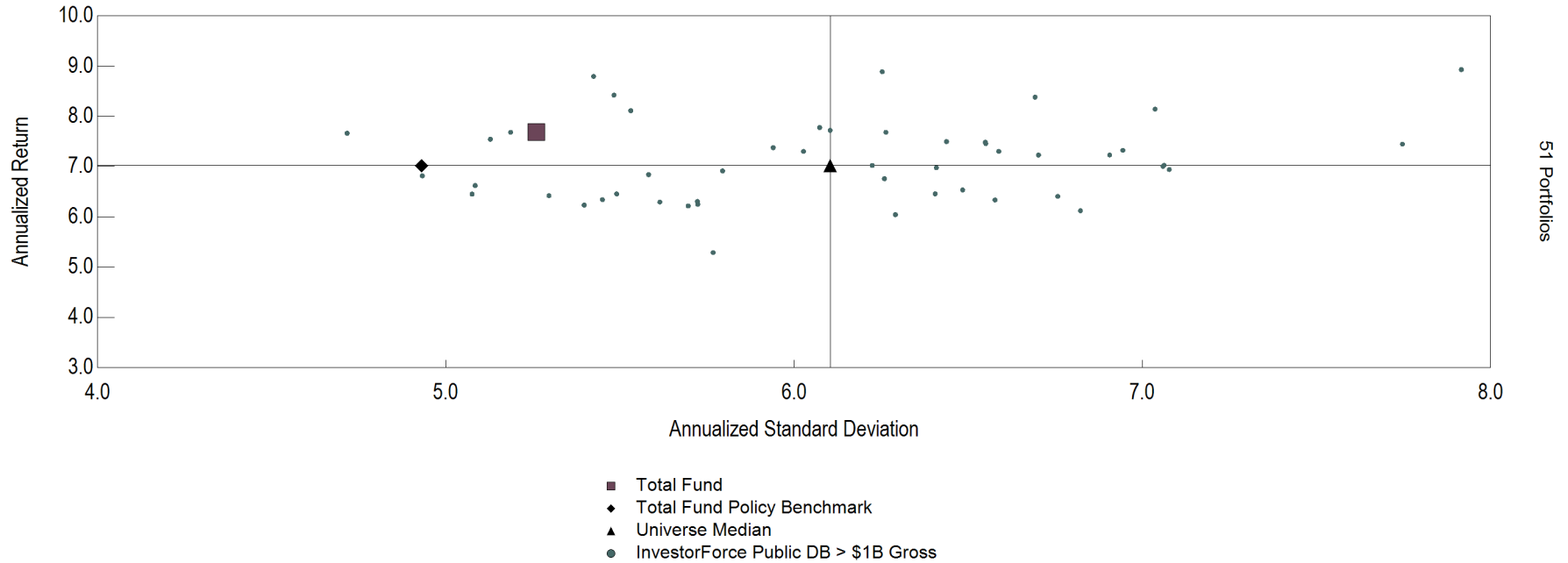
**Total Plan Allocation (Actual) vs. InvestorForce Public DB > \$1B Gross
As of June 30, 2018**



Allocation (Rank)

5th Percentile	48.9	30.5	31.8	13.6	23.3	14.4	12.1	3.2
25th Percentile	33.8	21.2	26.6	7.9	12.4	4.7	9.6	2.2
Median	26.1	17.5	21.9	5.7	8.1	3.2	6.5	1.2
75th Percentile	21.4	12.6	16.8	2.2	4.9	2.0	5.3	0.4
95th Percentile	9.0	5.0	12.6	0.1	1.8	1.8	0.9	0.1
# of Portfolios	40	42	46	26	33	22	37	42
● Total Fund	23.5 (65)	22.8 (21)	25.0 (38)	2.9 (68)	10.3 (34)	2.5 (63)	11.2 (9)	1.8 (35)

Annualized Return vs. Annualized Standard Deviation
3 Years Ending June 30, 2018



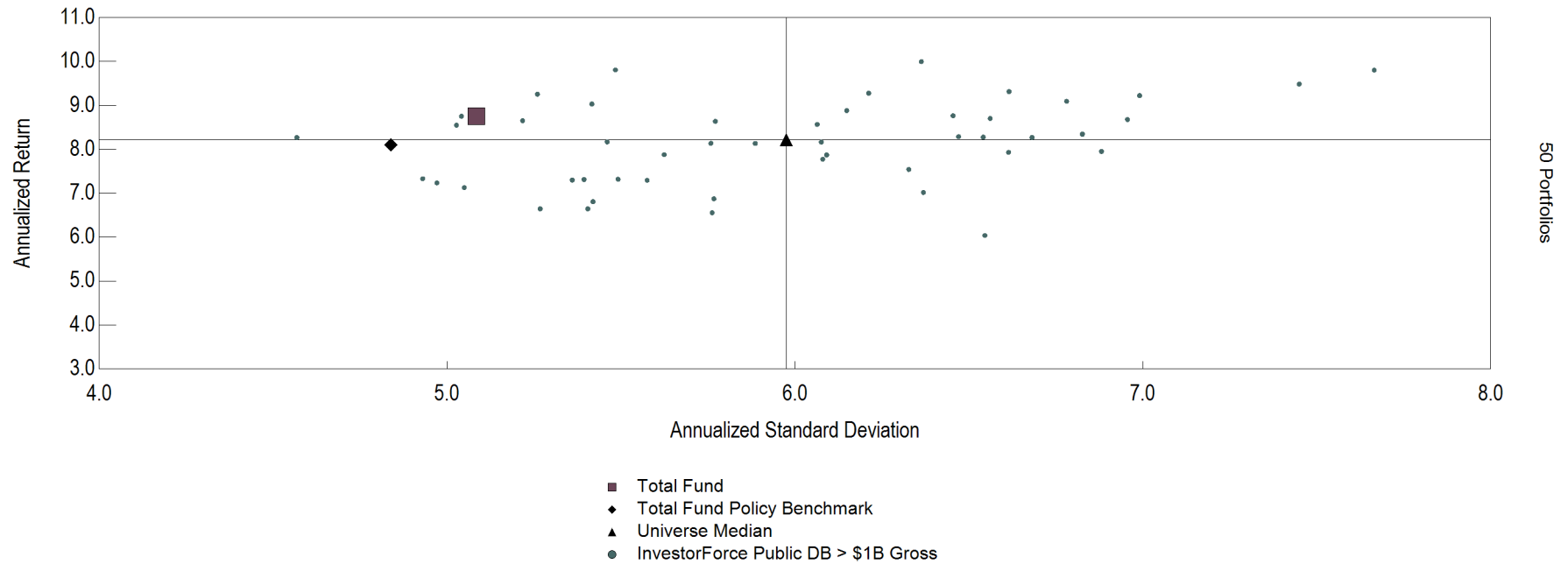
Statistics Summary

3 Years Ending June 30, 2018

	Annualized Standard Deviation	Annualized Return
Total Fund	5.25%	7.41%
Total Fund Policy Benchmark	4.93%	7.02%
InvestorForce Public DB > \$1B Gross Median	6.10%	7.02%



Annualized Return vs. Annualized Standard Deviation
5 Years Ending June 30, 2018



Statistics Summary

5 Years Ending June 30, 2018

	Anlzd Standard Deviation	Anlzd Return
Total Fund	5.08%	8.48%
Total Fund Policy Benchmark	4.84%	8.10%
InvestorForce Public DB > \$1B Gross Median	5.97%	8.22%



Benchmark History

As of June 30, 2018

Total Fund		
1/1/2018	Present	22.4% Russell 3000 / 21.0% Custom MSCI ACWI IMI Net 50% Hedge / 26.6% BBgBarc US Universal TR / 10% Private Equity Target / 11% NCREIF ODCE +40 bps / 4.2% Hedge Fund Custom Index / 2.8% Bloomberg Commodity Index TR USD / 2% Citi 6 Month T-Bill
10/1/2017	12/31/2017	23.5% Russell 3000 / 21.9% Custom MSCI ACWI IMI Net 50% Hedge / 25.4% BBgBarc US Universal TR / 10% Private Equity Target / 11% NCREIF ODCE +40 bps / 3.4% Hedge Fund Custom Index / 2.8% Bloomberg Commodity Index TR USD / 2% Citi 6 Month T-Bill
7/1/2017	9/30/2017	23.7% Russell 3000 / 21.7% Custom MSCI ACWI IMI Net 50% Hedge / 25.4% BBgBarc US Universal TR / 10% Private Equity Target / 11% NCREIF ODCE +40 bps / 3.4% Hedge Fund Custom Index / 2.8% Bloomberg Commodity Index TR USD / 2% Citi 6 Month T-Bill
4/1/2017	6/30/2017	24.1% Russell 3000 / 21.3% Custom MSCI ACWI IMI Net 50% Hedge / 25.4% BBgBarc US Universal TR / 10% Private Equity Target / 11% NCREIF ODCE +40 bps / 3.4% Hedge Fund Custom Index / 2.8% Bloomberg Commodity Index TR USD / 2% Citi 6 Month T-Bill
1/1/2017	3/31/2017	24.4% Russell 3000 / 21.0% Custom MSCI ACWI IMI Net 50% Hedge / 25.4% BBgBarc US Universal TR / 10% Private Equity Target / 11% NCREIF ODCE +40 bps / 3.4% Hedge Fund Custom Index / 2.8% Bloomberg Commodity Index TR USD / 2% Citi 6 Month T-Bill
10/1/2016	12/31/2016	23.8% Russell 3000 / 21.6% Custom MSCI ACWI IMI Net 50% Hedge / 25.4% BBgBarc US Universal TR / 10% Private Equity Target / 11% NCREIF ODCE +40 bps / 3.4% Hedge Fund Custom Index / 2.8% Bloomberg Commodity Index TR USD / 2% Citi 6 Month T-Bill
7/1/2016	9/30/2016	24.5% Russell 3000 / 21.4% Custom MSCI ACWI IMI Net 50% Hedge / 25.1% BBgBarc US Universal TR / 10% Private Equity Target / 11% NCREIF ODCE +40 bps / 3.2% Hedge Fund Custom Index / 2.8% Bloomberg Commodity Index TR USD / 2% Citi 6 Month T-Bill
10/1/2015	6/30/2016	3% Bloomberg Commodity Index TR USD / 25.5% Russell 3000 / 10% NCREIF ODCE +40 bps / 2% Citi 6 Month T-Bill / 22.5% BBgBarc US Universal TR / 11% Private Equity Target / 23% Custom MSCI ACWI IMI Net 50% Hedge / 3% 3-month U.S. T-Bill Index + 5% (1M-lag)
4/1/2015	9/30/2015	3% Bloomberg Commodity Index TR USD / 25% Russell 3000 / 10% NCREIF ODCE +40 bps / 2% Citi 6 Month T-Bill / 22.5% BBgBarc US Universal TR / 11% Private Equity Target / 23.5% Custom MSCI ACWI IMI Net 50% Hedge / 3% 3-month U.S. T-Bill Index + 5% (1M-lag)
1/1/2015	3/31/2015	3% Bloomberg Commodity Index TR USD / 25.5% Russell 3000 / 10% NCREIF ODCE +40 bps / 2% Citi 6 Month T-Bill / 22.5% BBgBarc US Universal TR / 11% Private Equity Target / 23% Custom MSCI ACWI IMI Net 50% Hedge / 3% 3-month U.S. T-Bill Index + 5% (1M-lag)
10/1/2014	12/31/2014	3% Bloomberg Commodity Index TR USD / 25% Russell 3000 / 10% NCREIF ODCE +40 bps / 2% Citi 6 Month T-Bill / 23% BBgBarc US Universal TR / 11% Private Equity Target / 24% Custom MSCI ACWI IMI Net 50% Hedge / 2% 3-month U.S. T-Bill Index + 5% (1M-lag)
1/1/2014	9/30/2014	3% Bloomberg Commodity Index TR USD / 24% Russell 3000 / 10% NCREIF ODCE +40 bps / 2% Citi 6 Month T-Bill / 23% BBgBarc US Universal TR / 11% Private Equity Target / 25% Custom MSCI ACWI IMI Net 50% Hedge / 2% 3-month U.S. T-Bill Index + 5% (1M-lag)



10/1/2013	12/31/2013	3% Bloomberg Commodity Index TR USD / 24% Russell 3000 / 10% NCREIF ODCE +40 bps / 2% Citi 6 Month T-Bill / 24% BBgBarc US Universal TR / 10% Private Equity Target / 26% Custom MSCI ACWI IMI Net 50% Hedge / 1% 3-month U.S. T-Bill Index + 5% (1M-lag)
4/1/2013	9/30/2013	3% Bloomberg Commodity Index TR USD / 24% Russell 3000 / 10% NCREIF Property Index - 25 bps / 2% Citi 6 Month T-Bill / 24% BBgBarc US Universal TR / 10% Private Equity Target / 26% Custom MSCI ACWI IMI Net 50% Hedge / 1% 3-month U.S. T-Bill Index + 5% (1M-lag)
1/1/2013	3/31/2013	3% Bloomberg Commodity Index TR USD / 23% Russell 3000 / 10% NCREIF Property Index - 25 bps / 2% Citi 6 Month T-Bill / 24% BBgBarc US Universal TR / 10% Private Equity Target / 27% Custom MSCI ACWI IMI Net 50% Hedge / 1% 3-month U.S. T-Bill Index + 5% (1M-lag)
10/1/2012	12/31/2012	3% Bloomberg Commodity Index TR USD / 24% Russell 3000 / 10% NCREIF Property Index - 25 bps / 2% Citi 6 Month T-Bill / 24% BBgBarc US Universal TR / 10% Private Equity Target / 26% Custom MSCI ACWI IMI Net 50% Hedge / 1% 3-month U.S. T-Bill Index + 5% (1M-lag)
1/1/2012	9/30/2012	3% Bloomberg Commodity Index TR USD / 24% Russell 3000 / 10% NCREIF Property Index - 25 bps / 2% Citi 6 Month T-Bill / 26% BBgBarc US Universal TR / 7% Private Equity Target / 27% Custom MSCI ACWI IMI Net 50% Hedge / 1% 3-month U.S. T-Bill Index + 5% (1M-lag)
10/1/2011	12/31/2011	3% Bloomberg Commodity Index TR USD / 23% Russell 3000 / 10% NCREIF Property Index - 25 bps / 2% Citi 6 Month T-Bill / 26% BBgBarc US Universal TR / 7% Private Equity Target / 28% Custom MSCI ACWI IMI Net 50% Hedge / 1% 3-month U.S. T-Bill Index + 5% (1M-lag)
4/1/2011	9/30/2011	3% Bloomberg Commodity Index TR USD / 23% Russell 3000 / 10% NCREIF Property Index - 25 bps / 2% Citi 6 Month T-Bill / 26% BBgBarc US Universal TR / 7% Private Equity Target / 29% Custom MSCI ACWI IMI Net 50% Hedge
1/1/2011	3/31/2011	3% Bloomberg Commodity Index TR USD / 22% Russell 3000 / 10% NCREIF Property Index - 25 bps / 2% Citi 6 Month T-Bill / 26% BBgBarc US Universal TR / 7% Private Equity Target / 30% Custom MSCI ACWI IMI Net 50% Hedge
10/1/2010	12/31/2010	3% Bloomberg Commodity Index TR USD / 23% Russell 3000 / 10% NCREIF Property Index - 25 bps / 2% Citi 6 Month T-Bill / 26% BBgBarc US Universal TR / 7% Private Equity Target / 29% Custom MSCI ACWI IMI Net 50% Hedge
7/1/2010	9/30/2010	3% Bloomberg Commodity Index TR USD / 26% Russell 3000 / 10% NCREIF Property Index - 25 bps / 2% Citi 6 Month T-Bill / 26% BBgBarc US Universal TR / 7% Private Equity Target / 26% Custom MSCI ACWI IMI Net 50% Hedge
4/1/2010	6/30/2010	3% Bloomberg Commodity Index TR USD / 26% Russell 3000 / 10% NCREIF Property Index - 25 bps / 2% Citi 6 Month T-Bill / 26% BBgBarc US Universal TR / 7% Private Equity Target / 26% MSCI ACWI ex USA IMI
1/1/2010	3/31/2010	3% Bloomberg Commodity Index TR USD / 29% Russell 3000 / 10% NCREIF Property Index - 25 bps / 2% Citi 6 Month T-Bill / 26% BBgBarc US Universal TR / 7% Private Equity Target / 23% MSCI ACWI ex USA IMI
4/1/2009	12/31/2009	2% Bloomberg Commodity Index TR USD / 30% Russell 3000 / 10% NCREIF Property Index - 25 bps / 2% Citi 6 Month T-Bill / 28% BBgBarc US Universal TR / 7% Private Equity Target / 21% MSCI ACWI ex USA IMI

10/1/2008	3/31/2009	2% Bloomberg Commodity Index TR USD / 30% Russell 3000 / 10% NCREIF Property Index - 25 bps / 2% Citi 6 Month T-Bill / 1.96% BBgBarc US High Yield BA/B TR / 26.04% BBgBarc US Aggregate TR / 7% Private Equity Target / 21% MSCI ACWI ex USA IMI
3/1/2001	9/30/2008	100% LACERA TF Blended Benchmark

50% FX Hedge Index: Calculated by taking the MSCI World Ex.-U.S. IMI FX Hedged Index and applying a 50% factor.

Brigade Custom Index: Composed of 50% Barclays U.S. High Yield Ba/B and 50% Credit Suisse Leveraged Loan Indices.

Custom MSCI ACWI IMI Net 50% Hedged: Calculated by taking the MSCI ACWI IMI FX Hedged Index (net) and applying a 50% factor.

Dolan Custom Index: Composed of 65% Barclays Credit/Intermediate, 25% Barclays MBSI, and 10% Barclays U.S. High Yield Ba/B Indices.

EAFE Custom Index: Inception – 6/30/06 MSCI EAFE(Net); 6/30/06 – Present MSCI EAFE + Canada (Net).

FI Custom Index: Prior to 3/2009 the Index was composed of the Barclays U.S. Aggregate Bond Index and the Barclays U.S. High Yield Ba/B Index with weights that varied over time. From 3/2009 on the Index is composed of 100% of the Barclays U.S. Universal Index.

Hedge Fund Custom Index: Composed of the Citigroup 3-month U.S. T-bill + 500 bps.

MSCI Canada IMI Custom Index: Composed of the MSCI Canada Index (net) from 11/1999 through 8/2008 and the MSCI Canada IMI Index (net) thereafter.

MSCI EAFE IMI Custom Index: Composed of the MSIC EAFE Index (net) from 11/1999 through 8/2008 and the MSCI EAFE IMI Index (net) thereafter.

MSCI EM IMI Custom Index: Composed of the MSCI EM Index (gross) from inception to 12/2000; the MSCI EM Index (net) from 1/2000 through 8/2008; and the MSCI EM IMI Index (net) thereafter.

Opportunistic Custom Index: Composed of 50% Barclays U.S. High Yield Index and 50% Credit Suisse Leveraged Loan Index.

Opportunistic EMD Custom: Composed of 50% EMBI Global Diversified, 25% GBI-EM GD, and 25% CEMBI BD.

Private Equity Target: Composed of rolling ten-year return of the Russell 3000 Index + 500 bps.

Real Estate Target: Prior to 7/2013 the Real Estate Target was composed of the NCREIF Property Index - 25 bps. From 7/2013 on it is composed of the NCREIF ODCE Index + 40 bps.

Securitized Custom Index: Composed of Barclays Securitized Index + 400 bps.

Western Opportunistic Custom Index: Composed of 60% BofA Merrill Lynch US Floating Rate Home Equity Loan ABS Index and 40% Barclays U.S. Credit 1-3 Yr Index.



Biography

Andrew Erickson is an executive vice president of State Street Corporation and head of Global Services worldwide. In this role he is responsible for client engagement, solutions and experience across onshore and offshore markets. He previously led Global Services in the Americas for mutual funds, insurance and institutional clients. He is also a member of State Street's Management Committee, the company's most senior strategy and policy-making team.



Andrew Erickson
Executive Vice President,
Head of Global Services

Global Services provides custody, accounting, administration, institutional transfer agency, performance measurement, technology support, and other regulatory, tax, and compliance services for State Street's premier clients. Prior to this role, Andrew was the head of the Global Services business in Asia Pacific, as well as director at State Street Trust HK Limited, director at State Street Technology (Zhejiang) Co., Ltd, director of State Street Trust (SG) Limited, and sole director of State Street New Zealand Limited.

Andrew has been with State Street for more than 25 years and has held a variety of management positions in Australia, New Zealand, Japan and Hong Kong within Business Development, Relationship Management, Operations and Information Technology divisions. He was head of State Street's Global Services business in North Asia responsible for growing and managing our business in Hong Kong, Korea, Taiwan and Japan. From 1999 to 2011, he was based in Japan as president and representative director of State Street Trust and Banking Co., Ltd.

Prior to joining State Street, Andrew worked for Westpac Banking Corporation and Sun Life Insurance.

FOR INFORMATION ONLY

August 23, 2018

TO: Each Member
Board of Investments

FROM: Adam Cheng, CFA *AC*
Senior Investment Analyst

FOR: September 12, 2018 Board of Investments Meeting

SUBJECT: **SECURED OVERNIGHT FINANCING RATE (SOFR)**

Since the 1980's, the London Interbank Offered Rate (LIBOR) has been a standard reference (interest) rate in many floating rate instruments such as bonds, bank loans, mortgages, student loans, and complex derivatives. LIBOR maintains a large footprint in the financial markets with an estimated \$200 trillion of securities referencing LIBOR (according to the Alternative Reference Rate Committee). LIBOR is derived from a daily survey of large banks that report their estimated cost of borrowing from other banks on an unsecured basis. The small sample of banks in the survey made the rate susceptible to manipulation, which led to a bid-rigging scandal (2005-2008) that culminated with several banks being fined billions of dollars.

In 2014, the Federal Reserve formed the Alternative Reference Rates Committee (ARRC), which brought together representatives from the private sector and public regulators to explore possible replacements for LIBOR. By May 2016, after much deliberation, the committee selected the Secured Overnight Financing Rate (SOFR) as the best candidate.

Unlike LIBOR, which is based on a survey of borrowing costs, SOFR is based on actual transactions in the U.S. Treasury repo¹ market. These transactions account for roughly \$800-\$850 billion of average daily trading volume which is one of the reasons SOFR is the preferred replacement benchmark for LIBOR. On April 3, 2018, the Federal Reserve began publishing SOFR, taking the first step to eventually replacing LIBOR.

In its current form, SOFR is an overnight rate published daily by the New York Fed, based on the prior day's repo transactions. The goal is to have SOFR become the standard reference rate for U.S. based floating rate instruments. In order to achieve that goal, SOFR rates will have to be established for different maturities (such as one month, 3 month, and 1 year). To facilitate the development of SOFR rates for various tenors, SOFR futures began trading in May of this

¹ A repurchase agreement (Repo) is a form of borrowing in which the borrower posts securities as collateral. Technically, the borrower sells the securities to the lender and agrees to buy the securities back when the loan is repaid.

Each Member, Board of Investments

August 23, 2018

Page 2 of 2

year. A deep and liquid market for derivatives is essential to creating longer-term SOFR-based reference rates so the development of a SOFR term structure is an important next step to gaining market acceptance.

The ARRC has laid out a six-step plan to transition from U.S. dollar-denominated LIBOR to SOFR by the end of 2021. The Euro region is undergoing a similar transition to replace Euro-denominated LIBOR, and leading nations such as the UK, Japan, and Switzerland are developing reference rates denominated in their own currencies as well.

As markets transition to SOFR, there is concern about what might happen if LIBOR stops being published. Most existing bond or swap contracts do not have adequate fallback provisions for a substitute reference rate. Some bonds might transition to a fixed rate as the LIBOR rate being referenced becomes stale (set to the last published rate), while others might transition to the Prime Rate. In order to minimize such uncertainty, ARRC has established working groups to get market participants to adopt fallback language in the event LIBOR stops being published, while planning for an orderly transition to substitute reference rates such as SOFR.

Liquidity in the SOFR market should improve over time; meanwhile, there is concern that the transition to SOFR could impact the liquidity in the LIBOR market. Market participants may consider repositioning out of their LIBOR-based securities in anticipation of reduced liquidity which, in turn, may cause some volatility in bonds and derivatives linked to LIBOR. This further highlights the need for a gradual, well-organized transition.

To be clear, SOFR is the leading candidate to replace U.S. Dollar LIBOR, but it is not a certainty. Much depends on the execution of the plan and adoption by the market. The U.S. will also have to coordinate with regulators and market participants in other countries as they manage similar transitions. Staff will continue to monitor the progress of the ARRC transition plan and report back to the Board on any material developments.

Noted and Reviewed:



Jonathan Grabel
Chief Investment Officer

FOR INFORMATION ONLY

August 6, 2018

TO: Each Member
Board of Investments

FROM: Jude Perez 
Principal Investment Officer, Portfolio Analytics

FOR: SEPTEMBER 12, 2018 BOARD OF INVESTMENTS MEETING

SUBJECT: **OPEB MASTER TRUST**

Attached is the quarterly report for the OPEB Master Trust, as of June 30, 2018.

Noted and Reviewed



Jonathan Grabel
Chief Investment Officer

Attachment
JP:cq



OPEB MASTER TRUST

for the quarter ended June 30, 2018

COMMENTARY

The OPEB Master Trust is comprised of three separate trusts; 1) Los Angeles County 2) LACERA and 3) Superior Court. In the second quarter, the OPEB Trust assets were transitioned to the revised asset allocation approved by the Board of Investments. This report includes the breakout of assets by functional category and underlying funds. A total of seven new accounts have been added to the Trust with the first full month of performance in July; therefore, no return information is provided as of the fiscal year end.

The two legacy managers, BlackRock Institutional Trust Company global equity index and J.P. Morgan Asset Management cash both outperformed in the quarter.

