AGENDA

A REGULAR MEETING OF THE BOARD OF INVESTMENTS

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

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

10:00 A.M., * WEDNESDAY, MAY 9, 2018

*Although the meeting is scheduled for 9:00 a.m., it is anticipated that the meeting will start at the conclusion of the joint meeting of the Board of Investments and Board of Retirement that is scheduled to start at the same time.

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 April 11, 2018

IV. PUBLIC COMMENT

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

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

VII. CONSENT ITEMS

A. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve attendance of Board members at the 2018 SWFI Institutional Investor Summit Asia on June 5 – June 6, 2018 in Tokyo, Japan 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 April 25, 2018)

VII. CONSENT ITEMS (Continued)

B. Recommendation as submitted by Michael Schneider, Chair, Real Estate Committee: That the Board adopt the immediate, intermediate and on-going actions identified by the Real Estate Structure Review. (Memo dated April 27, 2018)

VIII. NON-CONSENT ITEMS

A. Recommendation as submitted by Jonathan Grabel, Chief Investment Officer: That the Board approve Allocation option "B," on page 10 of Meketa's presentation and Chart 1 of this memorandum, for the LACERA Pension Trust Asset Allocation for the following reasons:

- Allocation B is a diversified portfolio consistent with LACERA's Investment Beliefs;
- Provides comparatively better downside protection and greater probability of achieving LACERA's 7.25% target return compared to LACERA's current allocation and 4Q2018 Policy, given model constraints; and
- Delivers a higher expected Sharpe ratio and expected returns adjusted for risk and net of fees. (Memo dated April 25, 2018)

B. Recommendation as submitted by Ted Wright, Principal Investment Officer, Dale Johnson, Investment Officer and Brenda Cullen, Investment Officer: That the Board hire Quantitative Management Associates, L.L.C., and Systematic Financial Management, L.P., for active U.S. Small Capitalization Equity mandates and allocate up to $400 million to each using separate account vehicles. (Memo dated April 30, 2018)

C. Recommendation as submitted by Christopher Wagner, Principal Investment Officer and David E. Simpson, Investment Officer: That the Board invite the following Secondary Advisor Request for Proposal finalists, Greenhill Capital Advisory, Evercore Group L.L.C., and Campbell Lutyens to present at the June Board meeting. (Memo dated April 27, 2018)

D. Recommendation as submitted by Barry W. Lew, Legislative Affairs Officer: That the Board adopt the revised Legislative Policy. (Memo dated April 30, 2018)

IX. REPORTS

A. Review of Securities Litigation Policy
Michael Herrera, Senior Staff Counsel
(Memo dated April 30, 2018)

B. Update on AB 2571 – Race and Gender Pay Equity Policy
Barry W. Lew, Legislative Affairs Officer
(For Information Only) (Memo dated April 26, 2018)

C. Enhancing Manager Due Diligence and Monitoring Regarding Workplace Diversity and Inclusion Policies and Practices
Jude Perez, Principal Investment Officer
Scott Zdrazil, Senior Investment Officer
(For Information Only) (Memo dated April 27, 2018)

D. Sexual Harassment Prevention Training for Trustees
John Nogales, Director Human Resources
Roberta Van Nortrick, Training Coordinator
(For Information Only) (Memo dated April 23, 2018)

E. Tennenbaum Capital Partners – Organizational Update
Adam Cheng, Senior Investment Analyst
(For Information Only) (Memo dated April 27, 2018)

F. OPEB Master Trust as of March 31, 2018
Ted Wright, Principal Investment Officer
(For Information Only) (Memo dated April 26, 2018)

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

H. Fund Performance Review as of March 31, 2018
Meketa Performance Report as of March 31, 2018
Jon Grabel, Chief Investment Officer
(For Information Only)

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

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. AE Industrial Partners Fund II, L.P.
2. Other Manager: 1
3. Other Manager: 2

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.

Persons requiring an alternative format of this agenda pursuant to Section 202 of the Americans with Disabilities Act of 1990 may request one by calling Cynthia Guider at (626) 564-6000, from 8:30 a.m. to 5:00 p.m. Monday through Friday, but no later than 48 hours prior to the time the meeting is to commence. Assistive Listening Devices are available upon request. American Sign Language (ASL) Interpreters are available with at least three (3) business days notice before the meeting date.

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, APRIL 11, 2018

PRESENT: David Green, Chair

Wayne Moore, Secretary

Joseph Kelly (left the meeting at 11:15 a.m.)

David Muir (left the meeting at 11:30 a.m.)

Ronald Okum

Gina V. Sanchez

Herman B. Santos

Michael Schneider

ABSENT: Shawn Kehoe, Vice Chair

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

Jude Perez, Principal Investment Officer

STAFF ADVISORS AND PARTICIPANTS (Continued)

David Chu, Investment Officer

Shelly P. Tilaye, Senior Investments Analyst

Dale Johnson, Investment Officer

Brenda Cullen, Investment Officer

Esmeralda Del Bosque, Investment Officer

Jeff Jia, Senior Investment Analyst

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

StepStone Group LP
Jose Fernandez, Partner

I. CALL TO ORDER

The meeting was called to order by Chair Green at 9:22 a.m., in the Board Room of Gateway Plaza.

II. PLEDGE OF ALLEGIANCE

Mr. Kelly 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 March 5, 2018

Mr. Santos made a motion, Mr. Green seconded, to approve the minutes of the special meeting of March 5, 2018. The motion passed unanimously.

IV. PUBLIC COMMENT

There were no requests from the public to speak.

V. INTERIM CHIEF EXECUTIVE OFFICER'S REPORT
(Memo dated April 2, 2018)

Mr. Hill provided an update regarding the CEO Search.

Furthermore, Mr. Hill reminded the Board to complete the 2018 Board of Investments July Board Offsite RSVP form.

VI. CHIEF INVESTMENT OFFICER'S REPORT
(Memo dated April 2, 2018)

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

VII. CONSENT ITEMS

Mr. Schneider made a motion, Mr. Moore seconded, to approve the following agenda items. The motion passed unanimously.

A. Recommendation as submitted by Wayne Moore, Chair, Fixed Income/ Hedge Funds/Commodities Committee: That the Board change the cash sweep vehicle from the State Street Institutional Liquid Reserves Fund to the State Street Institutional U.S. Government Money Market Fund. (Memo dated March 19, 2018)

B. Recommendation as submitted by Wayne Moore, Chair, Fixed Income/ Hedge Funds/Commodities Committee: That the Board adopt the changes to the guidelines for the two diversified hedge fund of funds portfolios managed by Grosvenor Capital Management and Goldman Sachs Asset Management. (Memo dated March 22, 2018)

VII. CONSENT ITEMS (Continued)

C. Recommendation as submitted by Michael Schneider, Chair, Audit Committee: That the Board approve revised Audit Committee Charter. (Memo dated April 3, 2018)

D. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve attendance of Board members at the Global Real Estate Sustainability Benchmark: Sustainable Real Assets Conference on April 25, 2018 in London, England 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 March 30, 2018)

E. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve international attendance for Trustee Sanchez at the 2018 Sustainable Real Assets Conference in London on April 25, 2018 prior to her attendance at the UCLA Anderson Executive Education – Corporate Governance Program on September 25-27, 2018 in Los Angeles, California.
(Memo dated March 30, 2018)

F. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve attendance of Board members at the 5th Annual Hispanic Heritage Foundation Investors Group Conference on June 28-29, 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 Mrs. Sanchez)
(Memo dated March 27, 2018)

G. 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 - Technology Symposium on July 12-13, 2018 in Palo Alto, 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 March 15, 2018)

VII. CONSENT ITEMS (Continued)

H. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve attendance of Board members at the 2018 Fortune Brainstorm Tech Conference on July 16 –18, 2018 in Aspen, Colorado 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 March 22, 2018)

I. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve attendance of Board members at the 2018 Middle East Summit on May 7- 8, 2018 in Dubai, United Arab Emirates 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 April 3, 2018)

J. Recommendation as submitted by Robert R. Hill, Interim Chief Executive Officer: That the Board approve international attendance for Trustee Sanchez at the 2018 Middle East Summit in Dubai, United Arab Emirates on May 7- 8, 2018 prior to her attendance at the UCLA Anderson Executive Education – Corporate Governance Program on September 25-27, 2018 in Los Angeles, California.
(Memo dated April 3, 2018)

VIII. NON - CONSENT AGENDA

A. Recommendation as submitted by Ted Wright, Principal Investment Officer, Dale Johnson, Investment Officer and Brenda Cullen, Investment Officer: That the Board invite the following firms to interview with the Board for active U.S. small capitalization equity mandates: 1) Quantitative Management Associates, LLC, and 2) Systematic Financial Management, LP. (Memo dated April 2, 2018)

Messrs. Grabel, Wright, Johnson and Ms. Cullen and Mr. Filla of

Meketa Investments Group were present and answered questions from the Board.

VIII. NON - CONSENT AGENDA (Continued)

Mr. Santos made a motion, Mr. Moore seconded, to approve the motion to invite the following firms to interview with the Board for active U.S. small capitalization equity mandates: 1) Quantitative Management Associates, LLC, and 2) Systematic Financial Management, LP. The motion passed unanimously.

B. Recommendation as submitted by Jonathan Grabel, Chief Investment Officer, Jude Perez, Principal Investment Officer, Esmeralda Del Bosque, Investment Officer and Jeff Jia, Senior Investment Analyst: That the Board adopt the OPEB Master Trust Investment Policy Statement with the proposed revisions. (Memo dated March 15, 2018)

Messrs. Grabel, Perez, Jia, and Ms. Del Bosque were present and answered questions from the Board.

Mr. Santos made a motion, Mr. Kelly seconded, to approve the agenda item. The motion passed unanimously.

IX. REPORTS

A. Pension Trust Asset Allocation
Jon Grabel, Chief Investment Officer
Stephen McCourt, Meketa Investment Group
Timothy Filla, Meketa Investment Group
(Memo dated March 22, 2018)

Mr. Grabel and Messrs. McCourt and Filla of Meketa Investment Group were present and answered questions from the Board.

B. Board of Investments Offsite Tentative Agenda for July 2018
Jon Grabel, Chief Investment Officer
(Memo dated March 22, 2018)

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

IX. REPORTS (Continued)

The following items were received and filed:

C. Assembly Bill 2571 – Race and Gender Pay Equity Policy
Barry W. Lew, Legislative Affairs Officer
(For Information Only) (Memo dated April 2, 2018)

D. Selection of Securities Class Action Claims Filing Agent
Michael D. Herrera, Senior Staff Counsel
(For Information Only) (Memo dated April 2, 2018)

E. Amicus Curiae Brief in Metzler Investments GMBH, v. Corinthian Colleges, Inc., etc., 540 F.3d 1049 (9th Cir. 2008)
Michael D. Herrera, Senior Staff Counsel
(For Information Only) (Memo dated April 2, 2018)

F. Cyan, Inc., v. Beaver County Employees Retirement Fund
Johanna M. Fontenot, Senior Staff Counsel
(For Information Only) (Memo dated March 28, 2018)

G. Monthly Status Report on Board of Investments Legal Projects
Steven P. Rice, Chief Counsel
(For Information Only) (Memo dated April 3, 2018)

H. Securities Litigation Report for Calendar Year 2017
Michael D. Herrera, Senior Staff Counsel
(For Information Only) (Memo dated April 2, 2018)

I. Council of Institutional Investors Business Meeting and Public Funds Director Ballots
Scott Zdrazil, Senior Investment Officer
Dale Johnson, Investment Officer
(For Information Only) (Memo dated March 30, 2018)

J. Notice of Change of Ownership Structure RREEF America LLC
John McClelland, Principal Investment Officer
(For Information Only) (Memo dated March 27, 2018)

IX. REPORTS (Continued)

K. March 2018 Fiduciary Counsel Contact and Billing Report
Steven P. Rice, Chief Counsel
(Memo dated April 3, 2018) (Privileged and Confidential)
(Attorney-Client Communication/Attorney Work Product)

X. REPORT ON STAFF ACTION ITEMS

The Board requested for staff to review the Securities Litigation Policy. Lastly, the Board requested that Board of Investment related policies be added to Boardvantage for easy reference.

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

Mr. Grabel announced that Chad Timko has been promoted to Financial Analyst III position.

(Mr. Kelly left the meeting at 11:15 a.m.)

(Mr. Muir left the meeting at 11:30 a.m.)

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. Juggernaut Capital Partners IV, L.P.

Mr. Wagner, Mrs. Tilaye and Jose Fernandez of StepStone Group LP, provided a brief presentation and answered questions from the Board.

XII. EXECUTIVE SESSION (Continued)

Mr. Santos made a motion, Mr. Okum seconded, to approve staff's recommendation. The motion passed (roll call) with Messrs. Green, Moore, Okum, and Santos voting yes and Mrs. Sanchez and Mr. Schneider voting no.

The Board's decision and vote to approve an investment of up to $125 million in Juggernaut Capital Partners IV, L.P., was reported out in open session. Juggernaut Capital Partners IV, L.P is a private equity fund targeting small companies primarily in the United States with a focus in the healthcare/pharmaceuticals, consumer, and business services sectors.

B. Conference with Legal Counsel - Existing Litigation
(Pursuant to Paragraph (1) of Subdivision (d) of Government Code Section 54956.9)

1. LACERA v. Justin Caldbeck
Santa Clara County Superior Court,
Case No. 17CV316347
Counsel: Glaser Weil

The Board met in Executive Session pursuant to Paragraph (1) of Subdivision (d) of California Government Code Section 54956.9. There was nothing to report at this time.

2. LACERA's Amicus Brief filed in *Cal Fire Local 2881 v. CalPERS et al.*,
California Supreme Court
Case No. S239958
Counsel: Greines, Martin, Stein & Richland LLP

XII. EXECUTIVE SESSION (Continued)

The Board met in Executive Session pursuant to Paragraph (1) of Subdivision (d) of California Government Code Section 54956.9. There was nothing to report at this time.

XIII. ADJOURNMENT

There being no further business to come before the Board, the meeting was adjourned at 12:09 p.m.

WAYNE MOORE, SECRETARY

DAVID GREEN, CHAIR

L//.CERA

April 30, 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 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.

Business as Usual

Any time there is a major change in organizational leadership there is a heightened risk something can go wrong. The ability to weather major change is an indication of the overall strength of an organization's core values, its governance structure, and most assuredly its greatest resources – its staff members. It's been six months since our former CEO retired and we thought this month would be a good opportunity to take the pulse of LACERA and see how we managed the risk.

We are pleased to report it's business as usual at LACERA, as we continue to Produce, Protect, and Provide the Promised Benefits to our members. Since October 2017 we:

- Welcomed 2,851 new members
- Processed 347 new disability applications
- Presented 303 disability applications to the Board with average processing time of 14 months
- Answered 60,101 calls in Member Services Call Center
- Answered 28,577 calls in RHC Call Center
- Met with 11,235 members in our Member Service Center
- Held 175 workshops throughout the County
- Retired 2,137 members
- Added 34 survivors seamlessly to the payroll
- Processed 17 Active Death Survivors to the payroll
- Provided 1,081 lump sum death benefit payments to survivors and beneficiaries

- Paid a total of $1.7 billion in benefits
- Processed 155,515 documents (or 513,719 pages) through our Document Processing Center
- Conducted 10 new recruitments
- Filled 19 vacant positions
- Held a well-received Board Offsite
- Generated the FY 2018-19 strategic spending plan (budget) for your review
- Implemented our search plan for a new CEO

With the exception of the implementation of our search plan for a new CEO, these are just a few of the things that we do day in and day out. They do not represent out of the ordinary accomplishments. Instead they represent business as usual.

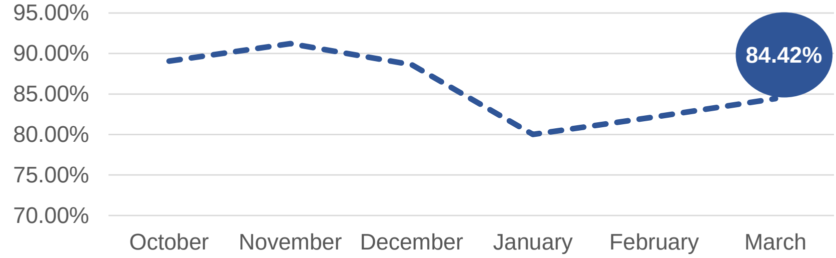
I would like to take a moment to recognize all LACERA staff members for their commitment to LACERA's values and our mission. We are operating as we always have with professionalism and dedication to our members and that is a testament to the quality of our staff members. Finally, I would like to thank the Boards for your continued faith in our staff members' abilities.

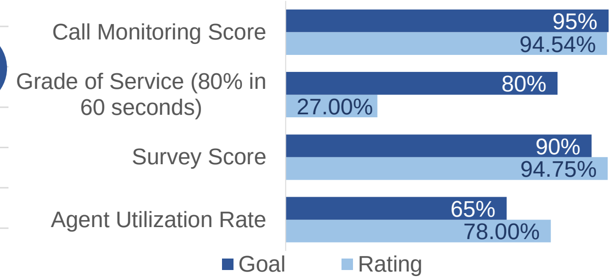
RH: jp
CEO report May 2018.doc
Attachments

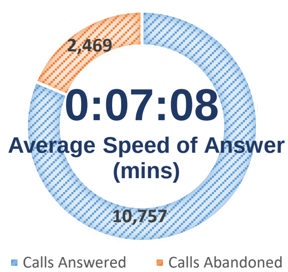
Striving for Excellence in Service

Outreach Attendance	Outreach Events	Outreach Satisfaction	Member Service Center	Member Services Calls
2,939	**29**	**96.5%**	**100.0%**	**13,226**
27,719 Year-to-Date	311 Year-to-Date	1.7% Change Since Last Mo.	0.0% Change Since Last Mo.	13,404 3 Mo. Avg.

Member Services



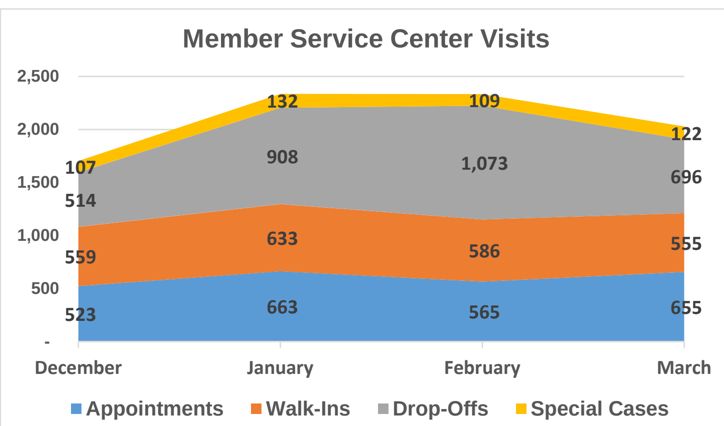


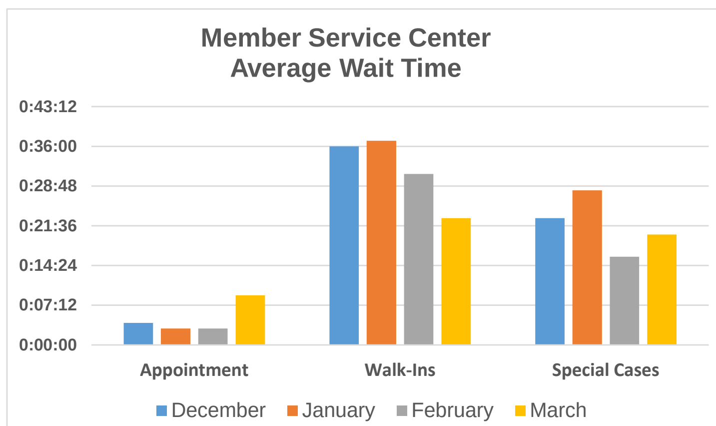


Top Calls

1. Workshop Info/Appointments Inquiry
2. Retirement Counseling: Process Overview
3. Taxes: Explanation of Deductions/Rates

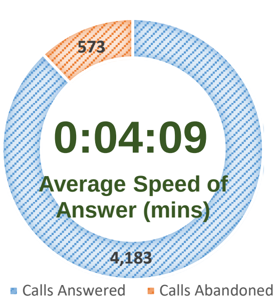
390 Emails
5:45 hours
Avg. Response Time (ART)





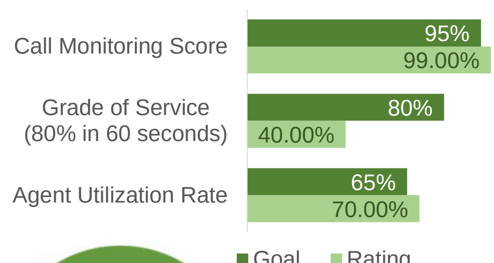
*Drop Off Wait Time: No Waiting

Retiree Healthcare



Top Calls

1. Part B Premium Reimbursement
2. Medical Benefits - General Inquiries
3. Medical-New Enroll./Change/Cancel



194 Emails
1 day
Avg. Response Time (ART)

Striving for Excellence in Service (Continued)

Disability

Applications

586 On Hand

75	Received
436	Year-to-Date
0	Re-opened
1	Year-to-Date
47	To Board - Initial
365	Year-to-Date
3	Closed
50	Year-to-Date
611	In Process
611	Year-to-Date

Appeals

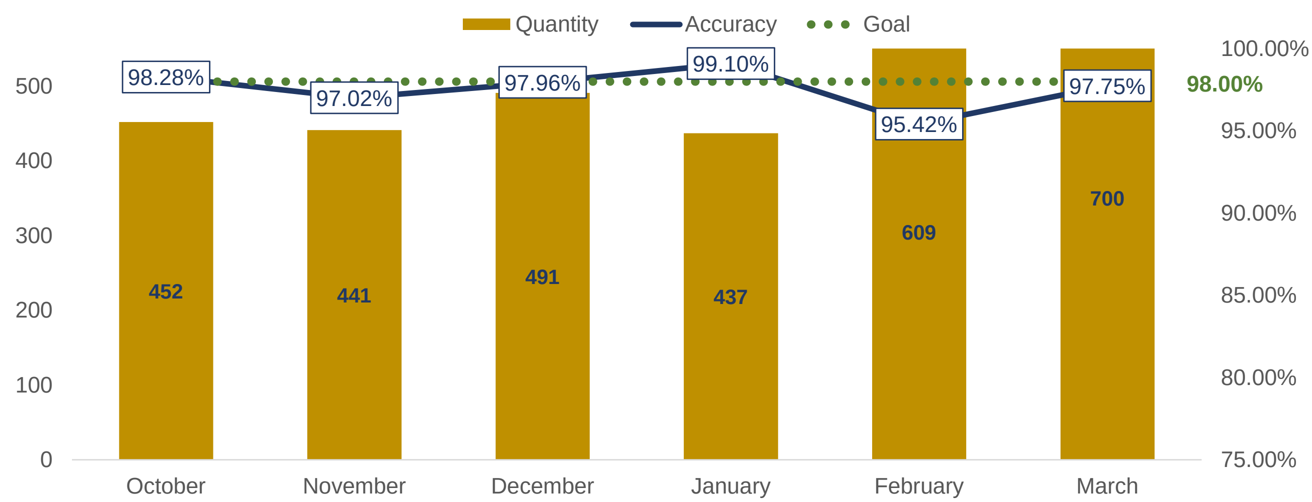
116 On Hand

1	Received
23	Year-to-Date
2	Admin Closed/Rule 32
20	Year-to-Date
0	Referee Recommended
9	Year-to-Date
1	Revised/Reconsidered for Granting
5	Year-to-Date
114	In Process
114	Year-to-Date

Striving for Excellence in Quality

Quality Assurance and Metrics

Audits of Retirement Elections, Payment Contracts, and Data Entry



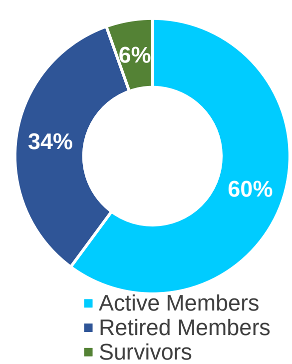
March 2018

97.75%

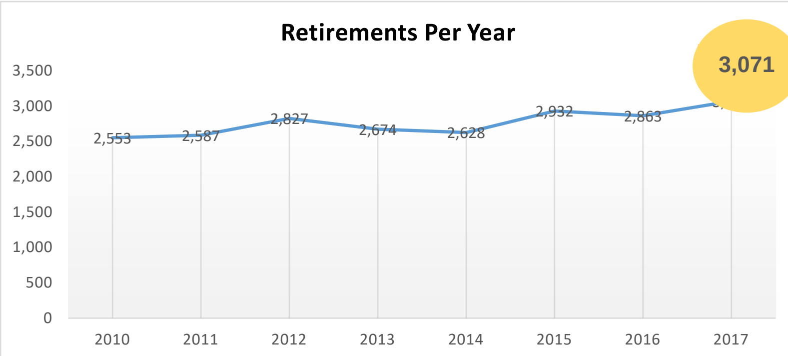
Retirement Elections		Payment Contracts		Data Entry	
494	Samples	**116**	Samples	**90**	Samples
97.73%	Accuracy	**98.22%**	Accuracy	**97.30%**	Accuracy

Member Snapshot

	Members as of 05/02/18				
	Plan	**Active**	**Retired**	**Survivors**	**Total**
General	**Plan A**	140	17,820	4,559	**22,519**
	Plan B	44	692	68	**804**
	Plan C	58	425	63	**546**
	Plan D	43,745	14,085	1,269	**59,099**
	Plan E	18,690	12,274	1,067	**32,031**
	Plan G	22,559	9	1	**22,569**
	Total General	**85,236**	**45,305**	**7,027**	**137,568**
Safety	**Plan A**	5	5,504	1,581	**7,090**
	Plan B	10,304	5,291	265	**15,860**
	Plan C	2,450	5	0	**2,455**
	Total Safety	**12,759**	**10,800**	**1,846**	**25,405**
TOTAL MEMBERS		**97,995**	**56,105**	**8,873**	**162,973**

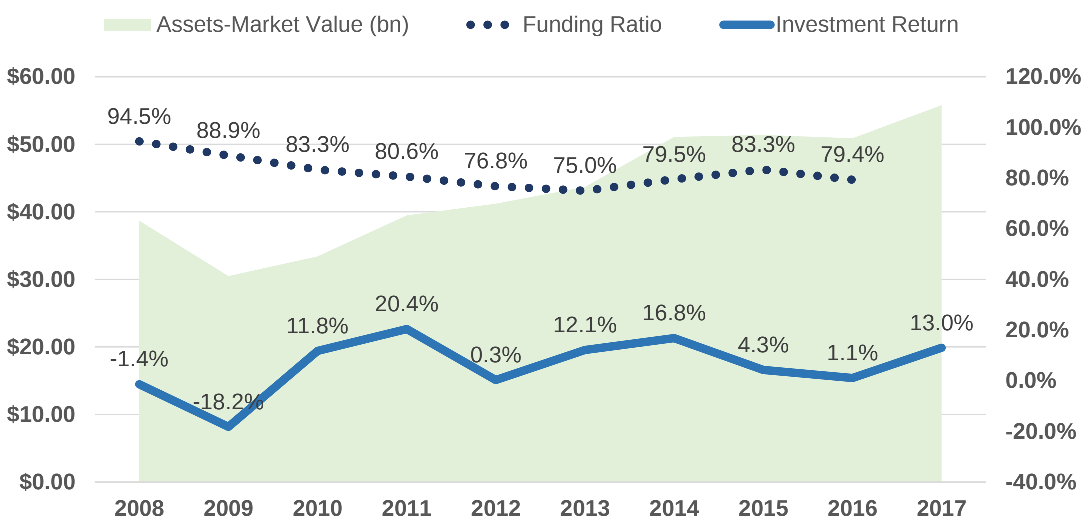


Member Snapshot (Continued)



	Healthcare Program (YTD)			Healthcare Enrollments (Monthly)	
	Employer	Member			
Medical	$354.8m	$30.1m		Medical	49,198
Dental	$31.8m	$3.3m		Dental	50,334
Part B	$42.9m	xxxx		Part B	32,995
				LTC	689
Total	**$429.6m**	**$33.3m**		**Total**	**133,216**

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*

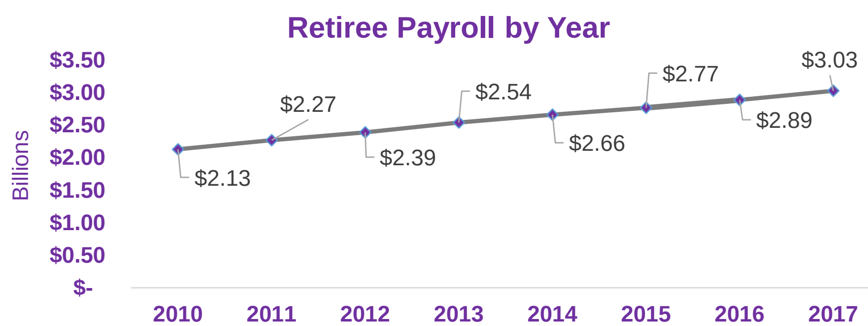
Contributions (as of 6/30/17)

	Employer	Member
Annual Add	$1331.4m	$526.6m
% of Payroll	19.7%*	6.65%*

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

Retired Members Payroll

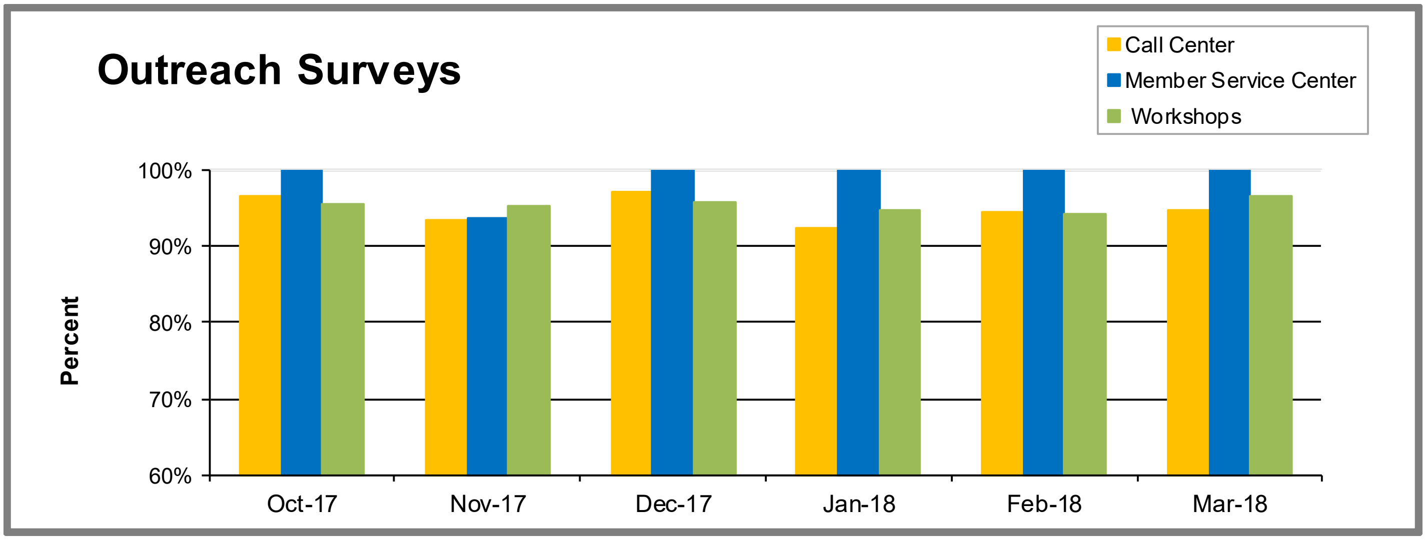
Monthly Payroll	268.4m
Payroll YTD	2.4b
New Retired Payees Added	327
Seamless %	100.00%
New Seamless Payees Added	2,641
Seamless YTD	99.73%
By Check %	4.00%
By Direct Deposit %	96.00%

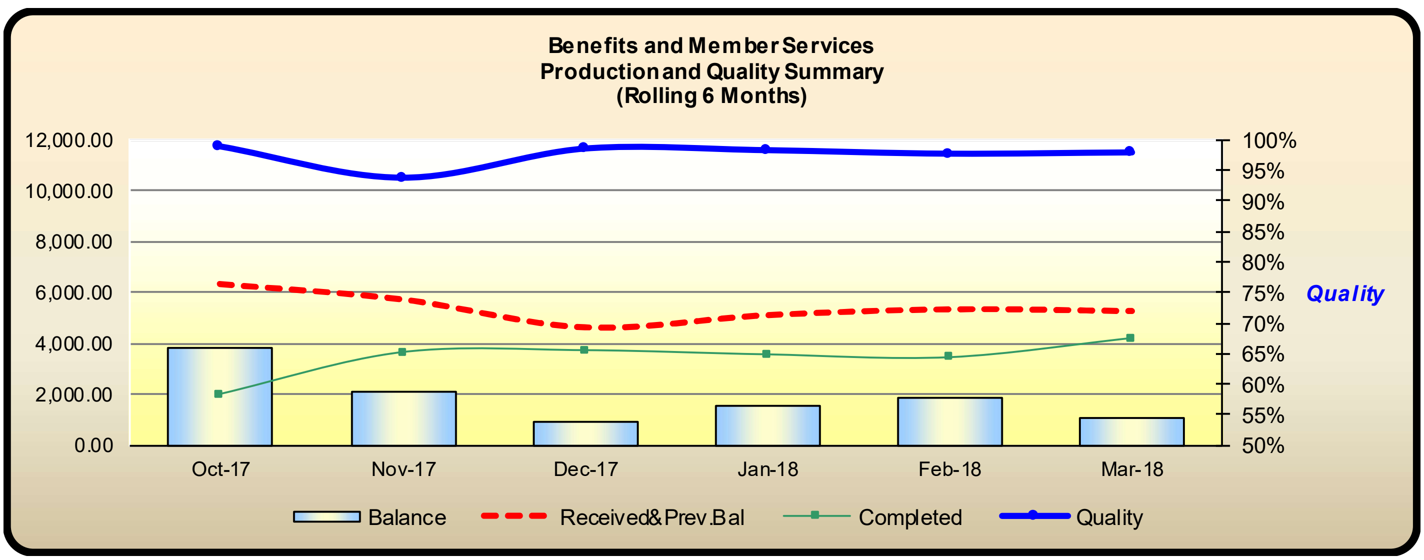


MORE COMING SOON!

LACERA's KEY BUSINESS METRICS

OUTREACH EVENTS AND ATTENDANCE				
Type	# of WORKSHOPS		# of MEMBERS	
	Monthly	YTD	Monthly	YTD
Benefit Information	6	113	312	6,208
Mid Career	1	6	52	368
New Member	15	113	401	2,471
Pre-Retirement	5	66	83	1,726
General Information	1	5	40	407
Retiree Events	1	8	23	728
Member Service Center	Daily	Daily	2,028	15,811
TOTALS	**29**	**311**	**2,939**	**27,719**





Member Services Contact Center			RHC Call Center		Top Calls
Overall Key Performance Indicator (KPI)	84.42%				
Category	**Goal**	**Rating**			Member Services
Call Center Monitoring Score	95%	94.54%	99%	1)	Workshop Info\Appointments: Inquiry
Grade of Service (80% in 60 seconds)	80%	27%	40%	2)	Ret. Counseling: Process Overview
Call Center Survey Score	90%	94.75%	xxxxx	3)	Taxes-Explanation of Deductions/Rates
Agent Utilization Rate	65%	78%	70%		
Number of Calls		13,226	4,756		Retiree Health Care
Number of Calls Answered		10,757	4,183	1)	Part B Premium Reimbursement
Number of Calls Abandoned		2,469	573	2)	Medical Benefits - General Inquiries
Calls-Average Speed of Answer (hh:mm:ss)		00:07:08	04:09:00	3)	Medical-New Enroll./Change/Cancel
Number of Emails		390	194		
Emails-Average Response Time (hh:mm:ss)		05:45:36	(Days) 1		Adjusted for weekends

Metrics YTD from July 1, 2017 through March 31, 2018

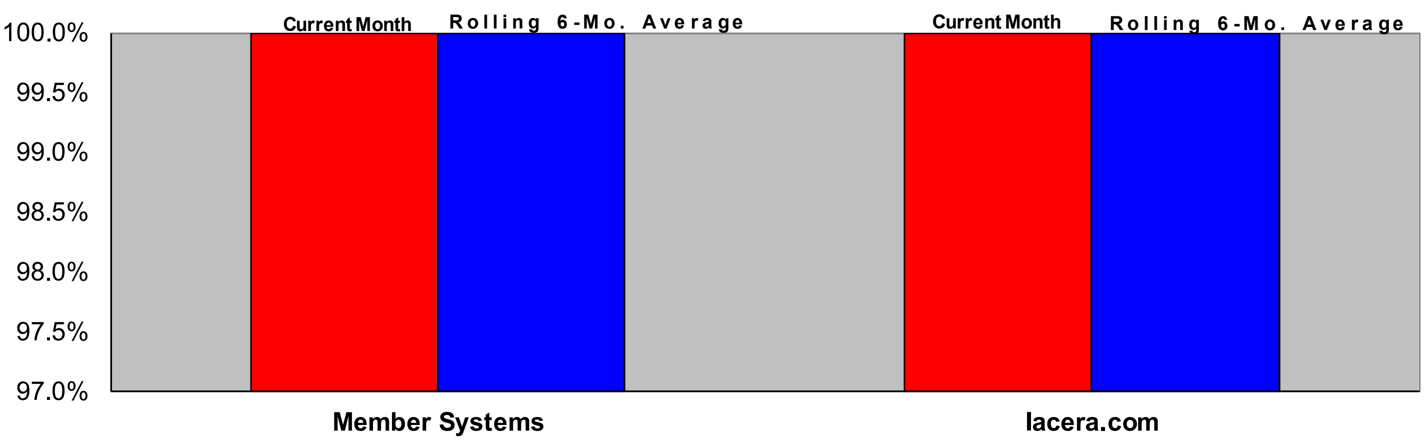
LACERA's KEY BUSINESS METRICS

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	586	xxxxxxx		On Hand	116	xxxxxxx
Received	75	436		Received	1	23
Re-opened	0	1		Administratively Closed/Rule 32	2	20
To Board – Initial	47	365		Referee Recommendation	0	9
Closed	3	50		Revised/Reconsidered for Granting	1	5
In Process	**611**	**611**		**In Process**	**114**	**114**

SYSTEMS AVAILABILITY - MARCH 2018



Active Members as of 5/2/18	
General-Plan A	140
General-Plan B	44
General-Plan C	58
General-Plan D	43,745
General-Plan E	18,690
General-Plan G	22,559
Total General	**85,236**
Safety-Plan A	5
Safety-Plan B	10,304
Safety-Plan C	2,450
Total Safety	**12,759**
TOTAL ACTIVE	**97,995**

Retired Members/Survivors as of 5/2/18	Retirees	Survivors	Total
General-Plan A	17,820	4,559	22,379
General-Plan B	692	68	760
General-Plan C	425	63	488
General-Plan D	14,085	1,269	15,354
General-Plan E	12,274	1,067	13,341
General-Plan G	9	1	10
Total General	**45,305**	**7,027**	**52,332**
Safety-Plan A	5,504	1,581	7,085
Safety-Plan B	5,291	265	5,556
Safety-Plan C	5	0	5
Total Safety	**10,800**	**1,846**	**12,646**
TOTAL RETIRED	**56,105**	**8,873**	**64,978**

Retired Members	
Monthly Payroll	268.40 Million
Payroll YTD	2.4 Billion
No. Monthly Added	327
Seamless %	100.00%
No. YTD Added	2,641
Seamless YTD %	99.73%
Direct Deposit %	96.00%

Health Care Program (YTD Totals)	Employer Amount	Member Amount
Medical	354,869,774	30,053,043
Dental	31,823,683	3,279,381
Med Part B	42,907,803	xxxxxxxxxx
Total Amount	**$429,601,260**	**$33,332,424**

Health Care Program Enrollments (Monthly)	
Medical	49,198
Dental	50,334
Med Part B	32,995
Long Term Care (LTC)	689

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.

Metrics YTD from July 1, 2017 through March 31, 2018

Date	Conference
June, 2018	
4-6	National Association of Securities Professionals (NASP) 29th Annual Pension & Financial Services Conference Houston, TX
8	CALAPRS (California Association of Public Retirement Systems) Round Table – Trustees Hilton Oakland Airport
8	CALAPRS (California Association of Public Retirement Systems) Round Table – Benefits Hilton Oakland Airport
11-13	2018 MoneyConf – “The Future of Money” Dublin, Ireland
11-13	Trustee Leadership Forum for Retirement Security at the Harvard Kennedy School Cambridge, MA
13	National Association of Corporate Directors (NACD) – Future Trends Event Austin, TX
20-22	AHIP (America’s Health Insurance Plans) Institute San Diego, CA
25-27	IFEBP Public Employee Benefits Institute Las Vegas, NV
25-28	International Corporate Governance Network (ICGN) Annual Conference Milan, Italy
28-29	5th Annual Hispanic Heritage Foundation Investors Group Conference New York, NY
July, 2018	
11-13	Pacific Pension Institute (PPI) North American Summer Roundtable La Jolla, CA
12-13	National Association of Corporate Directors (NACD) Technology Symposium Palo Alto, CA
16-18	2018 Fortune Brainstorm Tech Conference Aspen, CO
August, 2018	
14-15	ISMG Security Summit New York, NY
27-30	CALAPRS (California Association of Public Retirement Systems) Principles of Pension Management for Trustees Pepperdine University

L//.CERA

April 30, 2018

TO: Each Member
Board of Investments

FROM: Jon Grabel
Chief Investment Officer

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

The following memorandum and attachments constitute the CIO report for March 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. **Attachment 4** summarizes compliance regarding asset allocations, portfolio guidelines, and other policies across the Total Fund for the most recent quarter.

PERFORMANCE

The Total Fund finished with an approximate investment balance of $55.6 billion.[1] The month had a negative net return of -0.11%. Fiscal year to date, the Total Fund has gained 7.4%.

The OPEB Master Trust generated a negative return in March. For the month, the L.A. County, LACERA, and Superior Court funds all had net losses of -1.5%. Fiscal year to date, L.A. County, LACERA, and Superior Court funds had respective net gains of 8.7%, 8.8%, and 8.2%.

ATTRIBUTION

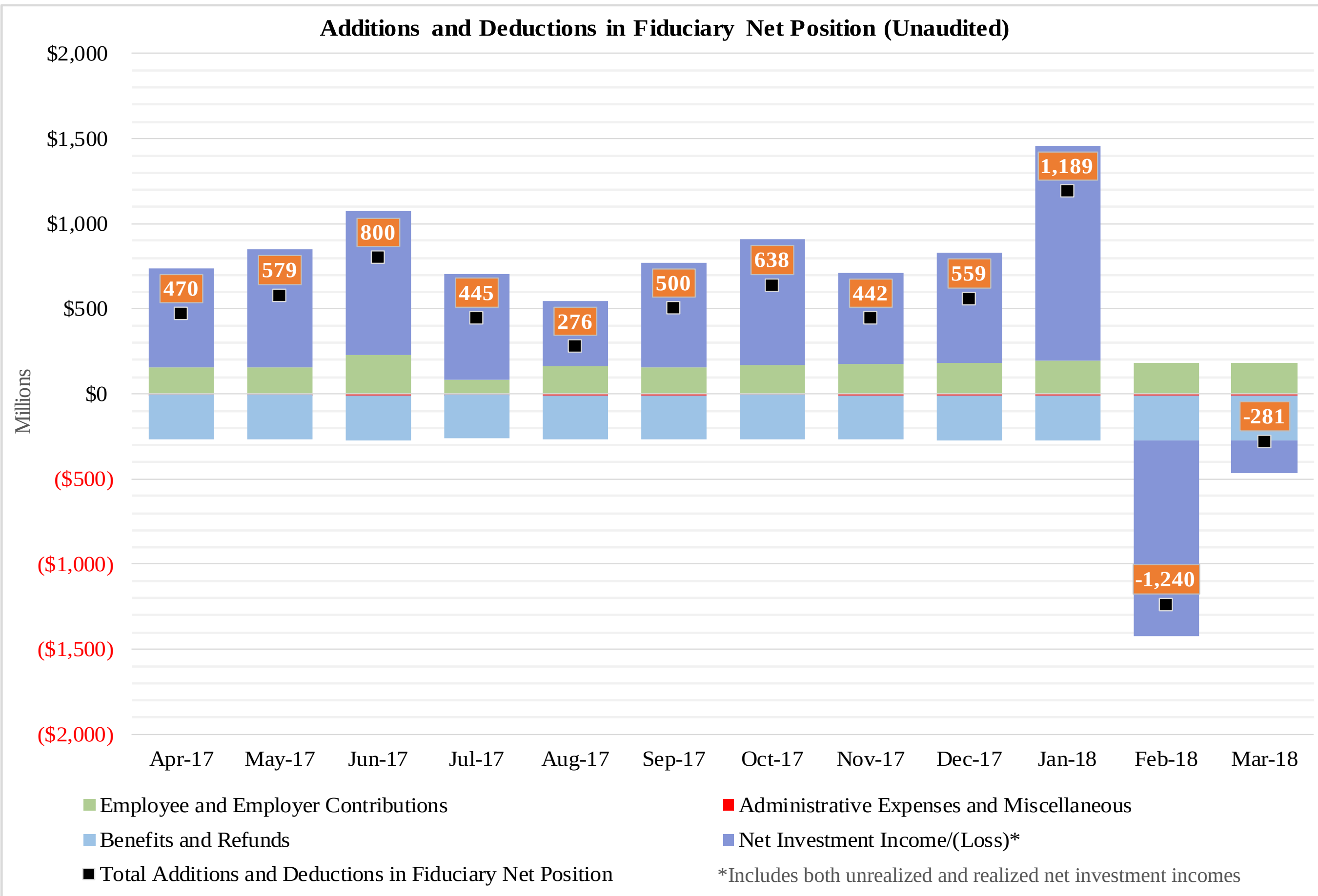
In the upcoming months, as LACERA's analytical systems and practices are enhanced, this section will discuss risk and return attribution at the Total Fund level.

[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.

CASH FLOWS, CASH BALANCES, AND FIDUCIARY NET POSITION[2]

As illustrated in Chart 1 below, included to provide detail on the sources of monthly transactional flows, the Plan's fiduciary net position decreased by $281 million during the month of March. Over the last twelve months, the Plan's net position has increased by $4.4 billion.

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



With respect to cash, LACERA finished the month of March with approximately $1.5 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 $1.4 billion of internal operating cash and short-term investments across all of its operating accounts and LACERA's external investment managers held a further $661 million in cash and short-term investments.

---

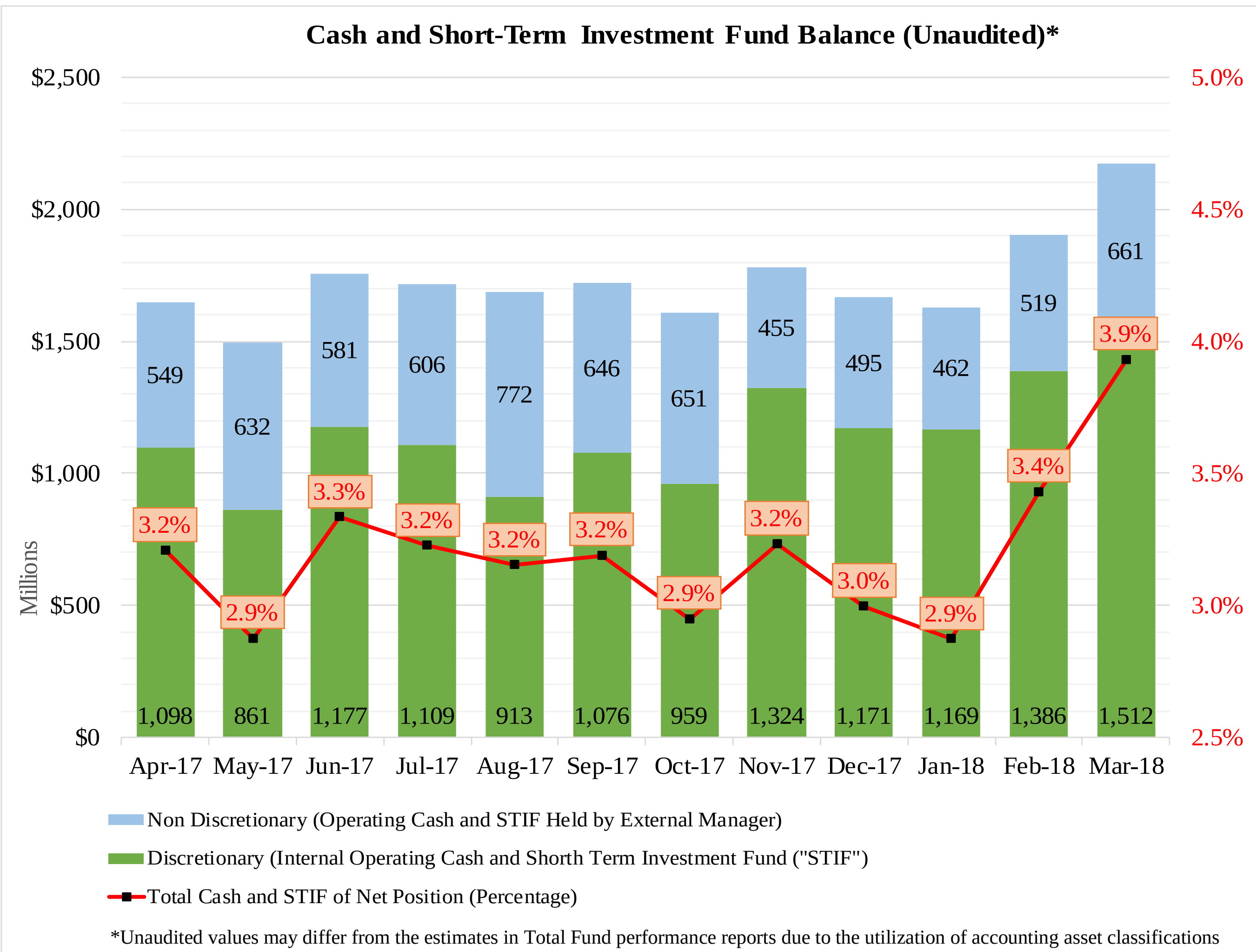
[2] LACERA's fiduciary net position is an unaudited snapshot of account balances as of the preceding month end and reflects assets available for future payments to retirees and their beneficiaries, including investment fund assets, as well as any liabilities owed as of the report date. The Plan's net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

In total, LACERA held approximately $2.2 billion in cash and short-term investment funds at the end of March, which can be categorized as follows:

- Non-discretionary (operating cash and Short Term Investment Fund ("STIF") balances held by external investment managers): $661 million
- Discretionary (internal operating cash and STIF balances accessible for the daily operating needs of the plan): $1.5 billion

The Fund's total cash and short-term investment fund balance represented 3.4% of the Plan's unaudited net position, while its discretionary cash and short-term investment fund balance represented 2.5% 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 March, Private Equity and Real Estate had net investment distributions (cash inflows) totaling $38.3

million. Public Equity, Fixed Income and Hedge Funds, had net investment contributions (cash outflows) totaling -$961.4 million.

Table 1: Asset Category Cash Flows

Asset Category and Activity	**$ in Millions**	**Cash Impact**
Private Equity		
Distributions	$71.5	Inflow
Capital calls	-$71.3	Outflow
Private Equity	*$0.2*	*Net Inflow*
Public Equity: U.S.		
Distributions	$12.0	Inflow
Contributions	-$15.0	Outflow
U.S. Equity	*-$3.0*	*Net Outflow*
Public Equity: Non-U.S.		
Distributions	$0.0	Inflow
Contributions	$0.0	Outflow
Currency hedge	-$51.3	Outflow
Non-U.S. Equity	*-$51.3*	*Net Outflow*
Fixed Income		
Distributions	$150.0	Inflow
Contributions	-$943.0*	Outflow
Fixed Income	*-$793.0*	*Net Outflow*
Commodities		
No activity	$0.0	Net Flow
Commodities	*$0.0*	*n/m*
Hedge Funds		
Distributions	$10.9	Inflow
Contributions	$125.0	Outflow
Hedge Funds	*-$114.1*	*Net Outflow*
Real Estate		
Separate account net activity	$51.2	Inflow
Commingled fund net activity	-$13.1	Outflow
Real Estate	*$38.1*	*Net Inflow*

*Consolidation of the Active Core Fixed Income & Intermediate Credit Index to the Bloomberg Barclays Aggregate Index Fund

The Public Equity asset class realized a -$51.3 million cash outflow from the Non-U.S. Equity currency-hedging program. LACERA's Asset Allocation Policy requires that the developed markets Non-U.S. Equity allocation, currently $12.8 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 March realized a loss and -$51.3 million was transferred from cash to LACERA's passive currency overlay account. The hedged Non-U.S. Equity portfolio lost -1.8% net of fees, or approximately -$167.3 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 four 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. Candidate firms have been identified in conjunction with LACERA's Hedge Fund Advisors. Responses have been submitted to LACERA. Staff will conduct due diligence and possibly make recommendations to the Board in the second and third quarters of 2018.

The second search currently underway is an RFI for active U.S. small capitalization equity investment management services. The RFI was issued in July with responses due in August. The review process is currently in the due diligence phase and manager interviews are scheduled for the May Board meeting.

The third search is an RFP issued for active U.S. and non-U.S. public equity emerging managers to oversee direct mandates in separate accounts. The RFP was issued in October and manager responses were due in November. The review process is underway and a recommendation is expected to be made in the third quarter of 2018.

The fourth search is for a private equity secondary advisor. The Board has approved minimum qualifications for this external service provider and the RFP was released in January 2018. The review process is underway and a recommendation is scheduled for the May Board meeting.

UPDATES

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

Total Fund

- In conjunction with Meketa, a Total Fund strategic asset allocation study is in process with BOI presentations scheduled monthly through the remainder of the fiscal year.
- The asset allocation glide path previously approved by the Board continues to be implemented.

Public Equity

- Staff is finalizing contract negotiations and preparing for conversion of public market commingled strategies into separate account structures.

Private Equity

- A personnel search has been launched for a Senior Investment Officer to focus on secondary activity, co-investments, and alternative private equity structure. Interviews will be conducted in early May.
- Staff and JPMorgan staff 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 Board by the end of the calendar year.

Fixed Income

- The structural changes and manager transitions approved by the Board in February have been implemented. Total transition costs of 6 bps were in line with expectations.
- A review of the securities lending program is scheduled for the June meeting of the Fixed Income/Hedge Funds/Commodities Committee.

Real Estate

- Staff is developing the draft for the real estate investment platform for fiscal year 2018-2019.
- Structure review recommendations were presented to the Real Estate Committee in April and are being advanced to the Board for Adoption.

Commodities

- A structure review is scheduled for the September meeting of the Fixed Income/Hedge Funds/Commodities Committee.

Hedge Funds

- A direct portfolio is being built with individual manager recommendations occurring throughout 2018.

Corporate Governance

- The recently adopted *Corporate Governance Principles* policy is being translated into LACERA's proxy voting platform to implement the new policy.
- Assessment of public markets managers' ESG practices continues to be refined, with takeaways integrated into LACERA's public market manager searches and monitoring.
- Staff is developing forthcoming recommendations for consideration following the Corporate Governance Committee April 2018 meeting regarding the engagement practices and priorities.

OPEB

- Transition to the updated asset allocation will be completed by third quarter 2018.
- The BOI adopted an updated Investment Policy Statement at the April BOI.

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. See attachment 4.

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.

APRIL FORECAST

In April, there are several notable capital market occurrences. The yield on the ten-year U.S. Treasury note topped 3% for the first time since 2014 and the yield on the two-year U.S. Treasury note topped 2.5% for the first time since 2008. The flattening of the curve is a product of short-term rates rising while long-term rates are increasing at a slower place, which some economists often interpret as a signal that a recession could take place in the near future. Continuing the trend from February and March, equity markets continue to have elevated volatility compared to the prior several years. Unlike equities, credit and commodity markets are not experiencing meaningful spikes in volatility. Corporate earnings season begin and initial results from the first quarter indicate continued broad economic strength. Higher inflation has been a topic on earnings conference calls across several industries. Companies such as Caterpillar, 3M, Kimberly-Clark, and Procter & Gamble discussed higher raw material inflation. Interest rate and inflation levels are likely to remain closely watched by investors.

The increased level of market volatility and the broader swings in public assets are making for a challenging April. As of publication of this report, the Total Fund will likely be marginally negative or flat for the month.

Attachments

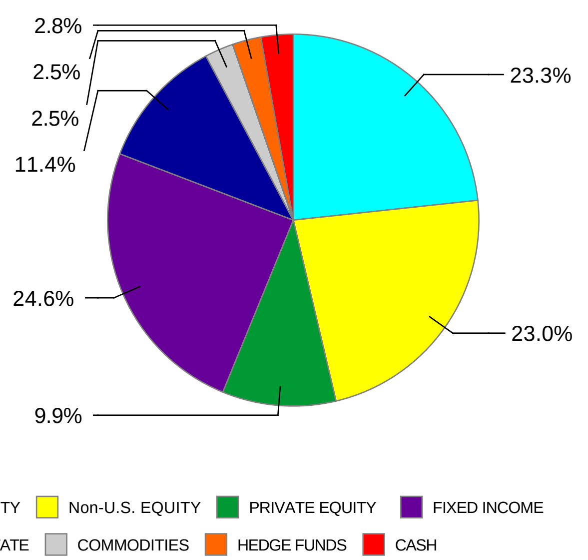
JG:cq

LACERA'S *ESTIMATED* TOTAL FUND

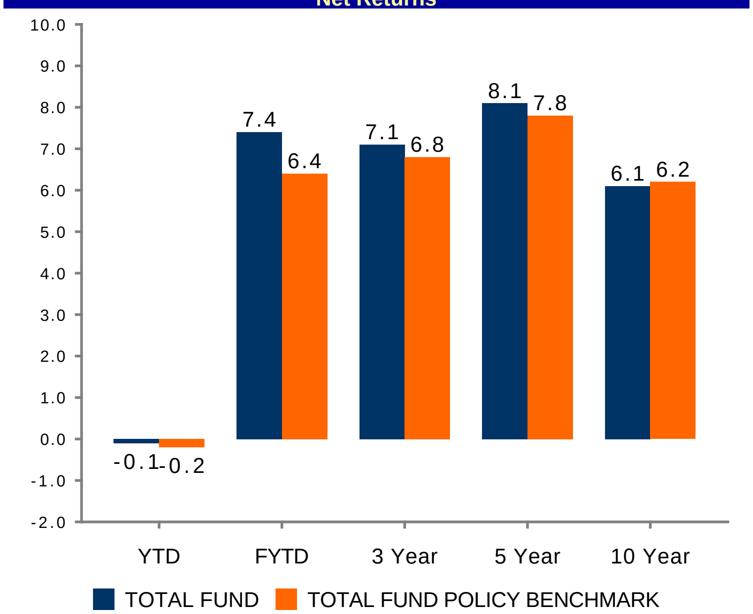
March 31, 2018

	Market Value (millions)	Actual % Total Fund	Target % Total Fund	YTD	FYTD	3 Year	5 Year	10 Year
				TOTAL RETURNS (NET)				
U.S. EQUITY	**12,947.3**	**23.3**	**22.4**	**-0.7**	**10.1**	**9.9**	**12.9**	**9.6**
RUSSELL 3000 (DAILY)				-0.6	10.5	10.2	13.0	9.6
Non-U.S. EQUITY (Hedged)	**12,793.5**	**23.0**	**21.0**	**-1.9**	**9.1**	**6.9**	**7.7**	**3.8**
CUSTOM MSCI ACWI IMI N 50%H				-1.7	9.1	6.4	7.3	3.6
PRIVATE EQUITY [1]	**5,504.6**	**9.9**	**10.0**	**5.3**	**16.3**	**12.7**	**15.2**	**11.3**
PRIVATE EQUITY TARGET [2]				3.3	9.7	13.0	13.3	10.5
FIXED INCOME	**13,699.9**	**24.6**	**26.6**	**-0.9**	**1.0**	**2.8**	**2.9**	**5.1**
FI CUSTOM INDEX				-1.4	-0.0	1.7	2.2	4.1
REAL ESTATE [1]	**6,330.2**	**11.4**	**11.0**	**1.5**	**5.4**	**9.3**	**9.3**	**3.1**
REAL ESTATE TARGET				1.9	5.4	9.9	10.8	6.2
COMMODITIES	**1,398.0**	**2.5**	**2.8**	**-0.2**	**9.0**	**-1.7**	**-6.9**	**-6.2**
Bloomberg Commodity Index Total Return				-0.4	6.9	-3.2	-8.3	-7.7
HEDGE FUNDS [3]	**1,366.5**	**2.5**	**4.2**	**2.0**	**5.0**	**3.1**	**4.7**	
HEDGE FUND CUSTOM INDEX [3]				1.5	4.6	5.5	5.3	
CASH	**1,564.8**	**2.8**	**2.0**	**0.4**	**0.9**	**0.9**	**0.6**	**0.8**
Citigroup 6 M Treasury Bill Index				0.3	0.9	0.6	0.4	0.4
TOTAL FUND [1]	**55,604.9**	**100.0**	**100.0**	**-0.1**	**7.4**	**7.1**	**8.1**	**6.1**
TOTAL FUND POLICY BENCHMARK				-0.2	6.4	6.8	7.8	6.2

Asset Allocation



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

Periods greater than 1-year are annualized

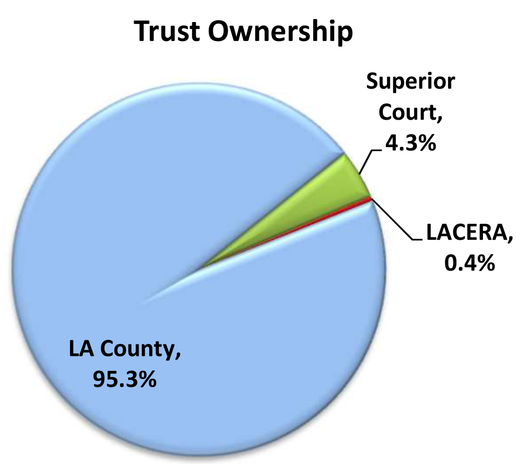
Limited Access
04/17/2018 04:39:50 PM

Attachment 2

OPEB MASTER TRUST

March 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	$856.4	95.3%	-1.50	-0.63	8.69	12.57	7.39	6.07	5.88
	Net				-1.50	-0.64	8.66	12.52	7.35	6.03	5.84
	Net All				-1.51	-0.65	8.63	12.49	7.28	5.98	5.80
LACERA:	Gross	Feb-2013	$3.3	0.4%	-1.46	-0.61	8.79	12.69	7.45	6.11	5.92
	Net				-1.47	-0.62	8.76	12.65	7.41	6.07	5.88
	Net All				-1.49	-0.67	8.27	11.97	6.74	5.66	5.49
Superior Court:	Gross	Jul-2016	$38.6	4.3%	-1.52	-0.64	8.26	11.85	---	---	11.27
	Net				-1.52	-0.65	8.22	11.81	---	---	11.24
	Net All				-1.53	-0.67	8.10	11.65	---	---	10.28
TRUST OWNERSHIP TOTAL:			**$898.3**	**100.0%**							



Allocation		Inception Date	Market Value (millions)	Allocation %	Month	3 Month	FYTD	1 Year	3 Year	5 Year	Since Incept.
OPEB Global Equity:	Gross	Mar-2014	$699.8	80.6%	-1.92	-0.90	10.50	15.32	8.62	---	7.76
	Net				-1.92	-0.91	10.47	15.27	8.58	---	7.72
Benchmark: MSCI ACWI IMI Net					-1.87	-0.89	10.35	15.03	8.27	---	7.41
Excess Return (Gross - Benchmark)					*-0.05*	*-0.01*	*0.15*	*0.28*	*0.35*	*---*	*0.36*
OPEB Enhanced Cash:	Gross	Feb-2013	$168.1	19.4%	0.15	0.39	1.06	1.41	0.97	0.73	0.72
	Net				0.15	0.37	1.03	1.36	0.92	0.67	0.66
Benchmark: Citigroup 6 M T-Bill Index					0.13	0.35	0.90	1.09	0.57	0.37	0.36
Excess Return (Gross - Benchmark)					*0.02*	*0.04*	*0.16*	*0.32*	*0.40*	*0.37*	*0.35*

These are preliminary returns

Periods greater than 1-year are annulized

ATTACHMENT 3

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 information regarding an active U.S. small capitalization equity mandate:

AB L.P.
Aberdeen Asset Management Inc
American Century Investment Management, Inc.
Aristotle Capital
Brandywine Global Investment Management, LLC
Brown Advisory LLC
ClearBridge Investments
Cooke & Bieler, LP
Cornerstone Capital Management Holdings LLC
Cortina Asset Management
Cramer Rosenthal McGlynn, LLC
FIAM LLC
Fisher Investments
Hotchkis and Wiley Capital Management, LLC
Investment Counselors of Maryland, LLC
Kayne Anderson Rudnick Investment Management, LLC
LMCG Investments, LLC
Macquarie Investment Management
Martingale Asset Management
Matarin Capital
Mesirow Financial Investment Management Inc.
MFS Institutional Advisors, Inc
PanAgora Asset Management, Inc
Quantitative Management Associaties LLC
Ranger Investment Management
River Road Asset Management, LLC
Rothschild Asset Management Inc
Systematic Financial Management, L.P.
The Boston Company Asset Management LLC
Tributary Capital Management, LLC
Victory Capital Management Inc
Voya Investment Management
Wellington Management Company LLP
Wells Capital Management, Inc.

Westfield Capital Management Company, L.P.
William Blair Investment Management, LLC
Ziegler Capital Management, LLC

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
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

The following firms have responded to a request for proposal regarding a private equity secondary advisor:

Campbell Lutyens & Co. Inc.
Citigroup
Credit Suisse
Elm Capital USA Ltd
Evercore Group L.L.C.
Greenhill Cogent, LP
Houlihan Lokey
Lazard
Melting Point Solutions
Park Hill Group
Setter Capital, Inc.
Triago Americas, Inc.

JG: cq

Compliance Monitor* - March 2018

This report highlights operational and compliance metrics monitored by the Investment Division

	Quarterly Review Status	# Advisory	Notes
PUBLIC MARKETS			
U.S. Equity			
Asset Allocation Policy Compliance	✓	1	Passive exposure is above the 75% allocation range by 1.6%
Investment Guideline Compliance	✓		
Emerging Manager Program	✓		
# of Sudan/Iran Holdings Held by Managers	✓		
Non - U.S. Equity			
Asset Allocation Policy Compliance	✓		
Investment Guideline Compliance	✓		
# of Sudan/Iran Holdings Held by Managers	✓	5	5 issuers held representing $17.8 mm in market value
Fixed Income			
Asset Allocation Policy Compliance	✓		
Investment Guideline Compliance	✓		
Emerging Manager Program	✓		
# of Sudan/Iran Holdings Held by Managers	✓	5	5 issuers held representing $38.1 mm in market value
Commodities			
Asset Allocation Policy Compliance	✓		
Investment Guideline Compliance	✓		
# of Sudan/Iran Holdings Held by Managers	✓	1	1 issuer held representing $2.0 mm in market value
Securities Lending			
Investment Guideline Compliance	✓		
$ Value on Loan	✓	1	GSAL $726.6 mm; State Street $1,040.5 mm
$ Value of Collateral	✓	1	GSAL $742.7 mm; State Street $1,110.2 mm
Total Income YTD	✓	1	GSAL $806 K; State Street $725 K
Proxy Voting			
Number of Meetings Voted	✓	1	170 meetings voted
Tax Reclaims			
Total Paid Reclaims YTD	✓	1	$551 dollars
Total Pending Reclaims	✓	1	$1.7 mm
PRIVATE MARKETS			
Real Estate (As of 12/31/2017)			

Compliance Monitor* - March 2018

This report highlights operational and compliance metrics monitored by the Investment Division

	Quarterly Review Status	# Advisory	Notes
Asset Allocation Policy Compliance	✓		
Guideline Compliance by Strategy (Core/Non-Core)	✓		
Guideline Compliance by Manager	✓		
Guideline Compliance by Property Type	✓		
Guideline Compliance by Geographic Location	✓	1	Western Region is above target by 3.4%
Guideline Compliance by Leverage	✓		
Private Equity (As of 12/31/2017)			
Asset Allocation Policy Compliance	✓		
Guideline Compliance by Strategy (Buyout/Venture/Special Sits)	✓		
Guideline Compliance by Geographic Location	✓		
Investment Exposure Limit	✓		
Hedge Funds			
Asset Allocation Policy Compliance	✓		
External Manager Guideline Compliance	✓	3	One FOF manager exceeded the cash limit by 1.1%; the other manager fell below its liquidity target by -0.6% & exceeded a strategy leverage constraint by 0.7%
Direct Portfolio Manager Guideline Compliance	✓		

OPEB MASTER TRUST

	Quarterly Review Status	# Advisory	Notes
Equity			
Asset Allocation Policy Compliance	✓		
Investment Guideline Compliance	✓		
# of Sudan/Iran Holdings Held by Managers	✓		
Fixed Income/Enhanced Cash			
Asset Allocation Policy Compliance	✓		
Investment Guideline Compliance	✓		
# of Sudan/Iran Holdings Held by Managers	✓		

FEE VALIDATION

	Quarterly Review Status	# Advisory	Notes
Fee Reconciliation Project	✓		
AB 2833	✓	1	Annual report delivered at the December 2017 BOI meeting

* Notes: This list is not exhaustive as various compliance processes are completed throughout the year.
Each quarter, different items may appear on the compliance monitor.