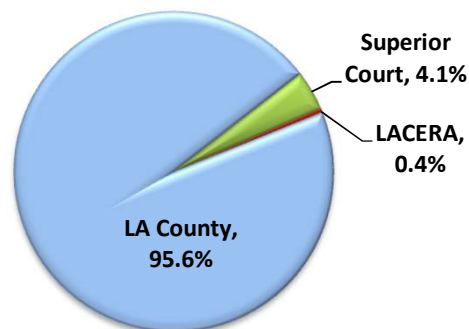
The equity investment is benchmarked to the MSCI All Country World Investable Market Index (ACWI IMI), which reflects equity market performance in the U.S., as well as unhedged non-U.S. market returns in developed and emerging countries. The equity portfolio returned 0.89% for the quarter and outperformed the Index return of 0.72% by 0.17%. The Index performance reflected a return of 3.83% in the U.S., 4.87% in Canada, -1.18% in Europe, -1.61% in the Pacific region, and -8.02% in emerging markets. The outperformance was due to tax reclaims advantage and stale pricing differences from Good Friday, March 30, 2018. U.S. equity markets were closed while many local markets remained open. For the fiscal year, the equity component rose 11.48% and outperformed the Index by 0.34%.

The cash component is benchmarked to the FTSE 6-month T-Bill Index and is invested in high quality, short-term debt instruments. For the quarter, this portion of the account returned 0.45%, slightly outperforming the benchmark return by 0.01%. This was the result of corporate security selection. The portfolio's exposure to interest rate risk continues to be low, as signified by a duration of 0.38 years. For the fiscal year, the cash component outperformed the Index by 17 bps.

Fund Name	Inception Date	Market Value (millions)	Trust Ownership	Qtr	FYTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Los Angeles County:	Feb-2013	\$899.4	95.6%						
Gross				1.50	10.33	10.33	7.73	6.38	----
Net				1.50	10.29	10.29	7.69	6.33	----
Net All ¹				1.49	10.25	10.25	7.62	6.29	----
LACERA:	Feb-2013	\$3.5	0.4%						
Gross				1.47	10.39	10.39	7.79	6.41	----
Net				1.46	10.35	10.35	7.75	6.37	----
Net All ¹				1.42	9.80	9.80	7.05	5.96	----
Superior Court:	Jul-2016	\$38.2	4.1%						
Gross				1.49	9.86	9.86	----	----	----
Net				1.48	9.82	9.82	----	----	----
Net All ¹				1.46	9.68	9.68	----	----	----
TRUST OWNERSHIP TOTAL:		\$941.0	100.0%						

¹ Includes Custody & LACERA's Administrative Fees.

Trust Ownership



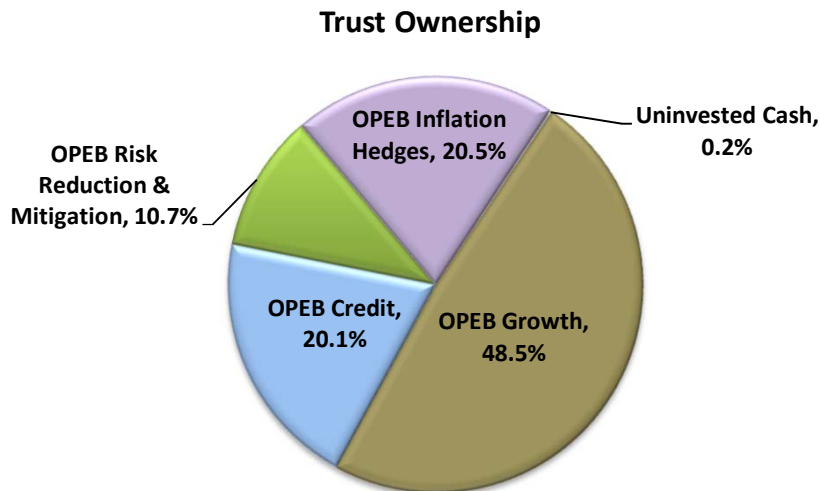


OPEB MASTER TRUST

for the quarter ended June 30, 2018

Fund Name	Inception Date	Market Value (millions)	Trust Ownership	Qtr	FYTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
OPEB Growth	Jul-2016	\$456.8	48.5%						
Gross				0.89	11.48	11.48	----	----	----
Net				0.88	11.44	11.44	----	----	----
Net All				0.88	11.44	11.44	----	----	----
OPEB Credit*	Jul-2018	\$189.3	20.1%						
Gross				----	----	----	----	----	----
Net				----	----	----	----	----	----
Net All				----	----	----	----	----	----
OPEB Risk Reduction & Mitigation*	Jul-2018	\$100.4	10.7%						
Gross				---	---	---	----	----	----
Net				---	---	---	----	----	----
Net All				---	---	---	----	----	----
OPEB Inflation Hedges*	Jul-2018	\$192.9	20.5%						
Gross				----	----	----	----	----	----
Net				----	----	----	----	----	----
Net All				----	----	----	----	----	----
Uninvested Cash		\$1.6	0.2%	----	----	----	----	----	----
TRUST OWNERSHIP TOTAL:		\$941.0	100.0%						

* OPEB transition to new asset allocation occurred in June, first full month return will be in July 2018.





OPEB MASTER TRUST

for the quarter ended June 30, 2018

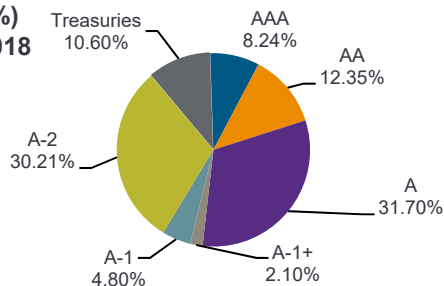
Allocation	Inception Date	Market Value (millions)	Allocation %	Qtr	FYTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
OPEB Global Equity:	Mar-2014	\$456.8	48.5%						
Gross				0.89	11.48	11.48	8.71	---	---
Net				0.88	11.44	11.44	8.67	---	---
Benchmark: MSCI ACWI IMI Net				0.72	11.14	11.14	8.34	---	---
Excess Return (Gross - Benchmark)				0.16	0.34	0.34	0.37	---	---
OPEB BTC High Yield Bonds*	Jul-2018	\$56.7	6.0%						
Gross				---	---	---	---	---	---
Net				---	---	---	---	---	---
Benchmark: BC High Yield Index				---	---	---	---	---	---
Excess Return (Gross - Benchmark)				---	---	---	---	---	---
OPEB BTC EM Debt LC*	Jul-2018	\$37.8	4.0%						
Gross				---	---	---	---	---	---
Net				---	---	---	---	---	---
Benchmark: JPM GBI-EM Global Diversified Index				---	---	---	---	---	---
Excess Return (Gross - Benchmark)				---	---	---	---	---	---
OPEB BTC Inv. Grade Bonds*	Jul-2018	\$76.9	8.2%						
Gross				---	---	---	---	---	---
Net				---	---	---	---	---	---
Benchmark: BBG BARC US Aggregate Index				---	---	---	---	---	---
Excess Return (Gross - Benchmark)				---	---	---	---	---	---
OPEB BTC TIPS*	Jul-2018	\$57.6	6.1%						
Gross				---	---	---	---	---	---
Net				---	---	---	---	---	---
Benchmark: BBG US TIPS Index				---	---	---	---	---	---
Excess Return (Gross - Benchmark)				---	---	---	---	---	---
OPEB BTC REITs*	Jul-2018	\$97.1	10.3%						
Gross				---	---	---	---	---	---
Net				---	---	---	---	---	---
Benchmark: DJ US Select Real Estate Sec Index				---	---	---	---	---	---
Excess Return (Gross - Benchmark)				---	---	---	---	---	---
OPEB BTC Commodities*	Jul-2018	\$38.3	4.1%						
Gross				---	---	---	---	---	---
Net				---	---	---	---	---	---
Benchmark: Bloomberg Commodity Index (Total Return)				---	---	---	---	---	---
Excess Return (Gross - Benchmark)				---	---	---	---	---	---
OPEB BTC Bank Loans*	Jul-2018	\$94.8	10.1%						
Gross				---	---	---	---	---	---
Net				---	---	---	---	---	---
Benchmark: S&P/LSTA Leveraged Loan Index				---	---	---	---	---	---
Excess Return (Gross - Benchmark)				---	---	---	---	---	---
OPEB Enhanced Cash:	Feb-2013	\$23.5	2.5%						
Gross				0.45	1.52	1.52	1.08	0.81	---
Net				0.43	1.46	1.46	1.03	0.75	---
Benchmark: FTSE 6 M T-Bill Index				0.44	1.35	1.35	0.71	0.45	---
Excess Return (Gross - Benchmark)				0.01	0.17	0.17	0.37	0.36	---

* OPEB transition to new asset allocation occurred in June, first full month return will be in July 2018.

Portfolio characteristics – LACERA OPEB

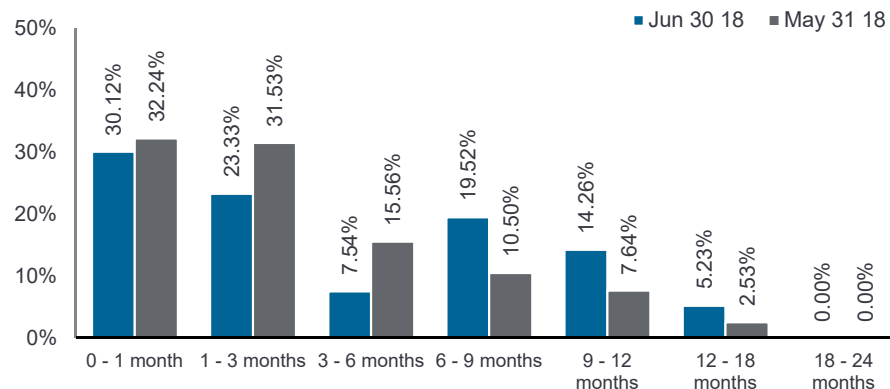
Portfolio Statistics	Jun 30 18	May 31 18	Change
Duration (yrs)	0.38	0.28	0.10
Spread Duration (yrs)	0.45	0.29	0.16
Average Yield (%)	2.50	2.26	0.24
Average Life (yrs)	0.53	0.33	0.20
Average Credit Quality	A+	A+	-

Credit quality* (%) as of June 30, 2018

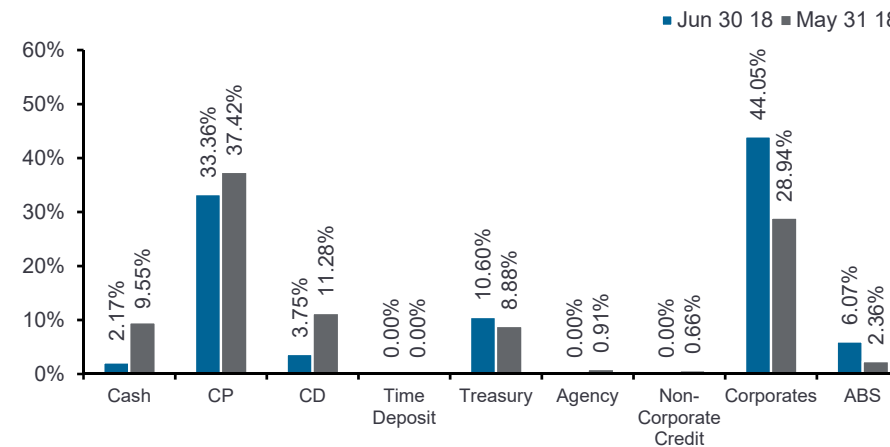


	Jun 30 18	May 31 18
Treasuries	10.60%	8.88%
AAA	8.24%	13.93%
AA	12.35%	7.60%
A	31.70%	20.89%
A-1+	2.10%	11.70%
A-1	4.80%	13.83%
A-2	30.21%	23.17%
Total	100.00%	100.00%

Duration Distribution



Sector Allocation



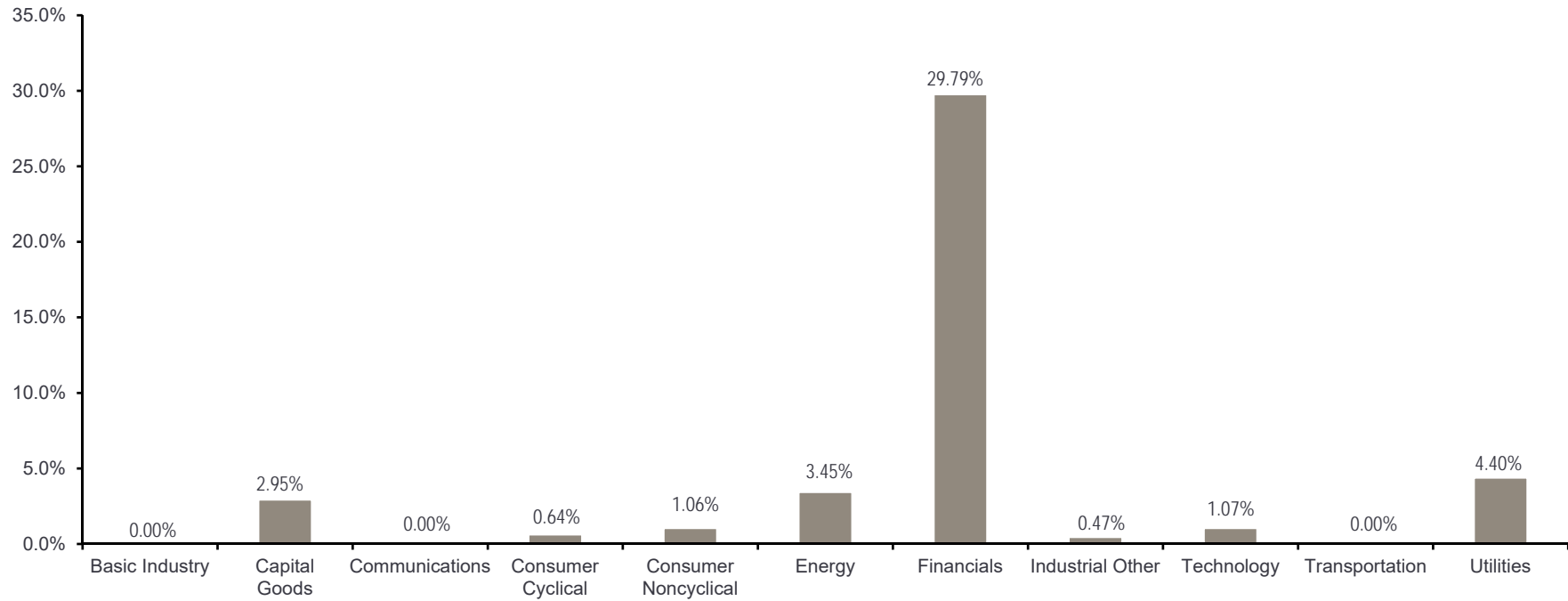
The above information is shown for illustrative purposes only.

*Quality distribution uses the middle of the split ratings.

Portfolio corporate sector allocation – LACERA OPEB

As of June 30, 2018

Corporate Sector Allocation (% Market Value)



The above information is shown for illustrative purposes only.

Investment objective and strategy

The MSCI ACWI Investable Market Index (IMI) captures large, mid and small cap representation across 23 Developed Markets (DM) and 24 Emerging Markets (EM) countries*. The fund is managed in a common trust fund maintained by BlackRock Institutional Trust Company, N.A. ("BTC"). The index is a widely tracked global equity benchmark and is comprehensive, covering approximately 99% of the global equity investment opportunity set.

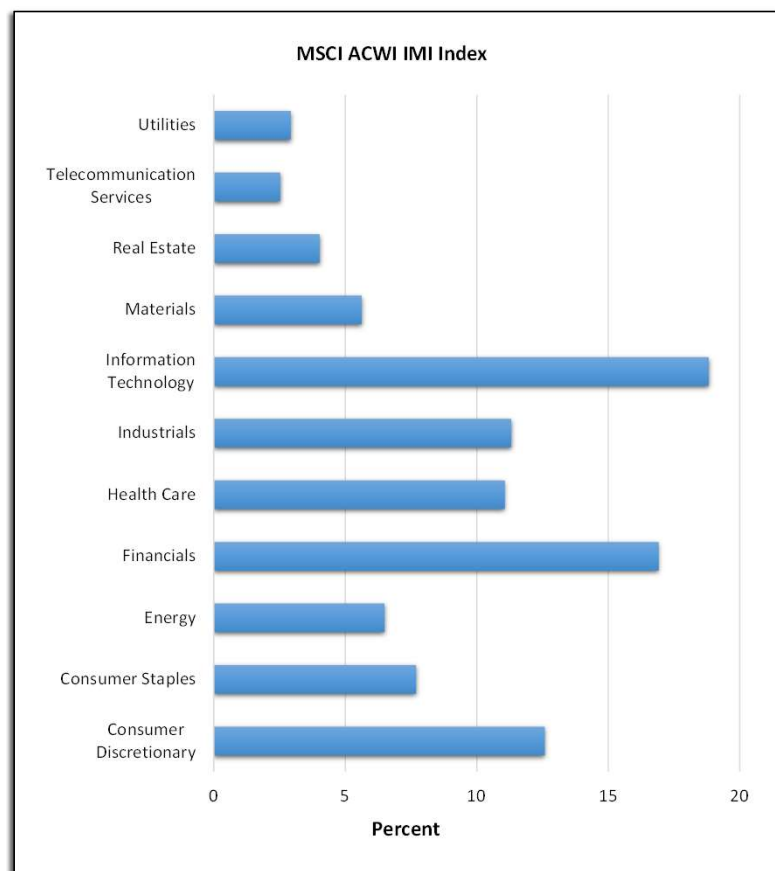
Performance

	MRQ	YTD	1-Year	3-Year	5-Year	Since Inception
OPEB Master Trust Fund Return GOF %	0.89	-0.02	11.48	8.71	-	7.52
MSCI ACWI IMI Benchmark %	0.72	-0.18	11.14	8.34	-	7.14
Excess	0.16	0.16	0.34	0.37	-	0.37

Performance disclosure: Period returns for less than 1-year are cumulative and greater than 1-year are annualized

Sector allocation

% of Benchmark



Investment details

Benchmark	MSCI ACWI IMI Net Dividend Return Index
Total Fund Assets	\$2.84 billion
Fund Inception Date	03/23/2010

Benchmark characteristics

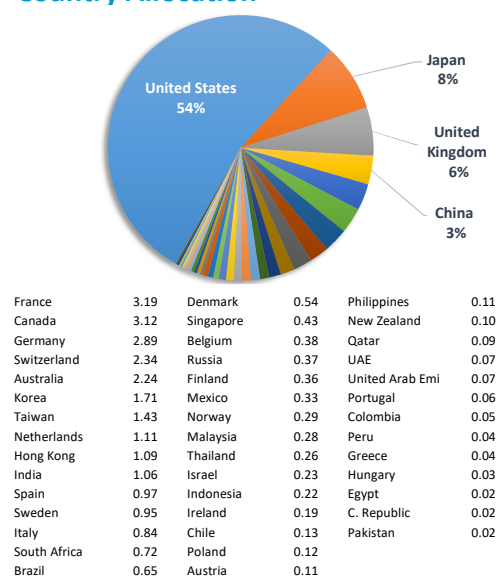
Number of Securities	8,913
Dividend Yield	2.20%

Benchmark Top 10 constituents

Company	Country	Fund (% assets)
Apple Inc.	United States	1.79
Microsoft Corporation	United States	1.38
Amazon.com, Inc.	United States	1.34
Facebook, Inc. Class A	United States	0.89
JPMorgan Chase & Co.	United States	0.68
Alphabet Inc. Class C	United States	0.67
Exxon Mobil Corporation	United States	0.67
Alphabet Inc. Class A	United States	0.64
Johnson & Johnson	United States	0.62
Tencent Holdings Ltd.	Hong Kong	0.55

Benchmark holdings are subject to change and are not intended as recommendation of individual securities.

Country Allocation




* DM countries include: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the UK and the US.

EM countries include: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russia, Qatar, South Africa, Taiwan, Thailand, Turkey and the United Arab Emirates.

FOR INFORMATION ONLY

August 30, 2018

TO: Each Member
Board of Investments

FROM: Jonathan Grabel 
Chief Investment Officer

FOR: September 12, 2018 Board of Investments

SUBJECT: IMPLEMENTATION UPDATE ON LACERA PENSION TRUST STRATEGIC ASSET ALLOCATION

At the May 9, 2018 Board of Investments meeting (BOI), the Board approved a new Strategic Asset Allocation (SAA) for LACERA’s Pension Trust. At the July 9, 2018 BOI Offsite, a prospective implementation plan was reviewed.

During the BOI Offsite, staff noted that the SAA could be prudently implemented in the next 12 to 24 months. **Table 1** below summarizes the status of the actions and reports as well as the timeline for transitioning to the new SAA targets. Future items that require BOI approval will be placed on the agenda of subsequent meetings along with supporting documentation.

**Table 1
Strategic Asset Allocation Implementation Timeline**

Implementation Steps	Target Dates for Completion or Discussion
Determine the appropriate policy ranges for the Pension Trust Asset Allocation	Completed
Identify the appropriate benchmarks for the Pension Trust Asset Allocation	September 2018 – Recommendation
Update Governance Documents <ul style="list-style-type: none"> • Investment Policy Statement • Policies • Procedures manual 	September 2018 - Report 4 th Quarter of 2018 1 st Quarter of 2019
Align Management and Oversight <ul style="list-style-type: none"> • Align Committees to new SAA • Staffing <ul style="list-style-type: none"> • Real Assets – PIO • Real Assets – FA-III • Portfolio Analytics – SIO • Portfolio Analytics – FA-II • Portfolio Analytics – FA-I • Consultant searches 	Completed Completed 4 th Quarter of 2018 Complete In Process 4 th Quarter of 2018 1 st Quarter of 2019 - Completion

<ul style="list-style-type: none"> Recommendation to conduct search 	August 2018 - Recommendation
<p>Growth</p> <ul style="list-style-type: none"> Public Equities <ul style="list-style-type: none"> Structure review <ul style="list-style-type: none"> Reduce public equity exposure Possible manager consolidation Rebalance passive exposure to Board approved benchmark Private Equity <ul style="list-style-type: none"> Investment plan Potential secondary sale Opportunistic Real Estate <ul style="list-style-type: none"> Implement structure review and investment plan 	<p>4th Quarter of 2018</p> <p>4th Quarter of 2018</p> <p>4th Quarter of 2018</p> <p>Ongoing</p>
<p>Credit</p> <ul style="list-style-type: none"> Conduct consultant search – Credit Structure review <ul style="list-style-type: none"> Realign weights with targets Resize current liquid managers Conduct new mandate searches 	<p>In Process</p> <p>4th Quarter of 2018</p> <p>Ongoing</p>
<p>Risk Reducing & Mitigation</p> <ul style="list-style-type: none"> Conduct consultant search – Hedge Funds Implementation of Fixed Income structure review <ul style="list-style-type: none"> Potential manager rebalancing and consolidation Conduct RFI for cash overlay program 	<p>In Process</p> <p>4th Quarter of 2018</p> <p>September 2018 – Recommendation</p>
<p>Real Assets & Inflation Hedges</p> <ul style="list-style-type: none"> Conduct consultant search – Real Assets Issue RFI for a completion portfolio Add TIPS through invitation to bid process Conduct new mandate searches 	<p>In Process</p> <p>In Process</p> <p>In Process</p> <p>Ongoing</p>
<p>Adapt Portfolio Analytics</p> <ul style="list-style-type: none"> Analytics Reporting Performance Reporting 	<p>Second Quarter 2019*</p> <p>Second Quarter 2019*</p>
<p>Complete operational updates at State Street</p>	<p>4th Quarter of 2018</p>
<p>Transition to updated asset allocation*</p>	<p>September 2018 – June 2020</p>


*Dependent on BOI approved IPS

This timeline allows for a comprehensive review and revision of LACERA’s Pension Trust Investment Policy Statement as well as pertinent operational changes including composite structure, custodian accounts, investment management agreements and new target allocations. Barring any unforeseen circumstances, staff expects to complete the transition by June 2020. This document will be updated monthly, communicating the progress of individual steps and provided to the BOI throughout the implementation process.

FOR INFORMATION ONLY

August 30, 2018

TO: Each Member
Board of Investments

FROM: James Rice, CFA 
Principal Investment Officer

FOR: September 12, 2018 Board of Investments Meeting

SUBJECT: **2018 SECOND QUARTER
HEDGE FUND PERFORMANCE REPORT**

Attached for your review is the Hedge Fund Performance Report for the second quarter of 2018. This memorandum provides staff's observations regarding the overall hedge fund program and its objectives. Additionally, it summarizes the performance of the hedge fund program and its underlying portfolios, the returns of which are shown net of all fees throughout this report.

The report provides information on the performance of the entire hedge fund program, including the direct portfolio and sections prepared by LACERA's two hedge fund of funds managers, Grosvenor Capital Management ("Grosvenor") and Goldman Sachs Asset Management ("GSAM").

BACKGROUND

As of June 30, 2018, LACERA's hedge fund program consisted of one direct portfolio and four fund of funds portfolios, three managed by Grosvenor and one by GSAM. Grosvenor and GSAM each run a diversified portfolio that invests across hedge fund strategies. Grosvenor also runs two opportunistic credit portfolios that are focused on credit strategies. Apart from the fund of fund strategies, LACERA began making its first investments in a direct hedge portfolio effective April 1, 2018. The total investment in hedge funds was \$1.6 billion as of June 30, 2018, and represented 2.9% of LACERA's Total Fund.