LACERA

April 25, 2018

TO: Each Member
Board of Investments

FROM: Robert R. Hill RRH
Interim Chief Executive Officer

FOR: Board of Investments Meeting of May 9, 2018

SUBJECT: 2018 SWFI Institutional Investor Summit Asia
June 5 – June 6, 2018 in Tokyo, Japan

The 2018 SWFI Institutional Investor Summit Asia will take place on June 5 – June 6, 2018 at the Hotel Andaz Tokyo Toranomon in Tokyo, Japan. This VIP forum is an information-driven, marketing-free forum where delegates share insights, engage in forward-looking discussions and learn relevant, timely market intelligence. This is an exclusive event for institutional investors, government officials, and C-level investment executives who want to interact and build relationships. Discussions and presentations are purely educational.

The main conference highlights include the following:

- Mapping the Future of Sustainable Investing
- Investment Opportunities in Indonesia: Infrastructure, Maritime and Sustainable Development
- How to Access Institutional-Quality Real Estate in Japan?
- Asset Owners and Allocators: Japan ESG Stewardship Code

The conference meets LACERA's policy of an average of five (5) hours of substantive educational content per day. The standard hotel rate at the Hotel Andaz Tokyo Toranomon is $380.00 per night plus applicable taxes and the registration fee to attend is $4,999.00.

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 SWFI Institutional Investor Summit Asia on June 5 – June 6, 2018 in Tokyo, Japan and approve reimbursement of all travel costs incurred in accordance with LACERA's Education and Travel Policy.

RH/lg
Attachment

SIGN UP AND JOIN TODAY
Email: events@swfinstitute.org
or +1 949-228-4341

SWFI®

INSTITUTE FUND SUMMIT ASIA 2018 TOKYO

5 - 6 June, 2018

Visit **www.iinvestorforum.com** or email **events@swfinstitute.org** for more information

This VIP forum is an information-driven, marketing-free forum where delegates share insights, engage in forward-looking discussions and learn relevant, timely market intelligence. This is an exclusive event for institutional investors, government officials, and C-level investment executives who want to interact and build relationships. Discussions and presentations are purely educational. Significant emphasis is placed on peer to peer interactions, with sufficient networking time built into each engagement.

VENUE

Hotel Andaz Tokyo Toranomon
1-23-4, Toranomon,
Minato-ku
Tokyo, Japan, 105-0001

CONTACT

Sponsorships
events@swfinstitute.org

Registration
Karen Maduell
kmaduell@swfinstitute.org

DATA AND SUBS

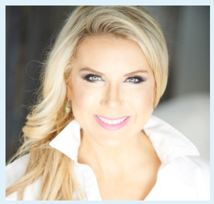
EVENT SPONSOR

DoubleLine®

SWFI COVERAGE

We cover an investor segment with an aggregate AUM of greater than US$ 30 trillion. Our research and data focuses on public investors, including sovereign wealth funds, pensions, superannuation funds, afores, central bank reserves, endowments and more.

Register today! *Complimentary registration for public delegates, qualified LPs, and investment consultants.*
Registration details on page 4.



MASTER OF CEREMONIES

Rachel Pether, CFA - Sovereign Wealth Expert

A trained journalist with over 5 years' experience at the BBC, Rachel currently hosts a weekly podcast called *Follow The Money Show* in partnership with SWFI.

As a qualified investment professional with 8 years' experience at Mubadala Investment Company, Rachel has an exceptional understanding of the financial markets. Additionally, Rachel is a Director at Heirloom Investment Management. In 2014, the Association of Corporate Treasurers named Rachel "The One to Watch" in Treasury. www.followthemoneyshow.com

Want to become an SWFI Member?

Join a Global Membership of Organizations Dedicated to Participating in the Institutional Investor Community
DETAILS: Vince Berretta, vberretta@swfinstitute.org

Institute Fund Summit Asia 2017, Singapore

Photos from Previous U.S. Forum

SWFI®

SWFI Event Advisory Board

The Event Advisory Board provides counsel on the planning and organization of events as well as the formation of strategic partnerships. The board helps foster a global institutional investor community through shaping the dialogue at SWFI events and facilitating relationship building. SWFI members may choose to nominate one event advisory board memer.

Name	Title	Term
Abdiel Santiago	Secretary of the Fund, Fondo de Ahorro de Panamá	2015-Present
Abdulla Al-Kuwari	Financial Institutions Portfolio, Qatar Holding. Board Member, Qatar Abu Dhabi Investment Company	2015-Present
Deepak Mungla	Chief Executive Officer, Enam Asset Management	2017-Present
Ana María Jul	Consultant to the Ministry of Economy and Finance of Panama	2014-Present
Anthony Oliveira	Founder, Oliveira Advisory Services LLC, Former Board Member of California Public Employees' Retirement System (CalPERS)	2015-Present
Dag Dyrdal	Independent Adviser, Former Chief Strategic Relations Officer, Norges Bank Investment Management	2014-Present
Duncan Finnie	Managing Director, MFS Investment Management	2017-Present
Eric Zwickel	Director, EMEA Asset Owners and Consultants, S&P Dow Jones Indices	2015-Present
Joseph Keenan	Head of Asset Manager and Sovereign Wealth Fund Segment, Markets Group, BNY Mellon	2015-Present
Kurt Schacht	Managing Director, Standards and Financial Market Integrity Division, CFA Institute. Chair, U.S. Securities and Exchange Commission Investor Advisory Committee	2014-Present
Niraj Thanki	Head of Non-Bank Financial Institutions, International, Al Hilal Bank	2018-Present
Yu Serizawa	President and CEO, FORMA CORPORATION	2018-Present
Nicholas Garrott	Former Senior Economic Advisor, Greater London Authority	2014-Present
Noah R. Wortman	Global Head of Class Action Services, Goal Group	2015-Present
Peter Jodlowski	Former Chief Financial Officer, Emirates Investment Authority, Chief Financial Officer, Jeddah Economic Company	2014-Present
Rinchinnyamyn Amarjargal	Former Prime Minister, Mongolia	2014-Present
Robert L. Greene	Former Chairman, Virginia Retirement Systems	2014-Present
José Filomeno de Sousa dos Santos	Former Chairman of the Board of Directors, Fundo Soberano de Angola	2014-Present
Ruby Menon	Of Counsel, Robbins Geller Rudman & Dowd LLP	2015-Present
Jacques Demers	Managing Partner, AGAWA PARTNERS, INC	2015-Present
Herman B. Santos	Trustee, Los Angeles County Employees Retirement Association	2016-Present
David J. Holmgren	Chief Investment Officer, Hartford Healthcare	2018-Present

INSTITUTE FUND SUMMIT EUROPE 2017 »
AMSTERDAM

PAST SUMMIT SPEAKERS

Thomas Fearnley, Director, Investments, Ministry of Finance, Norway
Andreas Dombret, Member of the Executive Board, Deutsche Bundesbank
Roberto Violi, Senior Director, Banca d'Italia
Ulf Erlandsson PhD, Senior Portfolio Manager, Fjärde AP-fonden (Ap4)
Olivier Rousseau, Executive Director, French Pension Reserve Fund
Bertrand de Mazières, Director General, European Investment Bank
Marcel Jeucken, Managing Director, Responsible Investment, PGGM
Artur Furtunado, Member of the Board of Directors, Fundo Soberano de Angola
Claudia Kruse, Managing Director, Head of Governance & Sustainability, APG Asset Management
Fabio Scacciavillani, Chief Economist, Oman Investment Fund
Amandeep Shihn, Investment Consultant, Willis Towers Watson
Carl-Heinrich Kehr, PhD, Principal, Mercer
Eila Kreivi, Director, Head of Capital Markets Department, European Investment Bank
Salman Ahmed, Chief Investment Strategist, Lombard Odier Investment Managers
Nick Samouilhan, Senior Fund Manager, Aviva Investors Asia
Mamadou-Abou Sarr, Global Head of ESG Investing, Northern Trust Asset Management
H.E. Ahmad Al-Sayed, Former CEO, Qatar Investment Authority; Founder and CEO, Sharq Capital Investment LLC

PROGRAM AGENDA

**Agenda subject to change*

TUESDAY, 5 June

8:00 – 8:40am REGISTRATION & WELCOME COFFEE

8:45 – 8:55am **SWFI: Welcome & Introductions**
Michael Maduell, President and Chairman, SWFI

9:00 – 9:05am **Public Investor 100 Award Recognitions**

9:05 – 9:30am **Opening Keynote Presentation**
Donghyun Park, Principal Economist, Economic Research and Regional Cooperation Department, Asian Development Bank

9:30 – 10:25am **Abenomics, Demographics and Destiny**
This panel will discuss how asset owners have reacted and interacted with the effects of Abenomics, the middle income trap in Asia and other issues surrounding the region. What opportunities lie ahead in Asia and the greater region?
TBA, MFS Investment Management
Ruston Smith, Chairman of the Tesco Pension Fund and Tesco Pension Investment Ltd
Michael Cross, Global Head of Official Sector Institutions, HSBC Global Asset Management

10:30 – 10:45am NETWORKING / BREAK

10:50 – 11:25am **Mapping the Future of Sustainable Investing**
This plenary panel will center on the current status of sustainable investing for institutional pools of capital. How can asset owners access these types of investments? What role can large sovereign funds and pensions play in the green economy?

11:15 – 12:10pm **How to Access Institutional-Quality Real Estate in Japan?**
Japan has witnessed a significant increase of inbound tourism. This is against the backdrop of the upcoming 2020 Olympic Games in Tokyo. How can asset owners access hotel, developmental projects and other types of institutional real estate?

12:15 – 1:15pm LUNCH

1:15 – 1:50pm **Global Infrastructure: Strategies and Tactics**
How can institutional investors seize opportunities?
Andrew Hsu, CFA, Portfolio Manager, Global Infrastructure Investments, DoubleLine Capital
Shigeto Kondo, Ph.D., Research Fellow, JIME Center, The Institute of Energy Economics, Japan

1:50 – 2:15pm **Keynote Presentation -** ***Investment Opportunities in Indonesia: Infrastructure, Maritime and Sustainable Development***
Indonesia - an archipelagic nation of over 18,000 islands - will be the 5th largest economy in 2030. An active economic development program focuses on marine and coastal resources. What are the opportunities in this emerging economy?
Luhut Binsar Pandjaitan, Coordinating Minister for Maritime Affairs, Indonesia*

2:15 – 3:00pm **Formulating Investment Strategies Across the Asset Owner Landscape**
Which strategies are overplayed? What is the current landscape like today?

3:00– 5:55pm NETWORKING FUNCTION
TBA

6:00 – 7:00pm COCKTAIL RECEPTION
7:00 – 8:30pm WELCOME DINNER

WEDNESDAY, 6 June

8:30 – 8:55am COFFEE & NETWORKING

9:00 – 9:25am **Keynote Presentation**
Ron Suber, Former President of Prosper Marketplace, Inc., Independent Non-Executive Chairman at Credible Labs Inc.

9:30 – 10:10am ***Healthcare and Aging: Challenges and Opportunities***
What does the future look like?

10:15 – 10:30am NETWORKING BREAK

10:40 – 11:10am **Asset Owners and Allocators: Japan ESG Stewardship Code**
Increasingly, countries are adopting more stringent corporate governance standards, as more public fund capital flows into equity markets. How are Japanese-focused investors coping with this? Will the "G" in ESG take hold for investors looking to Japan?

PROGRAM AGENDA

11:15 – 11:55am **How Can Institutional Investors Truly Take Advantage of Private Markets?**
Alternative assets such as infrastructure, private equity and real estate are expensive to access compared to traditional fixed income and equity investing. How can institutional investors take advantage of illiquid investments?
David J. Holmgren, Chief Investment Officer, Hartford Healthcare*
TBA, KKR & Co. (invited)*

12:00 – 1:15pm LUNCH

1:45 – 2:10pm **Keynote Presentation**

2:15 – 2:45pm **Roundtable on Insight Observations for the Future**
Are some chief investment officers and boards using dated models when it comes to current asset allocation? If this is true, what can CIOs do to address the issue?

2:45pm FINAL REMARKS

More Former Event Photos

SWFI®

REGISTRATION

Fee Schedule

Qualified LPs, Public Delegates & Investment Consultants — *Complimentary**

Visit www.swfireg.com, please wait for confirmation

Managers, Corporations, GPs & Service Providers

CONTACT: events@swfinstitute.org

CALL: +1 949-228-4341

CLICK: www.iinvestorforum.com

EMAIL: events@swfinstitute.org

MAIL: 2300 West Sahara Avenue. ste 800
Las Vegas, Nevada
United States

Registration includes:

- Delegate Access to All Sessions
- Welcome Cocktail Reception & Dinner
- Afternoon Networking Event
- Discounts on Andaz
- accommodations *(subject to limited availability)*

Credit Card Authorization Form

In order to secure your place now, fill out the form below and mail in with payment to the address listed above. Please fill out a separate form for each delegate.

Attendee Name	Corporate Mailing Address
Title	City
Organization	State/Province
Corporate Email	Country
Tel	Zip code

Name on Card: ______________________________

Card Number: ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Expiry Date: ☐☐/☐☐ Security Code: ☐☐☐☐ Signature: ______________________________

Sample List of Past Summit Delegates

SAMPLE LIST - NOT COMPLETE

Public Investors (inc. SWFs & Pensions)

Alberta Investment Management Corporation
AP2
AP4
APG Asset Management
Arizona Retirement Ssytem
BBC Pension
British Columbia Investment Management Corporation (bcIMC)
Brunei Investment Agency
California Public Employees' Retirement System (CalPERS)
Central Provident Fund (Singapore)
CERN Pension
China Investment Corporation (CIC)
CPP Investment Board (CPPIB)
Emirates Investment Authority
Employees' Retirement System, State of Hawaii
Employees' Retirement Fund of the City of Dallas
ERAFP
Fonds de réserve pour les retraites (FRR)
Fonds Marocain de Développement Touristique
Frankfort Police Pension Fund
Fundo Soberano de Angola
Future Fund (Australia)
General Corporation for Social Security (Yemen)
GIC Private Limited (GIC)
Government Pension Fund, (Thailand)
Government Pension Investment Fund (Japan)
Hellenic Pension Mutual Fund Management
Hong Kong Retirement Schemes Association
JSC Partnership Fund (Georgia)
Khazanah Nasional
Korea Investment Corporation
Kuwait Investment Authority
Libyan Investment Authority
Lockheed Martin Investment Management Co.
Los Angeles County Pension Association
Los Angeles Fire and Police Pensions
Miami Police Relief & Pension Fund
MN
Mubadala
Mumtalakat Holdings
National Development Fund of Iran
National Fund for Veterans, Cambodia
National Health Insurance Service (South Korea)
National Investment Corporation of the National Bank of Kazakhstan
National University of Singapore
New Mexico State Investment Office
New York City Retirement System
New Zealand Superannuation Fund
Norges Bank Investment Management
North Carolina Department of State Treasurer
Oman Investment Fund
Ontario Municipal Employees Retirement System
Ontario Teachers' Pension Plan
Palestine Investment Fund
PGGM
PSP Investments
Public Investment Corporation (South Africa)
Queensland Investment Corporation
QSuper
Russian Direct Investment Fund
San Jose Police and Fire Retirement Plan
Saudi Fund for Development
State Capital Investment Corporation (Vietnam)
State Oil Fund of the Republic of Azerbaijan
State of Wisconsin Investment Board (SWIB)
Teacher Retirement System of Texas
Temasek Holdings
Universities Superannuation Scheme (USS)
United Nations Joint Staff Pension Fund Investment Management Service
Utah Retirement Systems
Varma Mutual Pension Insurance C
VER The State Pension Fund (Finland)
Virginia Retirement System
Washington State Investment Board
Wyoming State Treasurer's Office

Central Banks & Finance Ministries

Arizona State Treasurer
Austrian National Bank
Bank for International Settlements (BIS)
Bank of Finland
Bank of Korea
Bank of Israel
Bank of Italy
Bank of Papua New Guinea
Bank of Thailand
Banque Central du Luxembourg
Bank Indonesia
Banque de France
Banque de la République d'Haïti
California State Treasurer
Central Bank of Egypt
Central Bank of Ghana
Central Bank of Hungary
Central Bank of Iceland
Central Bank of Malta
Central Bank of Mauritania
Central Bank of Mongolia
Central Bank of Suriname
Croatian National Bank
Czech National Bank
Deutsche Bundesbank
European Central Bank
HM Treasury
Ministry of Finance, Panamá
Ministry of Economy and Finance of Peru
Monetary Authority of Singapore
Norwegian Ministry of Finance
Turkish Treasury
U.S. Department of the Treasury

Foundations & Endowments

California Institute of Technology Investment Office
Concordia
Hartford Healthcare
Stanford Management Company
UAW Retiree Medical Benefits Trust*

Agency & Other

ARPA-E
British High Commission
California High-Speed Rail Authority
City of London
City of Los Angeles – Mayor's Office
County of Los Angeles, California
Daegu-Gyeongbuk Free Economic Zone Authority
Estonian Development Fund
Eurasian Development Bank
European Commission
European Bank for Reconstruction and Development
European Stability Mechanism
European Investment Bank
Financial Market Authority, Liechtenstein
Foreign Affairs, Trade and Development Canada
Government of Australia
Greater London Authority
Hong Kong Trade Development Council
Infocomm Development Authority of Singapore
Invest HK
Italian Ministry of Foreign Affairs
Jeddah Economic Company
Ministry of Defence (Singapore)
Mongolian Ministry of Industry
Nevada Commission on Economic Development
Office of the Turkish Prime Minister
Pension Benefit Guaranty Corporation (PBGC)
Singapore Tote Board
SME Development Fund of Mongolia
WestSummit Capital
The White House (U.S.)
Vertex Venture Management (Temasek)
UK Trade and Investment
Ministry of Finance, Chile*

Non-Profits and Associations

China Light Industry Council
CFA Institute
Hong Kong Retirement Schemes Association
Options Industry Council
National Association of Investment Companies (NAIC)
Robert F. Kennedy Center for Justice and Human Rights
World Gold Council
World Ocean Council

Non-Public Attendees - Investment Consultants

Meketa Investment Group
Mercer
NEPC
TorreyCove Capital Partners LLC
Towers Watson Willis
Wilshire Associates

Non-Public Attendees

Aberdeen Asset Management
Abraaj Capital
Acadian Asset Management LLC
Adams Street Partners
Adelante Capital Management
Adveq Management AG
AGAWA PARTNERS
American Capital
American Century Investments
AMP Capital Investors
Amundi
Analytic Investors
Aquiline Capital Partners
Arcus Infrastructure Partners
Ariel Investments, LLC
AXA Rosenberg Investment Management LLC
Axiom International Investors LLC
Baillie Gifford
Bank of America Merrill Lynch
Bank of China
Barclays
Baring Asset Management
BBVA
BlackRock
BDO Consulting
BMO Global Asset Management
BNP Paribas
BNY Mellon
Bunge
Cain Brothers Asset Management
CapMan Real Estate
Cartica Management, LLC
CarVal Investors LLC
CBOE
CBRE Clarion Securities
Citigroup
Chicago Title Insurance Company
Columbia Management
Contrarian Capital Management, LLC

CQS Management Limited
Credit Suisse
Cushman & Wakefield
Danske Bank
Deloitte
Deutsche Bank AG
DIAM International
Dimensional Fund Advisors, LP
Diversified Global Asset Management
Dividend Solar
DONG Energy
DTE Energy
DuPont Capital Management
DZ Bank
Eagle Investment Systems
Eastspring Investments
Egan-Jones Ratings Company
Enam Asset Management Company Pvt.Ltd.
Euroclear Bank
Everstone Capital Asia Pte Ltd
FactSet Research Systems
Fairview Capital Partners
Federal Home Loan Banks Office of Finance
First State Investments
Fisher Investments
Fitch Ratings
FLAG Capital Management
FPM Frankfurt Performance Management AG
Fullerton Fund Management
Gavilon, LLC
GE Asset Management
Global Catalyst Partners
Goal Group
Goldman Sachs
GP Investments Ltd
Grant & Eisenhofer
Grayling Momentum
Greywolf Capital Management
Grosvenor Capital Management
Hastings Fund Management
Heard Capital LLC
Henderson Global Investors
Herndon Capital Management
Highstar Capital
Hines
Hotchkis & Wiley
Hudson Clean Energy Partners
ING Bank NV
ING Investment Management
Intellectual Ventures
INVESCO

Jennison Associates LLC
JP Morgan Asset Management
Keller Rohrback LLP
Kessler Topaz Meltzer & Check
Keywise Capital Management
Kirby Mclnerney LLP
Kuwait Finance House
Labaton Sucharow LLP
Lakestar Capital LLP
Landmark Partners
Lasalle Investment Management
Lenox Park
Leonard Green & Partners, L.P.
Lloyds Banking Group
Logan Circle Partners
Los Angeles Capital Management
LSV Asset Management
Marcus and Millichap
Manulife Asset Management
MarketAxess Corporation
Martin Currie
Meketa Investment Group
MFS International
Misys
Mondrian Investment Partners Ltd
Montreal Exchange
Morgan Stanley
MSCI
NGP Energy Capital Management, LLC
NorCap Advisors, LLC

Northern Trust
ORTEC Finance Switzerland AG
Paamco
Palladium Equity Partners, LLC
Partners Group
Pathway Capital Management, LLC
Pioneer Investment Management
Pramerica Real Estate Investors
PricewaterhouseCoopers
Prologis
Prudential Investment Management
Quantum Global Investment Management AG
Quoniam Asset Management
Quotient Investors
RBC Global Asset Management
RBC Investor Services
Record Currency Management Ltd
RLJ Equity Partners
RMK Timberland Group
Robbins Geller Rudman & Dowd LLP
Robeco
Royal Bank of Canada
Royal Bank of Scotland
Royal London Asset Management
Sarasin & Partners
Saudi Fransi Capital LLC
SecondMarket
Sectoral Asset Management
Seix Investment Advisors LLC
Siris Capital Group

Société Générale
Srei Infrastructure Finance Limited
S&P Dow Jones Indices
Standard Bank
Standard Life Investments Ltd.
Starwood Capital Group
State Street Global Advisors
Stroock & Stroock & Lavan LLP
Sumitomo Trust & Banking Co., Ltd.
SummerHaven Investment Management
SunGard
T. Rowe Price
Tarpon Investimentos
Toron AMI International Asset Management
Tradeweb Markets
The Sentient Group
The Silverfern Group
TOBAM
UBS
Unigestion
Upstart
V&S Investment Co., Ltd
Victory Capital Management
Vista Equity Partners
Voya Investment Management
VTB Capital
Waddell & Reed Asset Management Group
Wasatch Advisors
Wells Capital Management
WisdomTree

April 27, 2018

TO: Each Member
Board of Investments

FROM: Real Estate Committee and John McClelland

FOR: May 9, 2018 Board of Investments Meeting

SUBJECT: **REAL ESTATE STRUCTURE REVIEW**

RECOMMENDATION

Adopt the immediate, intermediate and on-going actions identified by the Real Estate Structure Review.

BACKGROUND

A staff-prepared Real Estate Structure Review was presented to the Committee on April 11, 2018. The Committee voted unanimously to forward the actions recommended within the review to the Board for approval. Collectively, the recommended actions are expected to increase prospects for improved performance in the future.

Attachment 1 is the Real Estate Structure Review. The recommended actions are summarized below:

Immediate modifications

1. Cease allowing the separate account managers to make value-added investments on a discretionary basis.
2. Manager-specific performance hurdles should be developed.
3. Identify benchmark variances and calculate relative contribution to performance on an on-going basis.

Tasks to implement over the next six- to 12-month period

1. Critically evaluate manager performance and mandates.
2. Increase exposure to industrial investments to better match the benchmark.
3. Reduce exposure to apartments to better match the benchmark.
4. Evaluate office and retail holdings and evaluate whether capital would be more effectively deployed by a property-type specialist owner/operator in a fund format.

Tasks to initiate or continue on an on-going basis

1. Justify benchmark variances on an annual basis.

2. Domestic value-added and high-return commingled funds should be evaluated for possible commitments.
3. Open-end commingled core funds should be evaluated for possible commitments.
4. Cull the portfolio of under-performing assets.

The recommended actions are consistent with those included in the Attribution Project-Final Conclusions presented by the Board's real estate consultant, The Townsend Group, during the April meeting of the Committee. **Attachment 2** is the Consultant's concurrence to the Structure Review.

OPTIONS AVAILABLE TO THE BOARD

The proposed actions are intended to increase prospects for improved performance in the future. If the Board does not approve the proposed actions, staff will consult with the Committee and propose alternative actions.

DELIBERATIONS AND OPINIONS EXPRESSED BY THE COMMITTEE

The proposed actions were unanimously supported by the Committee. In addition, future Committee agendas were directed to include a review of the emerging manager program as well as a discussion relating to possibly augmenting future Real Estate Investment Plans with an economic study that addresses market conditions and indicators for primary cities and property types.

RISKS OF ACTION AND INACTION

If the Board approves the proposed actions, staff will immediately begin implementation. Manager-specific evaluations and mandate reviews will be completed and results presented to the Committee. Manager-specific performance hurdles, any mandate changes, and any termination recommendations will be advanced by staff.

If the proposed actions are not approved, then both the Committee and Board will have other opportunities to address real estate performance during upcoming reviews of both the Objectives, Policies and Procedures, as well as a 2018-2019 Real Estate Investment Plan. These subjects are tentatively expected to be presented in June (to the Committee) and July (to the Board) of this year.

All of the capital authorized in the 2017-2018 Real Estate Investment Plan has been utilized for new investments or is earmarked for investments that have not yet been completed. Thus, regardless of action taken by the Board, no new investment activity will take place until and unless an updated Investment Plan is adopted by the Board.

Attachments

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

JM:dr

ATTACHMENT 1

March 19, 2018

TO: Each Member
Real Estate Committee

FROM: John McClelland
Principal Investment Officer, Real Estate

FOR: April 11, 2018 Real Estate Committee Meeting

SUBJECT: **REAL ESTATE STRUCTURE REVIEW**

RECOMMENDATIONS

Adopt the immediate, intermediate and on-going actions identified by this Real Estate Structure Review.

EXECUTIVE SUMMARY

LACERA has been investing in private real estate since 1985. The real estate allocation target is currently 11% of the total Fund, which translates into $6.1 billion.[1] The real estate portfolio, at $6.2 billion, is slightly over the target but within set rebalance ranges. The portfolio consists predominantly of office, retail, industrial, multifamily and hotel assets located in the United States. While the portfolio has mainly been invested in core properties, value-added and high-return investments have been made.

This report provides a structure review of the real estate program. It describes the role of real estate in the total Fund portfolio, investment philosophy, the return objectives, and program structure. A discussion section is followed by recommendations for program modification that are intended to result in the prospects for improved performance.

The program has met several of its asset class goals, including diversifying the Fund and generating cash flow. However, it has failed to meet its ten-year return objective. Extensive research has been devoted to identifying the cause of under-performance and steps that can be taken to improve performance in the future. The Board's real estate consultant, The Townsend Group, has been instrumental in conducting attribution analysis, and several reports on this topic have been presented to the Board. Under-performance over the ten-year period is discussed throughout the remainder of this structure review.

This review identifies immediate steps that can be taken with the potential to improve performance which include; (i.) suspending any additional value-added investing by the Fund's separate account managers on a discretionary basis; (ii.) establishing manager-specific performance hurdles against

[1] Based on the total Fund value as of December 31, 2017.

which future performance will be evaluated; and (iii.) identifying intentional, Board-approved, benchmark variances and measuring their ongoing relative contribution to performance.

Intermediate term actions recommended by this report include: (i.) critically evaluating historical manager performance and terminating or modifying mandates as appropriate; (ii.) increasing exposure to the industrial sector; and (iii.) decreasing exposure to the multifamily sector.

Ongoing recommended actions that are expected to increase prospects for improved performance consist of: (i.) using U.S.-focused value-add and high-return commingled funds to generate higher returns; (ii.) using U.S.-focused open-end core commingled funds to gain access to large assets (like central business district (CBD) office and regional malls) and increase diversification; (iii.) culling the portfolio of under-performing assets. In addition, benchmark variances should be identified and evaluated annually.

ROLE OF REAL ESTATE

LACERA's Real Estate Objectives Policies and Procedures (the "OPP") identifies the role of real estate to be:

- Enhancing the diversification of the total Fund.
- Providing competitive risk-adjusted returns relative to other asset classes.
- Hedging against inflation when market conditions allow such a hedge.

The program has generally succeeded in accomplishing the role identified. Real estate has enhanced the diversification of the total Fund. **TABLE 1** illustrates that over both the five- and ten-year period, the correlations between real estate and the other asset classes in the portfolio have been low or negative, indicating diversification.

Real estate, as measured by LACERA's custom benchmark, delivered competitive risk-adjusted returns relative to other asset classes. Real estate generated a 6.3% return with a standard deviation of 5.8% over the ten-year period ending September 2017. This return and risk level was lower than U.S. public equities and higher than fixed income, as expected.

Unfortunately, LACERA real estate program failed to meet the benchmark during this ten-year period. The ten-year return from real estate of 3.0% is lower than both the return from U.S. equity of 7.4% and the return from fixed income of 5.5%. Under-performance, which is mainly attributable to non-core investments, has been the subject of substantial analysis by staff and the consultant. Numerous recommendations related to improving performance appear at the end of this review.

TABLE 1
RISK AND RETURN OF LACERA COMPOSITES
(as of September 30, 2017)

	5 Years			10 Years		
ASSET CLASS	**Return (Net)**	**Standard Deviation**	**Correlation to Real Estate**	**Return (Net)**	**Standard Deviation**	**Correlation to Real Estate**
Real Estate	**9.4%**	**2.4%**	**1.00**	**3.0%**	**6.9%**	**1.00**
U.S. Equity	14.2%	7.9%	-0.68	7.4%	17.1%	-0.14
Non-U.S. Equity	9.5%	9.5%	-0.53	2.5%	20.1%	-0.25
Fixed Income	3.4%	2.9%	-0.15	5.5%	3.9%	-0.44
Private Equity	14.8%	3.4%	0.03	11.1%	8.2%	0.45
Commodities	-9.1%	14.0%	-0.36	-5.4%	21.7%	-0.14
Hedge Funds	5.2%	4.1%	-0.36	---	---	---
Cash	0.6%	0.2%	-0.28	90.0%	1.5%	-0.27
TOTAL FUND	**8.9%**	**4.4%**	**-0.6**	**5.3%**	**9.7%**	**-0.11**

There has been very little inflation over the prior ten-year period. Therefore, it remains unproven whether the real estate program will provide the desired hedge.

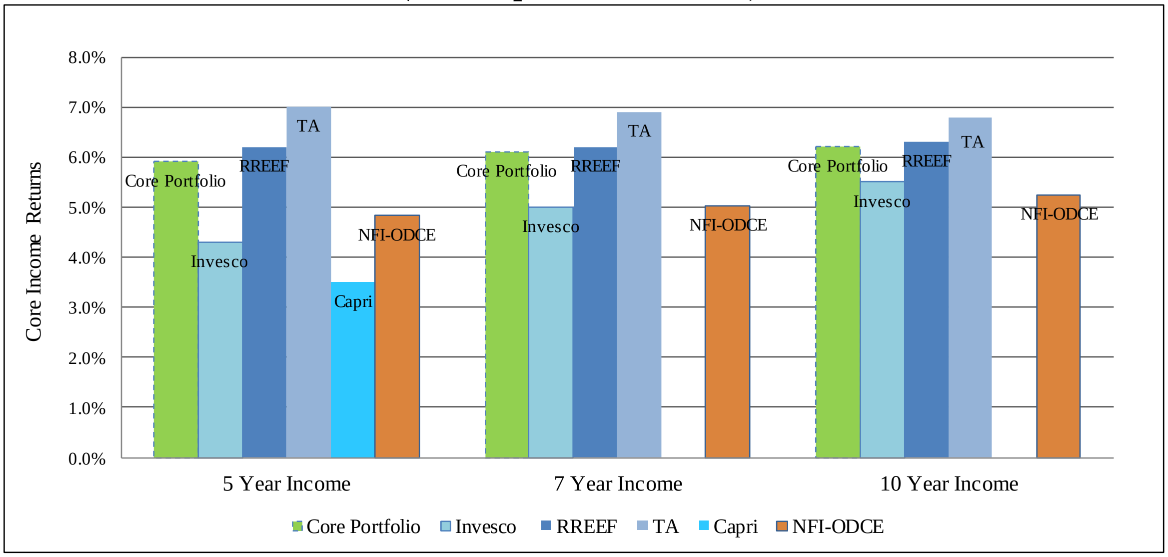
INVESTMENT PHILOSOPHY

The Real Estate OPP also identifies investment philosophy, or objectives, to guide program decisions. Each of these is summarized below.

- Maximize long-term total cash returns.

  The $4.6 billion core portion of the portfolio, which comprises the majority of the program, generated the majority of its return from income rather than appreciation. Thus, this objective has been achieved. **CHART 1** illustrates the income component of return from core assets over the last five-, seven- and ten-year periods.

CHART 1
CORE REAL ESTATE INCOME RETURNS
(as of September 30, 2017)



Although the income returns have been satisfactory, it is worth noting that appreciation from the core portfolio was negative, indicating depreciation, over the last ten-year period. (See **TABLE 3** below)

- Achieve a total return competitive with other asset classes.

  As discussed previously and illustrated on **TABLE 1**, this objective was achieved over the five-year period. However, the program has failed to deliver a competitive return over the ten-year period ending September 2017.

- Maintain broad diversification.

  The program is broadly diversified across property type and geography. There are a total of 96 individual assets included in the separate account portfolio, which comprised 86% of the portfolio as of the end of September 2017.

- Control risk

  Risk has been controlled in the portfolio using several tools. The primary risk-control tool has been to emphasize investment in core real estate. Core real estate has historically been less risky than non-core real estate, albeit with commensurately lower returns. Leverage has been limited and managed such that maturity dates are not concentrated. Loans secured by portfolio assets are not cross-collateralized and are largely non-recourse to LACERA.[2] The maximum size of equity investment in any single property has been restricted to $150

[2] Recourse provisions are limited to instances where the borrower lies, cheats or steals. These are often referred to as "bad boy carve-outs" and are common in real estate loans.

million. Separate account managers have been charged with controlling risk at the property level. Finally, the program has been intentionally diversified by property type, geography and manager to control risk.

RETURN OBJECTIVES

The current return objective, or benchmark, for the real estate program is to exceed the NCREIF-ODCE index by 40 basis points over a rolling ten-year period on a net-of-fee basis.[3] The benchmarks for different types of real estate investments are outlined on **TABLE 2**.

TABLE 2
REAL ESTATE RETURN OBJECTIVES[4]

Investment Category	After Fee Benchmark
Private Core	ODCE
Private Value-Add	OCDE+100 bps
Private High-Return	ODCE+300 bps
Public REITs (Domestic)	NAREIT
Public REITs (International)	FTSE/EPRA/NAREIT
Private Debt	≥NPI Income
Total Portfolio	**ODCE + 40 bps**

Return objectives for the real estate program have varied since the program was established in 1985. The ODCE-based objective was adopted in July 2013. Prior to that, the return objective was based on the NCREIF Property Index (NPI), which replaced real rate of return objectives in January 2009.[5]

The OPP also calls for a comparison of the returns to the current asset class assumptions used in portfolio construction (asset allocation modeling). Notwithstanding the asset allocation study currently underway, the prior study utilized a 10-year return assumption of 5.7% and a standard deviation of 14.0.[6]

The ten-year return of 3.0% for real estate failed to achieve the asset class assumed return of 5.7%. Risk, as measured by standard deviation, was 6.4% for the portfolio, lower than the asset class assumption of 14.0% and slightly higher than the custom benchmark of 5.8%. **TABLE 3** summarizes performance by investment type.

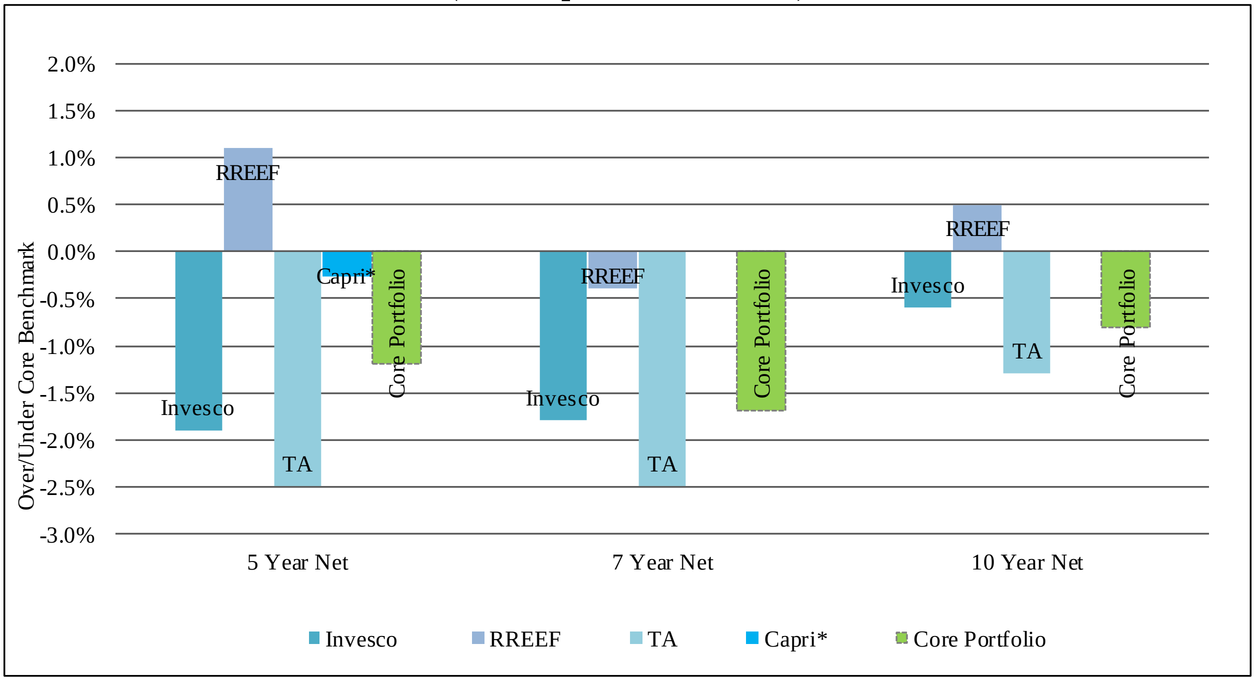
[3] NCREIF-ODCE is the National Council of Real Estate Fiduciaries (NCREIF) Fund Index (NFI) Open-end Diversified Core Equity Index (ODCE).
[4] The Total Portfolio benchmark is weighted 70% core, 25% value-add and 5% high-return.
[5] The real rate of return objective was 4% from 1985-1997, 6% from 1997-2005 and 5% from 2005-2008.
[6] 2015 Wilshire Capital Markets Assumptions, March 2015.

TABLE 3
TEN-YEAR RETURNS BY INVESTMENT TYPE
(as of September 30, 2017)

Investment Type	Net Market Value ($ in millions)	% of Portfolio	Income	Apprec.	Total Gross Return	Total Net Return	Custom Benchmark	Difference
Core	$4,623	74%	6.2%	-0.7%	5.5%	5.2%	6.0%	-0.8%
Value Added	$626	10%	5.1%	-6.7%	-2.0%	-3.0%	6.9%	-9.9%
High Return	$986	16%	2.9%	-14.4%	-11.9%	-16.1%	9.0%	-25.1%
Total	**$6,234**	**100%**	**5.8%**	**-2.0%**	**3.7%**	**3.0%**	**6.3%**	**-3.3%**

Core investing has most closely tracked the benchmark, under-performing by 80 basis points. The core portfolio primarily consists of properties held in separate accounts plus the LACERA headquarters building. **CHART 2** illustrates separate account performance relative to the benchmark over five-, seven- and ten-year time periods.

CHART 2
CORE OVER/UNDER PERFORMANCE
(as of September 30, 2017)



*Capri compared to NPI-Apartment

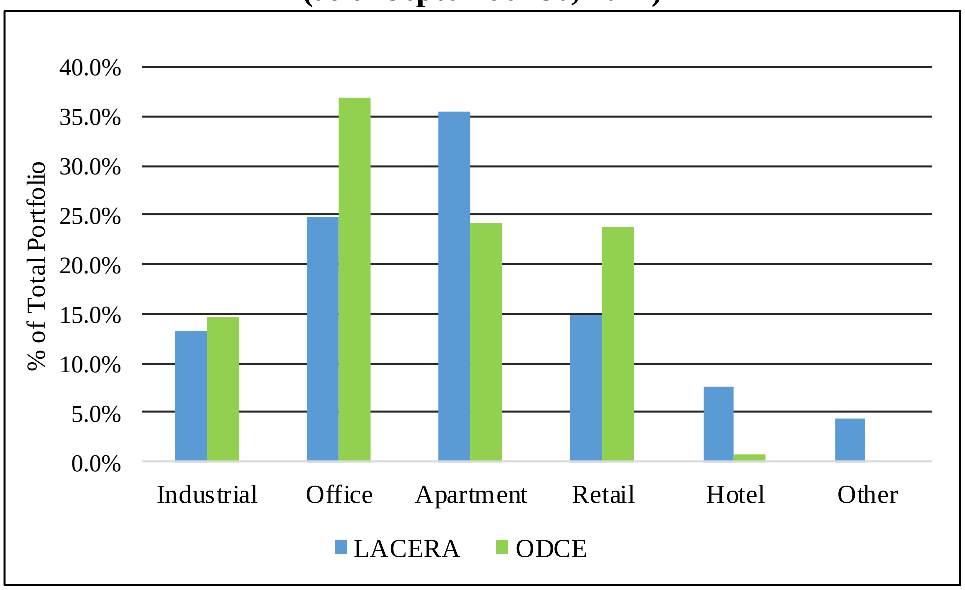
Notably, only the RREEF separate account has met or exceeded the core benchmark over any of the time periods measured.

Attribution analysis completed by the Board's real estate consultant, The Townsend Group, has identified numerous factors contributing to under/over-performance. A sample of these factors includes:

- Suburban office properties have consistently been the weakest performers.
- Warehouse industrial properties have consistently been the strongest performers.
- The program's relative under-weight to industrial properties has detracted from performance.
- The program's relative under-weight to office properties has enhanced performance.
- LACERA's smaller apartments (<$100 million) have consistently performed well.

CHART 3 compares LACERA's property diversification to NFI-ODCE.

CHART 3
PROPERTY DIVERSIFICATION
(as of September 30, 2017)



The value-add and high-return investments have significantly under-performed their benchmarks over a ten-year period. See the discussion section below for additional commentary.

REAL ESTATE PORTFOLIO STRUCTURE

The real estate program has been structured primarily using separate accounts. Core investments have been the main focus of the program since they have offered reasonably attractive returns at relatively low risk. **TABLE 4** illustrates the composition of the portfolio as of September 2017.

TABLE 4
LACERA REAL ESTATE PORTFOLIO COMPOSITION
(as of September 30, 2017, $ in millions)

Investment Style	Separate Accounts	% of Style	Commingled Funds	% of Style	Net Market Value	% of Total Style
Core	$4,225	91%	$398	9%	$4,623	74%
Value Added	$621	99%	$5	1%	$626	10%
High Return	$528	54%	$458	46%	$986	16%
Total	**$5,374**	**86%**	**$860**	**14%**	**$6,234**	**100%**

The OPP requires that ≥60% of the real estate allocation be invested in core assets. Value-add investing is limited to ≤40% and high Return investing is limited to ≤20% of the allocation. Real estate debt, limited to ≤20% of the allocation, may be moved to a discreet Credit allocation following the conclusion of the current asset allocation study.

The program structure relies heavily on separate account vehicles, which account for 86% of the value of the portfolio. These vehicles have allowed LACERA to retain control over when, where and on what terms capital is invested. The vast majority of the 96 assets held via separate accounts are wholly-owned, providing maximum flexibility to the Fund (i.e. LACERA does not need a partner to concur on any business plan or decision, including, for example, a decision to sell a property). The separate account agreements may be terminated without cause with little notice. Capital has been made available for new investments annually based on a Board-approved Investment Plan. Once authorized, the separate account managers have discretion to make investments that comply with LACERA-approved investment criteria. Staff estimates that fees paid to separate account managers for core investing are approximately 30% lower than if open-end commingled funds were used.

Using separate account vehicles also introduces some risk and challenges for the Fund. Owning assets directly, or even via special purpose entities (SPE), causes the Fund or SPE to take all of the risk and liability of ownership. It also requires a substantial effort to establish and maintain the legal entities used to limit liability related to ownership. The Fund's ability to diversify, especially in the mega-deal size range, is less than it would be if large commingled fund vehicles were used for investment.

Commingled fund structures have been utilized for some select strategies within the U.S. and for all non-U.S. real estate investments. Both open and closed-end commingled funds have been utilized. Each commingled fund investment is approved by the Board.

DISCUSSION

LACERA's current real estate program has evolved over time to its current state. Initially investing via open- and closed-end commingled funds in 1985, the Fund retained its first separate account managers in 1992. Investments were limited to the U.S. core and value-add sectors until

1995, when the first high-return strategy was funded (the single-family housing program). Since that time the program has included core, value-added and high-return strategies.

Core Investing

The large allocation to core investing (74%) has served the Fund well. Core investing has controlled risk while meeting most of the program objectives. Five-year returns of 9.3% and seven-year returns of 9.5% were quite respectable.

Core returns over the ten-year period of 5.2% under-performed relative to the NCREIF-ODCE benchmark. Significant factors contributing to the under-performance include: (i.) property types included in the benchmark that LACERA does not own have performed well, like CBD office and regional malls; (ii.) LACERA's large retail assets have under-performed; (iii.) most of LACERA's office properties have under-performed; and (iv.) LACERA has been under-weight industrial properties, which have been the strongest performing property type in the benchmark. (refer to **CHART 3** above)

LACERA's performance, albeit below the benchmark, has benefited from several factors as well. These include: (i.) strong performance from industrial investments (notwithstanding an under-weight position); (ii.) strong performance from apartment investments; (iii.) strong performance by smaller retail assets; and (iv.) LACERA's relative over-weighting to out-performing regions of the Pacific and Mountain areas.

Another factor contributing to benchmark under-performance is the off-benchmark allocation to real estate debt. The debt investments are intended to be a lower risk alternative to core investing, generating higher income but sacrificing any return from appreciation. Approximately 6.5% of the allocation was invested in real estate debt at the end of September 2017. The debt portion of the program has exceeded its sub-benchmark of ≥NPI Income returns. The five-year returns from debt of 8.0% from Barings and 6.7% from Quadrant are impressive given the relatively low level of risk being taken by the managers.[7] The benchmark mismatch created by real estate debt may be eliminated if a discreet Credit allocation is established at the Fund.

LACERA's core portfolio includes $269 million of non-U.S. holdings (in Europe and Asia), while the benchmark is limited to U.S. assets. This off-benchmark geographic exposure is contributing to variance.

LACERA's headquarters building also impacts performance relative to the benchmark. Gateway Plaza, a 282,000 square foot, 13-story office building located in Pasadena, CA is valued at $109 million. The property was acquired in 1990 with the dual purpose of housing LACERA and for investment. The property has generated a negative 1.1% return over the last ten years and positive 6.3% since-inception return. Hence, it has contributed to benchmark under-performance. Selling this asset for investment reasons, even during periods when it is expected to under-perform the benchmark, is not seriously contemplated due to its role serving as the Fund's headquarters.

[7] The real estate debt program was initiated in 2011.

Consequently, the property should be separated from the investment portfolio for performance measurement purposes.

Conclusion: LACERA should monitor its off-benchmark investments and measure their relative contribution to performance.

Conclusion: Gateway Plaza should be separated from the real estate investment portfolio for future performance reporting purposes.

The size of LACERA's core portfolio, which consists of 77 properties located throughout the U.S. and valued at $4.2 billion, allows it to be somewhat diversified with an average investment per asset of $54.9 million. However, this portfolio is not nearly as diversified as the benchmark, ODCE. In September 2017 the ODCE index consisted of 2,510 properties and was valued at $181 billion, which is an average of $73 million per asset. Thus, the benchmark is much more diversified and has larger properties than the LACERA portfolio.

Conclusion: LACERA could improve diversification and gain access to larger assets by investing via one or more ODCE commingled funds.

LACERA's separate account managers, responsible for 91% of the core investments, can be segmented into four groups, longest-term, medium-term, shorter-term and debt.

The longest-term managers, RREEF, TA Associates and Invesco, were retained in 1992-1994 and have the most assets under management. They collectively manage $2.4 billion or 52% of the core assets.

The medium-term managers include Barings (formerly Cornerstone Real Estate Advisers), Capri Capital and Vanbarton (formerly Emmes). Barings was retained in 2004. They currently manage a single asset, a hotel property for LACERA. Capri Capital, was initially retained as an emerging manager, in 2011, and was graduated in 2016. Capri manages a portfolio of apartment assets. Vanbarton was retained in 2003. They currently manage a portfolio of retail properties in the Midwest.

The shorter-term or newest managers are Clarion, Heitman and Stockbridge. They were retained in 2013. Consequently, they have not yet generated five-year returns.

The debt managers are Barings and Quadrant. They were retained in 2011 to execute real estate debt investments exclusively.

Long-term Manager performance relative to the benchmark has been disappointing. As illustrated on **CHART 2** above, only RREEF has exceeded the benchmark over a five-, seven- or ten-year period.

Notably, none of the individual engagement agreements contain a performance target. Rather, each agreement references the OPP, which includes the LACERA benchmark for the program. Managers have been considered contributors to the total portfolio and none of the managers have been held individually accountable for total portfolio performance. Total portfolio composition was managed by LACERA. For example, when initially hired, RREEF was directed to invest primarily in the west and TA was directed to invest primarily in the east so that the resulting portfolio was diversified. Neither manager was expected to be geographically diversified across the entire U.S.

Similarly, the recently hired managers, Clarion, Heitman and Stockbridge, were expected to supplement the existing total portfolio, not individually meet the benchmark composition.

Conclusion: Individual manager performance targets should be developed and put in place in order to better assess performance.

Conclusion: Manager performance should be reviewed and mandate modifications considered as appropriate.

Non-Core Investing

Non-core investments consist of value-added (medium risk) and high-return (high risk). LACERA has utilized both separate accounts and commingled funds for non-core investing since 1995. Non-core investing is done in pursuit of higher-than-core returns.

While some value-add investments have performed well, overall they have failed to achieve a premium over core investments. Notably, the separate account value-add investments have been extremely concentrated. Just three investments account for over 80% of the market value of the value-add portfolio as of September 2017. The largest single investment is a hotel that represents nearly 34% of the value-added portfolio.

Conclusion: LACERA should consider using commingled funds for future value-added investments so that greater diversification can be achieved. However, vintage year diversification should also be considered.

Conclusion: Non-core investing by separate account managers should be restricted to ≤20% of the gross assets under manager by each manager. Value-added investments should only be permitted on an exception basis.

High-return investing has largely consisted of ground-up development, higher-risk international investments and the single-family housing program. LACERA has utilized separate accounts and commingled funds for high-return investments.

Long-term performance of high-return investments have been very disappointing, under-performing the benchmark by 2,510 basis points over a ten-year period. More recent performance has been encouraging. The three-year return of 15.2% exceeded the benchmark by 210 basis points. This has largely been the result of “build-to-core” investment successes. Build-to-core refers to the practice of constructing new properties and, upon completion and stabilization, either selling or transferring to the Fund’s core holdings. Recently completed projects have generated internal rates of return ranging from 14.5% to 29.1%.

LACERA's single-family housing program has dramatically impacted long-term, high-return performance. The program generated exceptionally strong returns for over ten years and was consistently the highest performing investment in the entire Fund portfolio. However, it realized substantial losses during the Global Financial Crisis. The program ceased making new investments in 2008 and an orderly liquidation of remaining assets was completed in 2017. Nonetheless, its negative impact on ten-year returns for the high-return portfolio remains, accounting for 59%, or 1,470 basis points of the under-performance.

High-return investments frequently generate cash flow streams that cause significant differences between time-weighted and dollar-weighted (aka Internal Rate of Return) returns. For example, the Cityview LA Urban fund, to which LACERA committed $50 million in 2007, is considered a top-quartile performer by The Townsend Group for its vintage year. The since-inception time-weighted return was -14.0% and the internal rate of return was +11.9%. The internal rate of return is a more appropriate method for assessing performance when negative and positive cash flows and significant variances in the amount of capital invested occur over time.

Conclusion: Diversification of investments and vintage year helps mitigate the high risk associated with high-return investing.

RECOMMENDATIONS

The current positive real estate cycle is now nine-years old. Returns have moderated as cap-rate compression has ceased and spreads to other asset types have narrowed. The 20-year average spread between real estate and U.S. treasuries is 3.0%, which is higher than the current 2.2% spread.[8] Similarly, pricing of public versus private real estate as measured by REIT share prices compared to the net asset value of company holdings is -12%. This indicates that the share prices for REITS are priced 12% less than the underlying value of the real estate owned by the REIT. The 20-year average for this ratio is +3%, suggesting that either REIT prices are likely to rise OR real estate values are likely to decline.

An additional indication of concern that the current positive real estate cycle may be nearing an end is the recent Consensus Forecast Survey published by the Pension Real Estate Association. The forecast returns from real estate as of Q1 2018 were 6.0% for 2018, 5.3% for 2019 and 4.8% for 2020. The forecast appreciation component of return for 2020 is -0.1%, indicating an expectation that property values will decline.

These matrixes and forecast suggest that now may not be the appropriate time to add more risk to the real estate program. However, as a long-term investor, the Fund should continue to prudently invest through cycles.

Regardless of the state of the real estate market, LACERA's real estate program could be modified to improve the chances of meeting or exceeding the benchmark return in the future without significantly changing the risk profile of the allocation. Recommended modifications would not

[8] Deutsche Asset Management Alternatives, U.S. Real Estate Indicators Dashboard, March 2018.

alter the role of real estate in the portfolio or the philosophy for the allocation. Staff suggests that several modifications should be implemented immediately and that several additional tasks should be undertaken over the next six- to twelve-month period.

Immediate modifications

- Cease allowing the separate account managers to make value-added investments on a discretionary basis. The managers have not demonstrated the ability to execute value-added strategies successfully.
- Manager-specific performance hurdles should be developed. Individual performance hurdles will provide for mutual understanding of what is expected for continued investment by the Fund.
- Identify benchmark variances and calculate relative contribution to performance on an on-going basis. Intentionally varying from the benchmark should require rationale that is regularly revisited. This can be done as part of the annual Real Estate Investment Plan.

Tasks to implement over the next six- to 12-month period

- Critically evaluate manager performance and mandates. Modify or terminate as needed to take advantage of demonstrated competencies. Continued retention should be predicated on performance. Some separate account managers have generated strong performance while others have not. Under-performing managers should be terminated or have mandates restricted to only areas of proven expertise.
- Increase exposure to industrial investments to better match the benchmark.
- Reduce exposure to apartments to better match the benchmark.
- Evaluate office and retail holdings and evaluate whether capital would be more effectively deployed by a property-type specialist owner/operator in a fund format.

Tasks to initiate or continue on an on-going basis

- Justify benchmark variances on an annual basis. Variance bands can be established around the property type and geographic composition of the benchmark. The annual Real Estate Investment Plan should include rationale for variances that exceed established limits.
- Domestic value-added and high-return commingled funds should be evaluated for possible commitments. Any commitments should be staggered across multiple vintage years.
- Open-end commingled core funds should be evaluated for possible commitments. Such investments would reduce the current benchmark mismatch by gaining exposure to CBD office and regional mall properties. It would also increase diversification. Such investments may be made by contributing asset for shares, thereby avoiding any entry queues.
- Cull the portfolio of under-performing assets. Annual business plans for each property include a hold-sell analysis. Extra emphasis should be placed on selling assets that are expected to under-perform. This is particularly true of the large, historically under-performing, retail assets.

CONCLUSION

Allocating funds to real estate has benefited the Fund from an asset allocation perspective. The real estate investment program has met several of its asset class goals, including diversifying the Fund and generating cash flow. However, it has failed to meet its ten-year return objective. This structure review has tried to identify and suggest modifications to the program that should enhance prospects for improved performance in the future.

Should the real estate Committee approve the proposed recommendations, they will be forwarded to the Board for adoption. Staff would then immediately implement the identified actions. Additionally, staff suggests that the role of real estate be revisited during the next update to the Real Estate Objectives, Policies and Procedures and Investment Policy Statement.

Noted and Reviewed:

____
Jonathan Grabel
Chief Investment Officer

JDM/dr

ATTACHMENT 2

TOWNSEND® GROUP
an Aon company

88 Kearny Street, Suite 800
San Francisco, CA 94105

Memorandum

To: LACERA Board of Investments ("BOI")

From: Townsend Jennifer J. Stevens

Date: May 9, 2018

Re: Real Estate Structure Review

Townsend recently completed a multi-stage Performance Attribution Project related to the LACERA Individually Managed Account ("IMA") Program. The Final Conclusions for this Attribution Project were presented to LACERA's Real Estate Committee on April 11, 2018. The goal of the assignment was to dissect the outperformance and underperformance of LACERA's IMA real estate holdings (the dominant position in the LACERA Real Estate Portfolio), draw conclusions based on past performance and make independent recommendations based on key findings.

Townsend's recommendations, resulting from the key findings of the LACERA IMA Attribution Project, are summarized for the LACERA BOI below.

Townsend Recommendations Resulting from LACERA IMA Attribution Project

1. Terminate Underperforming IMA Managers

- Consider direct asset sales and/or portfolio sales (*Note: Sales of Industrial and Apartment IMA assets were recently executed by DB and CityView via disposition of a 50% stake),*
- Consider transfer to Open-End Commingled Funds.

2. Retain Outperforming IMA Managers

- Restructure IMA Contracts for Retained IMA Managers,
- Hold IMA Managers Accountable for Performance,
- Set IMA Primary and Secondary Performance Target,
- Recommend managers sell assets that will not meet future performance targets,
- Continue approving dollars available for deployment of capital on an annual basis, while limiting Non-Core exposure. Note: ODCE allows for Non-Core of up to 20%.

3. **Establish Mix of Open-End Commingled Funds & Separate Accounts for US Core Investment Portfolio**
    - Compliment IMA Exposure with Commingled Fund Exposure,
    - Allow for periodic rebalancing of positions to achieve competitive risk adjusted returns and/or take advantage of market opportunity.

4. **Re-introduce US Closed-End Non-Core Commingled Funds**
    - Target specific Non-Core strategies that cannot be replicated in IMA format (specific examples provided to the LACERA Real Estate Committee).

LACERA IMA Attribution Project Key Findings*

- **Overall IMA Program**
    - Despite generating positive income returns, LACERA's IMA Portfolio lags the Benchmark with respect to appreciation and total return,
    - Greater diversification could be achieved by including a mix of commingled funds and IMAs,
    - Vintage is a key factor in determining performance of Non-Core IMAs,
    - Setting performance targets may help to hold IMA managers accountable in the future,
    - LACERA's choice to exclusively execute through US IMAs following the Global Financial Crisis has an associated opportunity cost.

- **Core IMA Program**
    - The LACERA Core Separate Account program has met the three primary objectives of the LACERA OPP:
        - Generates strong income returns,
        - Achieves a total net return that is competitive with other asset classes (8.14% since inception),
        - Provides a level of diversification to the Plan (albeit Townsend believes that superior diversification is achievable through Core and Core Plus open-end commingled fund execution).

- **Value IMA Program**
    - As a whole, Value Separate Accounts have not performed well,
    - The LACERA Value Separate Account program has consistently lagged LACERA's Value benchmark to-date,
    - Current J-Curve effect may be impacting near-term performance, which has yet to materialize into stabilized performance,
    - The Value Separate Account Composite lags the LACERA actuarial target for the Plan (6.47% since inception).

- **High Return IMA Program**
    - The LACERA High Return Separate Account program has achieved strong performance post Global Financial Crisis,

- Over the fifteen and since inception time intervals, the program inured losses (-3.46% since inception).

**Additional findings regarding property type and geographic selection were included in Phase I of the LACERA IMA Attribution Project. Historical findings regarding property type and geography were shared with the LACERA Real Estate Committee and the IMA Managers and should be considered in positioning the LACERA Portfolio going forward. Examples include the underperformance of Office investments and the outperformance of Apartment & Industrial investments in the IMA Portfolio.*

Recommendation

The LACERA Real Estate Structure Review takes into account the key findings and recommendations outlined in Townsend's LACERA IMA Attribution Project. As the asset allocation study draws to a conclusion, Townsend notes that additional edits may be required to address the going-forward role of real estate, as well as the structure of the Real Estate Portfolio in the LACERA OPP.

Townsend concurs with the LACERA Staff Report recommending that the LACERA BOI approve and adopt the Real Estate Structure Review.

LACERA

April 25, 2018

TO: Each Member
Board of Investments

FROM: Jonathan Grabel
Chief Investment Officer

FOR: May 9, 2018 Board of Investments

SUBJECT: **LACERA PENSION TRUST ASSET ALLOCATION**

RECOMMENDATION

Staff recommends the Board of Investment ("Board" or "BOI") approve Allocation option "B," on page 10 of Meketa's presentation and Chart 1 of this memorandum, for the LACERA Pension Trust ("Pension Trust") Asset Allocation for the following reasons:

- Allocation B is a diversified portfolio consistent with LACERA's Investment Beliefs;
- Provides comparatively better downside protection and greater probability of achieving LACERA's 7.25% target return compared to LACERA's current allocation and 4Q2018 Policy, given model constraints; and
- Delivers a higher expected Sharpe ratio and expected returns adjusted for risk and net of fees.

COMMENTS

In September 2017, the Board approved Meketa's capital market assumptions in the asset allocation models for OPEB Master Trust and LACERA's Pension Trust. Following the approval of OPEB Master Trust Asset Allocation in December 2017, LACERA's Pension Trust Asset Allocation Study immediately commenced. In March 2018, the Board approved the use of a functional framework for modeling purposes and the inclusion of a broader group of investments in Credit and Inflation Hedging/Real Assets in the Pension Trust Asset Allocation Study. In the subsequent BOI meeting, Meketa presented a review of the asset allocation process and potential asset allocation options for the Board to consider.

Attached is Meketa's updated presentation on the Pension Trust Asset Allocation Study. The three proposed asset allocation options under functional and traditional frameworks are outlined on page 10 and 11 of Meketa's presentation, respectively.

Staff has reviewed Meketa's report and considers Allocation B to be the most optimal allocation. LACERA's Statement of Investment Beliefs expresses the core principles that the Board employs in its decision-making process. These include "long-term strategic asset allocation will be the primary determinant of LACERA's risk/return outcomes" and "diversification across different risk factors is necessary for risk reduction." Consistent with these beliefs, Allocation B, as modeled, is more diversified than the current policy portfolio and is expected to better mitigate losses without sacrificing returns.

Compared to LACERA's current allocation and 4Q2018 Policy, the proposed Allocations A, B, and C have greater asset diversification, including exposures to natural resources, infrastructure, and Treasury Inflation Protected Securities or TIPS. The weightings of each asset class for the current and proposed allocations are detailed below in Chart 1 and on page 10 of Meketa's presentation.

Chart 1
Asset Allocation Policies

	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
Growth	**65.0**	**59.1**	**53.1**	**50.0**	**47.0**	**43.0**
Global Equity	65.0	47.9	41.4	39.0	35.0	30.0
Private Equity	0.0	9.5	10.0	9.0	10.0	11.0
Opportunistic Real Estate	0.0	1.7	1.7	2.0	2.0	2.0
Credit	**0.0**	**6.3**	**7.3**	**11.0**	**12.0**	**12.0**
High Yield	0.0	2.7	3.0	3.0	3.0	3.0
Bank Loans	0.0	1.5	1.8	3.0	4.0	4.0
EM Debt	0.0	0.7	0.8	2.0	2.0	2.0
Illiquid Credit[1]	0.0	1.4	1.7	3.0	3.0	3.0
Real Assets and Inflation Hedges	**0.0**	**11.9**	**12.1**	**16.0**	**17.0**	**19.0**
Core and Value-Added Real Estate	0.0	9.4	9.3	7.0	7.0	7.0
Private Natural Resources/Commodities	0.0	2.5	2.8	4.0	4.0	5.0
Private Infrastructure	0.0	0.0	0.0	2.0	3.0	4.0
TIPS	0.0	0.0	0.0	3.0	3.0	3.0
Risk Reducing and Mitigating	**35.0**	**22.7**	**27.5**	**23.0**	**24.0**	**26.0**
Investment Grade Bonds	35.0	18.6	21.2	19.0	19.0	20.0
Diversified Hedge Fund Portfolio	0.0	2.1	4.3	3.0	4.0	5.0
Cash	0.0	2.0	2.0	1.0	1.0	1.0
10 Year Expected Return	***5.8***	***6.4***	***6.2***	***6.3***	***6.3***	***6.3***
Standard Deviation	*12.50*	*13.05*	*12.22*	*12.22*	*12.04*	*11.73*
Sharpe Ratio	***0.34***	***0.37***	***0.38***	***0.39***	***0.40***	***0.41***
Illiquid%	*0*	*14*	*15*	*19*	*23*	*26*
Estimated Weighted Avg. Fees (bps)	*16*	*79*	*90*	*100*	*115*	*129*
20 Year Expected Return[2]	6.9	7.4	7.2	7.3	7.3	7.3
20 Year Expected Return 2018[2]	6.7	7.2	7.0	7.1	7.1	7.1

[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.
[2] Based on Meketa's 20 Year Expected Returns, which rely on reversion to historical mean returns in the 11-20 year period.

Source: Meketa Investment Group

Staff observes that the proposed allocations all have reductions in Global Equity, Core and Value-Added Real Estate, and Cash, accompanied by allocations to Credit, Diversified Hedge Fund, and inflation hedging assets. This diversification may improve the probability of achieving LACERA's 7.25% target return while providing better downside protection. As exhibited by return results from Mean Variance Optimization, Value at Risk, negative scenarios, and stress-tests analyses on pages 13 to 18 of the presentation and Chart 2 below, all three portfolios have lower probability of negative returns than the current allocation and 4Q2018 Policy. Additionally, inflation hedges such as TIPS may help mitigate some of the inflation built into the pension liability.

Chart 2
MVO-Based Risk Analysis

Scenario:	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
"Worst Case" Returns[1]:						
One Year	-19.5	-19.9	-18.6	-18.5	-18.2	-17.6
Five Years *(annualized)*	-6.4	-6.3	-5.7	-5.6	-5.4	-5.2
Ten Years *(annualized)*	-3.0	-2.8	-2.4	-2.3	-2.1	-1.9
Twenty Years *(annualized)*	-0.5	-0.2	0.0	0.1	0.2	0.4
Probability of Experiencing Negative Returns						
One Year	31.8	30.8	30.1	29.8	29.4	28.9
Five Years	14.5	13.0	12.2	11.7	11.3	10.7
Ten Years	6.7	5.6	4.9	4.6	4.3	3.9
Twenty Years	1.7	1.2	1.0	0.9	0.8	0.6
Probability of Achieving at least a 7.25% Return						
One Year	45.1	47.1	46.3	46.7	46.8	46.6
Five Years	39.1	43.5	41.9	42.6	42.8	42.5
Ten Years	34.7	40.8	38.6	39.7	39.8	39.5
Twenty Years	29.0	37.1	34.1	35.5	35.8	35.3

1 "Worst Case" Return Projections encompass 99th percentile of possible outcomes.
Source: Meketa Investment Group

By including a broader group of investments, the proposed allocations provide more attractive return/risk quotients than the current allocation and may potentially result in better performance throughout a full market cycle. As presented on page 10 of Meketa's presentation, Allocation B has a standard deviation of 12.0% (a measure of portfolio risk) and Sharpe ratio of 0.40[1] (a measurement of risk-adjusted return) and the current Pension Trust's allocation has a standard deviation of 13.1% and Sharpe ratio of 0.37. Allocation B improves both measures on an expected basis. Although Allocation C has the highest Sharpe ratio of 0.41 and a lowest standard deviation of 11.7% among the three options, the slight gain in Sharpe ratio may not warrant the additional increase in illiquid holdings. As modeled, Allocation C also has a lower probability of achieving a 7.25% return than Allocation B across multiple time periods. A peer analysis of liquidity is shown below and on page 22 of Meketa's presentation and in Chart 3 below.