Since program inception in October 2011 through June 2018, LACERA has made investments in four fund of funds portfolios and the direct portfolio:

- \$250 million was invested in Grosvenor's Diversified portfolio at the start of the program. An additional \$150 million was funded in the fourth quarter of 2015 and the first quarter of 2016. As of June 30, 2018, this Diversified portfolio, made up of 28 funds, was valued at \$488.1 million.
- LACERA has invested \$200 million in the Grosvenor Opportunistic Credit 2013 portfolio, since its inception in January 2013. As of June 30, 2018, this portfolio, comprised of four funds, was valued at \$21.9 million. This portfolio is now in a scheduled wind down phase. In the quarter ended June 30, 2018, \$14.5 million was distributed to LACERA. Through quarter-end, a total of \$242.1 million has been distributed.

- In May 2015, LACERA began investing in the GSAM Diversified portfolio. As of June 30, 2018, the GSAM Diversified portfolio was invested in 28 funds valued at \$486.0 million. To date, \$450 million has been invested in the portfolio.
- A \$300 million commitment was made to the Grosvenor Opportunistic Credit 2016 portfolio in the fourth quarter of 2015. The \$300 million commitment was invested over the period from 1Q 2016 through 3Q 2017. As of June 30, 2018, this portfolio was valued at \$359.9 million and was invested in 15 funds.
- In 2Q18, LACERA made \$260 million in investments in three direct hedge funds. As of June 30, 2018 that portfolio is valued at \$255.0 million.

Aggregated performance for the four funded portfolios (“Total Portfolio”) is summarized in **Table 1** below.

Table 1
Total Portfolio
Net Performance through June 30, 2018

Net of All Fees and Expenses	Quarter	One Year	Three Years	Five Years	Inception to Date¹
Total of Four Portfolios	0.8%	5.5%	2.9%	4.1%	4.9%
T-Bills + 5% (Primary Benchmark)	1.7%	6.4%	5.7%	5.4%	5.3%
HFRX Global Hedge Fund Index (Secondary Benchmark)	0.2%	2.5%	0.8%	1.3%	1.9%
Excess Return, Primary Benchmark	-90 bps	-90 bps	-280 bps	-130 bps	-40 bps
Excess Return, Secondary Benchmark	60 bps	300 bps	200 bps	280 bps	300 bps

¹ Annualized returns of Total Portfolio and its benchmarks since October 2011.

STAFF DISCUSSION

2Q 2018 Overview

During the second quarter of 2018, the Total Portfolio returned 0.8%. The Total Portfolio underperformed the 1.7% return of LACERA’s primary hedge fund benchmark (“primary benchmark”), the 90-Day U.S. T-Bills Index plus 500 basis points (“bps”). LACERA’s secondary benchmark is the HFRX Global Hedge Fund Index (“secondary benchmark”), which is comprised of open hedge funds across broad strategy categories¹. LACERA’s Total Portfolio outperformed the 0.6% return of the secondary benchmark in the recent quarter.

LACERA’s primary benchmark represents the long-term performance objective of the program to deliver strong absolute returns over cash. The secondary benchmark is representative of broad market performance of actual hedge funds and is considered in assessing relative performance of

¹ The HFRX Global Hedge Fund Index is constructed to include funds in its four main strategy categories of equity hedge, event driven, macro/CTA, and relative value. Underlying constituent funds and strategies in the index are weighted based on assets in the hedge fund industry, which results in relatively even weights among the four categories. LACERA’s hedge fund program uses somewhat different asset categories and will hold underlying strategies at weights that differ from this index.

LACERA's program or determining if hedge funds as a group have met their performance objectives over time.

The investible hedge fund industry, as measured by the HFRX Global Hedge Fund Index, was below LACERA's absolute return primary benchmark. For the quarter, none of the four HFRX strategy indices exceeded LACERA's absolute return benchmark. The best performance was in the relative value category (+1.2%), followed by event driven (+0.3%) and Macro/CTA (+0.2%). Negative performance occurred in the equity hedge category (-0.9%).

Program Objective Overview

Since inception, LACERA's hedge fund program has returned 4.9% annualized, net of all fees and expenses, which modestly underperformed the primary benchmark by 40 bps but outperformed the secondary benchmark by 300 bps.

A key objective for the hedge fund program is to reduce volatility of the Total Fund without materially decreasing returns. The Total Portfolio experienced low levels of realized volatility since inception. Volatility, as measured by standard deviation of returns and shown in **Table 2**, was 2.6% since inception, well below the 5-8% target range. Low volatility has benefited the Total Fund providing more consistent returns from the hedge fund program. Thus, since inception, the hedge fund program has modestly underperformed its return objectives by returning less than its absolute return benchmark, but has been below its volatility objective with lower than expected realized volatility. Though the allocation is currently small, the hedge fund program's risk and return objectives are expected to be less than the Total Fund as a whole.

The moderate returns and very low volatility has led to an overall hedge fund program Sharpe ratio, or risk-adjusted return, of 1.7 since inception which exceeds the 1.2 Sharpe ratio of LACERA's public market asset classes. Since inception, the hedge fund program has captured 38% of the upside and 20% of the downside relative to LACERA public market returns (a composite of public equity, fixed income, commodities, and cash which makes up 70-80% of LACERA's assets). This means that the hedge fund program generated 38% of the magnitude of returns in months where market returns were positive and lost a smaller fraction, 20%, of the magnitude of monthly returns when they were negative. This asymmetric upside/downside relationship adds value to a total portfolio over time.

Since inception, the Total Portfolio has also met its objectives for Total Fund diversification. The realized equity beta of LACERA's hedge fund program since inception has been 0.14, which is below the 0.25 maximum beta policy guideline. Low equity beta is an objective of the hedge fund program designed to diversify and to have lower downside risk than LACERA's Total Fund, since lower equity beta portfolios will be less susceptible to equity market declines.

Table 2
Portfolio Risk and Return Statistics
Net Performance: Inception through June 30, 2018

Net of All Fees and Expenses	Net Return ¹	Standard Deviation	Sharpe Ratio	Beta to MSCI ACWI ²
LACERA Hedge Fund Program	4.9%	2.6%	1.74	0.14
LACERA Total Public Assets: Equities, Fixed Income, Commodities and Cash	9.1	7.3%	1.22	0.65

¹ Annualized Return net of all fees and expenses since October 2011 program inception.

² Morgan Stanley Capital International All Country World Index.

Performance Detail

Grosvenor’s Diversified portfolio return was 1.9%, in the second quarter as shown in **Table 3**. The diversified portfolio outperformed by 20 basis points. Performance was broadly positive across almost all categories and above the absolute return benchmark in all categories besides multi-strategy and commodities.

Grosvenor’s Opportunistic Credit 2013 and Opportunistic Credit 2016 portfolio returns were 1.2% and 0.6%, respectively, in the second quarter. The two credit portfolios underperformed their primary benchmark return of 1.7%, by 0.4% and 1.0% respectively. The Opportunistic Credit 2013 portfolio is winding down after its five-year investment period. At quarter end, the portfolio was comprised of four liquidating credit fund positions, cash and accrued expenses. The Opportunistic Credit 2016 portfolio has over two years of performance to date. During the quarter, the portfolio’s 0.6% return came from its entire allocation in credit strategies. In this portfolio, the largest contributions to return came from the sub-strategy categories of structured credit, specialist credit, and fundamental credit. This was offset by negative returns coming from distressed and emerging markets credit.

Quarterly performance for the GSAM Diversified portfolio was 1.3%, modestly underperforming its primary benchmark return of 1.7% and exceeding its secondary benchmark return by 1.1%. Performance was strongest in relative value (+3.4%) and event driven (+3.0%) strategies, more modestly positive in equity long/short (+0.3%) and slightly negative in tactical trading (-0.5%).

The first quarter of the direct portfolio, comprised of three funds, returned -2.5% in the quarter, underperforming both its primary and secondary benchmarks. One fund, an alternative risk premia strategy, accounted for all of the underperformance due to substantial negative absolute performance of the value premium in equity markets.

Table 3
Diversified and Opportunistic Credit Portfolios
Net Performance through June 30, 2018

Net of All Fees and Expenses	Quarter	One Year	Three Years	Five Years	Inception to Date¹
Grosvenor Diversified Portfolio (San Gabriel)	1.9%	6.4%	1.9%	3.1%	3.9%
T-Bills + 5% (Primary Benchmark)	1.7%	6.4%	5.7%	5.4%	5.3%
HFRX Global Hedge Fund Index (Secondary Benchmark)	0.2%	2.5%	0.8%	1.3%	1.9%
Excess Return, Primary Benchmark	20 bps	0 bps	-380 bps	-230 bps	-140 bps
Excess Return, Secondary Benchmark	170 bps	400 bps	110 bps	180 bps	200 bps
Grosvenor Opportunistic Credit 2013 Portfolio (San Gabriel 2)	1.2%	3.8%	2.9%	4.7%	6.0%
T-Bills + 5% (Primary Benchmark)	1.7%	6.4%	5.7%	5.4%	5.4%
HFRX Fixed Income Credit Fund Index (Secondary Benchmark)	0.7%	1.7%	1.1%	1.0%	1.7%
Excess Return, Primary Benchmark	-40 bps	-260 bps	-280 bps	-70 bps	60 bps
Excess Return, Secondary Benchmark	60 bps	210 bps	170 bps	370 bps	420 bps
GSAM Diversified Portfolio	1.3%	5.7%	2.8%	N/A	2.5%
T-Bills + 5% (Primary Benchmark)	1.7%	6.4%	5.7%	N/A	5.6%
HFRX Global Hedge Fund Index (Secondary Benchmark)	0.2%	2.5%	0.8%	N/A	0.5%
Excess Return, Primary Benchmark	-40 bps	-70 bps	-290 bps	N/A	-320 bps
Excess Return, Secondary Benchmark	110 bps	320 bps	190 bps	N/A	200 bps
Grosvenor Opportunistic Credit 2016 Portfolio (San Gabriel 3)	0.6%	6.7%	N/A	N/A	9.7%
T-Bills + 5% (Primary Benchmark)	1.7%	6.4%	N/A	N/A	5.8%
HFRX Fixed Income Credit Fund Index (Secondary Benchmark)	0.7%	1.7%	N/A	N/A	4.6%
Excess Return, Primary Benchmark	-100 bps	30 bps	N/A	N/A	390 bps
Excess Return, Secondary Benchmark	-10 bps	500 bps	N/A	N/A	510 bps
LACERA Direct Portfolio	-2.5%	N/A	N/A	N/A	-2.5%
T-Bills + 5% (Primary Benchmark)	1.7%	N/A	N/A	N/A	1.7%
HFRX Global Hedge Fund Index (Secondary Benchmark)	0.2%	N/A	N/A	N/A	0.2%
Excess Return, Primary Benchmark	-410 bps	N/A	N/A	N/A	-410 bps
Excess Return, Secondary Benchmark	-260 bps	N/A	N/A	N/A	-260 bps

¹ Annualized returns of Grosvenor Diversified portfolio and its benchmarks since October 2011.
Annualized returns of Grosvenor Opportunistic Credit 2013 portfolio and its benchmarks since January 2013.
Returns of Grosvenor Opportunistic Credit 2016 portfolio and its benchmarks since February 2016.
Annualized returns of GSAM Diversified Portfolio and its benchmarks since May 2015.
Returns of LACERA's Direct Portfolio and its benchmarks since April 2018.

Investment Guidelines

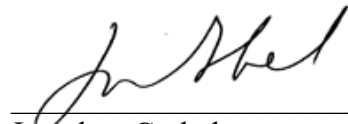
The investment guidelines for each portfolio include targets, ranges, and limits relating to volatility, diversification, manager allocation, strategy allocation, leverage, downside risk, and liquidity. Those are summarized within the Grosvenor, GSAM, and direct portfolio sections of the quarterly report. The portfolio measures for the Grosvenor portfolios were within its guidelines as of June 30, 2018. GSAM's portfolio is also within its guideline constraints but is under its performance objective since its inception over three years ago. With low volatility, the GSAM portfolio has achieved its Sharpe Ratio objective. The direct portfolio is not yet subject to its guideline constraints as the portfolio is being built and strategies are being added over the coming year.

Summary

Over measured time periods of three years or greater, LACERA's hedge fund program has underperformed its cash plus 5% benchmark with only slight underperformance over the since inception period. Since inception, performance over the same time periods of three years or longer exceeded the secondary benchmark, largely due to material allocations to, and good performance of, the credit segments of the portfolios. Positive results in the relative value, multi-strategy, equity-long short, and event driven categories also contributed positively to performance since program inception. LACERA's hedge fund program has achieved its risk objectives as its realized volatility was well below its target range and its beta to equities has been well below its policy maximum. Overall, the program has contributed positively to the risk-adjusted return of the Total Fund since inception.

Attachment

Noted and Reviewed:



Jonathan Grabel
Chief Investment Officer

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

2018 Second Quarter Hedge Fund Performance

September 12, 2018



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- ❖ Tab 2 Grosvenor Capital Management Reports
- ❖ Tab 3 Goldman Sachs Asset Management Reports
- ❖ Tab 4 Direct Portfolio Reports
- ❖ Tab 5 Administrator Reports
- ❖ Tab 6 Glossary of Hedge Fund Terms

Plan Allocation Status

June 30, 2018

LACERA Assets	\$55,953.3 mm
Hedge Fund Program Target Allocation at 4.0% of Total Fund	\$2,238.1 mm
Grosvenor Diversified (San Gabriel) Portfolio Market Value	\$488.1 mm
Grosvenor Opportunistic Credit (San Gabriel 2) Portfolio Market Value	\$21.9 mm
Grosvenor Opportunistic Credit 2 (San Gabriel 3) Portfolio Market Value	\$359.9 mm
Total GCM Grosvenor Hedge Fund Program Market Value	\$869.8 mm
Goldman Diversified Hedge Fund Portfolio Market Value	\$486.0 mm
Total GSAM Goldman Sachs Hedge Fund Program Market Value	\$486.0 mm
Direct Hedge Fund Portfolio Market Value	\$255.0 mm
Total Direct Hedge Fund Portfolio Market Value	\$255.0 mm
Total Hedge Fund Program Market Value	\$1,610.7 mm

Portfolio Returns

June 30, 2018

Total Hedge Fund Composite	--- Annualized ---					
	2Q18	YTD	1 Year	3 Year	5 Year	ITD ³
Hedge Fund Program Aggregate Portfolio ^{1,2}	0.81%	1.74%	5.52%	2.87%	4.09%	4.89%
90-Day U.S. T-Bills plus 500 basis points	1.67%	3.27%	6.39%	5.67%	5.41%	5.33%
HFRX Global Hedge Fund Index	0.17%	-0.85%	2.47%	0.83%	1.32%	1.89%

Grosvenor Diversified Portfolio	--- Annualized ---					
	2Q18	YTD	1 Year	3 Year	5 Year	ITD ⁴
San Gabriel Fund, L.P. ¹ (Diversified)	1.86%	3.61%	6.43%	1.89%	3.08%	3.93%
90-Day U.S. T-Bills plus 500 basis points	1.67%	3.27%	6.39%	5.67%	5.41%	5.33%
HFRX Global Hedge Fund Index	0.17%	-0.85%	2.47%	0.83%	1.32%	1.89%

Grosvenor Opportunistic Credit Portfolio 2013	--- Annualized ---					
	2Q18	YTD	1 Year	3 Year	5 Year	ITD ⁵
San Gabriel Fund 2, L.P. ¹ (Opportunistic Credit)	1.23%	0.52%	3.81%	2.86%	4.73%	5.95%
90-Day U.S. T-Bills plus 500 basis points	1.67%	3.27%	6.39%	5.67%	5.41%	5.39%
HFRX Fixed Income Credit Index	0.68%	0.29%	1.74%	1.13%	0.98%	1.71%

Goldman Sachs Diversified Portfolio	--- Annualized ---					
	2Q18	YTD	1 Year	3 Year	5 Year	ITD ⁶
Goldman Sachs Hedge Fund of Fund ¹	1.30%	1.66%	5.67%	2.75%	n/a	2.47%
90-Day U.S. T-Bills plus 500 basis points	1.67%	3.27%	6.39%	5.67%	n/a	5.63%
HFRX Global Hedge Fund Index	0.17%	-0.85%	2.47%	0.83%	n/a	0.47%

Grosvenor Opportunistic Credit Portfolio 2016	--- Annualized ---					
	2Q18	YTD	1 Year	3 Year	5 Year	ITD ⁷
San Gabriel Fund 3, L.P. ¹ (Opportunistic Credit)	0.63%	1.59%	6.73%	n/a	n/a	9.67%
90-Day U.S. T-Bills plus 500 basis points	1.67%	3.27%	6.39%	n/a	n/a	5.81%
HFRX Fixed Income Credit Index	0.68%	0.29%	1.74%	n/a	n/a	4.61%

Direct Hedge Fund Portfolio	--- Annualized ---					
	2Q18	YTD	1 Year	3 Year	5 Year	ITD ⁸
Direct Hedge Fund Portfolio ¹	-2.48%	n/a	n/a	n/a	n/a	-2.48%
90-Day U.S. T-Bills plus 500 basis points	1.67%	n/a	n/a	n/a	n/a	1.67%
HFRX Global Hedge Fund Index	0.17%	n/a	n/a	n/a	n/a	0.17%

¹ Portfolio returns are net of all fees and expenses.

² Returns prior to 1/1/2013 are that of San Gabriel Fund, L.P. (Grosvenor Diversified Portfolio) only.

³ ITD returns for the HF Composite and benchmarks commence on 10/1/2011 (the inception date of the Composite).

⁴ ITD returns for San Gabriel Fund, L.P. and benchmarks commence on 10/1/2011 (the inception date of the Fund).

⁵ ITD returns for San Gabriel Fund 2, L.P. and benchmarks commence on 1/1/2013 (the inception date of the Fund).

⁶ ITD returns for Goldman Sachs and benchmarks commence on 5/1/2015 (the inception date of the Fund).

⁷ ITD returns for San Gabriel Fund 3, L.P. and benchmarks commence on 2/1/2016 (the inception date of the Fund).

⁸ ITD returns for Direct Hedge Fund Portfolio, and benchmarks commence on 4/1/2018 (the inception date of the Portfolio).

Past performance is not necessarily indicative of future results, and the performance of the portfolio could be volatile.

Portfolio Risk and Return Statistics

Measured Since Inception Through June 30, 2018

LACERA Hedge Fund Portfolios

	Return ¹	Standard Deviation	Sharpe Ratio	Beta to MSCI ACWI	Inception
Total Hedge Fund Program	4.89%	2.63%	1.74	0.14	10/1/2011
Grosvenor Diversified (San Gabriel)	3.93%	2.60%	1.39	0.13	10/1/2011
Grosvenor Opportunistic Credit (San Gabriel 2)	5.95%	3.48%	1.60	0.19	1/1/2013
Goldman Sachs Diversified	2.47%	2.96%	0.63	0.11	5/1/2015
Grosvenor Opportunistic Credit (San Gabriel 3)	9.68%	2.97%	3.00	0.14	2/1/2016
Direct Portfolio	-2.48%	-- N/A: time period insufficient --			4/1/2018

LACERA Custom Composites With and Without Hedge Funds ²

	Return ¹	Standard Deviation	Sharpe Ratio	Beta to MSCI ACWI	Inception
Total Public Equities, Fixed Income, Commodities and Cash	9.12%	7.25%	1.216	0.645	10/1/2011
Total Public Equities, Fixed Income, Commodities, Cash, and Hedge Funds	9.07%	7.18%	1.220	0.639	10/1/2011
Impact of Hedge Funds:	-0.05%	-0.07%	0.004	-0.006	

¹ Returns are net of all fees and expenses and annualized for periods greater than one year.

² State Street, LACERA's custodian, began compiling these custom composites in June of 2013.

Compositing information prior to June 2013 was prepared by LACERA.

Grosvenor Capital Management

Portfolio Fund Summary

Portfolio Returns

Los Angeles County Employees Retirement Association (June 30, 2018)

	2Q18	YTD	1 Year	Annualized		
				3 Year	5 Year	ITD ³
Grosvenor Aggregate Portfolio ^{1,2}	1.33%	2.57%	6.31%	3.15%	4.31%	5.06%
90-Day U.S. T-Bills plus 500 basis points	1.67%	3.27%	6.39%	5.67%	5.41%	5.32%
HFRX Global Hedge Fund Index	0.17%	-0.85%	2.47%	0.83%	1.32%	1.89%

	2Q18	YTD	1 Year	Annualized		
				3 Year	5 Year	ITD ⁴
San Gabriel Fund, L.P. ¹ (Diversified)	1.86%	3.61%	6.43%	1.90%	3.09%	3.93%
90-Day U.S. T-Bills plus 500 basis points	1.67%	3.27%	6.39%	5.67%	5.41%	5.32%
HFRX Global Hedge Fund Index	0.17%	-0.85%	2.47%	0.83%	1.32%	1.89%

	2Q18	YTD	1 Year	Annualized		
				3 Year	5 Year	ITD ⁵
San Gabriel Fund 2, L.P. ¹ (Opportunistic Credit)	1.23%	0.52%	3.81%	2.87%	4.73%	5.95%
90-Day U.S. T-Bills plus 500 basis points	1.67%	3.27%	6.39%	5.67%	5.41%	5.38%
HFRX Fixed Income Credit Index	0.68%	0.29%	1.74%	1.13%	0.97%	1.71%

	2Q18	YTD	1 Year	Annualized		
				3 Year	5 Year	ITD ⁶
San Gabriel Fund 3, L.P. ¹ (Opportunistic Credit)	0.63%	1.59%	6.73%	-	-	9.67%
90-Day U.S. T-Bills plus 500 basis points	1.67%	3.27%	6.39%	-	-	5.82%
HFRX Fixed Income Credit Index	0.68%	0.29%	1.74%	-	-	4.61%

1 Portfolio returns are net of fees and expenses.

2 Returns prior to 1/1/2013 are that of San Gabriel Fund, L.P. only.

3 ITD returns for the aggregate portfolio and benchmarks commence on 10/1/2011 (the inception date of San Gabriel Fund, L.P.).

4 ITD returns for San Gabriel Fund, L.P. and benchmarks commence on 10/1/2011 (the inception date of the Fund).

5 ITD returns for San Gabriel Fund 2, L.P. and benchmarks commence on 1/1/2013 (the inception date of the Fund).

6 ITD returns for San Gabriel Fund 3, L.P. and benchmarks commence on 2/1/2016 (the inception date of the Fund).

Data sources: ©2018 Citigroup Index LLC. All rights reserved. Hedge Fund Research (HFR).

Past performance is not necessarily indicative of future results.

Hedge Fund Categories

Los Angeles County Employees Retirement Association (June 30, 2018)

San Gabriel Fund, L.P.						Cumulative returns			Annualized returns		
Hedge fund category	QTD opening balance	QTD subscriptions/ (redemptions)	QTD gain (loss)	QTD ending balance	% of NAV (As of 6/30/18)	2Q18	YTD	1 Year	3 Year	5 Year	ITD ¹
Credit	\$136,632,841	(\$5,292,265)	\$2,280,774	\$133,621,351	27.38%	1.72%	3.18%	7.70%	3.93%	5.65%	7.67%
Equities	\$117,855,352	(\$807,333)	\$3,357,398	\$120,405,418	24.67%	2.80%	4.74%	8.96%	0.83%	3.28%	3.31%
Quantitative	\$22,561,089	\$2,400,000	\$567,695	\$25,528,784	5.23%	2.27%	3.10%	5.55%	-	-	-6.05%
Macro	\$59,772,002	\$3,800,000	\$1,430,128	\$65,002,130	13.32%	2.25%	7.52%	8.89%	5.36%	5.53%	5.12%
Relative Value	\$57,356,110	\$8,163,969	\$1,548,157	\$67,068,236	13.74%	2.64%	5.45%	7.94%	3.23%	5.83%	7.58%
Multi-Strategy	\$61,201,915	\$1,900,000	\$702,351	\$63,804,267	13.07%	1.12%	1.68%	7.20%	6.91%	5.89%	7.69%
Commodities	\$4,369,002	(\$4,252,506)	(\$116,495)	-	-	-2.67%	-6.21%	-12.39%	-	-	-8.39%
Portfolio Hedges	-	-	-	-	-	-	-	-	-	-	-13.68%
APPA ⁴	(\$78,769)	-	\$33,849	(\$44,921)	-0.01%	-	-	-	-	-	-
Other ⁵	\$1,012,245	\$1,093,315	(\$9,060)	\$2,096,500	0.43%	0.74%	2.59%	-	-	-	-
Uninvested ⁶	\$18,483,658	(\$7,005,180)	(\$872,044)	\$10,606,434	2.17%	-	-	-	-	-	-
Net asset value	\$479,165,445	-	\$8,922,753	\$488,088,198	100.00%	1.86%	3.61%	6.43%	1.90%	3.09%	3.93%

San Gabriel Fund 2, L.P.						Cumulative returns			Annualized returns		
Hedge fund category	QTD opening balance	QTD subscriptions/ (redemptions)	QTD gain (loss)	QTD ending balance	% of NAV (As of 6/30/18)	2Q18	YTD	1 Year	3 Year	5 Year	ITD ²
Credit	\$30,631,677	(\$12,982,866)	\$321,771	\$17,970,582	82.11%	1.81%	2.07%	6.79%	5.09%	6.48%	7.65%
Relative Value	-	-	-	-	-	-	-	-	-	-	-8.09%
APPA ⁴	\$9,758	-	(\$9,758)	-	-	-	-	-	-	-	-
Other ⁵	\$682,239	(\$225,275)	\$35,248	\$492,212	2.25%	4.89%	0.74%	-	-	-	-
Uninvested ⁶	\$4,750,798	(\$1,291,859)	(\$35,675)	\$3,423,265	15.64%	-	-	-	-	-	-
Net asset value	\$36,074,472	(\$14,500,000)	\$311,587	\$21,886,058	100.00%	1.23%	0.52%	3.81%	2.87%	4.73%	5.95%

San Gabriel Fund 3, L.P.						Cumulative returns			Annualized returns		
Hedge fund category	QTD opening balance	QTD subscriptions/ (redemptions)	QTD gain (loss)	QTD ending balance	% of NAV (As of 6/30/18)	2Q18	YTD	1 Year	3 Year	5 Year	ITD ³
Credit	\$354,829,632	(\$6,683,269)	\$2,524,815	\$350,671,178	97.43%	0.72%	2.03%	7.77%	-	-	10.91%
APPA ⁴	(\$377,519)	-	\$404,680	\$27,160	0.01%	-	-	-	-	-	-
Uninvested ⁶	\$3,216,617	\$6,683,269	(\$686,445)	\$9,213,441	2.56%	-	-	-	-	-	-
Net asset value	\$357,668,730	-	\$2,243,050	\$359,911,779	100.00%	0.63%	1.59%	6.73%	-	-	9.67%

1 ITD returns for San Gabriel Fund, L.P. commence on 10/1/2011 (the inception date of the Fund).

2 ITD returns for San Gabriel Fund 2, L.P. commence on 1/1/2013 (the inception date of the Fund).

3 ITD returns for San Gabriel Fund 3, L.P. commence on 2/1/2016 (the inception date of the Fund).

4 Aggregated Prior Period Adjustment.

5 "Other" may include: residual positions with underlying funds from which the Fund has redeemed, and general trades.