[1] Sharpe ratio and standard deviation are based on Meketa's 10-year expected return of 6.3%.

Chart 3
Liquidity - Peer Analysis

	Hedge Funds	Private Markets	% Illiquid[1]
California Peers			
CALPERS	0	21	21
CALSTRS	6	26	32
SFERS	15	45	60
UC Retirement System	7	17	24
OCERS	2.5	29	32
LACERS	0	22	22
CA Peer Average	***5***	***27***	***32***
National Peers			
MD	5	27	32
NJ	5	18	23
NC	7	14	21
OPERS	10	22	32
Michigan	6	32	38
Oregon	12	30	42
MA	9	24	33
PA Schools	10	33	43
National Peer Average	***8***	***25***	***33***
LACERA Portfolios			
LACERA 4Q18	5	22	27
A	4	24	28
B	5	27	32
C	6	30	36

[1] These are estimates based on an analysis of publically available documents. The methodology used for the peer analysis differs from the liquidity analysis in the remainder of the presentation. Meketa used broad generalizations regarding asset classes to enable comparisons while working with information that is more limited. As an example, Real Estate is treated as illiquid in the peer analysis, but in the remainder of the presentation, Core Real Estate is treated as quarterly liquid.

Source: Meketa Investment Group

In accordance with LACERA's Investment Beliefs, staff believes Allocation B can potentially add the most value net of fees and adjusted for risk. Therefore, staff recommends the Board approve Allocation B as LACERA's Pension Trust Asset Allocation.

Next Steps

Should the Board approve any changes to the Pension Trust Asset Allocation, the expected implementation period for a new strategic asset allocation is 12 to 24 months. Subsequent to a decision, Meketa and staff will present the BOI with an updated Investment Policy Statement that reflects the changes in allocation policy, benchmarks and rebalancing ranges. A timeline for implementation of the Pension Trust Asset Allocation is listed in **Table 1** below.

Table 1
Tentative Asset Allocation Implementation Timeline

Next Steps	Target Dates for Completion
Determine the appropriate policy bands and benchmarks for the Pension Trust Asset Allocation	June 2018
Update Investment Policy Statement	May – July 2018
Present Investment Policy Statement to the BOI for review	August 2018
Complete operational updates at State Street	4th Quarter of 2018
Transition to updated asset allocation	September 2018 – June 2020

Staff will provide the Board with periodic status updates on the process.

Attachments

JG:cq

MEMORANDUM

To: LACERA Board of Investments

From: Stephen McCourt, Leandro Festino, Tim Filla
Meketa Investment Group

Date: May 9, 2018

Re: Pension Trust Asset Allocation

BACKGROUND

The Board of Investments is responsible for selecting an asset allocation strategy for the Pension Trust. LACERA's Investment Beliefs state that "Long-term strategic asset allocation will be the primary determinant of LACERA's risk/return outcomes" and that "Asset allocation has a greater effect on return variability than asset class investment structure or manager selection." Given the importance of asset allocation, Meketa Investment Group believes it is necessary to review asset allocation on a regular basis and in consultation with Staff, decided to conduct an asset allocation review for the Pension Trust immediately following the conclusion of the OPEB Trust asset allocation.

PROCESS

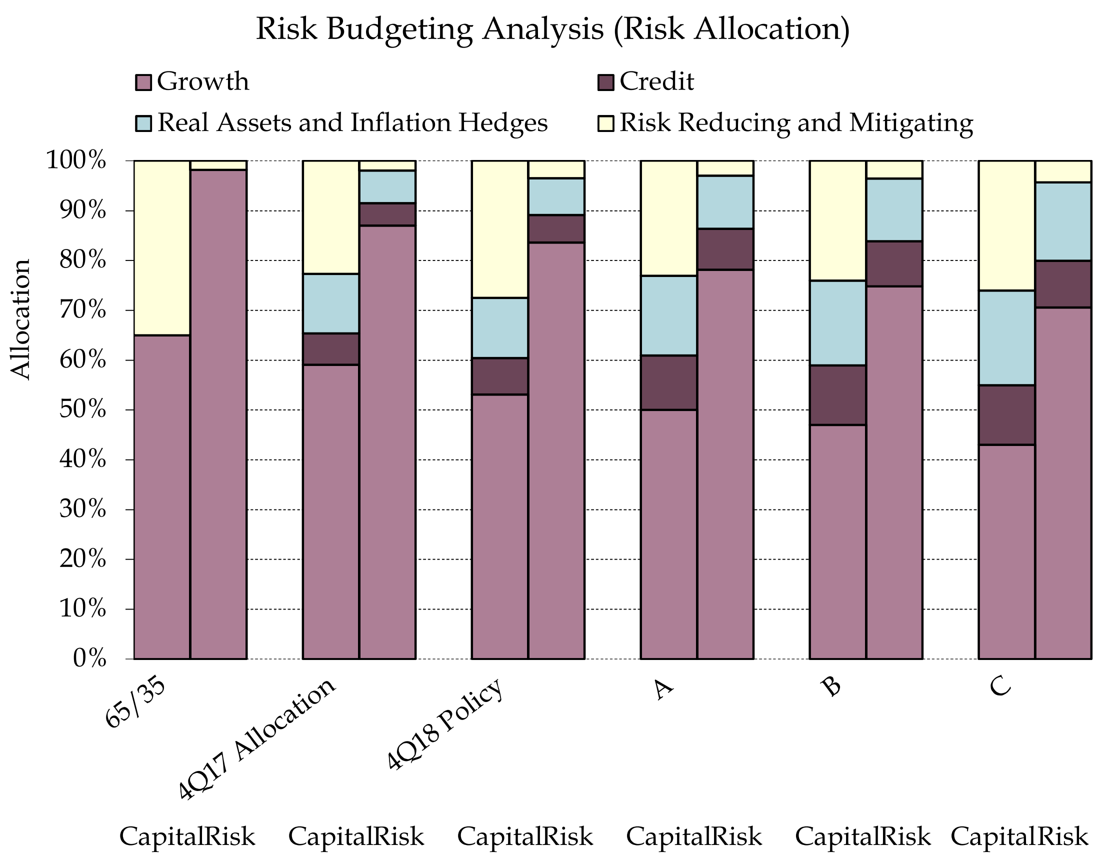
Over the past year, Meketa and Staff have conducted several educational sessions on asset allocation as well as educational sessions on potential additional asset classes/strategies. Based on feedback from those meetings and subsequent conversations with Staff, Meketa developed an initial set of asset allocation options, which were presented and discussed at the April Board of Investments meeting. Following the April meeting, Meketa developed a further refined set of options that have the potential to improve upon the expected return of LACERA's 4Q18 Policy, while also potentially lowering LACERA's risk as measured by the expected standard deviation.

ASSET ALLOCATION REVIEW

In Meketa's opinion, LACERA's current allocation and 4Q18 Policy are both broadly diversified, efficient, and well thought out portfolios. As such, each of the policies proposed today is seeking incremental improvements upon a solid foundation. The potential improvements offered by the options being presented fall into the following categories; increased diversification, expected return enhancement, and risk mitigation.

DIVERSIFICATION

To further diversify LACERA's assets, the proposed portfolios all include allocations to TIPS, Private Natural Resources, and Infrastructure. In addition, the proposed portfolios have discrete allocations to High Yield Bonds, Bank Loans, Emerging Markets Debt, and Illiquid Credit. These strategies were all previously utilized within Fixed Income, but having discrete allocations helps to ensure diversification by making it easier for the Board to monitor the specific exposures. The capital and risk allocation chart below highlights the potential to improve diversification offered by the proposed options.



EXPECTED RETURN

The addition of Private Natural Resources and Infrastructure are potentially accretive to LACERA's expected return. Meketa believes that LACERA has adequate liquidity and the operational capabilities to meet current obligations without a large cash reserve. Reducing LACERA's allocation to cash has the potential to increase LACERA's expected return and Meketa modelled lower allocations to cash across each of proposed policies. The table below contains the expected returns and risk profiles of each option.

	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
10 Year Expected Return	**5.8**	**6.4**	**6.2**	**6.3**	**6.3**	**6.3**
Standard Deviation	12.50	13.05	12.22	12.22	12.04	11.73
Sharpe Ratio	0.34	0.37	0.38	0.39	0.40	0.41
Illiquid%	0	14	15	19	23	26

RISK

Risk can be measured in a number of ways, such as with the standard deviation numbers shown in the table above. Each of the proposed options has a lower expected standard deviation than the reference portfolios. Another way to measure risk is with MVO analysis and scenario analysis.

	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
"Worst Case" Returns[1]:						
One Year	-19.5	-19.9	-18.6	-18.5	-18.2	-17.6
Ten Years *(annualized)*	-3.0	-2.8	-2.4	-2.3	-2.1	-1.9
Probability of Experiencing Negative Returns:						
One Year	31.8	30.8	30.1	29.8	29.4	28.9
Ten Years	6.7	5.6	4.9	4.6	4.3	3.9
Negative Historical Scenarios:						
GFC (4Q07 - 1Q09)	-27.0	-26.4	-23.8	-23.0	-21.7	-20.0
Stagflation (1Q73 - 3Q74)	-22.8	-17.0	-14.1	-14.2	-14.2	-12.3
TMT bubble (4/00 - 9/02)	-20.4	-14.5	-10.5	-9.2	-7.5	-4.9
Crash of 1987 (9/87 - 11/87)	-13.2	-10.0	-8.6	-8.4	-7.7	-6.8

[1] "Worst Case" Return Projections encompass 99th percentile of possible outcomes.

As shown in the table above, each of the proposed policies has lower probability of suffering losses, improved expected "worst case" outcomes, and provides potentially better protection from negative scenarios.

SUMMARY

Meketa Investment Group believes that all of the options offer incremental enhancements to LACERA's current allocation and LACERA's 4Q18 Policy. There is no "right" or "an only prudent" choice, rather, there are tradeoffs to each strategy. The intention of this presentation is to provide an in-depth analysis of Meketa's proposed asset allocation options to aid the Board in selecting LACERA's strategic asset allocation. Mr. Festino and Mr. Filla will be leading the presentation and along with Staff will be available to address questions from the Board.

We look forward to discussing the Pension Trust's asset allocation with you at the May 9th meeting.

TF/srt

Los Angeles County Employees Retirement Association

Pension Trust Asset Allocation Review

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
760 795 3450 fax 760 795 3445 www.meketagroup.com

Background

Background

- The Board of Investments ("The Board") is responsible for establishing investment policy and determining the asset allocation for the Pension Fund.
- LACERA's Investment Beliefs state that, "**Long-term strategic asset allocation will be the primary determinant of LACERA's risk/return outcomes**" and that "**Asset allocation has a greater effect on return variability than asset class investment structure or manager selection.**"
- Meketa Investment Group has conducted several informational sessions with the Board on asset allocation over the past year. The most recent presentation was at the April meeting when an initial set of portfolios was discussed.
- Meketa presented and the Board approved a set of capital markets expectations, which serve as the inputs for this analysis. The approved capital market expectations are included in the appendix. Also included in the appendix are Meketa's updated 2018 capital market expectations.
- The goal of this session is to discuss a refined set of asset allocation options and to either select one of the options presented or provide further guidance to Meketa and Staff for the development of alternatives.

Asset Allocation Process Overview

Review of LACERA's Process to Develop Proposed Policies

- Meketa and Staff have conducted multiple informational sessions with the Board on asset allocation topics.
- Meketa independently developed capital market expectations.
- Meketa and Staff produced custom composites (Private Equity and Hedge Funds) that utilize Meketa's assumptions and incorporate LACERA's investment approach.
- The Board approved Meketa's 2017 Capital Market Expectations for use as inputs.
- Meketa and Staff collaborated on an initial set of options. The initial set of options focused on improving upon the 4Q18 Policy in single dimensions (either lower risk or higher return).
- Based on feedback from the Board and extensive discussions with Staff, Meketa developed a set of options that have the potential to improve upon the expected outcome of the 4Q18 Policy in both dimensions.
- The proposed policies (A, B, and C) also add new asset classes that potentially improve LACERA's overall diversification and better protect LACERA's members from the effects of inflation.
- As an example of the level of collaboration with staff, the options presented today are the tenth iteration of potential options, and each iteration was subject to a detailed review by Meketa and Staff.

Asset Allocation Options

Review of Proposed Asset Allocation Policies

- As a starting point, we modelled a 65/35 portfolio, the current allocation (4Q17), and the 4Q18 Policy that is reflected in LACERA's Investment Policy Statement.
- Based on feedback regarding the first set of asset allocation options presented to the Board and through further consultations with Staff, Meketa developed a range of options, each of which increases LACERA's expected returns while also lowering LACERA's exposure to risk as measured by standard deviation.
- In exchange for the potential improvements in expected risk-adjusted returns, each of the proposed portfolios adds a degree of illiquidity.

Proposed Changes

- **Add dedicated allocations to Credit[1] categories such as;**
  - **High Yield Bonds**
  - **Bank Loans**
  - **Emerging Markets Debt**
- **Utilize additional Real Assets and Inflation Hedges**
  - **Private Infrastructure** provides an inflation hedge, additional diversification, and modest potential for return enhancement
  - **Private Natural Resources** adds an additional source of high expected return potential with inflation protection and diversification benefit
  - **TIPS** would further diversify the portfolio, while providing a modest hedge against any unexpected increase in inflation
- **Equitize or reduce cash**
  - Cash is the asset class with the lowest expected return and as such, any allocation to it acts as a drag on portfolio returns
  - A cash overlay is an implementation option that has the potential to improve returns while maintaining liquidity

[1] LACERA currently has assets invested in each of these categories within the Fixed Income allocation.

Asset Allocation Policies

	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
Growth	**65.0**	**59.1**	**53.1**	**50.0**	**47.0**	**43.0**
Global Equity	65.0	47.9	41.4	39.0	35.0	30.0
Private Equity	0.0	9.5	10.0	9.0	10.0	11.0
Opportunistic Real Estate	0.0	1.7	1.7	2.0	2.0	2.0
Credit	**0.0**	**6.3**	**7.3**	**11.0**	**12.0**	**12.0**
High Yield	0.0	2.7	3.0	3.0	3.0	3.0
Bank Loans	0.0	1.5	1.8	3.0	4.0	4.0
EM Debt	0.0	0.7	0.8	2.0	2.0	2.0
Illiquid Credit[1]	0.0	1.4	1.7	3.0	3.0	3.0
Real Assets and Inflation Hedges	**0.0**	**11.9**	**12.1**	**16.0**	**17.0**	**19.0**
Core and Value-Added Real Estate	0.0	9.4	9.3	7.0	7.0	7.0
Private Natural Resources/Commodities	0.0	2.5	2.8	4.0	4.0	5.0
Private Infrastructure	0.0	0.0	0.0	2.0	3.0	4.0
TIPS	0.0	0.0	0.0	3.0	3.0	3.0
Risk Reducing and Mitigating	**35.0**	**22.7**	**27.5**	**23.0**	**24.0**	**26.0**
Investment Grade Bonds	35.0	18.6	21.2	19.0	19.0	20.0
Diversified Hedge Fund Portfolio	0.0	2.1	4.3	3.0	4.0	5.0
Cash	0.0	2.0	2.0	1.0	1.0	1.0
10 Year Expected Return	***5.8***	***6.4***	***6.2***	***6.3***	***6.3***	***6.3***
Standard Deviation	*12.50*	*13.05*	*12.22*	*12.22*	*12.04*	*11.73*
Sharpe Ratio	***0.34***	***0.37***	***0.38***	***0.39***	***0.40***	***0.41***
Illiquid%	*0*	*14*	*15*	*19*	*23*	*26*
Estimated Weighted Avg. Fees (bps)	*16*	*79*	*90*	*100*	*115*	*129*
20 Year Expected Return[2]	6.9	7.4	7.2	7.3	7.3	7.3
20 Year Expected Return 2018[2]	6.7	7.2	7.0	7.1	7.1	7.1

[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.

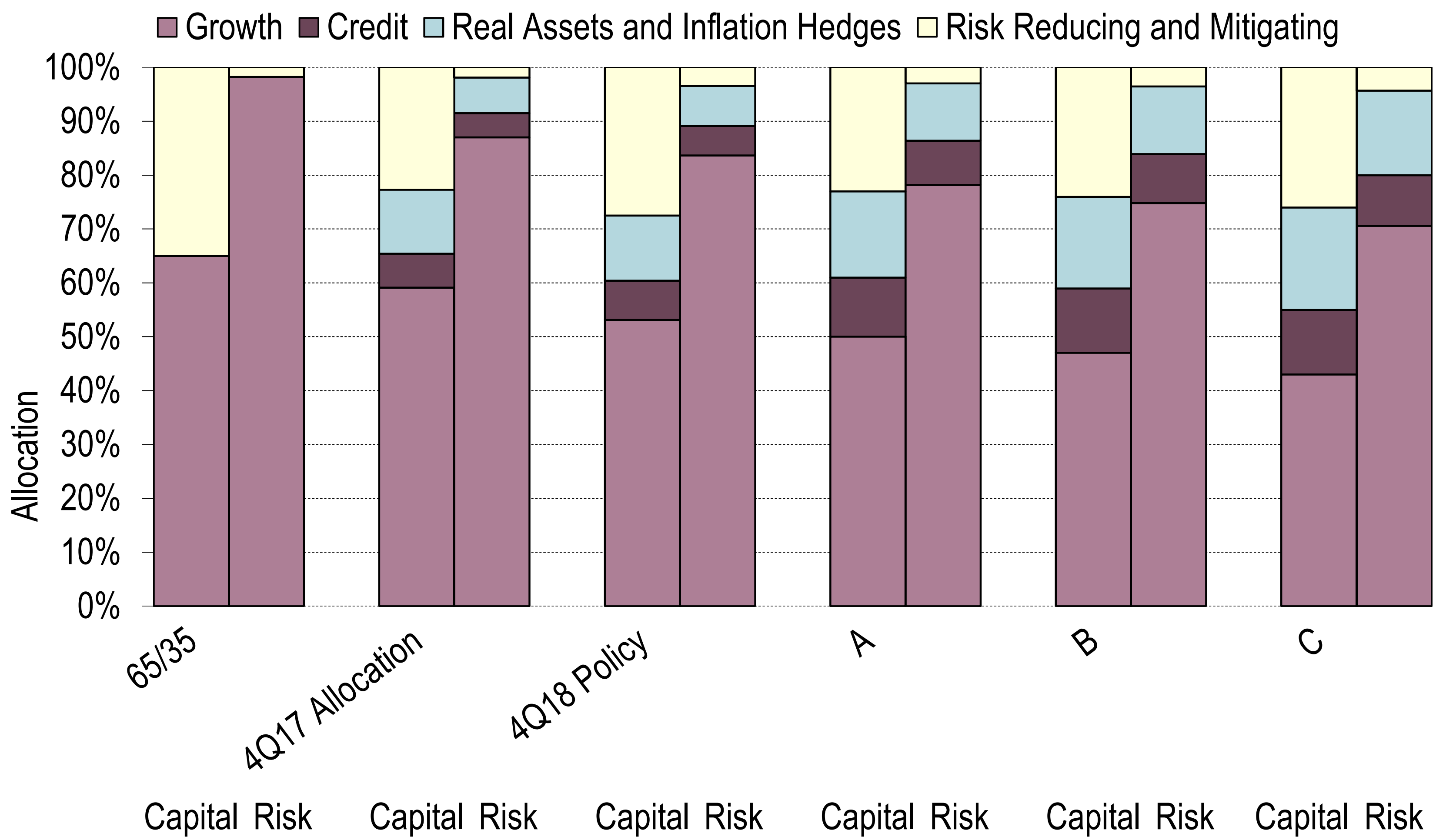
[2] Based on Meketa's 20 Year Expected Returns, which rely on reversion to historical mean returns in the 11-20 year period.

Asset Allocation Policies – Traditional View

	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
Global Equities	65	48	41	39	35	30
Fixed Income	35	25	29	30	31	32
Real Estate	0	11	11	9	9	9
Private Equity	0	10	10	9	10	11
Commodities	0	3	3	2	1	1
Hedge Funds	0	2	4	3	4	5
Cash	0	2	2	1	1	1
New	0	0	0	7	9	11
10 Year Expected Return	***5.8***	***6.4***	***6.2***	***6.3***	***6.3***	***6.3***
Standard Deviation	*12.50*	*13.05*	*12.22*	*12.22*	*12.04*	*11.73*
Sharpe Ratio	***0.34***	***0.37***	***0.38***	***0.39***	***0.40***	***0.41***
Illiquid%	*0*	*14*	*15*	*19*	*23*	*26*
Estimated Weighted Avg. Fees (bps)	*16*	*79*	*90*	*100*	*115*	*129*
20 Year Expected Return	6.9	7.4	7.2	7.3	7.3	7.3
20 Year Expected Return	6.7	7.2	7.0	7.1	7.1	7.1

- The “New” asset categories/strategies are TIPS, Private Natural Resources and Private Infrastructure.

Risk Budgeting Analysis (Risk Allocation)



- Policies A, B, and C offer greater diversification of capital and risk than LACERA's Current Allocation or LACERA's 4Q18 Policy.

MVO-Based Risk Analysis

Scenario:	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
"Worst Case" Returns[1]:						
One Year	-19.5	-19.9	-18.6	-18.5	-18.2	-17.6
Five Years *(annualized)*	-6.4	-6.3	-5.7	-5.6	-5.4	-5.2
Ten Years *(annualized)*	-3.0	-2.8	-2.4	-2.3	-2.1	-1.9
Twenty Years *(annualized)*	-0.5	-0.2	0.0	0.1	0.2	0.4
Probability of Experiencing Negative Returns						
One Year	31.8	30.8	30.1	29.8	29.4	28.9
Five Years	14.5	13.0	12.2	11.7	11.3	10.7
Ten Years	6.7	5.6	4.9	4.6	4.3	3.9
Twenty Years	1.7	1.2	1.0	0.9	0.8	0.6
Probability of Achieving at least a 7.25% Return						
One Year	45.1	47.1	46.3	46.7	46.8	46.6
Five Years	39.1	43.5	41.9	42.6	42.8	42.5
Ten Years	34.7	40.8	38.6	39.7	39.8	39.5
Twenty Years	29.0	37.1	34.1	35.5	35.8	35.3

- The A, B, and C portfolios have lower worst case returns and lower probability for negative returns than either LACERA's current allocation or LACERA's 4Q18 Policy.
- The A, B, and C portfolios also have a greater probability of achieving LACERA's 7.25% target return when compared with the 4Q18 policy.

1 "Worst Case" Return Projections encompass 99th percentile of possible outcomes.

Value at Risk[1]

Scenario	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
VaR (%):						
One Month	-7.9	-8.2	-7.7	-7.7	-7.5	-7.3
Three Months	-13.0	-13.5	-12.6	-12.5	-12.3	-12.0
VaR ($ mm):						
One Month	-4,385	-4,564	-4,264	-4,259	-4,193	-4,077
Three Months	-7,224	-7,497	-6,991	-6,977	-6,861	-6,663

Conditional Value at Risk[1]

Scenario	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
cVaR (%):						
One Month	-9.1	-9.5	-8.8	-8.8	-8.7	-8.4
Three Months	-15.0	-15.6	-14.6	-14.6	-14.3	-13.9
cVaR ($ mm):						
One Month	-5,049	-5,256	-4,912	-4,907	-4,831	-4,699
Three Months	-8,368	-8,688	-8,106	-8,092	-7,959	-7,733

[1] Calculated with a 99% confidence level and based upon Meketa Investment Group's Annual Asset Study. CVaR represents the average loss past the 99th percentile.

Historical Negative Scenario Analysis[1]
(*Cumulative* Return)

Scenario:	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
Taper Tantrum (5/13 - 8/13)	-1.7	-0.2	-0.2	-0.5	-0.3	-0.2
Global Financial Crisis (4Q07 - 1Q09)	-27.0	-26.4	-23.8	-23.0	-21.7	-20.0
Popping of the TMT bubble (4/00 - 9/02)	-20.4	-14.5	-10.5	-9.2	-7.5	-4.9
LTCM (7/98 - 8/98)	-8.4	-7.2	-6.5	-6.8	-6.4	-6.0
Crash of 1987 (9/87 - 11/87)	-13.2	-10.0	-8.6	-8.4	-7.7	-6.8
Stagflation (1/80 - 3/80)	-6.8	-4.3	-4.1	-4.3	-4.1	-4.0
Stagflation (1Q73 - 3Q74)	-22.8	-17.0	-14.1	-14.2	-14.2	-12.3

- Portfolios A, B, and C provide the most potential benefit under sharply negative equity market driven historical scenarios (GFC, TMT bubble, Crash of '87).
- The proposed portfolios perform inline or modestly better than the 4Q18 Policy across the remaining scenarios.

[1] See the Appendix for our scenario inputs. In periods where the ideal benchmark was not yet available we used the next closest benchmark(s) as a proxy.

Historical Positive Scenario Analysis[1]
(Cumulative Return)

Scenario	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
Global Financial Crisis Recovery (3/09 - 11/09)	42.1	33.1	30.3	31.2	29.8	27.8
Best of Great Moderation (4/03 – 2/04)	31.6	28.7	26.7	26.4	25.3	23.9
Peak of the TMT Bubble (10/98 – 3/00)	36.2	41.3	39.2	38.0	37.6	36.9
Plummeting Dollar (1/86 – 8/87)	75.5	61.0	55.3	54.0	50.8	46.8
Volcker Recovery (8/82 – 4/83)	37.2	29.4	27.9	27.2	26.1	24.8
Bretton Wood Recovery (10/74 – 6/75)	32.2	26.3	24.1	23.5	22.5	20.8

- The 65/35 portfolio and the 4Q17 Actual portfolio would have provided the best results in the GFC Recovery and most other positive scenarios.
- The proposed policies do not capture as much of the upside in positive return scenarios, but as mentioned above they do not suffer as severe a drawdown in the negative scenarios.

1 See the Appendix for our scenario inputs. In periods where the ideal benchmark was not yet available we used the next closest benchmark(s) as a proxy.

Stress Testing: Impact of Market Movements
(Expected Return under Stressed Conditions)[1]

What happens if (over a 12-month period):	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
10-year Treasury Bond rates rise 100 bps	4.3	5.9	5.5	5.4	5.4	5.3
10-year Treasury Bond rates rise 200 bps	2.0	4.1	3.5	3.4	3.3	3.1
10-year Treasury Bond rates rise 300 bps	-0.8	2.0	1.3	1.2	1.1	0.8
Baa Spreads widen by 50 bps, HY by 200 bps	-1.6	-1.0	-0.6	-0.6	-0.4	-0.1
Baa Spreads widen by 300 bps, HY by 1000 bps	-21.4	-21.1	-19.5	-19.2	-18.4	-17.4
Trade Weighted Dollar gains 10%	-0.1	-0.1	0.4	0.1	0.3	0.5
Trade Weighted Dollar gains 20%	-3.1	-2.5	-2.1	-2.5	-2.2	-2.1
U.S. Equities decline 10%	-5.8	-5.2	-4.6	-4.5	-4.3	-3.9
U.S. Equities decline 25%	-16.0	-14.6	-13.3	-13.0	-12.5	-11.6
U.S. Equities decline 40%	-27.8	-26.5	-24.2	-24.0	-22.9	-21.5

- Each policy portfolio has a different sensitivity to four major risk factors: interest rates, credit spreads, currency fluctuations, and equity values.
- LACERA's primary risk factors would continue to be an equity market decline and a widening of credit spreads, no matter the policy.
- The proposed portfolios do offer the potential for improved outcomes in the negative equity scenarios.

[1] Assumes that assets not directly exposed to the factor are affected nonetheless. See the Appendix for further details.

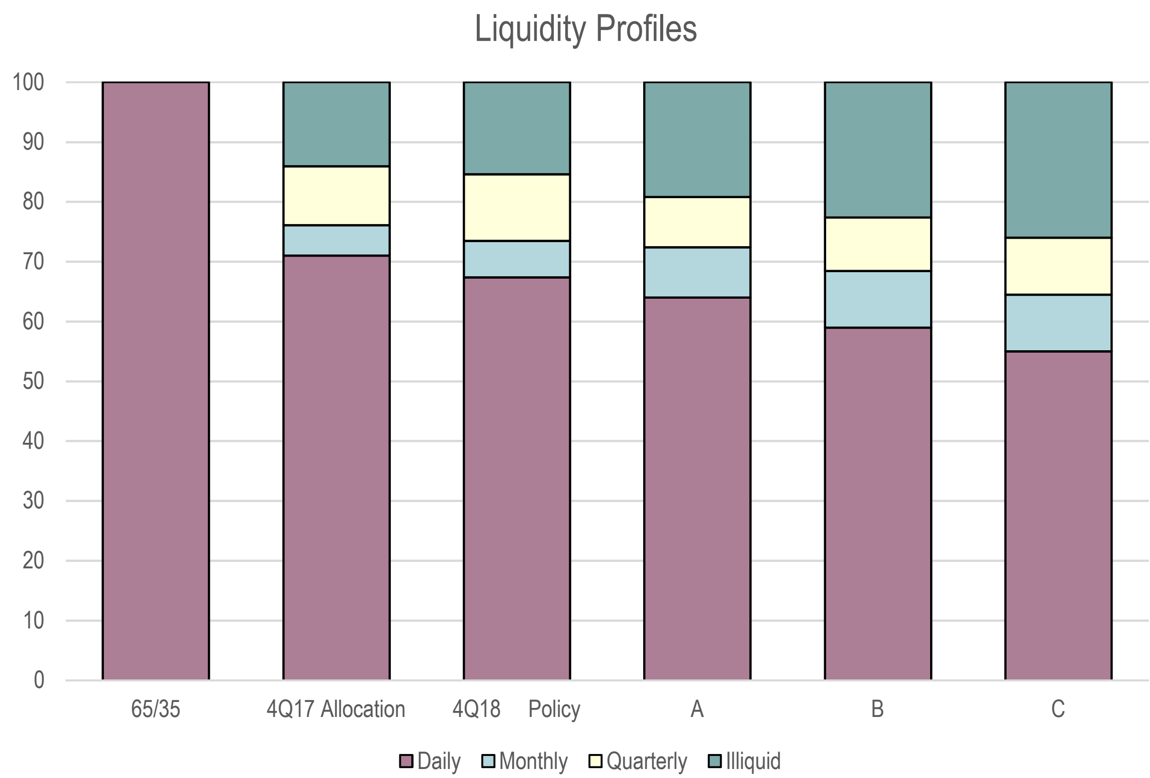
Anti-Stress Testing: Impact of Market Movements
(Expected Return under Favorable Conditions)[1]

What happens if (over a 12-month period):	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
10-year Treasury Bond rates drop 100 bps	7.2	6.8	6.8	6.8	6.8	6.8
10-year Treasury Bond rates drop 200 bps	19.3	16.5	15.8	15.6	15.2	14.7
Baa Spreads narrow by 30bps, HY by 100 bps	8.8	8.6	8.1	8.2	8.0	7.8
Baa Spreads narrow by 100bps, HY by 300 bps	16.1	15.5	14.7	14.7	14.3	13.7
Trade Weighted Dollar drops 10%	8.6	7.7	7.2	7.2	7.0	6.7
Trade Weighted Dollar drops 20%	19.4	17.9	16.7	16.4	15.8	15.2
U.S. Equities rise 10%	7.3	7.0	6.7	6.6	6.5	6.3
U.S. Equities rise 30%	18.6	16.9	15.8	15.7	15.2	14.5

- Each policy portfolio has a different sensitivity to four major risk factors: interest rates, credit spreads, currency fluctuations, and equity values.

1 Assumes that assets not directly exposed to the factor are affected nonetheless. See the Appendix for further details.

Liquidity Profile[1]



- The proposed policies have declining levels of liquidity.
- Portfolio C has over 50% of assets in daily liquid assets.

[1] For the purpose of this analysis Global Equity, Investment Grade Bonds, and Commodities were identified as daily liquid. High Yield Bonds, Bank Loans, and CTAs were identified as typically monthly liquid. Core Real Estate and Hedge Funds other than CTAs were all identified as typically quarterly liquid. Private Equity, Non-Core and Opportunistic Real Estate, Natural Resources, and Infrastructure are all not liquid.

Liquidity – Stress Test

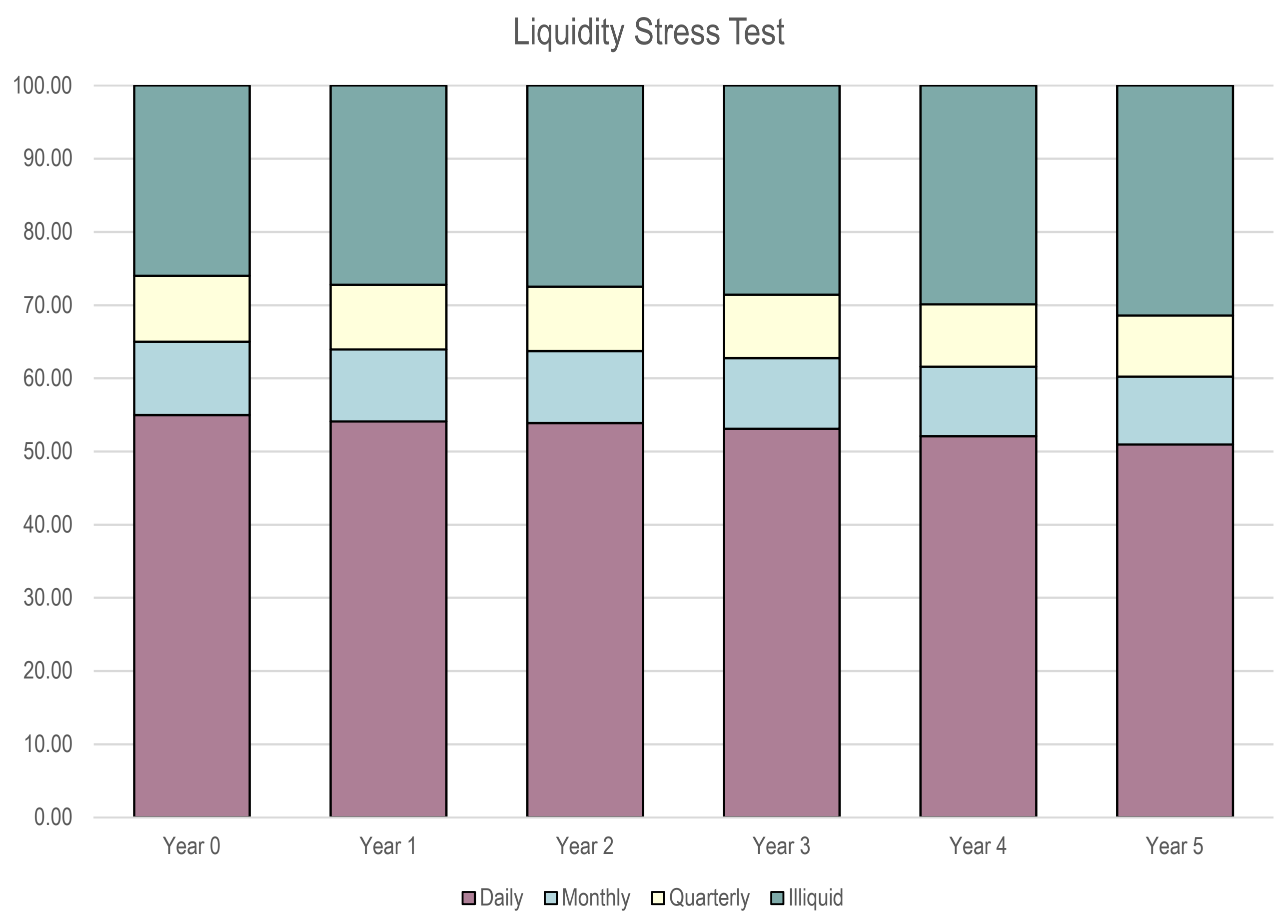
We conducted an extreme stress test to analyze the Fund's liquidity. Specifically, we evaluated whether the Fund could:

- Continue to meet its benefit obligations and expenses (including any obligations to fund commitments to Private Market managers),
- While staying within its target allocation ranges,
- And at what cost (i.e., to what extent would it be forced to sell stressed or distressed assets)?

The scenario is designed to be extreme.

- In Years 1 – 3, we use the returns produced by each asset class in 4q07, 2008, and 1q09, respectively. In Years 4 – 5, we assume flat (0%) returns for each asset class (i.e., no rebound).
- We assume net outflows of $1.4 billion in Year 1, $1.4 billion in Year 2, $1.5 billion in Year 3, $1.7 billion in Year 4, and $1.8 billion in Year 5.
- We assume closed-end funds offer no liquidity in years 1 – 4, and limited liquidity in year 5.
- We assume open-end and hedge funds offer no liquidity in years 1 – 3, and limited liquidity in years 4 - 5.
- We assume the Fund would rebalance toward its policy targets each year.
- We show the results for Policy C on the following pages, as it is the least liquid of the policy options and thus represents the most extreme case.

Liquidity – Stress Test



Liquidity - Peer Analysis

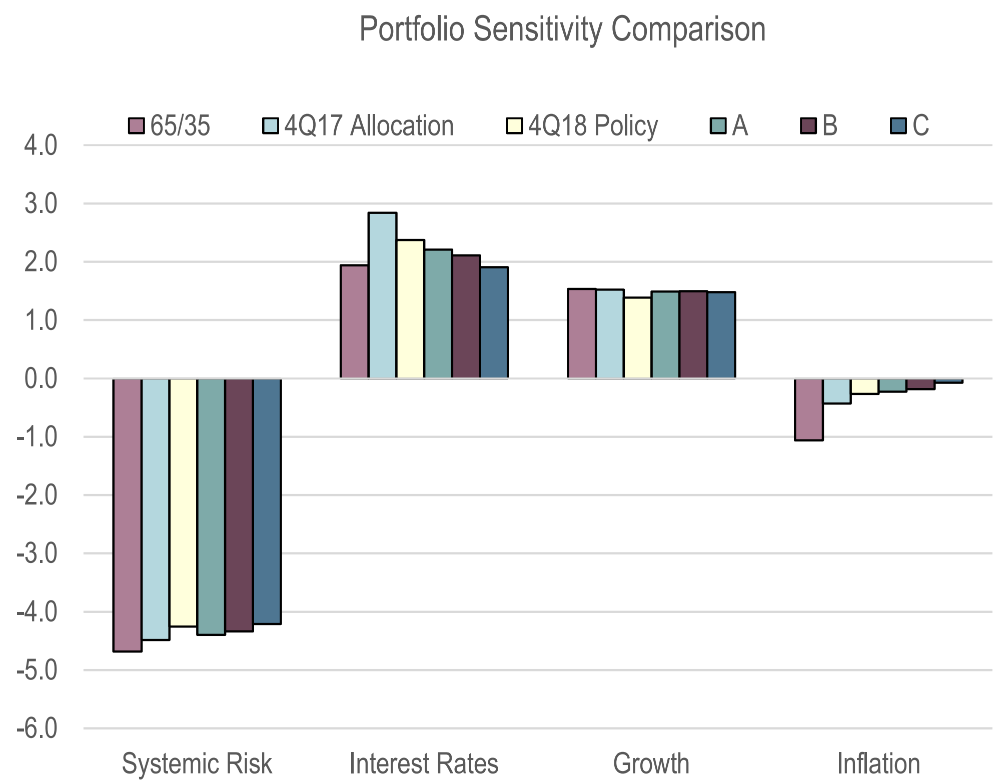
	Hedge Funds	Private Markets	% Illiquid[1]
California Peers			
CALPERS	0	21	21
CALSTRS	6	26	32
SFERS	15	45	60
UC Retirement System	7	17	24
OCERS	2.5	29	32
LACERS	0	22	22
CA Peer Average	***5***	***27***	***32***
National Peers			
MD	5	27	32
NJ	5	18	23
NC	7	14	21
OPERS	10	22	32
Michigan	6	32	38
Oregon	12	30	42
MA	9	24	33
PA Schools	10	33	43
National Peer Average	***8***	***25***	***33***
LACERA Portfolios			
LACERA 4Q18	5	22	27
A	4	24	28
B	5	27	32
C	6	30	36

[1] These are estimates based on an analysis of publically available documents. The methodology used for the peer analysis differs from the liquidity analysis in the remainder of the presentation. Meketa used broad generalizations regarding asset classes to enable comparisons while working with information that is more limited. As an example, Real Estate is treated as illiquid in the peer analysis, but in the remainder of the presentation, Core Real Estate is treated as quarterly liquid.

Economic Regime Management

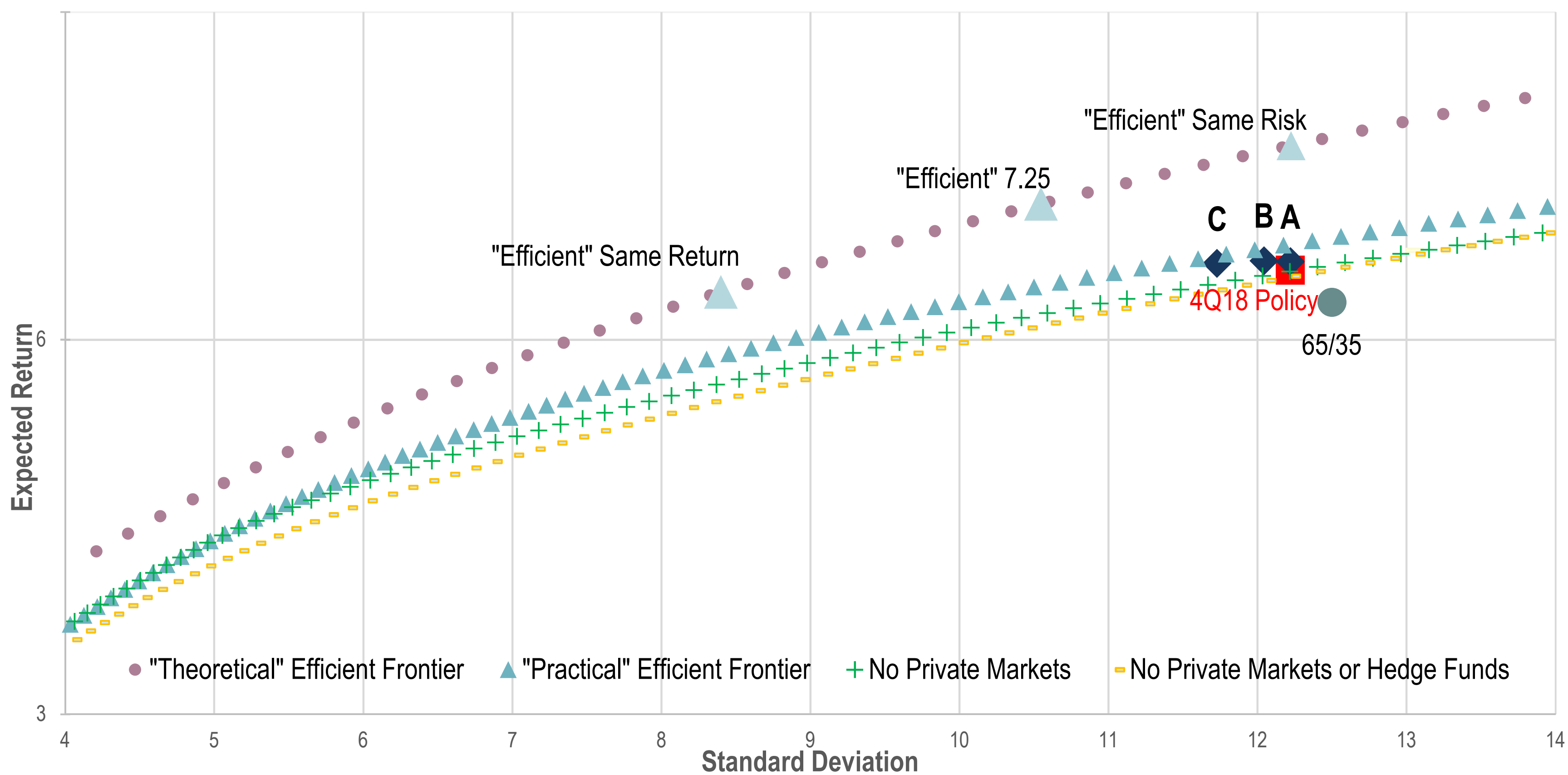
- The Economic Regime Management (ERM) approach focuses on understanding the dynamics of the most important macro level forces that drive returns across asset classes.
- We find the most important factors to be:
  - Systemic Risk – "system-wide" risk that propagates through all asset classes (e.g., 2008)
  - Interest Rate Surprise – unexpected changes in the 10 year interest rate (related to Duration)
  - Growth Surprise – unexpected changes in the Real GDP growth rate
  - Inflation Surprise – unexpected changes in the CPI growth rate
- We focus on surprises because expectations matter.
- What was considered "low" inflation in the 1970s would be considered "high" today.
- These factors explain the majority of volatility across asset classes.
- Understanding these dynamics explain the "why" not just the "what."

Portfolio Sensitivity Comparison



- The chart above shows the resulting change in portfolio return given a one standard deviation event in the respective risk factor.
- The proposed portfolios have the potential to mitigate some of LACERA's exposure to systematic risk, interest rate risk, and inflation risk.

The Efficient Frontier[1]



- All of the proposed portfolios are very close to the "Practical" Efficient Frontier and offer potentially superior risk-adjusted expected returns than the 4Q18 Policy.

[1] Returns presented are One Year Expected Returns.

The Efficient Frontier (continued)

- All of the proposed allocations represent an improvement in both dimensions (higher return and lower risk) relative to the 4Q18 Policy.

The Efficient Frontier (continued)

	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	Same Return "Efficient" (%)	Same Risk "Efficient" (%)	7.25% Return "Efficient" (%)
Growth	**65.0**	**59.1**	**53.1**	**12.0**	**18.5**	**15.3**
Global Equity	65.0	47.9	41.4	0.0	0.0	0.0
Private Equity	0.0	9.5	10.0	12.0	18.5	15.3
Opportunistic Real Estate	0.0	1.7	1.7	0.0	0.0	0.0
Credit	**0.0**	**6.3**	**7.3**	**13.0**	**10.0**	**13.5**
High Yield	0.0	2.7	3.0	0.0	0.0	0.0
Bank Loans	0.0	1.5	1.8	4.0	0.0	0.2
EM Debt	0.0	0.7	0.8	0.0	1.0	2.4
Illiquid Credit	0.0	1.4	1.7	9.0	9.0	10.9
Real Assets and Inflation Hedges	**0.0**	**11.9**	**12.1**	**18.0**	**31.5**	**24.4**
Core and Value-Added Real Estate	0.0	9.4	9.3	0.0	0.0	0.0
Private Natural Resources/Commodities	0.0	2.5	2.8	2.0	4.0	2.0
Private Infrastructure	0.0	0.0	0.0	16.0	27.5	22.4
TIPS	0.0	0.0	0.0	0.0	0.0	0.0
Risk Reducing and Mitigating	**35.0**	**22.7**	**27.5**	**56.0**	**37.0**	**44.7**
Investment Grade Bonds	35.0	18.6	21.2	23.0	0.0	5.2
Diversified Hedge Fund Portfolio	0.0	2.1	4.3	33.0	37.0	39.5
Cash	0.0	2.0	2.0	0.0	0.0	0.0
10 Year Expected Return	*5.8*	*6.4*	*6.2*	6.26	7.98	7.25
Standard Deviation	*12.50*	*13.05*	*12.22*	8.40	12.22	10.55
Sharpe Ratio	*0.34*	*0.37*	*0.38*	0.56	0.53	0.54
Illiquid%	*0*	*14*	*15*	31.0	52.0	41.8
Estimated Weighted Average Fees (bps)	*16*	*79*	*90*	*251*	*335*	*313*

- The unconstrained model produces concentrated portfolios that are not practical under real world investment conditions.

Summary and Recommendation

Summary

- Meketa Investment Group proposed three allocation options, which offer potential to improve upon the risk-adjusted return expectations of LACERA's 4Q18 Policy.
- In exchange for the potential improvements in expected risk-adjusted returns, each of the proposed portfolios adds a degree of illiquidity.
  - Meketa conducted a liquidity stress test on the least liquid option (option C) and found that LACERA was still able to maintain a level of 50% in daily liquid assets.
  - Meketa also surveyed peer plans and found the level of illiquid assets of the proposed options was in-line with LACERA's peers.
- Meketa collaborated closely with Staff and utilized multiple types of analyses with an emphasis on evaluating portfolio risk; Mean Variance Optimization with a functional lens, risk budgeting, value at risk, scenario analysis (both historical and theoretical), liquidity analysis, and Economic Regime Management, Meketa's proprietary factor based model.
- In the vast majority of the potentially negative scenarios tested, the proposed policies have noticeably lower levels of potential losses. Additionally, the proposed policies have lower sensitivities to the risk factors in Meketa's ERM model.

Recommendation

- Meketa Investment Group believes that all of the options offer incremental enhancements to LACERA's current allocation and LACERA's 4Q18 Policy.
- There is no "right" or "an only prudent" choice, rather, there are tradeoffs to each strategy.
- Meketa is aware that Staff is recommending option B. Meketa believes that all of the options presented are reasonable for LACERA and we look forward to assisting the Board in selecting a strategic asset allocation.

Next Steps

Next Steps

This Meeting:

- Review the proposed asset allocations options
- Select an asset allocation or provide guidance to Meketa and Staff on the development of alternative options

June Meeting:

- Approve ranges around the asset allocation selected at the May meeting

Or

- Review a further refined set of allocation options, select an asset allocation, and approve ranges

July Off-Site Meeting:

- Discuss strategic asset allocation implementation

Appendix

Capital Market Expectations

Fixed Income

Asset Class	2017 10-Year E(R) (%)	2018 10-Year E(R) (%)	Change from 2017 to 2018 (%)	Historical Return[1] (%)	Standard Deviation (%)
Cash Equivalents	1.5	1.8	0.3	4.0	1.0
Rate Sensitive					
Investment Grade Bonds	2.5	2.7	0.2	7.5	4.0
Long-term Government Bonds	3.0	2.7	-0.3	8.3	12.5
Credit					
High Yield Bonds	5.0	4.2	-0.8	9.0	12.5
Bank Loans	5.1	4.3	-0.8	5.7	10.0
Emerging Market Bonds	5.1	4.9	-0.2	6.3	13.3
Private Debt Composite[2]	6.1	6.0	-0.1	7.6	18.0
Investment Grade RE Debt	2.7	2.8	0.1	6.0	9.0
High Yield RE Debt	7.0	6.0	-1.0	6.0	23.0

[1] Historical Returns are based on different periods for each asset class due to variations in the availability of reliable data and therfore should not be used for comparative purposes between asset classes.
[2] Private Debt Composite is composed of 40% Mezzanine Debt, 40% Distressed Debt, and 20% Direct Lending.

Equities

Asset Class	2017 10-Year E(R) (%)	2018 10-Year E(R) (%)	Change from 2017 to 2018 (%)	Historical Return[1] (%)	Standard Deviation (%)
U.S. Equity	5.7	5.4	-0.3	11.7	18.0
Developed Market Equity (non-US)	6.3	6.1	-0.2	8.6	20.0
Developed Market Equity (50% currency hedge)	5.8	5.6	0.0	8.2	18.0
Emerging Market Equity	9.6	9.0	-0.6	10.3	26.0
Global Equity	6.7	6.2	-0.5	7.2	19.0
LACERA Private Equity Composite[2]	9.3	8.8	-0.5	10.9	26.0

[1] Historical Returns are based on different periods for each asset class due to variations in the availability of reliable data and therfore should not be used for comparative purposes between asset classes.
[2] LACERA Private Equity Composite is composed of 90% Buyouts and 10% Venture.

Real Assets/Inflation Sensitive

Asset Class	2017 10-Year E(R) (%)	2018 10-Year E(R) (%)	Change from 2017 to 2018 (%)	Historical Return[1] (%)	Standard Deviation (%)
TIPS	3.0	2.8	-0.2	3.3	7.5
Real Estate Composite[2]	5.7	5.8	0.1	8.7	18.0
Core Private Real Estate	4.0	4.1	0.1	9.3	12.5
Value-Added Real Estate	6.0	6.0	0.0	6.9	19.0
Opportunistic Real Estate	7.5	7.5	0.0	10.0	25.0
REITs	6.0	6.2	0.2	10.6	29.0
Natural Resources Composite	7.9	8.6	0.7	10.4	23.0
Timberland	5.5	5.5	0.0	12.3	12.0
Farmland	6.5	6.4	-0.1	11.7	13.0
Oil & Gas E&P	8.8	9.4	0.6	10.7	26.0
Mining	7.5	9.5	2.0	7.8	35.0
Commodities	4.4	5.4	1.0	2.4	19.5
MLPs	6.9	7.3	0.4	5.6	22.5
Infrastructure Composite[3]	6.6	6.1	-0.5	NA	17.4

1 Historical Returns are based on different periods for each asset class due to variations in the availability of reliable data and therfore should not be used for comparative purposes between asset classes.
2 Real Estate Composite is composed of 15% REITS, 30% Core, 25% Value-Added, 20% Opportunistic and 10% High Yield RE Debt.
3 Infrastructure Composite is composed of 80% Core and 20% Non-Core.

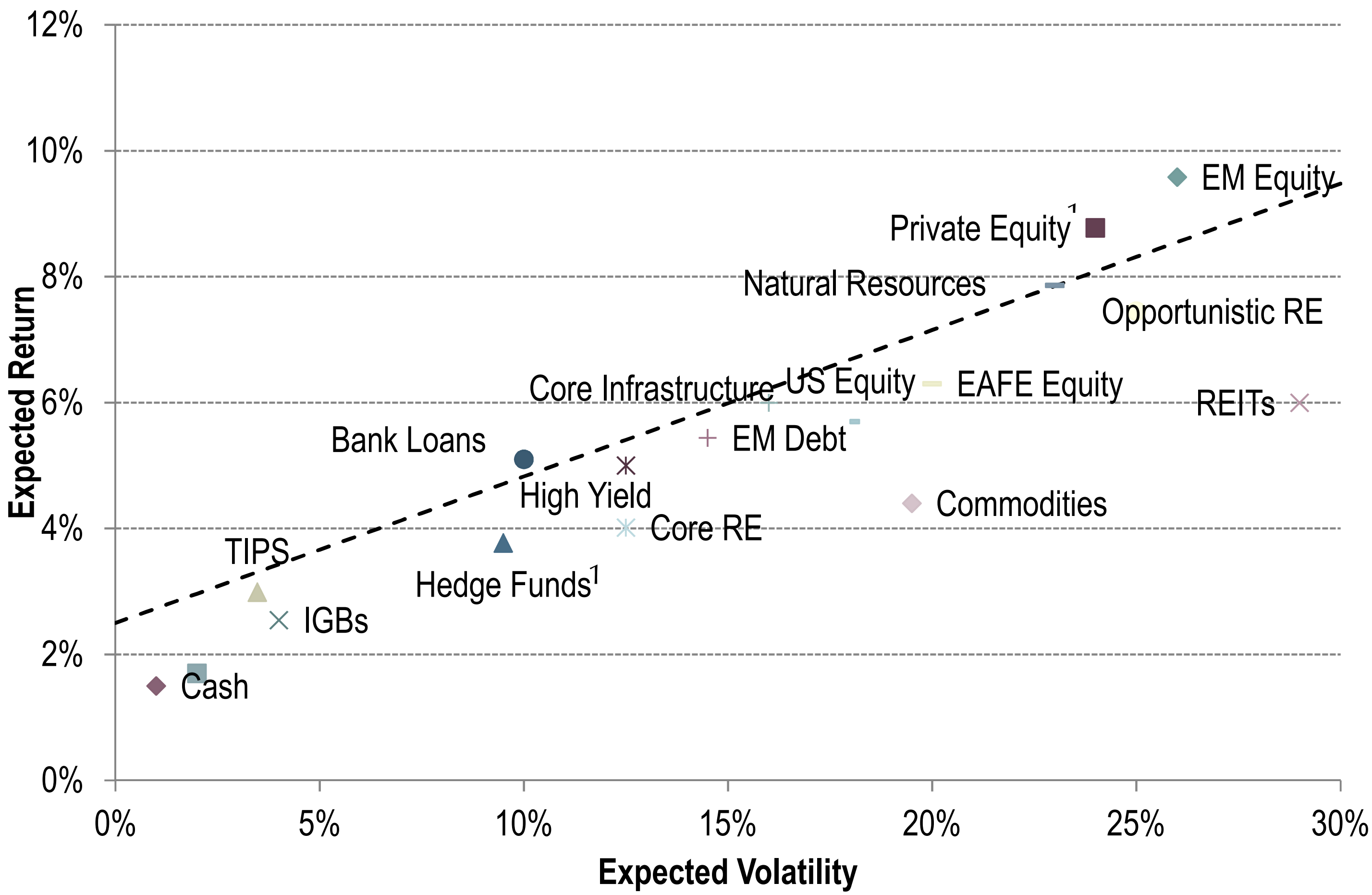
Multi Asset Strategies

Asset Class	2017 10-Year E(R) (%)	2018 10-Year E(R) (%)	Change from 2017 to 2018 (%)	Historical Return[1] (%)	Standard Deviation (%)
LACERA Hedge Fund Composite[2]	4.0	4.4	0.4	10.2	9.9
Long-Short	2.8	2.7	-0.1	11.5	11.0
Event-Driven	4.6	4.8	0.2	10.5	10.0
Global Macro	3.3	4.6	1.3	10.5	8.0
CTA – Trend Following	3.0	4.1	1.1	9.6	10.0
Fixed Income/L-S Credit	4.0	3.4	-0.6	7.4	10.0
Relative Value/Arbitrage	4.8	5.7	0.9	9.4	9.5
Risk Parity (10% vol)	4.5	4.6	0.1	NA	11.0

[1] Historical Returns are based on different periods for each asset class due to variations in the availability of reliable data and therfore should not be used for comparative purposes between asset classes.

[2] LACERA Hedge Fund Composite is based on LACERA's target weights and is composed of 20% Long-Short, 33% Event-Driven, 9% Global Macro, 9% CTA, 5% Fixed Income/L-S Credit, and 24% Relative Value/Arbitrage.

Expected Return and Expected Volatility[1]



[1] The Hedge Fund and Private Equity Composites presented above use MIG's strategy weights and differ from the LACERA custom composites on pages 8 and 9.

September 2017 Capital Markets Expectations Presentation

Los Angeles County Employees Retirement Association

Capital Markets Expectations

Presented on:
September 11, 2017
by Meketa Investment Group

Background

- The Board of Investments (“The Board”) is responsible for establishing investment policy and determining the asset allocation for the Pension Fund and the OPEB Trusts.
  - An asset allocation review is presently being conducted for the OPEB Trusts and should be competed by the end of calendar 2017.
  - The Pension Fund is scheduled for an asset allocation review in early 2018.
- LACERA’s Investment Beliefs state that, “Long-term strategic asset allocation will be the primary determinant of LACERA’s risk/return outcomes” and that “Asset allocation has a greater effect on return variability than asset class investment structure or manager selection.”

Background (continued)

- Meketa Investment Group conducts and annual study of the capital markets. The goal of the study is to develop forward looking expectations for returns and volatility.
- The Annual Asset Study provides the inputs and assumptions used in Meketa's asset allocation process. This presentation contains the results of the 2017 Asset Study and outlines Meketa approach to developing capital markets expectations.

Annual Asset Study

- Meketa Investment Group utilizes an approach that identifies asset classes that are appropriate for long-term allocation of funds, and that also are investable.
- Three considerations influence this process: unique return behavior, an observable historical track record, and a robust market.
- We then make forecasts for each unique asset class.
- This involves setting long-term expectations for a variety of asset classes for:
  - Returns
  - Standard Deviation
  - Correlations

Annual Asset Study (continued)

- Our process relies on both quantitative and qualitative methodologies.
- Meketa produces 10-Year expectations as part of the development of its long-term (20-Year) expectations.

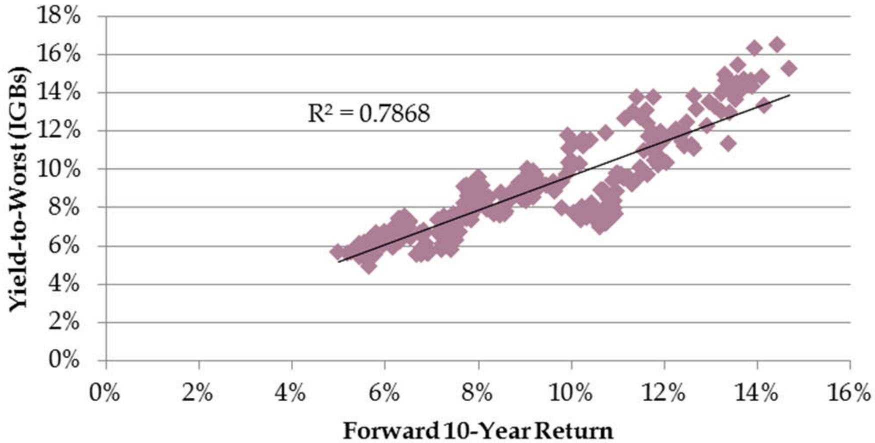
The first step is to build our 10-year forecasts

- Our fundamental models are primarily valuation based
  - Each model falls in one of eight groups, based on the most important factors that drive their returns:

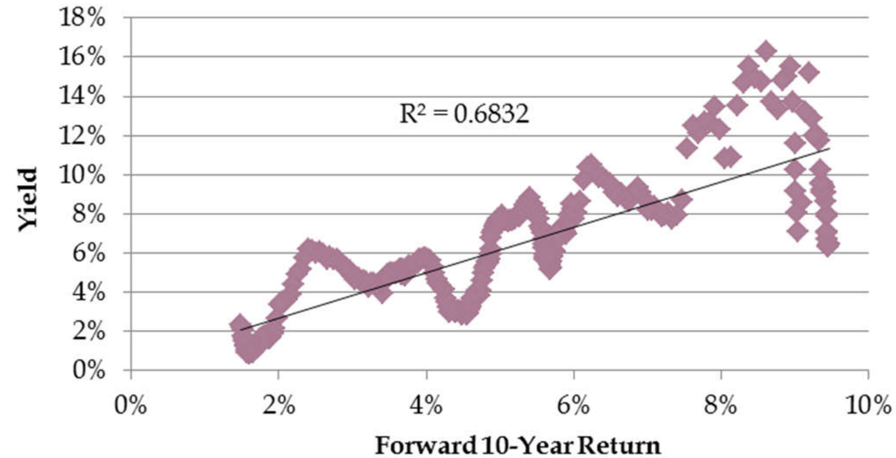
Asset Class Category	Major Factors
Equities	Dividend Yield, GDP Growth, Valuation
Bonds	Yield to Worst, Default Rate, Recovery Rate
Commodities	Collateral Yield, Roll Yield, Inflation
Infrastructure	Public IS Valuation, Income, Growth
Natural Resources	Price per Acre, Income, Public Market Valuation
Real Estate	Cap Rate, Yield, Growth
Private Equity	EBITDA Multiple, Debt Multiple, Public VC Valuation
Hedge Funds and Other	Leverage, Alternative Betas

Some models are naturally more predictive than others

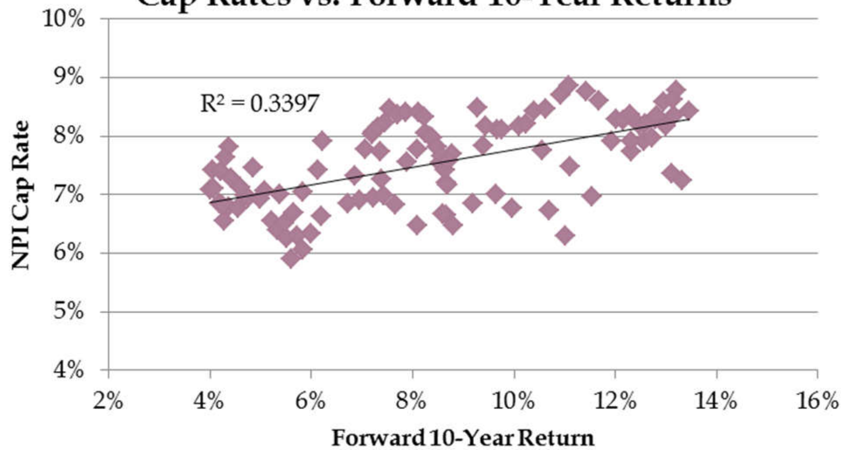
Investment Grade Bonds: Yield-to-Worst vs. Forward 10-Year Returns



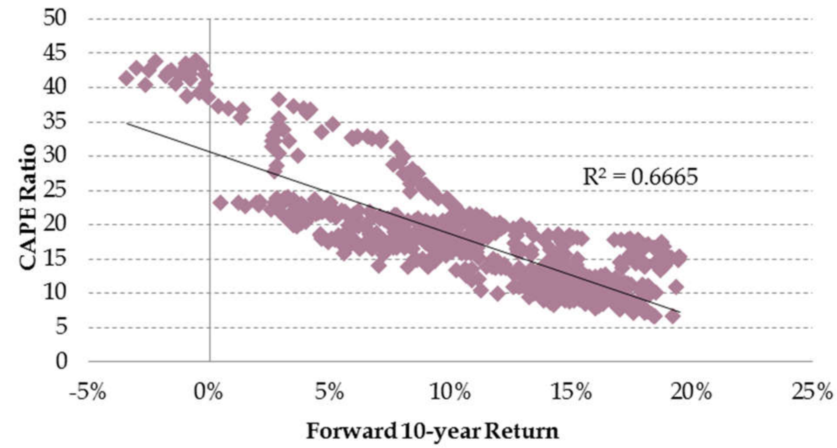
Cash (90-Day T-Bill): Yield vs. Forward 10-Year Return



Core Real Estate: Cap Rates vs. Forward 10-Year Returns



Shiller PE vs. Forward 10-year Return



Longer Term Expectations

- Meketa also develops longer term expectations. The purpose of the longer term expectations is to provide an additional lens through which to view the asset allocation.
- We do this by combining our 10-year forecasts with the historical returns for each asset class.
  - How much we apply to each depends on our confidence in them (both the model & the data).
    - The 10-year model weighting varies between 50% and 100%.
    - It only hits 100% when there is a lack of good historical data.
- We then infer a forecast of 10-year returns in ten years (i.e., years 11-20).
  - This allows us to test our assumptions with finance theory.
  - Essentially, we assume mean-reversion over the first ten years, then consistency with CAPM thereafter.

The final step is to make any qualitative adjustments

- The Investment Committee reviews the output and may make adjustments due to:
  - Quality of the underlying data
  - Confidence in the model
  - External inputs (e.g., perceived risks)

The other inputs: standard deviation and correlation

- Standard deviation:
  - We review the trailing ten-year standard deviation, as well as the trailing ten-year skewness.
  - Historical standard deviation serves as the base for our assumptions.
  - We increase or decrease the assumptions based on the size and sign of the historical skewness.

Asset Class	Standard Deviation	Skewness	Assumption
Bank Loans	8.0%	-1.9	10.0%

  - We look at performance during the GFC to see if further changes were warranted (e.g., hedge funds).
  - We also adjust for private market asset classes with "smoothed" return streams.

The other inputs: standard deviation and correlation (continued)

- Correlation:
  - We use trailing ten-year correlations as our guide.
  - Again, we make adjustments for performance during the GFC and “smoothed” return streams.
- Most of our adjustments are conservative in nature (i.e., they increase the standard deviation and correlation).

Capital Market Assumption Development Example: Equities

- We use a fundamental model for equities that combines income and capital appreciation.

E(R)=Dividend Yield + Expected Earnings Growth + Multiple Effect + Currency Effect

- Meketa Investment Group evaluates historical data statistically to develop expectations for dividend yield, earnings growth, the multiple effect and currency effect.
- Our models assume that there is a reversion to the mean over long time periods.

Capital Market Assumption Development Example: Bonds

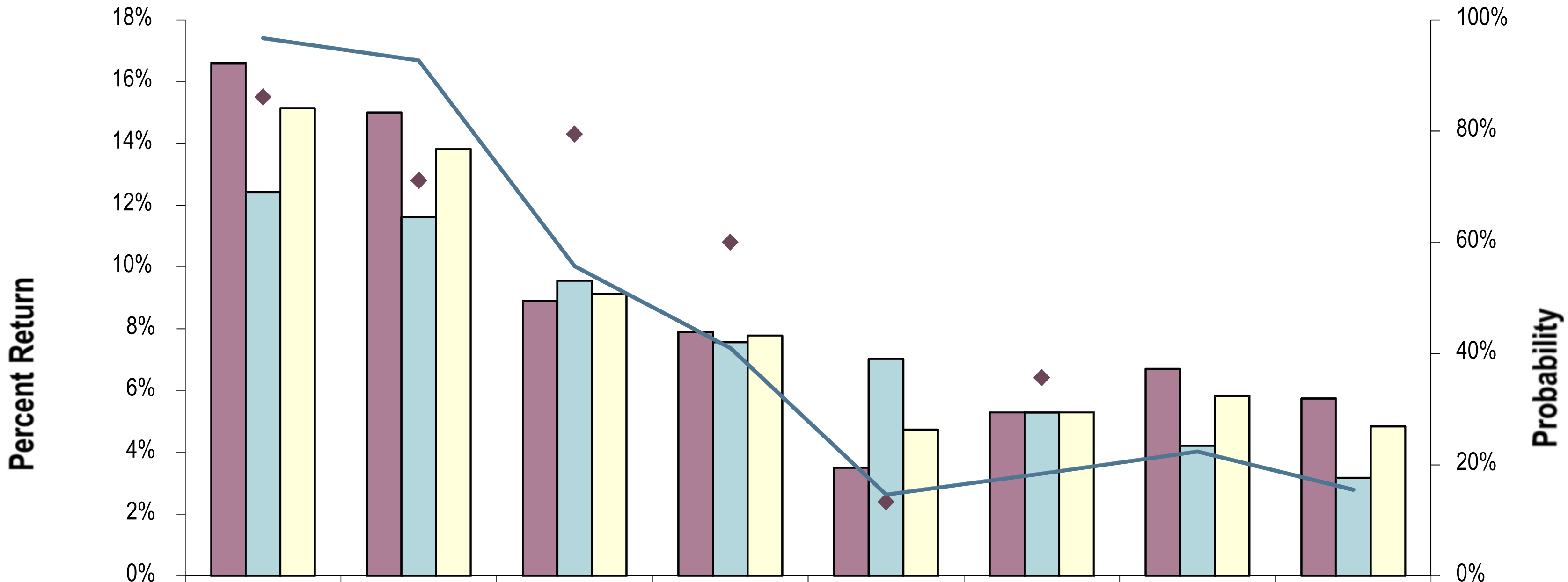
- The short version for investment grade bond models is:

E(R)=Current YTW (yield to worst)

- Our models assume that there is a reversion to the mean for spreads (though not yields).
- For TIPS, we add the real yield of the TIPS index to the breakeven inflation rate.
- As with equities, we make currency adjustments when necessary for foreign bonds.
- For bonds with credit risk, Meketa Investment Group estimates default rates and loss rates in order to project an expected return:

E(R)= YTW - (Annual Default Rate * Loss Rate)

The Secular Decline in Investment Returns[1]



	1980	1985	1990	1995	2000	2005	2010	2015
Equity Expected Return	16.6%	15.0%	8.9%	7.9%	3.5%	5.3%	6.7%	5.8%
Bond Expected Return	12.4%	11.6%	9.6%	7.6%	7.0%	5.3%	4.2%	3.2%
65/35 Eq/Bond Exp. Ret.	15.1%	13.8%	9.1%	7.8%	4.7%	5.3%	5.8%	4.8%
Actual 10-year Return	15.5%	12.8%	14.3%	10.8%	2.4%	6.4%		
Probability of earning 8%	97%	93%	56%	41%	15%	18%	22%	16%

A portfolio composed of 65% domestic stocks and 35% investment grade bonds has produced diminishing expected returns as well as actual returns over the past thirty years.

[1] Expected return assumptions for 1) Bonds equals the yield of the ten-year Treasury plus 100 basis points, and 2) Equities equals the dividend yield plus the earnings yield of the S&P 500 index (using the inflation-adjusted trailing 10-year earnings). Probability calculation is for the subsequent ten years.

Fixed Income

Asset Class	10-Year E(R) (%)	Historical Return (%)	Standard Deviation (%)	Pension	OPEB
Cash Equivalents	1.5	4.0	1.0	☑	☑
Rate Sensitive					
Investment Grade Bonds	2.5	7.5	4.0	☑	☒
Long-term Government Bonds	3.0	8.3	12.5	☒	☒
Credit					
High Yield Bonds	5.0	9.0	12.5	☑	☒
Bank Loans	5.1	5.7	10.0	☑	☒
Emerging Market Bonds	5.1	6.3	13.3	☑	☒
Private Debt Composite[1]	6.1	7.6	18.0	☑	☒
Investment Grade RE Debt	2.7	6.0	9.0	☑	☒
High Yield RE Debt	7.0	6.0	23.0	☑	☒

☑ Denotes currently utilized dedicated asset class. ☒ Denotes potential new dedicated asset class.

1 Private Debt Composite is composed of 40% Mezzanine Debt, 40% Distressed Debt, and 20% Direct Lending.

Equities

Asset Class	10-Year E(R) (%)	Historical Return (%)	Standard Deviation (%)	Pension	OPEB
US Equity	5.7	11.7	18.0	☑	☒
Developed Market Equity (non-US)	6.3	8.6	20.0	☑	☒
Developed Market Equity (50% currency hedge)	5.8	8.2	18.0	☑	☒
Emerging Market Equity	9.6	10.3	26.0	☑	☒
Global Equity	6.7	7.2	19.0	☒	☑
LACERA Private Equity Composite[1]	9.3	10.9	26.0	☑	☒

☑ Denotes currently utilized dedicated asset class. ☒ Denotes potential new dedicated asset class.

[1] LACERA Private Composite is based on LACERA's target weights and is composed of 90% Buyouts and 10% Venture Capital.

Real Assets/Inflation Sensitive

Asset Class	10-Year E(R) (%)	Historical Return (%)	Standard Deviation (%)	Pension	OPEB
TIPS	3.0	3.3	7.5	☒	☒
Real Estate Composite[1]	5.7	8.7	18.0	☑	☒
Core Private Real Estate	4.0	9.3	12.5	☑	☒
Value-Added Real Estate	6.0	6.9	19.0	☑	☒
Opportunistic Real Estate	7.5	10.0	25.0	☑	☒
REITs	6.0	10.6	29.0	☒	☒
Timberland	5.5	12.3	12.0	☒	☒
Farmland	6.5	11.7	13.0	☒	☒
Oil & Gas E&P	8.8	10.7	26.0	☒	☒
Mining	7.5	7.8	35.0	☒	☒
Commodities	4.4	2.4	19.5	☑	☒
MLPs	6.9	5.6	22.5	☒	☒
Infrastructure Composite[2]	6.6		17.4	☒	☒

☑ Denotes currently utilized dedicated asset class. ☒ Denotes potential new dedicated asset class.

1 Real Estate Composite is composed of 15% REITS, 30% Core, 25% Value-Added, 20% Opportunistic and 10% High Yield RE Debt.
2 Infrastructure Composite is composed of 80% Core and 20% Non-Core.

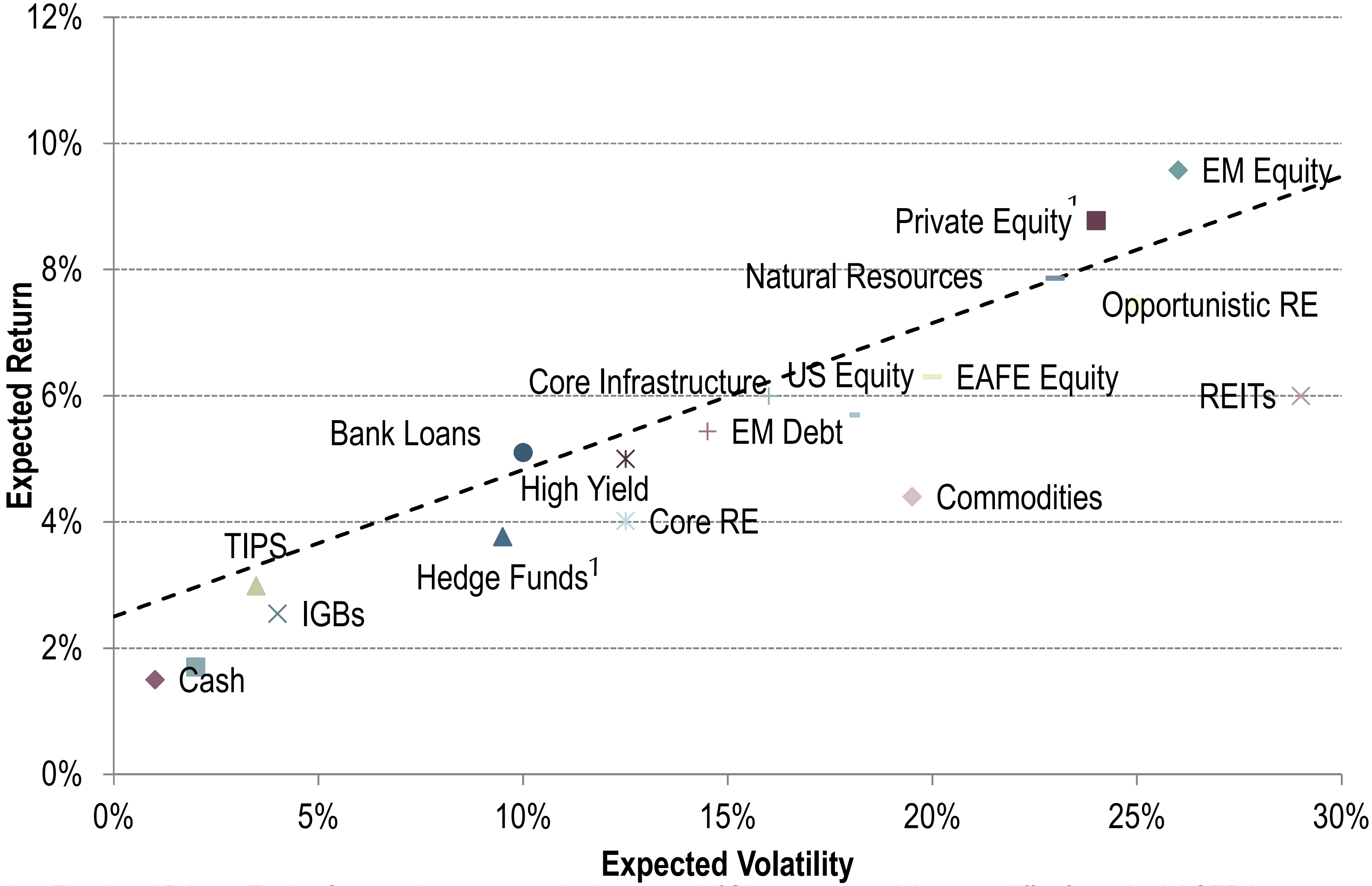
Multi Asset Strategies

Asset Class	10-Year E(R) (%)	Historical Return (%)	Standard Deviation (%)	Pension	OPEB
LACERA Hedge Fund Composite[1]	4.0	10.2	9.9	☑	☒
Long-Short	2.8	11.5	11.0	☑	☒
Event-Driven	4.6	10.5	10.0	☑	☒
Global Macro	3.3	10.5	8.0	☑	☒
CTA – Trend Following	3.0	9.6	10.0	☑	☒
Fixed Income/L-S Credit	4.0	7.4	10.0	☑	☒
Relative Value/Arbitrage	4.8	9.4	9.5	☑	☒
Risk Parity (10% vol)	4.5		11.0	☒	☒

☑ Denotes currently utilized dedicated asset class. ☒ Denotes potential new dedicated asset class.

1 LACERA Hedge Fund Composite is based on LACERA's target weights and is composed of 20% Long-Short, 33% Event-Driven, 9% Global Macro, 9% CTA, 5% Fixed Income/L-S Credit, and 24% Relative Value/Arbitrage.

Expected Return and Expected Volatility



1 The Hedge Fund and Private Equity Composites presented above use MIG's strategy weights and differ from the LACERA custom composites on pages 16 and 18.

Correlations

	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

This is just a sample of asset class correlations. Meketa will provide a correlation table with all asset classes utilized in LACERA's asset allocation.

Horizon Study

- Annually, Horizon Actuarial Services, LLC publishes a survey of capital market assumptions that they collect from various investment advisors.
- In the 2017 survey there were 35 respondents.
- The Horizon survey is a useful tool for Board members to determine whether their consultant's expectations for returns (and risk) are reasonable.

Horizon Study (continued)

Asset Class	10-Year Average Expectation (%)	MIG 10-Year Expectation (%)
U.S. Equity *(large cap)*	6.5	6.0
Non-U.S. – Developed	7.0	6.3
Non-U.S. – Emerging	8.0	9.6
U.S. *Corporate Bonds* – Core	3.2	3.3
U.S Corporate Bonds – High Yield	5.1	5.0
Non-U.S. Debt – Emerging	5.3	5.1
U.S. Treasuries (cash)	2.3	1.5
TIPS	2.9	3.0
Real Estate	6.2	5.7
Hedge Funds[1]	4.9	3.8
Commodities	4.1	4.4
Infrastructure[2]	6.7	6.6
Private Equity[1]	9.0	9.3
Inflation	2.2	2.4

[1] The Hedge Fund and Private Equity Composites presented above use MIG's strategy weights and differ from the LACERA custom composites on pages 16 and 18.

[2] The Infrastructure Composite was used for the MIG 10-Year Expectation.

Appendix

Fixed Income

Asset Class	10-Year E(R) (%)	20-Year E(R) (%)	Year 11-20 E(R) (%)	Historical Return (%)	Standard Deviation (%)
Cash Equivalents	1.5	2.8	4.0	4.0	1.0
Rate Sensitive					
Investment Grade Bonds	2.5	3.5	4.5	7.5	4.0
Long-term Government Bonds	3.0	3.8	4.6	8.3	12.5
Credit					
High Yield Bonds	5.0	6.0	7.0	9.0	12.5
Bank Loans	5.1	5.5	5.9	5.7	10.0
Emerging Market Bonds	5.1	5.7	6.3	6.3	13.3
Private Debt Composite	6.1	6.9	7.7	7.6	18.0
Investment Grade RE Debt	2.7	3.5	4.4	6.0	9.0
High Yield RE Debt	7.0	6.9	6.8	6.0	23.0

Equities

Asset Class	10-Year E(R) (%)	20-Year E(R) (%)	Year 11-20 E(R) (%)	Historical Return (%)	Standard Deviation (%)
US Equity	5.7	7.5	9.3	11.7	18.0
Developed Market Equity (non-US)	6.3	7.3	8.3	8.6	20.0
Developed Market Equity 50% currency hedged	5.8	6.8	7.8	8.2	18.0
Emerging Market Equity	9.6	9.8	10.0	10.3	26.0
Global Equity	6.7	*7.9*	9.1	7.2	19.0
Private Equity Composite[1]	9.3	*9.6*	9.9	11.4	27.0

[1] The Private Equity Composite presented above use MIG's strategy weights and differs from the LACERA custom composite on page 16.

Real Assets/Inflation Sensitive

Asset Class	10-Year E(R) (%)	20-Year E(R) (%)	Year 11-20 E(R) (%)	Historical Return (%)	Standard Deviation (%)
TIPS	3.0	3.5	4.0	3.3	7.5
Real Estate Composite	5.7	*6.9*	8.2	8.7	18.0
Core Private Real Estate	4.0	5.7	7.4	9.3	12.5
Value-Added Real Estate	6.0	7.2	8.4	6.9	19.0
Opportunistic Real Estate	7.5	8.9	10.4	10.0	25.0
REITs	6.0	6.5	7.0	10.6	29.0
Timberland	5.5	6.5	7.5	12.3	12.0
Farmland	6.5	7.3	8.0	11.7	13.0
Oil & Gas E&P	8.8	9.1	9.4	10.7	26.0
Mining	7.5	8.5	9.5	7.8	35.0
Commodities	4.4	4.5	4.6	2.4	19.5
MLPs	6.9	7.5	8.1	5.6	22.5
Infrastructure Composite	6.6	7.2	7.8	0.0	17.4

Multi Asset Strategies

Asset Class	10-Year E(R) (%)	20-Year E(R) (%)	Year 11-20 E(R) (%)	Historical Return (%)	Standard Deviation (%)
LACERA Hedge Fund Composite[1]	4.0	5.4	6.8	10.2	9.9
Long-Short	2.8	4.6	6.4	11.5	11.0
Event-Driven	4.6	6.0	7.4	10.5	10.0
Global Macro	3.3	5.5	7.7	10.5	8.0
CTA – Trend Following	3.0	4.3	5.6	9.6	10.0
Fixed Income/L-S Credit	4.0	4.7	5.3	7.4	10.0
Relative Value/Arbitrage	4.8	5.8	6.8	9.4	9.5
Risk Parity (10% vol)	*4.5*	5.7	6.9		11.0

[1] The Hedge Fund Composite presented above use MIG's strategy weights and differs from the LACERA custom composite on page 18.

Private Equity Assumptions and Comparisons

Private Equity Assumptions and Comparison from 2017 to 2018

2017 Asset Study: Private Equity Buyout 10 Year Expected Return = 9.3%

- For Buyouts, we used data on pricing and debt multiples
  - We looked at the average purchase price (EBITDA multiple) and debt multiple since 1994[1]
  - Higher prices and debt levels have usually been associated with below average results

Buyouts	US EBITDA Multiple	Europe EBITDA Multiple	US Debt Multiple
Current	9.9	10.1	5.5
Historical	7.6	8.5	4.5

  - Using this signal, we arrived at lower (than historical average) premium over public equities
  - We add this premium to public equities (65% US, 20% EAFE, 15% EM)

Private Equity Assumptions and Comparison from 2017 to 2018

2018 Asset Study: Private Equity Buyout 10 Year Expected Return = 8.8%

- For Buyouts, we used data on operational efficiencies, leverage and borrowing costs
- Borrowing costs for leverage are consistent with High Yield.

Buyouts	US Small Cap	US Large Cap	EAFE	EAFE Small Cap
Public Equities Return	6.5%	5.5%	7.3%	5.2%
Operational Efficiencies	5.0%	3.5%	3.5%	5.0%
Leverage	1.4	1.6	1.6	1.4
Gross Levered Return	13.8%	11.0%	13.8%	12.0%
Fee	2&20	2&20	2&20	2&20
Net of Fees	9.4%	7.2%	9.5%	8.0%
Weights	60%	25%	10%	5%
Expected Return	**8.8%**			

Private Equity Assumptions and Comparison from 2017 to 2018

Asset Class	2017 10-Year E(R) (%)	2018 10-Year E(R) (%)	Change from 2017 to 2018 (%)	Historical Return (%)	Standard Deviation (%)
Global Equity	**6.7**	6.2	-0.5	7.7	19.0
Buyouts	**9.3**	8.8	-0.5	10.3	25.0
Venture	**9.0**	7.2	-1.8	15.8	35.0
LACERA Private Equity Composite[1]	**9.3**	8.7	-0.6	10.9	26.0

[1] LACERA Private Equity Composite is composed of 90% Buyouts and 10% Venture.

Private Equity Implementation: Impacts of Shifting the Mix

Private Equity Implementation – Impact of Shifting the Mix

Asset Class	2017 10-Year E(R) (%)	2018 10-Year E(R) (%)	Change from 2017 to 2018 (%)	Historical Return (%)	Standard Deviation (%)
Global Equity	6.7	6.2	-0.5	7.7	19.0
Buyouts	9.3	8.8	-0.5	10.3	25.0
Venture	9.0	7.2	-1.8	15.8	35.0
LACERA Private Equity Composite 90/10	9.3	8.7	-0.6	10.9	26.0
LACERA Private Equity Composite 70/30	9.2	8.3	-0.9	12.0	28.0

	65/35 (%)	4Q17 Actual (%)	4Q18 Policy (%)	A (%)	B (%)	C (%)
Private Equity 90/10						
10 Year Expected Return	*5.8*	*6.4*	*6.2*	*6.3*	*6.3*	*6.3*
Standard Deviation	*12.50*	*13.05*	*12.22*	*12.22*	*12.04*	*11.73*
Sharpe Ratio	***0.34***	***0.37***	***0.38***	***0.39***	***0.40***	***0.41***
20 Year Expected Return	*6.9*	*7.4*	*7.2*	*7.3*	*7.3*	*7.3*
Private Equity 70/30						
10 Year Expected Return	*5.8*	*6.4*	*6.2*	*6.4*	*6.4*	*6.4*
Standard Deviation	*12.50*	*13.05*	*12.22*	*12.26*	*12.09*	*11.77*
Sharpe Ratio	***0.34***	***0.37***	***0.38***	***0.39***	***0.40***	***0.41***
20 Year Expected Return	*6.9*	*7.4*	*7.2*	*7.3*	*7.4*	*7.3*

Fees by Asset Class

Estimated Management Fees

	Active/Passive	Estimated Management Fee (bps)[1]
Growth		
Global Equity	Both	18
Private Equity	Active	440
Opportunistic Real Estate	Active	200
Credit		
High Yield	Active	44
Bank Loans	Active	60
EM Debt	Active	50
Illiquid Credit	Active	400
Real Assets and Inflation Hedges		
Core Real Estate	Active	57
Value-Added Real Estate	Active	60
Commodities	Active	36
Private Natural Resources	Active	400
Private Infrastructure	Active	400
TIPS	Passive	1
Risk Reducing and Mitigating		
Investment Grade Bonds	Both	13
Diversified Hedge Fund Portfolio	Active	400
Cash	Active	5

[1] Estimated Management Fee is based on either LACERA's current fees or an estimate provided by Meketa Investment Group for new asset classes (Private Natural Resources, Private Infrastructure, and TIPS).

Scenario Inputs

Scenario Return Inputs

Asset Class	Benchmark Used
Investment Grade Bonds	Barclays Aggregate
TIPS	Barclays U.S. TIPS
Intermediate-term Government Bonds	Barclays Treasury Intermediate
Long-term Government Bonds	Barclays Long U.S. Treasury
EM Bonds (local)	JPM GBI-EM Global Diversified Composite
Bank Loans	CSFB Leveraged Loan
High Yield Bonds	Barclays High Yield
Direct Lending - First Lien	Cliffwater Direct Lending Index
Direct Lending - Second Lien	Cliffwater Direct Lending Index
Mezzanine Debt	Cambridge Associates Mezzanine
Distressed Debt	Cambridge Associates Distressed Debt Index
Core Real Estate	NCREIF Property
Value-Added RE	NCREIF Townsend Value Added
Opportunistic RE	NCREIF Townsend Opportunistic
REITs	NAREIT Equity
Infrastructure (private)	S&P Global Infrastructure
Natural Resources (private)	S&P Global Natural Resources
Timber	NCREIF Timberland
Commodities	Bloomberg Commodity Index
U.S. Equity	Russell 3000
Public Foreign Equity (Developed)	MSCI EAFE
Public Foreign Equity (Emerging)	MSCI Emerging Markets
Private Equity	Cambridge Associates Private Equity Composite
Long-short Equity	HFRI Equity Hedge
Global Macro	HFRI Macro
Hedge Funds	HFRI Fund Weighted Composite
Private Debt	Barclays High Yield and CSFB Leveraged Loan

Negative Historical Scenario Returns - Sample Inputs

	Taper Tantrum (May - Aug 2013)	Global Financial Crisis (Oct 2007 - Mar 2009)	2008 Calendar Year	Popping of the TMT Bubble (Apr 2000 - Sep 2002)	LTCM (Jul - Aug 1998)	Asian Financial Crisis (Aug 1997 - Jan 1998)	Rate spike (1994 Calendar Year)	Crash of 1987 (Sep - Nov 1987)	Strong dollar (Jan 1981 - Sep 1982)	Stagflation (Jan - Mar 1980)	Stagflation (Jan 1973 - Sep 1974)
Cash Equivalents	0.0	3.1	1.7	9.9	0.8	2.4	3.9	1.4	24.4	2.9	13.5
Short-term Investment Grade Bonds	-0.1	8.7	5.0	21.9	1.6	3.5	0.5	2.3	29.9	-2.6	4.3
Investment Grade Bonds	-3.7	9.3	5.2	28.6	1.8	4.9	-2.9	2.2	29.9	-8.7	7.9
Long-term Corporate Bonds	-9.3	-9.4	-5.2	26.9	-0.6	5.4	-5.8	1.5	29.6	-14.1	-12.0
Long-term Government Bonds	-11.6	24.5	24.0	35.5	4.1	8.6	-7.6	2.6	28.4	-13.6	-1.8
TIPS	-8.5	9.6	-2.4	37.4	0.7	2.0	-7.5	2.8	15.6	-7.8	4.3
Global ILBs	-7.4	-1.5	-7.7	39.7	0.7	2.2	-7.9	2.9	16.5	-8.3	4.5
High Yield Bonds	-2.0	-20.7	-26.2	-6.3	-5.0	5.6	-1.0	-3.6	6.9	-2.3	-15.5
Bank Loans	0.8	-22.5	-28.8	6.3	0.7	3.3	10.3	-1.7	3.3	-1.1	-7.5
Direct Lending - First Lien	3.4	-2.1	-5.8	-0.7	-0.7	1.7	0.7	-0.2	2.0	-0.6	-4.4
Direct Lending - Second Lien	4.6	-2.9	-7.8	-1.0	-0.9	2.3	1.0	-0.3	2.6	-0.8	-5.9
Foreign Bonds	-3.2	5.3	4.4	8.5	3.5	3.3	5.3	-0.3	34.8	-6.5	-1.4
Mezzanine Debt	4.6	-25.5	-25.9	-2.0	-2.6	10.3	7.6	0.4	3.2	-1.0	-7.2
Distressed Debt	4.6	-25.5	-25.9	-2.0	-2.6	10.3	7.6	0.4	3.2	-1.0	-7.2
Emerging Market Bonds (major)	-11.5	-2.7	-9.7	6.3	-28.2	-1.8	-18.9	-9.2	-1.6	-2.6	-20.2
Emerging Market Bonds (local)	-14.3	-2.3	-5.2	7.2	-34.1	-2.4	-22.8	-11.0	-2.0	-3.2	-23.9
US Equity	3.0	-43.8	-37.0	-43.8	-15.4	3.6	1.3	-29.5	-2.3	-4.1	-42.6
Developed Market Equity (non-US)	-2.2	-49.6	-43.4	-46.7	-11.5	-5.8	7.8	-14.5	-18.0	-7.0	-36.3
Emerging Market Equity	-9.4	-45.8	-53.3	-43.9	-26.7	-31.8	-7.3	-25.3	-12.1	-6.6	-44.2
Global Equity	-0.7	-46.6	-42.2	-46.7	-14.0	-3.2	5.0	-21.5	-11.2	-5.8	-39.3
Private Equity/Debt	5.7	-25.6	-27.2	-23.4	-3.2	15.7	13.2	0.6	-2.7	-2.5	-18.2
Private Equity	5.8	-25.8	-27.6	-26.0	-3.3	16.7	14.2	0.6	-3.9	-2.7	-20.1
Private Debt Composite	4.6	-21.3	-22.5	-1.7	-2.3	8.7	6.2	0.2	3.0	-1.0	-6.9
REITs	-13.3	-61.3	-37.7	45.4	-15.3	9.8	-3.5	-19.5	2.5	-3.6	-33.9
Core Private Real Estate	3.6	-7.3	-6.5	23.6	2.3	8.5	6.4	0.7	23.9	5.5	-4.4
Value-Added Real Estate	3.8	-18.0	-13.4	177.0	1.8	11.4	11.2	1.2	44.2	9.6	-7.6
Opportunistic Real Estate	4.0	-24.7	-21.8	21.4	1.5	20.0	18.8	0.9	30.7	7.0	-5.6
Natural Resources (Private)	2.5	-26.2	-34.1	-3.9	-16.9	-7.8	12.6	-10.8	-9.4	-9.2	19.3
Timberland	1.3	25.4	9.5	-1.5	0.5	12.0	15.4	3.8	23.6	-7.4	5.5
Farmland	3.3	30.2	15.8	11.4	0.8	3.9	9.4	2.2	13.3	-4.2	3.1
Commodities (naïve)	-2.4	-31.8	-35.6	18.5	-12.0	-6.2	16.6	1.8	-16.0	-9.6	139.5
Core Infrastructure	3.7	0.2	-0.6	24.8	-0.3	6.1	-11.5	0.0	-0.2	-0.1	-0.5
Hedge Funds	-0.4	-15.6	-19.0	-2.1	-9.4	1.7	4.1	-7.8	-3.8	-1.9	-15.7
Long-Short	1.0	-24.0	-26.6	-8.8	-8.3	7.9	2.6	-10.0	-4.9	-2.5	-19.8
Hedge Fund of Funds	-0.5	-17.8	-21.4	-0.4	-7.7	0.5	-3.5	-5.7	-2.7	-1.4	-11.5

Positive Historical Scenario Returns - Sample Inputs

	Global Financial Crisis Recovery (Mar 2009 - Nov 2009)	Best of Great Moderation (Apr 2003 - Feb 2004)	Peak of the TMT Bubble (Oct 1998 - Mar 2000)	Pre-Recession (Jun - Oct 1990)	Plummeting Dollar (Jan 1986 - Aug 1987)	Volcker Recovery (Aug 1982 - Apr 1983)	Bretton Wood Recovery (Oct 1974 - Jun 1975)
Cash Equivalents	0.1	0.9	6.7	3.3	10.0	6.0	4.5
Short-term Investment Grade Bonds	4.3	2.8	5.3	4.5	13.2	15.4	5.0
Investment Grade Bonds	9.0	4.6	1.7	3.8	14.4	26.4	9.2
Long-term Corporate Bonds	28.8	11.3	-3.1	1.5	15.9	42.1	17.5
Long-term Government Bonds	2.0	4.9	-2.3	2.4	15.4	33.6	11.8
TIPS	14.3	9.1	6.3	2.2	10.2	11.5	4.1
Global ILBs	24.7	9.6	6.6	2.3	10.8	12.1	4.3
High Yield Bonds	49.1	21.8	2.1	-12.9	24.9	23.3	19.3
Bank Loans	32.9	10.1	6.1	-6.1	11.1	10.4	8.7
Direct Lending - First Lien	10.6	5.7	1.1	-1.9	5.8	5.0	5.1
Direct Lending - Second Lien	14.3	7.7	1.4	-2.5	7.8	6.7	6.8
Foreign Bonds	23.4	15.2	-7.0	15.8	44.5	32.3	17.9
Mezzanine Debt	30.8	23.7	26.8	0.7	5.4	8.2	8.3
Distressed Debt	30.8	23.7	26.8	0.7	5.4	8.2	8.3
Emerging Market Bonds (major)	27.0	20.6	49.0	-8.7	38.9	21.6	21.0
Emerging Market Bonds (local)	37.5	25.2	61.0	-10.5	48.4	26.5	25.7
US Equity	51.6	37.2	50.2	-14.7	64.8	59.3	55.1
Developed Market Equity (non-US)	60.5	56.7	53.0	-9.7	140.0	29.6	34.6
Emerging Market Equity	94.6	79.4	101.3	-15.9	126.5	52.1	53.4
Global Equity	59.9	46.2	54.8	-11.1	108.4	43.0	44.6
Private Equity/Debt	15.4	23.3	84.6	4.6	19.1	13.7	18.4
Private Equity	13.0	23.7	92.1	5.5	21.7	14.8	20.2
Private Debt Composite	27.5	20.4	21.4	0.1	5.9	7.9	8.0
REITs	82.5	44.6	-5.2	-15.6	51.8	47.4	42.5
Core Private Real Estate	-16.4	9.0	18.1	1.9	13.1	6.8	4.5
Value-Added Real Estate	-32.7	11.4	19.6	3.2	23.6	11.9	7.8
Opportunistic Real Estate	-19.0	13.6	27.9	0.4	16.7	8.6	5.7
Natural Resources (Private)	57.8	36.1	22.2	6.0	78.3	30.2	14.8
Timberland	-3.3	8.5	20.5	5.7	28.6	20.0	8.7
Farmland	5.4	9.6	10.4	3.3	15.9	11.3	5.0
Commodities (naïve)	28.9	30.6	17.1	43.5	27.6	6.2	-20.2
Core Infrastructure	2.1	8.5	33.0	0.0	1.4	0.6	0.6
Hedge Funds	20.1	22.4	52.8	-1.9	30.6	13.8	14.5
Long-Short	25.9	25.3	81.4	5.1	40.8	18.0	18.9
Hedge Fund of Funds	10.3	13.3	36.8	11.9	21.3	9.7	10.3

"Positive" Stress Test Return Assumptions - Sample Inputs[1]

	10-year Treasury Bond rates drop 100 bps	10-year Treasury Bond rates drop 200 bps	Baa Spreads narrow by 30bps, High Yield by 100 bps	Baa Spreads narrow by 100bps, High Yield by 300 bps	Trade Weighted Dollar drops 10%	Trade Weighted Dollar drops 20%	U.S. Equities rise 10%	U.S. Equities rise 30%
Cash Equivalents	0.7	0.8	0.2	0.2	1.3	2.7	1.2	1.7
Short-term Investment Grade Bonds	3.4	5.3	1.1	2.6	2.5	3.6	1.7	3.1
Investment Grade Bonds	8.5	14.4	2.7	5.0	3.4	6.6	2.3	4.6
Long-term Corporate Bonds	18.4	32.3	7.1	16.5	6.2	10.6	3.8	8.2
Long-term Government Bonds	20.5	38.0	3.4	0.5	5.1	13.0	2.8	6.9
TIPS	7.1	12.0	3.3	7.0	4.6	4.1	2.2	4.3
Global ILBs	3.1	3.0	4.5	8.5	6.5	3.9	2.7	5.8
High Yield Bonds	9.2	13.1	8.9	27.5	4.7	5.1	6.0	13.7
Bank Loans	4.4	2.2	5.0	17.5	1.9	1.3	3.7	8.6
Direct Lending - First Lien	3.2	2.0	7.6	9.4	0.7	7.7	2.9	5.0
Direct Lending - Second Lien	3.6	2.4	10.2	12.7	0.8	11.0	4.1	7.1
Foreign Bonds	8.6	16.4	4.5	9.0	11.1	12.3	3.3	7.8
Mezzanine Debt	5.8	7.2	9.8	18.5	4.5	13.1	6.6	9.9
Distressed Debt	5.8	7.4	9.9	18.9	4.8	15.2	7.2	11.2
Emerging Market Bonds (major)	7.9	12.0	8.0	17.8	6.8	12.1	6.0	12.8
Emerging Market Bonds (local)	9.1	10.0	7.3	19.6	9.0	14.9	7.1	16.0
US Equity	8.9	22.7	11.2	16.8	5.4	21.5	10.0	30.0
Developed Market Equity (non-US)	3.9	21.4	12.5	19.9	15.9	28.2	8.3	20.2
Emerging Market Equity	5.8	21.1	13.2	37.8	16.6	33.5	13.0	27.8
Global Equity	6.5	21.9	12.0	22.1	11.3	26.3	10.0	26.1
Private Equity/Debt	7.3	12.3	10.7	13.2	6.6	19.5	9.0	19.0
Private Equity	7.7	14.1	10.9	13.1	6.9	20.7	9.5	21.5
Private Debt Composite	5.4	6.3	9.9	17.5	3.9	13.5	6.3	9.8
REITs	9.0	20.4	13.6	27.4	7.9	24.0	12.2	31.7
Core Private Real Estate	5.6	8.5	5.1	8.4	3.1	10.3	3.0	3.4
Value-Added Real Estate	8.0	15.0	5.0	10.3	4.6	16.4	4.3	6.5
Opportunistic Real Estate	8.0	15.0	3.6	8.7	2.7	18.2	4.0	5.5
Natural Resources (Private)	4.0	17.9	11.6	13.7	11.4	15.5	9.4	20.7
Timberland	6.0	15.5	3.8	5.5	4.6	15.4	4.8	5.8
Farmland	5.0	9.4	8.1	8.3	4.1	13.4	4.3	5.6
Commodities (naïve)	1.5	4.0	4.4	9.2	8.6	5.4	3.6	6.4
Core Infrastructure	5.0	6.0	6.9	4.0	4.8	11.2	2.6	4.3
Hedge Funds	8.2	11.8	5.7	11.9	4.6	7.8	6.0	11.9
Long-Short	8.3	13.0	6.2	12.8	5.8	12.4	7.1	15.0
Hedge Fund of Funds	6.6	10.0	4.3	10.1	3.2	6.2	4.5	10.2

[1] Assumptions are based on performance for each asset class during historical periods that resembled these situations.

Stress Test Return Assumptions - Sample Inputs[1]

	Rates Rise 100 bp (%)	Rates Rise 200 bp (%)	Rates Rise 300 bp (%)	BBB Spreads widen by 50 bp (%)	BBB Spreads widen by 300 bp (%)	USD Gains 10% (%)	USD Gains 20% (%)	Equities Decline 10% (%)	Equities Decline 25% (%)	Equities Decline 40% (%)	Rates Fall 100 bp (%)	Rates Fall 200 bp (%)
Public Domestic Equity	10.3	9.0	6.9	6.0	-42.0	3.5	7.0	-10.0	-25.0	-40.0	10.5	8.4
Public Foreign Equity (Developed)	10.3	9.0	6.9	5.5	-33.0	-7.0	-14.0	-10.5	-26.3	-42.0	10.5	8.4
Public Foreign Equity (Emerging)	10.3	9.0	6.9	5.0	-39.0	-7.0	-14.0	-11.0	-27.5	-44.0	10.5	8.4
Long-Short Hedge Funds	6.4	7.0	6.0	6.5	-21.0	2.1	4.2	-6.0	-15.0	-24.0	6.3	5.0
Private Equity	5.2	4.5	3.5	6.0	-42.0	3.5	7.0	-8.0	-20.0	-32.0	5.3	4.2
Core Real Estate	8.7	9.6	8.7	9.5	-12.0	4.0	8.0	-5.0	-12.5	-20.0	5.5	5.2
REITs	7.9	8.0	6.0	0.5	-36.0	1.0	2.0	-9.5	-23.8	-38.0	14.9	7.4
Non-Core Real Estate	7.1	10.4	9.3	11.5	-24.0	4.0	8.0	-7.0	-17.5	-28.0	3.6	7.6
Infrastructure (private)	4.3	2.6	2.9	3.5	-24.0	3.0	6.0	-5.0	-12.5	-20.0	5.3	5.5
Natural Resources (private)	8.6	12.2	13.5	2.0	-16.5	-3.1	-6.2	-5.0	-12.5	-20.0	2.5	2.0
Natural Resources (public)	11.4	16.2	18.0	4.0	-33.0	-6.2	-12.3	-9.5	-23.8	-38.0	5.0	4.0
Commodities	8.7	4.6	-0.6	-0.5	-21.0	-15.0	-30.0	-7.0	-17.5	-28.0	1.8	-4.8
Short-Term Bonds	-6.4	-12.2	-17.9	8.0	6.0	7.0	14.0	1.0	2.5	4.0	5.1	10.9
Long-Term Government Bonds	-15.3	-33.6	-52.0	12.0	15.0	10.0	20.0	5.0	12.5	20.0	21.6	40.0
TIPS	-7.0	-15.8	-24.6	8.5	12.0	8.0	16.0	1.0	2.5	4.0	10.6	19.4
Investment Grade Bonds	-3.4	-8.6	-13.9	-0.4	-4.6	8.0	16.0	2.0	5.0	8.0	7.2	12.5
Investment Grade Corporate Bonds	-4.3	-11.4	-18.5	-1.4	-18.5	8.0	16.0	-1.5	-3.8	-6.0	9.9	17.0
Foreign Developed Bonds	-5.1	-11.8	-18.5	0.0	-3.5	-6.3	-12.6	-2.0	-5.0	-8.0	8.4	15.2
Emerging Market Bonds (external)	-2.0	-7.9	-13.9	-2.7	-25.9	5.0	10.0	-2.0	-5.0	-8.0	10.0	16.0
Emerging Market Bonds (local)	-0.8	-6.6	-12.3	1.4	-8.0	-6.3	-12.6	-3.0	-7.5	-12.0	10.7	16.4
High Yield Bonds	1.5	-2.6	-6.7	-4.9	-35.9	4.5	9.0	-6.0	-15.0	-24.0	9.7	13.8
Bank Loans	5.0	6.0	7.5	2.5	-30.0	4.5	9.0	-6.0	-15.0	-24.0	3.0	2.0
Hedge Funds	5.8	6.2	3.6	3.5	-18.0	5.0	10.0	-5.0	-12.5	-20.0	8.1	4.4
TAA	7.8	5.7	3.1	6.5	-22.2	3.2	6.4	-7.0	-17.5	-28.0	10.8	11.8
Risk Parity	6.1	2.1	-2.5	5.6	-12.0	1.6	3.3	-2.0	-5.0	-8.0	10.2	12.3

[1] Assumptions are based on performance for each asset class during historical periods that resembled these situations.

Dataset for Drawdown Analysis

Asset Class	Index or Proxy Used
Short-term Bonds	Barclays 1-3 Year Gov't/Credit
U.S. Treasuries (Intermediate)	Barclays Treasury Intermediate
Investment Grade Bonds	Barclays Aggregate
Private Debt	Cambridge Associated Mezzanine and Distressed
High Yield	Barclays High Yield
U.S. Treasuries (LT)	Barclays Long US Treasury
TIPS	Barclays US TIPS
Bank Loans	CFSB Leveraged Loan Index
Infrastructure (Core Private)	Track record of common core infrastructure fund
Global Macro	HFRI Macro (Total) Index
Emerging Market Debt (Major)	JPM EMBI+ Composite
Emerging Market Debt (Local)	JPM GBI-EM Global Diversified Composite
Hedge Funds	HFRI Fund Weighted Composite
Option-based Equity	CBOE S&P 500 Put Write Index
Private Equity	Cambridge Associates Private Equity Composite
Tactical Asset Allocation	Weighted Average of Typical TAA Fund
Risk Parity	Track record of common risk parity fund
Core Private Real Estate	NCREIF Property Index
U.S. Equity	S&P 500
REITs	NAREIT Equity
Infrastructure (Public)	S&P Global Infrastructure Index
Non-Core Private Real Estate	NCREIF Closed End Value Add Fund Index
Developed Market Equity (Non-U.S)	MSCI EAFE
Emerging Market Equity	MSCI Emerging Markets

L//.CERA

April 30, 2018

TO: Each Member
Board of Investments

FROM: Ted Wright, CFA, FRM, PRM, CAIA
Principal Investment Officer – Global Equities

Dale Johnson
Investment Officer – Global Equities

Brenda Cullen
Investment Officer – Global Equities

FOR: May 9, 2018 Board of Investments Meeting

SUBJECT: **FINALIST INTERVIEWS FOR THE PUBLIC EQUITIES ACTIVE U.S. SMALL CAPITALIZATION EQUITY MANAGER SEARCH**

RECOMMENDATION

Hire Quantitative Management Associates (QMA) and Systematic Financial Management (Systematic) for active U.S. Small Capitalization Equity mandates and allocate up to $400 mm to each using separate account vehicles.

On April 11, 2018, the Board approved staff's recommendation, which is supported by Meketa, to invite QMA and Systematic to interview with the Board for active U.S. Small Capitalization Equity mandates. Both firms are scheduled to present at the May 9, 2018 Board meeting.

Staff recommends that these two highest scoring search candidates, QMA and Systematic, be retained for active U.S. Small Capitalization Equity mandates with an initial allocation of up to $400 million to each manager. Funding for these mandates will come from existing passive portfolios in the U.S. equity composite.

Attached for your review are the finalists' presentations. For reference, also attached is staff's report which includes Meketa's recommendation on the search process from the April Board meeting.

Each firm has been allocated 20 minutes for their presentation and 10 minutes for questions. The order of presentations is as follows:

1. Quantitative Management Associates
   Stacie Mintz, Managing Director and Portfolio Manager
   Roy Henriksson, Chief Investment Officer
   Brad Zenz, Managing Director, Head of North America Sales

2. Systematic Financial Management
   Kenneth Burgess, Portfolio Manager and Partner
   Eoin Middaugh, Partner
   Steven Shaw, Senior Vice President, Institutional Sales

Attachments

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

Active U.S. Small Capitalization Equity Manager Search

Board of Investments Meeting
April 11, 2018

TED WRIGHT
PRINCIPAL INVESTMENT OFFICER, GLOBAL EQUITIES

DALE JOHNSON
INVESTMENT OFFICER

BRENDA CULLEN
INVESTMENT OFFICER

TABLE OF CONTENTS

April 2, 2018

TO: Each Member
Board of Investments

FROM: Ted Wright, CFA, FRM, PRM, CAIA
Principal Investment Officer – Global Equities

Dale Johnson
Investment Officer – Global Equities

Brenda Cullen
Investment Officer – Global Equities

FOR: April 11, 2018 Board of Investments Meeting

SUBJECT: **PUBLIC EQUITIES ACTIVE U.S. SMALL CAPITALIZATION EQUITY MANAGER SEARCH**

RECOMMENDATION

Invite the following firms to interview with the Board of Investments (Board) for active U.S. small capitalization (cap) equity mandates: 1) Quantitative Management Associates, LLC (QMA), and 2) Systematic Financial Management, LP (Systematic).

EXECUTIVE SUMMARY

On June 14, 2017, the Board authorized staff to issue a Request for Information (RFI) for active small capitalization U.S. equity managers. The purpose of this search is to identify qualified managers within the active U.S. small cap investment manager universe for potential addition to LACERA's U.S. equity composite. Small cap is generally considered a less efficient segment of the U.S. market; thus, the addition of dedicated small cap mandates may enhance the returns of the U.S. equity composite.

In July 2017, staff issued an RFI for active U.S. small cap equity managers in accordance with the Board-approved investment manager search process for public markets and the minimum qualifications (MQs) specified in LACERA's Investment Policy Statement. In an effort to narrow the universe to those managers with solid, consistent longer-term track records, the MQs included an excess return performance requirement. Thirty-eight responses were received, 27 of which met the RFI's minimum qualifications. Staff evaluated and ranked the responses using LACERA's standard two-phase assessment process: 1) evaluation of the written RFI response, and 2) in-house and on-site interviews.

The first phase, or evaluation of RFIs, confirmed the quality and consistency of each manager's performance and assessed qualitative factors historically associated with continued success. Qualitative criteria included an assessment of each manager's organization (including a review of Securities and Exchange Commission (SEC) audits and past or pending litigation); professional staff; investment philosophy, process, and research; performance, trading, and operations; and fees. Submissions were ranked based on the weighted average of each manager's qualitative (75%) and quantitative (25%) scores.

The firms with a combined qualitative/quantitative score of 75 or above were invited to continue into the second phase of the evaluation process, comprised of in-house interviews and on-site due diligence. This phase is intended to provide a deeper understanding of the firms' investment processes, familiarity with key decision-makers, and comfort with risk controls and back office functions such as operations and trading. For this part of the evaluation process, seven firms were invited for in-house interviews, four of which advanced to on-site due diligence.

Upon the completion of phase two, final scores were assigned which reflected all information gathered throughout the evaluation process **(Table 1)**. These scores were based on a critical assessment of all the criteria enumerated above in addition to a comprehensive analysis of each firm's risk management, systems, operations, and compliance functions.

Table 1: Final Scores

Investment Manager	Final Score
Quantitative Management Associates	**95**
Systematic Financial Management	**93**
Cooke & Bieler	87
PanAgora Asset Management	86

A brief summary of the two recommended finalists is included below, while a more detailed discussion of both finalist firms is located in the **Manager Assessment** section of this memo.

Quantitative Management Associates (Final Score 95). QMA has been managing U.S. equity strategies since the firm's inception in 1975 and introduced the U.S. Small Cap Core Equity strategy in 2009. Staff views the experience of the investment team, the strategy's disciplined and differentiated investment process that is both adaptive and fundamentally-based, and the firm's research-driven and team-oriented culture as key strengths. The small cap product is managed by a five-person team led by Mr. Peter Xu, Head of Research and Portfolio Management for U.S. Core Equity (24 years of investment experience) and Ms. Stacie Mintz, Managing Director and Portfolio Manager (23 years of investment experience). Mr. Xu and Ms. Mintz experienced investors with long tenures in both the industry and at QMA.

> **Systematic Financial Management (Final Score 93).** Founded in 1982, Systematic began managing assets for U.S. tax-exempt clients in the firm's Small Cap Free Cash Flow strategy in 1993. Systematic's strengths include the team's extensive experience in small cap investing and its investment process which focuses on a company's cash flow and financial strength in order to limit downside risk. The team, headed by Mr. Ken Burgess, lead Portfolio Manager (24 years of investment experience in the industry and with the strategy at the firm), is deep in talent and broad in experience. Together, they demonstrate a strong commitment to their philosophy and knowledge of small cap investing.

The remaining managers selected for on-site interviews, Cooke & Bieler and PanAgora Asset Management, were well-regarded by staff but did not rank as highly as the recommended managers after on-site interviews due to lower relative scores in operations/compliance and investment process/research, respectively. The consistency of scoring across all categories was an additional consideration in reaching this recommendation.

In sum, from a broad pool of active U.S. small cap managers all of whom passed the excess performance requirement, staff believes that it has identified two high-quality managers which exhibit the performance, organizational, and fit characteristics that could provide a benefit to LACERA's existing U.S. equity composite. From a performance perspective, both managers have consistently exceeded LACERA's excess return expectation for managers in a small cap mandate over a seven-year period. From a fit perspective, the low correlation of each manager's excess returns to those of the existing U.S. equity composite indicates that they would have a diversifying effect on the portfolio.[1] The two managers are also complementary to each other, exhibiting a low level of correlation in excess returns and differing in terms of investment philosophy and process (Systematic uses rigorous fundamental analysis in constructing concentrated, traditional value portfolios while QMA applies a quantitative process to construct less concentrated, higher-quality portfolios). Finally, both managers ranked highly on measures that have historically been associated with continued success such as soundness of philosophy, consistency of process, and quality and stability of investment personnel. Further, both firms demonstrated the back office and risk control functions that are prerequisites to managing institutional assets.

Accordingly, staff recommends inviting QMA and Systematic to interview with the Board for active U.S. small cap equity mandates.

BACKGROUND

On September 14, 2016, LACERA's general consultant, Meketa Investment Group, presented a review of LACERA's public equity program to the Board of Investments. In

---

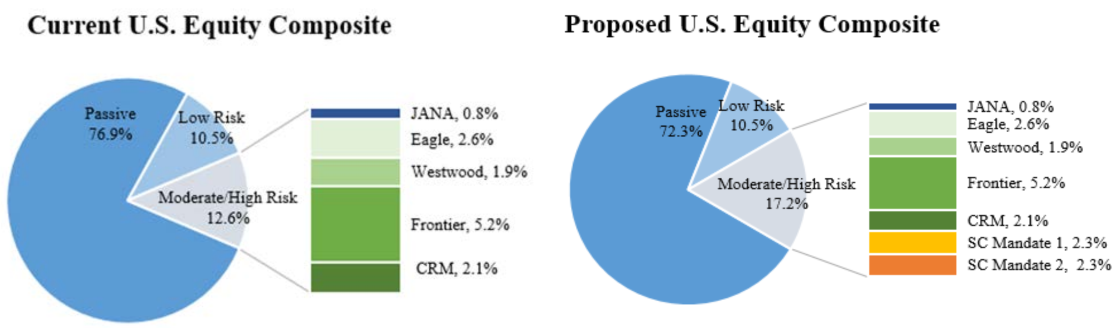
[1] Excess return correlation measures how similar a manager's excess return stream is to that of LACERA's existing U.S. equity composite.

their presentation, Meketa observed that, over the past decade, LACERA's public equities composite performance has been index-like, with the U.S. composite lagging its benchmark moderately and the non-U.S. composite offsetting the U.S. composite's underperformance.

To enhance the U.S. composite's returns, Meketa recommended that LACERA split its combined small- and mid-capitalization (SMID) mandates into separate groups. As a reminder, the majority of assets within the U.S. equity composite are passively managed (approximately 77%) with the remainder of the composite's assets invested in low risk (primarily, enhanced) and moderate-to-high risk SMID cap mandates **(Table 2)**. The rationale for the recommendation was to index the more efficient large- and mid-cap areas of the market while seeking to enhance the portfolio's excess return by hiring active small cap managers in what is generally considered the less efficient segment of the market.

Table 2: Proposed U.S. Equity Composite

$13.2 billion assets under management as of 12/31/17



Source: State Street. As of December 31, 2017.

Staff conducted an independent review and came to a similar conclusion: active management in the large- and mid-cap areas of the U.S. equity markets has been most challenged over time. Per eVestment, the median large- and mid-cap managers have outperformed their respective indices by only 17 bps and 48 bps (gross-of-fees) over the ten-year period ended December 31, 2017. [2] On a net-of-fees basis, therefore, results would be even more muted. Conversely, the median small cap manager has outperformed the index by 112 bps gross-of-fees during the same period.

LACERA's prior search for SMID equity managers in 2008 resulted in the hiring of Cramer Rosenthal McGlynn (CRM) and Westwood Investment Management (Westwood). As it has been nine years since the last SMID cap search, staff believes that it is appropriate to review the small cap universe and potentially refresh the current manager line-up.

[2] The median large cap manager is measured versus the Russell 1000 Index, the median mid cap manager is measured versus the Russell Mid Cap Index, and the median small cap manager is measured versus the Russell 2000 Index.

EVALUATION PROCESS

The active U.S. small cap equity manager search was initiated in July 2017 using the Board-approved investment manager search process for public markets and the minimum qualifications specified in LACERA's Investment Policy Statement. A detailed explanation of the two-phase evaluation process is presented in the **Evaluation Process** section of this document while a summary is provided below.

Phase one of the evaluation process consisted of a qualitative and quantitative evaluation of the RFI responses aimed at confirming the quality and consistency of each manager's performance as well as determining the prospect for each manager to enjoy continued success. AUM characteristics (such as size, quality, and concentration) and back office procedures were also reviewed to assess the risk of asset loss and the ability of each firm to manage institutional assets. Qualitative criteria included an assessment of each manager's organization; professional staff; investment philosophy, process, and research; performance, trading, and operations; and fees. A detailed presentation of each manager's ranking is shown in the section labeled **Phase One Scoring Matrix**. Submissions were ranked based on the weighted average of each manager's qualitative (75%) and quantitative (25%) scores, and the seven highest-ranked managers with scores of 75 or above were advanced to the next phase of the evaluation process. Consistent with staff's normal search procedures, phase one scores were set aside so that candidates advanced to phase two with a clean slate.

Phase two of the evaluation process consisted of in-house and on-site manager interviews. The interviews provided staff with an opportunity to further clarify RFI responses as well as gain a greater appreciation for the managers' investment processes, investment professionals, trading, operations, compliance, and other areas of potential risk or competitive advantage. In the first part of this stage, staff conducted in-house interviews at LACERA with the seven highest-scoring phase one candidates (**Table 3**).

Table 3
Firms Invited for In-House Interviews

Investment Manager	Phase One Score
Quantitative Management Associates	89
Cooke & Bieler	82
Systematic Financial Management	77
PanAgora Asset Management	77
Brandywine Global Investment Management	77
Investment Counselors of Maryland	75
Aristotle Capital Boston	75

Of the seven firms that were interviewed at LACERA's offices, the four firms with the highest scores advanced to the final round of on-site interviews for further in depth evaluation: Cooke & Bieler, PanAgora, QMA, and Systematic.

Following the on-site interviews, final scores reflecting the in-house and on-site interviews were assigned. These scores are shown in **Table 1** on page 2 of this memo in order of highest to lowest rank. While all four firms were well regarded by staff, only QMA and Systematic are recommended for Board consideration. The remaining two firms, Cooke & Bieler and PanAgora Asset Management, did not rank as highly as the recommended managers due to lower relative scores in the performance, trading, and operations areas and investment philosophy, process, and research sections, respectively.

CONCLUSION

In July 2017, staff issued an RFI for active U.S. small cap equity managers using LACERA's Board-approved investment manager search process for public markets and in accordance with the minimum qualifications specified in LACERA's Investment Policy Statement. Twenty-seven responses met the minimum qualifications. Staff evaluated the managers using the customary two-phase approach. The evaluation resulted in the identification of the following two finalists: Quantitative Management Associates and Systematic Financial Management.

The two firms are high-quality managers which utilize disciplined and unique investment processes, employ dedicated and knowledgeable investment professionals, and possess solid, long-term performance track records. With risk-adjusted returns generally in line with or slightly better than other respondents, QMA and Systematic have also scored highly on attributes that would indicate continued success and have demonstrated the organizational capability required to manage institutional assets. Finally, both managers exhibit fit characteristics that may benefit LACERA's existing U.S. equity composite.

For the reasons enumerated earlier, staff would propose hiring both managers, allocating $200-400 million to each using separate account vehicles. Under the proposed separate account structure, LACERA would retain all beneficial ownership rights, including proxy voting authority, and vote proxies of underlying securities in accordance with LACERA's *Corporate Governance Principles.* The funding for these two mandates would come from passive U.S. equity strategies, reducing the U.S. composite's weight in passive equities from 77% to 71-74% (35-75% target) and raising its weight in active equity moderate/high risk from 12% to 15-18% (10-30% target) as of December 31, 2017, depending on the amount allocated. The addition of the proposed active U.S. small cap equity mandates would be a significant milestone for LACERA in its year-long effort to allocate a dedicated proportion of its active U.S. composite to the smaller, less efficient areas of the U.S. equity market.

LACERA's general consultant, Meketa Investment Group, collaborated with staff throughout this search and concurs with conclusions reached.[3] Accordingly, staff recommends that the Board of Investments invite Quantitative Management Associates and Systematic Financial Management to interview for active U.S. small capitalization equity mandates.

[3] Meketa's memo is included in section IX of this document labelled Meketa Memorandum.

The remainder of this presentation report is as follows:

Section II:	Evaluation Process
Section III:	Manager Assessments
Section IV:	Phase One Scoring Matrix
Section V:	Performance and Risk Analysis
Section VI - VIII:	General Manager Information (information provided by the firm about their organization, answers to additional questions, and key personnel biographies.)
Section IX:	Meketa Memorandum
Section X:	Appendix

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

EVALUATION PROCESS

OVERVIEW

The active U.S. small capitalization (cap) equity manager search was conducted using staff's customary two-phase approach. Phase one consisted of a qualitative and quantitative evaluation of RFI responses that met the search's minimum qualifications. The factors reviewed as part of the qualitative analysis were: 1) organization, 2) professional staff, 3) investment philosophy, process, and research, 4) performance, trading, and operations, and 5) fees, while those that comprised the quantitative portion were: 1) information ratio, 2) upside capture, 3) downside capture, and 4) excess return correlation. Total phase one scores for each manager were calculated by combining each firm's qualitative score (weighted 75%) with their quantitative score (weighted 25%). A complete list of phase one scores is located behind the tab labeled **Phase One Scoring Matrix**.

In phase two of the evaluation process, staff conducted in-house interviews in LACERA's office and on-site interviews at each manager's principle place of business.

PHASE ONE: REQUEST FOR INFORMATION (RFI) EVALUATION

Phase one of the evaluation process focused on the quality and consistency of a manager's performance and attempted to assess qualitative factors that have historically been associated with continued success. For this reason, the qualitative portion of this phase was given a weight of 75%, while a 25% weight was assigned to the quantitative portion.

Qualitative Evaluation

The following four categories were used in the qualitative assessment of the RFI responses (category weights in parenthesis):

Organization (15%)

The section includes a review of the firm's history, ownership structure, products offered, assets under management (AUM), capacity limits, client base, and turnover. Securities and Exchange Commission (SEC) audits and past or pending litigation were also reviewed.

A firm's ownership structure is considered important for two primary reasons. First, the availability of direct ownership opportunities for employees generally improves recruitment and enhances retention. Second, privately owned firms may not have the same pressure to generate profits as firms owned by public entities and may be in a better position to manage asset growth to preserve performance. Firms that were either employee-owned and/or offer ownership opportunities for key professionals were viewed more favorably than those that were publically-owned firms or were wholly-owned subsidiaries of public firms.

Recent organizational changes were also reviewed for their potential impact on the firm, its investment team, and/or its investment process. Organizational changes that appeared to be disruptive were scored negatively.

AUM characteristics were carefully assessed because rapid growth, a base that is too large, and/or capacity limits that are not suitable, could have a negative impact on a manager's performance. Rapid growth or a large asset base may result in the dilution of a manager's best ideas or may curtail his/her ability to invest in the smallest cap securities in its universe. Conversely, a firm with insufficient assets may lack the resources needed to provide the robust risk controls, compliance, infrastructure, or personnel needed to support the investment team. Accordingly, asset growth capacity limits were key topics of discussion with firms committed to reasonable growth and capacity limits viewed more favorably.

Although the RFI minimum qualifications specified a three-year performance history, firms with a longer history of managing U.S. small capitalization equity strategies and products with longer track records were viewed more favorably.

Firms with a substantial institutional (as opposed to retail) client base were also given preference as institutional clients tend to have longer investment horizons and may therefore exert less selling pressure on illiquid small cap securities moving in and out of strategies. Material client turnover attributable to manager-related deficiencies was scored negatively.

Firms with clean SEC audits, no current or previous litigation, and no investigations were viewed more positively.

Finally, this category included a review of the firm's Form ADV reports (parts I and II), code of ethics, personal trading policies, and disaster recovery/business resumption plans. As part of the RFI response, firms are required to disclose information regarding their use of any placement agents.

Professional Staff (25%)

Skilled and experienced investment professionals are critical to the continued success of any investment strategy. Important factors in this category included portfolio manager continuity, staff turnover, size and depth of the investment/research team, and portfolio manager experience investing in the small capitalization portion of the U.S. equity market. Diversity of investment professionals was also evaluated.

The portfolio manager is primarily responsible for developing, defining, implementing, and monitoring the investment process. Analysts, traders, and research personnel also play important roles in gathering information to buy, hold, or sell decisions which ultimately determine the portfolio's performance. Therefore, well-established investment firms with seasoned professionals were viewed favorably as was low turnover within key investment professional ranks.

Further, firms with portfolio managers and research analysts responsible for multiple, dissimilar products received lower scores than those with teams that focus on a single product or related products.

Due to less extensive sell-side coverage of smaller capitalization stocks, small cap strategies, both fundamental and quantitative, require a greater degree of internal research. Accordingly, staff viewed firms with deep and experienced teams and strong internal capabilities as having a competitive advantage over those that relied primarily on external research. Additionally, products employing a unique or specialized research focus or process were viewed more favorably.

Finally, organizations with recent turnover (or reassignment) in senior management positions were viewed less favorably due to the possible negative impact on the organization's corporate culture and the potential for additional departures.

Investment Philosophy, Process, and Research (30%)

This critical category encompasses the firm's core investment principles, decision-making process (including security analysis, portfolio construction, and buy/sell disciplines), and risk controls.

Staff evaluated how investment ideas are initially identified in the security selection process. Although many U.S. small capitalization managers employ some form of quantitative screening technique to identify investment opportunities, some managers also utilize qualitative tools. Staff viewed the use of multiple approaches to idea generation more positively than approaches relying solely on a single quantitative screen.

The consistent and disciplined application of an investment process is another key determinant of a manager's ability to repeat past successes. Managers that have shown consistency in security selection, portfolio construction, and in the implementation of buy/sell disciplines as well as those who exhibit strong portfolio risk controls, were viewed more favorably than those who did not.

Due to less extensive sell-side coverage and higher trading costs of small capitalization stocks, staff sought to identify firms with strong internal research capabilities and gave preference to firms that demonstrated robust analytical methods in identifying investment opportunities and who incorporated liquidity considerations into the security selection process.

While a team approach may provide certain advantages with respect to portfolio construction and key man risk, staff generally gave preference to strategies with a clearly identified decision-maker as it is easier to gain insight into, and therefore confidence in, one person's thought process. Strategies that utilized a team-based approach were assessed to determine what advantages, if any, their approach offered.

Staff evaluated each product's style bias. Due to a higher level of volatility in the small capitalization segment of the market, strategies that were not highly stylized (i.e., neither deep value nor aggressive growth) were viewed more favorably.

Finally, firms that had a policy that address Environmental, Social, and Governance issues in the investment process were viewed more positively.

Performance, Trading, and Operations (20%)
This category assessed each manager's trading capabilities, operations, performance, compliance procedures, and risk management.

Staff verified that returns were calculated in compliance with the CFA Institute's Global Investment Performance Standards (GIPS), and that GIPS compliance was certified by an independent third party.

Large dispersions in a manager's returns between client accounts may be a concern because a prospective client cannot be certain which return history to expect. Lower dispersions in returns were preferred to large dispersions, and explanations for large differences in returns were assessed for reasonability.

As the small capitalization market is less liquid than its larger-cap counterpart, small cap stocks are more difficult and more expensive to trade. Accordingly, firms with the following characteristics were viewed favorably: traders with extensive small cap experience, risk-controlled trade processes, and processes that monitor trade costs on a regular basis.

Staff reviewed each firm's trade order management system and operations processes to understand how information flows across different groups and the types and capabilities of systems used. Firms that utilized automated systems to integrate portfolio management, trading, risk management, compliance checks, accounting, and settlement were viewed positively as such processes minimize manual errors.

Fees (10%)
This category assessed managers based on provided fee quotes. Separate accounts were preferred and managers with lower fees received higher scores.

Quantitative Evaluation
Managers received a quantitative score comprised of the four quantitative measures listed below (as calculated by Zephyr Associates'StyleADVISOR). All measures were equally weighted. Managers received a relative ranking score for each of the four components and then the scores were combined to arrive at each manager's total quantitative score.

1. ***Information Ratio*** – measures a manager's excess return per unit of excess risk incurred (i.e., how much a manager outperforms a benchmark divided by the amount of risk the manager takes relative to that benchmark). Higher

information ratios imply that investors are better rewarded per unit of risk incurred.

2. ***Upside Capture*** **–** the amount a manager's performance increases relative to its benchmark in a rising stock market environment. For example, if the benchmark increases 10% during a year and the manager's portfolio rises 12%, the manager's upside capture is 120%. Conversely, if the benchmark increases 10% and the manager's portfolio only rises 8%, the manager's upside capture is 80%. All else equal, a higher upside capture number is superior to a lower one.

3. ***Downside Capture*** **–** the amount a manager's performance decreases relative to its benchmark in a declining stock market environment. For example, if the benchmark falls 10% during a year but the manager's portfolio declines only 7%, the manager's downside capture is 70%. Conversely, if the benchmark falls 10% and the manager's portfolio declines 11%, the manager's downside capture is 110%. A lower downside capture figure is superior to a higher one.

4. ***Excess Return Correlation*** **–** the correlation of each manager's excess returns to those of LACERA's existing U.S. equity composite (Composite) may help determine its diversification benefits. Managers that exhibit a low correlation of excess returns relative to LACERA's existing managers would tend to provide greater diversification, and thus ranked higher than a manager with a higher level of correlation.

Total scores for phase one were calculated using each manager's RFI qualitative score (75% weight) and each manager's aggregate quantitative score (25% weight). Detailed manager scores are located behind the **Phase One Scoring Matrix** tab. The firms with phase one scores of 75 or higher advanced to phase two, the interview phase, of the evaluation process. Consistent with staff's normal search procedures, phase one scores were set aside so that the candidates advanced to phase two with a clean slate.

PHASE TWO: INTERVIEW PROCESS

In-House Interviews

The interviews at LACERA enabled staff to go beyond the written RFI and gain a deeper understanding of each manager's investment philosophy and process. They also provided staff with an opportunity to ask questions about the RFI, as well as to identify and evaluate each firm's competitive advantage.

Key investment decision-makers were requested to attend the interviews. Staff evaluated the managers on their ability to clearly articulate their investment philosophy, process, and capabilities and ranked them accordingly.

On-Site Interviews

The on-site interviews at each manager's office enabled staff to obtain even more in-depth knowledge about each firm. Staff met with each firm's management and other investment team members, as well as with the individuals responsible for the operations, compliance, and trading functions. Staff reviewed each manager's investment process again, ensuring consistency with their previous presentation and RFI response.

The on-site interview also provided staff with the opportunity to assess each organization's culture and gain additional insight into the manager's values and business practices. A firm's corporate culture affects its ability to recruit and retain people, as well as employee morale. The on-site visit enabled staff to get a sense of these qualitative aspects of each firm.

Final Fee Quote

Following the on-site interviews, staff asked the two finalists, QMA and Systematic, to provide a final fee quote based on an allocation of between $200 million and $400 million. To preserve the integrity of the evaluation process and ensure that the manager negotiated in good faith, staff will withdraw any recommendation to retain a manager if the manager attempts to renegotiate their fee subsequent to this memorandum.

Final Manager Scores

Upon completion of on-site interviews, each manager received a final score. Final scores were based on all information gathered during the evaluation process. Reference checks were also conducted. Final scores are presented in **Table 1**.