6 "Uninvested" may include: cash, expenses, management fees, and net receivables/payables.

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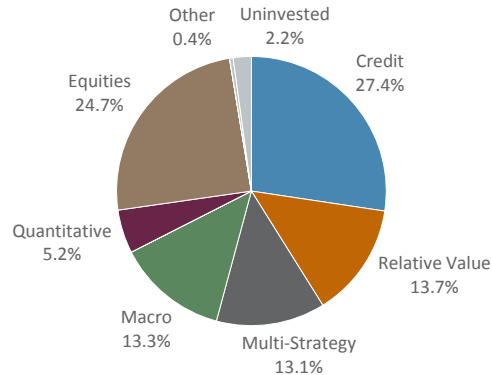
Hedge Fund Categories

Los Angeles County Employees Retirement Association (June 30, 2018)

San Gabriel Fund, L.P.

Asset allocation by strategy^{1,2}

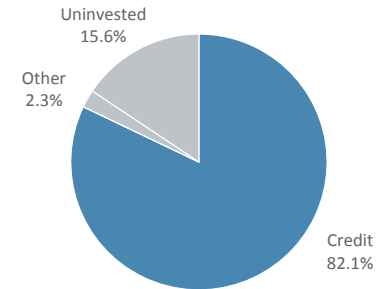
Percent of fund's net asset value



San Gabriel Fund 2, L.P.

Asset allocation by strategy^{1,2}

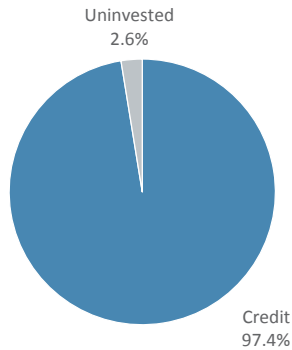
Percent of fund's net asset value



San Gabriel Fund 3, L.P.

Asset allocation by strategy^{1,2}

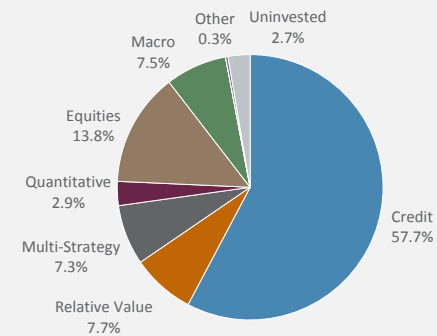
Percent of fund's net asset value



Total Hedge Fund Program

Asset allocation by strategy^{1,2}

Percent of fund's net asset value



¹ "Other" (if present) may include: residual positions with underlying funds from which the Fund has redeemed, and general trades.

² "Uninvested" may include: cash, expenses, management fees, and net receivables/payables.

Hedge Fund Program Summary

Los Angeles County Employees Retirement Association (June 30, 2018)

San Gabriel Fund, L.P.						Cumulative returns			Annualized returns		
Fund Name	Fund Category	QTD ending balance	% of NAV (as of 6/30/18)	Start date of investment	End date of investment	2Q18	YTD	1 Year	3 Year	5 Year	ITD ¹
Fund 1	Credit	\$18,448,660	3.78%	04/01/2013	Present	1.99%	4.56%	11.22%	6.24%	6.97%	7.12%
Fund 2	Credit	\$29,160,220	5.97%	02/01/2014	Present	1.45%	2.13%	7.65%	7.03%	-	6.71%
Fund 3	Credit	\$12,795,609	2.62%	05/01/2013	Present	1.39%	1.08%	4.32%	3.23%	6.33%	6.23%
Fund 4	Credit	\$25,154,301	5.15%	10/01/2011	Present	2.61%	4.60%	9.01%	4.44%	7.38%	8.91%
Fund 5	Credit	\$4,078,174	0.84%	10/01/2012	Present	1.70%	5.73%	12.95%	2.80%	4.40%	5.95%
Fund 6	Credit	\$26,926,314	5.52%	10/01/2011	Present	1.34%	1.67%	6.31%	2.65%	5.81%	7.79%
Fund 7	Credit	\$17,058,073	3.49%	11/01/2017	Present	1.49%	5.17%	-	-	-	5.30%
Fund 8	Equities	\$16,857,664	3.45%	11/01/2015	Present	3.41%	5.70%	10.13%	-	-	6.02%
Fund 9	Equities	\$6,607,309	1.35%	08/01/2016	Present	0.65%	-1.73%	4.36%	-	-	4.13%
Fund 10	Equities	\$12,420,656	2.54%	05/01/2017	Present	0.27%	-1.42%	2.13%	-	-	1.21%
Fund 11	Equities	\$3,127,022	0.64%	10/01/2012	Present	3.00%	4.98%	14.70%	7.34%	13.17%	12.44%
Fund 12	Equities	\$12,078,296	2.47%	07/01/2014	Present	3.56%	-1.57%	-0.13%	-2.27%	-	-3.31%
Fund 13	Equities	\$19,203,322	3.93%	02/01/2018	Present	1.10%	-0.40%	-	-	-	-0.40%
Fund 14	Equities	\$19,886,855	4.07%	11/01/2017	Present	1.97%	7.74%	-	-	-	1.97%
Fund 15	Equities	\$2,701,335	0.55%	11/01/2012	Present	5.22%	3.92%	-0.26%	-5.89%	0.51%	2.99%
Fund 16	Equities	\$27,522,959	5.64%	11/01/2015	Present	5.55%	13.29%	29.18%	-	-	17.05%
Fund 17	Quantitative	\$25,528,784	5.23%	08/01/2017	Present	2.27%	3.10%	-	-	-	7.54%
Fund 18	Macro	\$29,644,724	6.07%	04/01/2012	Present	6.16%	18.08%	28.89%	16.14%	15.62%	13.88%
Fund 19	Macro	\$16,727,467	3.43%	05/01/2017	Present	0.78%	2.40%	-6.70%	-	-	-3.38%
Fund 20	Macro	\$18,629,940	3.82%	10/01/2013	Present	-2.20%	-0.87%	2.64%	4.01%	-	3.94%
Fund 21	Relative Value	\$26,728,896	5.48%	03/01/2013	Present	4.49%	9.03%	18.10%	10.78%	14.68%	14.44%
Fund 22	Relative Value	\$10,843,115	2.22%	06/01/2018	Present	0.40%	0.40%	-	-	-	0.40%
Fund 23	Relative Value	\$19,061,632	3.91%	05/01/2015	Present	2.31%	3.91%	7.04%	4.34%	-	4.64%
Fund 24	Relative Value	\$3,710,117	0.76%	08/01/2015	Present	-1.56%	1.34%	1.59%	-	-	-3.27%
Fund 25	Relative Value	\$6,724,476	1.38%	11/01/2015	Present	0.34%	1.45%	-15.82%	-	-	-13.45%
Fund 26	Multi-Strategy	\$24,810,397	5.08%	11/01/2011	Present	1.40%	3.12%	7.93%	7.95%	8.01%	8.43%
Fund 27	Multi-Strategy	\$16,534,476	3.39%	04/01/2017	Present	-2.95%	-2.99%	2.18%	-	-	3.74%
Fund 28	Multi-Strategy	\$22,459,394	4.60%	02/01/2017	Present	4.29%	3.92%	10.99%	-	-	6.31%
Terminated Fund 46	Relative Value	-	-	10/01/2011	05/01/2018	-2.10%	-1.89%	0.02%	-	-	5.47%
Terminated Fund 47	Commodities	-	-	01/01/2015	06/01/2018	-2.67%	-4.56%	-8.53%	-	-	-13.20%
APPA	APPA ²	(\$44,921)	-0.01%	-	-	-	-	-	-	-	-
Other	Other ³	\$2,096,500	0.43%	-	-	0.74%	2.59%	-	-	-	-
Total Uninvested	Uninvested ⁴	\$10,606,434	2.17%	-	-	-	-	-	-	-	-
Net asset value	Total	\$488,088,198	100.00%			1.86%	3.61%	6.43%	1.90%	3.09%	3.93%

- 1 ITD return for the portfolio commenced 10/1/2011. Individual fund returns are over the period indicated by the Start date of investment and End date of investment columns in the table. Returns for funds for a period of 12 months or less are not annualized.
- 2 Aggregated Prior Period Adjustment.
- 3 "Other" may include: residual positions with underlying funds from which the Fund has redeemed, and general trades.
- 4 "Uninvested" may include: cash, expenses, management fees, and net receivables/payables.

Past performance is not necessarily indicative of future results.

Hedge Fund Program Summary

Los Angeles County Employees Retirement Association (June 30, 2018)

San Gabriel Fund 2, L.P.						Cumulative returns			Annualized returns		
Fund name	Fund category	QTD ending balance	% of NAV (As of 6/30/18)	Start date of investment	End date of investment	2Q18	YTD	1 Year	3 Year	5 Year	ITD ¹
Fund 1	Credit	\$2,548,372	11.64%	01/01/2013	Present	1.04%	1.42%	-0.48%	0.05%	1.52%	2.37%
Fund 2	Credit	\$6,407,512	29.28%	04/01/2013	Present	2.29%	-3.50%	-4.63%	3.95%	6.61%	6.72%
Fund 3	Credit	\$9,014,698	41.19%	06/01/2014	Present	1.70%	5.73%	12.95%	2.80%	-	2.73%
APPA	APPA ²	-	-	-	-	-	-	-	-	-	-
Other	Other ³	\$492,212	2.25%	-	-	4.89%	0.74%	-	-	-	-
Total Uninvested	Uninvested ⁴	\$3,423,265	15.64%	-	-	-	-	-	-	-	-
Net asset value	Total	\$21,886,058	100.00%			1.23%	0.52%	3.81%	2.87%	4.73%	5.95%

1 ITD return for the portfolio commenced 1/1/2013. Individual fund returns are over the period indicated by the Start date of Investment and End date of Investment columns in the table. Returns for funds for a period of 12 months or less are not annualized.

2 Aggregated Prior Period Adjustment.

3 "Other" may include: residual positions with underlying funds from which the Fund has redeemed, and general trades.

4 "Uninvested" may include: cash, expenses, management fees, and net receivables/payables.

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Hedge Fund Program Summary

Los Angeles County Employees Retirement Association (June 30, 2018)

San Gabriel Fund 3, L.P.						Cumulative returns			Annualized returns		
Fund name	Fund category	QTD ending balance	% of NAV (As of 6/30/18)	Start date of investment	End date of investment	2Q18	YTD	1 Year	3 Year	5 year	ITD ¹
Fund 1	Credit	\$41,810,910	11.62%	02/01/2016	Present	1.45%	2.13%	7.65%	-	-	9.86%
Fund 2	Credit	\$30,718,745	8.54%	02/01/2016	Present	1.69%	5.27%	9.14%	-	-	6.46%
Fund 3	Credit	\$10,527,786	2.93%	02/01/2016	Present	1.39%	1.08%	4.32%	-	-	4.70%
Fund 4	Credit	\$42,278,838	11.75%	02/01/2016	Present	2.61%	4.60%	9.01%	-	-	8.85%
Fund 5	Credit	\$17,707,650	4.92%	06/01/2017	Present	0.68%	2.95%	5.51%	-	-	5.89%
Fund 6	Credit	\$20,287,141	5.64%	02/01/2016	Present	2.32%	5.36%	10.93%	-	-	16.18%
Fund 7	Credit	\$10,346,348	2.87%	02/01/2018	Present	2.15%	3.46%	-	-	-	3.46%
Fund 8	Credit	\$19,404,899	5.39%	08/01/2016	Present	-10.01%	-21.41%	-17.68%	-	-	0.37%
Fund 9	Credit	\$7,817,717	2.17%	02/01/2016	Present	-11.86%	-4.60%	10.71%	-	-	14.75%
Fund 10	Credit	\$22,684,263	6.30%	06/01/2017	Present	-0.76%	1.09%	10.50%	-	-	9.43%
Fund 11	Credit	\$16,368,460	4.55%	02/01/2016	Present	-0.33%	2.51%	15.87%	-	-	26.11%
Fund 12	Credit	\$33,556,157	9.32%	04/01/2016	Present	1.98%	4.33%	9.72%	-	-	8.81%
Fund 13	Credit	\$17,833,705	4.96%	02/01/2016	Present	2.56%	4.70%	9.35%	-	-	8.06%
Fund 14	Credit	\$21,222,764	5.90%	04/01/2017	Present	2.58%	4.64%	9.43%	-	-	9.23%
Fund 15	Credit	\$38,105,795	10.59%	03/01/2016	Present	3.22%	6.48%	11.38%	-	-	10.27%
APPA	APPA ²	\$27,160	0.01%	-	-	-	-	-	-	-	-
Total Uninvested	Uninvested ³	\$9,213,441	2.56%	-	-	-	-	-	-	-	-
Net asset value	Total	\$359,911,779	100.00%			0.63%	1.59%	6.73%	-	-	9.67%

1 ITD return for the portfolio commenced 2/1/2016. Individual fund returns are over the period indicated by the Start date of investment and End date of investment columns in the table. Returns for funds for a period of 12 months or less are not annualized.

2 Aggregated Prior Period Adjustment.

3 "Uninvested" may include: cash, expenses, management fees, and net receivables/payables.

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Portfolio Characteristics

Los Angeles County Employees Retirement Association (Allocation Period: July 1, 2018)

	San Gabriel Fund 1, L.P. ^{1,2,6}				San Gabriel Fund 2, L.P. ^{1,3,7,8}				San Gabriel Fund 3, L.P. ^{1,3,7}				Total Hedge Fund Program ^{1,4}			
	Guideline	Forward looking estimate	Realized since inception		Guideline	Forward looking estimate	Realized since inception		Guideline	Forward looking estimate	Realized since inception		Guideline	Forward looking estimate	Realized since inception	
Volatility																
Standard deviation of returns	5-7%	4.3%	2.6%		≤10%	3.5%	3.5%		≤8%	4.1%	2.9%		5-8%	4.2%	2.8%	
Sharpe Ratio	≥1.0	1.26	1.40		>1.0	0.95	1.61		>1.0	1.36	3.05				1.71	
Diversification																
Portfolio beta to MSCI World	≤0.20	0.22	0.21	0.14	≤0.30	0.09	0.09	0.20	≤0.25	0.18	0.12	0.14	≤0.25	0.20	0.17	0.15
Manager Allocation																
Number of investment managers	20-40	22			7-15	1			7-15	11				31		
Portfolio category																
	Compliance range	Target allocation	Capital allocation		Target range	Maximum	Capital allocation		Target range	Maximum	Capital allocation		Target range	Maximum	Capital allocation	
Credit	10%-40%	30%	27.3%				78.9%				95.5%				56.9%	
Equities	5%-40%	20%	23.7%				0.0%				0.0%				13.3%	
Multi-Strategy	0%-30%	15%	14.0%				0.0%				0.0%				7.9%	
Relative Value	0%-30%	14%	13.7%				0.0%				0.0%				7.7%	
Macro	0%-20%	13%	13.3%				0.0%				0.0%				7.5%	
Commodities	0%-15%	2%	0.0%				0.0%				0.0%				0.0%	
Quantitative	0%-15%	5%	5.2%				0.0%				0.0%				2.9%	
Portfolio Hedges	0%-10%	1%	0.0%				0.0%				0.0%				0.0%	
Look-through exposure category																
Corporate Credit					15-40%		5.0%		<50%		24.3%					
Mortgage Credit					30-60%		49.4%		<50%		33.4%					
Structured Credit					10-25%		12.4%		<50%		24.1%					
Relative Value					0-15%		0.0%									
Other (Event Driven, Macro, Equities)					0-10%		2.2%									

- 1 Forward looking estimates, historical simulation returns and related statistics are net of underlying manager fees/expenses but gross of GCM Grosvenor fees/expenses.
- 2 Assumes historical strategy correlation average of 0.3.
- 3 Assumes historical strategy correlation average of 0.5.
- 4 Assumes historical strategy correlation average of 0.4.
- 5 Forward Looking Estimate Beta statistic is presented for informational purposes only.
- 6 Forward Looking Estimate Sharpe Ratio is calculated using the Risk-based Allocation Report as follows: Portfolio ROR less Risk-free Rate (assumed to be 1.0% for this purpose) divided by Portfolio Standard Deviation at the 0.3 correlation level.
- 7 Forward Looking Estimate Sharpe Ratio is calculated using the Risk-based Allocation Report as follows: Portfolio ROR less Risk-free Rate (assumed to be 1.0% for this purpose) divided by Portfolio Standard Deviation at the 0.5 correlation level.
- 8 San Gabriel Fund 2, L.P. is in its harvest period with an anticipated termination date of December 31, 2018.

The statistics on this slide are for illustrative purposes only, and are summarized from data contained in the attached portfolio reports. The Notes and Disclosures following this presentation and accompanying the attached portfolio reports are integral to your review of the statistics, and must be read with your review of the statistics.

Risk Summary

Los Angeles County Employees Retirement Association (Allocation Period: July 1, 2018)

Leverage within hedge funds	San Gabriel Fund, L.P.		San Gabriel Fund 2, L.P.		San Gabriel Fund 3, L.P.		Total hedge fund program	
	Guideline maximum	Leverage	Guideline maximum	Leverage	Guideline maximum	Leverage	Guideline maximum	Leverage
Hedge fund category								
Credit	4.0x	1.3x	3.0x	1.0x	3.0x	1.1x		1.2x
Relative Value	8.0x	7.7x						7.7x
Event Driven	4.0x	2.0x						2.0x
Equities	4.0x	1.5x						1.5x
Macro	20.0x	9.0x						9.0x
Other	5.0x	1.5x	3.0x	1.0x	3.0x	0.0x		1.4x
Downside loss								
Actual allocation to single fund, % of capital (at market)	10% maximum	6.1%						7.7%
% ROR impact of Severe Case Loss in a single fund (at market)	≥ -4%	-2.1%						-1.2%
Impact of Severe Case Loss in a single sub-strategy (at market)	≥ -7%	-2.6%						-1.5%
Fund-Level ROR Impact of Severe Case Loss (at market)	≥ -10%	-7.9% ¹	≥ -15%	-7.8% ¹	≥ -15%	-5.6% ¹		-6.4% ¹
Actual allocation to single investment manager, % of capital (at cost)			20% maximum	32.1%	25% maximum	14.1%		8.6%
Actual allocation to GCM Special Opportunities Fund (at market)	10% maximum	4.3%						
Actual allocation to Self Liquidating Funds, % of capital (at cost)	20% maximum	4.1%						
Actual allocation to Self Liquidating Funds, % of capital (at market)	20% maximum	4.3%						
% ROR impact of Severe Case Loss in a single investment manager (at market)			≥ -5%	-7.0%	≥ -7%	-2.3%		-1.2%
Liquidity excluding fund level and discretionary gates, notice periods, and side pocket investments²								
Fund capital with lockups greater than 1 year but less than 2 years	<35%	8.7%						25.2%
Fund capital with lockups greater than 2 years	0.0%	0.0%						0.0%
Fund capital available within one quarter, after lockups expire, including the effect of mandatory investor-level gates							>50%	62.2%
Fund capital available within one year, after lockups expire, including the effect of mandatory investor-level gates	>65%	82.0%					>50%	64.4%
Fund capital with quarterly or more frequent liquidity after lockups expire, excluding the effects of mandatory investor-level gates			60 months from San Gabriel 2 inception		At least 90% of the Fund's capital (at cost) 60 months from San Gabriel 3 inception			
Initial Anticipated End Date								

1 Assumes historical strategy correlation of 0.4.

2 Self-liquidating Funds are considered to have lockups of greater than 1 year, but less than 2 years for purposes of measuring the above constraints.

The statistics on this slide are for illustrative purposes only, and are summarized from data contained in the attached portfolio reports. The Notes and Disclosures following this presentation and accompanying the attached portfolio reports are integral to your review of the statistics, and must be read with your review of the statistics.

Compliance Summary

Los Angeles County Employees Retirement Association (Allocation Period: July 1, 2018)

San Gabriel Fund, L.P.

Category	In compliance	Discussion
Forward looking return, volatility, and correlation objectives	YES	-
Downside risk case	YES	-
Number of investment managers	YES	-
Allocation to single hedge fund	YES	-
Maximum leverage	YES	-
Lockups	YES	-
Fund liquidity after lockups	YES	-
Strategy categories	YES	-

San Gabriel Fund 2, L.P.

Category	In compliance	Discussion
Forward looking return, volatility, and correlation objectives	YES	-
Downside risk case	YES	-
Number of investment managers	NO	Irrelevant; Portfolio in liquidation.
Allocation to single investment manager	NO	Irrelevant; Portfolio in liquidation.
Downside risk to a single investment manager	NO	Irrelevant; Portfolio in liquidation.
Maximum leverage	YES	-
Look-through exposure categories	NO	Irrelevant; Portfolio in liquidation.

San Gabriel Fund 3, L.P.

Category	In compliance	Discussion
Forward looking return, volatility, and correlation objectives	YES	-
Downside risk case	YES	-
Number of investment managers	YES	-
Allocation to single investment manager	YES	-
Downside risk to a single investment manager	YES	-
Maximum leverage	YES	-
Look-through exposure categories	YES	-

Allocation Report – San Gabriel Fund, L.P.

GROSVENOR

CAPITAL MANAGEMENT, L.P.