Table 1

Investment Manager	Final Score
QMA	**95**
Systematic	**93**
Cooke & Bieler[1]	87
PanAgora Asset Management[2]	86

[1] Cooke & Bieler scored lower on Performance, Trading, and Operations.
[2] PanAgora Asset Management scored lower on Investment Philosophy, Process, and Research.

MANAGER ASSESSMENT

QUANTITATIVE MANAGEMENT ASSOCIATES (FINAL SCORE 95)

Organization

Quantitative Management Associates (QMA), a global asset management firm headquartered in Newark, New Jersey, is a wholly-owned subsidiary of PGIM, Inc. (formerly Prudential Investment Management) and an indirect, wholly-owned subsidiary of Prudential Financial, Inc., a publicly-held company (NYSE:PRU). QMA is a signatory to the UN Principles for Responsible Investment.

Providing U.S. equity investment management services for institutional clients since 1975, QMA managed $137.5 billion in global multi-asset solutions, quantitative equity, and equity index strategies as of December 31, 2017. The firm's U.S. Small Cap Core Equity (SCCE) strategy, initiated in 2009, had $2.0 billion in strategy assets under management as of calendar year-end. The firm estimates capacity of approximately $5.0 billion in this strategy.

Professional Staff

QMA's SCCE strategy is managed by a team of seven investment professionals based in Newark, New Jersey. Mr. Peter Xu, head of the U.S. core equity team, has over 24 years of investment experience, 23 of which have been with QMA. Mr. Xu has overall responsibility for the research and portfolio management of the SCCE strategy as well as ultimate decision-making authority for changes to its model. Mr. Xu earned a BS in Nuclear Physics (Fudan University, Shanghai), an MA in Economics (Rice University), and a PhD in Finance (University of Houston).

Ms. Stacie Mintz, managing director and portfolio manager (PM), would be the lead portfolio manager for the LACERA account. Ms. Mintz has a BA in Economics from Rutgers University, an MBA in Finance from New York University, and 25 years of investment experience (23 of which have been with QMA). Ms. Mintz's broader responsibilities include managing U.S. equity portfolios in the firm's core, long/short, and market neutral strategies as well as overseeing the implementation of, and ensuring data integrity for, the SCCE product.

The larger investment team includes ten additional PMs and research analysts with over 13 years of investment experience on average. All accounts are managed on a team basis with a heavy reliance on algorithmic portfolio construction. While the strategy's PMs do not have independent investment responsibility for specific accounts and buy/sell decisions are primarily model driven, they do provide oversight in conjunction with other members of the team by validating fundamentals and ensuring model integrity.

Investment Process

QMA believes that inefficiencies in the U.S. small cap equity space create mispriced securities that active managers with a systematic process have the ability to exploit. To capitalize on these opportunities, QMA has developed an adaptive, systematic process, based on fundamental insights that incorporates over 300 fundamental, market, and forecast data items per stock. As part of QMA's unique adaptive process, factor weights are adjusted to reflect the individual growth profile for each company using a process called contextual modeling. Simply put, the strategy's model will vary the emphasis placed on valuation, growth, and quality factors as a company's growth prospects change.

The goal of the portfolio construction process is to produce a well-diversified core portfolio with the valuation, growth, and quality characteristics capable of producing consistent levels of alpha in diverse markets. To accomplish this goal, QMA employs a three-step investment process: 1) definition of the investment universe, 2) stock selection, and 3) portfolio construction. In the first stage of the process, QMA refines a broad investment universe roughly equivalent to the Russell 3000 Index to narrow its focus to the smallest 2,000 stocks. Out-of-benchmark names can be considered as part of the opportunity set to provide a higher level of active share but in aggregate are limited to ten percent of the portfolio. Fundamental data for universe constituents is then examined to ensure integrity.

The stock selection process consists of a bottom-up fundamental analysis of all of the stocks in the small capitalization universe. Weights, adjusted for each company's individual growth profile, are assigned to each factor and resulting scores are used to rank order universe constituents. Rankings from the stock selection process are then combined with transaction cost data to obtain a cost-adjusted ranking for each stock in the universe.

A proprietary optimizer is used to construct and rebalance portfolios. Optimization inputs include cost-adjusted stock rankings and benchmark-related limits for individual security, industry, sector, size, and style exposures. The output of this process is a range of optimal portfolios that maximize expected excess returns across the risk spectrum. Portfolio managers can then select the optimized portfolio that best suits their clients' needs. To ensure diversification and avoid undesired bets, neutral exposures are maintained with respect to sectors and industries, and size and style. Active position sizes are limited and each stock's liquidity profile considered.

The result of this process as it relates to the SCCE strategy is a well-diversified portfolio of 300-500 stocks that generally tilts towards value, growth (at a reasonable price), and quality while maintaining a neutral posture relative to other, less stable sources of market risk. QMA expects the SCCE strategy to achieve an annual excess return of 3-4% with tracking error of 3-5% across a full market cycle.

QMA has a defined approach to ESG. In line with QMA's goal to add value to the portfolio, QMA focuses its research on ESG best practices that may have a positive impact on portfolio performance and may reduce portfolio risk. Its stock selection models include governance-related quality factors, such as management and board quality. It is further developing its capacity to identify and integrate investment-relevant ESG factors and is a member of the Investor Advisory Group of the Sustainability Accounting Standards Board.

Observations

QMA has managed U.S. equity strategies since its founding in 1975 and the SCCE strategy since 2009. The depth and experience of QMA's investment management team is one of the firm's competitive advantages. Mr. Xu and Ms. Mintz are seasoned, dedicated investors, each with more than two decades of investment experience, the vast majority of which was acquired together at QMA. As a whole, the team is well- qualified with an average of 18 years of investment experience

(17 years on average at QMA) and a combined seven bachelor degrees, six masters' degrees, two doctorate degrees, and two Chartered Financial Analyst (CFA) designations. The entire investment team is based in the firm's Newark, New Jersey office, a location that offers opportunities for intellectual stimulation as well as quality of life, a combination that many of the firm's urban competitors cannot provide. The tenure of the strategy's investment team as well as the firm's support staff is a testament to QMA's ability to attract and retain talented investment professionals.

QMA's quantitative approach to factor investing, based on a systematic application of financial theory further supported by fundamental analysis, is unique. The model underlying the firm's U.S. Small Cap Equity strategy analyzes over 3,000 stocks daily, assessing the attractiveness of each security using approximately 300 fundamental and market data items, each of which has solid theoretical underpinnings. The inclusion of additional data items or other proposed changes to the model are thoroughly vetted for significance by extensive testing before inclusion.

An additional competitive advantage is the adaptive nature of the strategy's model that is altered to take into account a company stage in its life cycle as well as shifting market conditions. Further distinguishing features are a proprietary algorithm that emphasizes factors associated with persistent alpha while maintaining neutrality to those that are less stable and including transaction costs and liquidity when evaluating a company's attractiveness.

Since the inception of the strategy in 2009, QMA has made several enhancements to its model and considers such changes to be a normal part of the investment process as financial markets evolve. Accordingly, research is continuously conducted to identify additional factors capable of improving the model's performance. New factors are added only after extensive back testing, not only to fully understand their significance over time but also to ensure seamless implementation. Changes to the model in the last three years include the addition of the following data items: credit quality, sales-to-price, target price ratio, and board quality.

A concern that surfaced during due diligence was that the strategy, although almost ten years old, has not yet experienced a downturn. Despite having posted solid net-of-fee performance over most major time periods and since inception (+340 basis points annualized versus the Russell 2000 index), the strategy was initiated after the financial crisis and, therefore, its performance track record does not incorporate any periods of material market stress. To gain greater comfort with how the strategy might perform in periods of dislocation, staff analyzed the performance of QMA's Midcap Core Equity strategy that was initiated in 1996. Staff observed that, while annualized performance was solid across all major periods, the strategy lagged in a few shorter intervals (e.g. 1998, 2001, 2005, 2008, 2009) when one factor, typically momentum or value, strongly dominated. To improve the strategy's performance during these periods, QMA introduced an enhancement to the model that uses the earnings yield spread across stocks in the underlying universe to assess the dispersion in valuations. The weights of value and quality factors in the model can be adjusted to reflect anticipated turning points accordingly. This enhancement is expected to smooth volatility in the strategy's performance at inflection points in the future.

An unrelated QMA strategy was a finalist in a 2012 search but was not presented to the Board due to a delay in the disclosure of an error in the strategy's model discovered after the RFP was submitted. QMA explained that the delay was due to continued analysis in determining materiality and the need to notify current clients first. All clients affected were made whole and trading costs reimbursed for all accounts, including those that had experienced gains. The strategy proposed here relies on an unrelated model and is managed by a separate team. Discussions with both the investment and compliance teams have offered staff reassurance that adequate safeguards are in place to avoid such errors in the future. A letter detailing the nature of the issue and remedies taken is appended to the end of this memo as **ATTACHMENT 1**.

In summary, QMA's investment philosophy and process for its SCCE strategy are differentiated and the firm's trading, operations, compliance, and risk functions well developed and suitable for an institutional client. The investment team is intelligent, experienced, and engaged, and provided reassurance regarding the strategy's potential behavior despite a shorter-track record.

Staff has a high degree of confidence in QMA and recommends the SCCE strategy as a finalist for LACERA's U.S. Small Cap Equity mandate.

QMα | a PGIM company

March 2, 2018

Dear LACERA:

This letter serves to provide detail surrounding certain events that occurred in early 2012 when QMA was a finalist in an unrelated search, but not presented to the Board due to a delay in disclosing an error in the underlying model after the RFP was submitted. After a thorough assessment period, all clients affected were made whole and trading costs were reimbursed including those accounts that experienced gains. Our intent is to provide you with a timeline of that period and to describe the nature and resolution of the event with clients, process enhancements, and future expectations.

Timeline

- On March 21, 2012, the Head of the International Quant Core Team informed QMA's Chief Compliance Officer that his team had identified an error in the processing of certain international portfolios. The source of the error was identified late on March 20, 2012 (as described further below), and affected portfolios from the period January 26, 2012 to March 20, 2012.
- On March 22, 2012, the affected portfolios were rebalanced with updated information.
- From March 22, 2012 to March 30, 2012, QMA senior management, including risk, compliance and legal officers, met to determine the course of action and methods of analysis to calculate the performance impact on client accounts.
- From March 30, 2012 to April 2, 2012, initial communications were made to those clients whose portfolios were affected by the error as an early alert that a potential issue in the construction of their portfolios was being reviewed. Internally, QMA determined corrective actions, formulated the portfolio variances, and calculated the basis point impact on each account's performance. We advised clients that we expected the impact analysis to take an extended period of time. No other information was provided at that time because we had not concluded our review.
- On April 4, 2012, QMA hosted LACERA Investment professionals for an onsite due diligence on QMA's Emerging Markets Core strategy. Topics of discussion included Firm overview, investment process, compliance and risk management, operations and business continuation. QMA did not initiate a discussion of the ongoing review of the international model issue during the meeting.
- On or about April 11, 2012, QMA was notified by LACERA that our participation in the final for the Emerging Markets strategy was terminated due to lack of disclosure of the error. It became clear to us, in retrospect, that regardless of materiality, pro-active disclosure of an issue with a model to a late-stage prospect is expected.
- From April 2, 2012 to the conclusion of the issue, QMA determined corrective actions, formulated the portfolio variances, and calculated the basis point impact on each account's performance.
- Between April 30, 2012 and May 2, 2012, we sent a final notification to the affected clients describing the nature of the issue, the impact to their accounts, and the corrective measures that we were taking.
- Following our notification to clients, client accounts were made whole. There were 25 accounts affected, most impacted by +/-10 bps; one outlier had a -40bp impact. As is our policy, accounts with gains retained the gain and were also reimbursed for transaction costs incurred in connection with our rebalancing of the portfolios with updated data on March 20, 2012. Accounts with a loss were reimbursed for that loss, with interest, plus transaction costs.

QMA did not lose any clients as a result of the issue, was not subject to legal action or additional due diligence by any client and subsequently received an additional investment in the strategy from one of the affected clients. We believe our communications with our clients during the resolution of this issue reinforced the trust they have in QMA.

Nature of the Issue and Remedies

On January 26, 2012 a formatting change affecting an input file used by an international portfolio construction program caused stale stock ratings to be used in the rebalancing of a number of portfolios through March 20, 2012. The impact of the stale data file on the portfolios was subtle, so it took some time for us to recognize that there was an issue.

The model that underlies the international strategies is distinct from the US model that underlies the US Small Cap Core strategy currently under consideration by LACERA. Nevertheless, once we discovered the issue with the international model, we reviewed the US model to prevent a similar issue from occurring.

As a result of the error, we also put the following additional safeguards in place:

- we established a development environment for developing, modifying and testing model changes;
- we created a tool to formalize the procedure for promoting model changes to the production environment; and
- we purchased a vendor solution for source code management to maintain version control for all of our investment management programming.

Expectations for the Future

We have controls in place to detect these issues promptly, and have a reimbursement policy that favors the client. Complex issues, such as the one in 2012, are unusual for us, and we have not had one of comparable complexity before or since that time. We have developed, and will always strive to develop, enhanced quality control and review practices to prevent and detect process errors.

That said, if any issues were to occur, minor or more extensive, we would continue to communicate quickly and clearly with our clients. We pledge to extend that same level of transparency to LACERA.

Sincerely,

Brad Zenz

Brad Zenz
Managing Director, Head of North American Sales

MANAGER ASSESSMENT

SYSTEMATIC FINANCIAL MANAGEMENT, L.P. (FINAL SCORE 93)

Organization

Systematic Financial Management, L.P. (Systematic) was founded in 1982 and became a subsidiary of Affiliated Managers Group, Inc. in 1995. Systematic is headquartered in Teaneck, New Jersey and offers investment management services for U.S. and international equity strategies.

As of December 31, 2017, Systematic's total assets under management were $5.3 billion, of which $1.6 billion was in the Small Cap Value Free Cash Flow (SCV) product. Systematic estimates there is approximately $900 million of capacity remaining in the SCV product. Systematic is not a signatory to the UN Principles for Responsible Investment.

Professional Staff

The lead portfolio manager for the SCV product is Kenneth Burgess, CFA, Lead Portfolio Manager. He is supported by Ryan Wick, CFA, Assistant Portfolio Manager and eight other assistant portfolio managers and equity analysts. Mr. Burgess has been with Systematic for over 24 years. Mr. Wick has been with Systematic for 12 years and has over 18 years of investment experience.

The broader investment team includes eight portfolio managers (PMs), with over 22 years of experience on average, who are responsible for the investment process and research for all of Systematic's equity products. The PMs are integral to the research process as they incorporate their experiences and observations from day-to-day research, monitoring of client portfolios, performance, and markets.

Investment Process

Systematic believes that small cap stocks are inefficient due to trends in investor sentiment which move stock prices away from their "true" economic value. Sytematic seeks to exploit the inefficiencies and identify attractively valued stocks by calculating the present value of an investment's future cash flows in a consistent manner. Systematic employs a fundamental process that provides a structured and disciplined approach to evaluating stocks and constructing a portfolio. The process incorporates analyzing a company's free cash flow potential and debt levels, which provide a ballast for managing through economic cycles and swings in investor sentiment.

The process begins by evaluating stocks in the small capitalization universe represented by the Russell 2000 Index. An initial quantitative screen is applied to the universe to narrow the list of prospective investments by focusing on cash flow, debt, and current price measures. The resulting list of approximately 200 companies are then modeled and analyzed in detail. The fundamental analysis consists of reviewing historical operating results, debt coverage, balance sheet, current business model, company management, and industry trends, as well as risks and opportunities related to environmental, social, and governance (ESG) factors. Systematic also employs a third party vendor to further identify relevant ESG factors. Systematic is trying to identify well-managed, financially sound companies that are trading at a discount to fair value, are generating strong operating and free cash flow, and have a catalyst for stock price appreciation.

Next, the portfolio is constructed on a bottom-up basis and position weights are determined by conviction and contribution to overall portfolio profile of low price to cash flow and low debt metrics. The objective is to construct a portfolio of quality companies that over the long term will be best positioned to withstand swings in investor sentiment and economic cycles.

The result is a well-diversified portfolio, holding approximately 100-150 stocks, and has an expected excess return of 2-3% with an expected tracking error of 3-5%. Individual security weights are limited to 5% of the portfolio. The holding period for a stock is typically three to five years. This relatively long period helps minimize trading costs by limiting the impact from turnover.

Staff's Observations

Staff views the experience, knowledge, and depth of the Systematic portfolio management team as one of the firm's competitive advantages. During the in-house interview, staff met with Mr. Burgess and was impressed by his knowledge of small capitalization stocks and his long history with the firm. Mr. Burgess was one of the original team members on the small capitalization product at Systematic, and his unique perspective on small capitalization stocks and the strategy is a valuable asset to the firm. Staff gained further confidence in the investment team after meeting with Mr. Wick, the Assistant Portfolio Manager for the small cap product during the on-site visit. Although he is an assistant portfolio manager, he appeared to have considerable input and decision-making responsibilities on the product.

Another competitive advantage that distinguishes Systematic's product from its peers is the behavioral aspects of the fundamental investment process. Typically, behavioral insights are incorporated into quantitative investment strategies. However, Systematic takes a long-term view and attempts to identify companies that can navigate economic cycles and changes in investor sentiment.

A third competitive advantage is Systematic's long-term track record. The strategy has been active for 25 years and experienced many market cycles and environments. The knowledge and experience gained over that time has reinforced the firm's conviction in its philosophy and process and supported the execution of the strategy.

Staff's main concern about Systematic was related to investment personnel and potential key-person risk. Mr. Burgess has been with the firm for 25 years and many of the other senior investment staff have been with the firm for over 20 years. However, the firm is already developing its next group of lead portfolio managers by assigning assistant portfolio managers to each strategy and offering them partnership status. Within the SCV strategy, there is a broad range of tenure and experience to ensure continuity and refreshment.

Systematic's SCV strategy has delivered very solid performance, beating its benchmark on a net-of-fees basis for all annualized periods going back to the product's inception 25 years ago. Since inception, the strategy has outperformed the Russell 2000 Index by over 500 basis points annually. Staff has a high level of confidence in the Systematic portfolio management team, their investment process, and the SCV strategy. Therefore, staff recommends Systematic as a finalist.

PHASE ONE: TOTAL MANAGER SCORE

	MANAGERS	REQUEST FOR INFORMATION (QUALITATIVE)	RISK FACTORS (QUANTITATIVE)	TOTAL
		75%	25%	100%
1	Quantitative Management Associates LLC	70	19	**89**
2	Cooke & Bieler, LP	65	17	**82**
3	Systematic Financial Management, L.P.	66	11	**77**
4	Brandywine Global Investment Management, LLC	62	15	**77**
5	PanAgora Asset Management, Inc.	60	17	**77**
6	Aristotle Capital	60	15	**75**
7	Investment Counselors of Maryland, LLC	65	10	**75**
8	Macquarie Investment Management – Core	52	19	**71**
9	Aberdeen Asset Management Inc.	52	19	**71**
10	Matarin Capital	52	19	**71**
11	Martingale Asset Management	52	18	**70**
12	Kayne Anderson Rudnick Investment Management, LLC	54	15	**69**
13	Tributary Capital Management, LLC	54	13	**67**
14	AB L.P.	53	13	**66**
15	River Road Asset Management, LLC	53	13	**66**
16	Victory Capital Management Inc.	51	14	**65**
17	ClearBridge Investments	52	13	**65**
18	Voya Investment Management	51	12	**63**
19	American Century Investment Management, Inc.	50	11	**61**
20	Macquarie Investment Management – Value	51	9	**60**
21	Brown Advisory LLC	51	9	**60**
22	William Blair Investment Management, LLC	48	11	**59**
23	Wellington Management Company LLP	49	7	**56**
24	The Boston Company Asset Management LLC	47	9	**56**
25	Cramer Rosenthal McGlynn, LLC	49	6	**55**
26	LMCG Investments, LLC	47	8	**55**
27	Fisher Investments	44	9	**53**

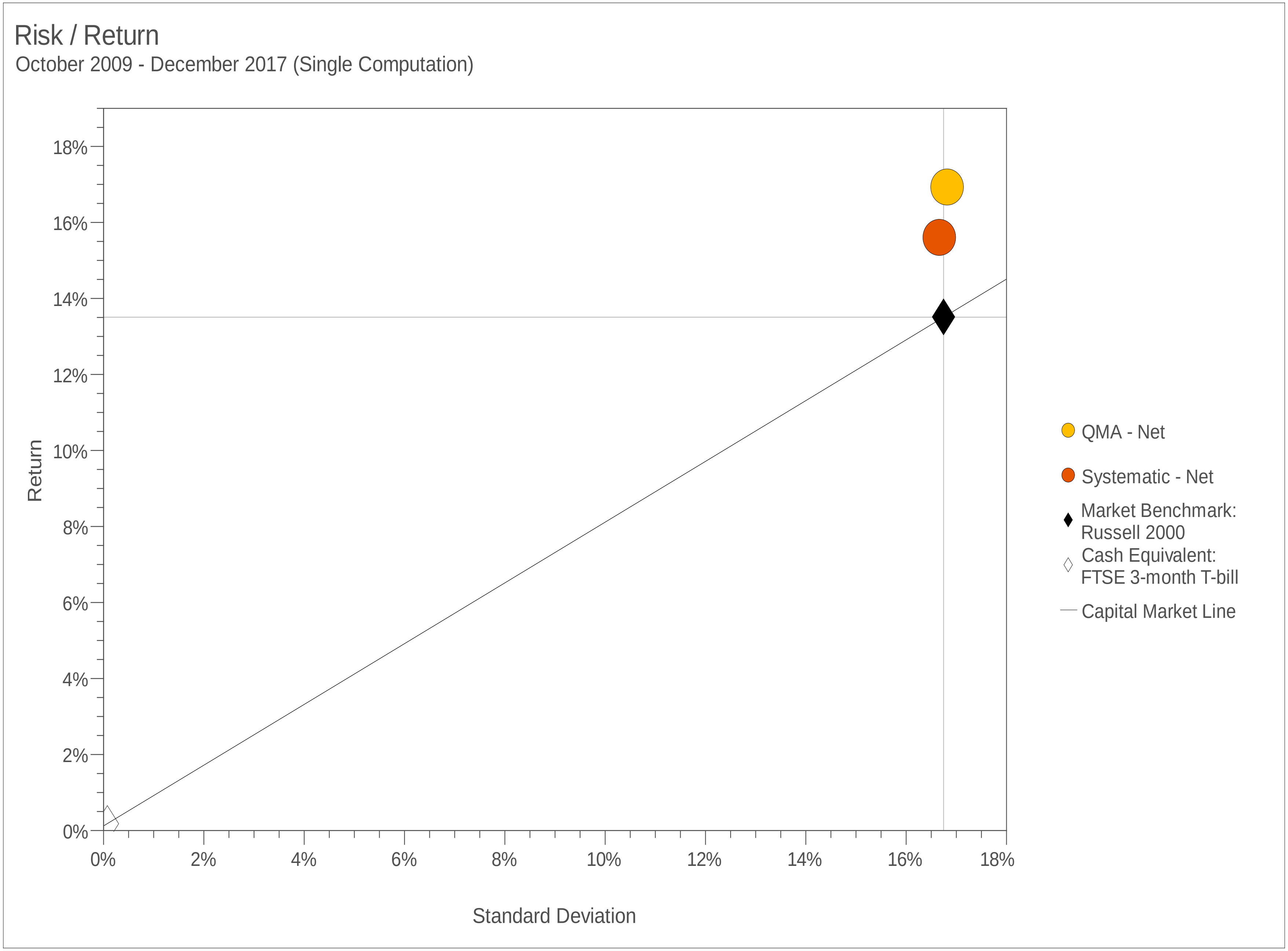
ANNUALIZED MANAGER PERFORMANCE
AS OF DECEMBER 31, 2017

	YEARS				
MANAGERS	**ONE**	**THREE**	**FIVE**	**SEVEN**	**SINCE INCEPTION***
QMA (Gross-of-Fees)	13.0%	12.1%	16.9%	15.8%	17.7%
QMA (Net-of-Fees)	12.3%	11.4%	16.2%	15.0%	16.9%
Systematic (Gross-of-Fees)	25.0%	16.7%	19.0%	14.8%	15.1%
Systematic (Net-of-Fees)	23.8%	15.6%	17.9%	13.7%	14.0%
BENCHMARK					
Russell 2000 Index	14.7%	10.0%	14.1%	11.6%	
PEER UNIVERSES					
eVestment Small Cap Median	14.9%	10.6%	15.0%	12.7%	

*QMA since inception beginning October 2009. The Russell 2500 Index returned 13.5% during this time.
Systematic since inception beginning January 1993. The Russell 2500 Index returned 9.5% during this time.

CALENDAR YEAR
MANAGER PERFORMANCE
AS OF DECEMBER 31, 2017

	YEARS						
MANAGERS	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**
QMA (Gross-of-Fees)	13.0%	23.6%	0.8%	11.0%	40.0%	25.0%	1.9%
QMA (Net-of-Fees)	12.3%	22.9%	0.1%	10.2%	39.0%	24.2%	1.3%
Systematic (Gross-of-Fees)	25.0%	23.9%	2.6%	6.1%	41.5%	16.9%	-5.7%
Systematic (Net-of-Fees)	23.8%	22.7%	1.6%	5.0%	40.2%	15.8%	-6.7%
BENCHMARK							
Russell 2000 Index	14.7%	21.3%	-4.4%	4.9%	38.8%	16.4%	-4.2%
PEER UNIVERSES							
eVestment Small Cap Median	14.9%	20.6%	-2.9%	5.1%	41.5%	16.6%	-1.9%



SOURCE: Zephyr StyleADVISOR

RISK FACTORS
(Quantitative)[1]

	Managers	Information Ratio[2]	Up Capture[3]	Down Capture[4]	Excess Return Correlation[5]
		Raw Score	Raw Score	Raw Score	Raw Score
1	Quantitative Management Associates LLC	1.43	108.4%	92.2%	0.17
2	PanAgora Asset Management, Inc.	1.30	106.1%	92.5%	0.21
3	Macquarie Investment Management	0.89	99.7%	87.7%	0.20
4	Cooke & Bieler, LP	0.80	107.3%	87.3%	0.30
5	Matarin Capital	0.58	91.8%	80.1%	0.11
6	Aberdeen Asset Management Inc.	0.51	92.8%	79.9%	0.16
7	Aristotle Capital	0.47	97.3%	89.2%	0.25
8	Martingale Asset Management	0.45	79.5%	61.7%	-0.05
9	AB L.P.	0.45	100.8%	92.4%	0.29
10	Systematic Financial Management, L.P.	0.38	96.1%	89.8%	0.32
11	ClearBridge Investments	0.36	99.6%	93.3%	0.22
12	Kayne Anderson Rudnick Investment Mgmt., LLC	0.33	77.8%	61.3%	0.17
13	William Blair Investment Management, LLC	0.33	97.2%	89.3%	0.33
14	Victory Capital Management Inc.	0.32	89.3%	81.6%	0.18
15	Brandywine Global Investment Management, LLC	0.31	97.1%	90.9%	0.12
16	Voya Investment Management	0.31	92.4%	87.7%	0.23
17	Fisher Investments	0.24	95.0%	89.8%	0.38
18	Tributary Capital Management, LLC	0.22	89.3%	84.2%	0.16
19	Brown Advisory LLC	0.21	90.2%	83.5%	0.34
20	Investment Counselors of Maryland, LLC	0.18	95.3%	91.8%	0.26
21	Macquarie Investment Management	0.11	87.4%	83.3%	0.27
22	River Road Asset Management, LLC	0.03	75.9%	70.1%	0.04
23	American Century Investment Management, Inc.	-0.04	93.0%	93.0%	0.12
24	Wellington Management Company LLP	-0.05	97.2%	98.0%	0.28
25	The Boston Company Asset Management LLC	-0.07	124.0%	125.1%	0.27
26	LMCG Investments, LLC	-0.23	86.1%	88.2%	0.22
27	Cramer Rosenthal McGlynn, LLC	-0.38	89.5%	95.3%	0.23

[1] For 6.5 years ending June 30, 2017. Table is sorted by information ratio rank.
[2] The information ratio is the excess return per unit of excess risk. It is measured by dividing excess return by the excess risk.
[3] The up capture is the amount a manager's performance increases relative to the benchmark in an up equity market environment.
[4] The down capture is the amount a mangers' performance drops relative to the benchmark in a declining equity market environment.
[5] Excess return correlation measure how similar a manager's excess returns are in relation to LACERA's domestic equity composite. A lower number provides LACERA greater diversification benefits than a higher number.
SOURCE: Zephyr StyleADVISOR

QUANTITATIVE MANAGEMENT ASSOCIATES, LLC
ORGANIZATIONAL INFORMATION
As of December 31, 2017

ORGANIZATION		
HEADQUARTERS	2 Gateway Center, 6th Floor, Newark NJ 07102	
YEAR FIRM FOUNDED	1975	
WHERE MONEY IS MANAGED	1975	
OWNERSHIP STRUCTURE	LLC	
YEAR PROPOSED PRODUCT WAS INTRODUCED	2009	
ASSETS UNDER MANAGEMENT		
TOTAL FIRM ASSETS UNDER MANAGEMENT AS OF 12/31/2017	$137,529 million	
TOTAL PRODUCT ASSETS AS OF 12/31/2017	$2,026.6 million	
NUMBER OF INSTITUTIONAL CLIENTS IN PRODUCT	22 client accounts	
LARGEST ACCOUNT IN PRODUCT	$880 million	
PRODUCT ASSETS GAINED IN LAST 4 CALENDAR YEARS:	NUMBER OF NEW CLIENT ACCOUNTS	ASSETS GAINED ($MM)
2017	17	$172 million
2016	1	$110 million
2015	1	$44 million
2014	0	$0
PRODUCT ASSETS LOST IN LAST 4 CALENDAR YEARS:	NUMBER OF LOST CLIENTS	ASSETS LOST ($MM)
2017	0	$0
2016	0	$0
2015	0	$0
2014	0	$0
PROFESSIONAL STAFF		
PROPOSED LEAD PORTFOLIO MANAGER(S)	Stacie Mintz, CFA	
AVERAGE YEARS OF PORTFOLIO MANAGEMENT EXPERIENCE	24	
NUMBER OF RESEARCH ANALYSTS IN PRODUCT	10	
AVERAGE YEARS OF RESEARCH ANALYST EXPERIENCE	13	
PRODUCT PROFESSIONAL ADDITIONS FOR THE LAST 4 CALENDAR YEARS	NAME OF PROFESSIONAL	TITLE
2017		
2016		
2015		
2014		
PRODUCT PROFESSIONAL DEPARTURES FOR THE LAST 4 CALENDAR YEARS	NAME OF PROFESSIONAL	TITLE
2017		
2016	Daniel Carlucci	Portfolio Manager
2015		
2014		

Source: RFP Respondent

QUANTITATIVE MANAGEMENT ASSOCIATES, LLC
ORGANIZATIONAL INFORMATION

PROPOSED ANNUAL FEE STRUCTURE		
PROPOSED ANNUAL FEE BREAK POINTS (separate account)	Asset Based Fee: 55 bpts: First $100M 53 bpts: Next $100M 49 bpts: Thereafter	
PROPOSED EFFECTIVE FEE ON $200 MILLION (basis points)	54 bps	
PROPOSED EFFECTIVE FEE ON $200 MILLION (dollars)	$1.08 million	

Source: RFP Respondent

SYSTEMATIC FINANCIAL MANAGEMENT, L.P.
ORGANIZATIONAL INFORMATION
As of December 31, 2017

ORGANIZATION		
HEADQUARTERS	Teaneck, New Jersey	
YEAR FIRM FOUNDED	1982	
WHERE MONEY IS MANAGED	Teaneck, New Jersey	
OWNERSHIP STRUCTURE	Limited Partnership	
YEAR PROPOSED PRODUCT WAS INTRODUCED	1993	
ASSETS UNDER MANAGEMENT		
TOTAL FIRM ASSETS UNDER MANAGEMENT AS OF 12/31/2017	$5,280 M Discretionary AUM	
TOTAL PRODUCT ASSETS AS OF 12/31/2017	$1,587 M Discretionary AUM	
NUMBER OF INSTITUTIONAL CLIENTS IN PRODUCT	31 Institutional Clients	
LARGEST ACCOUNT IN PRODUCT	Approximately $620 M *(as of 12/31/2017)*	
PRODUCT ASSETS GAINED IN LAST 4 CALENDAR YEARS:	NUMBER OF NEW CLIENTS	ASSETS GAINED ($MM)
2017	2	$11 M
2016	1	$20 M
2015	0	$0 M
2014	1	$6 M
PRODUCT ASSETS LOST IN LAST 4 CALENDAR YEARS:	NUMBER OF LOST CLIENTS	ASSETS LOST ($MM)
2017	2	$36 M
2016	0	$0
2015	0	$0
2014	1	$58 M
PROFESSIONAL STAFF		
PROPOSED LEAD PORTFOLIO MANAGER(S)	Kenneth Burgess, CFA	
AVERAGE YEARS OF PORTFOLIO MANAGEMENT EXPERIENCE	22 Years	
NUMBER OF RESEARCH ANALYSTS IN PRODUCT	9	
AVERAGE YEARS OF RESEARCH ANALYST EXPERIENCE	17 Years	
PRODUCT PROFESSIONAL ADDITIONS FOR THE LAST 4 CALENDAR YEARS	NAME OF PROFESSIONAL	TITLE
2017	---	---
2016	---	---
2015	Mike Cikos, CFA	Equity Analyst
2014	---	---
PRODUCT PROFESSIONAL DEPARTURES FOR THE LAST 4 CALENDAR YEARS	NAME OF PROFESSIONAL	TITLE
2017	Elizabeth Howell, CFA	Equity Analyst
2016	---	---
2015	Christopher Hayes	Junior Analyst
2014	---	---
PROPOSED ANNUAL FEE STRUCTURE		
PROPOSED ANNUAL FEE BREAK POINTS (separate account)	Fees Below Are Based Upon Various Initial Allocation Levels If $200 M: 55bps on all assets If $300 M: 52bps on all assets If $400M or Above: 49bps on first $400M / 45bps over $400M	
PROPOSED EFFECTIVE FEE ON $200 MILLION (dollars)	$1,100,000	

Source: RFP Respondent

STAFF SUPPLEMENTAL QUESTIONS[1]

1. Please describe your investment philosophy as it relates to the active U.S. small capitalization equity product.

QMA's investment approach is grounded in the systematic application of financial theory and fundamental analysis. We believe that fundamentals drive stock prices. Prices, however, do not always follow fundamentals, which introduces opportunities to exploit pricing inefficiencies. The Quantitative Equity team seizes on such opportunities. Mispriced securities in the US small cap space may offer a particularly rich source of alpha, as less available information about small cap companies can create more efficiencies for potential exploitation.

- Our systematic, bottom-up process uses distinctive value, growth, and quality factors to identify and exploit inefficiencies that arise in markets, chief among them the behavioral biases of investors.

- As a company's growth prospects change, our adaptive, proprietary model varies the weights we place on valuation, growth, and quality factors. Our model also adapts factor weightings in extreme market conditions.

- We build broadly diversified portfolios. We focus on diversifying across keys risk factors, as well as at the stock level, to neutralize unintended portfolio risk and minimize exposures sensitive to exogenous shocks.

- QMA utilizes a systematic, repeatable process. Our model is not impacted by behavioral biases.

We believe that the result is a well-diversified, core portfolio with the valuation, growth, and quality characteristics most likely to produce alpha.

We continually seek ways to enhance our investment processes. Our belief is that periodic enhancements are necessary as markets evolve. QMA's investment professionals routinely explore both sell-side and academic research related to quantitative techniques in an effort to discover new, applicable investment ideas. Since the inception of the US Small Cap Core Equity strategy, we have introduced various enhancements and improvements to our stock selection model. We consider these enhancements a normal part of our investment process.

2. In what market environment would you expect your product to outperform/underperform?

In our experience, growth and quality exposures tend to perform better when uncertainty floods the market, while valuation performs better when investors feel more confident and are more willing to take on risk in their portfolios. Our strategy is designed to provide excess return in most market conditions through balanced exposure to valuation, growth, and quality factors. Given our risk controlled portfolio construction, we do not expect to underperform the benchmark dramatically in any market environment.

[1] Source: RFP Respondent

Our strategy may lag when a pervasive change in sentiment pushes stock prices away from the fundamentals on which our model is based. Investors may react to extreme events by becoming overly greedy or overly fearful, and as a result prices may move away from what fundamentals would suggest. When investors turn their focus back to company fundamentals as opposed to macro events, relative performance tends to rebound.

Our strategy may also struggle at turning points in the economy. For example, at the start of a recession, analysts may be slow to revise their earnings estimates, which may mean a lag in the data we use in our stock selection model. These turning points are relatively uncommon and short-lived.

Our stock selection model is designed to adapt to changes in both company growth rates and market environments. Following the Global Financial Crisis, we introduced a new element to help the model adapt better to changes in the market environment, as indicated by the earnings yield spread. We believe the adaptive nature of our model increases the likelihood that our process will perform well in different types of environments.

There is no guarantee our expectations will be achieved.

3. Please describe how your portfolio construction process is the most efficient method for implementing your stock selection ideas.

The goal of our portfolio construction process is to produce a well-diversified, core portfolio with the valuation, growth, and quality characteristics most likely to produce alpha. The Quantitative Equity team seeks to reduce the risk of underperformance from an individual or small group of stocks through broad portfolio diversification. We also limit unintended exposures to uncompensated off-benchmark risk by constraining industry, sector, size, and style relative to the client's benchmark.

The Quantitative Equity team assesses the relative attractiveness of all securities in our universe on a daily basis. We place more emphasis on valuation for the slowest growing stocks in the universe, and more emphasis on growth expectation signals and quality signals for stocks with faster projected growth rates. From this data, we calculate a score for each security, which represents our assessment of its relative attractiveness. That score is a key input to our proprietary optimizer during portfolio construction. QMA's portfolio optimizer also systematically applies limits to active exposures of common risk factors such as industry, sector, style, and size.

The simple elegance of this approach results in a portfolio with balanced risk exposures and an emphasis on the stock selection signals we consider most likely to produce excess return for our clients.

Source: RFP Respondent

4. What do you consider the greatest risk to your active U.S. small capitalization equity portfolio?

QMA defines risk as expected long-run active risk, as measured relative to the benchmark. When prices are detached from fundamentals, our strategy may be at risk to underperform. Our experience shows that these periods occur from time to time, though they are short-lived and relatively infrequent. Prolonged periods of detachment from fundamentals are uncommon.

We believe that the adaptive nature of our model increases the likelihood that our process will perform well in many different types of environments.

Past performance is not a guarantee or a reliable indicator of future results.

5. What is your firm's competitive advantage in the U.S. small capitalization equity space?

History of QMA's Multifactor-Based Investments
Twenty years ago, when factor investing was just emerging from the blackboards of academia, QMA was deeply engaged in conversations with institutional clients about the need for higher returns from their equity allocations. We developed a proprietary quantitative stock selection model that harnessed the market's underlying return drivers to generate above-index returns with minimal increase in tracking error and risk. Our model combines the value, growth, and quality measures shown to exhibit the greatest premiums, and adaptively weights them by future growth expectations. Over time, we have made several enhancements to our model, but our approach has remained consistent.

QMA's approach to factor investing is grounded in a systematic application of financial theory and fundamental analysis, as well as an asset allocator's perspective on how the components of a portfolio fit best together. In our own research, we have found that different fundamentals are more effective for evaluating different securities and the relative value of various market segments. Markets are not static, so we adapt these factor exposures to align with individual company growth rate changes and shifting investment climates.

QMA's Advantages in Multifactor Investments
One of the strengths of our investment approach is the breadth of investment insights we generate and the quantity of information we draw on to produce them. On a daily basis we analyze a large universe of over 3,000 stocks, incorporating nearly 300 fundamental, market, and forecast data items per stock. Our research comes from solid theoretical sources. Proposed changes are vetted by extensive testing before we add them to existing model parameters.

Another point of distinction is our model itself. Factor investing has become nearly ubiquitous, with numerous managers offering single and multi-factor strategies as a way to replicate active manager returns at a lower fee. QMA's approach to factor investing is grounded in a systematic application of financial theory and fundamental analysis. Markets are not static, so we adapt these factor exposures to align with individual company growth rate changes and shifting investment climates. Our adaptive model varies the weights of valuation, growth, and

Source: RFP Respondent

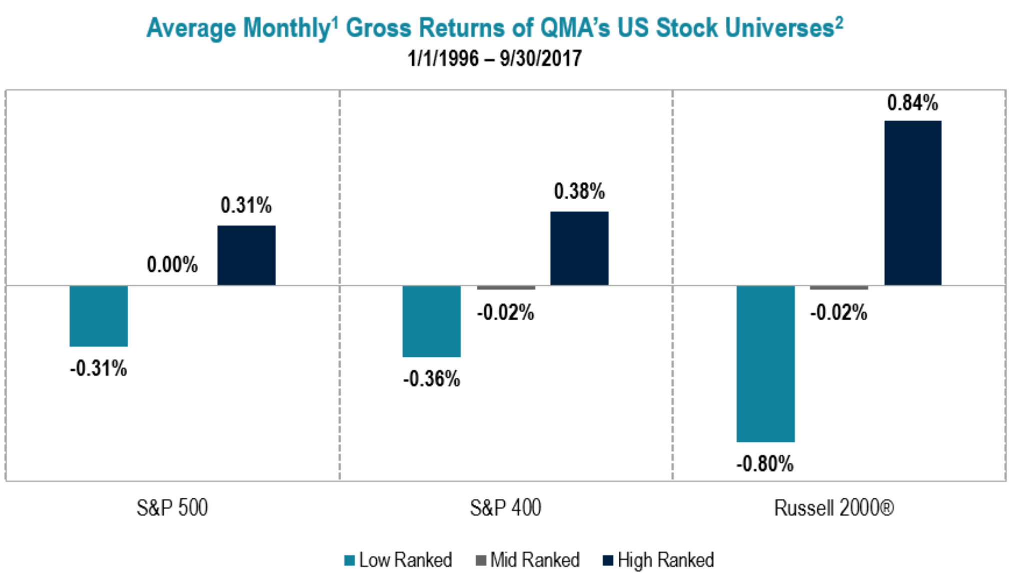
quality factors according to a company's growth rate. The model may adapt factor weightings in extreme market conditions.

We use a proprietary optimization algorithm to focus portfolio risk on potential alpha. +The process limits exposure to common risk factors, such as industry, size, and style relative to the client's benchmark. We also consider estimated transaction costs and any client-directed company or industry restrictions.

The exhibit below shows the efficacy of our multi-factor stock selection model in identifying out- and underperforming stocks in the US universe:

Multi-Factor Framework Captures Alpha Over Time

The multi-factor model is effective at identifying outperforming and underperforming stocks across the market cap spectrum



1 Based on the difference between each group of stocks' returns and the average of all stocks' returns.
2 Average monthly equal-weighted market-adjusted gross returns for all stocks in universes.
Source: QMA using data provided by FactSet. Returns are gross of management fees and are only provided to illustrate the information implicit in our stock selection methodology. Please see 'Notes to Disclosure' page for Important Information including risk factors and disclosures. Past performance is not a guarantee or a reliable indicator of future results. The Russell 2000® Index is a trademark/service mark of the Frank Russell Company. Russell® is a trademark of the Frank Russell Company.

Source: RFP Respondent

Notes to Disclosure
IMPORTANT INFORMATION

The information contained herein is provided by Quantitative Management Associates LLC (“QMA”). This document may contain confidential information and the recipient hereof agrees to maintain the confidentiality of such information. Distribution of this information to any person other than the person to whom it was originally delivered and to such person’s advisers is unauthorized, and any reproduction of these materials, in whole or in part, or the divulgence of any of its contents, without the prior consent of QMA, is prohibited. These materials are not intended for distribution to or use by any person in any jurisdiction where such distribution would be contrary to local law or regulation. Certain information in this document has been obtained from sources that QMA believes to be reliable as of the date presented; however, QMA cannot guarantee the accuracy of such information, assure its completeness, or warrant such information will not be changed. The information contained herein is current as of the date of issuance (or such earlier date as referenced herein) and is subject to change without notice. QMA has no obligation to update any or all such information; nor do we make any express or implied warranties or representations as to the completeness or accuracy. Any information presented regarding the affiliates of QMA is presented purely to facilitate an organizational overview and is not a solicitation on behalf of any affiliate. These materials are not intended as an offer or solicitation with respect to the purchase or sale of any security.

These materials do not take into account individual client circumstances, objectives or needs. No determination has been made regarding the suitability of any securities, financial instruments or strategies for particular clients or prospects. The information contained herein is provided on the basis and subject to the explanations, caveats and warnings set out in this notice and elsewhere herein. Any discussion of risk management is intended to describe QMA’s efforts to monitor and manage risk but does not imply low risk.

These materials are for informational or educational purposes. In providing these materials, QMA (i) is not acting as your fiduciary as defined by the Department of Labor and is not giving advice in a fiduciary capacity and (ii) is not undertaking to provide impartial investment advice as QMA will receive compensation for its investment management services. This product or service is available to ERISA plans only when represented by an Independent Fiduciary as defined by the DOL. A plan or its Independent Fiduciary will be asked to make representations in the investment management agreement or adoption agreement to enable reliance on the Independent Fiduciary exception from the definition of fiduciary in the DOL’s regulations.

The basis for the performance objective set forth within this RFI is QMA's research and its long experience in managing equity accounts that use quantitative methods to drive stock selection and portfolio construction. There can be no guarantee that this objective will be achieved. QMA has based this investment objective on certain assumptions that it believes are reasonable. There is no guarantee, however, that any or all of such assumptions will prove to be accurate in the face of actual changes in the securities market or other material changes in regional or local markets specific to this strategy. Factors that would or could mitigate against achieving this investment objective would include material changes in the economic environment and factors that are not included in our model or are underperforming in our model. The investment objective contemplated herein is over a complete market cycle which is generally between five and ten years for this strategy. The investment objective set forth above is calculated gross of management fees. Had such fees been taken into account, the investment objective indicated would be lower.

Investing in securities involves risk of loss that investors should be prepared to bear. In addition, model-based strategies present unique risks that may result in the model’s not performing as expected. These risks include, for example, design flaws in the model; input, coding or similar errors; technology disruptions that make model implementation difficult or impossible; and errors in externally supplied data utilized in models. To the extent that portfolio manager judgment is applied to model output, decisions based on judgment may detract from the investment performance that might otherwise be generated by the model. No investment strategy or risk management technique can guarantee returns or eliminate risk in any market environment.

The financial indices referenced herein are provided for informational purposes only. The manager's holdings and portfolio characteristics may differ from those of the benchmark(s). Additional factors impacting the performance displayed herein may include portfolio-rebalancing, the timing of cash flows, and differences in volatility, none of which impact the performance of the financial indices. Financial indices assume reinvestment of dividends but do not reflect the impact of fees, applicable taxes or trading costs which may also reduce the returns shown. You cannot invest directly in an index. The statistical data regarding such indices has been obtained from sources believed to be reliable but has not been independently verified.

References to specific securities and their issuers are for illustrative purposes only and are not intended and should not be interpreted as recommendations to purchase or sell such securities. The securities referenced may or may not be held in portfolios managed by QMA and, if such securities are held, no representation is being made that such securities will continue to be held.

These materials do not purport to provide any legal, tax or accounting advice.

Source: RFP Respondent

27Roy D. Henriksson, PhD, Chief Investment Officer, 5 years at QMA

Roy D. Henriksson, PhD, is the Chief Investment Officer of QMA. He has over twenty years of experience combining quantitative research with its practical applications in investment portfolios. Prior to joining QMA, Roy was CIO of Advanced Portfolio Management, where he designed and managed customized, risk-targeted investment portfolios for institutional clients globally. He is also currently the Co-Chairman of the Liquidity Risk Committee and Member of the Advisory Board of the International Association for Quantitative Finance (the IAQF). Previously, Roy held a variety of senior positions in research, trading and product development at a number of large investment banks. His broad product experience spans equity, fixed income, hedge funds, currency, and commodity derivatives.

Roy has published numerous articles on market-timing skill, portfolio optimization and asset allocation in leading journals. A recipient of the Graham and Dodd Award from The Financial Analysts Journal, he has held the position of Professor of Finance at the University of California, Berkeley, where he also served as Senior Consultant to Wells Fargo Investment Advisors and as an Advisor to the University of California Endowment. Roy holds a BS in Economics, a MS in Management, and a PhD in Finance, all from Massachusetts Institute of Technology.

Peter Xu, PhD, Co Head of Quantitative Equity Team, Head of US Strategies, 20 years at QMA

Peter Xu, PhD**,** is a Managing Director and Co-Head of QMA's Quantitative Equity team. His responsibilities include research on higher alpha and alternative strategies. For over 20 years, Peter has played a critical role in the evolution of QMA's quantitative models and investment process that have delivered strong performance across all of our equity strategies. He has published articles in a number of journals, including The Financial Analysts Journal, The Journal of Portfolio Management, The Journal of Asset Management, The Journal of Investing, Review of Quantitative Finance and Accounting, and others. Peter earned a BS in Nuclear Physics from Fudan University in Shanghai, an MA in Economics from Rice University, and a PhD in Finance from the University of Houston.

George N. Patterson, PhD, Co Head of Quantitative Equity Team, <1 year at QMA

George N. Patterson, PhD**,** is a Managing Director and Co-Head of QMA's Quantitative Equity team. His responsibilities include overseeing portfolio management, investment research and new product development for the US, Non-US and Value equity strategies. Prior to joining QMA, George was Managing Director, Corporate Strategy, at Axioma, Inc., focusing on identifying buy-side trends and market opportunities to foster growth at the company. He was previously Chief Investment Officer for Quantitative Investments at Bank of Montreal Global Asset Management, with responsibilities across global equities and multi-asset strategies spanning stand-alone asset allocation funds, FX overlays, retail fund of funds, and ETF-based multi-asset solutions. Prior to that, George was Co-Founder and a Managing Partner at Menta Capital LLC, a California-based quantitative equity

[1]Source: RFP Respondent

hedge fund, and a Senior Portfolio Manager in equity market neutral strategies at Barclays Global Investors. He began his career at NASA's Jet Propulsion Laboratory. George earned a BS in Physics from the Massachusetts Institute of Technology, and a PhD in Physics from Boston University.

Stacie L. Mintz, CFA, Portfolio Manager, 25 years at QMA

Stacie L. Mintz, CFA**,** is a Managing Director and Portfolio Manager for QMA, working with the Quantitative Equity team. Her responsibilities include managing US equity portfolios, including US Core, Long Short, and Market Neutral strategies, and overseeing the team responsible for implementation. Previously, Stacie was a member of the Dynamic Asset Allocation team, where she was responsible for several retail and institutional portfolios. In addition, during that time, she was responsible for managing the overall asset allocation for the Prudential Pension Plan. She earned a BA in Economics from Rutgers University, an MBA in Finance from New York University, and holds the Chartered Financial Analyst (CFA) designation.

Devang Gambhirwala, Portfolio Manager, 31 years at QMA

Devang Gambhirwala is a Principal and Portfolio Manager for QMA. Devang is primarily responsible for overseeing US Core Equity portfolios, including US Core, Long-Short and Market Neutral strategies. He is also responsible for the management of structured products. Earlier at PGIM, Inc., Devang worked as a Quantitative Research Analyst and an Assistant Portfolio Manager. He earned a BS in Computer and Information Sciences from the New Jersey Institute of Technology and an MBA from Rutgers University.

Satish Sanapareddy, CFA, Portfolio Manager, 19 years at QMA

Satish Sanapareddy, CFA**,** is a Vice President and Portfolio Manager for QMA, working with the Quantitative Equity team. His responsibilities include portfolio management and research for US Core Equity portfolios. Previously, Satish focused primarily on stock selection and portfolio construction research for the US Core Equity strategies, as well as production support for implementation of the US Core Equity strategy. Satish earned a BS in Engineering from Nagarjuna University of India and an MBA in Finance from Hull University in the UK and holds the Chartered Financial Analyst (CFA) designation.

Edward J. Lithgow, Portfolio Manager, 21 years at QMA

Edward J. Lithgow is a Vice President and Portfolio Manager for QMA, working with the Quantitative Equity team. His responsibilities include managing domestic and international indexing funds. In addition, Ed also assists with portfolio management and research for QMA's US Core Equity portfolios. Previously, he was a Quantitative Analyst for QMA's US Core Equity and Indexing teams with responsibility for optimizing portfolios and monitoring cash flows, as well as performance attribution and risk analysis. Ed also traded equities, currencies, and futures for QMA's Indexing funds. Ed earned a BS in Business Administration from Seton Hall University and an MBA in Finance from St. Joseph's University.

[1]Source: RFP Respondent

STAFF SUPPLEMENTAL QUESTIONS[1]

1. Please describe your investment philosophy as it relates to the active U.S. small capitalization equity product.

Systematic believes investors can seek the higher rates of returns associated with small cap investing without sacrificing the quality of the portfolio. A high-quality company, in our opinion, possesses superior financial strength while executing a proven business model that generates positive amounts of free cash flow and shows a catalyst for price appreciation. By focusing on companies that can retire all outstanding debt within ten years based on expected levels of free cash flow, an additional margin of safety for our clients can be achieved. We further believe that a company's value is equal to its discounted future cash flows. Though earnings and earnings forecasts are important, we believe cash flows provide the truest measure of a firm's viability and operation. Our philosophy is unchanged since the inception of this strategy.

2. In what market environment would you expect your product to outperform/underperform?

Our Small Cap Value Free Cash Flow strategy has historically outperformed in a variety of market conditions and we expect that to continue to be the case going forward. With that said, there are some particular circumstances where we believe our outperformance may be greater. Specifically, we would expect our focus on companies that we believe possess strong free cash flow and superior financial strength to provide outperformance in periods where access to the capital markets for smaller companies is somewhat limited. In such an environment, many of the companies in the benchmark will have difficulty funding their operations and growing their businesses. As a result, their stock prices will often suffer. In contrast, businesses with good financial footing and solid free cash flow are much less reliant on the capital markets for funding, and thus perform very well on a relative basis in such an environment. Additionally, our strategy should also experience good relative results at times when investors are currently, or are becoming, more risk averse. Because the companies in the portfolio are more solid financially and have a business model producing good free cash flow, they are less speculative in nature. It is precisely these types of businesses investors tend to seek out in times of uncertainty and risk aversion.

Conversely, this strategy will tend to have its greatest relative underperformance during periods of speculation, like in the lead up to the global financial crisis. These are times when risk seeking, not risk aversion, is the order of the day. In these periods, there is often easy access to capital for the majority of companies. During such times, the superior financial strength of the companies in our portfolio can go largely ignored by the marketplace as investors speculate on, and hope for, a bright future for companies with shaky current fundamentals. However, it has been our experience that often the speculation and hope does not pan out.

In the end, in our view, an investment is simply worth the present value of its future cash flows. By focusing on companies generating strong cash flow with limited debt and purchasing them at reasonable valuations, we expect to add value over the long-term.

Source: RFP Respondent

3. Please describe how your portfolio construction process is the most efficient method for implementing your stock selection ideas.

Our portfolio construction process is the most robust and efficient method for implementing our stock selection ideas because it incorporates all the information we have obtained and analyzed in our bottom up stock selection process. Individual positions are conviction weighted within the portfolio based upon our assessment of their relative risk and reward within the context of a diversified portfolio. This assessment incorporates our knowledge of the company, its industry, the overall economic environment, and importantly, the strengths and weaknesses of it as an investment relative to the other companies in the portfolio. Importantly, as company fundamentals, industry dynamics and economic trends change over time, this information is picked up in our ongoing fundamental company research and incorporated into our portfolio construction in real time.

4. What do you consider the greatest risk to your active U.S. small capitalization equity portfolio?

In absolute terms, the greatest risk to our portfolio is overall equity market risk in general. We strive to mitigate this risk through our fundamental research effort, where our goal is not only to identify securities that have upside potential, but also to minimize the risk of loss by purchasing companies with good cash flows and limited debt at a valuation discount, thereby providing a margin of safety. However, in the event of an overall equity market decline, while we may be able to reduce the size of a drawdown in our portfolio as a result of our fundamental research and portfolio construction efforts, given the fully invested nature of our strategy it is impossible to completely avoid declines in value from time to time. Historically, these declines have proven to be temporary in nature and have often provided excellent opportunities to purchase attractive securities at a discount that have led to substantial outperformance in the periods that follow.

5. What is your firm's competitive advantage in the U.S. small capitalization equity space?

We believe our competitive advantage comes from our long-term investment horizon, our focus on free cash flow and limited company debt, and the stability and experience of our investment team. The specific anomalies that we are trying to capture are related to both valuation and investor sentiment. Because investor sentiment is often driven by a short term viewpoint, security prices are driven either above or below their "true" value. This gives disciplined, long term investors like us the ability to purchase stocks that are below our estimate of their intrinsic value and sell securities that reach or exceed our estimate of their intrinsic value. Because of our focus on cash flow generation and limited debt, we believe the companies in our portfolio are less speculative in nature and are far better equipped than the average small cap stock to weather economic cycles and swings in investor sentiment. Our most critical competitive advantage is the knowledge and experience gained from executing our investment discipline for over 25 years. We have an ingrained understanding of our investment philosophy, its strengths and weaknesses, and its success throughout the multiple and varied economic cycles of the past quarter-century.

Source: RFP Respondent

Kenneth W. Burgess, CFA
Lead Portfolio Manager
Years with Firm: 25

Ken is a Managing Partner in the firm and member of the Management Committee as well as lead portfolio manager for our Small Cap Value Free Cash Flow and SMID Cap Value Free Cash Flow portfolios. He also serves as an analyst, providing research support within selected economic sectors.

Ken's investment career began in 1993, when he joined Systematic. Ken specializes in cash flow analysis and devotes his efforts to portfolio management and the analysis of small and mid cap equities. His work has included contributions to quantitative and fundamental equity analysis, portfolio management, and performance analytics.

Ken holds the Chartered Financial Analyst (CFA) designation and is a member of both the CFA Institute and New York Society of Security Analysts (NYSSA). Ken conducted his undergraduate studies at New Hampshire College, majoring in economics and finance.

Kevin McCreesh, CFA
Chief Investment Officer
Years with Firm: 22

Kevin is a Managing Partner in the firm and member of the Management Committee. In addition, as Chief Investment Officer, he has oversight responsibilities for all client portfolios. Kevin also serves as the lead portfolio manager for our Large and Small Cap Value equity portfolios. Although Kevin joined Systematic in 1996, he has been actively involved with our investment discipline since 1990.

Kevin began his investment career as an analyst in the financial planning and analysis department of IBM's semiconductor manufacturing division. As a senior analyst in Paine Webber's treasury department, and then as controller for Mitchell Hutchins Investment Advisory Unit, Kevin further honed his research and analytical skills. Prior to joining Systematic in 1996, he served as an equity portfolio manager at Mitchell Hutchins.

Kevin holds the Chartered Financial Analyst (CFA) designation and is a member of both the CFA Institute and New York Society of Security Analysts (NYSSA). He has an M.B.A. in financial management from Drexel University and a B.S. in geology from the University of Delaware.

[1]Source: RFP Respondent

Ronald M. Mushock, CFA
Portfolio Manager
Years with Firm: 21

Ron is a Managing Partner in the firm and member of the Management Committee as well as the lead portfolio manager for Mid and SMID Cap Value equity portfolios. Additionally, Ron maintains analyst responsibilities within selected economic sectors.

Ron began his career as a quantitative equity analyst with Abel/Noser. Prior to joining Systematic in 1997, Ron was a fundamental equity analyst with Standard and Poor's Equity Group.

Ron holds the Chartered Financial Analyst (CFA) designation and is a member of both the CFA Institute and New York Society of Security Analysts (NYSSA). Ron received an M.B.A. in finance and international business from New York University's Stern School of Business, and graduated Summa Cum Laude from Seton Hall University with a B.S. in finance.

Eoin E. Middaugh, CFA
Portfolio Manager
Years with Firm: 16

Eoin is a Managing Partner in the firm and member of the Management Committee as well as having lead portfolio management responsibilities for our Disciplined Value strategies. Additionally, Eoin conducts investment strategy research covering all sectors and the full market capitalization spectrum. He also conducts new product development and communicates Systematic's strategies and views to our clients and their consultants.

Eoin began his career as a consultant at Wurts & Associates, working with both defined benefit and defined contribution plan sponsors on asset allocation, investment policy, manager search and performance evaluation. He joined Systematic in 2002.

Eoin holds the Chartered Financial Analyst (CFA) designation and is a member of both the CFA Institute and the Los Angeles Society of Financial Analysts. He also served as a member of the Advisory Board to the Department of Finance at Washington State University. Eoin graduated Summa Cum Laude, earning a B.A. in business administration with an emphasis in finance from Washington State University, where he was a member of the golf team.

[1]Source: RFP Respondent

Ryan Wick, CFA
Assistant Portfolio Manager
Years with Firm: 13

As an assistant portfolio manager, Ryan conducts company-specific fundamental research within selected economic sectors spanning the market capitalization spectrum. Ryan's research includes analyzing financial statements, building financial models, performing valuation analysis, and interviewing company management.

Ryan began his investment career at ABN AMRO in New York as an associate equity research analyst in the Industrial Manufacturing and Technologies Group covering Diversified Industrials.

Prior to joining Systematic in 2005, Ryan was an equity analyst with Axe-Houghton Associates where he conducted fundamental research coverage for small to mid cap companies in the Healthcare, Industrial and Technology sectors.

Ryan received an M.B.A. in finance from Columbia Business School and a B.A. in English from Bucknell University. He holds the Chartered Financial Analyst (CFA) designation, and is a member of the CFA Institute and New York Society of Security Analysts (NYSSA).

Aman R. Patel, CFA
Assistant Portfolio Manager
Years with Firm: 16

Aman is a partner in the firm and serves as assistant portfolio manager. In this role he conducts company-specific fundamental research within selected economic sectors spanning the market capitalization spectrum. Aman's research includes analyzing financial statements, building financial models, performing valuation analysis, and interviewing company management.

Aman began his investment career as an equity analyst in Prudential Securities' equity research department. Prior to joining Systematic in 2002, Aman further honed his research and analytical skills first as an associate analyst with UBS Warburg's healthcare equity research team, and then at Federated Investors where he completed his M.B.A. internship in investment management.

Aman received an M.B.A. in finance and strategy from Carnegie Mellon University and a B.A. in biochemistry from Rutgers University. He holds the Chartered Financial Analyst (CFA) designation.

[1]Source: RFP Respondent

Brian D. Kostka, CFA
Assistant Portfolio Manager
Years with Firm: 11

Brian is a partner in the firm and serves as assistant portfolio manager. In this role he conducts company-specific fundamental research within selected economic sectors spanning the market capitalization spectrum. Brian's research includes analyzing financial statements, building financial models, performing valuation analysis, and interviewing company management.

Brian began his investment career at UBS Investment Research as an associate research analyst covering the Consumer and Finance industries. Prior to joining Systematic in 2007, Brian was an equity analyst with Estabrook Capital, a division of BNY Asset Management, where he conducted fundamental research for the small to large cap products, as well as performed portfolio attribution analysis.

Brian received his B.S. in finance and economics from Boston College. Brian also holds the Chartered Financial Analyst (CFA) designation, and is a member of the CFA Institute, the New York Society of Security Analysts (NYSSA) and the CFA Society of Philadelphia.

Rick Plummer, CFA
Assistant Portfolio Manager / Senior Equity Analyst
Years with Firm: 14

Rick is a partner in the firm and serves as a senior equity analyst / assistant portfolio manager. In this role he conducts company-specific fundamental research within selected economic sectors spanning the market capitalization spectrum. Rick's research includes analyzing financial statements, building financial models, performing valuation analysis, and interviewing company management.

Rick joined Systematic in 2004 following a ten-year stint with the Value Line Investment Survey. At Value Line, he served as a Senior Industry Analyst and lead editor of the firm's daily supplemental stock reports. He also spent time in Value Line's Asset Management department, working as a technology-sector consultant and portfolio manager.

Rick received his M.B.A. in finance at New York University's Stern School of Business, with Stern Scholar honors. He holds a B.A. in economics and government from Wesleyan University. He holds the Chartered Financial Analyst (CFA) designation, and is a member of the CFA Institute and New York Society of Security Analysts (NYSSA).

[1]Source: RFP Respondent

Christopher Lippincott, CFA
Senior Equity Analyst
Years with Firm: 10

As a senior equity analyst, Chris conducts company-specific fundamental research within selected economic sectors spanning the market capitalization spectrum. Chris's research includes analyzing financial statements, building financial models, performing valuation analysis, and interviewing company management.

Chris began his investment career in 1996 at Alexander, Wescott & Co. as an equity analyst covering Technology Hardware and the Electronic Supply Chain. He then moved on to Auerbach, Pollack & Richardson where he conducted fundamental research coverage for small to mid cap companies in the Technology Hardware sector. In 2000, Chris joined KeyBanc Capital Markets as the senior equity analyst covering the Electronic Supply Chain. Prior to joining Systematic in 2008, Chris was a senior industry analyst at Standard & Poor's covering Industrial Machinery, Coal Mining and Specialty Chemicals.

Chris received an M.B.A. in finance from the Fordham University Business School and a B.A. in history from Vassar College. Chris also holds the Chartered Financial Analyst (CFA) designation, and is a member of the CFA Institute and the New York Society of Security Analysts (NYSSA).

Tom LaBarbera, CFA
Senior Equity Analyst
Years with Firm: 13

As a senior equity analyst, Tom conducts quantitative research across all sectors and the full market capitalization spectrum. Tom's research includes analyzing quantitative rankings, building financial models and back testing.

Tom began his investment career in 2000 at FactSet Research Systems working in both the Consulting and Sales departments. While at FactSet, Tom worked with over 100 investment managers supporting their quantitative and fundamental research departments. Tom joined Systematic in 2005.

Tom received a B.S. in finance from Marist College. He holds the Chartered Financial Analyst (CFA) designation, and is a member of the CFA Institute and the New York Society of Security Analysts (NYSSA).

[1]Source: RFP Respondent

J Matthew Tangel, CFA
Senior Equity Analyst
Years with Firm: 10

As a senior equity analyst, Matthew conducts both quantitative and fundamental research. Matthew's research includes analyzing quantitative rankings, building financial models, back testing, and supporting all Systematic analysts with their data needs. In addition, he conducts company-specific fundamental research within selected economic sectors spanning the market capitalization spectrum. Matthew's research includes analyzing financial statements, building financial models, performing valuation analysis and interviewing company management.

Matthew began his investment career at FactSet Research Systems working in the Consulting department. Prior to joining Systematic in 2008, Matthew worked with large institutional investors, hedge funds, plan sponsors, quantitative asset management firms, small money managers and government agencies.

Matthew received his B.S. in finance from Bryant University. Matthew also holds the Chartered Financial Analyst (CFA) designation, and is a member of the CFA Institute and the New York Society of Security Analysts (NYSSA).

Jennifer Mulroy, CFA
Senior Equity Analyst
Years with Firm: 8

As a senior equity analyst, Jennifer conducts company-specific fundamental research within selected economic sectors spanning the market capitalization spectrum. Jennifer's research includes analyzing financial statements, building financial models, performing valuation analysis and interviewing company management.

Prior to joining Systematic in 2010, Jennifer was an Account Manager for SunGard APT, which provides multi-factor statistical risk models and software applications for asset managers, hedge funds and traders. Previous to her Account Manager position, she was a consultant for SunGard VPM, where she was responsible for the implementation of highly customizable portfolio accounting systems for high profile hedge funds.

Jennifer received her B.S. in chemical engineering with a minor in managerial finance from Rensselaer Polytechnic Institute in Troy, NY. Jennifer also holds the Chartered Financial Analyst (CFA) designation, and is a member of the CFA Institute and the New York Society of Security Analysts (NYSSA).

[1]Source: RFP Respondent

Mike Cikos, CFA
Equity Analyst
Years with Firm: 3

As an equity analyst, Mike conducts company-specific fundamental research within selected economic sectors spanning the market capitalization spectrum. Mike's research includes analyzing financial statements, building financial models, performing valuation analysis, and interviewing company management.

Mike began his investment career at Maxim Group as a financial advisor for high net worth individuals. Prior to joining Systematic in 2015, Mike was a Senior Research Associate with Macquarie Group. Prior to Macquarie Group, he held research positions at both buy- and sell-side firms including RS Investment Management and Sidoti & Company.

Mike received his B.A. in business administration with a major in finance from the University of Notre Dame. Mike also holds the Chartered Financial Analyst (CFA) designation, and is a member of the CFA Institute and the CFA Society San Francisco (CFASF).