Allocation Report

Expressed in US Dollars

Period is 01 July 2018

GABRIEL - San Gabriel Fund, L.P. (the "Fund")

Portfolio Fund Name	Ending Balance as of 30 June 2018 Before EOM Activity					Allocation as of 01 July 2018					
	Ending Balance	as Percentage of Substrategy/Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV	Subscriptions (Redemptions)	Allocated Balance	as Percentage of Substrategy/Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV
Credit											
Fundamental Credit											
Fund 1	18,448,660	38.75%	13.81%	3.86%	3.78%	-	18,448,660	38.75%	14.22%	3.90%	3.78%
Fund 2	29,160,220	61.25%	21.82%	6.11%	5.97%	-	29,160,220	61.25%	22.48%	6.17%	5.97%
Total - Fundamental Credit	47,608,880	100.00%	35.63%	9.97%	9.75%	-	47,608,880	100.00%	36.70%	10.07%	9.75%
Structured Credit											
Fund 3	12,795,609	30.45%	9.58%	2.68%	2.62%	(3,329,737)	9,465,872	24.83%	7.30%	2.00%	1.94%
Fund 4	25,154,301	59.85%	18.83%	5.27%	5.15%	-	25,154,301	65.99%	19.39%	5.32%	5.15%
Fund 5	4,078,174	9.70%	3.05%	0.85%	0.84%	(577,958)	3,500,216	9.18%	2.70%	0.74%	0.72%
Total - Structured Credit	42,028,084	100.00%	31.45%	8.80%	8.61%	(3,907,695)	38,120,389	100.00%	29.39%	8.06%	7.81%
Long/Short Credit											
Fund 6	26,926,314	61.22%	20.15%	5.64%	5.52%	-	26,926,314	61.22%	20.76%	5.70%	5.52%
Fund 7	17,058,073	38.78%	12.77%	3.57%	3.49%	-	17,058,073	38.78%	13.15%	3.61%	3.49%
Total - Long/Short Credit	43,984,387	100.00%	32.92%	9.21%	9.01%	-	43,984,387	100.00%	33.91%	9.31%	9.01%
Total Credit	133,621,351		100.00%	27.98%	27.38%	(3,907,695)	129,713,656		100.00%	27.44%	26.58%
Equities											
Directional Equity / U.S./Canada											
Fund 8	16,857,664	100.00%	14.00%	3.53%	3.45%	(5,000,000)	11,857,664	100.00%	10.27%	2.51%	2.43%
Total - Directional Equity / U.S./Canada	16,857,664	100.00%	14.00%	3.53%	3.45%	(5,000,000)	11,857,664	100.00%	10.27%	2.51%	2.43%
Fundamental Market Neutral Equity / Global											
Fund 9	6,607,309	29.82%	5.49%	1.38%	1.35%	-	6,607,309	29.82%	5.73%	1.40%	1.35%
Fund 10	12,420,656	56.06%	10.32%	2.60%	2.54%	-	12,420,656	56.06%	10.76%	2.63%	2.54%
Fund 11	3,127,022	14.11%	2.60%	0.65%	0.64%	-	3,127,022	14.11%	2.71%	0.66%	0.64%
Total - Fundamental Market Neutral Equity / Global	22,154,987	100.00%	18.40%	4.64%	4.54%	-	22,154,987	100.00%	19.20%	4.69%	4.54%
Event Driven											
Fund 12	12,078,296	100.00%	10.03%	2.53%	2.47%	-	12,078,296	100.00%	10.47%	2.56%	2.47%
Total - Event Driven	12,078,296	100.00%	10.03%	2.53%	2.47%	-	12,078,296	100.00%	10.47%	2.56%	2.47%

Portfolio Fund Name	Ending Balance as of 30 June 2018 Before EOM Activity					Allocation as of 01 July 2018					
	Ending Balance	as Percentage of Substrategy/ Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV	Subscriptions (Redemptions)	Allocated Balance	as Percentage of Substrategy/ Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV
Specialist Equity / U.S./Canada											
Fund 13	19,203,322	100.00%	15.95%	4.02%	3.93%	-	19,203,322	100.00%	16.64%	4.06%	3.93%
Total - Specialist Equity / U.S./Canada	19,203,322	100.00%	15.95%	4.02%	3.93%	-	19,203,322	100.00%	16.64%	4.06%	3.93%
Specialist Equity / Asia											
Fund 14	19,886,855	100.00%	16.52%	4.16%	4.07%	-	19,886,855	100.00%	17.23%	4.21%	4.07%
Total - Specialist Equity / Asia	19,886,855	100.00%	16.52%	4.16%	4.07%	-	19,886,855	100.00%	17.23%	4.21%	4.07%
Specialist Equity / Global											
Fund 15	2,701,335	8.94%	2.24%	0.57%	0.55%	-	2,701,335	8.94%	2.34%	0.57%	0.55%
Fund 16	27,522,959	91.06%	22.86%	5.76%	5.64%	-	27,522,959	91.06%	23.85%	5.82%	5.64%
Total - Specialist Equity / Global	30,224,294	100.00%	25.10%	6.33%	6.19%	-	30,224,294	100.00%	26.19%	6.39%	6.19%
Total Equities	120,405,418		100.00%	25.22%	24.67%	(5,000,000)	115,405,418		100.00%	24.41%	23.64%
<u>Quantitative</u>											
Non-Directional Quantitative											
Fund 17	25,528,784	100.00%	100.00%	5.35%	5.23%	-	25,528,784	100.00%	100.00%	5.40%	5.23%
Total - Non-Directional Quantitative	25,528,784	100.00%	100.00%	5.35%	5.23%	-	25,528,784	100.00%	100.00%	5.40%	5.23%
Total Quantitative	25,528,784		100.00%	5.35%	5.23%	-	25,528,784		100.00%	5.40%	5.23%
<u>Macro</u>											
Diversified Macro											
Fund 18	29,644,724	63.93%	45.61%	6.21%	6.07%	-	29,644,724	63.93%	45.61%	6.27%	6.07%
Fund 19	16,727,467	36.07%	25.73%	3.50%	3.43%	-	16,727,467	36.07%	25.73%	3.54%	3.43%
Total - Diversified Macro	46,372,191	100.00%	71.34%	9.71%	9.50%	-	46,372,191	100.00%	71.34%	9.81%	9.50%
Specialist Macro											
Fund 20	18,629,940	100.00%	28.66%	3.90%	3.82%	-	18,629,940	100.00%	28.66%	3.94%	3.82%
Total - Specialist Macro	18,629,940	100.00%	28.66%	3.90%	3.82%	-	18,629,940	100.00%	28.66%	3.94%	3.82%
Total Macro	65,002,130		100.00%	13.61%	13.32%	-	65,002,130		100.00%	13.75%	13.32%
<u>Relative Value</u>											
Diversified Relative Value											
Fund 21	26,728,896	47.20%	39.85%	5.60%	5.48%	-	26,728,896	47.20%	39.85%	5.65%	5.48%
Fund 22	10,843,115	19.15%	16.17%	2.27%	2.22%	-	10,843,115	19.15%	16.17%	2.29%	2.22%
Fund 23	19,061,632	33.66%	28.42%	3.99%	3.91%	-	19,061,632	33.66%	28.42%	4.03%	3.91%
Total - Diversified Relative Value	56,633,643	100.00%	84.44%	11.86%	11.60%	-	56,633,643	100.00%	84.44%	11.98%	11.60%
Option Volatility Arbitrage											
Fund 24	3,710,117	35.56%	5.53%	0.78%	0.76%	-	3,710,117	35.56%	5.53%	0.78%	0.76%
Fund 25	6,724,476	64.44%	10.03%	1.41%	1.38%	-	6,724,476	64.44%	10.03%	1.42%	1.38%
Total - Option Volatility Arbitrage	10,434,593	100.00%	15.56%	2.19%	2.14%	-	10,434,593	100.00%	15.56%	2.21%	2.14%
Total Relative Value	67,068,236		100.00%	14.05%	13.74%	-	67,068,236		100.00%	14.19%	13.74%

Portfolio Fund Name	Ending Balance as of 30 June 2018 Before EOM Activity					Allocation as of 01 July 2018					
	Ending Balance	as Percentage of Substrategy/Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV	Subscriptions (Redemptions)	Allocated Balance	as Percentage of Substrategy/Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV
Multi-Strategy											
Diversified Multi-Strategy											
Fund 26	24,810,397	38.89%	38.89%	5.20%	5.08%	-	24,810,397	36.38%	36.38%	5.25%	5.08%
Fund 27	16,534,476	25.91%	25.91%	3.46%	3.39%	4,400,000	20,934,476	30.69%	30.69%	4.43%	4.29%
Fund 28	22,459,394	35.20%	35.20%	4.70%	4.60%	-	22,459,394	32.93%	32.93%	4.75%	4.60%
Total - Diversified Multi-Strategy	63,804,267	100.00%	100.00%	13.36%	13.07%	4,400,000	68,204,267	100.00%	100.00%	14.43%	13.97%
Total Multi-Strategy	63,804,267		100.00%	13.36%	13.07%	4,400,000	68,204,267		100.00%	14.43%	13.97%
Aggregated Prior Period Adjustment											
Multi-Manager											
APPA USD	(44,921)	100.00%	100.00%	-0.01%	-0.01%	-	(44,921)	100.00%	100.00%	-0.01%	-0.01%
Total - Multi-Manager	(44,921)	100.00%	100.00%	-0.01%	-0.01%	-	(44,921)	100.00%	100.00%	-0.01%	-0.01%
Total Aggregated Prior Period Adjustment	(44,921)		100.00%	-0.01%	-0.01%	-	(44,921)		100.00%	-0.01%	-0.01%
Other											
Other Investments											
Terminated Fund 25	11,785	0.56%	0.56%	0.00%	0.00%	-	11,785	0.65%	0.65%	0.00%	0.00%
Terminated Fund 32	273,561	13.05%	13.05%	0.06%	0.06%	(14,399)	259,162	14.31%	14.31%	0.05%	0.05%
Terminated Fund 46	1,722,075	82.14%	82.14%	0.36%	0.35%	(271,664)	1,450,411	80.11%	80.11%	0.31%	0.30%
Terminated Fund 4	89,079	4.25%	4.25%	0.02%	0.02%	-	89,079	4.92%	4.92%	0.02%	0.02%
Total - Other Investments	2,096,500	100.00%	100.00%	0.44%	0.43%	(286,063)	1,810,436	100.00%	100.00%	0.38%	0.37%
Total Other	2,096,500		100.00%	0.44%	0.43%	(286,063)	1,810,436		100.00%	0.38%	0.37%
Total ALLOCATED	477,481,764			100.00%	97.83%	(4,793,758)	472,688,006			100.00%	96.84%
Cash	5,898,190				1.21%	5,083,730	10,981,920				2.25%
Expenses	(183,791)				-0.04%	8,829	(174,962)				-0.04%
Management Fees	(187)				-	846,142	845,955				0.17%
Net Rec/(Pay)	4,892,222				1.00%	(1,144,942)	3,747,280				0.77%
Total UNALLOCATED	10,606,434				2.17%	4,793,758	15,400,193				3.16%
NET ASSET VALUE	488,088,198				100.00%	0	488,088,198				100.00%

Notes and Disclosures

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Please review the notes following this report.

Run Date: 20 August 2018 07:11 PM

Allocation Report – San Gabriel Fund 2, L.P.

GROSVENOR

CAPITAL MANAGEMENT, L.P.

Allocation Report

Expressed in US Dollars

Period is 01 July 2018

GABRIEL2 - San Gabriel Fund 2, L.P. (the "Fund")

Portfolio Fund Name	Ending Balance as of 30 June 2018 Before EOM Activity					Allocation as of 01 July 2018					
	Ending Balance	as Percentage of Substrategy/ Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV	Subscriptions (Redemptions)	Allocated Balance	as Percentage of Substrategy/ Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV
<u>Credit</u>											
Structured Credit											
Fund 1	2,548,372	14.18%	14.18%	13.80%	11.64%	(710,363)	1,838,010	11.87%	11.87%	11.50%	8.40%
Fund 2	6,407,512	35.66%	35.66%	34.70%	29.28%	(493,470)	5,914,042	38.18%	38.18%	37.01%	27.02%
Fund 3	9,014,698	50.16%	50.16%	48.83%	41.19%	(1,277,562)	7,737,136	49.95%	49.95%	48.41%	35.35%
Total - Structured Credit	17,970,582	100.00%	100.00%	97.33%	82.11%	(2,481,394)	15,489,187	100.00%	100.00%	96.92%	70.77%
Total Credit	17,970,582		100.00%	97.33%	82.11%	(2,481,394)	15,489,187		100.00%	96.92%	70.77%
<u>Other</u>											
Other Investments											
Terminated Fund 11	492,212	100.00%	100.00%	2.67%	2.25%	-	492,212	100.00%	100.00%	3.08%	2.25%
Total - Other Investments	492,212	100.00%	100.00%	2.67%	2.25%	-	492,212	100.00%	100.00%	3.08%	2.25%
Total Other	492,212		100.00%	2.67%	2.25%	-	492,212		100.00%	3.08%	2.25%
Total ALLOCATED	18,462,794			100.00%	84.36%	(2,481,394)	15,981,399			100.00%	73.02%
Cash	2,899,860				13.25%	2,448,071	5,347,931				24.44%
Expenses	(41,130)				-0.19%	300	(40,830)				-0.19%
Management Fees	5,195				0.02%	33,023	38,218				0.17%
Net Rec/(Pay)	559,340				2.56%	-	559,340				2.56%
Total UNALLOCATED	3,423,265				15.64%	2,481,394	5,904,659				26.98%
NET ASSET VALUE	21,886,058				100.00%	-	21,886,058				100.00%

Notes and Disclosures

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Run Date: 20 August 2018 07:13 PM

Allocation Report – San Gabriel Fund 3, L.P.

GABRIEL3 - San Gabriel Fund 3, L.P. (the "Fund")

Portfolio Fund Name	Ending Balance as of 30 June 2018 Before EOM Activity					Allocation as of 01 July 2018					
	Ending Balance	as Percentage of Substrategy/ Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV	Subscriptions (Redemptions)	Allocated Balance	as Percentage of Substrategy/ Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV
Credit											
Fundamental Credit											
Fund 1	41,810,910	100.00%	11.92%	11.92%	11.62%	(6,969,879)	34,841,031	100.00%	10.30%	10.29%	9.68%
Total - Fundamental Credit	41,810,910	100.00%	11.92%	11.92%	11.62%	(6,969,879)	34,841,031	100.00%	10.30%	10.29%	9.68%
Structured Credit											
Fund 2	30,718,745	25.28%	8.76%	8.76%	8.54%	-	30,718,745	25.86%	9.08%	9.08%	8.54%
Fund 3	10,527,786	8.66%	3.00%	3.00%	2.93%	(2,739,593)	7,788,193	6.56%	2.30%	2.30%	2.16%
Fund 4	42,278,838	34.79%	12.06%	12.06%	11.75%	-	42,278,838	35.59%	12.49%	12.49%	11.75%
Fund 5	17,707,650	14.57%	5.05%	5.05%	4.92%	-	17,707,650	14.91%	5.23%	5.23%	4.92%
Fund 6	20,287,141	16.69%	5.79%	5.78%	5.64%	-	20,287,141	17.08%	5.99%	5.99%	5.64%
Total - Structured Credit	121,520,160	100.00%	34.65%	34.65%	33.76%	(2,739,593)	118,780,567	100.00%	35.10%	35.10%	33.00%
Distressed											
Fund 7	10,346,348	34.78%	2.95%	2.95%	2.87%	-	10,346,348	34.78%	3.06%	3.06%	2.87%
Fund 8	19,404,899	65.22%	5.53%	5.53%	5.39%	-	19,404,899	65.22%	5.73%	5.73%	5.39%
Total - Distressed	29,751,247	100.00%	8.48%	8.48%	8.27%	-	29,751,247	100.00%	8.79%	8.79%	8.27%
Emerging Market Credit											
Fund 9	7,817,717	16.68%	2.23%	2.23%	2.17%	-	7,817,717	16.89%	2.31%	2.31%	2.17%
Fund 10	22,684,263	48.40%	6.47%	6.47%	6.30%	-	22,684,263	49.00%	6.70%	6.70%	6.30%
Fund 11	16,368,460	34.92%	4.67%	4.67%	4.55%	(573,824)	15,794,635	34.12%	4.67%	4.67%	4.39%
Total - Emerging Market Credit	46,870,439	100.00%	13.37%	13.36%	13.02%	(573,824)	46,296,615	100.00%	13.68%	13.68%	12.86%
Specialist Credit											
Fund 12	33,556,157	30.31%	9.57%	9.57%	9.32%	(1,964,787)	31,591,370	29.05%	9.33%	9.33%	8.78%
Fund 13	17,833,705	16.11%	5.09%	5.09%	4.96%	-	17,833,705	16.40%	5.27%	5.27%	4.96%
Fund 14	21,222,764	19.17%	6.05%	6.05%	5.90%	-	21,222,764	19.51%	6.27%	6.27%	5.90%
Fund 15	38,105,795	34.42%	10.87%	10.87%	10.59%	-	38,105,795	35.04%	11.26%	11.26%	10.59%
Total - Specialist Credit	110,718,421	100.00%	31.57%	31.57%	30.76%	(1,964,787)	108,753,634	100.00%	32.14%	32.13%	30.22%
Total Credit	350,671,178		100.00%	99.99%	97.43%	(12,248,082)	338,423,096		100.00%	99.99%	94.03%

Portfolio Fund Name	Ending Balance as of 30 June 2018 Before EOM Activity					Allocation as of 01 July 2018					
	Ending Balance	as a Percentage of Substrategy/Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV	Subscriptions (Redemptions)	Allocated Balance	as a Percentage of Substrategy/Region	as a Percentage of Strategy	as a Percentage of Allocated	as a Percentage of NAV
Aggregated Prior Period Adjustment											
Multi-Manager											
APPA USD	27,160	100.00%	100.00%	0.01%	0.01%	-	27,160	100.00%	100.00%	0.01%	0.01%
Total - Multi-Manager	27,160	100.00%	100.00%	0.01%	0.01%	-	27,160	100.00%	100.00%	0.01%	0.01%
Total Aggregated Prior Period Adjustment	27,160		100.00%	0.01%	0.01%	-	27,160	100.00%	0.01%	0.01%	
Total ALLOCATED	350,698,338			100.00%	97.44%	(12,248,082)	338,450,256		100.00%		94.04%
Cash	9,335,823					2,170,930	11,506,753				3.20%
Expenses	(122,306)					321	(121,984)				-0.03%
Management Fees	(76)					629,789	629,713				0.18%
Net Rec/(Pay)	-					-	9,447,042				2.62%
Total UNALLOCATED	9,213,441				2.56%	12,248,082	21,461,524				5.96%
NET ASSET VALUE	359,911,779				100.00%	0	359,911,779				100.00%

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**Asset
Management**

Goldman Sachs Asset Management

Portfolio Fund Summary

Hedge Fund Categories

Los Angeles County Employees Retirement Association (June 30, 2018)

Hedge Fund Category	Inception Date	End Date	QTD Opening Balance	QTD Subscriptions/ (Redemptions)	QTD Gain/(Loss)	QTD Ending Balance	% of Nav (as of 6/30/2018) ²	Cumulative Returns			Annualized Returns	
								2Q2018 ¹	YTD	1 Year	3 Year	ITD ¹
Deep Basin Long-Short Fund LP Strategic Sha	11/1/2017	-	9,818,669.98	-	(88,391.52)	9,730,278.46	2.00%	-0.90%	4.92%	8.11%	-	8.11%
Kintbury Equity Fund LP Class F (NIE)	5/1/2015	-	23,713,993.87	-	(38,638.05)	23,675,355.82	4.87%	-0.16%	7.98%	14.04%	1.82%	2.80%
Lakewood Capital Partners LP (NIE)	5/1/2015	-	21,125,024.87	-	(251,182.98)	20,873,841.89	4.29%	-1.19%	-4.57%	-0.76%	5.87%	5.09%
Palestra Capital Part LP (Ser 3 Int 1.5/20)(NIE)	6/1/2015	-	28,105,298.89	-	869,420.69	28,974,719.58	5.96%	3.09%	6.03%	13.84%	12.57%	12.03%
PFM Oncology Opp Fund II, LP Class A (NIE)	6/1/2015	-	11,415,828.05	-	116,699.35	11,532,527.40	2.37%	1.02%	2.24%	6.25%	8.34%	9.29%
Rubric Capital Partners LP Series F1 Interests	3/1/2017	-	27,200,836.30	-	(159,400.00)	27,041,436.30	5.56%	-0.59%	-1.50%	13.81%	-	12.91%
Swiftcurrent Partners, L.P. (Class C, NIE)	7/1/2016	-	20,472,741.00	-	(7,393.51)	20,465,347.49	4.21%	-0.04%	3.60%	9.54%	-	5.92%
Equity Long/Short			141,852,392.96	-	441,113.98	142,293,506.94	29.27%	0.31%	2.45%	10.36%	5.46%	5.74%
Empyrean Capital Fund LP (Class 2 Ser N - NIE	7/1/2015	-	25,888,731.00	-	1,179,123.00	27,067,854.00	5.57%	4.55%	4.93%	7.90%	6.56%	6.56%
Farallon Capital Institutional Partners, L.P. LP	7/1/2015	-	9,976,689.00	-	223,991.00	10,200,680.00	2.10%	2.25%	3.25%	6.08%	4.20%	4.20%
HG Vora Special Opportunities Fd LP Series 1	10/1/2017	-	25,965,615.00	-	1,235,054.00	27,200,669.00	5.59%	4.76%	5.51%	8.80%	-	8.80%
Manikay Onshore Fund LP Class A1 (NIE)	6/1/2015	-	26,112,343.13	(14,647,327.54)	134,401.48	11,599,417.07	2.39%	0.78%	-1.25%	4.12%	6.13%	6.13%
Manikay Onshore Fund LP Class A3 NIE	6/1/2018	-	-	14,647,327.54	76,540.46	14,723,868.00	3.03%	0.52%	0.52%	0.52%	-	0.52%
Palmetto Catastrophe Fund L.P. Class H - NV	6/1/2018	-	-	15,000,000.00	62,872.00	15,062,872.00	3.10%	0.42%	0.42%	0.42%	-	0.42%
Taconic Opportunity Fund LP (CL AA, Non Loc	3/1/2018	-	23,021,477.00	-	733,341.00	23,754,818.00	4.89%	3.19%	3.28%	3.28%	-	3.28%
Warlander Partners, LP Class W (NIE)	2/1/2016	-	5,882,416.11	-	88,446.51	5,970,862.62	1.23%	1.50%	0.72%	-8.12%	-	-6.37%
Event Driven			116,847,271.24	15,000,000.00	3,733,769.45	135,581,040.69	27.89%	3.01%	2.90%	6.06%	4.08%	2.97%
Alyeska Fund 2 LP Class A - Unrestricted (NIE)	6/1/2015	-	22,486,787.70	-	1,644,734.06	24,131,521.76	4.96%	7.31%	-2.93%	2.71%	-1.00%	-0.93%
D.E. Shaw Valence Fund, LLC (NIE)	2/1/2016	-	26,765,666.00	-	344,867.00	27,110,533.00	5.58%	1.29%	6.65%	11.52%	-	13.41%
Holocene Advisors Fund LP Class AI-A LP Int (I	5/1/2017	-	27,414,102.93	-	934,874.40	28,348,977.33	5.83%	3.41%	3.87%	8.72%	-	11.38%
Macquarie Global Alpha US Feeder Fund Clas	6/1/2017	5/31/2018	19,059,253.06	(19,215,430.62)	156,177.56	-	-	0.48%	1.21%	3.37%	-	3.27%
Relative Value			95,725,809.69	(19,215,430.62)	3,080,653.02	79,591,032.09	16.37%	3.40%	2.50%	7.14%	3.25%	3.20%
Atreus Fund, LP Class F	6/1/2017	-	11,113,000.71	-	(51,260.32)	11,061,740.39	2.28%	-0.46%	-1.47%	-4.56%	-	-4.76%
Bridgewater Pure Alpha Major Markets II, LLC	5/1/2015	-	18,887,095.91	-	853,644.67	19,740,740.58	4.06%	4.52%	0.04%	4.16%	1.55%	0.20%
Crabel Fund, L.P. (Class A, Fee Option 1 GS, 2,	7/1/2015	-	10,085,990.18	(9,000,000.00)	196,929.35	1,282,919.53	0.26%	2.18%	9.38%	12.76%	4.41%	4.41%
Dymon Asia Macro (US) Fund Class P (NIE)	6/1/2015	-	14,569,289.20	-	113,730.81	14,683,020.01	3.02%	0.78%	1.09%	1.32%	0.99%	-0.16%
Edgestream Sumatra Fund LP	7/1/2015	-	9,505,338.10	-	(300,139.74)	9,205,198.36	1.89%	-3.16%	-4.98%	-0.20%	4.40%	4.40%
EMSO Saguaro Ltd Class A-NV	2/1/2018	-	13,547,640.75	-	(545,543.77)	13,002,096.98	2.67%	-4.03%	-3.69%	-3.69%	-	-3.69%
Glen Point Macro Fund LP CI A NV USD Share	10/1/2017	-	13,771,202.33	-	(1,075,348.76)	12,695,853.57	2.61%	-7.81%	-5.41%	-5.96%	-	-5.96%
Stone Milliner Macro Fd Delaware LP CI N (NI	1/1/2018	-	17,965,136.99	-	53,305.53	18,018,442.52	3.71%	0.30%	2.28%	2.28%	-	2.28%
Winton Diversified Strategy Fund (US) L.P.	9/1/2016	-	9,920,146.52	-	257,091.28	10,177,237.80	2.09%	2.59%	1.29%	10.63%	-	3.72%
Tactical Trading			119,364,840.69	(9,000,000.00)	(497,590.95)	109,867,249.74	22.60%	-0.47%	0.02%	1.73%	0.39%	-0.39%
Total Assets and Liabilities not Allocated to Underlying Managers of Los Angeles County Employees Retirement Association						18,848,611.85	3.88%					
Net Asset Value						486,181,441.31	100.00%					

¹ The LACERA Portfolio inception on May 1, 2015. Returns less than 12 months are cumulative, not annualized. Past performance does not guarantee future results, which may vary.

² Based on the end equity value of the Fund.

Overview

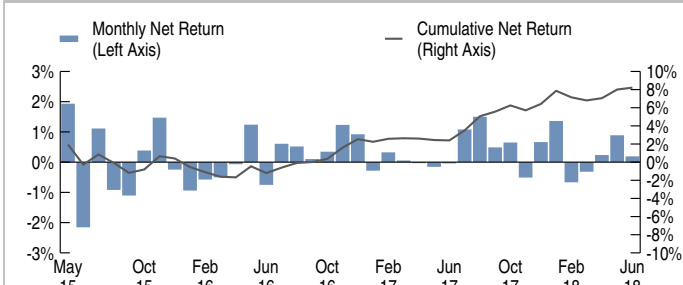
Global equities were flat in June, with gains in the US offset by negative performance in Europe, Japan and emerging markets. Concerns regarding trade wars, higher US rates and higher oil prices drove markets. President Trump announced plans for a potential additional \$200bn in tariffs on Chinese imports. The US and UK bond yield curves flattened, while the EUR curve steepened at the back end. Japanese yields were little changed. In emerging markets, most local and external debt indices fell. In FX, the US dollar rose against most major currencies. In commodities, WTI crude oil rose due to outages in Canada and potential impacts from sanctions on Iran. Brent crude oil also saw gains while natural gas, copper, and gold fell.

Equity long/short managers were largely flat in June driven by losses in the last week of the month. Long positioning generated gains; outperformance on an exposure-adjusted basis was driven by information technology and consumer discretionary positioning, though slightly offset by underperformance across industrials and materials. Short positioning was challenged as meaningful negative excess returns across the consumer discretionary and staples sectors dragged on both absolute and relative performance.

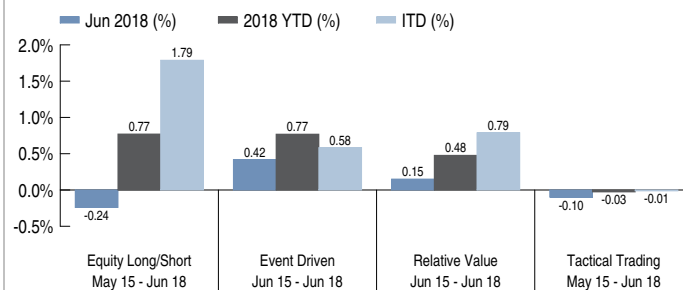
Event driven managers generated positive performance in June. Merger spreads for commonly held deals on the AIMS Event Driven platform significantly tightened, outperforming spreads for the broader merger universe, which were only modestly tighter month-over-month. AIMS Event Driven managers' equity sub-strategies generated modest positive performance, driven by gains in consumer discretionary and healthcare and partially offset by losses in industrials and financials. Within credit, platform exposure to the bonds of a tire distributor detracted following news that a large tire manufacturer will no longer sell through the company.

Tactical trading managers were slightly down in June. As expected, the Fed raised rates by 25bps and the ECB stated it will end its bond-buying program at the end of 2018; however, the ECB dovishly surprised by indicating that rates will be on hold through September 2019. Developed markets macro saw performance dispersion across managers. Long equities positioning detracted while a short-bias in fixed income and mixed FX positioning had varying performance across managers, with some benefiting from being long USD. Emerging market macro managers were mostly down, as long-biased positions suffered, including Brazilian fixed income and long RUB. CTAs were mixed in June, but in aggregate positive. CTA gains were driven by currencies, specifically a long USD bias, and fixed income, where gains were driven by being long European and short US rates and bonds at the short- and medium-term end of the curve. Trading in commodities was also positive, with gains from shorts in agriculture, such as coffee and sugar, outweighing losses from a long bias to base metals, particularly copper. CTA trading in equities was negative, driven by a long bias, especially in Europe.

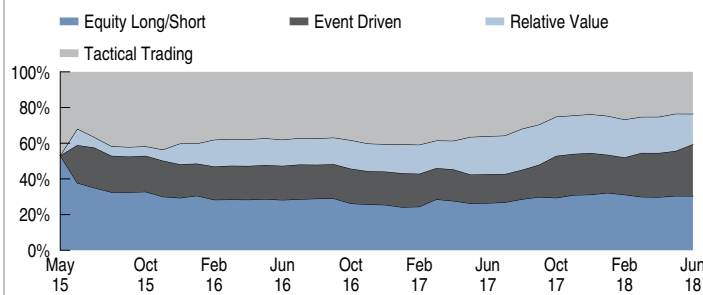
Monthly & Cumulative Net Returns¹



Contribution to Return by Sector²



Historical Sector Allocations³



Performance & Characteristics¹

	— Cumulative (%) —			— Annualized (%) —					Max. Vol ITD	- MSCI World USD- Correlation	- Barclays Agg- Beta	Sharpe Ratio ⁵	Inception Date		
	MTD	QTD	YTD	1Y	3Y	5Y	ITD ⁴	Drawdown (%)							
LACERA (A1)	0.19	1.32	1.69	5.68	2.76	N/A	2.52	2.98	-3.54	0.56	0.17	-0.16	-0.18	0.52	May 15
HFRX Global Hedge Fund Index	-0.19	0.17	-0.85	2.47	0.83	N/A	0.47	3.87	-8.92	0.89	0.35	-0.04	-0.06	-0.13	May 15
MSCI World Index Hedged USD	0.28	3.10	0.56	9.53	7.00	N/A	5.89	9.77	-12.43	1.00	1.00	-0.07	-0.27	0.50	May 15
Bloomberg Barclays Aggregate Bond Index	-0.12	-0.16	-1.62	-0.40	1.73	N/A	1.21	2.68	-3.28	-0.07	-0.02	1.00	1.00	0.09	May 15
3 Month Libor	0.19	0.57	0.99	1.66	1.01	N/A	0.97	0.17	N/A	N/A	N/A	N/A	N/A	N/A	May 15

For Existing Investors Only. Past performance does not guarantee future results, which may vary. Please refer to the Disclosures page for important information.

[1] This is the performance for Los Angeles County Employees Retirement Association (Class A, Series 1). Returns are net of underlying manager fees, Goldman Sachs incentive fees and Goldman Sachs management fees. Not all investors may be holders of this Class and this Class currently may not be available for purchase. Please refer to the offering documents of the Fund for a discussion of the differences among Classes that might impact performance. Returns are presented in USD. The figures published here are final and unaudited.

[2] Contribution data is geometrically calculated based on a monthly time series. Data will not arithmetically sum to fund total due to fund level assets and liabilities not allocated to underlying managers. Cumulative geometric returns for less than 12 months are calculated as follows: $(1+r_1)(1+r_2)...(1+r_n)-1$. Annualized geometric returns for returns greater than 12 months are calculated as follows:

$[(1+r_1)(1+r_2)...(1+r_n)]^{12/m}-1$.

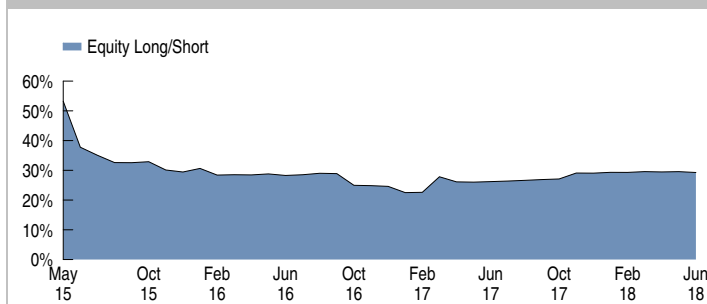
[3] Based on invested assets. The investment manager may change the allocations over time. The allocations noted should not be deemed representative of allocations in the future. All the allocations were done using the portfolio's valuations at month-end.

[4] Returns less than 12 months are cumulative, not annualized.

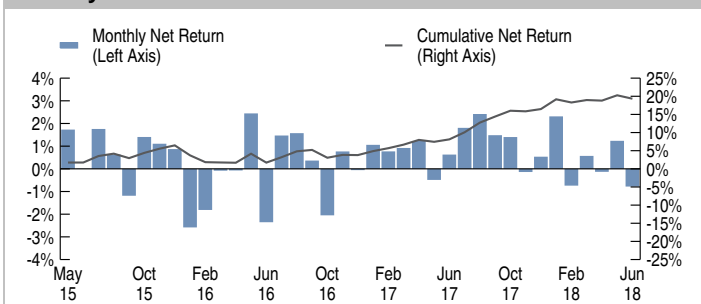
[5] The 3 Month Libor (USD) rate is used for this calculation.

Sector Level Returns — Equity Long/Short

Historical Sector Allocations¹



Monthly & Cumulative Net Returns²

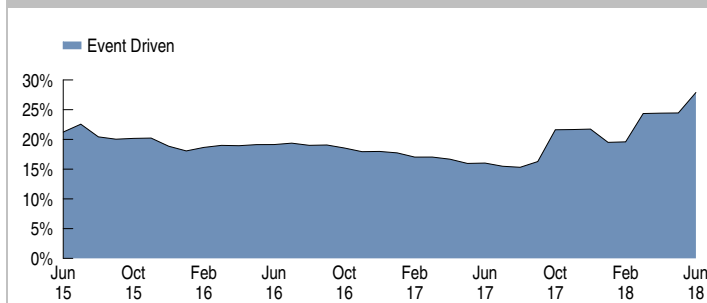


Performance & Characteristics^{2,3}

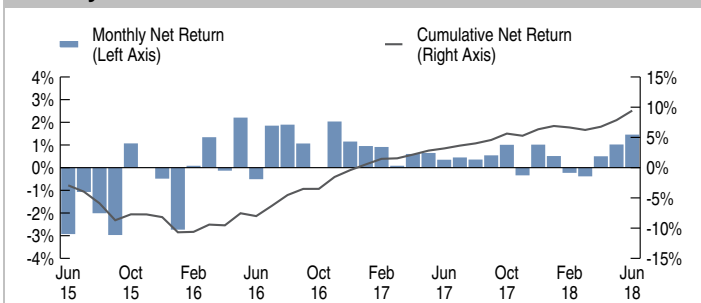
	Weight ¹ (%)	Cumulative (%)			Annualized (%)				Max. Drawdown (%)	- MSCI World USD-		- Barclays Agg-		Sharpe Ratio ⁵	Inception Date	End Date	
		MTD	QTD	YTD	1Y	3Y	5Y	ITD ⁴		Vol ITD	Correlation	Beta	Correlation				Beta
Performance	29.27	-0.78	0.31	2.45	10.36	5.46	N/A	5.74	4.45	-4.50	0.48	0.22	-0.21	-0.36	1.07	May 15	Jun 18
Contribution	N/A	-0.24	0.09	0.77	2.95	1.58	N/A	1.79	1.37	N/A	N/A	N/A	N/A	N/A	N/A	May 15	Jun 18

Sector Level Returns — Event Driven

Historical Sector Allocations¹



Monthly & Cumulative Net Returns²



Performance & Characteristics^{2,3}

	Weight ¹ (%)	Cumulative (%)			Annualized (%)				Max. Drawdown (%)	- MSCI World USD-		- Barclays Agg-		Sharpe Ratio ⁵	Inception Date	End Date	
		MTD	QTD	YTD	1Y	3Y	5Y	ITD ⁴		Vol ITD	Correlation	Beta	Correlation				Beta
Performance	27.89	1.46	3.01	2.90	6.06	4.08	N/A	2.97	4.44	-10.69	0.71	0.32	-0.14	-0.24	0.45	Jun 15	Jun 18
Contribution	N/A	0.42	0.80	0.77	1.40	0.81	N/A	0.58	0.90	N/A	N/A	N/A	N/A	N/A	N/A	Jun 15	Jun 18

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[2] This is the performance for the Fund classification of Los Angeles County Employees Retirement Association. Returns are presented in USD. The figures published here are final and unaudited.

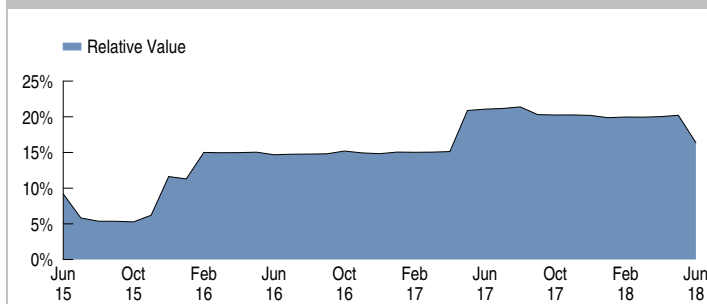
[3] Contribution data is geometrically calculated based on a monthly time series. Data will not arithmetically sum to fund total due to fund level assets and liabilities not allocated to underlying managers. Cumulative geometric returns for less than 12 months are calculated as follows: $(1+r_1)(1+r_2)...(1+r_n)-1$. Annualized geometric returns for returns greater than 12 months are calculated as follows: $[(1+r_1)(1+r_2)...(1+r_n)]^{12/m}-1$.

[4] Returns less than 12 months are cumulative, not annualized.

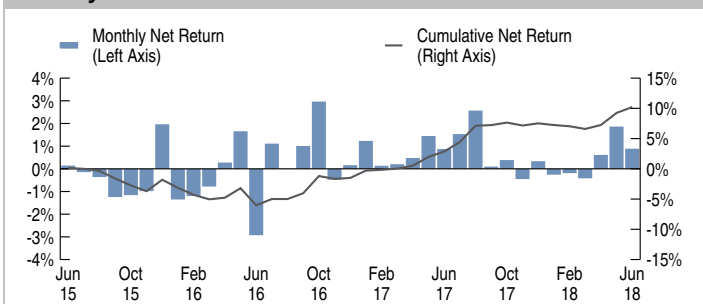
[5] The 3 Month Libor (USD) rate is used for this calculation.

Sector Level Returns — Relative Value

Historical Sector Allocations¹



Monthly & Cumulative Net Returns²

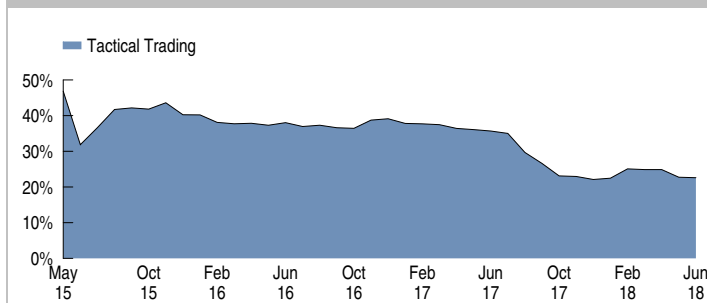


Performance & Characteristics^{2,3}

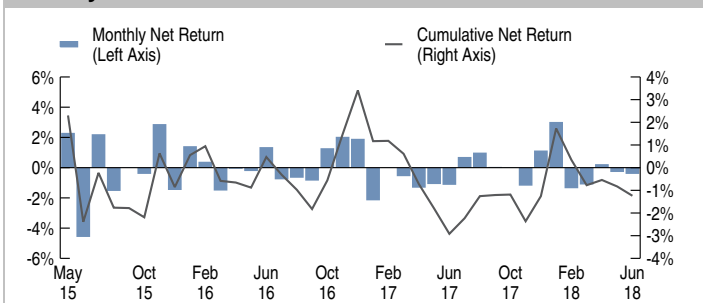
	Weight ¹ (%)	Cumulative (%)			Annualized (%)				Max. Drawdown (%)	- MSCI World USD -		- Barclays Agg -		Sharpe Ratio ⁵	Inception Date	End Date	
		MTD	QTD	YTD	1Y	3Y	5Y	ITD ⁴		Vol ITD	Correlation	Beta	Correlation				Beta
Performance	16.37	0.89	3.40	2.50	7.14	3.25	N/A	3.20	4.11	-6.17	0.10	0.04	-0.17	-0.26	0.54	Jun 15	Jun 18
Contribution	N/A	0.15	0.66	0.48	1.48	0.81	N/A	0.79	0.67	N/A	N/A	N/A	N/A	N/A	N/A	Jun 15	Jun 18

Sector Level Returns — Tactical Trading

Historical Sector Allocations¹



Monthly & Cumulative Net Returns²



Performance & Characteristics^{2,3}

	Weight ¹ (%)	Cumulative (%)			Annualized (%)				Max. Drawdown (%)	- MSCI World USD -		- Barclays Agg -		Sharpe Ratio ⁵	Inception Date	End Date	
		MTD	QTD	YTD	1Y	3Y	5Y	ITD ⁴		Vol ITD	Correlation	Beta	Correlation				Beta
Performance	22.60	-0.41	-0.47	0.02	1.73	0.39	N/A	-0.39	5.34	-6.11	0.22	0.12	-0.00	-0.01	-0.26	May 15	Jun 18
Contribution	N/A	-0.10	-0.11	-0.03	0.54	0.13	N/A	-0.01	1.94	N/A	N/A	N/A	N/A	N/A	N/A	May 15	Jun 18

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[2] This is the performance for the Fund classification of Los Angeles County Employees Retirement Association. Returns are presented in USD. The figures published here are final and unaudited.

[3] Contribution data is geometrically calculated based on a monthly time series. Data will not arithmetically sum to fund total due to fund level assets and liabilities not allocated to underlying managers. Cumulative geometric returns for less than 12 months are calculated as follows: $(1+r_1)(1+r_2)...(1+r_n)-1$. Annualized geometric returns for returns greater than 12 months are calculated as follows: $[(1+r_1)(1+r_2)...(1+r_n)]^{12/m}-1$.

[4] Returns less than 12 months are cumulative, not annualized.

[5] The 3 Month Libor (USD) rate is used for this calculation.

Manager Level — Cumulative Manager Performance^{1,2} (%)

Manager	Classification	Weight ³	MTD		QTD		YTD		Inception Date	End Date
			Return	Contrib.	Return	Contrib.	Return	Contrib.		
Equity Long/Short										
Palestra Capital	United States	5.96	0.26	0.05	3.09	0.61	6.03	1.18	Jun 15	Jun 18
Rubric Capital	Global	5.56	-1.79	-0.34	-0.59	-0.11	-1.50	-0.29	Mar 17	Jun 18
Kintbury	Europe	4.87	-1.28	-0.21	-0.16	-0.03	7.98	1.26	May 15	Jun 18
Lakewood	Global	4.29	-1.33	-0.20	-1.19	-0.18	-4.57	-0.70	May 15	Jun 18
Bridger (Swiftcurrent)	United States	4.21	-1.05	-0.15	-0.04	-0.00	3.60	0.51	Jul 16	Jun 18
PFM Oncology Opportunities Fund II	Global	2.37	2.40	0.19	1.02	0.08	2.24	0.18	Jun 15	Jun 18
Deep Basin Long-Short Fund	United States	2.00	-1.72	-0.12	-0.90	-0.06	4.92	0.32	Nov 17	Jun 18
Overall		29.27	-0.78	-0.24	0.31	0.09	2.45	0.77	May 15	Jun 18
Event Driven										
HG Vora	Multi-Strategy	5.59	2.89	0.57	4.76	0.98	5.51	1.16	Oct 17	Jun 18
Empyrean Capital Partners	Multi-Strategy	5.57	1.02	0.20	4.55	0.98	4.93	1.11	Jul 15	Jun 18
Taconic Opportunity	Multi-Strategy	4.89	1.97	0.34	3.19	0.58	3.28	0.60	Mar 18	Jun 18
Palmetto Catastrophe Fund	Credit Opps - Dist	3.10	0.42	0.05	0.42	0.05	0.42	0.05	Jun 18	Jun 18
Manikay	Multi-Strategy	3.03	0.52	0.06	0.52	0.06	0.52	0.06	Jun 18	Jun 18
Manikay	Multi-Strategy	2.39	0.47	0.04	0.78	0.11	-1.25	-0.40	Jun 15	Jun 18
Farallon Capital Partners	Multi-Strategy	2.10	1.81	0.14	2.25	0.17	3.25	0.31	Jul 15	Jun 18
Warlander	Credit Opps - Dist	1.23	1.28	0.06	1.50	0.07	0.72	0.01	Feb 16	Jun 18
Overall		27.89	1.46	0.42	3.01	0.80	2.90	0.77	Jun 15	Jun 18
Relative Value										
Holocene	Equity Market Neutral	5.83	-0.31	-0.11	3.41	0.95	3.87	1.08	May 17	Jun 18
D.E. Shaw Valence Fund	Equity Market Neutral	5.58	0.95	0.32	1.29	0.42	6.65	1.82	Feb 16	Jun 18
Alyeska Fund 2	Equity Market Neutral	4.96	2.26	0.68	7.31	1.84	-2.93	-0.65	Jun 15	Jun 18
Macquarie Global Alpha Fund (Class L)	Equity Market Neutral	N/A	N/A	N/A	0.82	0.16	1.21	0.24	Jun 17	May 18
Overall		16.37	0.89	0.15	3.40	0.66	2.50	0.48	Jun 15	Jun 18
Tactical Trading										
Bridgewater Pure Alpha Major Markets II	Macro	4.06	2.10	0.37	4.52	0.77	0.04	0.07	May 15	Jun 18
Stone Milliner Macro	Macro	3.71	-0.16	-0.03	0.30	0.04	2.28	0.39	Jan 18	Jun 18
Dymon Asia Macro Fund	Macro	3.02	1.14	0.15	0.78	0.11	1.09	0.16	Jun 15	Jun 18
Emso Saguaro	Macro	2.67	-1.52	-0.18	-4.03	-0.50	-3.69	-0.46	Feb 18	Jun 18
Glen Point Global Macro	Macro	2.61	-4.68	-0.57	-7.81	-0.98	-5.41	-0.60	Oct 17	Jun 18
Atreus (Class F)	Macro	2.28	-1.97	-0.20	-0.46	-0.04	-1.47	-0.12	Jun 17	Jun 18
Winton Diversified Futures Fund (US) L.P	Managed Futures	2.09	1.20	0.11	2.59	0.22	1.29	0.19	Sep 16	Jun 18
Edgestream (Sumatra/Nias)	Managed Futures	1.89	-0.72	-0.06	-3.16	-0.26	-4.98	-0.39	Jul 15	Jun 18
Crabel	Managed Futures	0.26	-0.47	-0.01	2.18	0.17	9.38	0.83	Jul 15	Jun 18
Overall		22.60	-0.41	-0.10	-0.47	-0.11	0.02	-0.03	May 15	Jun 18

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$[(1+r_1)(1+r_2)...(1+r_n)]^{12/m}-1$. Manager contributions are made to the Sector level while Sector contributions are made to the fund level.

[3] Based on the end equity value of the Fund. Allocations as of June 2018. The investment manager may change the allocations over time. The allocations noted should not be deemed representative of allocations in the future. Historical sector performance and contributions reflect both active and terminated managers. Managers terminated prior to the current year are excluded. For ease of presentation, active and terminated managers are shown for the current year only.

Manager Level — Annualized Manager Performance^{1,2} (%)

Manager	Classification	Weight ³	1 Year		3 Year		5 Year		ITD ⁴		Vol ITD	Inception Date	End Date
			Return	Contrib.	Return	Contrib.	Return	Contrib.	Return	Contrib.			
Equity Long/Short													
Palestra Capital	United States	5.96	13.84	2.75	12.57	2.35	N/A	N/A	12.03	2.25	7.65	Jun 15	Jun 18
Rubric Capital	Global	5.56	13.81	2.68	N/A	N/A	N/A	N/A	12.91	2.46	6.43	Mar 17	Jun 18
Kintbury	Europe	4.87	14.04	2.19	1.82	0.10	N/A	N/A	2.80	0.49	11.03	May 15	Jun 18
Lakewood	Global	4.29	-0.76	-0.02	5.87	0.99	N/A	N/A	5.09	1.00	7.49	May 15	Jun 18
Bridger (Swiftcurrent)	United States	4.21	9.54	1.36	N/A	N/A	N/A	N/A	5.92	0.87	5.53	Jul 16	Jun 18
PFM Oncology Opportunities Fund II	Global	2.37	6.25	0.55	8.34	0.52	N/A	N/A	9.29	0.62	8.72	Jun 15	Jun 18
Deep Basin Long-Short Fund	United States	2.00	N/A	N/A	N/A	N/A	N/A	N/A	8.11	0.52	N/A	Nov 17	Jun 18
Overall		29.27	10.36	2.95	5.46	1.58	N/A	N/A	5.74	1.79	4.45	May 15	Jun 18
Event Driven													
HG Vora	Multi-Strategy	5.59	N/A	N/A	N/A	N/A	N/A	N/A	8.80	1.93	N/A	Oct 17	Jun 18
Empyrean Capital Partners	Multi-Strategy	5.57	7.90	1.98	6.56	1.62	N/A	N/A	6.56	1.62	4.29	Jul 15	Jun 18
Taconic Opportunity	Multi-Strategy	4.89	N/A	N/A	N/A	N/A	N/A	N/A	3.28	0.60	N/A	Mar 18	Jun 18
Palmetto Catastrophe Fund	Credit Opps - Dist	3.10	N/A	N/A	N/A	N/A	N/A	N/A	0.42	0.05	N/A	Jun 18	Jun 18
Manikay	Multi-Strategy	3.03	N/A	N/A	N/A	N/A	N/A	N/A	0.52	0.06	N/A	Jun 18	Jun 18
Manikay	Multi-Strategy	2.39	4.12	1.11	6.13	1.72	N/A	N/A	6.13	1.74	5.75	Jun 15	Jun 18
Farallon Capital Partners	Multi-Strategy	2.10	6.08	0.91	4.20	0.83	N/A	N/A	4.20	0.83	3.82	Jul 15	Jun 18
Warlander	Credit Opps - Dist	1.23	-8.12	-0.69	N/A	N/A	N/A	N/A	-6.37	-0.58	6.97	Feb 16	Jun 18
Overall		27.89	6.06	1.40	4.08	0.81	N/A	N/A	2.97	0.58	4.44	Jun 15	Jun 18
Relative Value													
Holocene	Equity Market Neutral	5.83	8.72	2.34	N/A	N/A	N/A	N/A	11.38	2.99	4.35	May 17	Jun 18
D.E. Shaw Valence Fund	Equity Market Neutral	5.58	11.52	2.97	N/A	N/A	N/A	N/A	13.41	3.75	4.82	Feb 16	Jun 18
Alyeska Fund 2	Equity Market Neutral	4.96	2.71	0.75	-1.00	-1.41	N/A	N/A	-0.93	-1.32	8.45	Jun 15	Jun 18
Macquarie Global Alpha Fund (Class L)	Equity Market Neutral	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.27	0.75	3.31	Jun 17	May 18
Overall		16.37	7.14	1.48	3.25	0.81	N/A	N/A	3.20	0.79	4.11	Jun 15	Jun 18
Tactical Trading													
Bridgewater Pure Alpha Major Markets II	Macro	4.06	4.16	0.78	1.55	0.33	N/A	N/A	0.20	0.24	13.87	May 15	Jun 18
Stone Milliner Macro	Macro	3.71	N/A	N/A	N/A	N/A	N/A	N/A	2.28	0.39	N/A	Jan 18	Jun 18
Dymon Asia Macro Fund	Macro	3.02	1.32	0.16	0.99	0.12	N/A	N/A	-0.16	-0.13	7.47	Jun 15	Jun 18
Emso Saguaro	Macro	2.67	N/A	N/A	N/A	N/A	N/A	N/A	-3.69	-0.46	N/A	Feb 18	Jun 18
Glen Point Global Macro	Macro	2.61	N/A	N/A	N/A	N/A	N/A	N/A	-5.96	-0.63	N/A	Oct 17	Jun 18
Atreus (Class F)	Macro	2.28	-4.56	-0.40	N/A	N/A	N/A	N/A	-4.76	-0.43	6.12	Jun 17	Jun 18
Winton Diversified Futures Fund (US) L.P	Managed Futures	2.09	10.63	0.96	N/A	N/A	N/A	N/A	3.72	0.35	9.52	Sep 16	Jun 18
Edgestream (Sumatra/Nias)	Managed Futures	1.89	-0.20	0.07	4.40	0.27	N/A	N/A	4.40	0.27	7.23	Jul 15	Jun 18
Crabel	Managed Futures	0.26	12.76	1.07	4.41	0.47	N/A	N/A	4.41	0.47	9.28	Jul 15	Jun 18
Overall		22.60	1.73	0.54	0.39	0.13	N/A	N/A	-0.39	-0.01	5.34	May 15	Jun 18

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[4] Returns less than 12 months are cumulative, not annualized.