[1]Source: RFP Respondent

MEMORANDUM

To: LACERA Board of Investments

From: Stephen McCourt, Leandro Festino, Tim Filla
Meketa Investment Group

Date: March 15, 2018

Re: Public Equities Active U.S. Small Cap Equity Manager Search

BACKGROUND

On September 14, 2016 Meketa presented to the Board of Investments ("BOI" or the "Board") a review of LACERA's public equity program. One of the recommendations from our review was focusing greater active management weight to smaller companies, as greater inefficiencies have historically translated to higher probability of outperformance by active managers. As a result, LACERA Staff initiated a search for domestic small cap equity managers in July, 2017.

RECOMMENDATION & OBSERVATIONS

Starting in July of last year with the issuance of the RFI, Staff led the search process. During this time, Meketa collaborated with Staff. We discussed with Staff the merits of the respondents, the short list for interviews at LACERA's office, the visits to the four managers' offices, the merits of the finalist managers, and the fees and expenses of each. Meketa independently assessed these managers through a combination of meetings at our offices, the managers' offices, and phone conversations. Overall, we concur with the recommendation that the Board should interview Quantitative Management Associates ("QMA") and Systematic Financial Management ("Systematic"). Our research suggests that these managers would be positive additions to the LACERA portfolio.

SUMMARY AND RECOMMENDATION

Staff has proposed that QMA and Systematic be invited by the Board to present their small cap equity products. We concur with the recommendation from Staff. We followed the search from its beginning, and can attest that Staff followed LACERA's existing process. Furthermore, we concur that both managers are strong options for the Board to consider, both independently and in relationship to LACERA's existing U.S. equity assets.

We look forward to discussing this matter with you at the April 11th meeting.

SM/TF/LF/srt

MEKETA INVESTMENT GROUP
5796 ARMADA DRIVE SUITE 110 CARLSBAD CA 92008
760 795 3450 fax 760 795 3445 www.meketagroup.com

Active U.S. Small Capitalization Equity RFI Respondents

	Investment Manager	Passed Initial Screen	Reason Screen Not Passed
1	Aristotle Capital	Y	
2	Fisher Investments	Y	
3	Cortina Asset Management	N	Did not meet Excess Return MQ
4	Martingale Asset Management	Y	
5	American Century Investment Management, Inc.	Y	
6	Quantitative Management Associates LLC	Y	
7	Cramer Rosenthal McGlynn, LLC	Y	
8	Victory Capital Management Inc.	Y	
9	Cooke & Bieler, LP	Y	
10	Rothschild Asset Management Inc.	N	Did not meet Excess Return MQ
11	Cornerstone Capital Management Holdings LLC	N	Did not meet Excess Return MQ
12	River Road Asset Management, LLC	Y	
13	Macquarie Investment Management	Y	
14	Macquarie Investment Management	Y	
15	Brown Advisory LLC	Y	
16	Matarin Capital	Y	
17	Tributary Capital Management, LLC	Y	
18	Mesirow Financial Investment Management Inc.	N	Did not meet Excess Return MQ
19	FIAM LLC	N	Did not meet Excess Return MQ
20	Westfield Capital Management Company, L.P.	N	Did not meet Excess Return MQ
21	MFS Institutional Advisors, Inc.	N	Did not meet Excess Return MQ
22	Ranger Investment Management	N	Did not meet Excess Return MQ
23	Wellington Management Company LLP	Y	
24	LMCG Investments, LLC	Y	
25	Aberdeen Asset Management Inc.	Y	
26	Investment Counselors of Maryland, LLC	Y	

	Investment Manager	Passed Initial Screen	Reason Screen Not Passed
27	Brandywine Global Investment Management, LLC	Y	
28	Systematic Financial Management, L.P.	Y	
29	PanAgora Asset Management, Inc.	Y	
30	Kayne Anderson Rudnick Investment Management, LLC	Y	
31	Wells Capital Management, Inc.	N	Did not meet Excess Return MQ
32	ClearBridge Investments	Y	
33	Voya Investment Management	Y	
34	Ziegler Capital Management, LLC	N	Did not meet Excess Return MQ
35	Hotchkis and Wiley Capital Management, LLC	N	Did not meet Minimum AUM MQ
36	William Blair Investment Management, LLC	Y	
37	The Boston Company Asset Management LLC	Y	
38	AB L.P.	Y	

Active U.S. Small Capitalization Equity
Minimum Qualifications
(July 2017 RFI)

1. The organization must be registered with the U.S. Securities and Exchange Commission (SEC) as an investment adviser, unless the organization is exempt from registration due to its status as a bank or insurance company.

2. As of June 30, 2017, the investment manager must have a minimum of $600 million in total assets under management in the proposed product.

3. The proposed product must have at least a three-year performance track record as of June 30, 2017.

4. At least 60% of the proposed product's quarterly rolling one-year excess returns over the last three years ended June 30, 2017 (6 of 9 observations) must exceed the Russell 2000 Index by at least 50 basis points, net-of-fees.

In addition, the firm must conform to Global Investment Performance Standards (GIPS) for performance reporting.

Los Angeles County Employees Retirement Association (LACERA)

US Small Cap Core Equity

May 9, 2018

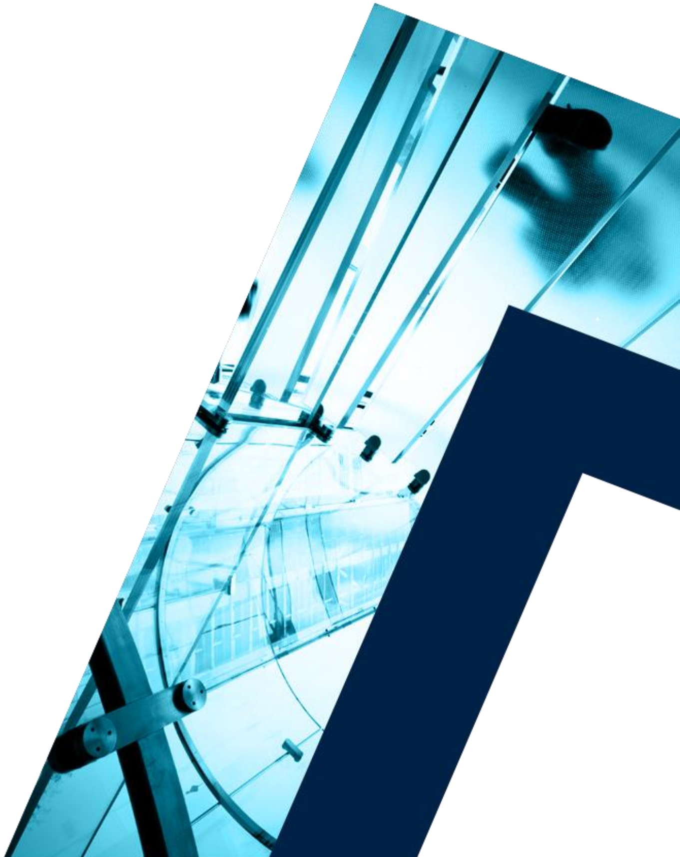


Table of Contents

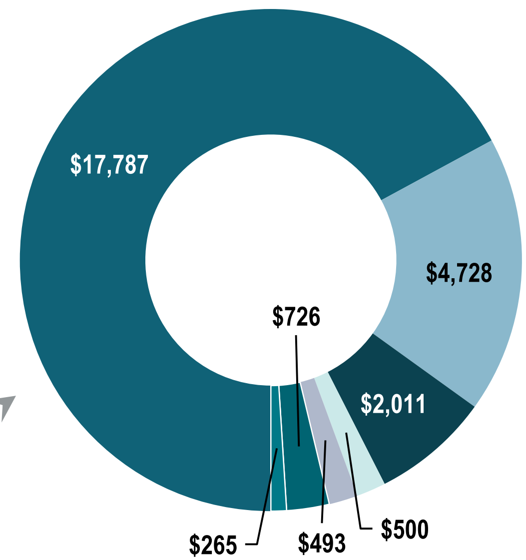
QMA Overview

Serving investors since 1975, QMA combines rigorous investment research with experienced judgment, seeking to deliver sustainable long-term outperformance.

- Two areas of investment focus: quantitative equity and global multi-asset solutions
- Robust infrastructure supports investment organization with 200 employees: 189 in Newark, 9 in San Francisco and 2 in London
- Highly experienced, stable team
  - Investment professionals from 19 countries, including 19 PhDs. Portfolio managers average 18 years of investment experience and 14 years at QMA.
- Wholly owned, independently operated subsidiary of Prudential Financial, Inc.

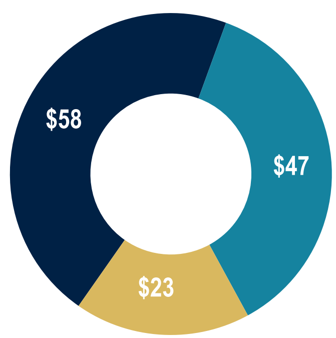
US Core Equity

US Large Cap	$17,787 million
US Mid Cap	$4,728 million
US Small Cap	$2,011 million
US Core Equity Extended	$726 million
US Market Neutral	$493 million
US Long/Short	$500 million
US All Cap	$265 million
Total	**$26,510 million**



Assets Under Management[1]

Global Multi-Asset Solutions	$58.4 billion
Quantitative Equity	$46.5 billion
Equity Indexing	$22.5 billion
Total	**$127.6 billion**



As of 3/31/2018.
AUM totals may not sum due to rounding. QMA is the primary business name of Quantitative Management Associates LLC.
[1]QMA's total Global Multi-Asset Solutions AUM is $81.4 billion, including $22.9 billion that QMA's Global Multi-Asset Solutions team directs to equity strategies advised by QMA; in this pie chart, these assets are only included in the Quantitative Equity and Equity Indexing AUM in order to avoid double counting.

Organizational Structure

Andrew Dyson
Chairman and Chief Executive Officer

Roy Henriksson, PhD
Chief Investment Officer

Global Multi-Asset Solutions Team of 19	Quantitative Equity Team of 18	Equity Indexing Team of 3	Research Team of 11
George Sakoulis, PhD	George Patterson, PhD Peter Xu, PhD	John Moschberger, MBA, CFA	Joshua Livnat, PhD Margaret Stumpp, PhD

Global Trading	Technology & Operations
Team of 7	Team of 64

Global Distribution & Marketing	Compliance/Legal[1]	Business Management[2]
Team of 34	Team of 11	Team of 35

As of 3/31/2018.
[1]Compliance and Legal report independently to the Law Department of Prudential Financial, Inc.
[2]Business Management includes Finance, Risk, Human Resources, Business Continuation and Administrative Functions.

Quantitative Equity

Roy Henriksson, PhD - Chief Investment Officer
32 Years of Investment Experience

Head of Quantitative Equity Team of 18	Years of Inv. Experience
George Patterson, PhD	22
Peter Xu, PhD	24

Portfolio Management	Years of Inv. Experience
Devang Gambhirwala, MBA	31
Stacie Mintz, MBA, CFA	24
Satish Sanapareddy, MBA, CFA	19
Wen Jin, PhD, CFA	17
Jacob Pozharny, PhD	25
Vlad Shutoy, MS	14
John Van Belle, PhD	44
Stephen Courtney	31
Mitchell Stern, PhD	33

Product Specialist	Years of Inv. Experience
Gavin Smith, PhD	14

Responsible for US Small Cap Core Equity

Research Team of 14	Years of Inv. Experience
Joshua Livnat, PhD	24
Margaret Stumpp, PhD	31

Global Trading Team of 7	Years of Inv. Experience
Richard Crist	30

Investment Systems and Infrastructure Team of 17	Years of Inv. Experience
Larry Marchese	31

Women & Minority Investment Team Professionals

	Number of Professionals	%
Women in Investments	10	18%
Minority in Investments	18	32%
Women & Minority as % of Investment Team		42%

As of 3/31/2018.

Table of Contents

US Small Cap Core Equity

Investment Approach

An actively managed, disciplined and adaptive strategy can consistently capture alpha through fundamental insights that are systematically applied with experienced judgment.

Key Features

- Bottom-up stock selection drives exposure to key sources of alpha (valuation, growth, quality)
- Active share exposure to full spectrum of attractive small cap stocks
- Time-tested analysis on how best to weight alpha drivers for different types of companies
- Cost efficient trading and risk controlled portfolio construction

Year	US Small Cap Core Equity (Gross)	Russell 2000® Index	Alpha
2018 (1/1– 3/31)	-0.25%	-0.08%	-17 bps
2017	13.01	14.65	-164
2016	23.64	21.31	+233
2015	0.78	-4.41	+519
2014	10.95	4.89	+606
2013	39.90	38.82	+108
2012	24.94	16.35	+859
2011	1.93	-4.18	+611
2010	32.91	26.85	+606
2009 (10/1–12/31)	3.54	3.87	-33

Composite vs. Russell 2000®
As of 3/31/2018

Annualized	1 Year	3 Year	5 Year	Since Inception[1]
Gross Return (%)	10.54	9.64	14.19	17.08
Benchmark Return (%)	11.79	8.39	11.47	13.07
Alpha (bps)	**-125**	**+125**	**+272**	**+401**
Tracking Error (%)	**2.11**	**2.37**	**2.52**	**2.55**
Information Ratio	**-0.60**	**0.53**	**1.08**	**1.57**

Source: QMA, Frank Russell Company.
[1]Inception date for the US Small Cap Core Equity Composite is 10/1/2009.
The since inception gross performance for QMA's US Small Cap Core Equity as of 3/31/2018 would have been reduced from 17.08% to 16.33%, if netted by QMA's highest advisory fee in effect for the strategy. Please see 'Notes to Disclosure' page for Important Information including risk factors and disclosures, and the 'Composite Performance Returns' section in the Appendix for additional disclosures and net performance. Past performance is not a guarantee or a reliable indicator of future results. The Russell 2000® Index is a trademark/service mark of the Frank Russell Company. Russell® is a trademark of the Frank Russell Company.

Adaptive, Disciplined Investment Process

Time-tested approach adds value from stock selection through final portfolio manager review

Investment Universe

- 3,000 US stocks
- Data integrity checks

Stock Selection

- Bottom-up analysis based on fundamentals
- Adaptively-weighted factors
- Rankings calculated for every company in the universe

Portfolio Construction

- Overweight stocks with high rankings
- Exposure to Value, Growth and Quality
- Budget active risk
- Manage transaction and shorting costs
- Portfolio manager review

Core Portfolio

- Diversified portfolio
- Focused on expected alpha

US Core Stock Selection Process

Stock Universe

3,000 US Stocks

Targeted Sources of Expected Returns

Value
- Forward price/earnings
- Change in price/earnings
- Adjusted price/book
- Sales/price

Growth
- EPS estimate revisions
- Price-volume behavior
- Target price movement
- Earnings call tone

Quality
- Earnings quality
- Company financing
- Tax liabilities
- Board quality
- Management trading
- Short sale activity
- Credit signal

Adaptive Factor Weighting

Adjusts to changing company growth rates and market opportunities

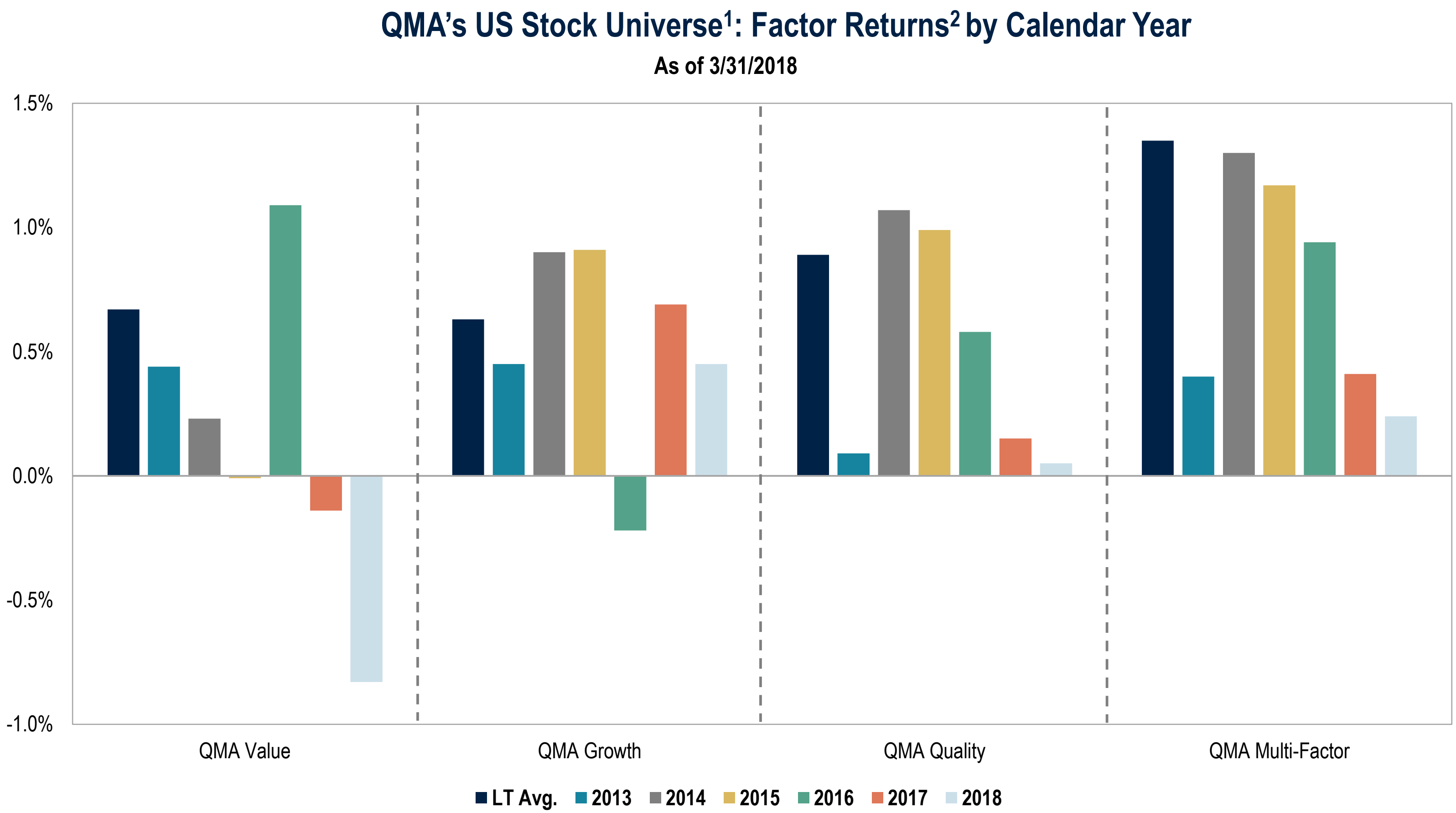
Slowly growing stocks	Average growing stocks	Fast growing stocks
Emphasis on valuation	Balanced exposure	Emphasis on growth/quality

Ranking for Each Stock

Signals are subject to change without notice.

The Benefit of Factor Diversification

Factor diversification contributes to performance consistency over time

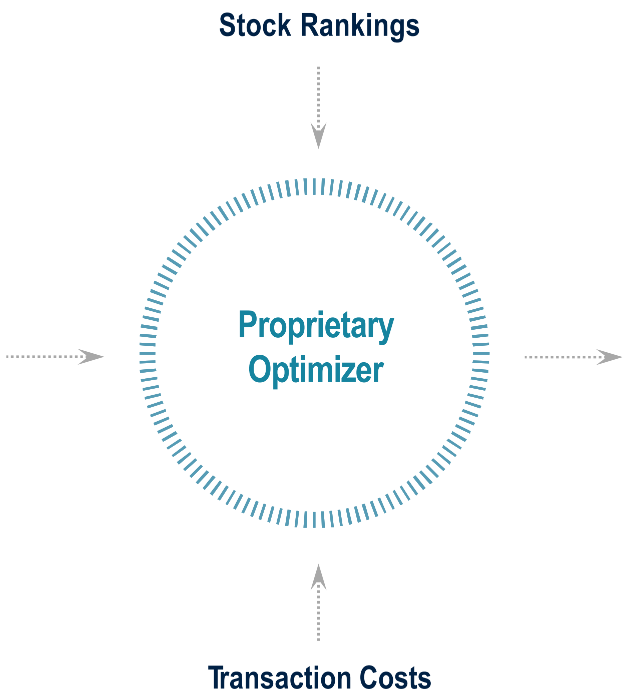


[1]Average monthly equal-weighted market-adjusted gross returns for all stocks in universe (largest 3,000 US stocks).
[2]Based on the difference between each group of stocks' returns and the average of all stocks' returns.
Source: QMA using data provided by FactSet. Returns are gross of management fees and are only provided to illustrate the information implicit in our stock selection methodology.
Please see 'Notes to Disclosure' page for Important Information including risk factors and disclosures. Past performance is not a guarantee or a reliable indicator of future results.

Portfolio Construction Seeks to Capture Sources of Alpha

Aims to deliver consistent results by focusing on stocks with high ranking, while managing risk exposures

Typical Risk Parameters vs. Benchmark	
Individual Stock	±0.75%
Industry/Sector	± 0.75%
Size	± 3.00%
Growth	± 2.00%
Non-Benchmark Exposure	<10% of MV
Liquidity	<10% of ADV
Targeted Turnover	**75-100%**



	US Small Cap Core Equity	Russell 2000® Index
Market Cap ($ Billion)		
Weighted Average	$2.3	$2.5
Median	$1.3	$0.9
Valuation		
P/E (FY1 Estimate)	16.1x	17.7x
Dividend Yield	1.3%	1.3%
Growth and Profitability		
Return on Equity	11.9%	5.3%
Positive Earnings Revision (% of Market Value)	59.9%	43.2%
Number of Holdings	**333**	**1,983**

As of 3/31/2018.
Source: QMA, FactSet, Frank Russell Company.
Shown for illustrative purposes only. Portfolio construction parameters may vary without notice. QMA US Mid Cap Core Equity representative portfolio characteristics are subject to change. Past performance is not a guarantee or a reliable indicator of future results. Please see 'Notes to Disclosure' page for Important Information including risk factors and disclosures. The Russell® Indices are trademarks/service marks of the Frank Russell Company. Russell® is a trademark of the Frank Russell Company.

Examples of Buys/Sells

Evaluation						Action				
	Company Growth Rate	Model Score	Value	Earnings Growth	Quality		Beg. Weight	Ending Weight	Market Weight	Active Weight
Buy										
Diamondrock Hospitality	Slower Grower	2.79	Cheap	Flat	Good: Insider buying, financing growth internally, buying form internal sources, higher tax liabilities indicate solid earning stream	**Buy**- Improving fundamentals	0.00%	0.52%	0.10%	0.42%
1-800 Flowers	Fast Grower	2.74	Moderate	Positive	Good: high accounting quality, finance and tax scores	**Buy**- Improving fundamentals	0.15%	0.22%	0.13%	0.20%
Sell										
Bojangles	Moderate Grower	-0.82	Moderate	Negative	Poor: Short selling activity, low board quality	**Sell**- deteriorating fundamentals	0.19%	0.00%	0.01%	-0.01%
Etsy Inc.	Fast Grower	2.24	Moderate	Positive	Good: Finance and Tax scores Positive	**Sell**- risk control – max. overweight 75bps per company	1.00%	0.91%	0.16%	0.75%

Source: QMA.
The buy/sell positions shown above are not indicative of performance. The information on this slide is provided solely for the purpose of describing QMA's investment process. The holdings shown do not represent all of the securities purchased, sold or recommended for any particular client and in the aggregate may represent a very small percentage of an account's portfolio holdings. The securities described on this slide are not intended to be an investment recommendation by QMA. QMA makes no representation as to the merits of investing in such securities. This slide is not intended as investment advice and is shown for illustration purposes only. Please see 'Notes to Disclosure' page for Important Information including risk factors and disclosures.

Summary

Stable and experienced portfolio management team

- The current portfolio management team has been responsible for managing the US Core strategies for nearly its entire 20-year history

Consistent outperformance

- For two decades the US Core team has managed investment strategies that consistently outperformed their benchmark across varied market conditions

Targeted and adaptive factor exposures

- QMA's outperformance and consistency is a direct result of its unique multifactor stock selection model that targets a select set of fundamentally-based factors and actively adapts those exposures to the market environment and each company's growth rate

Systematic implementation

- The investment process is implemented in a consistent and repeatable manner that mitigates unintended exposures and helps control for risk

Ongoing research

- Robust research ensures that all aspects of the process are well thought out, thoroughly tested and properly implemented - and that the process continues to evolve over time

Table of Contents

Ongoing Research Leads to Periodic Model Enhancements

QMα a PGIM company

1996
- Strategy inception

1997

1998
- Replaced earning surprises with analyst estimate revision as measure of growth signals

1999
- Changed optimizer from BARRA to CPLEX

2000

2001
- Incorporated real-time bid-ask spread and transaction costs in optimization to evaluate brokers and trading strategies
- Added management trading, share repurchase/issues, and earnings quality
- Additional data integrity screens

2002
- Refined market capitalization risk control

2003

2004

2005

2006
- Introduced short rebate spread signal

2007

2008
- Refined company financing signal

2009

2010
- Added recent price movement to growth rate measure used to classify stocks
- Refined EPS estimate revisions signal
- Added short sale activity signal
- Further refined financing signal

2011
- Added tax liabilities signal
- Added E/P spread based factor weightings for extreme market conditions

2012

2013

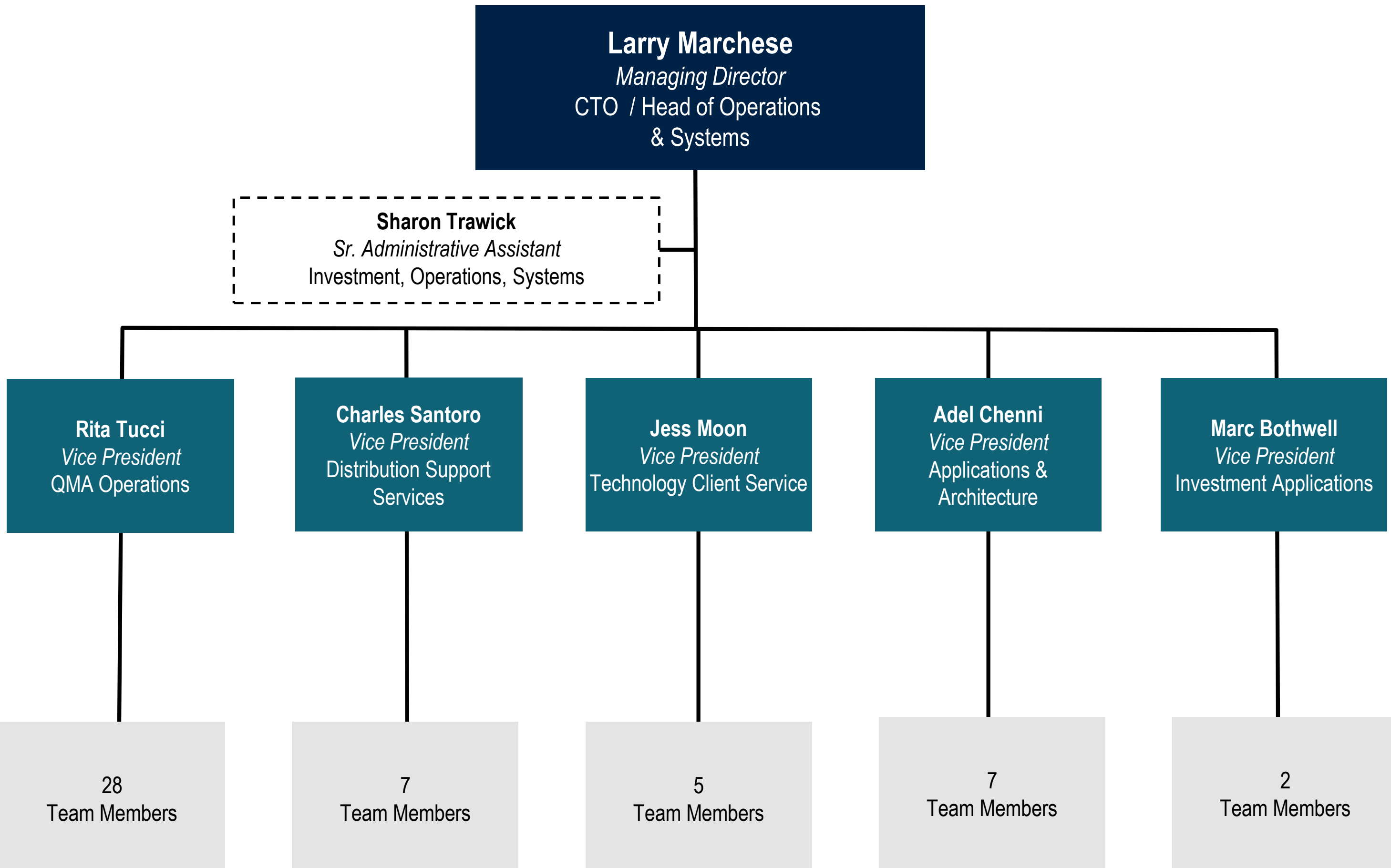
2014

2015
- Added a sales/price signal
- Added a target price signal
- Introduced a board quality signal

2016
- Added credit signal

2017
- Added earnings call tone

QMA Operations, Systems, and Market Data Services Organization



As of 12/31/2017.

QMA Operations

Committed to Driving Results

Controls designed to exceed industry standard

Daily

- Investigate and resolve settlement issues with brokers/custodians
- Flow verification and notification
  - Verify and approve cashflow prior to investment decision making
- Reconcile all settled cash balances
- Reconcile share positions
- Reconcile variation margin to broker and custodian
- Price assets and monitor corporate actions

Monthly

- Reconcile internal records to official custodian/accountant's records
- Verify accuracy of performance returns
  - FactSet
  - Benchmark
- Support client reporting

QMA Operations

Risk and Regulatory Reporting

- BCP quarterly review, and hot-site testing
- Preparation of legal documentation for country opening in emerging markets countries
- Sarbanes-Oxley quarterly review and update
- Quarterly broker commission reconciliation-NSAR

QMA Operations

In Summary, QMA's Operations Ensures That…

Transactions are:

- Properly recorded
- Accurately instructed
- Settled timely

Portfolios are:

- Reconciled
- Reported

Performance is accurately calculated

- GIPS-compliant

Assets are:

- Priced correctly
- Actively maintained for dividends and corporate actions

Biographies

Senior Management

Andrew Dyson is the Chairman and Chief Executive Officer of QMA. He joined from Affiliated Managers Group, Inc., where he was an Executive Vice President responsible for managing the company's central global distribution platform. Earlier, Andrew served as Head of BlackRock's Global Institutional Client Business, following the merger of BlackRock and Barclays Global Investors. In prior roles at BlackRock and Merrill Lynch Investment Managers, he held senior distribution positions, including Head of the International Institutional Business, and, before that, Head of the Institutional Business for Europe, Middle East, Africa and Asia Pacific.

Previously, Andrew was Head of US Multinational Investment Consulting for William M. Mercer, and also served as Head of UK Pension Fund Investment Consulting for the firm. He earned a Masters degree in Mathematics from Cambridge University. Andrew is a Fellow of the Institute of Actuaries.

Roy D. Henriksson, PhD, is the Chief Investment Officer of QMA. He has over twenty years of experience combining quantitative research with its practical applications in investment portfolios. Prior to joining QMA, Roy was CIO of Advanced Portfolio Management, where he designed and managed customized, risk-targeted investment portfolios for institutional clients globally. He is also currently the Co-Chairman of the Liquidity Risk Committee and Member of the Advisory Board of the International Association for Quantitative Finance (the IAQF). Previously, Roy held a variety of senior positions in research, trading and product development at a number of large investment banks. His broad product experience spans equity, fixed income, hedge funds, currency, and commodity derivatives.

Roy has published numerous articles on market-timing skill, portfolio optimization and asset allocation in leading journals. A recipient of the Graham and Dodd Award from *The Financial Analysts Journal,* he has held the position of Professor of Finance at the University of California, Berkeley, where he also served as Senior Consultant to Wells Fargo Investment Advisors and as an Advisor to the University of California Endowment. Roy holds a BS in Economics, a MS in Management, and a PhD in Finance, all from Massachusetts Institute of Technology.

Biographies

Quantitative Equity

George N. Patterson, PhD, is a Managing Director and Co-Head of QMA's Quantitative Equity team. His responsibilities include overseeing portfolio management, investment research and new product development for the US, Non-US and Value equity strategies. Prior to joining QMA, George was Managing Director, Corporate Strategy, at Axioma, Inc., focusing on identifying buy-side trends and market opportunities to foster growth at the company. He was previously Chief Investment Officer for Quantitative Investments at Bank of Montreal Global Asset Management, with responsibilities across global equities and multi-asset strategies spanning stand-alone asset allocation funds, FX overlays, retail fund of funds, and ETF-based multi-asset solutions. Prior to that, George was Co-Founder and a Managing Partner at Menta Capital LLC, a California-based quantitative equity hedge fund, and a Senior Portfolio Manager in equity market neutral strategies at Barclays Global Investors. He began his career at NASA's Jet Propulsion Laboratory. George earned a BS in Physics from the Massachusetts Institute of Technology, and a PhD in Physics from Boston University.

Peter Xu, PhD, is a Managing Director and Co-Head of QMA's Quantitative Equity team and Head of US Core, Long Short and Market Neutral strategies. His responsibilities include research on higher alpha and alternative strategies. For over 20 years, Peter has played a critical role in the evolution of QMA's quantitative models and investment process that have delivered strong performance across all of our equity strategies. He has published articles in a number of journals, including *The Financial Analysts Journal*, *The Journal of Portfolio Management*, *The Journal of Asset Management, The Journal of Investing, Review of Quantitative Finance and Accounting*, and others. Peter earned a BS in Nuclear Physics from Fudan University in Shanghai, an MA in Economics from Rice University, and a PhD in Finance from the University of Houston.

Jacob Pozharny, PhD, is a Managing Director for QMA working within the Quantitative Equity team, where he heads research and portfolio management for the Non-US Equity strategies. Jacob was previously a Managing Director and Head of International Quantitative Equity at the TIAA-CREF organization and Teachers Advisors, Inc., where he was responsible for quantitative stock selection and portfolio construction for international portfolios. Earlier in his career, Jacob held positions at the University of California, Nicholas-Applegate Capital Management and the Federal Reserve. He earned a BA in Economics, an MS in Statistics, an MS in Finance and Applied Economics, and a PhD in Applied Statistics from the University of California.

Stephen Courtney is a Managing Director for QMA working within the Quantitative Equity team, where he serves as both a senior portfolio manager and co-head of the Value Strategy. Prior to joining QMA, Stephen was a Director at ClearBridge Investments and its predecessor organizations, where he served as a research analyst and portfolio manager for 26 years. He earned a BA in Political Science from Boston College. He is also a member of the CFA Institute and the New York Society of Security Analysts.

Mitchell Stern, PhD, is a Managing Director for QMA working within the Quantitative Equity team, where he co-heads research and portfolio management for the Value Equity strategies. Mitch's experience at QMA has included leading value research, and managing large-cap, small-cap, long-short, and derivative portfolios. Previously, he was the Lead Researcher for Dreman Value Management. Earlier in his career, Mitch was an Assistant Professor of Finance at the University of Tennessee and Fairfield University. Mitch earned a BA *cum laude* in Economics from Brandeis University and an MA and a PhD in Economics from the University of Virginia.

Devang Gambhirwala is a Principal and Portfolio Manager for QMA working within the Quantitative Equity team. His responsibilities include managing US Core, Long-Short and Market Neutral strategies. He is also responsible for the management of structured products. Earlier at PGIM, Inc., Devang worked as a Quantitative Research Analyst and an Assistant Portfolio Manager. He earned a BS in Computer and Information Sciences from the New Jersey Institute of Technology and an MBA from Rutgers University.

Biographies

Quantitative Equity

Wen Jin, PhD, CFA, is a Managing Director and Portfolio Manager for QMA working within the Quantitative Equity team. His responsibilities include portfolio management, analysis and research for the Non-US strategies. Prior to joining QMA, he was a Portfolio Manager and Director of Quantitative Strategy and Trading at Aristeia Capital Management, where he oversaw derivatives valuation, quantitative trading strategy development and portfolio management. Prior to that, Wen was a Quantitative Strategist in the options trading group at Citadel Investment Group. He earned a BS in Physics from University of Sciences and Technology of China, an MA and PhD in Physics from Columbia University and holds the Chartered Financial Analyst (CFA) designation.

Stacie L. Mintz, CFA, is a Managing Director and Portfolio Manager for QMA working within the Quantitative Equity team. Her responsibilities include managing US Core, Long Short and Market Neutral strategies, and overseeing the team responsible for implementation. Previously, Stacie was a member of the Global Multi-Asset Solutions team, where she was responsible for several retail and institutional portfolios. In addition, during that time, she was responsible for managing the overall asset allocation for the Prudential Pension Plan. She earned a BA in Economics from Rutgers University, an MBA in Finance from New York University, and holds the Chartered Financial Analyst (CFA) designation.

Satish Sanapareddy, CFA, is a Vice President and Portfolio Manager for QMA working within the Quantitative Equity team. His responsibilities include portfolio management and research for US Core strategies. Previously, Satish focused primarily on stock selection and portfolio construction research on the US Core Equity team, as well as production support for implementation of the US Core Equity strategy. Satish earned a BS in Engineering from Nagarjuna University of India and an MBA in Finance from Hull University in the UK and holds the Chartered Financial Analyst (CFA) designation.

Vlad Shutoy is a Principal and Portfolio Manager for QMA working within the Quantitative Equity team. His responsibilities include portfolio management, analysis and research for the Non-US strategies. Prior to joining QMA, Vlad worked at Bloomberg, LP, where he led a team responsible for building predictive equity models for top-tier institutional investors. Prior to that, he was a Quantitative Analyst at Goldman Sachs Asset Management's QIS team developing proprietary equity models while building short-term trading strategies. Vlad also worked at ING Investment Management, where he was focused on portfolio management of long-short equity while overseeing all quantitative investment processes. He earned a BS in Computer Engineering and a MS from New York University Tandon School of Engineering where he studied Computer Science and Financial Engineering.

Gavin Smith, PhD, is a Managing Director and Product Specialist for QMA working within the Quantitative Equity and Global Multi-Asset Solutions teams. His responsibilities include portfolio analysis and research. Gavin was previously a member of the Research team where his focus was on alpha and implementation research that could be applied across markets and strategies. Prior to joining QMA, Gavin was at Macquarie Capital where he led the North American Quantitative Research team. During his time at Macquarie he was named Rising Star for Quantitative Research in the Institutional Investor All American Research Survey. Earlier, Gavin was a Quantitative Researcher in the Quantitative Equity Strategies team at Barclays Capital in New York. Gavin was also a Quantitative Researcher at Plato Investment Management in Sydney, Australia. There he focused on alpha research within the Australian market. He received his Bachelor of Commerce (Honors) in Finance from the University of Wollongong and his PhD in Finance from the University of New South Wales in Australia.

Biographies

Quantitative Equity

John Van Belle, PhD, is a Managing Director and Portfolio Manager for QMA working within the Quantitative Equity team. His responsibilities include managing global and non-US portfolios. John has also been a Vice President in Currency Management Consulting at both Bankers Trust and Citibank. He began his career in the Research department of the Federal Reserve Bank of New York. He has taught Economics and Finance at the University of Virginia and Rutgers Graduate School of Management and has published numerous articles in the fields of Economics and Finance. John earned a BS in Economics from St. Joseph's College and a PhD in Economics from the University of Virginia.

Research

Joshua Livnat, PhD, is a Managing Director for QMA and Head of Research. Previously, he was a Professor of Accounting at NYU's Leonard Stern School of Business. His primary research areas have included capital markets, the effects of various accounting disclosure on stock prices, market anomalies and valuation issues. Joshua co-authored the book "Cash Flow and Security Analysis." He has also been published in many journals, including *Journal of Accounting Research, Journal of Accounting & Economics, The Accounting Review, Journal of Finance, Journal of Portfolio Management,* and *Financial Analysts Journal.* Joshua has taught at Vanderbilt University, University of California at Berkeley, Northwestern University and Hebrew University in Jerusalem. He earned a BS in Mathematics and Statistics from Hebrew University and a PhD in Accounting from New York University.

Margaret S. Stumpp, PhD, is a Senior Advisor to QMA. She is extensively involved in quantitative research in asset allocation, security selection and portfolio construction. Maggie previously served as QMA's Chief Investment Officer for over two decades. Maggie has published articles on finance and economics in numerous publications, including *The Financial Analysts Journal, The Journal of Portfolio Management, The Journal of Investment Management* and *Award Papers in Public Utility Economics.* Maggie earned a BA *cum laude* with distinction in Economics from Boston University and holds an AM and PhD in Economics from Brown University.

Global Trading

Richard L. Crist is a Managing Director and Head of Global Trading for QMA. His responsibilities include a team of traders and all aspects of trading in US and International markets for institutional strategies. The team currently transacts in equities, futures, currencies, ETFs and fixed-income products. Earlier in his career, Rich held various roles in portfolio management, compliance and accounting within the Prudential organization. Rich earned a BS in Accounting from Montclair State University.

Biographies

Investment Systems and Infrastructure

Larry Marchese is a Managing Director and Chief Technology and Operations Officer for QMA. Larry oversees Technology, Operations, Client Reporting, Performance Measurement, Market Data and Production Quantitative Programming. Since joining QMA, Larry has been responsible for the architectural design and implementation of the automated systems that underlie key business functions across QMA. He has also been responsible for optimizing workflows across the firm to increase efficiency, accuracy, and straight-through processing. Prior to joining QMA, Larry served as Head of Applications at Jennison Associates. Previously, Larry headed the Global Technology group for Chase Asset Management, and subsequently became Chief Technology Officer for J.P. Morgan Funds. Larry earned a BA in Mathematics from Hunter College of the City University of New York.

Institutional Relationship Management

Brad Zenz is a Managing Director, Head of North America Sales for QMA, where he is responsible for institutional client relations and business development. Prior to joining QMA, he was a Director of Institutional Sales with RS Investments. Previously, Brad was with Goldman Sachs, where he worked with institutions, endowments, and foundations. Brad earned a BA from the University of Southern California and a MBA from the Northwestern University Kellogg School of Management.

Notes to Disclosure

Important Information

The information contained herein is provided by Quantitative Management Associates LLC ("QMA"). This document may contain confidential information and the recipient hereof agrees to maintain the confidentiality of such information. Distribution of this information to any person other than the person to whom it was originally delivered and to such person's advisers is unauthorized, and any reproduction of these materials, in whole or in part, or the divulgence of any of its contents, without the prior consent of QMA, is prohibited. These materials are not intended for distribution to or use by any person in any jurisdiction where such distribution would be contrary to local law or regulation. Certain information in this document has been obtained from sources that QMA believes to be reliable as of the date presented; however, QMA cannot guarantee the accuracy of such information, assure its completeness, or warrant such information will not be changed. The information contained herein is current as of the date of issuance (or such earlier date as referenced herein) and is subject to change without notice. QMA has no obligation to update any or all such information; nor do we make any express or implied warranties or representations as to the completeness or accuracy. Any information presented regarding the affiliates of QMA is presented purely to facilitate an organizational overview and is not a solicitation on behalf of any affiliate. **These materials are not intended as an offer or solicitation with respect to the purchase or sale of any security.**

These materials do not take into account individual client circumstances, objectives or needs. No determination has been made regarding the suitability of any securities, financial instruments or strategies for particular clients or prospects. The information contained herein is provided on the basis and subject to the explanations, caveats and warnings set out in this notice and elsewhere herein. Any discussion of risk management is intended to describe QMA's efforts to monitor and manage risk but does not imply low risk.

These materials are for informational or educational purposes. In providing these materials, QMA (i) is not acting as your fiduciary as defined by the Department of Labor and is not giving advice in a fiduciary capacity and (ii) is not undertaking to provide impartial investment advice as QMA will receive compensation for its investment management services. This product or service is available to ERISA plans only when represented by an Independent Fiduciary as defined by the DOL. A plan or its Independent Fiduciary will be asked to make representations in the investment management agreement or adoption agreement to enable reliance on the Independent Fiduciary exception from the definition of fiduciary in the DOL's regulations.

The basis for the performance objective set forth within this presentation is QMA's research and its long experience in managing equity accounts that use quantitative methods to drive stock selection and portfolio construction. There can be no guarantee that this objective will be achieved. QMA has based this investment objective on certain assumptions that it believes are reasonable. There is no guarantee, however, that any or all of such assumptions will prove to be accurate in the face of actual changes in the securities market or other material changes in regional or local markets specific to this strategy. Factors that would or could mitigate against achieving this investment objective would include material changes in the economic environment and factors that are not included in our model or are underperforming in our model. The investment objective contemplated herein is over a complete market cycle which is generally between five and ten years for this strategy. The investment objective set forth above is calculated gross of management fees. Had such fees been taken into account, the investment objective indicated would be lower.

Enhancements represent the results of ongoing research initiatives intended to continually advance the design of QMA's model. An enhancement or collection of enhancements does not constitute a material change to QMA's investment philosophy or strategy unless otherwise communicated to all clients.

Investing in securities involves risk of loss that investors should be prepared to bear. In addition, model-based strategies present unique risks that may result in the model's not performing as expected. These risks include, for example, design flaws in the model; input, coding or similar errors; technology disruptions that make model implementation difficult or impossible; and errors in externally supplied data utilized in models. To the extent that portfolio manager judgment is applied to model output, decisions based on judgment may detract from the investment performance that might otherwise be generated by the model. No investment strategy or risk management technique can guarantee returns or eliminate risk in any market environment.

The financial indices referenced herein are provided for informational purposes only. The manager's holdings and portfolio characteristics may differ from those of the benchmark(s). Additional factors impacting the performance displayed herein may include portfolio-rebalancing, the timing of cash flows, and differences in volatility, none of which impact the performance of the financial indices. Financial indices assume reinvestment of dividends but do not reflect the impact of fees, applicable taxes or trading costs which may also reduce the returns shown. You cannot invest directly in an index. The statistical data regarding such indices has been obtained from sources believed to be reliable but has not been independently verified.

References to specific securities and their issuers are for illustrative purposes only and are not intended and should not be interpreted as recommendations to purchase or sell such securities. The securities referenced may or may not be held in portfolios managed by QMA and, if such securities are held, no representation is being made that such securities will continue to be held.

These materials do not purport to provide any legal, tax or accounting advice.

US Small Cap Core Equity Composite

US Small Cap Core Equity Composite
October 1, 2009 to December 31, 2016

Annual Returns for Periods Ended December 31

Year	Gross Return	Net Return	Russell 2000® Index	Composite 3-Yr St Dev	Benchmark 3-Yr St Dev	Number of Portfolios	Internal Dispersion	Composite Market Value (millions)	Firm Assets (millions)
2009*	3.54%	3.37%	3.87%	NR	NR	5 or less	NM	$21.3	$70,162.1
2010	32.91%	32.07%	26.85%	NR	NR	5 or less	NM	$18.0	$79,735.3
2011	1.93%	1.27%	-4.18%	NR	NR	5 or less	NM	$15.4	$70,564.6
2012	24.94%	24.15%	16.35%	20.55%	20.48%	5 or less	NM	$18.3	$86,274.3
2013	39.90%	39.02%	38.82%	17.58%	16.68%	5 or less	NM	$366.1	$109,742.9
2014	10.95%	10.24%	4.89%	13.39%	13.31%	5 or less	NM	$419.2	$113,073.6
2015	0.78%	0.13%	-4.41%	13.98%	14.16%	5 or less	NM	$547.6	$113,065.2
2016	23.64%	22.86%	21.31%	15.89%	15.99%	5 or less	NM	$764.9	$116,116.8

Annualized Returns

As of December 31, 2016	Gross Return	Net Return	Russell 2000® Index
1 Year	23.64%	22.86%	21.31%
3 Year	11.40%	10.69%	6.74%
Inception October 1, 2009	18.33%	17.57%	13.34%

* The returns shown are for the period October 1, 2009 through December 31, 2009.
NR Not Required
NM Not meaningful when there are less than or equal to 5 accounts in the composite for the full year.

Quantitative Management Associates LLC (QMA) claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. QMA has been independently verified for the period from January 1, 1993 to December 31, 2016.
Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. The US Small Cap Core Equity Composite has been examined for the period from October 1, 2009 to December 31, 2016. The verification and performance examination reports are available upon request.

Notes

1. Quantitative Management Associates (QMA), an SEC-registered investment advisor, is a wholly-owned subsidiary of PGIM, Inc., a Prudential Financial, Inc. company. In 2008, QMA redefined the firm to include assets managed through wrap fee programs (QMA Managed Accounts) for all periods after January 1, 2006. Prudential Financial, Inc. of the United States is not affiliated in any manner with Prudential plc, a company incorporated in the United Kingdom.
2. The US Small Cap Core Equity Composite includes all portfolios whose investment strategy is to outperform the Russell 2000® Index in a risk-managed manner. This composite was created on October 1, 2009.
3. A list of composite descriptions and policies for valuing portfolios, calculating performance and preparing compliant presentations are available upon request.
4. Performance results are stated gross and net of model fees. Performance has been calculated in US dollars and reflects the reinvestments of dividends and other earnings. Returns for each client will be reduced by such fees and expenses as described in their individual contract. The fee schedule currently in effect is as follows: .65% on the first $50 million, .60% on the next $50 million and .55% thereafter. Actual advisory fees charged and actual account minimum size may vary by account due to various conditions described in QMA's Form ADV 2A. Net returns are calculated by deducting the highest tier of the QMA fee schedule in effect for the respective time period from the monthly gross composite return. The composite shown may include accounts that are group annuity or life insurance products issued by The Prudential Insurance Company of America. The three-year annualized ex-post standard deviation measures the variability of the composite and the benchmark returns over the preceding 36-month period. It is not required to be presented for annual periods prior to 2011 or when a full three years of composite performance is not yet available. The internal dispersion of annual returns is measured by the asset-weighted standard deviation of portfolio returns included in the composite for the entire year. The annualized return is equivalent to the annual return which, if earned in each year of the indicated multi-year period, would produce the actual cumulative return over the time period. Past performance is not a guarantee or a reliable indicator of future results.
5. The benchmark for this composite is the Russell 2000® Index. The Russell 2000® Index measures the performance of the 2,000 smallest companies in the Russell 3000® Index. Dividend income is reinvested. Source of the Russell 2000® Index: Frank Russell Company. Russell 2000® Index is a trademark/service mark of the Frank Russell Company. Russell® is a trademark of the Frank Russell Company. The manager's holdings and portfolio characteristics may differ from those of the benchmark(s). Additional factors impacting the performance displayed herein may include portfolio-rebalancing, the timing of cash flows, and differences in volatility, none of which impact the performance of the financial indices. Financial indices assume reinvestment of dividends but do not reflect the impact of fees, applicable taxes or trading costs which may also reduce the returns shown. You cannot invest directly in an index. The statistical data regarding such indices has been obtained from sources believed to be reliable. Benchmark returns are not covered by the report of independent verifiers.
6. Small-cap stocks have limited marketability and may be subject to more abrupt or erratic market movements than large-cap stocks.

Systematic
FINANCIAL MANAGEMENT

May 9, 2018
Small Cap Value Free Cash Flow

Kenneth Burgess, CFA
Portfolio Manager
Partner

Eoin E. Middaugh, CFA
Partner

Steven C. Shaw
Senior Vice President

LACERA

Our mission is to provide clients with above benchmark long-term investment results and client service that consistently surpasses expectations.

Systematic FINANCIAL MANAGEMENT

Exclusive Focus on Managing Value Portfolios

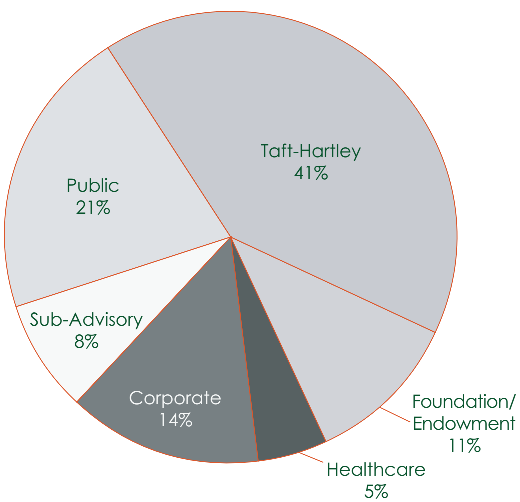
Firm Overview

- $4.8 Billion in Discretionary Assets
- 30+ Years Experience
- Institutional Client Base
- Significant Employee Ownership
- Affiliated Managers Group, Inc. Affiliate

Free Cash Flow Value

Our strategy seeks to invest in high-quality, undervalued companies with superior financial strength, strong free cash flows and lower relative levels of debt that we believe will outperform over full market cycles.

Client Distribution*



* Percentage based upon 87 firm-wide institutional accounts.

Portfolio Offerings

Portfolio	Inception
Small Cap Value FCF	1993
SMID Cap Value FCF	2010

As of March 31, 2018

Representative Client List

Corporate

Ash Grove Cement Company
Gundersen Lutheran Employees' Retirement Plan
Oshkosh Truck Corp.
University of Akron Operating Fund

Foundation/Endowment

Dillard University Endowment
Diocese of San Bernardino
HFSF Grants Management, Inc.
Moose International, Inc.
Sister M. Athanasia Gurry Trust Fund of the Sisters of St. Joseph
Texas State University

Public

City of Lauderhill Firefighters'
City of Pontiac General Employees Retirement
City of St. Petersburg Retirement System
City of Winston-Salem
Franklin Regional Retirement System
Fresno County Employees Retirement Association
Gwinnett County Board of Education Retirement
Missouri Local Government Employees Retirement
Ohio Bureau of Workers' Compensation
Public School Retirement System of St. Louis
Sonoma County Employees Retirement
State of Idaho Endowment Fund

Sub-Advisory

Transamerica Asset Management, Inc.

Taft-Hartley

Bakery and Confectionary International Pension Fund
Cement Masons Southern California Pension Trust
Drywall Pension Fund
Golden Gate Transit
Heating, Piping & Refrigeration Pension
IBEW Local 124
IBEW Local 191
IBEW Pacific Coast Pension Fund
Intermountain Ironworkers Pension Trust
International Brotherhood of Teamsters
Ironworkers Local Union No. 167 Pension Plan
Laborers' District Council for Baltimore
Laborers' Local 231
Laborers' Pension Fund
Southern Nevada Culinary & Bartenders Pension Trust
Teamsters Local 808
U.A. Plumbers & Steamfitters Local 22 Pension Fund
U.A.W. Local 259 Pension Plan
United Mine Workers
United Scenic Artists Local 829
Western Washington Glaziers Retirement Trust Western Washington Laborers
Western Pennsylvania Teamsters and Employers Pension Fund

Other

Catholic Health Initiatives
St. Joseph Health System

Representative Client List as of March 31, 2018. Inclusion in this list does not represent a recommendation or endorsement of Systematic's products and/or services. Clients listed herein may be invested in other Systematic managed investment capabilities and, as such, are not exclusively representative of the product(s) discussed herein. Clients included in this list are the institutional clients which have provided written consent to Systematic to be named in marketing materials.

Organizational Overview

Systematic FINANCIAL MANAGEMENT

Management Committee

D. Kevin McCreesh, CFA — *Managing Partner/ Chief Investment Officer*
Kenneth W. Burgess, CFA — *Managing Partner/ Senior Portfolio Manager*
Karen E. Kohler — *Managing Partner/ Chief Operating Officer/ Chief Compliance Officer*
Ronald M. Mushock, CFA — *Managing Partner/ Senior Portfolio Manager*
Eoin E. Middaugh, CFA — *Managing Partner/ Portfolio Manager*

D. Kevin McCreesh, CFA*
Chief Investment Officer

Gloria Fleming

Portfolio Management
Kenneth W. Burgess, CFA*
Eoin E. Middaugh, CFA*
Ronald M. Mushock, CFA*
Aman Patel, CFA*

Research Analysts
Mike Cikos, CFA
Brian Kostka, CFA*
Thomas J. Labarbera, Jr., CFA
Christopher Lippincott, CFA
Jennifer Mulroy, CFA
Rick Plummer, CFA*
Matthew Tangel, CFA
W. Ryan Wick, CFA

Trading
Roger H. Chang, *Head Trader**
J. Melissa Reformato

Marketing & Client Service

Scott N. Garrett, CFA
Ronald E. Luraschi
Steven C. Shaw
James V. Wallerius*

Marketing & Client Service Support
Allison J. Chase
Scott Tyndale

Karen E. Kohler*
Chief Operating Officer/ Chief Compliance Officer

Operations
Bill Skayhan, *Manager*
Diana Greene
Christine Szabo

Compliance
Michele Egeberg, *Manager*
Cynthia Greenidge

Information Technology
Michael Saroyan
Alex Vexler

Finance/ Administration
Tom Poutre, *Controller*
Francesco Lo Martire
Tom Tomasik

* Partner of the firm

Investment Team

Name	Title	Fundamental Research	Quantitative Analysis	Portfolio Management	Trading	Fundamental Research Focus	Years Investment Experience	Year Joined Systematic
D. Kevin McCreesh, CFA*	Chief Investment Officer	●		●		Generalist	32	1996
Kenneth W. Burgess, CFA*	**Portfolio Manager**	●	●	●		**Generalist, FCF**	**25**	**1993**
Ronald M. Mushock, CFA*	Portfolio Manager	●	●	●		Generalist	26	1997
Eoin E. Middaugh, CFA*	Portfolio Manager	●	●	●		Quantitative Analysis	20	2002
Aman Patel, CFA*	Portfolio Manager	●		●		Cons. Staples, Energy, Financials, Healthcare, Industrials, Materials, Utilities	19	2002
Brian D. Kostka, CFA*	Assistant Portfolio Manager	●		●		Cons. Disc., Cons. Staples, Healthcare, Industrials, Materials, Telecom	18	2007
W. Ryan Wick, CFA	**Assistant Portfolio Manager**	●		●		**Cons. Disc., Cons. Staples, Financials, Healthcare, Industrials, Technology, FCF**	**19**	**2005**
Rick Plummer, CFA*	Senior Equity Analyst/ Assistant Portfolio Manager	●		●		Generalist	23	2004
Christopher Lippincott, CFA	**Senior Equity Analyst**	●				**Cons. Disc., Financials, Industrials, Technology, Materials, FCF**	**21**	**2008**
Tom LaBarbera Jr., CFA	Senior Equity Analyst		●			Quantitative Analysis	17	2005
Jennifer Mulroy, CFA	Senior Equity Analyst	●				Cons. Disc., Cons. Staples, Health-care, Technology	11	2010
Matthew Tangel, CFA	Senior Equity Analyst	●	●			Quantitative Analysis/Fundamental Research, Energy, Financials, Industrials, Materials, Utilities	10	2008
Mike Cikos, CFA	Equity Analyst	●				Generalist	8	2015
Roger H. Chang	Head Trader				●	Trading	24	1996
J. Melissa Reformato	Trader				●	Trading	17	2001

* Partner of the firm

Note: 27% of the investment team are women/minorities. It is the policy and practice of Systematic to provide equal employment opportunity to all employees and applicants. Systematic does not unlawfully discriminate on the basis of race, color, creed, marital status, religion, national origin, ancestry, sex, sexual orientation, age, physical or mental disability, atypical hereditary cellular or blood trait or an individual's status as a veteran of the Armed Forces of the United States. All employment decisions will be made in a non-discriminatory manner. All personnel actions relating to compensation, benefits, company-sponsored training, and education tuition assistance, social and recreational programs will be administered in a non-discriminatory manner.

Systematic FINANCIAL MANAGEMENT

Don’t Sacrifice Quality When Investing in Smaller Companies

Systematic Strives to:

- Invest in the Healthiest Small Cap Companies
- Invest in Companies Possessing Tremendous Financial Flexibility
- Significantly Reduce Financial Risk & Solvency Concerns
- Avoid Speculative Situations and Focus on Proven Business Models
- Avoid Problems Associated with Accrual Accounting
- Provide Superior Risk-Adjusted Returns

Strong Operating Cash Flow

Strong Free Cash Flow

Limited Financial Leverage

Strong Debt Coverage

Systematic FINANCIAL MANAGEMENT

Identify

Universe Screening

Initial Universe
Small Caps generally consistent with market cap range of Russell 2000® Index

Quantitative Model
- Low P/OCF
- Low P/FCF
- Low EV/FCF
- Low Total Debt/Cap
- Strong Debt Coverage

200 Stock Research Focus List

Analyze

Fundamental Research

Review the Business Model
- Validate liquidity position
- Understand and identify key business attributes
- Review management and corporate strategy
- Assess sustainability of the business model

Forecast Financial Results
- Revenues and expenses
- Margins and profitability
- Operating cash flow
- Capital spending
- Free cash flow

Assess Company Valuation
- Identify appropriate cash flow multiples
- Perform DCF analysis

Execute

Portfolio Construction

100-150 Securities
- P/E in line or lower than Index
- P/FCF lower than Index
- EV/FCF lower than Index
- Debt coverage substantially better than Index

Risk Control

Investments continuously monitored
Prudently diversified
Max position size 5%
Market cap sensitive

Sell Discipline

High valuation
Deterioration in financial strength
Position size/Market cap
Opportunity cost

Investment Example: Urban Outfitters Inc. (URBN)

Systematic FINANCIAL MANAGEMENT

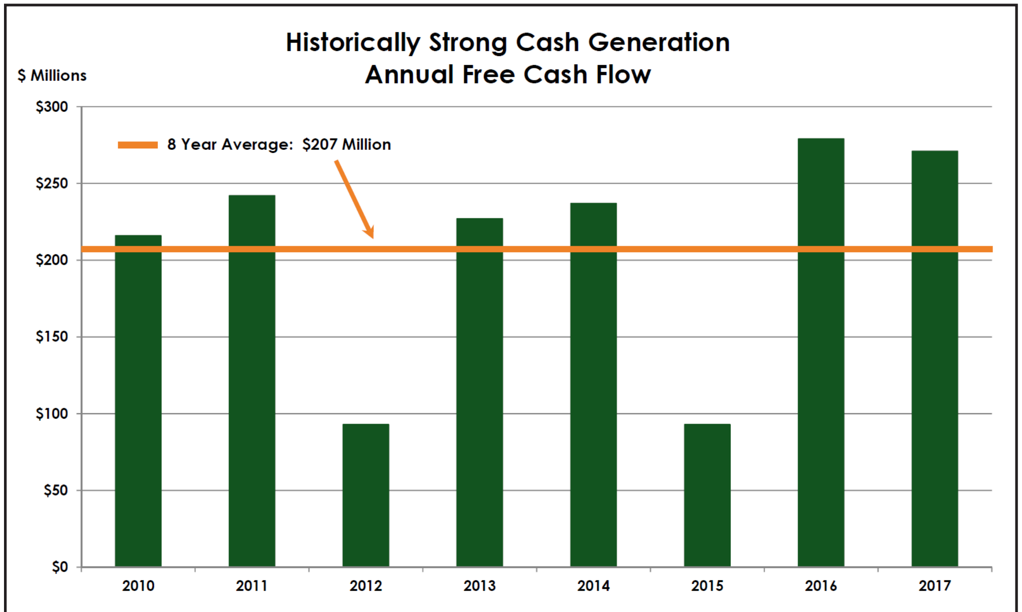
Leading Specialty Retailer with Three Key Divisions
- Urban Outfitters (245 Stores)
- Anthropologie (226 Stores)
- Free People (132 Stores)
- Well Managed with a Modest Footprint and Limited Capital Requirements

Strong Tenured Management Team
- Current CEO Founded the Company in 1976
- Insiders Own Over 24% of the Company
- Shareholder Friendly – Company Has Repurchased Nearly 25% of the Share Base Over the Past 3 Years
- Investing In Direct to Consumer Business (Online Sales)

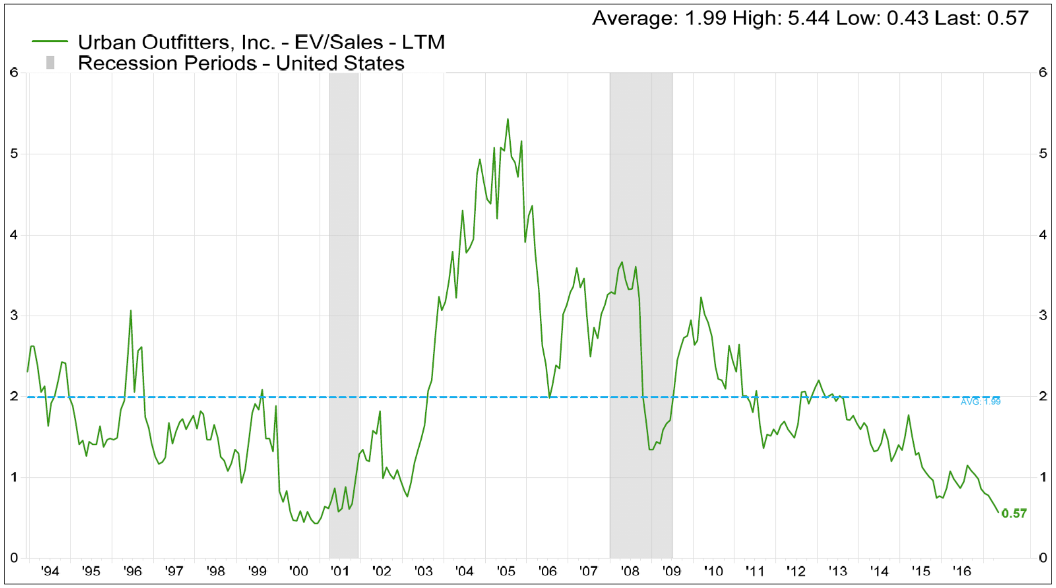
Pristine Balance Sheet
- Zero Debt
- Over $400 Million in Cash

Favorable Valuation
- EV/FCF at 8x vs. Russell 2000® at 33x
- EV/Sales at Historic Lows

Economic/Industry Backdrop
- While The Retail Environment Has Been Pressured, We See a Number of Signs Pointing to Improvement
  - Economy Steadily Improving
  - Job Market and Employment Outlook Strong
  - Disposable Income Improving
  - Store Rents Coming Down



Source: FactSet

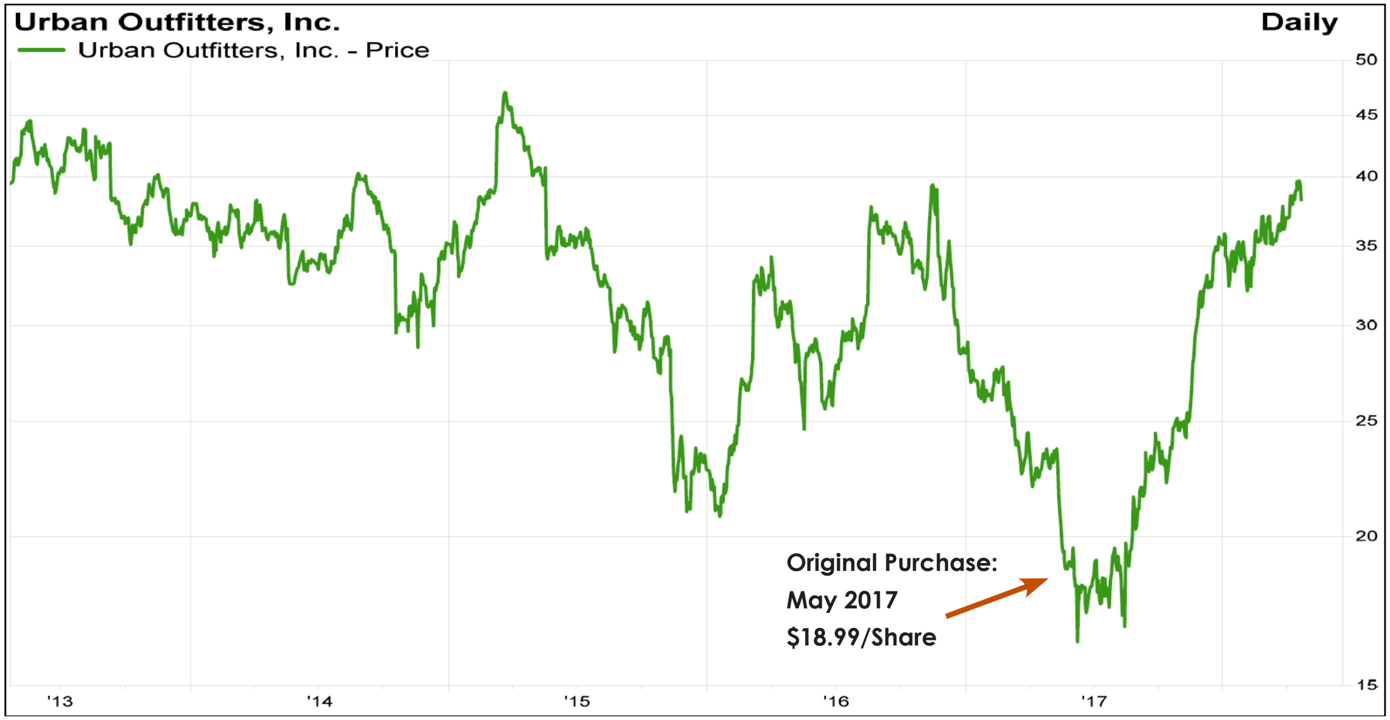


Source: FactSet

The above representation of the portfolio's investment in Urban Outfitters Inc. (URBN) has been prepared pursuant to the specific request by Los Angeles County Employees Retirement Association to include such an example in this presentation to LACERA's Board on May 9, 2018. This representative investment example is supplemental to information relating to other investment examples previously provided in past presentations, discussions and portfolio disclosures and is intended to be illustrative of the investment philosophy, buy/sell discipline and the overall investment process Systematic uses in making investment decisions for its Small Cap Value Free Cash Flow strategy. It should not be assumed that all investment decisions made, in the past or future investments, in the portfolio were or will be profitable or equal the performance of the security mentioned herein. A list of all investment decisions made by Systematic in our Small Cap Value Free Cash Flow strategy within the past year is available upon request. Please refer to the Additional Disclosures page at the end of this book for important disclosures.