LACERA

Investment Guidelines Summary



Performance Objectives	Investment Guidelines	LACERA Portfolio	Measurement Period	In Compliance?	Date of Certification
•Target annualized return					
–Absolute: 3-month T-Bills + 500 bps	5.6%	2.8%	3 year rolling	No	6/30/2018
–Relative: HFRX Global Hedge Fund Index	0.8%	2.8%	3 year rolling	Yes	6/30/2018
•Target range of annualized volatility	3.0% – 8.0%	2.5%	3 year rolling	No	6/30/2018
•Sharpe ratio	0.6 - 1.0	0.7	3 year rolling	Yes	6/30/2018
•Beta to equity markets	0.2	0.1 ¹	3 year rolling	Yes	6/30/2018
•Beta to fixed income markets	0.2	-0.3 ²	3 year rolling	Yes	6/30/2018
Capital Allocation Constraints					
•Number of investment managers	15-35	26	Monthly	Yes	6/30/2018
	Equity Hedge: 10-50%	29.3%	Monthly	Yes	6/30/2018
	Event Driven: 10-50%	27.9%	Monthly	Yes	6/30/2018
•Target/compliance range of allocation to strategies (at market)	Directional/Tactical: 10-50%	22.6%	Monthly	Yes	6/30/2018
	Relative Value: 0-40%	16.4%	Monthly	Yes	6/30/2018
	Other Assets / Liabilities (cash): <5%	3.9%	Monthly	Yes	6/30/2018
•Maximum allocation to a single fund (at market)	10%	6.0%	Monthly	Yes	6/30/2018
•Maximum allocation to a single advisor (at market)	15%	6.0%	Monthly	Yes	6/30/2018
•Maximum percentage ownership of a single fund	30%	7.9%	Quarterly	Yes	6/30/2018
Downside Risk Case (See risk report)					
•Portfolio-level RoR Impact of Severe Case Loss (at market)	25%	20.6%	Monthly	Yes	6/30/2018
•Severe Case Loss in a single fund (at market)	<3% Capital at Risk	1.4%	Monthly	Yes	6/30/2018
•Severe Case Loss in a single advisor (at market)	<6% Capital at Risk	1.4%	Monthly	Yes	6/30/2018
Liquidity					
•Hard lockup period of 1 year or greater	<20%	0.0%	Monthly	Yes	6/30/2018
•Quarterly liquidity or better (excluding locks)	>75%	79.0%	Monthly	Yes	6/30/2018
•Percent of portfolio available within 1 year (excluding locks)	>65%	81.1%	Monthly	Yes	6/30/2018
•Hard lockup more than 2 years (not to exceed three years)	<10%	0.0%	Monthly	Yes	6/30/2018
Leverage					
	Tactical Trading: 20x	9.5	Quarterly	Yes	6/30/2018
	Event Driven: 4x	1.8	Quarterly	Yes	6/30/2018
•Strategy level leverage	Equity Long / Short: 4x	1.8	Quarterly	Yes	6/30/2018
	Relative Value: 8x	6.2	Quarterly	Yes	6/30/2018

As of June 2018. Investment guideline targets are subject to change and are current as of the date of this presentation. Investment guideline targets are objectives and do not provide any assurance as to future results. **Past performance does not guarantee future results, which may vary.** Source: HFR Database © HFR, Inc. 2018, www.hedgefundresearch.com. Pertrac Indices Database, www.msci.com, www.barcap.com.

1. Beta to equity markets represents the LACERA portfolio's beta to the MSCI World Index Hedged USD. 2. Beta to fixed income markets represents the LACERA portfolio's beta to the Barclays Aggregate Bond Index.



Additional Information

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Index Benchmarks

Indices are unmanaged. The figures for the index reflect the reinvestment of all income or dividends, as applicable, but do not reflect the deduction of any fees or expenses which would reduce returns. Investors cannot invest directly in indices.

The indices referenced herein have been selected because they are well known, easily recognized by investors, and reflect those indices that the Investment Manager believes, in part based on industry practice, provide a suitable benchmark against which to evaluate the investment or broader market described herein. The exclusion of "failed" or closed hedge funds may mean that each index overstates the performance of hedge funds generally.

MSCI World Index

The MSCI World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets. The MSCI World Index consists of the following 23 developed market country indexes: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States. The index is calculated without dividends, with net or with gross dividends reinvested, in both US dollars and local currencies. Source: PerTrac Indices Database, www.msldata.com.

Barclays Aggregate Bond Index

The Barclays Capital U.S. Aggregate Index represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis. Source: PerTrac Indices Database, www.barcap.com

HFRX Global Hedge Fund Index

The HFRX Global Hedge Fund Index is designed to be representative of the overall composition of the hedge fund universe. It is comprised of all eligible hedge fund strategies; including but not limited to convertible arbitrage, distressed securities, equity hedge, equity market neutral, event driven, macro, merger arbitrage, and relative value arbitrage. The strategies are asset weighted based on the distribution of assets in the hedge fund industry. Source: HFR Database © HFR, Inc. 2015, www.hedgefundresearch.com. Please note that HFRX performance indications are based on preliminary estimates.

General Disclosures

Past performance does not guarantee future results, which may vary. The value of investments and the income derived from investments will fluctuate and can go down as well as up. A loss of principal may occur.

Although certain information has been obtained from sources believed to be reliable, we do not guarantee its accuracy, completeness or fairness. We have relied upon and assumed without independent verification, the accuracy and completeness of all information available from public sources.

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The strategy may include the use of derivatives. Derivatives often involve a high degree of financial risk because a relatively small movement in the price of the underlying security or benchmark may result in a disproportionately large movement in the price of the derivative and are not suitable for all investors. No representation regarding the suitability of these instruments and strategies for a particular investor is made.

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LACERA Direct Portfolio

Portfolio Fund Summary

LACERA Direct Portfolio Summary (June 30, 2018)

Investment Manager and Fund	Inception	QTD Opening Balance	QTD Subscriptions / (Redemptions)	QTD Gain / (Loss)	QTD Ending Balance	% of Direct HF Program (6/30/2018)	2Q 2018	YTD	1 Year	3 Year	ITD
Multi-Strategy											
AQR Liquid Enhanced Alternative Premia Fund, L.P.	4/1/2018	-	75,000,000	(7,362,309)	67,637,691	26.5%	-9.82%	-9.82%	-	-	-9.82%
Davidson Kempner Institutional Partners, L.P.	4/1/2018	-	60,000,000	422,341	60,422,341	23.7%	0.72%	0.72%	-	-	0.72%
HBK Multi-Strategy Fund L.P.	5/1/2018	-	125,000,000	1,947,585	126,947,585	49.8%	1.56% ¹	1.56% ¹	-	-	1.56%
Multi-Strategy Total		-	260,000,000	(4,992,383)	255,007,617	100.0%	-2.46%	-2.46%	-	-	-2.46%
Total Direct Portfolio		-	260,000,000	(4,992,383)	255,007,617	100.0%	-2.46%	-2.46%			-2.46%

¹ The inception date for HBK's 2Q2018 and YTD performance is 5/01/2018.

LACERA - DIRECT PORTFOLIO

Investment Guidelines Summary

Performance Objectives	Investment Guidelines	LACERA Direct Portfolio	Measurement Period	In Compliance?
•Target annualized return				
–Absolute: 3-month T-Bills + 500 bps	1.67%	-2.46%	ITD	n/a
–Relative: HFRX Global Hedge Fund Index	0.17%	-2.46%	ITD	n/a
•Target range of annualized volatility	3.0% – 8.0%	n/a	3 year rolling	n/a
•Beta to equity markets referencing MSCI ACWI	< 0.2	n/a	3 year rolling	n/a
Capital Allocation Constraints				
•Number of investment managers	8 to 20	3	Quarterly	n/a
•Minimum allocation to a single fund (at market)	\$5 million	\$60,000,000	Quarterly	Yes
•Maximum percentage ownership of a single fund	35%	15%	Quarterly	Yes
•Maximum exposure to an investment manager across multiple funds	20% of Direct HF Portfolio (fully invested)	n/a	Quarterly	n/a
Downside Risk Case				
•Portfolio-level RoR Impact of Severe Case Loss (at market)	> -10%	n/a	Quarterly	n/a
Liquidity				
•Remaining lock up period of 1 year or greater	<40%	0.0%	Quarterly	Yes
•Remaining lock up period of 2 year or greater	<25%	0.0%	Quarterly	Yes
•Remaining lock up period of 3 year or greater	<10%	0.0%	Quarterly	Yes
•Remaining lock up period of 5 year or greater	0%	0.0%	Quarterly	Yes
•Minimum invested as % of portfolio asset value in funds where full or partial liquidity is available within one quarter (excluding notification periods and after lock-up expires)	40%	100.0%	Quarterly	Yes
•Minimum invested in funds liquid within 1 year (excluding notification periods and after lock-up expires)	65%	100.0%	Quarterly	Yes
Leverage				
	Macro / Tactical Trading: 20x	n/a	Quarterly	n/a
	Event Driven: 4x	n/a	Quarterly	n/a
•Strategy level leverage	Equity Hedge: 4x	n/a	Quarterly	n/a
	Relative Value: 8x	n/a	Quarterly	n/a
	Multi-Strategy: 5x	5.3	Quarterly	n/a



Administrator Reports



BNY MELLON
ALTERNATIVE INVESTMENT SERVICES

San Gabriel Fund, L.P.

Account Statement of Income (Loss)

As of June 30, 2018

In US Dollars

GABRIEL -Los Angeles County Employees
Retirement Association

Final and Unaudited

Period Ended	Balance Activity				Rate of Return			
	Balance Forward	Subscriptions (Redemptions)	Gain (Loss)	Ending Balance	MTD	QTD	YTD	ITD
31 Oct 11	-	227,000,000	714,679	227,714,679	0.31%	0.31%	0.31%	0.31%
30 Nov 11	227,714,679	11,275,000	(527,962)	238,461,717	-0.22%	0.09%	0.09%	0.09%
31 Dec 11	238,461,717	-	(820,955)	237,640,761	-0.34%	-0.25%	-0.25%	-0.25%
31 Jan 12	237,640,761	9,250,000	2,338,367	249,229,128	0.95%	0.95%	0.95%	0.69%
29 Feb 12	249,229,128	-	2,204,353	251,433,481	0.88%	1.84%	1.84%	1.58%
31 Mar 12	251,433,481	-	901,940	252,335,421	0.36%	2.21%	2.21%	1.95%
30 Apr 12	252,335,421	2,475,000	(248,709)	254,561,712	-0.10%	-0.10%	2.11%	1.85%
31 May 12	254,561,712	-	(2,607,166)	251,954,546	-1.02%	-1.12%	1.06%	0.81%
30 Jun 12	251,954,546	-	551,746	252,506,292	0.22%	-0.90%	1.28%	1.03%
31 Jul 12	252,506,292	-	1,764,400	254,270,692	0.70%	0.70%	1.99%	1.73%
31 Aug 12	254,270,692	-	2,609,458	256,880,150	1.03%	1.73%	3.04%	2.78%
30 Sep 12	256,880,150	-	1,358,766	258,238,916	0.53%	2.27%	3.58%	3.32%
31 Oct 12	258,238,916	-	1,207,320	259,446,236	0.47%	0.47%	4.06%	3.80%
30 Nov 12	259,446,236	-	1,417,836	260,864,072	0.55%	1.02%	4.63%	4.37%

* Returns are net of all underlying manager and performance fees as well as Grosvenor fund of fund management fees.

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BNY MELLON
ALTERNATIVE INVESTMENT SERVICES

San Gabriel Fund, L.P.

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	Balance Forward	Subscriptions (Redemptions)	Gain (Loss)	Ending Balance	MTD	QTD	YTD	ITD
31 Dec 12	260,864,072	-	3,163,257	264,027,329	1.21%	2.24%	5.90%	5.64%
31 Jan 13	264,027,329	-	5,578,384	269,605,713	2.11%	2.11%	2.11%	7.87%
28 Feb 13	269,605,713	-	1,246,278	270,851,991	0.46%	2.58%	2.58%	8.37%
31 Mar 13	270,851,991	-	3,365,962	274,217,952	1.24%	3.86%	3.86%	9.71%
30 Apr 13	274,217,952	-	2,456,700	276,674,652	0.90%	0.90%	4.79%	10.70%
31 May 13	276,674,652	-	3,908,114	280,582,766	1.41%	2.32%	6.27%	12.26%
30 Jun 13	280,582,766	-	(2,043,612)	278,539,154	-0.73%	1.58%	5.50%	11.44%
31 Jul 13	278,539,154	-	2,336,424	280,875,579	0.84%	0.84%	6.38%	12.38%
31 Aug 13	280,875,579	-	547,632	281,423,211	0.19%	1.04%	6.59%	12.60%
30 Sep 13	281,423,211	-	2,874,785	284,297,996	1.02%	2.07%	7.68%	13.75%
31 Oct 13	284,297,996	-	2,656,976	286,954,972	0.93%	0.93%	8.68%	14.81%
30 Nov 13	286,954,972	-	3,481,604	290,436,576	1.21%	2.16%	10.00%	16.20%
31 Dec 13	290,436,576	-	3,359,708	293,796,284	1.16%	3.34%	11.27%	17.55%
31 Jan 14	293,796,284	-	1,541,595	295,337,878	0.52%	0.52%	0.52%	18.16%

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	Balance Forward	Subscriptions (Redemptions)	Gain (Loss)	Ending Balance	MTD	QTD	YTD	ITD
28 Feb 14	295,337,878	-	2,964,579	298,302,458	1.00%	1.53%	1.53%	19.35%
31 Mar 14	298,302,458	-	(259,881)	298,042,577	-0.09%	1.45%	1.45%	19.25%
30 Apr 14	298,042,577	-	(944,859)	297,097,719	-0.32%	-0.32%	1.12%	18.87%
31 May 14	297,097,719	-	2,224,935	299,322,653	0.75%	0.43%	1.88%	19.76%
30 Jun 14	299,322,653	-	1,524,720	300,847,373	0.51%	0.94%	2.40%	20.37%
31 Jul 14	300,847,373	-	95,753	300,943,126	0.03%	0.03%	2.43%	20.41%
31 Aug 14	300,943,126	-	2,369,775	303,312,901	0.79%	0.82%	3.24%	21.35%
30 Sep 14	303,312,901	-	(695,249)	302,617,652	-0.23%	0.59%	3.00%	21.08%
31 Oct 14	302,617,652	-	(2,829,910)	299,787,743	-0.94%	-0.94%	2.04%	19.94%
30 Nov 14	299,787,743	-	539,276	300,327,018	0.18%	-0.76%	2.22%	20.16%
31 Dec 14	300,327,018	-	(977,229)	299,349,789	-0.33%	-1.08%	1.89%	19.77%
31 Jan 15	299,349,789	-	(1,011,166)	298,338,623	-0.34%	-0.34%	-0.34%	19.36%
28 Feb 15	298,338,623	-	3,143,559	301,482,182	1.05%	0.71%	0.71%	20.62%
31 Mar 15	301,482,182	-	2,051,735	303,533,917	0.68%	1.40%	1.40%	21.44%

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	Balance Forward	Subscriptions (Redemptions)	Gain (Loss)	Ending Balance	MTD	QTD	YTD	ITD
30 Apr 15	303,533,917	-	1,596,009	305,129,926	0.53%	0.53%	1.93%	22.08%
31 May 15	305,129,926	-	2,707,340	307,837,266	0.89%	1.42%	2.84%	23.16%
30 Jun 15	307,837,266	-	(1,359,415)	306,477,851	-0.44%	0.97%	2.38%	22.62%
31 Jul 15	306,477,851	-	638,458	307,116,309	0.21%	0.21%	2.59%	22.88%
31 Aug 15	307,116,309	-	(3,085,405)	304,030,904	-1.00%	-0.80%	1.56%	21.64%
30 Sep 15	304,030,904	-	(5,053,180)	298,977,724	-1.66%	-2.45%	-0.12%	19.62%
31 Oct 15	298,977,724	-	(1,275,143)	297,702,581	-0.43%	-0.43%	-0.55%	19.11%
30 Nov 15	297,702,581	50,000,000	(62,768)	347,639,813	-0.02%	-0.44%	-0.57%	19.09%
31 Dec 15	347,639,813	50,000,000	(2,976,929)	394,662,884	-0.75%	-1.19%	-1.31%	18.20%
31 Jan 16	394,662,884	50,000,000	(9,040,499)	435,622,385	-2.03%	-2.03%	-2.03%	15.79%
29 Feb 16	435,622,385	-	(5,684,022)	429,938,363	-1.30%	-3.31%	-3.31%	14.28%
31 Mar 16	429,938,363	-	279,950	430,218,313	0.07%	-3.25%	-3.25%	14.36%
30 Apr 16	430,218,313	-	4,712,669	434,930,982	1.10%	1.10%	-2.19%	15.61%
31 May 16	434,930,982	-	1,257,362	436,188,343	0.29%	1.39%	-1.91%	15.94%

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30 Jun 16	436,188,343	-	(2,528,889)	433,659,454	-0.58%	0.80%	-2.47%	15.27%
31 Jul 16	433,659,454	-	3,756,408	437,415,862	0.87%	0.87%	-1.63%	16.27%
31 Aug 16	437,415,862	-	5,625,760	443,041,622	1.29%	2.16%	-0.36%	17.77%
30 Sep 16	443,041,622	-	2,917,276	445,958,898	0.66%	2.84%	0.29%	18.54%
31 Oct 16	445,958,898	-	176,081	446,134,979	0.04%	0.04%	0.33%	18.59%
30 Nov 16	446,134,979	-	3,295,542	449,430,521	0.74%	0.78%	1.07%	19.46%
31 Dec 16	449,430,521	-	2,281,757	451,712,277	0.51%	1.29%	1.59%	20.07%
31 Jan 17	451,712,277	-	4,026,236	455,738,513	0.89%	0.89%	0.89%	21.14%
28 Feb 17	455,738,513	-	1,920,585	457,659,098	0.42%	1.32%	1.32%	21.65%
31 Mar 17	457,659,098	-	1,264,226	458,923,325	0.28%	1.60%	1.60%	21.99%
30 Apr 17	458,923,325	-	47,955	458,971,280	0.01%	0.01%	1.61%	22.00%
31 May 17	458,971,280	-	28,467	458,999,747	0.01%	0.02%	1.61%	22.01%
30 Jun 17	458,999,747	-	(439,119)	458,560,628	-0.10%	-0.08%	1.52%	21.89%
31 Jul 17	458,560,628	-	2,874,669	461,435,297	0.63%	0.63%	2.15%	22.65%

* Returns are net of all underlying manager and performance fees as well as Grosvenor fund of fund management fees.

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BNY MELLON
ALTERNATIVE INVESTMENT SERVICES

San Gabriel Fund, L.P.

Account Statement of Income (Loss)

As of June 30, 2018

In US Dollars

GABRIEL -Los Angeles County Employees
Retirement Association

Final and Unaudited

Period Ended	Balance Activity				Rate of Return			
	Balance Forward	Subscriptions (Redemptions)	Gain (Loss)	Ending Balance	MTD	QTD	YTD	ITD
31 Aug 17	461,435,297	-	877,920	462,313,218	0.19%	0.82%	2.35%	22.89%
30 Sep 17	462,313,218	-	3,132,776	465,445,994	0.68%	1.50%	3.04%	23.72%
31 Oct 17	465,445,994	-	1,783,552	467,229,545	0.38%	0.38%	3.44%	24.19%
30 Nov 17	467,229,545	-	1,711,398	468,940,943	0.37%	0.75%	3.81%	24.65%
31 Dec 17	468,940,943	-	2,109,318	471,050,261	0.45%	1.20%	4.28%	25.21%
31 Jan 18	471,050,261	-	9,056,965	480,107,227	1.92%	1.92%	1.92%	27.62%
28 Feb 18	480,107,227	-	(643,364)	479,463,863	-0.13%	1.79%	1.79%	27.45%
31 Mar 18	479,463,863	-	(331,800)	479,132,062	-0.07%	1.72%	1.72%	27.36%
30 Apr 18	479,132,062	-	2,678,955	481,811,017	0.56%	0.56%	2.28%	28.07%
31 May 18	481,811,017	-	7,606,367	489,417,384	1.58%	2.15%	3.90%	30.09%
30 Jun 18	489,417,384	-	(1,363,251)	488,054,134	-0.28%	1.86%	3.61%	29.73%
Total	400,000,000		88,054,134					

* Returns are net of all underlying manager and performance fees as well as Grosvenor fund of fund management fees.

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BNY MELLON
ALTERNATIVE INVESTMENT SERVICES

San Gabriel Fund 2, L.P.

Account Statement of Income (Loss)

As of June 30, 2018

In US Dollars

GABRIEL2 -Los Angeles County Employees
Retirement Association

Final and Unaudited

Period Ended	Balance Activity				Rate of Return			
	Balance Forward	Subscriptions (Redemptions)	Gain (Loss)	Ending Balance	MTD	QTD	YTD	ITD
31 Jan 13	-	152,500,000	5,918,693	158,418,693	3.88%	3.88%	3.88%	3.88%
28 Feb 13	158,418,693	12,000,000	1,673,033	172,091,725	0.98%	4.90%	4.90%	4.90%
31 Mar 13	172,091,725	-	2,839,852	174,931,578	1.65%	6.63%	6.63%	6.63%
30 Apr 13	174,931,578	35,500,000	5,159,051	215,590,629	2.45%	2.45%	9.25%	9.25%
31 May 13	215,590,629	-	4,173,941	219,764,570	1.94%	4.44%	11.36%	11.36%
30 Jun 13	219,764,570	-	(4,553,943)	215,210,627	-2.07%	2.27%	9.05%	9.05%
31 Jul 13	215,210,627	-	2,860,835	218,071,462	1.33%	1.33%	10.50%	10.50%
31 Aug 13	218,071,462	-	312,845	218,384,308	0.14%	1.47%	10.66%	10.66%
30 Sep 13	218,384,308	-	2,560,581	220,944,889	1.17%	2.66%	11.96%	11.96%
31 Oct 13	220,944,889	-	4,150,031	225,094,920	1.88%	1.88%	14.06%	14.06%
30 Nov 13	225,094,920	-	2,958,436	228,053,356	1.31%	3.22%	15.56%	15.56%
31 Dec 13	228,053,356	-	2,531,308	230,584,664	1.11%	4.36%	16.84%	16.84%
31 Jan 14	230,584,664	-	3,394,628	233,979,292	1.47%	1.47%	1.47%	18.56%
28 Feb 14	233,979,292	-	3,361,059	237,340,351	1.44%	2.93%	2.93%	20.27%

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BNY MELLON
ALTERNATIVE INVESTMENT SERVICES

San Gabriel Fund 2, L.P.

Account Statement of Income (Loss)

As of June 30, 2018

In US Dollars

GABRIEL2 -Los Angeles County Employees
Retirement Association

Final and Unaudited

Period Ended	Balance Activity				Rate of Return			
	Balance Forward	Subscriptions (Redemptions)	Gain (Loss)	Ending Balance	MTD	QTD	YTD	ITD
31 Mar 14	237,340,351	-	1,344,384	238,684,735	0.57%	3.51%	3.51%	20.95%
30 Apr 14	238,684,735	-	1,746,657	240,431,392	0.73%	0.73%	4.27%	21.83%
31 May 14	240,431,392	-	2,324,114	242,755,507	0.97%	1.71%	5.28%	23.01%
30 Jun 14	242,755,507	-	2,663,952	245,419,459	1.10%	2.82%	6.43%	24.36%
31 Jul 14	245,419,459	-	572,065	245,991,524	0.23%	0.23%	6.68%	24.65%
31 Aug 14	245,991,524	-	947,291	246,938,814	0.39%	0.62%	7.09%	25.13%
30 Sep 14	246,938,814	-	(439,677)	246,499,137	-0.18%	0.44%	6.90%	24.91%
31 Oct 14	246,499,137	-	(708,244)	245,790,893	-0.29%	-0.29%	6.59%	24.55%
30 Nov 14	245,790,893	-	516,496	246,307,389	0.21%	-0.08%	6.82%	24.81%
31 Dec 14	246,307,389	-	(994,947)	245,312,443	-0.40%	-0.48%	6.39%	24.31%
31 Jan 15	245,312,443	-	(1,893,969)	243,418,473	-0.77%	-0.77%	-0.77%	23.35%
28 Feb 15	243,418,473	-	2,519,793	245,938,267	1.04%	0.26%	0.26%	24.62%
31 Mar 15	245,938,267	-	1,226,024	247,164,291	0.50%	0.75%	0.75%	25.25%
30 Apr 15	247,164,291	-	2,454,635	249,618,925	0.99%	0.99%	1.76%	26.49%

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BNY MELLON
ALTERNATIVE INVESTMENT SERVICES

San Gabriel Fund 2, L.P.
Account Statement of Income (Loss)
As of June 30, 2018
In US Dollars

GABRIEL2 -Los Angeles County Employees
Retirement Association

Final and Unaudited

Period Ended	Balance Activity				Rate of Return			
	Balance Forward	Subscriptions (Redemptions)	Gain (Loss)	Ending Balance	MTD	QTD	YTD	ITD
31 May 15	249,618,925	-	1,084,330	250,703,255	0.43%	1.43%	2.20%	27.04%
30 Jun 15	250,703,255	-	(1,595,547)	249,107,708	-0.64%	0.79%	1.55%	26.23%
31 Jul 15	249,107,708	-	(967,442)	248,140,266	-0.39%	-0.39%	1.15%	25.74%
31 Aug 15	248,140,266	-	(2,327,587)	245,812,679	-0.94%	-1.32%	0.20%	24.56%
30 Sep 15	245,812,679	-	(3,273,929)	242,538,750	-1.33%	-2.64%	-1.13%	22.90%
31 Oct 15	242,538,750	-	464,357	243,003,107	0.19%	0.19%	-0.94%	23.14%
30 Nov 15	243,003,107	-	(794,487)	242,208,621	-0.33%	-0.14%	-1.27%	22.73%
31 Dec 15	242,208,621	-	(2,530,898)	239,677,723	-1.04%	-1.18%	-2.30%	21.45%
31 Jan 16	239,677,723	-	(4,554,587)	235,123,136	-1.90%	-1.90%	-1.90%	19.14%
29 Feb 16	235,123,136	-	(3,584,171)	231,538,964	-1.52%	-3.40%	-3.40%	17.33%
31 Mar 16	231,538,964	-	338,119	231,877,083	0.15%	-3.25%	-3.25%	17.50%
30 Apr 16	231,877,083	-	2,644,544	234,521,627	1.14%	1.14%	-2.15%	18.84%
31 May 16	234,521,627	-	1,146,582	235,668,209	0.49%	1.63%	-1.67%	19.42%
30 Jun 16	235,668,209	-	(108,313)	235,559,895	-0.05%	1.59%	-1.72%	19.37%

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BNY MELLON
ALTERNATIVE INVESTMENT SERVICES

San Gabriel Fund 2, L.P.

Account Statement of Income (Loss)

As of June 30, 2018

In US Dollars

GABRIEL2 -Los Angeles County Employees
Retirement Association

Final and Unaudited

Period Ended	Balance Activity				Rate of Return			
	Balance Forward	Subscriptions (Redemptions)	Gain (Loss)	Ending Balance	MTD	QTD	YTD	ITD
31 Jul 16	235,559,895	-	1,981,907	237,541,802	0.84%	0.84%	-0.89%	20.37%
31 Aug 16	237,541,802	-	3,216,404	240,758,206	1.35%	2.21%	0.45%	22.00%
30 Sep 16	240,758,206	-	1,854,967	242,613,173	0.77%	2.99%	1.22%	22.94%
31 Oct 16	242,613,173	-	2,406,407	245,019,580	0.99%	0.99%	2.23%	24.16%
30 Nov 16	245,019,580	-	1,922,902	246,942,481	0.78%	1.78%	3.03%	25.13%
31 Dec 16	246,942,481	(20,000,000)	3,493,814	230,436,295	1.54%	3.35%	4.62%	27.06%
31 Jan 17	230,436,295	-	3,156,154	233,592,449	1.37%	1.37%	1.37%	28.80%
28 Feb 17	233,592,449	-	1,679,491	235,271,941	0.72%	2.10%	2.10%	29.73%
31 Mar 17	235,271,941	(8,000,000)	285,566	227,557,506	0.13%	2.23%	2.23%	29.89%
30 Apr 17	227,557,506	-	1,661,490	229,218,996	0.73%	0.73%	2.97%	30.84%
31 May 17	229,218,996	(38,600,000)	910,123	191,529,120	0.48%	1.21%	3.46%	31.46%
30 Jun 17	191,529,120	-	1,312,455	192,841,575	0.69%	1.90%	4.17%	32.36%
31 Jul 17	192,841,575	-	1,390,119	194,231,694	0.72%	0.72%	4.92%	33.32%
31 Aug 17	194,231,694	(36,000,000)	46,577	158,278,271	0.03%	0.75%	4.96%	33.36%

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BNY MELLON
ALTERNATIVE INVESTMENT SERVICES

San Gabriel Fund 2, L.P.
Account Statement of Income (Loss)
As of June 30, 2018
In US Dollars

GABRIEL2 -Los Angeles County Employees
Retirement Association

Final and Unaudited

Period Ended	Balance Activity				Rate of Return			
	Balance Forward	Subscriptions (Redemptions)	Gain (Loss)	Ending Balance	MTD	QTD	YTD	ITD
30 Sep 17	158,278,271	(15,000,000)	1,282,919	144,561,190	0.90%	1.65%	5.90%	34.55%
31 Oct 17	144,561,190	-	126,009	144,687,198	0.09%	0.09%	5.99%	34.67%
30 Nov 17	144,687,198	(52,300,000)	489,311	92,876,509	0.53%	0.62%	6.55%	35.38%
31 Dec 17	92,876,509	-	900,319	93,776,828	0.97%	1.59%	7.58%	36.69%
31 Jan 18	93,776,828	-	292,617	94,069,446	0.31%	0.31%	0.31%	37.12%
28 Feb 18	94,069,446	(46,800,000)	198,890	47,468,335	0.42%	0.73%	0.73%	37.70%
31 Mar 18	47,468,335	(10,900,000)	(522,057)	36,046,278	-1.43%	-0.70%	-0.70%	35.73%
30 Apr 18	36,046,278	-	112,223	36,158,502	0.31%	0.31%	-0.39%	36.15%
31 May 18	36,158,502	(14,500,000)	118,768	21,777,270	0.55%	0.86%	0.15%	36.90%
30 Jun 18	21,777,270	-	80,199	21,857,468	0.37%	1.23%	0.52%	37.40%
Total		(42,100,000)	63,957,468					

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BNY MELLON
ALTERNATIVE INVESTMENT SERVICES

San Gabriel Fund 3, L.P.
Account Statement of Income (Loss)
As of June 30, 2018
In US Dollars

GABRIEL3 -Los Angeles County Employees
Retirement Association

Final and Unaudited

Period Ended	Balance Activity				Rate of Return			
	Balance Forward	Subscriptions (Redemptions)	Gain (Loss)	Ending Balance	MTD	QTD	YTD	ITD
29 Feb 16	-	35,000,000	(532,710)	34,467,290	-1.52%	-1.52%	-1.52%	-1.52%
31 Mar 16	34,467,290	28,000,000	741,955	63,209,245	1.19%	-0.35%	-0.35%	-0.35%
30 Apr 16	63,209,245	34,000,000	1,073,917	98,283,162	1.10%	1.10%	0.75%	0.75%
31 May 16	98,283,162	26,000,000	1,541,860	125,825,022	1.24%	2.36%	2.00%	2.00%
30 Jun 16	125,825,022	35,000,000	1,130,882	161,955,904	0.70%	3.08%	2.72%	2.72%
31 Jul 16	161,955,904	8,000,000	2,692,425	172,648,329	1.58%	1.58%	4.34%	4.34%
31 Aug 16	172,648,329	36,000,000	4,385,162	213,033,491	2.10%	3.72%	6.54%	6.54%
30 Sep 16	213,033,491	25,000,000	2,360,252	240,393,743	0.99%	4.75%	7.59%	7.59%
31 Oct 16	240,393,743	7,000,000	6,636,935	254,030,678	2.68%	2.68%	10.48%	10.48%
30 Nov 16	254,030,678	10,000,000	2,634,888	266,665,567	1.00%	3.71%	11.58%	11.58%
31 Dec 16	266,665,567	24,000,000	4,537,391	295,202,957	1.56%	5.33%	13.32%	13.32%
31 Jan 17	295,202,957	-	5,386,716	300,589,673	1.82%	1.82%	1.82%	15.39%
28 Feb 17	300,589,673	-	3,393,368	303,983,041	1.13%	2.97%	2.97%	16.69%
31 Mar 17	303,983,041	-	(813,283)	303,169,758	-0.27%	2.70%	2.70%	16.38%

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BNY MELLON
ALTERNATIVE INVESTMENT SERVICES

San Gabriel Fund 3, L.P.

Account Statement of Income (Loss)

As of June 30, 2018

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GABRIEL3 -Los Angeles County Employees
Retirement Association

Final and Unaudited

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	Balance Forward	Subscriptions (Redemptions)	Gain (Loss)	Ending Balance	MTD	QTD	YTD	ITD
30 Apr 17	303,169,758	13,000,000	1,256,206	317,425,964	0.40%	0.40%	3.11%	16.84%
31 May 17	317,425,964	-	786,987	318,212,951	0.25%	0.65%	3.36%	17.13%
30 Jun 17	318,212,951	13,000,000	(43,761)	331,169,190	-0.01%	0.63%	3.35%	17.12%
31 Jul 17	331,169,190	6,000,000	3,034,041	340,203,230	0.90%	0.90%	4.28%	18.17%
31 Aug 17	340,203,230	-	252,978	340,456,208	0.07%	0.97%	4.36%	18.26%
30 Sep 17	340,456,208	-	4,375,012	344,831,220	1.29%	2.27%	5.70%	19.78%
31 Oct 17	344,831,220	-	1,709,072	346,540,292	0.50%	0.50%	6.22%	20.37%
30 Nov 17	346,540,292	-	2,889,345	349,429,637	0.83%	1.33%	7.11%	21.38%
31 Dec 17	349,429,637	-	4,795,840	354,225,477	1.37%	2.72%	8.58%	23.04%
31 Jan 18	354,225,477	-	5,035,130	359,260,607	1.42%	1.42%	1.42%	24.79%
28 Feb 18	359,260,607	-	(900,986)	358,359,621	-0.25%	1.17%	1.17%	24.48%
31 Mar 18	358,359,621	-	(728,719)	357,630,902	-0.20%	0.96%	0.96%	24.23%
30 Apr 18	357,630,902	-	741,805	358,372,707	0.21%	0.21%	1.17%	24.48%
31 May 18	358,372,707	-	908,676	359,281,383	0.25%	0.46%	1.43%	24.80%

* The Fund's net asset value is calculated on the basis of pricing information obtained from various sources, including pricing vendors used by The Bank of New York Mellon or its Affiliates (collectively, "BNYM"), the Fund (or its investment manager), one or more broker/dealers as directed by the Fund (or its investment manager), and administrators of funds in which the Fund may have invested ("Pricing Information"). Certain Pricing Information may not be updated by BNYM's Pricing sources on a regular basis. Although BNYM may, from time to time, assess variances in Pricing Information or subject such Pricing Information to other tolerance testing established by BNYM, in no event does BNYM independently verify or make any representations or warranties, or give any other assurances, with respect to any Pricing Information utilized by BNYM in calculating the Fund's NAV or for any other purpose related to the Fund.

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* For investor related questions, please contact us at: aionline_ny@bnymellon.com

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BNY MELLON
ALTERNATIVE INVESTMENT SERVICES

San Gabriel Fund 3, L.P.
Account Statement of Income (Loss)
As of June 30, 2018
In US Dollars

GABRIEL3 -Los Angeles County Employees
Retirement Association

Final and Unaudited

Balance Activity					Rate of Return			
Period Ended	Balance Forward	Subscriptions (Redemptions)	Gain (Loss)	Ending Balance	MTD	QTD	YTD	ITD
30 Jun 18	359,281,383	-	592,265	359,873,648	0.16%	0.63%	1.59%	25.00%
Total		300,000,000	59,873,648					

* The Fund's net asset value is calculated on the basis of pricing information obtained from various sources, including pricing vendors used by The Bank of New York Mellon or its Affiliates (collectively, "BNYM"), the Fund (or its investment manager), one or more broker/dealers as directed by the Fund (or its investment manager), and administrators of funds in which the Fund may have invested ("Pricing Information"). Certain Pricing Information may not be updated by BNYM's Pricing sources on a regular basis. Although BNYM may, from time to time, assess variances in Pricing Information or subject such Pricing Information to other tolerance testing established by BNYM, in no event does BNYM independently verify or make any representations or warranties, or give any other assurances, with respect to any Pricing Information utilized by BNYM in calculating the Fund's NAV or for any other purpose related to the Fund.

* The Pricing Information used by BNYM to calculate the Fund's net asset value may differ from the pricing information provided to, or used by, other divisions of The Bank of New York Mellon or its subsidiaries or affiliates; such differences may or may not be material.

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Lacera Inc Loss - Los Angeles County Employees Retirement Association
Portfolio: LACERA GSAM HFOF
as of 6/30/2018



Asset Class	Fund Name	Subscriptions	Redemptions	Profit & Loss Cumulative	Market Value	3 Month Base	ITD Cum Base
Hedge Fund(100%)		29,647,327.53	(33,862,758.15)	40,804,678.75	467,332,829.46	1.45%	10.23%
Summary		29,647,327.53	(33,862,758.15)	40,804,678.75	467,332,829.46	1.45%	10.23%
Pending Trades		0.00	0.00	0.00	0.00		N/A
Unfunded Securities		0.00	0.00	0.00	0.00		N/A
Cash Balance		0.00	0.00	0.00	4,275,960.69		N/A
Clearer LAIA	Clearer LAIA	0.00	0.00	0.00	0.00		N/A
Clearer State Street - LAIA	Clearer State Street - LAIA	0.00	0.00	0.00	0.00		N/A
Clearer State Street - LCOX STIF	Clearer State Street - LCOX STIF	0.00	0.00	0.00	4,275,960.69		N/A
Non HedgeFunds		0.00	0.00	0.00	0.00		N/A
Total Portfolio Valuation		0.00	0.00	0.00	471,608,790.15		N/A

This information was prepared by International Fund Services.
Information shown is quarterly except when identified as cumulative (since inception).
Returns are shown gross of fund of fund fees and expenses.

Lacera Inc Loss - Los Angeles County Employees Retirement Association
Portfolio: LACERA HF Direct
as of 6/30/2018



Asset Class	Fund Name	Subscriptions	Redemptions	Profit & Loss Cumulative	Market Value	3 Month Base	ITD Cum Base
Hedge Fund(100%)		260,000,000.00	0.00	(4,992,383.00)	255,007,617.00	(2.46%)	(2.46%)
Hedge Fund	AQR Liquid Enhanced Alternative Premia Fund, L.P. - -	75,000,000.00	0.00	(7,362,309.00)	67,637,691.00	(9.82%)	(9.82%)
Hedge Fund	Davidson Kempner Institutional Partners, L.P. - (1.5% Management Fee) - New Issue Eligible	60,000,000.00	0.00	422,341.00	60,422,341.00	0.72%	0.72%
Hedge Fund	HBK Multi-Strategy Fund L.P. - Class A: Subclass A.1	125,000,000.00	0.00	1,947,585.00	126,947,585.00		1.56%
Summary		260,000,000.00	0.00	(4,992,383.00)	255,007,617.00	(2.46%)	(2.46%)
Pending Trades		0.00	0.00	0.00	0.00		N/A
Unfunded Securities		0.00	0.00	0.00	0.00		N/A
Cash Balance		0.00	0.00	0.00	0.00		N/A
Non HedgeFunds		0.00	0.00	0.00	0.00		N/A
Total Portfolio Valuation		0.00	0.00	0.00	255,007,617.00		N/A

This information was prepared by International Fund Services.
Information shown is quarterly except when identified as cumulative (since inception).
Returns are shown gross of fund of fund fees and expenses.



Glossary of Hedge Fund Terms

Hedge Fund Strategies

Overview

- **Credit strategies**
 - › Directional and relative value investments in debt securities, credit derivatives and related instruments
 - › Strategies include long-biased credit, long/short credit, structured credit and mortgage credit
 - › Hedging investments include short credit index, individual short, credit default swap and sovereign credit investments
- **Relative value strategies**
 - › Trades constructed to capitalize on perceived mispricings of one instrument relative to another or one maturity relative to another for a given instrument
 - › Generally less dependent on market direction
 - › Strategies include convertible arbitrage, statistical arbitrage, fixed income arbitrage and option volatility arbitrage
- **Equities strategies**
 - › Purchases (buying long) and/or sales (selling short) of equities based on fundamental and/or quantitative analysis and other factors
 - › Managers typically seek to capitalize on discrepancies between their assessment of security valuations and current market prices
 - › Strategies include long-biased hedged equities, less-correlated hedged equities and activist

Hedge Fund Strategies

Overview (continued)

■ Event driven strategies

- › Investments that seek to exploit situations in which an announced or anticipated event creates inefficiencies in the pricing of securities
- › Potential events include mergers, acquisitions, recapitalizations, bankruptcies and litigation decisions
- › Strategies include risk arbitrage and diversified event driven

■ Macro strategies

- › Investments based on analyses and forecasts of macroeconomic trends, including governmental and central bank policies, fiscal trends, trade imbalances, interest rate trends and inter-country relations
- › Strategies include discretionary and systematic

■ Commodities strategies

- › Investments across global commodity markets based on an analysis of factors, including supply and demand, legislative and environmental policies, trends in growth rates and resource consumption, global monetary and trade policy, geopolitical events and technical factors
- › Strategies may be long/short directional, spread-oriented or volatility-oriented
- › Strategies include discretionary and systematic

■ Portfolio hedging strategies

- › Investments designed to reduce a portfolio's overall exposure to various systemic risks and intended to provide protection during broad market downturns
- › Strategies include dedicated short equity, synthetic short equity, dedicated short credit and tail risk protection

Hedge Fund Strategies

Overview

Equity	Credit	Relative value	Tactical trading	Hedging strategies
<ul style="list-style-type: none">▪ Fundamental long/short<ul style="list-style-type: none">› Long-biased› Neutral› Short-biased› Variable▪ Activist▪ Trading-oriented long/short▪ Event driven<ul style="list-style-type: none">› Merger arbitrage› Spin-offs› Recapitalizations› Special situations▪ Regional focus▪ Sector specialist	<ul style="list-style-type: none">▪ Long/short▪ Directional credit<ul style="list-style-type: none">› Bank debt› Distressed securities› Mezzanine debt› Direct lending▪ Structured credit<ul style="list-style-type: none">› Residential mortgages (RMBS)› Commercial mortgages (CMBS)› Other Asset-Backed Securities (ABS)	<ul style="list-style-type: none">▪ Convertible bond arbitrage▪ Fixed income arbitrage▪ Option volatility arbitrage▪ Statistical arbitrage	<ul style="list-style-type: none">▪ Global macro<ul style="list-style-type: none">› Discretionary› Systematic▪ Commodities<ul style="list-style-type: none">› Relative value› Directional› Systematic	<ul style="list-style-type: none">▪ Short equity▪ Short credit▪ Synthetic put convertible bond arbitrage▪ Tail risk “protection” strategies

Risk Measure

Leverage

FOR ILLUSTRATIVE PURPOSES ONLY. NOT INTENDED TO PRESENT DATA RELATED TO ANY FUND.

The leverage of investments within a portfolio should be understood within the context of the portfolio's volatility or variance.

Leverage illustrations

- Buy equity shares on margin
 - › Apple stock: \$345
 - › Initial margin: 20%
 - › Leverage = $(\$345 / \$69) = 5x$
- Buy a futures contract on margin
 - › S&P 500 Index: 1330
 - › E-mini futures notional value: \$66,500 ($\$50 * 1330$)
 - › Exchange margin: \$3,500
 - › Leverage = $\$66,500 / \$3,500 = 19x$
- Buy a credit default swap (CDS)
 - › Purchase \$100 million notional protection for 5 years on General Electric's senior debt costing 115 bps a year
 - › Leverage = $\$100\text{mm} / (\$1.15\text{mm} * 5) = 17x$
- Borrow money to buy a bond
 - › Term financing on commercial mortgage-backed security collateral. 2 year term, cost is LIBOR + 150 bps, haircuts (margin) are 25%.
 - › 25% margin = 4x leverage

Goal

- Understand how leverage can magnify returns, both positive and negative
- Understand that levered investments may have higher volatility

Formula

$$\text{Leverage} = \frac{\text{Notional Exposure}}{\text{Capital Exposure}}$$

History

- Excessive use of leverage has been the source of many financial crises

Usefulness

- Some types of leverage are risk mitigating
- Should carefully examine levered investments to understand whether use of leverage is prudent

Limitations

- Various sources of leverage
 - › Borrowing
 - › Inherent to instrument
- Terminology can be confusing
 - › Leverage versus exposure

Risk Measure

Liquidity

FOR ILLUSTRATIVE PURPOSES ONLY. NOT INTENDED TO PRESENT DATA RELATED TO ANY FUND.

The liquidity of investments within a portfolio should be understood within the context of the portfolio's volatility or variance.

Liquidity illustration

Investment	Liquidity
Equity	Daily, in many cases
Fixed Income	Daily, in many cases
Hedge Funds	<ul style="list-style-type: none">Varies from monthly liquidity to multi-year lockupsQuarterly or semi-annual liquidity is common
Private Equity	5-10 year duration
Real Estate	Multi year

Goal	Understand ability to liquidate investments, especially during crises
Measures	Time needed to liquidate investment without incurring a material negative price impact as a result of the sale
History	<ul style="list-style-type: none">Liquidity typically “dries up” during financial crisesLess liquid investments<ul style="list-style-type: none">May be more volatile than their return streams indicateHave higher expected returns
Usefulness	<ul style="list-style-type: none">Liquidity indicates how quickly cash may be raisedLiquidity informs the reliability of certain risk statistics when evaluating an investment
Limitations	Assessment influenced by the chosen representative market environment

The Gabriel Funds

Notes and Disclosures

In reviewing this presentation relating to San Gabriel Fund, L.P. (the “Gabriel”), San Gabriel Fund 2, L.P. (“Gabriel 2”) or San Gabriel Fund 3, L.P. (“Gabriel 3” together with Gabriel and Gabriel 2, the “Gabriel Funds”), you should consider the following:

Gabriel commenced operations on October 1, 2011.

Gabriel 2 commenced investment operations on January 1, 2013.

Gabriel 3 commenced investment operations on February 1, 2016.

To the extent this report includes the performance of the Gabriel Funds, such returns are calculated net of all fees and expenses.

Figures for 2011–2017, as applicable, are derived from books and records of the Gabriel Funds that have been audited by the Gabriel Funds’ independent public accountants.

Figures for 2018 are estimated based on unaudited books and records of the Gabriel Funds.

Target Returns, Forward Looking Estimates, and Risk Parameters

Notes and Disclosures

Target Returns, Forward Looking Estimates, and Risk Parameters: Target returns, forward looking estimates, and risk parameters are hypothetical in nature and are shown for illustrative, informational purposes only. **This material is not intended to forecast, predict or project future performance.** It does not reflect the actual or expected returns or risk profile of any GCM Fund or strategy pursued by any GCM Fund, and does not guarantee future results.

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- not meant to forecast, predict or project the returns or risk parameters for any GCM Fund or any strategy pursued by any GCM Fund; and
- subject to numerous assumptions including, but not limited to, observed and historical market returns relevant to certain investments, an asset class, projected cash flows, projected future valuations of target assets and businesses, other relevant market dynamics (including interest rate and currency markets), anticipated contingencies, and regulatory issues.

Certain of the assumptions have been made for modeling purposes and are unlikely to be realized. No representation or warranty is made as to the reasonableness of the assumptions made or that all assumptions made have been stated or fully considered. Changes in the assumptions may have a material impact on the target returns, forward looking estimates, and risk parameters presented. Target returns and forward looking estimates may be shown before fees, transactions costs and taxes and do not account for the effects of inflation. Management fees, transaction costs, and potential expenses may not be considered and would reduce returns and affect parameters. Actual results experienced by clients may vary significantly from the target returns, forward looking estimates, and risk parameters shown. **Target Returns, Forward Looking Estimates, And Risk Parameters May Not Materialize.**

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KORN FERRY

CEO SEARCH UPDATE

September 5, 2018

On July 30 and 31 the Ad Hoc committee interviewed eleven candidates. From those eleven candidates the top four candidates were chosen as finalists.

It was then decided by the committee members that they spend more time informally with each of the four final candidates in an effort to get to know them better and determine if they are in fact a good fit for LACERA and whether LACERA is a good fit for the candidate.

On August 21 and August 23, the four final candidates were interviewed in informal settings over a meal or coffee. The Ad Hoc Committee members were able to gain greater insight into each candidate. These four candidates would then be presented to the Joint Boards.

On August 27, Korn Ferry discussed with each candidate their availability for an interview by the joint Boards. During these discussions, one of the candidates announced that they were withdrawing from the process due to personal reasons. The other three candidates were thrilled to be invited for the final round interviews.

The final round interviews are scheduled on Saturday, October 6 and will be held at the WestDrift Hotel in Manhattan Beach. The actual interview schedule is currently being developed.

Accommodations for board members at the WestDrift Hotel on Friday, October 5 will be offered since it is suggested that the joint Board interviews begin at an early hour to give the Boards ample time to spend with each candidate and make an informed decision.

FOR INFORMATION ONLY

August 31, 2018

TO: Each Member
Board of Investments

FROM: Steven P. Rice *SPR*
Chief Counsel

FOR: September 12, 2018 Board of Investments Meeting

SUBJECT: Monthly Status Report on Board of Investments Legal Projects

Attached is the monthly report on the status of Board-directed investment-related projects handled by the Legal Division as of September 1, 2018.

Attachment

c: Robert Hill
James Brekk
John Popowich
Bernie Buenaflor
Jon Gabel
Vache Mahseredjian
John McClelland
Christopher Wagner
Ted Wright
Jim Rice
Jude Perez
Scott Zdrazil
Christine Roseland
John Harrington
Cheryl Lu
Barry Lew
Margo McCabe
Lisa Garcia



LACERA Legal Division
Board of Investments Projects
Monthly Status Report - Pending as of September 1, 2018



	Project/ Investment	Description	Amount	Board Approval Date	Completion Status	% Complete		Notes
PRIVATE EQUITY	JP Morgan Investment	Private Equity Emerging Manager Separate Account Investment Management Agreement	\$300,000,000.00	December 13, 2017	In Progress	<div style="width: 75%;"></div>	75%	Legal and business teams had multiple conference calls with JPM to discuss agreement. Legal review and negotiations in process.
	Storm Ventures Fund VI, L.P.	Subscription	\$50,000,000.00	June 13, 2018	In Progress	<div style="width: 75%;"></div>	75%	Legal negotiations on LPA close to final. Side letter negotiations in process.
	Accel-KKR Growth Capital Partners III, L.P.	Subscription	\$50,000,000.00	August 8, 2018	In Progress	<div style="width: 100%;"></div>	100%	Completed.
REAL ESTATE	Aermont Capital Real Estate Fund IV	Subscription	€ 50,000,000.00 (approx. \$58,300,000.00)	August 8, 2018	In Progress	<div style="width: 50%;"></div>	50%	Legal review negotiations in process.



Documents not attached are exempt from disclosure under the California Public Records Act and other legal authority.

**For further information, contact:
LACERA
Attention: Public Records Act Requests
300 N. Lake Ave., Suite 620
Pasadena, CA 91101**



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