Investment Example: Urban Outfitters Inc. (URBN)

Systematic
FINANCIAL MANAGEMENT



Source: FactSet

Analysis at Time of Purchase

- Assumptions
  - Difficult Operating Environment Will Persist
  - Little to No Sales Growth
  - Continued Depressed Margins
- Forecast Sustainable FCF of $150 Million Using Conservative Assumptions
- EV/Sustainable FCF at 12x
- EV/Sales at Historic Lows
- DCF Supports a $24 Stock Price
- Potential for Tax Reform May Offer Additional Upside

Developments Since Purchase and Current Analysis

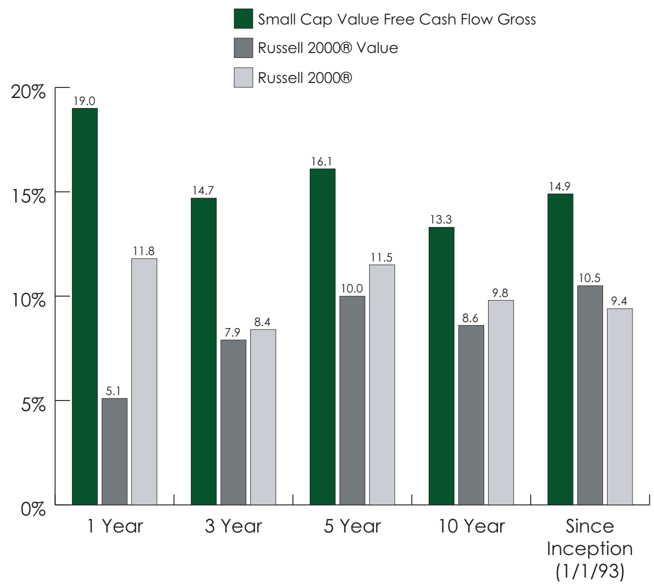
- The Economy Has and Continues to Improve, Resulting in an Improved Retail Landscape
- Could See Sales Growth of 5% or Better This Year
- Continue to Use Conservative Margin Assumptions
- Tax Rate Now Estimated at 25%
- We Now See FCF North of $250 Million
- Zero Debt and Over $500 Million in Cash
- EV/Sustainable FCF at 15x vs. Russell 2000® at 38x
- EV/Sales Still Near Historic Lows
- DCF Supports a $42 Stock Price

The above representation of the portfolio's investment in Urban Outfitters Inc. (URBN) has been prepared pursuant to the specific request by Los Angeles County Employees Retirement Association to include such an example in this presentation to LACERA's Board on May 9, 2018. This representative investment example is supplemental to information relating to other investment examples previously provided in past presentations, discussions and portfolio disclosures and is intended to be illustrative of the investment philosophy, buy/sell discipline and the overall investment process Systematic uses in making investment decisions for its Small Cap Value Free Cash Flow strategy. It should not be assumed that all investment decisions made, in the past or future investments, in the portfolio were or will be profitable or equal the performance of the security mentioned herein. A list of all investment decisions made by Systematic in our Small Cap Value Free Cash Flow strategy within the past year is available upon request. Please refer to the Additional Disclosures page at the end of this book for important disclosures.

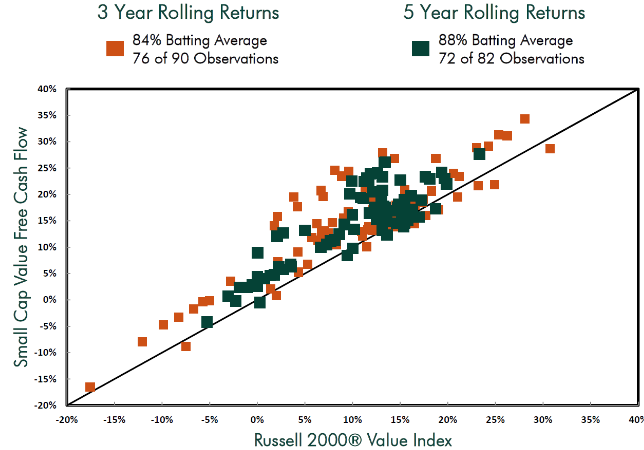
Small Cap Value Free Cash Flow Composite

Systematic
FINANCIAL MANAGEMENT

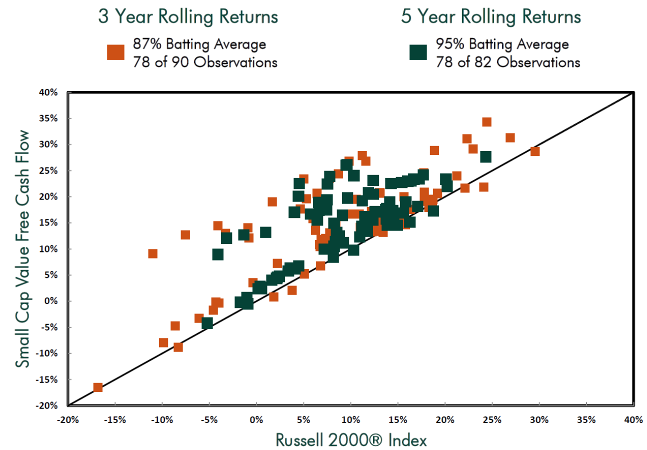
Annualized Returns



Rolling 3 and 5 Year Returns vs. Russell 2000® Value



Rolling 3 and 5 Year Returns vs. Russell 2000®



Investment Results

Period	Small Cap Value Free Cash Flow	Russell 2000® Value	Russell 2000®
YTD 2018	-0.3	-2.6	-0.1
2017	25.0	7.8	14.6
2016	23.9	31.7	21.3
2015	2.6	-7.5	-4.4
2014	6.1	4.2	4.9
2013	41.6	34.5	38.8
2012	16.9	18.1	16.4
2011	-5.7	-5.5	-4.2
2010	31.8	24.5	26.9
2009	38.9	20.5	27.2
2008	-32.7	-28.9	-33.8
2007	-3.2	-9.8	-1.6
2006	16.2	23.5	18.4
2005	8.2	4.7	4.6
2004	19.1	22.3	18.3
2003	39.6	46.0	47.3
2002	-8.4	-11.4	-20.5
2001	21.7	14.0	2.5
2000	28.4	22.8	-3.0
1999	12.3	-1.5	21.3
1998	13.0	-6.5	-2.5
1997	38.7	31.8	22.4
1996	30.1	21.4	16.5
1995	24.8	25.8	28.4
1994	1.1	-1.6	-1.8
1993	23.7	23.9	18.9

All Data as of March 31, 2018. All returns are gross of fees. Benchmark Source: FactSet. Past performance is not indicative of future performance. Information shown represents the Small Cap Value Free Cash Flow Composite, is supplemental and is intended for information purposes only. The Annual Composite Disclosure at the end of this book is an integral part of this presentation and contains requisite net of fee performance data and related disclosures. Systematic is the source of data unless otherwise indicated.

Performance results noted herein are gross of fees and do not reflect the deduction of investment advisory fees. The Client's return will be reduced by the investment advisory fees and other expenses the client may incur in the management of its investment advisory account. Systematic's investment advisory fees are more fully described in the Firm's Form ADV Part 2A. As an example, the net of fee return for our Small Cap Value Free Cash Flow strategy for the calendar year ending 2017 would have been 23.8%, versus the gross return of 25.0%, based on the highest fee of 1.0% charged for this product.

Consultants may only use the gross of fee data presented herein in one-on-one presentations with prospective institutional clients of Systematic. Any presentation to such prospective clients must also include the important disclosures noted above. Presentation to any other party is strictly prohibited.

Small Cap Value Free Cash Flow Composite

Portfolio Statistics (Since Inception 1/1/93)

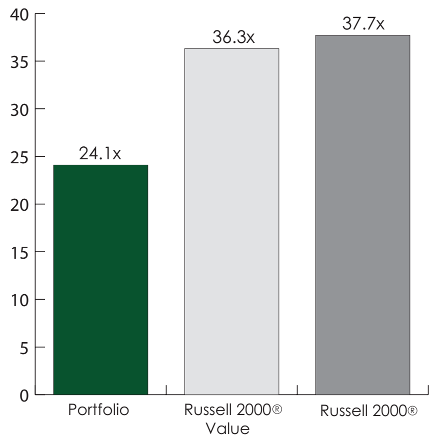
Small Cap Value Free Cash Flow vs.	Annualized Alpha	Annual Standard Deviation*	Correlation	Portfolio Beta	Information Ratio	Tracking Error	Up Capture	Down Capture
Russell 2000® Value	4.4%	18.6%	0.94	0.97	0.70	6.29	115%	87%
Russell 2000®	5.9%	18.6%	0.93	0.89	0.76	7.20	110%	74%

* vs. Russell 2000® Value of 18.0%; vs. Russell 2000® of 19.3%

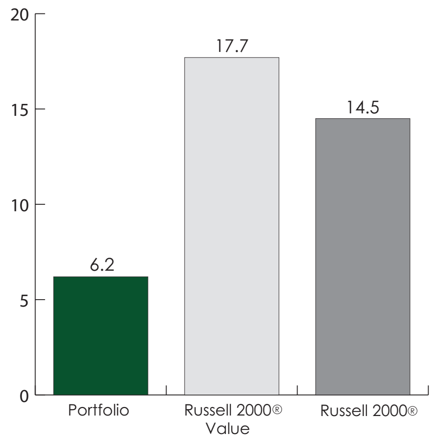
Portfolio Characteristics

	Weighted Avg. Mkt. Cap	Weighted Avg. Enterprise Value	Price to Forward Earnings	EV/EBITDA	EV/Free Cash Flow	Price/Free Cash Flow	Return on Equity	Years to Cover Total Debt	Active Share vs. Benchmark
Small Cap Value Free Cash Flow	$3.0 b	$3.7 b	14.1x	11.1x	24.1x	20.6x	9.7%	6.2	--
Russell 2000® Value	$2.1 b	$2.9 b	14.6x	12.0x	36.3x	22.7x	6.0%	17.7	89.0%
Russell 2000®	$2.5 b	$3.2 b	15.9x	14.0x	37.7x	27.2x	6.1%	14.5	90.4%

EV/Free Cash Flow



Years to Cover Total Debt



All Data as of March 31, 2018. All returns are gross of fees. Benchmark Source: FactSet. Past performance is not indicative of future performance. Information shown represents the Small Cap Value Free Cash Flow Composite, is supplemental and is intended for information purposes only. The Annual Composite Disclosure at the end of this book is an integral part of this presentation and contains requisite net of fee performance data and related disclosures. Systematic is the source of data unless otherwise indicated.

Performance results noted herein are gross of fees and do not reflect the deduction of investment advisory fees. The Client's return will be reduced by the investment advisory fees and other expenses the client may incur in the management of its investment advisory account. Systematic's investment advisory fees are more fully described in the Firm's Form ADV Part 2A. As an example, the net of fee return for our Small Cap Value Free Cash Flow strategy for the calendar year ending 2017 would have been 23.8%, versus the gross return of 25.0%, based on the highest fee of 1.0% charged for this product.

Consultants may only use the gross of fee data presented herein in one-on-one presentations with prospective institutional clients of Systematic. Any presentation to such prospective clients must also include the important disclosures noted above. Presentation to any other party is strictly prohibited.

Small Cap Value Free Cash Flow Composite

Systematic
FINANCIAL MANAGEMENT

Sector Allocation

% Economic Sector	Small Cap Value Free Cash Flow	Russell 2000® Value	Russell 2000®
Consumer Discretionary	12.1	11.0	12.1
Consumer Staples	1.1	2.2	2.3
Energy	3.5	6.4	3.7
Financials	24.2	31.4	18.0
Health Care	3.9	6.8	16.6
Industrials	21.2	12.3	15.3
Information Technology	16.3	8.9	17.5
Materials	5.6	4.3	4.3
Real Estate	8.1	9.9	6.3
Telecommunication Services	0.0	0.5	0.6
Utilities	1.2	6.3	3.3
Cash	2.8	0.0	0.0

Source: FactSet

Largest Positions

Stock	Weight (%)
Orbotech Ltd.	2.3
First Citizens Bancshares Inc.	2.1
Selective Insurance Group Inc.	1.6
Continental Building Products Inc.	1.6
United Fire Group Inc.	1.4
American Eagle Outfitters Inc.	1.3
Berkshire Hills Bancorp Inc.	1.3
Washington Federal Inc.	1.3
MSG Networks Inc.	1.3
Sandy Spring Bancorp Inc.	1.2
Total	**15.4**

As of March 31, 2018. Past performance is not indicative of future performance.
The Small Cap Value Free Cash Flow Composite portfolio data shown above is supplemental and is intended for informational purposes only.
Please refer to the Additional Disclosures page at the end of this book for important disclosures.

Market Environment

Systematic
FINANCIAL MANAGEMENT

Recession (2000-2002)

- Three year flight to quality

Low Quality Environment Created (2003 – 2006)

- Massive injection of liquidity by Federal Reserve
- Rapid rise in subprime mortgages
- Easy availability of credit
- Fed raises rates from 1.00% to 5.25% in effort to slow expansion

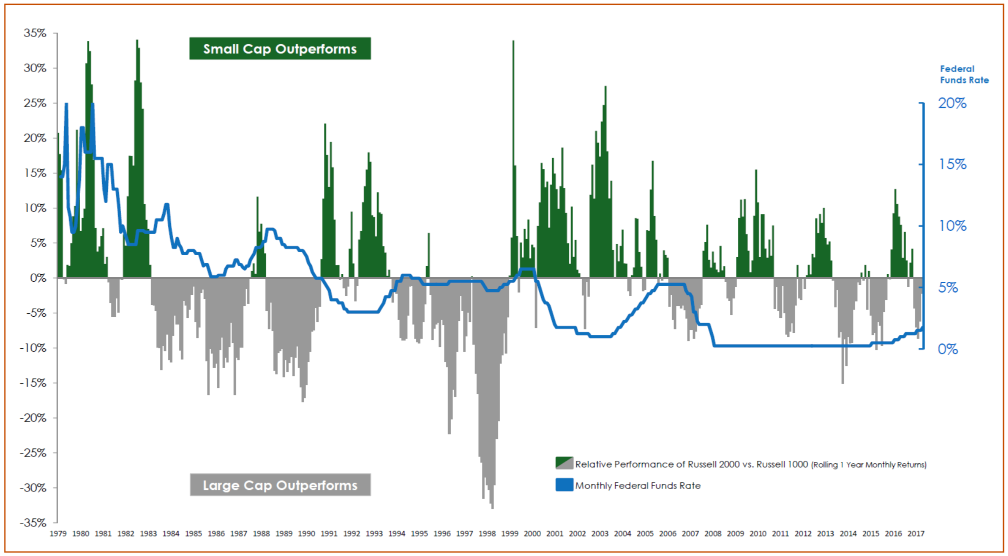
After Effects of Easy Monetary Policy (2007 – 2008)

- Housing sector bubble pops
- Lenders tighten underwriting standards
- Subprime mortgage market collapses
- Credit quality weakens across the board
- Capital markets freeze
- Fed repeatedly cuts rates, currently at 0.25%
- Government bail-out of financial system begins along with massive QE
- Stress tests foster stabalization
- Vastly improved financial strength puts U.S. in strong position

Current Environment

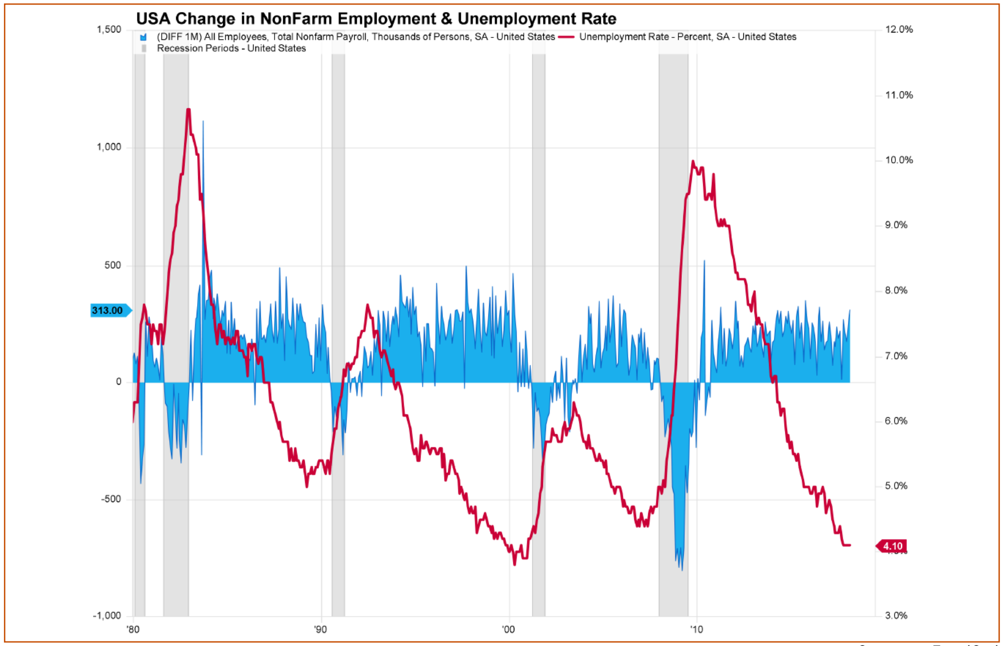
- With unemployment sub 6%, Fed concludes further QE and begins the process of raising short-term interest rates

Market Leadership
Large Cap vs. Small Cap



Source: FactSet and the Frank Russell Company

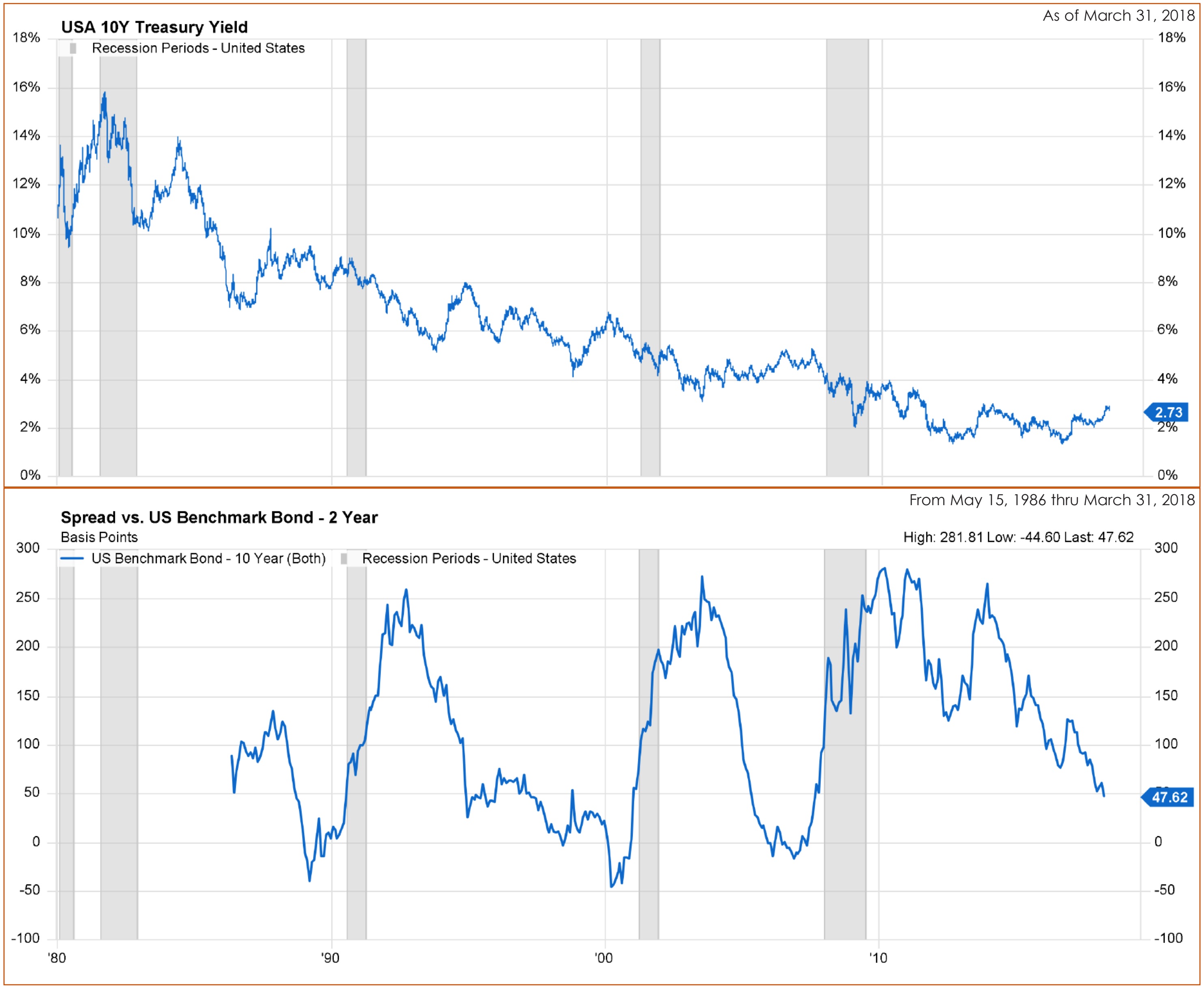
With a Much-improved Employment Backdrop, Fed Begins to Lift Short-term Interest Rates



Source: FactSet

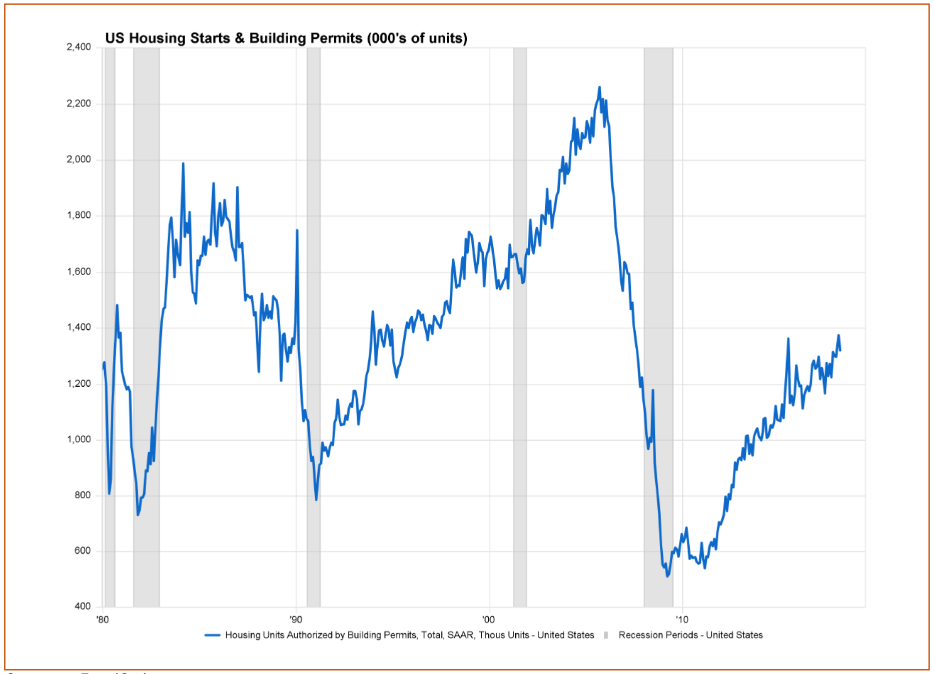
Systematic FINANCIAL MANAGEMENT

The Fed Remains Accommodative and Long-Term Rates Remain at Historic Lows

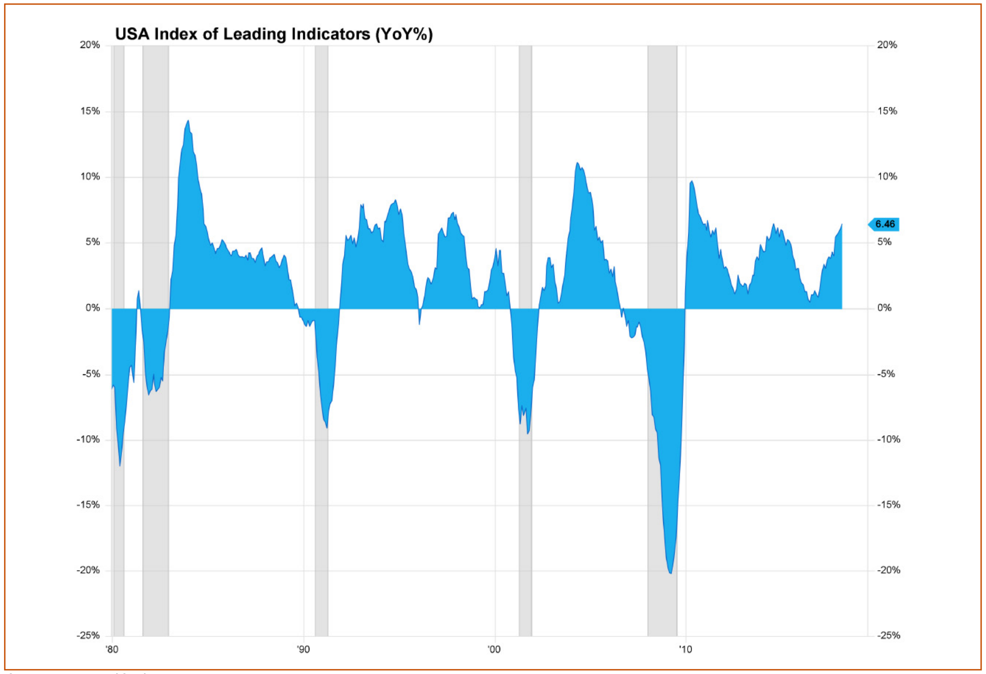


Source: FactSet

Recent Economic Data Continues to be Constructive



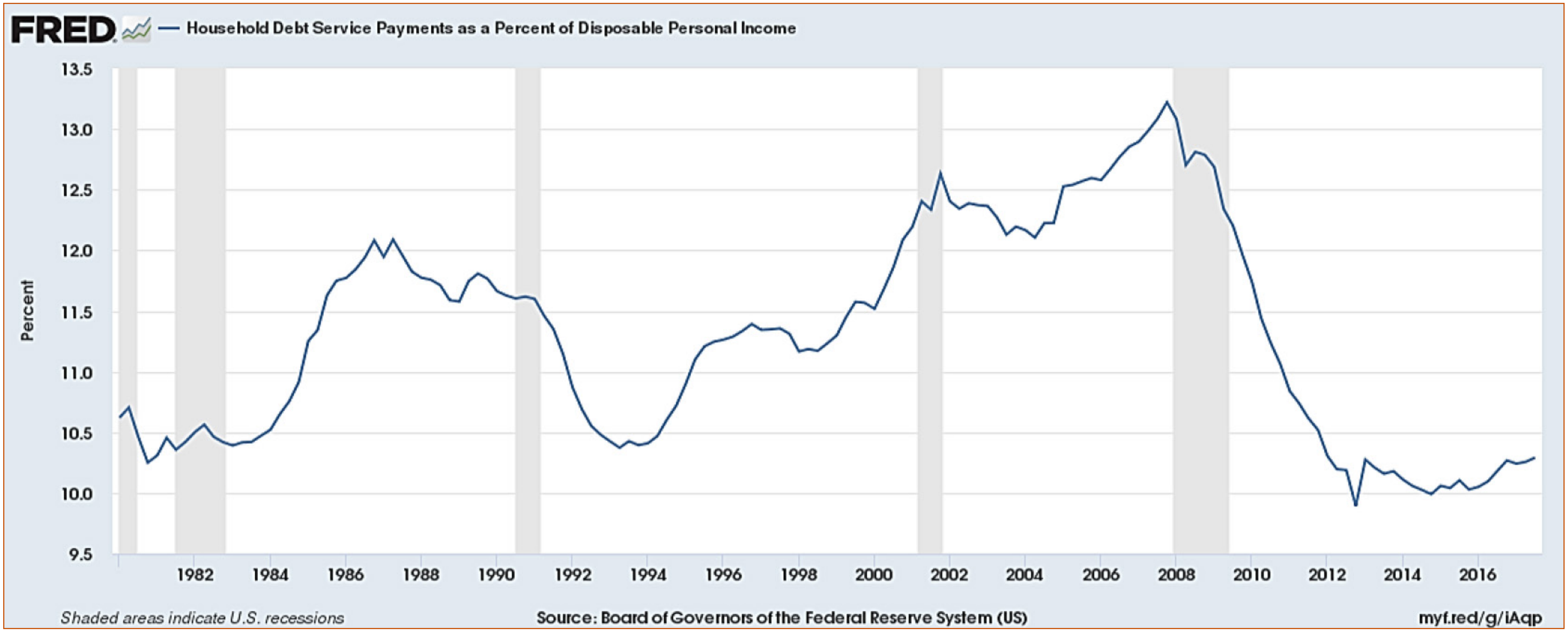
Source: FactSet



Source: FactSet

Systematic FINANCIAL MANAGEMENT

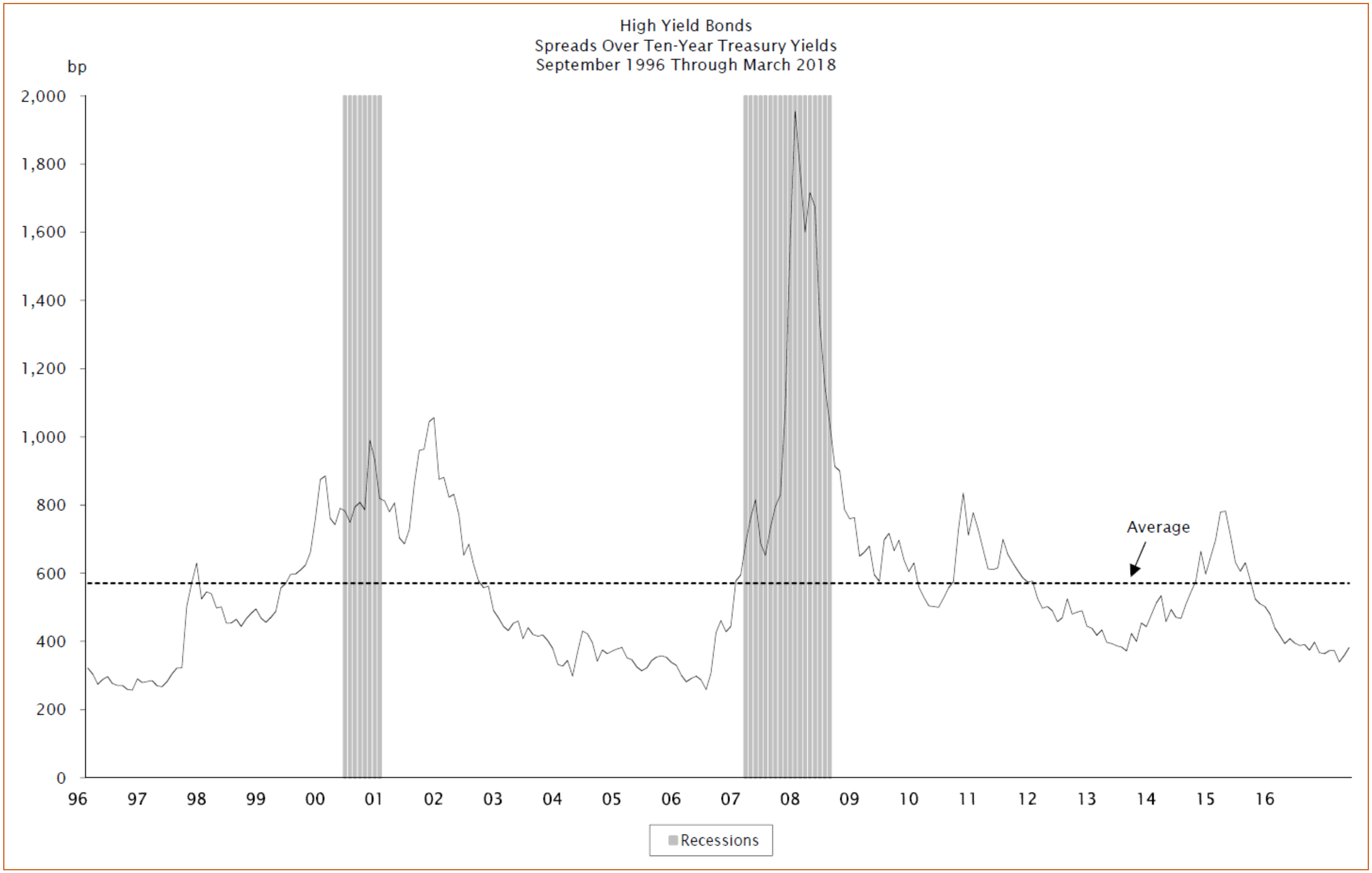
Household Debt Service Payments as a Percent of Disposable Personal Income



January 1, 1980 thru September 30, 2017 (Updated January 9, 2018).
Seasonally Adjusted Annual Rate. Quarterly Frequency.
Shaded areas indicate US recessions.

Systematic FINANCIAL MANAGEMENT

High Yield Spreads Continue to be Tight

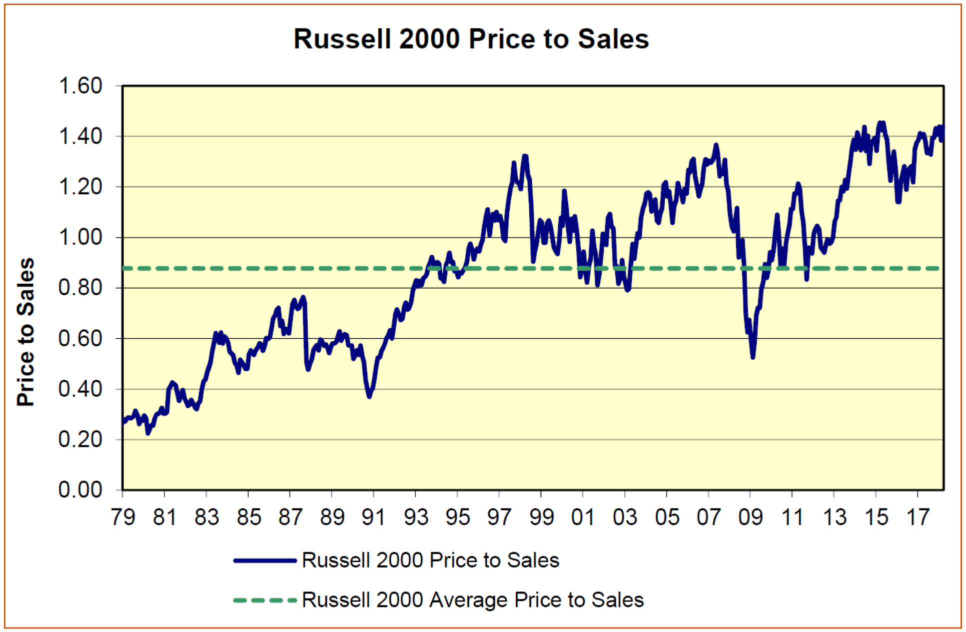


Source: FactSet, National Bureau of Economic Research. As of March 31, 2018.

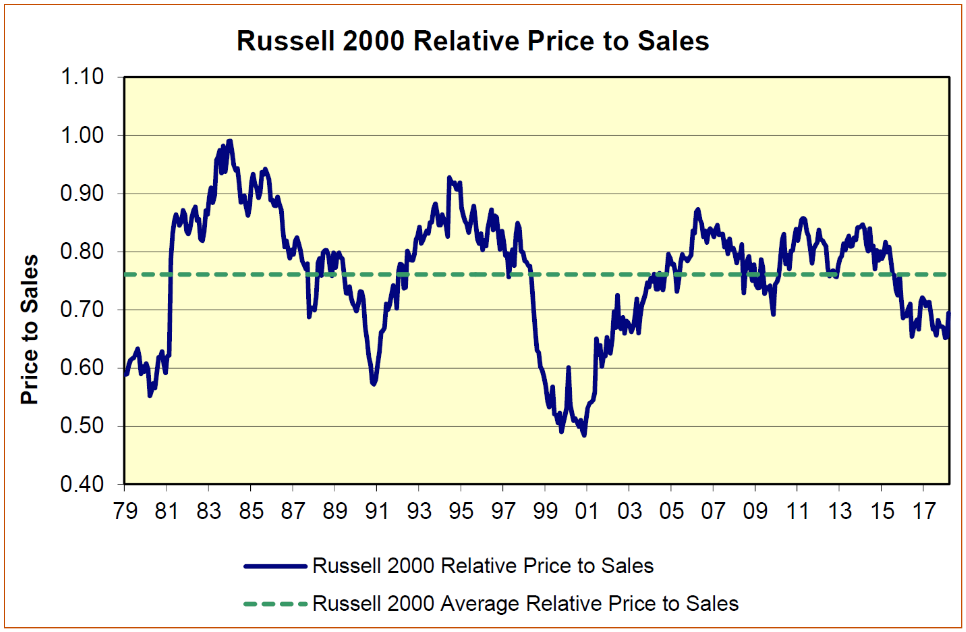
Systematic
FINANCIAL MANAGEMENT

Historical Small Cap Valuations

Russell 2000® Price to Sales



Russell 2000® Relative Price to Sales



Information provided from December 31, 1978 thru March 31, 2018.
Source: Compustat Basic Quarterly Database, Clarifi ModelStation.

Small Cap Value Free Cash Flow Composite Disclosure

Systematic FINANCIAL MANAGEMENT

Systematic Financial Management, L.P. ("Systematic") is an independently managed investment advisory firm and is an affiliate of Affiliated Managers Group, Inc. Systematic claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with GIPS® standards. Systematic has been independently verified for periods from January 1, 1993 through December 31, 2017*. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. The Small Cap Value Free Cash Flow Composite has been examined for the periods January 1, 1993 through December 31, 2016. The verification and performance examination reports are available upon request.

1. The performance results presented below reflect the Small Cap Value Free Cash Flow Composite performance from its January 1, 1993 inception. Prior to April 1, 2007, this composite was called Small Cap Value - Free Cash Flow Commission Composite.

2. Systematic's Small Cap Value Free Cash Flow Composite represents all fully discretionary, unrestricted institutional and retail commission managed accounts, including those accounts no longer with the firm. This composite represents 95% of the firm's Small Cap Value Free Cash Flow commission assets under management of $1,505 million, and 91% of the firm's total Small Cap Value Free Cash Flow assets under management of $1,570 million. Systematic's Small Cap Value Free Cash Flow composite was created January 1, 1993 and seeks to invest in high quality small cap companies (U.S. Equity, REITS, ADRs and foreign securities traded on U.S. markets) which possess superior financial strength, evidenced by strong cash flow characteristics and strong debt coverage ratios generally consistent with the market capitalization range of the Russell 2000® Index. Systematic's Small Cap Value Free Cash Flow Composite is measured against the Russell 2000® Value Index for comparison purposes. When comparing the performance of a manger to its benchmark(s), please note that the manager's holdings and portfolio characteristics may differ from those of the benchmark(s). A complete list and description of Systematic's composites is available upon request.

3. All fee-paying discretionary portfolios are included in firm composites; no non-fee paying, non-discretionary portfolios or proprietary portfolios are included in firm composites. The minimum account size for inclusion into this composite is $50,000. Prior to January 1, 2009, the minimum account size for inclusion was $100,000. Composite policy requires the temporary exclusion of any portfolio incurring a client-initiated restriction of greater than two securities such as limitations on foreign issuers or socially responsible investments. A portfolio will re-enter the composite when the restriction no longer applies. Additionally, composite policy requires the temporary removal of any portfolio with client initiated tax-loss selling. The temporary removal of such accounts occur at the beginning of the month in which the tax-loss selling was initiated and will re-enter the composite the first full month after tax loss restrictions no longer apply. As of 4/1/2014, Systematic no longer has a significant cash flow policy. From January 1, 2012 until March 31, 2014, composite policy required the temporary exclusion of any portfolio incurring a client initiated significant cash flow of 10% or more of portfolio assets based on the portfolio's market value prior to the cash flow. The temporary removal of such accounts occurred at the beginning of the month in which the significant cash flow occurred and the accounts re-enter the composite according to the firm's policy defining the grace period for new accounts, which is the first full month after the cash flow. For the period April 1, 2007 to December 31, 2011 composite policy did not address significant cash flows. For the period July 1, 2002 through April 1, 2007, composite policy required the temporary exclusion of any portfolio incurring a client initiated significant cash flows of 10% or more of portfolio assets. The temporary removal of such accounts occurred at the beginning of the quarter in which the significant cash flow occurred and the accounts re-entered the composite according to the firm's policy defining the grace period for new accounts, which is the first full quarter after the cash flow. Policies for valuing portfolios, calculating performance and preparing compliant presentations are available upon request.

4. The benchmark is the Russell 2000® Value Index. The Russell 2000® Value Index measures the performance of small-cap value segment of the U.S. equity universe. It includes those Russell 2000 Index companies with lower price-to-book ratios and lower forecasted growth values. The Russell 2000 Value Index is constructed to provide a comprehensive and unbiased barometer for the small-cap value segment. The Index is completely reconstituted annually to ensure larger stocks do not distort the performance and characteristics of the true small-cap opportunity set and that the represented companies continue to reflect value characteristics. Index results assume the reinvestment of dividends paid on the stocks constituting the index. The index does not incur fees or expenses. FTSE Russell is the source and owner of the Russell Index data contained or reflected in this material and all trademarks and copyrights related thereto. The presentation may contain confidential information and unauthorized use, disclosure, copying, dissemination or redistribution is strictly prohibited. This is a presentation of Systematic Financial Management, LP. FTSE Russell is not responsible for the formatting or configuration of this material or for any inaccuracy in Systematic's presentation thereof. An investment cannot be made directly in an index.

5. Composite returns are shown before US tax and the deduction of custody fees. The composite and benchmark returns are reported gross of foreign withholding taxes on dividends, interest and capital gains. Performance results for Small Cap Value Free Cash Flow Composite are based on U.S. dollar returns. Securities are priced using end-of-day market prices obtained from Interactive Data (IDC). No subjective unobservable inputs are used for valuing portfolio investments. There is no material difference between the composites' valuation hierarchy and the recommended hierarchy in the GIPS Valuation Principles. Systematic's pricing and fair valuation policy is available upon request.

6. As of March 31, 2018, the 3-year annualized ex-post standard deviation of monthly returns equals 12.81% for the Composite versus 13.90% for the Russell 2000® Value Index. Dispersion in the annual rates of return for the composite is measured using the equal-weighted standard deviation method. Dispersion for this composite is calculated using accounts in the composite for the entire duration of each period shown.

7. Returns are presented gross and net of management fees and include the reinvestment of all income. Net of fee performance was calculated using the highest management fee of 1.00%.The management fee is as follows: 1.00% of the first $25 million; 0.75% of the next $50 million; and 0.60% over $75 million. Actual investment advisory fees incurred by clients may vary.

8. Past performance is not indicative of future performance.

Reporting Currency:	US Dollar
Reporting Date:	March 31, 2018
Benchmark:	Russell 2000® Value Index
Composite Inception Date:	January 1, 1993

Annualized	Systematic Return Gross of Fees	Systematic Return Net of Fees	Russell 2000® Value
1 Year	19.04%	17.91%	5.13%
3 Year	14.65%	13.55%	7.87%
5 Year	16.14%	15.02%	9.96%
10 Year	13.29%	12.19%	8.61%
Since Inception	14.91%	13.80%	10.51%

Year End	Composite Gross	Composite Net	Russell 2000® Value
YTD 2018**	-0.31%	-0.56%	-2.64%
2017*	24.95%	23.78%	7.84%
2016	23.87%	22.70%	31.74%
2015	2.62%	1.60%	-7.46%
2014	6.05%	5.00%	4.22%
2013	41.55%	40.26%	34.51%
2012	16.90%	15.78%	18.05%
2011	-5.70%	-6.66%	-5.49%
2010	31.82%	30.57%	24.50%
2009	38.89%	37.57%	20.57%
2008	-32.68%	-33.42%	-28.92%
2007	-3.20%	-4.18%	-9.79%
2006	16.21%	15.09%	23.49%
2005	8.23%	7.17%	4.70%
2004	19.11%	17.97%	22.25%
2003	39.59%	38.31%	46.03%
2002	-8.40%	-9.34%	-11.42%
2001	21.70%	20.54%	14.03%
2000	28.43%	27.23%	22.83%
1999	12.30%	11.21%	-1.48%
1998	12.98%	11.87%	-6.46%
1997	38.65%	37.37%	31.78%
1996	30.09%	28.87%	21.38%
1995	24.83%	23.65%	25.75%
1994	1.13%	0.13%	-1.55%
1993	23.73%	22.56%	23.86%

Year End	Total Firm Assets (millions)	Composite Market Value (millions)	% of Firm Assets	Number of Accounts	Composite Dispersion	3 Year Standard Deviation-Composite	3 Year Standard Deviation-Benchmark
YTD 2018**	4,788	1,428	30%	55	N/A	12.81%	13.90%
2017*	5,280	1,389	26%	49	0.5%	12.65%	13.97%
2016	6,584	1,276	19%	49	0.4%	14.40%	15.50%
2015	9,438	1,130	12%	48	0.6%	13.02%	13.46%
2014	13,858	1,329	10%	47	0.7%	13%	13%
2013	14,004	1,388	10%	49	0.9%	17%	16%
2012	11,579	946	8%	56	0.7%	21%	20%
2011	11,010	899	8%	58	0.5%	27%	26%
2010	9,545	524	5%	57	1.0%		
2009	7,685	417	5%	61	1.9%		
2008	6,138	326	5%	67	0.8%		
2007	9,578	879	9%	62	0.7%		
2006	8,760	1,015	12%	94	1.1%		
2005	7,068	1,128	16%	107	0.6%		
2004	7,008	1,377	20%	89	1.4%		
2003	6,577	1,313	20%	107	2.6%		
2002	4,472	848	19%	91	0.9%		
2001	4,195	975	23%	102	1.5%		
2000	3,209	840	26%	77	2.3%		
1999	1,747	224	13%	62	1.2%		
1998	1,221	21	2%	36	0.7%		
1997	1,148	13	1%	16	1.5%		
1996	612	9	1%	13	N/A		
1995	1,395	12	<1%	Five or fewer	N/A		
1994	1,330	7	<1%	Five or fewer	N/A		
1993	1,123	5	<1%	Five or fewer	N/A		

N/A – Information is not statistically meaningful.
* Preliminary & pending verification for 2017
** Preliminary & pending verification for 2018

Additional Disclosures

This presentation, which is for informational purposes only, sets forth an overview of Systematic's management of the Firm's Small Cap Value Free Cash Flow Equity strategy and its related portfolio characteristics and statistical outcomes as of March 31, 2018. The portfolio statistics and characteristics contained herein are based on or derived from third party sources and are supplemental information only. We believe those sources to be accurate and reliable however, we are not responsible for errors by them on which we reasonably rely. In some cases, the data presented has been prepared by Systematic based on our internal analysis of financial data, public filings or was obtained through our fundamental research efforts.

Information about portfolio holdings, sector weightings and allocations, and/or portfolio characteristics mentioned herein (and their respective weights) is as of the date indicated and is shown for illustrative purposes only. Each investor's portfolio is individually managed and may vary form the information shown in terms if portfolio holdings, characteristics and performance. It should not be considered a recommendation to buy or sell any particular security, nor should information contained herein be relied upon as investment advice or to represent or predict portfolio investment performance. There is no assurance that any of the securities noted will remain in the portfolio at the time you receive this presentation. Actual holdings and percentage allocation in individual client portfolios may vary and are subject to change. It should not be assumed that any of the holdings discussed were, or will be, profitable, or that the investment decisions we make in the future will be profitable. A complete list of securities held in the portfolio over the past year is available upon request.

The holdings of the strategy may differ significantly from the securities that comprise the index shown. The index has been selected to represent what Systematic believes is an appropriate index to which the strategy's performance is compared. The index presented represents unmanaged portfolios whose characteristics differ from the composite portfolios; however, they tend to represent the investment environment existing during the time periods shown. The returns of the index do not include any transaction costs, management fees or other costs. An investment cannot be made directly in an index.

The companies held in the portfolio have been classified in accordance with S&P/MSCI GICS. The Global Industry Classification Standard ("GICS") was developed by and is the exclusive property and service mark of MSCI Inc. ("MSCI") and Standard & Poor's Financial Services LLC ("S&P"), and is licensed for use by Systematic "as such".

April 27, 2018

TO: Each Member
Board of Investments

FROM: Christopher Wagner CJW
Principal Investment Officer

David E. Simpson, CFA DES
Investment Officer

FOR: May 9, 2018 Board of Investments Meeting

SUBJECT: **PRIVATE EQUITY SECONDARY ADVISOR RECOMMENDATION**

RECOMMENDATION

Invite the three Secondary Advisor Request for Proposal ("RFP") finalists (Greenhill Capital Advisory ("Greenhill"), Evercore Group L.L.C. ("Evercore"), and Campbell Lutyens) to present at the June Board meeting**.**

BACKGROUND

At the August 9, 2017 Equity Committee meeting, staff presented a review of LACERA's Private Equity Secondary Policy. In that report, staff presented a breakdown of the Core Portfolio that showed inactive managers (defined as managers whose most recent fund LACERA is not invested in) totaled $1.1 billion in net asset value (25% of total) attached to 118 funds (55% of total). Given favorable pricing in the marketplace and the abundance of dry powder held by secondary fund managers, the Committee, and subsequently the Board, concurred that undertaking a sale of non-core elements of the portfolio warranted serious consideration. Factoring into this decision was the evolution of the secondary marketplace into an efficient price discovery and transaction medium enabling institutions such as LACERA to undertake portfolio management rebalancing exercises. The benefits of a secondary sale to LACERA at this time include:

- Allows LACERA to focus on core relationships.
- The current pricing environment is favorable to a sale.
- Ability to undertake reliable valuations of mature companies in the portfolios.
- Relief of the administrative burden of Inactive managers.

LACERA launched the Secondary Advisor RFP process on January 30, 2018, posting the RFP on LACERA's web site. Simultaneously, staff sent e-mails to 61 contacts at 52 firms identified as active in the secondary advisory marketplace. Thirteen firms submitted 'Intent to Respond' forms by the February 5, 2018 deadline. Of those firms, ten completed and submitted the RFP Information Requests by the February 26, 2018 deadline. LACERA then undertook a two stage process to assess the RFP submissions. Stage One was primarily a quantitative exercise scoring team and secondary activity factors. Firms that advanced to Stage Two were evaluated on six qualitative factors including firm, team, process, strategy, analytics, and fees. A more detailed discussion of the two stages follows.

STAGE ONE PROCESS

Staff determined a Stage One scoring methodology in advance of the receipt of the information requests that weighted three factors for each respondent:

- Team – seniority of team, tenure together, secondary experience, composition, and caliber of credentials and experiences.
- Secondary Activity – number of clients, limited partnership interests, and aggregate value advised on over past three years.
- Firm – Litigation, SEC matters, conflicts of interest, and proposed fee structure.

In addition to the calculated score from the three factors above, staff reviewed each submission in totality to determine if any compelling characteristics or capabilities should elevate (or disqualify) a firm into or from consideration as a finalist.

STAGE ONE RESULTS

Table 1 reports the scoring for the ten firms on the three factors.

Table 1
LACERA Secondary RFP Stage Two Scoring Results

				Firm Component				
Firm	**Secondary Activity**	**Team Score**	**Total Quant Score**	**Litigation**	**SEC Reg Matters**	**Fee Structure**	**Conflicts of Interest**	**Total Score**
Campbell Lutyens	15.2	53.6	**68.9**			**+5**		**73.9**
Firm A	39.9	13.3	**53.2**		**-5**			**48.2**
Firm B	8.6	10.7	**19.3**			**+5**		**24.3**
Evercore	30.8	45.8	**76.5**					**76.5**
Greenhill*	68.6	11.7	**80.2**					**80.2**
Firm C	10.8	15.7	**26.4**					**26.4**
Firm D	19.0	33.5	**52.5**		**-5**		**-5**	**42.5**
Firm E	12.8	9.3	**22.1**	**-5**				**17.1**
Firm F	29.6	41.8	**71.3**	**-5**				**66.3**
Firm G	14.9	14.6	**29.4**					**29.4**

**Greenhill submitted detailed information only on the five-person LACERA engagement team, omitting an additional 24 members of their secondary practice, hence the lower team score.*

Based on the scoring methodology, **Greenhill**, **Evercore,** and **Campbell Lutyens** emerged as the three leading firms for LACERA to engage with on the secondary sale. While Firm F scored higher than Campbell Lutyens through the first two factors, Firm F lost points because of a well-publicized lapse in internal controls that resulted in malfeasance. Campbell Lutyens was awarded points due to their very aggressive fee proposal.

In the extensive reviews of the proposals, staff considered expanding the pool of finalists due to other factors. By example:

- Firm B was the only European-based firm to respond to the RFP. While the potential universe of European buyers may be differentiated, all three finalists have European offices, the non-U.S. buyer universe is adequately covered.
- Firm C started as a valuation firm, a stand-alone service that could prove useful when LACERA starts looking towards buying secondaries and seeks independent valuation of the limited partnership interests. Even so, Greenhill also provides pure valuation services, so that service would be available to LACERA, if needed.
- Several firms have smaller, but very senior teams leading the advisory engagements. While these firms may not have the quantum of resources of the three finalists (which averaged secondary teams of 30 people), the professionals were certainly highly capable of leading complex transactions.

Ultimately, staff observed that the three finalists possessed the senior teams, supported by the infrastructure and resources that would ensure an efficient and thorough process for LACERA, and ultimately the best outcome.

STAGE TWO PROCESS

At the start of Stage Two, scoring for the three firms was reset to zero. All three finalists have advised on billions of dollars of transactions with limited partners comparable to LACERA, have large and experienced teams, and are considered to be the market leading secondary firms. Any of these three firms can successfully complete this mandate. Staff conducted half-day interviews in Pasadena with the four to six person teams that would be assigned to LACERA for the proposed sale from each of the three finalists. The firms were evaluated on the six criteria below (with some of the questions being explored listed):

1. Firm
    a. How important is the secondary business to the firm?
    b. How important is LACERA's business to the firm?
    c. What is the firm's reputation in the industry?
    d. How many similar mandates is the firm working on?
    e. Are there any business lines that result in conflicts of interest?
    f. How important is diversity to team construction and sale outcome?

2. Team
    a. How senior is the team that will be leading the engagement?
    b. How integrated into the process is the firm's legal team and resources?
    c. How is the firm staffed to handle the administrative heavy lifting tasks?
    d. How many mandates are the team members working on concurrently?

3. Process
    a. Was there a clear articulation of roles and responsibilities?
    b. Was the firm advocating a broad or narrow auction process?
    c. Did the firms favor expedience or thoroughness?
    d. What was the firm's level of engagement once the Purchase & Sale Agreement was signed (but before the final close)?

4. Portfolio Analytics
    a. How extensive is the firm's knowledge of LACERA's portfolio?
    b. Did the firm embrace a bottom's up valuation process?
    c. How extensive is the firm's database and knowledge capture systems?

5. Sales Strategy
    a. Based on the information LACERA shared with the finalists, how logical and feasible was their proposed sales strategy?
    b. Was their proposal uniquely customized for LACERA's portfolio or was it generic?
    c. How deep and extensive (across the senior team) was the sales strategy thought process?

6. Fee Structure and Terms
    a. Which firm had the most competitive fee structure?
    b. Which firm offered the most flexibility around fees?
    c. Did the sample engagement letters raise any flagged issues?
    d. Were they willing to act as a fiduciary to LACERA?

LACERA's evaluation process included input from LACERA's legal team, who participated in all three interviews. Reference calls with independent industry participants who had transacted with all three firms was also factored into the assessments.

STAGE TWO SCORING RESULTS

To quantify this qualitative evaluation component, staff independently force-ranked each of the three finalists on the six criteria. **Table 2** presents the results of that exercise.

Table 2
LACERA Secondary RFP Stage Two Scoring Results

	Top Ranked	Second Ranked	Third Ranked
Firm	Campbell Lutyens	Greenhill	Evercore
Team	Greenhill	Evercore	Campbell Lutyens
Process	Greenhill	Evercore	Campbell Lutyens
Sales Strategy	Greenhill	Evercore	Campbell Lutyens
Portfolio Analytics	Greenhill	Evercore	Campbell Lutyens
Fee Structure	Campbell Lutyens	Greenhill	Evercore
Total Scoring	**Greenhill**	**Evercore**	**Campbell Lutyens**

Greenhill was collectively perceived to be the strongest firm on four of the six criteria. Greenhill's attributes that resonated included the depth of experience of the senior team that would lead the LACERA engagement, the quantum of global resources that would ensure a thorough and expeditious process from start to close, a foundation in valuation services that predisposes the firm to a bottoms-up mentality, and finally a collaborative process on sales strategy that generated differentiated and salient results.

PROPOSED NEXT STEPS

Core to LACERA's Secondary Advisor RFP approach was the intent to build a bench of approved service providers that could be utilized to undertake secondary buy and sell transactions. Maintaining a bench of Secondary Advisors ensures LACERA can i) exert competitive pricing tension in negotiations, and ii) direct transactions to the optimal service provider for that transaction. By example, the three finalists possess different levels of expertise at tail-end interests, venture capital, special situations, and pure valuation services. The bench of advisors gives LACERA maximum flexibility.

As mentioned, staff commenced the Secondary Advisor RFP process at the December 2017 Equity Committee meeting. At that time, staff proposed a process and timeline which was approved at the January 2018 BOI meeting. In Phase IV of that process (refer to **Table 3**), staff reviews the RFP process that was undertaken with the Board and recommends the finalist selections. The next step is to have the three finalists present to the Board at the June Board meeting. Upon their approval by the Board as Secondary Advisors, staff would commence negotiations to launch the sale process.

Table 3
Proposed RFP Timeline

Phase	Steps	Actions	Firms in Process (Est.)	Timing	Status
I	**RFP Design and Launch**	- Codify and gain Board approval of scope of service requirements, Mimimum Qualifications, Evaluation Criteria - Publish the RFP document	N/A	Jan/18	Completed
II	**RFP Evaluation**	- Staff to review and rank RFP responses, select semi-finalists	15-25	Feb/18	Completed
III	**Semi-Finalist Evaluation**	- Staff conducts in-person interviews, completes reference calls	5-7	Mar-Apr/18	Completed
IV	**Finalist Recommendations**	- Staff presents to Board review of RFP process, finalist selections - Finalists present to BOI - BOI selects Secondary Advisors	3	Apr - May/18	In Process

Alternately, at its discretion, the Board could approve the three proposed finalists at the May 2018 Board meeting as Secondary Advisors and authorize staff to proceed directly into negotiations for the upcoming transaction. The Secondary Advisor is not a money manager but a transactional service provider, much like a broker, lawyer, or software provider. The Board does not always require service providers to make presentations to the Board. Approving the finalists as Secondary Advisors at the May 2018 Board meeting allows LACERA to maintain its progress towards achieving a final close by the end of the year (see **Attachment**).

CONCLUSION

Staff undertook a thorough review of the secondary advisor marketplace inviting over 50 firms to compete in the RFP process. After detailed analysis of the submitted materials, staff identified three market-leading firms best positioned to advise LACERA on its secondary needs. Staff recommends the Board invite the three finalists to present at the June BOI meeting, or at its discretion, approve Greenhill, Evercore and Campbell Lutyens for inclusion on the Secondary Advisors vendor list at today's meeting. Upon approval by the Board, staff will commence negotiations to determine the Secondary Advisor for the contemplated sale.

Attachment

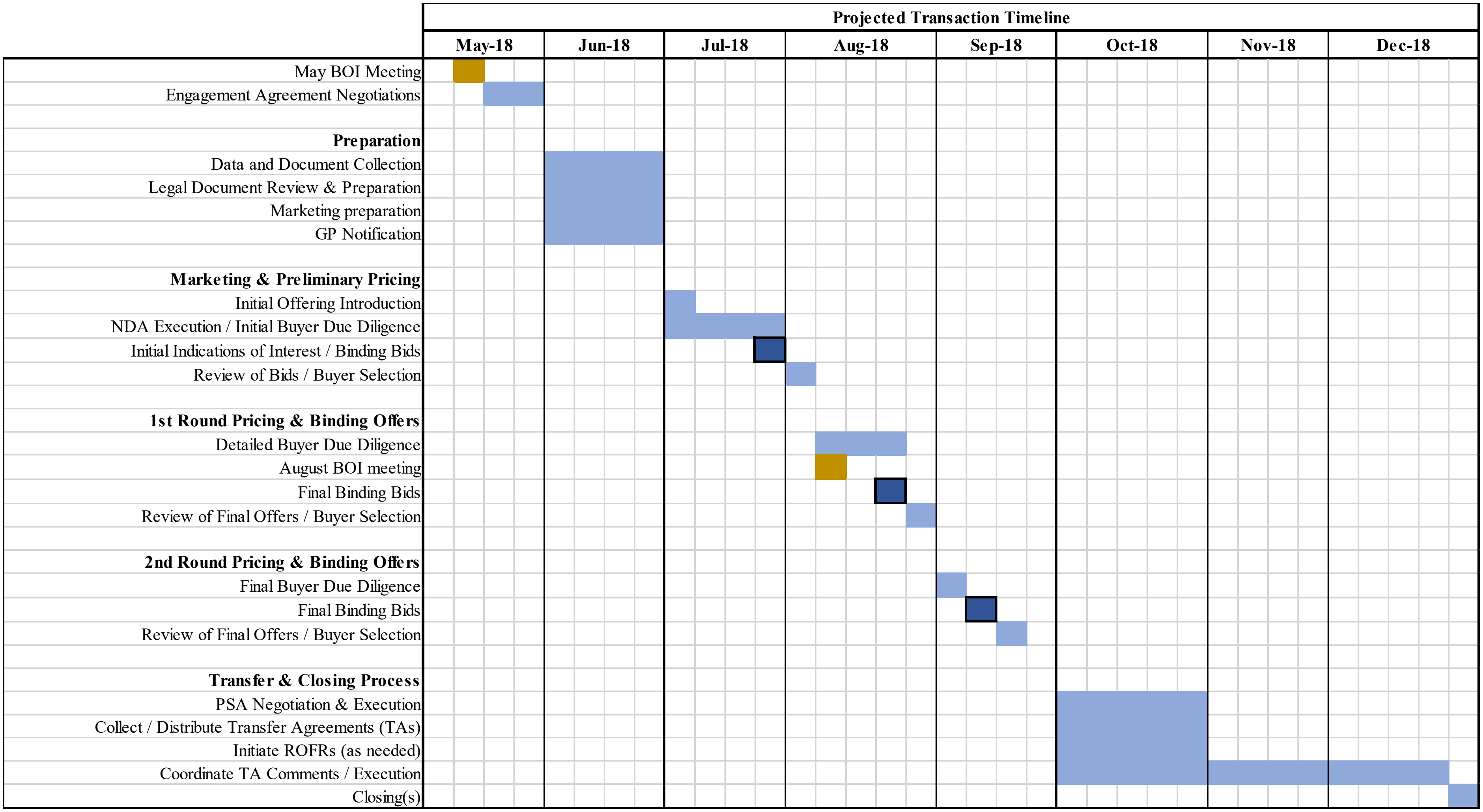
Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

CJW:mm

ATTACHMENT

LACERA SECONDARY SALE - PROJECTED TRANSACTION TIMELINE



LACERA

April 30, 2018

TO: Each Member
Board of Investments

FROM: Barry W. Lew
Legislative Affairs Officer

FOR: May 9, 2018 Board of Investments Meeting

SUBJECT: **Adoption of Revised Legislative Policy**

RECOMMENDATION

That the Board of Investments adopt the revised Legislative Policy.

LEGAL AUTHORITY

The Legislative Policy provides that "[it] shall be reviewed by the Board of Retirement and Board of Investments biannually at the end of each two-year legislative session and may be amended by action of both Boards at any time." The Insurance, Benefits and Legislative Committee of the Board of Retirement has reviewed the revised policy and recommended that the Board of Retirement adopt it. Staff is concurrently recommending that the Board of Investments also adopt the revised Legislative Policy.

DISCUSSION

An issue that arose with the introduction of H.R. 1 on November 2, 2017, the tax reform bill formerly known as the "Tax Cuts and Jobs Act", prompted a review of the current Legislative Policy to ensure that LACERA can respond efficiently and effectively to time-sensitive matters before consideration at the next regularly scheduled board meeting.

H.R. 1 contained a provision that would adversely affect state and local public sector pension plans by requiring them to pay unrelated business income tax (UBIT) on certain investments. The Board of Investments' legislative policy standard is to oppose proposals that create unreasonable costs or complexity in the administration of investments. H.R. 1 would have required LACERA to pay UBIT on certain of its investments that would thereby dilute the returns on those investments and impose compliance costs on LACERA to seek alternative ways of structuring its investments to mitigate or eliminate the effects of UBIT.

Although the subject matter of the bill was under the jurisdiction of the Board of Investments, the constraint of time-sensitivity in general can affect the ability of both the Board of Retirement and Board of Investments to respond efficiently and effectively to issues under their respective jurisdictions. The bill was introduced on November 2, 2017 and signed into law on December 22, 2017. Media reports on the bill indicated that the President intended to sign the bill by Christmas. The Board of Investments was scheduled to meet on November 2, 2017 (the same day the bill was introduced), and its next regularly scheduled meeting was on December 13, 2017, a month-and-a-half later and less than two weeks before the bill was signed into law.

Shortly after the introduction of the bill, the National Conference of Public Employee Retirement Systems (NCPERS), the National Association of State Retirement Administrators (NASRA), and the National Council on Teacher Retirement (NCTR) issued a joint letter to the Chairman of the House Ways and Means Committee expressing serious concerns regarding the UBIT provision in H.R. 1. NCPERS also advised its member organizations to consider individually relaying their concerns to the Congressional committees and leadership by writing their own letters of opposition regarding the UBIT provision. However, the current Legislative Policy does not provide staff with the discretion to send letters of support or opposition until the Board of Retirement or Board of Investments has adopted a position on the legislation. Thus, staff had to wait until the Board of Investments adopted a position on H.R. 1 at its meeting of December 13, 2017 before having the authorization to send a letter of opposition.

The following proposed revisions to the Legislative Policy are intended to enhance the ability of the Boards to respond to time-sensitive matters. Related revisions are also proposed to enhance efficiency in the legislative engagement process. The proposed revisions to the Legislative Policy are modeled after certain provisions in the Board of Investments' approved Corporate Governance Policy that provide for joint written communications with formally affiliated organizations or approval of action on time-sensitive matters.

SUMMARY OF PROPOSED REVISIONS

Definitions of Board Positions

Page 8-9: The positions of "Support if amended" and "Oppose unless amended" are conditional rather than definite positions of support and opposition that the Boards may adopt. The revisions propose that if the pre-conditions in the positions are satisfied as a result of amendments, then the resulting position will either be support or removal of opposition. The revisions provide that a resubmission of the proposal to the Boards to adopt a post-conditional position will not be necessary after fulfillment of the conditions, unless the Boards direct otherwise. The revisions also provide that if there are other substantive amendments to the proposal not requested by LACERA that may cause the Boards not to support or remove their opposition to the proposal, staff will resubmit the proposal to the Boards for consideration.

At the Board of Investments meeting of March 5, 2018, the Board requested that the term “substantive” be defined. The definition is provided in the footnote on page 8 and applies to the term as it is used throughout the Legislative Policy.

Page 9: The revision updates the definition of “Watch,” which is currently too narrow. For example, in 2017, the Board of Retirement adopted a “Watch” position on SB 562, which would enact a universal single-payer health care system in California. The bill did not precisely align with the current definition of “Watch,” although it was of interest to the Board of Retirement to watch the bill.

Action Between Board Meetings
Page 12: The revisions are to conform to proposed revisions of the conditional positions that the Boards may adopt.

Page 13: The revision provides for staff action related to issues that have been addressed by organizations with which LACERA is formally affiliated before consideration in a board meeting. Given the fact that LACERA’s membership in such organizations is intended to promote the interests of LACERA, if an issue has already been vetted by such an organization and the organization’s position is consistent with LACERA’s legislative policy standards, the revision authorizes staff to either participate in joint written communications with such an organization or engage in further individual outreach. The revision also provides a process of internal consultation before such actions can be taken.

CONCLUSION

The proposed revisions are intended to enhance the ability of the Boards to respond to time-sensitive matters and to facilitate efficient legislative engagement.

IT IS THEREFORE RECOMMENDED THAT YOUR BOARD adopt the revised Legislative Policy.

Reviewed and Approved:

Steven P. Rice

Steven P. Rice, Chief Counsel

Attachments
Attachment A—Legislative Policy (redlined)
Attachment B—Legislative Policy (clean)

cc:	Robert Hill	Steven Rice	Vanessa Gonzalez
	James Brekk	Jonathan Grabel	Cassandra Smith
	JJ Popowich	Allan Cochran	
	Bernie Buenaflor	Ricki Contreras	

ATTACHMENT A

LACERA LEGISLATIVE POLICY

~~Restated~~ Revised: ~~and Approved:~~ Board of Retirement: ~~October 13, 2016~~[date]

Board of Investments: ~~October 12, 2016~~[date]

Table of Contents

Statement of Mission and Purpose

The Los Angeles County Employees Retirement Association (LACERA) was established under the County Employees Retirement Law of 1937 (CERL) and administers retirement benefits provided by CERL and the California Public Employees' Pension Reform Act of 2013 (PEPRA). LACERA is governed by the Board of Retirement and the Board of Investments. The Boards have plenary authority and fiduciary responsibility for the system as provided by Section 17 of Article XVI of the California Constitution and in CERL. The Boards have the sole and exclusive fiduciary responsibility to administer the system in a manner that will assure prompt delivery of benefits and related services to its members and beneficiaries.

The existence of LACERA and the fiduciary responsibility of its governing Boards are embodied in the organizational mission to *produce, protect, and provide the promised benefits.*

Each element of our mission informs the foundation of this Legislative Policy:

- *Produce* the highest quality of service for our members and sponsors.
- *Protect* the promised benefits through prudent investment and conservation of plan assets.
- *Provide* the promised benefits.

LACERA's retirement plan benefits are provided by CERL, PEPRA, and other provisions under the California Government Code. As a tax-qualified defined benefit plan, LACERA is also subject to federal law under the Internal Revenue Code. The value to our members of the benefits administered by LACERA may also be affected by other provisions of state and federal law. Changes to provisions that affect LACERA are achieved through the state and federal legislative process and through forms of direct democracy by California voters, which include ballot initiatives and referenda. It is also intended that this policy cover state and federal rulemaking, although such action takes place within the Executive branch of government rather than the Legislative. These various proposals, whether submitted through the state or federal legislative process or through rulemaking, may enhance or detract from LACERA's administrative capability and mission; they may also further or infringe upon the Boards' fiduciary responsibilities, member rights and benefits, or LACERA's mission. As such, the Boards will proactively monitor such proposals and voice its position regarding proposals as described in this policy.

LACERA may identify issues that it determines to pursue through sponsorship of legislative proposals. The scope of such issues may vary in applicability to LACERA only or also to other public retirement systems. The diversity of public retirement plans within California implies a diversity of issues that may overlap with or have impact upon other public retirement systems. Consequently, the Boards may directly sponsor legislation or they may co-sponsor legislation with other public retirement systems, through the State

Association of County Retirement Systems, or with other parties that may have an alignment of interest with LACERA with respect to an issue or proposal.

The purpose of this Legislative Policy is to:

- Establish legislative policy standards to guide staff in making recommendations regarding legislative proposals to the Boards.

- Define the range of positions that the Boards may take with respect to legislative proposals.

- Establish a standard memorandum format to provide legislative analysis and recommendations to the Boards.

- Define circumstances in which the Board may need to communicate a position regarding a legislative proposal before the proposal is considered at a regularly scheduled Board meeting.

- Establish guidelines for staff and Board actions related to ballot measures.

- Provide for status reports of LACERA's legislative advocacy efforts.

The overall goal of this policy is to provide the Boards with flexibility to pursue legislative action on any and all issues that the Boards may view as affecting LACERA's mission.

This policy shall be reviewed by the Board of Retirement and Board of Investments biannually at the end of each two-year legislative session and may be amended by action of both Boards at any time.

Legislative Policy Standards

The legislative policy standards are categorized for the Board of Retirement, the Board of Investments, and both Boards. Legislative action items of interest to the Board of Retirement are first brought before the Board of Retirement's Insurance, Benefits and Legislative Committee for consideration before being recommended to the Board of Retirement. However, items may go directly to the Board of Retirement for consideration with the agreement of both the Chair of the Board of Retirement and the Chair of the Insurance, Benefits and Legislative Committee.

Legislative action items of interest to the Board of Investments are brought directly to the Board of Investments.

Legislative action items of interest to both the Board of Retirement and Board of Investments are brought separately to both Boards. However, such items to be considered by the Board of Retirement will first be considered by the Board of Retirement's Insurance, Benefits, and Legislative Committee before being recommended to the Board of Retirement.

The legislative policy standards conceptually relate to LACERA's mission to produce, protect, and provide the promised benefits; the legislative policy standards also embody the themes of quality of service, prudent investment, conservation of plan assets, and prompt delivery of benefits and services within each element of LACERA's mission.

Legislative proposals or rulemaking that are enacted into law ultimately require implementation by LACERA. The approach staff will take in formulating positions and recommendations is to foster collaboration with divisions within LACERA and resources outside of LACERA, including other public pension systems, LACERA's legislative advocate, and others whose interests align with LACERA's or who may have relevant information, to fully assess the impact of proposals.

Although the legislative policy standards are intended to guide staff in formulating positions and recommendations to the Boards on legislative proposals or rulemaking, the Boards may in their discretion adopt any position on specific proposals. This policy is not intended to limit the flexibility of the Boards to take a position or other action on any legislative matter or rulemaking that may impact LACERA or its stakeholders, whether or not the specific subject matter is listed in this policy.

Board of Retirement

- Support proposals that provide the Board of Retirement with increased flexibility in its administration of retirement plans and operations or enable more efficient and effective service to members and stakeholders.

- Support proposals that correct structural deficiencies in plan design.

- Support proposals that provide clarification, technical updates, or conforming changes to the County Employees Retirement Law of 1937, the California Public Employees' Pension Reform Act of 2013, or other applicable provisions under California law related to public retirement systems.

- Support proposals that protect vested benefits or have a positive impact upon LACERA's members.

- Support proposals that seek to prevent fraud in connection with retirement benefits and applications.

- Oppose proposals that infringe on the Board of Retirement's plenary authority or fiduciary responsibility.

- Oppose proposals that deprive members of vested benefits.

- Oppose proposals that mandate the release of confidential information of members and beneficiaries.

- Oppose proposals that jeopardize the tax-exempt status of LACERA's qualified retirement plan under the Internal Revenue Code and the California Revenue and Taxation Code or the deferred treatment of income tax on employer and employee contributions and related earnings.

- Oppose proposals that create unreasonable costs or complexity in the administration of retirement benefits.

- Oppose proposals that are contrary to or interfere with the Board of Retirement's adopted policies or decisions.

<u>Board of Investments</u>

- Support proposals that give increased flexibility to the Board of Investments in its investment policy and administration.

- Support proposals that preserve the assets and minimize the liabilities of trust funds administered by LACERA.

- Support proposals that are consistent with the Board of Investments' Corporate Governance Principles.

- Support proposals that are consistent with the Board of Investments' Statement of Investment Beliefs.

- Support proposals that promote transparent financial reporting.

- Oppose proposals that infringe on the Board of Investments' authority over the actuarial valuation process.

- Oppose proposals that infringe on the Board of Investments' plenary authority or fiduciary responsibility, including but not limited to investment mandates or restrictions.

- Oppose proposals that create unreasonable costs or complexity in the administration of investments.

- Oppose proposals that are contrary to or interfere with the Board of Investment's adopted policies or decisions.

Board of Retirement & Board of Investments

- Support proposals that harmonize the powers and functions of the Board of Retirement and Board of Investments but do not encroach on each Board's respective separate jurisdiction.

- Support proposals that enhance board member education and ethics.

- Address proposals related to the administrative budget.

- Address proposals related to the appointment of personnel.

Definitions of Board Positions

SPONSOR OR CO-SPONSOR

- Indicates that the proposal was initiated by the Board or that the proposal was initiated by one or more organizations with which LACERA shares sponsorship.

- Authorizes staff to engage with LACERA's legislative advocate to achieve passage of the proposal.

SUPPORT

- Indicates that the Board believes the proposal should become law.

- Authorizes staff to engage with LACERA's legislative advocate to achieve passage of the proposal.

SUPPORT IF AMENDED

- Indicates that the Board conditionally supports the proposal in becoming law and that amendments are necessary to facilitate implementation and administration.

- Authorizes staff to engage with LACERA's legislative advocate to communicate the Board's position and incorporate amendments into the proposal.

- If amendments requested by LACERA are adopted, authorizes staff to engage with LACERA's legislative advocate to achieve passage of the proposal without a resubmission of the proposal to the Board, unless the Board directs otherwise.

- If there are substantive[1] amendments to the proposal not requested by LACERA that may cause the Board not to support the proposal, staff will resubmit the proposal to the Board for consideration.

NEUTRAL

- Indicates that the proposal affects LACERA and its stakeholders, but the Board neither supports nor opposes it.

- Does not require engagement with LACERA's legislative advocate to achieve passage or defeat of the proposal.

[1] The term "substantive" as used in this Legislative Policy is defined as a change in the proposal that does not merely provide clarification but creates and defines rights and duties or, conversely, removes rights and duties.

OPPOSE

- Indicates that the Board does not believe the proposal should become law.

- Authorizes staff to engage with LACERA's legislative advocate to communicate the Board's position and to defeat the proposal.

OPPOSE UNLESS AMENDED

- Indicates that the Board conditionally opposes the proposal in becoming law and that amendments are necessary to remove the Board's opposition.

- Authorizes staff to engage with LACERA's legislative advocate to communicate the Board's position and to incorporate amendments into the proposal.

- If amendments requested by LACERA are adopted, the Board's position will be Neutral or Watch without a resubmission of the proposal to the Board, unless the Board directs otherwise.

- If there are substantive amendments to the proposal not requested by LACERA that may cause the Board not to remove its opposition, staff will resubmit the proposal to the Board for consideration.

WATCH

- Indicates that the proposal does not affect LACERA and its stakeholders but would be enacted under a law that covers LACERA such as CERL or PEPRA.

- Indicates that although the proposal is not based on a law that covers LACERA such as CERL or PEPRA, the proposal may be of interest or concern to the Board and its stakeholders and that the Board in the future may take a substantive position on the matter.

- Indicates that proposal will be resubmitted to the Board for consideration if amendments cause the proposal to affect LACERA and its stakeholders.

Once the Board has acted, these positions will typically be communicated by means of a letter from the Chief Executive Officer to the appropriate legislative officers. Staff coordinates with LACERA's legislative advocate in preparing this letter and developing a communication and distribution strategy for the letter, which may include verbal communications by the legislative advocate with relevant legislators and/or legislative staff. In the rulemaking context, LACERA's positions will typically be communicated to the enacting state or federal agency by means of a comment letter where the agency has provided an opportunity for public comment on a proposed rule before it is finalized and becomes effective.

Legislative Analysis Memorandum Format

The following is an outline of the format of the legislative analysis memorandum provided by staff. In general, the memorandum will follow this format but may be modified for specific cases.

Date

TO:

FROM:

FOR:

SUBJECT: **Bill Number**

Author:
Sponsor:
Introduced:
Amended:
Status:

Board Position:
Committee Recommendation:
Staff Recommendation:

[If the memo addresses rulemaking, the Subject section will provide similar relevant information.]

RECOMMENDATION
[This section states staff's or the Committee's recommendation to the Board.]

LEGISLATIVE POLICY STANDARD
[This section discusses the application of LACERA's legislative policy standards to the proposal and the justification for the recommendation to the Board.]

SUMMARY
[This section describes the provisions of the proposal and the key additions or updates the proposal makes to existing law.]

ANALYSIS
[This section provides an analysis of the effects and implications of the proposal on LACERA.]

IT IS THEREFORE RECOMMENDED THAT YOUR BOARD
[This section restates staff's or the Committee's recommendation and summary or concluding comments.]

Attachments
Attachment 1—Board Positions Adopted On Related Legislation
[This attachment states the positions the Board has previously taken on the subject matter of the bill.]
Attachment 2—Support And Opposition
[This attachment identifies those entities that have already taken a position on the bill.]
Bill Text

Action between Board Meetings

The Board of Retirement generally meets twice a month, including a disability meeting on the first Wednesday and an administrative meeting on the Thursday following the second Wednesday; the Board of Investments meets once a month on the second Wednesday. ~~The~~ Since the meeting schedules of the Boards do not necessarily accord with the hearing schedules and deadlines of the state Legislature and Congress. In the event a time-sensitive matter arises, action by staff may be required before the matter is considered by the Board at the next regularly scheduled Board meeting.

I. Legislation on Which the Board Previously Adopted a Position

~~The policy will provide direction for staff to~~Staff may engage with LACERA's legislative advocate to communicate a position on amendments to a bill before formal consideration by the Board of Retirement or Board of Investments if all the following conditions are met:

1. The Board had adopted a ~~Support, Support If Amended, Oppose, or Oppose Unless Amended~~Support or Oppose position on the bill *before* it was amended.

2. Substantive amendments that may justify a change in the Board's position to other than Neutral or Watch have occurred in the bill *after* the Board adopted a position and *before* the next regularly scheduled board meeting.

3. Consideration of the amended bill by a legislative committee or by the Assembly or Senate floor will occur *before* the amended bill can be considered at the next regularly scheduled board meeting.

Staff will take the following actions:

1. Prepare a legislative analysis of the amended bill for use in consultation.

2. Consult with the ~~Chief Counsel,~~ Chief Executive Officer, Chief Counsel, and legislative advocate for input regarding the amended bill to determine if the new position should be communicated to the Legislature.

3. If the new position should be communicated to the Legislature, consult with the Chair (or if not available, the Vice Chair) of the Board that has jurisdiction over the subject matter of the amended bill and obtain approval that the new position be communicated.

4. At the next regularly scheduled Board meeting, present a report to the Board regarding the position communicated in Step 3 and a summary of actions taken.

II. Formally Affiliated Organizations

1. Staff may participate in joint written communications that are organized or requested by formal organizations to which LACERA has formally affiliated and that are consistent with the Board's legislative policy standards.

2. In the event a matter has been addressed in written communications by a formal organization to which LACERA has formally affiliated, staff may, consistent with the Board's legislative policy standards, write letters of support or opposition or engage in advocacy on the matter.

Staff will take the following actions:

1. Prepare a legislative analysis of the matter for use in consultation.

2. Consult with the Chief Executive Officer, Chief Counsel, and legislative advocate to determine whether staff should engage in the written communications described in II.1 and II.2.

3. If staff should engage in the written communications described in II.1 and II.2, consult with the Chair (or if not available, the Vice Chair) of the Board that has jurisdiction over the subject matter and obtain approval to engage in such written communications.

4. At the next regularly scheduled Board meeting, present a report to the Board of actions taken and copies of the written communications.

Ballot Measures

California law provides for citizens to use ballot measures to initiate a state statute or a constitutional amendment or to repeal legislation through a veto referendum. The California State Legislature may also use ballot measures to offer legislatively referred state statutes or constitutional amendments.

In general, a government agency may not spend *public funds* for a partisan *campaign* advocating the passage or defeat of a ballot measure. It is, however, permissible for a government agency to engage in *informational* activities. What distinguishes *informational* activities from *campaign* activities depends on the style, tenor, and timing of the activity.

From time to time, ballot measures may be offered that are related to public retirement plans. The following guidelines are intended to provide guidance on actions that may be taken with respect to ballot measures on public retirement plans:

- Providing informational staff reports and analysis on the ballot measure's effect in a meeting open to the public.

- Providing a recommendation for the Board to take a position on the ballot measure in a meeting open to the public where all perspectives can be shared. (The Board may or may not take a position on any ballot measure. The Board may take a position when it determines it is necessary to publicly express its opinion for or against a matter on which it feels strongly with respect to its impact on LACERA.)

- Providing the Board's position and views on the ballot measure's merits and effects to interested stakeholders and organizations.

- Responding to inquiries from stakeholders and the public regarding the Board's position and views on the ballot measure.

The Fair Political Practices Commission (FPPC) was created by the Political Reform Act and requires government agencies to report expenses used to advocate or unambiguously urge the passage or defeat of a measure in an election. The FPPC also prohibits government agencies from paying for communication materials that advocate or unambiguously urge the passage or defeat of a measure in an election. LACERA must be cautious in not engaging in activities that can be characterized as *campaign* activities, which are prohibited and would be subject to campaign expenditure reporting requirements. Therefore, all activities related to ballot measures are subject to review by Chief Counsel.

Status Reports

For bills on which the Boards have taken a position, staff will provide a monthly status report listing each bill, its current status in the legislative process, and copies of communications used for lobbying the Legislature. The status report will be included in the green folders provided to the Board of Retirement and Board of Investments before regularly scheduled board meetings.

At the end of each legislative session, staff will provide a year-end report of all the bills on which the Boards had taken a position and their final disposition.

Legislative Process

The following pages include an outline[2] and a flowchart[3] of the California legislative process through which a bill becomes law. In general, bills in the federal legislative process move through similar stages.

---

[2] Overview of Legislative Process – Official California Legislative Information (http://www.leginfo.ca.gov/bil2lawx.html).

[3] The Life Cycle of Legislation: From Idea into Law. California Legislature: Assembly Rules Committee.

OVERVIEW OF LEGISLATIVE PROCESS

The process of government by which bills are considered and laws enacted is commonly referred to as the Legislative Process. The California State Legislature is made up of two houses: the Senate and the Assembly. There are 40 Senators and 80 Assembly Members representing the people of the State of California. The Legislature has a legislative calendar containing important dates of activities during its two-year session.

Idea

All legislation begins as an idea or concept. Ideas and concepts can come from a variety of sources. The process begins when a Senator or Assembly Member decides to author a bill.

The Author

A Legislator sends the idea for the bill to the Legislative Counsel where it is drafted into the actual bill. The draft of the bill is returned to the Legislator for introduction. If the author is a Senator, the bill is introduced in the Senate. If the author is an Assembly Member, the bill is introduced in the Assembly.

First Reading/Introduction

A bill is introduced or read the first time when the bill number, the name of the author, and the descriptive title of the bill is read on the floor of the house. The bill is then sent to the Office of State Printing. No bill may be acted upon until 30 days has passed from the date of its introduction.

Committee Hearings

The bill then goes to the Rules Committee of the house of origin where it is assigned to the appropriate policy committee for its first hearing. Bills are assigned to policy committees according to subject area of the bill. For example, a Senate bill dealing with health care facilities would first be assigned to the Senate Health and Human Services Committee for policy review. Bills that require the expenditure of funds must also be heard in the fiscal committees: Senate Appropriations or Assembly Appropriations. Each house has a number of policy committees and a fiscal committee. Each committee is made up of a specified number of Senators or Assembly Members.

During the committee hearing the author presents the bill to the committee and testimony can be heard in support of or opposition to the bill. The committee then votes by passing the bill, passing the bill as amended, or defeating the bill. Bills can be amended several times. Letters of support or opposition are important and should be mailed to the author and committee members before the bill is scheduled to be heard in committee. It takes a majority vote of the full committee membership for a bill to be passed by the committee.

Each house maintains a schedule of legislative committee hearings. Prior to a bill's hearing, a bill analysis is prepared that explains current law, what the bill is intended to do, and some background information. Typically the analysis also lists organizations that support or oppose the bill.

Second and Third Reading

Bills passed by committees are read a second time on the floor in the house of origin and then assigned to third reading. Bill analyses are also prepared prior to third reading. When a bill is read the third time it is explained by the author, discussed by the Members and voted on by a roll call vote. Bills that require an appropriation or that take effect immediately, generally require 27 votes in the Senate and 54 votes in the Assembly to be passed. Other bills generally require 21 votes in the Senate and 41 votes in the Assembly. If a bill is defeated, the Member may seek reconsideration and another vote.

Repeat Process in other House

Once the bill has been approved by the house of origin it proceeds to the other house where the procedure is repeated.

Resolution of Differences

If a bill is amended in the second house, it must go back to the house of origin for concurrence, which is agreement on the amendments. If agreement cannot be reached, the bill is referred to a two house conference committee to resolve differences. Three members of the committee are from the Senate and three are from the Assembly. If a compromise is reached, the bill is returned to both houses for a vote.

Governor

If both houses approve a bill, it then goes to the Governor. The Governor has three choices. The Governor can sign the bill into law, allow it to become law without his or her signature, or veto it. A governor's veto can be overridden by a two thirds vote in both houses. Most bills go into effect on the first day of January of the next year. Urgency measures take effect immediately after they are signed or allowed to become law without signature.

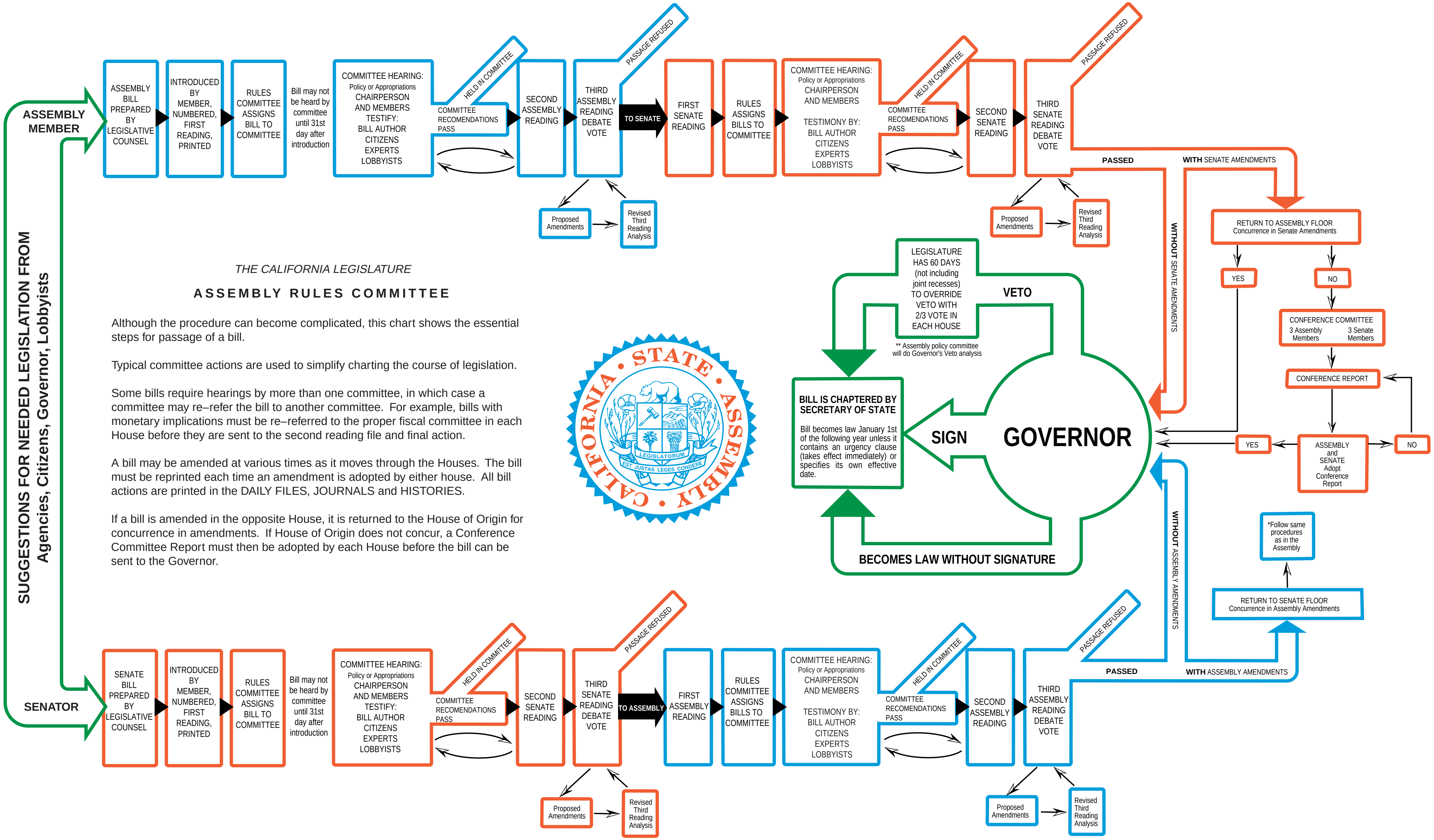
California Law

Bills that are passed by the Legislature and approved by the Governor are assigned a chapter number by the Secretary of State. These Chaptered Bills (also referred to as Statutes of the year they were enacted) then become part of the California Codes. The California Codes are a comprehensive collection of laws grouped by subject matter.

The California Constitution sets forth the fundamental laws by which the State of California is governed. All amendments to the Constitution come about as a result of constitutional amendments presented to the people for their approval.

THE LIFE CYCLE OF LEGISLATION

From Idea into Law



THE CALIFORNIA LEGISLATURE

ASSEMBLY RULES COMMITTEE

Although the procedure can become complicated, this chart shows the essential steps for passage of a bill.

Typical committee actions are used to simplify charting the course of legislation.

Some bills require hearings by more than one committee, in which case a committee may re–refer the bill to another committee. For example, bills with monetary implications must be re–referred to the proper fiscal committee in each House before they are sent to the second reading file and final action.

A bill may be amended at various times as it moves through the Houses. The bill must be reprinted each time an amendment is adopted by either house. All bill actions are printed in the DAILY FILES, JOURNALS and HISTORIES.

If a bill is amended in the opposite House, it is returned to the House of Origin for concurrence in amendments. If House of Origin does not concur, a Conference Committee Report must then be adopted by each House before the bill can be sent to the Governor.

Change Log

Restated and approved by the Board of Retirement on October 13, 2016 and the Board of Investments on October 12, 2016

ATTACHMENT B

LACERA LEGISLATIVE POLICY

Revised: Board of Retirement: [date]
Board of Investments: [date]

Table of Contents

Statement of Mission and Purpose

The Los Angeles County Employees Retirement Association (LACERA) was established under the County Employees Retirement Law of 1937 (CERL) and administers retirement benefits provided by CERL and the California Public Employees' Pension Reform Act of 2013 (PEPRA). LACERA is governed by the Board of Retirement and the Board of Investments. The Boards have plenary authority and fiduciary responsibility for the system as provided by Section 17 of Article XVI of the California Constitution and in CERL. The Boards have the sole and exclusive fiduciary responsibility to administer the system in a manner that will assure prompt delivery of benefits and related services to its members and beneficiaries.

The existence of LACERA and the fiduciary responsibility of its governing Boards are embodied in the organizational mission to *produce, protect, and provide the promised benefits.*

Each element of our mission informs the foundation of this Legislative Policy:

- *Produce* the highest quality of service for our members and sponsors.
- *Protect* the promised benefits through prudent investment and conservation of plan assets.
- *Provide* the promised benefits.

LACERA's retirement plan benefits are provided by CERL, PEPRA, and other provisions under the California Government Code. As a tax-qualified defined benefit plan, LACERA is also subject to federal law under the Internal Revenue Code. The value to our members of the benefits administered by LACERA may also be affected by other provisions of state and federal law. Changes to provisions that affect LACERA are achieved through the state and federal legislative process and through forms of direct democracy by California voters, which include ballot initiatives and referenda. It is also intended that this policy cover state and federal rulemaking, although such action takes place within the Executive branch of government rather than the Legislative. These various proposals, whether submitted through the state or federal legislative process or through rulemaking, may enhance or detract from LACERA's administrative capability and mission; they may also further or infringe upon the Boards' fiduciary responsibilities, member rights and benefits, or LACERA's mission. As such, the Boards will proactively monitor such proposals and voice its position regarding proposals as described in this policy.

LACERA may identify issues that it determines to pursue through sponsorship of legislative proposals. The scope of such issues may vary in applicability to LACERA only or also to other public retirement systems. The diversity of public retirement plans within California implies a diversity of issues that may overlap with or have impact upon other public retirement systems. Consequently, the Boards may directly sponsor legislation or they may co-sponsor legislation with other public retirement systems, through the State

Association of County Retirement Systems, or with other parties that may have an alignment of interest with LACERA with respect to an issue or proposal.

The purpose of this Legislative Policy is to:

- Establish legislative policy standards to guide staff in making recommendations regarding legislative proposals to the Boards.

- Define the range of positions that the Boards may take with respect to legislative proposals.

- Establish a standard memorandum format to provide legislative analysis and recommendations to the Boards.

- Define circumstances in which the Board may need to communicate a position regarding a legislative proposal before the proposal is considered at a regularly scheduled Board meeting.

- Establish guidelines for staff and Board actions related to ballot measures.

- Provide for status reports of LACERA's legislative advocacy efforts.

The overall goal of this policy is to provide the Boards with flexibility to pursue legislative action on any and all issues that the Boards may view as affecting LACERA's mission.

This policy shall be reviewed by the Board of Retirement and Board of Investments biannually at the end of each two-year legislative session and may be amended by action of both Boards at any time.

Legislative Policy Standards

The legislative policy standards are categorized for the Board of Retirement, the Board of Investments, and both Boards. Legislative action items of interest to the Board of Retirement are first brought before the Board of Retirement's Insurance, Benefits and Legislative Committee for consideration before being recommended to the Board of Retirement. However, items may go directly to the Board of Retirement for consideration with the agreement of both the Chair of the Board of Retirement and the Chair of the Insurance, Benefits and Legislative Committee.

Legislative action items of interest to the Board of Investments are brought directly to the Board of Investments.

Legislative action items of interest to both the Board of Retirement and Board of Investments are brought separately to both Boards. However, such items to be considered by the Board of Retirement will first be considered by the Board of Retirement's Insurance, Benefits, and Legislative Committee before being recommended to the Board of Retirement.

The legislative policy standards conceptually relate to LACERA's mission to produce, protect, and provide the promised benefits; the legislative policy standards also embody the themes of quality of service, prudent investment, conservation of plan assets, and prompt delivery of benefits and services within each element of LACERA's mission.

Legislative proposals or rulemaking that are enacted into law ultimately require implementation by LACERA. The approach staff will take in formulating positions and recommendations is to foster collaboration with divisions within LACERA and resources outside of LACERA, including other public pension systems, LACERA's legislative advocate, and others whose interests align with LACERA's or who may have relevant information, to fully assess the impact of proposals.

Although the legislative policy standards are intended to guide staff in formulating positions and recommendations to the Boards on legislative proposals or rulemaking, the Boards may in their discretion adopt any position on specific proposals. This policy is not intended to limit the flexibility of the Boards to take a position or other action on any legislative matter or rulemaking that may impact LACERA or its stakeholders, whether or not the specific subject matter is listed in this policy.

Board of Retirement

- Support proposals that provide the Board of Retirement with increased flexibility in its administration of retirement plans and operations or enable more efficient and effective service to members and stakeholders.
- Support proposals that correct structural deficiencies in plan design.

- Support proposals that provide clarification, technical updates, or conforming changes to the County Employees Retirement Law of 1937, the California Public Employees' Pension Reform Act of 2013, or other applicable provisions under California law related to public retirement systems.

- Support proposals that protect vested benefits or have a positive impact upon LACERA's members.

- Support proposals that seek to prevent fraud in connection with retirement benefits and applications.

- Oppose proposals that infringe on the Board of Retirement's plenary authority or fiduciary responsibility.

- Oppose proposals that deprive members of vested benefits.

- Oppose proposals that mandate the release of confidential information of members and beneficiaries.

- Oppose proposals that jeopardize the tax-exempt status of LACERA's qualified retirement plan under the Internal Revenue Code and the California Revenue and Taxation Code or the deferred treatment of income tax on employer and employee contributions and related earnings.

- Oppose proposals that create unreasonable costs or complexity in the administration of retirement benefits.

- Oppose proposals that are contrary to or interfere with the Board of Retirement's adopted policies or decisions.

<u>Board of Investments</u>

- Support proposals that give increased flexibility to the Board of Investments in its investment policy and administration.

- Support proposals that preserve the assets and minimize the liabilities of trust funds administered by LACERA.

- Support proposals that are consistent with the Board of Investments' Corporate Governance Principles.

- Support proposals that are consistent with the Board of Investments' Statement of Investment Beliefs.

- Support proposals that promote transparent financial reporting.

- Oppose proposals that infringe on the Board of Investments' authority over the actuarial valuation process.

- Oppose proposals that infringe on the Board of Investments' plenary authority or fiduciary responsibility, including but not limited to investment mandates or restrictions.

- Oppose proposals that create unreasonable costs or complexity in the administration of investments.

- Oppose proposals that are contrary to or interfere with the Board of Investment's adopted policies or decisions.

Board of Retirement & Board of Investments

- Support proposals that harmonize the powers and functions of the Board of Retirement and Board of Investments but do not encroach on each Board's respective separate jurisdiction.

- Support proposals that enhance board member education and ethics.

- Address proposals related to the administrative budget.

- Address proposals related to the appointment of personnel.

Definitions of Board Positions

SPONSOR OR CO-SPONSOR

- Indicates that the proposal was initiated by the Board or that the proposal was initiated by one or more organizations with which LACERA shares sponsorship.
- Authorizes staff to engage with LACERA's legislative advocate to achieve passage of the proposal.

SUPPORT

- Indicates that the Board believes the proposal should become law.
- Authorizes staff to engage with LACERA's legislative advocate to achieve passage of the proposal.

SUPPORT IF AMENDED

- Indicates that the Board conditionally supports the proposal in becoming law and that amendments are necessary to facilitate implementation and administration.
- Authorizes staff to engage with LACERA's legislative advocate to communicate the Board's position and incorporate amendments into the proposal.
- If amendments requested by LACERA are adopted, authorizes staff to engage with LACERA's legislative advocate to achieve passage of the proposal without a resubmission of the proposal to the Board, unless the Board directs otherwise.
- If there are substantive[1] amendments to the proposal not requested by LACERA that may cause the Board not to support the proposal, staff will resubmit the proposal to the Board for consideration.

NEUTRAL

- Indicates that the proposal affects LACERA and its stakeholders, but the Board neither supports nor opposes it.
- Does not require engagement with LACERA's legislative advocate to achieve passage or defeat of the proposal.

[1] The term "substantive" as used in this Legislative Policy is defined as a change in the proposal that does not merely provide clarification but creates and defines rights and duties or, conversely, removes rights and duties.

<u>OPPOSE</u>

- Indicates that the Board does not believe the proposal should become law.

- Authorizes staff to engage with LACERA's legislative advocate to communicate the Board's position and to defeat the proposal.

<u>OPPOSE UNLESS AMENDED</u>

- Indicates that the Board conditionally opposes the proposal in becoming law and that amendments are necessary to remove the Board's opposition.

- Authorizes staff to engage with LACERA's legislative advocate to communicate the Board's position and to incorporate amendments into the proposal.

- If amendments requested by LACERA are adopted, the Board's position will be Neutral or Watch without a resubmission of the proposal to the Board, unless the Board directs otherwise.

- If there are substantive amendments to the proposal not requested by LACERA that may cause the Board not to remove its opposition, staff will resubmit the proposal to the Board for consideration.

<u>WATCH</u>

- Indicates that the proposal does not affect LACERA and its stakeholders but would be enacted under a law that covers LACERA such as CERL or PEPRA.

- Indicates that although the proposal is not based on a law that covers LACERA such as CERL or PEPRA, the proposal may be of interest or concern to the Board and its stakeholders and that the Board in the future may take a substantive position on the matter.

- Indicates that proposal will be resubmitted to the Board for consideration if amendments cause the proposal to affect LACERA and its stakeholders.

Once the Board has acted, these positions will typically be communicated by means of a letter from the Chief Executive Officer to the appropriate legislative officers. Staff coordinates with LACERA's legislative advocate in preparing this letter and developing a communication and distribution strategy for the letter, which may include verbal communications by the legislative advocate with relevant legislators and/or legislative staff. In the rulemaking context, LACERA's positions will typically be communicated to the enacting state or federal agency by means of a comment letter where the agency has provided an opportunity for public comment on a proposed rule before it is finalized and becomes effective.

Legislative Analysis Memorandum Format

The following is an outline of the format of the legislative analysis memorandum provided by staff. In general, the memorandum will follow this format but may be modified for specific cases.

Date

TO:

FROM:

FOR:

SUBJECT: **Bill Number**

Author:
Sponsor:
Introduced:
Amended:
Status:

Board Position:
Committee Recommendation:
Staff Recommendation:

[If the memo addresses rulemaking, the Subject section will provide similar relevant information.]

RECOMMENDATION
[This section states staff's or the Committee's recommendation to the Board.]

LEGISLATIVE POLICY STANDARD
[This section discusses the application of LACERA's legislative policy standards to the proposal and the justification for the recommendation to the Board.]

SUMMARY
[This section describes the provisions of the proposal and the key additions or updates the proposal makes to existing law.]

ANALYSIS
[This section provides an analysis of the effects and implications of the proposal on LACERA.]

IT IS THEREFORE RECOMMENDED THAT YOUR BOARD
[This section restates staff's or the Committee's recommendation and summary or concluding comments.]

Attachments
Attachment 1—Board Positions Adopted On Related Legislation
[This attachment states the positions the Board has previously taken on the subject matter of the bill.]
Attachment 2—Support And Opposition
[This attachment identifies those entities that have already taken a position on the bill.]
Bill Text

Action between Board Meetings

The Board of Retirement generally meets twice a month, including a disability meeting on the first Wednesday and an administrative meeting on the Thursday following the second Wednesday; the Board of Investments meets once a month on the second Wednesday. Since the meeting schedules of the Boards do not necessarily accord with the hearing schedules and deadlines of the state Legislature and Congress. In the event a time-sensitive matter arises, action by staff may be required before the matter is considered by the Board at the next regularly scheduled Board meeting.

I. Legislation on Which the Board Previously Adopted a Position

Staff may engage with LACERA's legislative advocate to communicate a position on amendments to a bill before formal consideration by the Board of Retirement or Board of Investments if all the following conditions are met:

1. The Board had adopted a Support or Oppose position on the bill *before* it was amended.

2. Substantive amendments that may justify a change in the Board's position to other than Neutral or Watch have occurred in the bill *after* the Board adopted a position and *before* the next regularly scheduled board meeting.

3. Consideration of the amended bill by a legislative committee or by the Assembly or Senate floor will occur *before* the amended bill can be considered at the next regularly scheduled board meeting.

Staff will take the following actions:

1. Prepare a legislative analysis of the amended bill for use in consultation.

2. Consult with the Chief Executive Officer, Chief Counsel, and legislative advocate for input regarding the amended bill to determine if the new position should be communicated to the Legislature.

3. If the new position should be communicated to the Legislature, consult with the Chair (or if not available, the Vice Chair) of the Board that has jurisdiction over the subject matter of the amended bill and obtain approval that the new position be communicated.

4. At the next regularly scheduled Board meeting, present a report to the Board regarding the position communicated in Step 3 and a summary of actions taken.

II. Formally Affiliated Organizations

1. Staff may participate in joint written communications that are organized or requested by formal organizations to which LACERA has formally affiliated and that are consistent with the Board's legislative policy standards.

2. In the event a matter has been addressed in written communications by a formal organization to which LACERA has formally affiliated, staff may, consistent with the Board's legislative policy standards, write letters of support or opposition or engage in advocacy on the matter.

Staff will take the following actions:

1. Prepare a legislative analysis of the matter for use in consultation.

2. Consult with the Chief Executive Officer, Chief Counsel, and legislative advocate to determine whether staff should engage in the written communications described in II.1 and II.2.

3. If staff should engage in the written communications described in II.1 and II.2, consult with the Chair (or if not available, the Vice Chair) of the Board that has jurisdiction over the subject matter and obtain approval to engage in such written communications.

4. At the next regularly scheduled Board meeting, present a report to the Board of actions taken and copies of the written communications.

Ballot Measures

California law provides for citizens to use ballot measures to initiate a state statute or a constitutional amendment or to repeal legislation through a veto referendum. The California State Legislature may also use ballot measures to offer legislatively referred state statutes or constitutional amendments.

In general, a government agency may not spend *public funds* for a partisan *campaign* advocating the passage or defeat of a ballot measure. It is, however, permissible for a government agency to engage in *informational* activities. What distinguishes *informational* activities from *campaign* activities depends on the style, tenor, and timing of the activity.

From time to time, ballot measures may be offered that are related to public retirement plans. The following guidelines are intended to provide guidance on actions that may be taken with respect to ballot measures on public retirement plans:

- Providing informational staff reports and analysis on the ballot measure's effect in a meeting open to the public.

- Providing a recommendation for the Board to take a position on the ballot measure in a meeting open to the public where all perspectives can be shared. (The Board may or may not take a position on any ballot measure. The Board may take a position when it determines it is necessary to publicly express its opinion for or against a matter on which it feels strongly with respect to its impact on LACERA.)

- Providing the Board's position and views on the ballot measure's merits and effects to interested stakeholders and organizations.

- Responding to inquiries from stakeholders and the public regarding the Board's position and views on the ballot measure.

The Fair Political Practices Commission (FPPC) was created by the Political Reform Act and requires government agencies to report expenses used to advocate or unambiguously urge the passage or defeat of a measure in an election. The FPPC also prohibits government agencies from paying for communication materials that advocate or unambiguously urge the passage or defeat of a measure in an election. LACERA must be cautious in not engaging in activities that can be characterized as *campaign* activities, which are prohibited and would be subject to campaign expenditure reporting requirements. Therefore, all activities related to ballot measures are subject to review by Chief Counsel.

Status Reports

For bills on which the Boards have taken a position, staff will provide a monthly status report listing each bill, its current status in the legislative process, and copies of communications used for lobbying the Legislature. The status report will be included in the green folders provided to the Board of Retirement and Board of Investments before regularly scheduled board meetings.

At the end of each legislative session, staff will provide a year-end report of all the bills on which the Boards had taken a position and their final disposition.

Legislative Process

The following pages include an outline[2] and a flowchart[3] of the California legislative process through which a bill becomes law. In general, bills in the federal legislative process move through similar stages.

---

[2] Overview of Legislative Process – Official California Legislative Information (http://www.leginfo.ca.gov/bil2lawx.html).

[3] The Life Cycle of Legislation: From Idea into Law. California Legislature: Assembly Rules Committee.

OVERVIEW OF LEGISLATIVE PROCESS

The process of government by which bills are considered and laws enacted is commonly referred to as the Legislative Process. The California State Legislature is made up of two houses: the Senate and the Assembly. There are 40 Senators and 80 Assembly Members representing the people of the State of California. The Legislature has a legislative calendar containing important dates of activities during its two-year session.

Idea

All legislation begins as an idea or concept. Ideas and concepts can come from a variety of sources. The process begins when a Senator or Assembly Member decides to author a bill.

The Author

A Legislator sends the idea for the bill to the Legislative Counsel where it is drafted into the actual bill. The draft of the bill is returned to the Legislator for introduction. If the author is a Senator, the bill is introduced in the Senate. If the author is an Assembly Member, the bill is introduced in the Assembly.

First Reading/Introduction

A bill is introduced or read the first time when the bill number, the name of the author, and the descriptive title of the bill is read on the floor of the house. The bill is then sent to the Office of State Printing. No bill may be acted upon until 30 days has passed from the date of its introduction.

Committee Hearings

The bill then goes to the Rules Committee of the house of origin where it is assigned to the appropriate policy committee for its first hearing. Bills are assigned to policy committees according to subject area of the bill. For example, a Senate bill dealing with health care facilities would first be assigned to the Senate Health and Human Services Committee for policy review. Bills that require the expenditure of funds must also be heard in the fiscal committees: Senate Appropriations or Assembly Appropriations. Each house has a number of policy committees and a fiscal committee. Each committee is made up of a specified number of Senators or Assembly Members.

During the committee hearing the author presents the bill to the committee and testimony can be heard in support of or opposition to the bill. The committee then votes by passing the bill, passing the bill as amended, or defeating the bill. Bills can be amended several times. Letters of support or opposition are important and should be mailed to the author and committee members before the bill is scheduled to be heard in committee. It takes a majority vote of the full committee membership for a bill to be passed by the committee.

Each house maintains a schedule of legislative committee hearings. Prior to a bill's hearing, a bill analysis is prepared that explains current law, what the bill is intended to do, and some background information. Typically the analysis also lists organizations that support or oppose the bill.

Second and Third Reading

Bills passed by committees are read a second time on the floor in the house of origin and then assigned to third reading. Bill analyses are also prepared prior to third reading. When a bill is read the third time it is explained by the author, discussed by the Members and voted on by a roll call vote. Bills that require an appropriation or that take effect immediately, generally require 27 votes in the Senate and 54 votes in the Assembly to be passed. Other bills generally require 21 votes in the Senate and 41 votes in the Assembly. If a bill is defeated, the Member may seek reconsideration and another vote.

Repeat Process in other House

Once the bill has been approved by the house of origin it proceeds to the other house where the procedure is repeated.

Resolution of Differences

If a bill is amended in the second house, it must go back to the house of origin for concurrence, which is agreement on the amendments. If agreement cannot be reached, the bill is referred to a two house conference committee to resolve differences. Three members of the committee are from the Senate and three are from the Assembly. If a compromise is reached, the bill is returned to both houses for a vote.

Governor

If both houses approve a bill, it then goes to the Governor. The Governor has three choices. The Governor can sign the bill into law, allow it to become law without his or her signature, or veto it. A governor's veto can be overridden by a two thirds vote in both houses. Most bills go into effect on the first day of January of the next year. Urgency measures take effect immediately after they are signed or allowed to become law without signature.

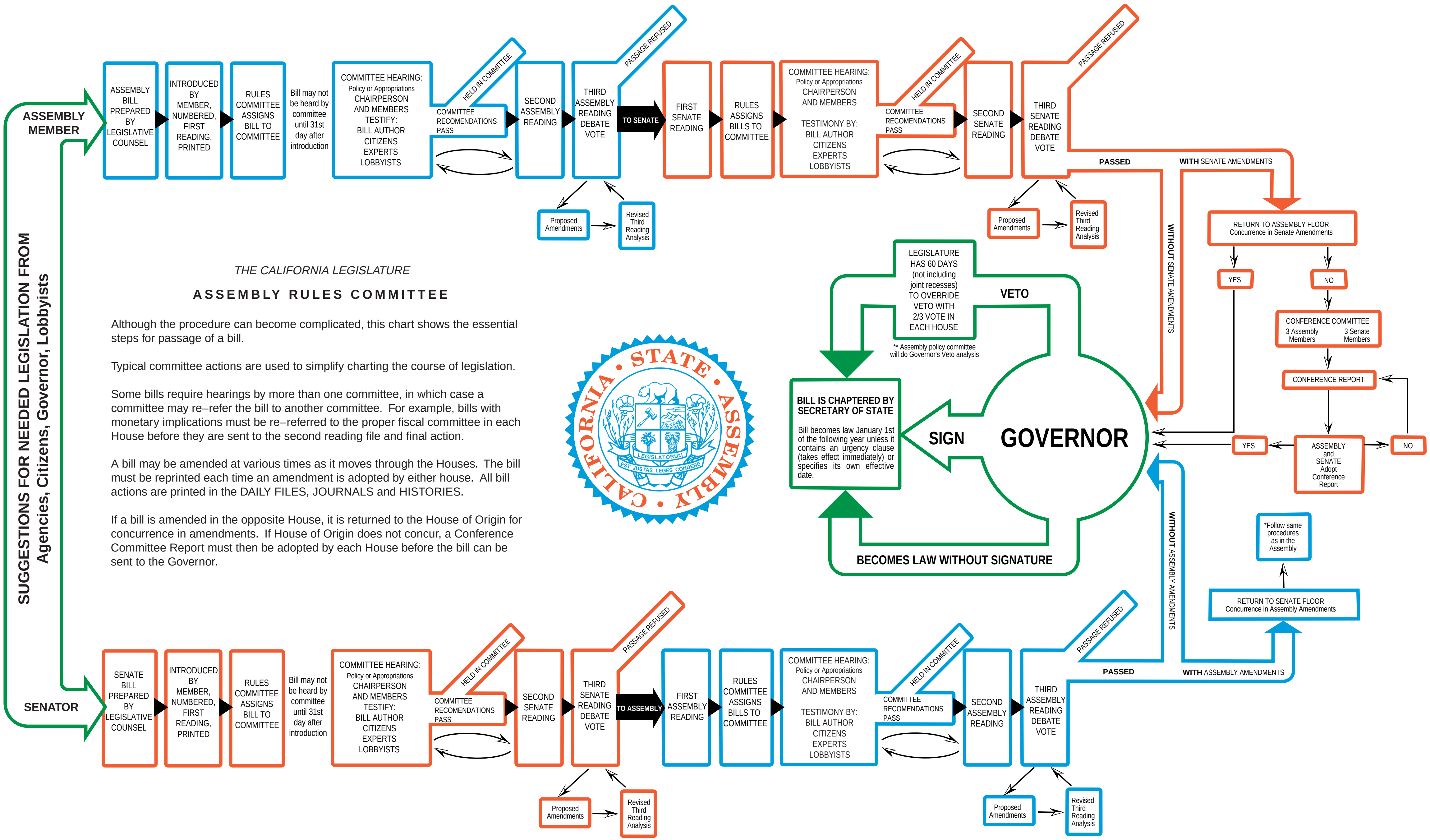
California Law

Bills that are passed by the Legislature and approved by the Governor are assigned a chapter number by the Secretary of State. These Chaptered Bills (also referred to as Statutes of the year they were enacted) then become part of the California Codes. The California Codes are a comprehensive collection of laws grouped by subject matter.

The California Constitution sets forth the fundamental laws by which the State of California is governed. All amendments to the Constitution come about as a result of constitutional amendments presented to the people for their approval.

THE LIFE CYCLE OF LEGISLATION

From Idea into Law



THE CALIFORNIA LEGISLATURE

ASSEMBLY RULES COMMITTEE

Although the procedure can become complicated, this chart shows the essential steps for passage of a bill.

Typical committee actions are used to simplify charting the course of legislation.

Some bills require hearings by more than one committee, in which case a committee may re–refer the bill to another committee. For example, bills with monetary implications must be re–referred to the proper fiscal committee in each House before they are sent to the second reading file and final action.

A bill may be amended at various times as it moves through the Houses. The bill must be reprinted each time an amendment is adopted by either house. All bill actions are printed in the DAILY FILES, JOURNALS and HISTORIES.

If a bill is amended in the opposite House, it is returned to the House of Origin for concurrence in amendments. If House of Origin does not concur, a Conference Committee Report must then be adopted by each House before the bill can be sent to the Governor.

STATE ASSEMBLY CALIFORNIA
LEGISLATORUM
EST JUSTAS LEGES CONDERE

Change Log

Restated and approved by the Board of Retirement on October 13, 2016 and the Board of Investments on October 12, 2016

L//CERA

April 30, 2018

TO: Each Member
Board of Investments

FROM: Michael D. Herrera
Senior Staff Counsel

FOR: Board of Investments Meeting of May 9, 2018

SUBJECT: **Review of Securities Litigation Policy**

The Board of Investments adopted its Securities Litigation Policy in March 2001. The Policy has a two-fold purpose: (1) to ensure LACERA is meeting its fiduciary duty by identifying, monitoring and evaluating cases in which the fund has a financial interest; and (2) to pursue those claims when and in a manner the Board determines is in the best interest of the fund.

The impetus for the Policy was the Private Securities Litigation Reform Act ("PSLRA"), which imposed certain reforms applicable to class actions involving claims under the U.S. securities laws and created a preference for institutional investor participation. Accordingly, the Policy formalized the Legal Office's securities class action monitoring and evaluation function, and implemented procedures designed to enhance LACERA's recovery of damages in these cases.

Since adopting the Policy nearly two decades ago, the Board has reviewed and revised it over time to keep pace with the changing securities litigation landscape. For example, after the U.S. Supreme Court ruled that the U.S. securities laws do not apply to securities purchased outside the United States, the Board approved a "global" Policy, which expanded the Policy to include participation in foreign securities cases where and as necessary to ensure the fund's interest are protected. *See Morrison v. National Australia Bank*, 130 S.Ct. 2869 (2010). Most recently, the Board reviewed and revised the Policy last October to include participation in class actions involving state and federal antitrust claims, involvement in pending cases by way of amicus curiae briefs, and to broaden the language of the Policy to allow for a claims filing agent.

In short, the Policy has been extremely successful. Significantly, the Legal Office has recovered over $70 million since the Board adopted the Policy. This includes recoveries obtained through the successful prosecution of securities cases, and our ongoing securities claims filing efforts. As a result of its efforts and success over the years, LACERA is widely viewed as a leader in this area and its Policy has served as a model for public pension funds throughout the country. We believe the current Policy is well-designed to ensure the Board continues to meet its fiduciary duty by identifying, monitoring and evaluating actions in which the fund has an interest, both foreign and domestic, and by participating and pursuing claims in such actions when and in a manner the Board determines is in the best interest of the fund. The Legal Office is therefore not recommending changes at this time. A copy of the current Policy is attached.

Finally, we note that the Policy provides that the "Legal Office shall provide the Board of Investments with annual reports covering its responsibilities under this policy." A copy of our most recent memorandum, "Securities Litigation Report For Calendar Year 2017," is attached for ease of reference. The Legal Office will continue to regularly review and recommend revisions as necessary to ensure the Policy remains well-designed to ensure that LACERA continues to meet its fiduciary duty by identifying, monitoring and evaluating actions in which the fund has an interest, and by participating and pursuing claims in such actions when and in a manner the Board determines is in the best interest of the fund.

Reviewed and Approved:

Steven P. Rice

Steven P. Rice
Chief Counsel

Attachments

cc: Robert P. Hill
James Brekk
Bernie Buenaflor
John Popowich
Jonathan Grabel
Vache Mahseredjian
John McClelland
James Rice
Ted Wright
Christopher Wagner
Beulah Auten
Ted Granger
Johanna Fontenot
Christine Roseland
John Harrington
Cheryl Lu

MDH:kt
f:/Legal/SecuritiesLit/BOISecLitPolicyUpdateMemo_043018.doc

BOARD OF INVESTMENTS
SECURITIES LITIGATION POLICY

PURPOSE

The Board of Investments adopts this policy to establish procedures and guidelines for monitoring and participating in securities class actions as appropriate to protect LACERA's interests. For purposes of this policy, a securities class action includes, but is not limited to, an action alleging claims under state and/or federal securities and antitrust laws and regulations, as well as similar claims arising under the laws and/or regulations of foreign jurisdictions.

PRINCIPLES

As a large institutional shareholder, LACERA is frequently a class member in securities class actions that seek to recover damages resulting from alleged wrongful acts or omissions of others.

The enactment by Congress of the Private Securities Litigation Reform Act ("PSLRA") in 1995 allows institutional investors and other large shareholders to seek appointment as lead or named plaintiff in a securities class action pending within the United States under U.S. federal securities laws. The lead or named plaintiff in a securities class action gains the right to supervise and control, or assist in the supervision or control, of the prosecution of such case.

Since enactment of the PSLRA, it has been demonstrated that active participation in a securities class action by large, sophisticated shareholders, particularly institutional shareholders, has resulted in lower attorney's fees and significantly larger recoveries on behalf of shareholders. The United States Securities and Exchange Commission and leaders in the legal community have commented that the governing board of a public pension system has a fiduciary duty to monitor securities class actions in which the system has an interest, and to participate as lead plaintiff where such participation is likely to enhance the recovery by members of the class.

In 2010, the United States Supreme Court in *Morrison v. National Australia Bank* ("Morrison") held that certain investor losses stemming from corporate wrongdoing cannot be pursued under federal securities laws. Specifically, the Supreme Court held that investors cannot bring or participate in a U.S. securities class action if their claims are based on securities they purchased outside the United States. As a result, investors must now identify and evaluate foreign securities actions in order to fully protect their interests, including the right to participate in such actions and share in any recovery.

STATEMENT OF FUNCTIONS AND RESPONSIBILITIES

1. Review of Class Action Filings

The Legal Office shall identify and evaluate securities class actions, brought or pending within the United States and in foreign jurisdictions, in which LACERA may have recognized losses. In this connection, the Legal Office may retain a vendor specializing in identifying and analyzing securities cases to perform this function, and to report its findings to the

Legal Office on a timely basis. The Legal Office may also select and retain one or more private law firms to identify and evaluate class action filings and, if the firm determines that LACERA's estimated loss meets the thresholds for Active Participation set forth below in Section 3(b), to report its findings to the Legal Office with a recommendation as to whether the case would be meritorious and worthy of further investigation or Active Participation by LACERA.

2. Active Case Monitoring

The Legal Office shall actively monitor each case in which the Legal Office has determined the case has merit and LACERA's estimated loss is $2 million or more. Active monitoring may include participation by the Legal Office in significant motions and in settlement discussions when permitted by the parties or the court.

3. Active Participation

The Legal Office shall recommend to the Board of Investments that LACERA take an active role in a securities class action beyond monitoring, which may include, but is not limited to, seeking appointment as a lead or named plaintiff, or opting out of the class action and pursuing an individual action, in cases where:

> (a) the Legal Office, after consulting with outside counsel, has determined the case has merit and the best interests of LACERA will be served by taking such action, and;
>
> (b) LACERA's estimated loss is $2 million or more, or LACERA's estimated loss exceeds $1 million and LACERA will join with one or more other public retirement funds in pursuing such action.

In addition, the Legal Office shall recommend to the Board of Investments that LACERA take an active role in a securities class action by filing an amicus curiae (friend-of-the-court) brief in those cases where the criteria set forth in Section 3(a) is satisfied.

Recommendations on whether to take an active role in a securities class action shall be submitted for approval, in advance, to the Board of Investments at a regularly-scheduled meeting or, where immediate approval is necessary, at a specially-called meeting. However, where the Chief Executive Officer determines that immediate approval is required in order to preserve LACERA's rights and/or interests by taking such action, and the matter cannot be timely presented for approval at a regularly-scheduled or special meeting of the Board, or where a quorum cannot be reached at such meeting, the Chief Executive Officer is authorized, after consultation with the Chief Counsel, Chief Investments Officer, and Chair of the Board of Investments, to make the decision. In the event such authority is exercised, the Chief Executive Officer shall instruct the Legal Office to concurrently notify the Board of Investments, and provide a summary of the action at the next regularly-scheduled meeting of the Board. Notwithstanding the foregoing, recommendations on whether to commence new litigation, as in the case of opting out of an existing securities class action and pursuing an individual action, shall be submitted to the Board of Investments for approval.

For purposes of this policy, a foreign securities action is defined as a lawsuit brought or pending outside the United States involving securities purchased on a foreign securities exchange by LACERA or on its behalf. Participation as a class member in a foreign securities action, if participation in such foreign action requires registration or other affirmative action by LACERA, shall be considered "Active Participation" and shall be submitted to the Board of Investments for approval.

4. Asset Recovery

LACERA's claims filing agent shall be responsible for filing all proofs of claim, including the necessary supporting documents and information, necessary to recover assets in every securities class action brought or pending within the United States and in foreign jurisdictions in which LACERA has suffered losses. In this connection, the Legal Office shall prepare, and revise as necessary, a retainer agreement and statement of work setting forth formalized claims filing procedures for the claims filing agent to follow, which shall include identifying and reviewing all class action settlements, providing timely notice of each settlement to LACERA, filing claims correctly and timely on LACERA's behalf, and providing quarterly reports regarding its efforts. The Legal Office, in consultation with the Financial Accounting and Services Division, shall monitor the performance of the claims filing agent in that regard. The claims filing agent shall submit quarterly reports on the securities litigation proceeds recovered, which information shall be shared with the Board.

5. Reports to the Board

The Legal Office shall provide the Board of Investments with annual reports covering its responsibilities under this policy. In addition, the Legal Office shall provide the Board with status reports as needed to keep the Board apprised of major developments in cases in which LACERA is a party.

6. Retention of Outside Counsel

The Legal Office shall retain one or more private law firms with demonstrated expertise and experience in prosecuting securities class actions (the "Securities Litigation Counsel") to advise and/or represent LACERA in securities actions. All retainer agreements shall be negotiated by the Legal Office and submitted for approval, in advance, to the Board of Investments at a regularly-scheduled meeting or, where immediate approval is necessary, at a specially-called meeting. However, where it is determined that immediate approval is required in order to preserve LACERA's rights and/or interests by retaining such counsel, and the matter cannot be timely presented for approval at a regularly-scheduled or special meeting of the Board, or where a quorum cannot be reached at such meeting, the Chief Executive Officer is authorized, after consultation with the Chief Counsel, Chief Investments Officer, and Chair of the Board of Investments, to make the decision. In the event such authority is exercised, the Chief Executive Officer shall instruct the Legal Office to concurrently notify the Board of Investments, and provide a summary of the action at the next regularly-scheduled meeting of the Board.

CHANGES TO CURRENT PRACTICE

The Legal Office has been monitoring securities class actions since passage by Congress of the PSLRA and has been evaluating the merits of LACERA taking an active role in such actions in which LACERA has a significant financial interest. The adoption of this policy will formalize the monitoring function being carried out by the Legal Office, and will create additional responsibilities for the Board of Investments and the Legal Office.

No additional staffing requirements or significant expense will result from the implementation of this policy.

Legal/SecuritiesLit/Securities Lit Policy_Revised_102217_FINAL

Policy Revised: November 2, 2017
Policy Revised: November 9, 2011
Policy Revised: April 29, 2010
Policy Adopted: March 28, 2001

L///.CERA

FOR INFORMATION ONLY

April 2, 2018

TO: Each Member
Board of Investments

FROM: Michael D. Herrera
Senior Staff Counsel

FOR: Board of Investments Meeting of April 11, 2018

SUBJECT: Securities Litigation Report for Calendar Year 2017

Securities Litigation Policy
In March 2001, the Board of Investments adopted a Securities Litigation Policy to formalize the Legal Office's securities class action monitoring and evaluation function, and implement procedures designed to enhance LACERA's recovery of damages from corporate wrongdoers. As a result of its efforts and success over the years, LACERA is widely viewed as a leader in this area and its Policy has served as a model for public pension funds throughout the country. A copy of the current Policy is attached for ease of reference.

We are pleased to report that LACERA recovered over $2.3 million in securities class action settlement proceeds in calendar year 2017. Significantly, this brings the total amount recovered by the Legal Office on behalf of the fund to over $70 million since the Board first adopted its Policy in 2001. This includes recoveries obtained through the successful prosecution of securities cases, and our ongoing securities claims filing efforts. The following is a breakdown of the amounts recovered on an annual basis since 2001:

Year	Recovery	Year	Recovery
2001	$ 4,517,547.94	2010	$ 3,722,892.78
2002	$ 2,261,807.59	2011	$ 3,389,833.73
2003	$ 4,169,433.87	2012	$ 1,674,197.34
2004	$ 2,864,029.34	2013	$ 3,734,841.01
2005	$ 1,684,734.35	2014	$ 2,427,465.00
2006	$ 20,734,575.09	2015	$ 2,127,080.76
2007	$ 6,335,155.06	2016	$ 2,189,274.71
2008	$ 3,513,037.39	2017	$ 2,306,483.22
2009	$3,437.147.76	**Total**	**$ 71,089,536.94**

Background
Congress passed the Private Securities Litigation Reform Act (the "PSLRA") in 1995 to address concerns about the influence of "professional plaintiffs" and class action attorneys. To this end, the PSLRA contains provisions intended to encourage participation by sophisticated institutional investors. For example, the PSLRA contains a "lead plaintiff" provision and class notification process aimed at giving the plaintiff(s) with the largest financial interest at stake (presumably, institutional investors) the right to control the course of the litigation and to select, subject to court approval, lead counsel for the class.

Although Congress intended to encourage institutional investors to serve as lead plaintiff, the PSLRA itself does not create any such duty. However, the United States Department of Labor has since stated that "not only is a fiduciary not prohibited from serving as lead plaintiff, the Secretary believes that a fiduciary has an affirmative duty to determine whether it would be in the interest of the plan participants to do so." The Secretary also affirmed its earlier position that "it may not only be prudent to initiate litigation, but also a breach of a fiduciary's duty to not pursue a valid claim."[1]

Global Coverage
In 2010, the United States Supreme Court decided a case that significantly changed the securities litigation landscape. In *Morrison v. National Australia Bank Ltd.,* 130 S.Ct. 2869 (2010), the Supreme Court for the first time held that investors can only bring federal securities fraud claims in U.S. courts if the securities were purchased or sold in the U.S. and/or listed on a domestic exchange, regardless of where the fraud or wrongdoing occurred. As a result, investors like LACERA who purchase securities outside the U.S. and/or on a foreign exchange can no longer rely on U.S. courts to protect their interests. The Board acted quickly to adopt a "global" policy to ensure LACERA continues to meet its fiduciary duty by identifying, monitoring and evaluating securities actions in which the fund has an interest, *both foreign and domestic*, and pursuing such claims when and in a manner the Board determines is in the best interest of the fund.

Identification and Evaluation of Securities Cases
With a significant portion of its portfolio invested in equity and debt securities, LACERA is in a position to seek recovery from issuers and others who engage in wrongful acts that diminish the value of these securities. Accordingly, the Policy provides that the Legal Office shall actively identify, evaluate, and monitor securities cases on behalf of LACERA, *both foreign and domestic*, and recommend to the Board of Investments that the fund take an active role in those cases where: (i) LACERA's estimated loss is $2 million or more, or $1 million if LACERA will join with one or more other public retirement funds in pursuing such action, and; (ii) the Legal Office has determined the case to be meritorious and the best interest of the fund will be served through active involvement.

We accomplish the herculean task of identifying, monitoring and evaluating securities actions in which the fund has an interest, *both foreign and domestic*, by engaging U.S. law firms with significant securities litigation experience and expertise to serve as monitoring counsel. Through an arrangement with LACERA's custodian, the law firms obtain LACERA's trading and holdings data directly from the custodian. In cases where LACERA has suffered a significant loss, the firms will report these cases to us.

Once the Legal Office determines that a case satisfies the initial loss threshold, we will then evaluate the case to determine whether the case has merit and the best interest of LACERA will be served through active involvement. Since the Board first adopted the Policy, the Legal Office has evaluated or conducted formal requests for proposals in connection with hundreds of significant securities cases.

---

[1] Secretary of Laborer's Memorandum of Law as Amicus Curiae in Support of the Florida State Board of Administration's Appointment as lead plaintiff in In re Telxon Corp. Securities Litigation, 67 F.Supp.2d 803 (N.D. Ohio, 1999).

Active Participation
Since the Board adopted the Policy, LACERA has taken and continues to take an active role in securities cases, either as court-appointed lead or named plaintiff in a class action, or by opting out and bringing an individual action. We will continue to keep the Board apprised of significant developments in LACERA's pending cases under separate cover.

Additionally, in cases where LACERA is a putative class member and the outcome of the case or ruling on a significant issue could adversely impact LACERA, the Legal Office will recommend that the Board authorize LACERA to file an amicus curiae ("friend of the court") brief in support of the shareholder plaintiff(s).

Asset Recovery
Virtually every public pension fund with significant funds invested in the securities markets is a passive member of the numerous securities class actions filed every year on behalf of defrauded investors. With a significant portion of its portfolio invested in equity and debt securities, LACERA is eligible to seek recovery of its losses stemming from corporate wrongdoing. Failing to timely and accurately file a claim in these actions after they settle can result in the fund missing out on its share of the millions of dollars recovered every year in these actions. Under the Board's Securities Litigation Policy, the Legal Office therefore implements and oversees procedures designed to ensure LACERA obtains its share of recoveries from these lawsuits, which includes active participation as a lead or named plaintiff, or by filing proofs of claim to share in the resulting settlements.

LACERA has historically relied on its custodians to perform this claims filing function. As discussed in our separate memo regarding our recent search for a new claims filing agent, the Legal Office recently retained Institutional Investor Services (ISS) to perform this service for LACERA. LACERA's agreement with ISS provides that the firm will identify and review all class action settlements in which LACERA has an interest, provide timely notice of those settlements to the Legal Office, submit correct and timely claims on LACERA's behalf, and provide reports regarding its efforts.

As noted above, these efforts have resulted in the recovery by the fund of over $2.3 million in securities class action claims in 2017, and over $70 million total since the Board first adopted its Policy in 2001.

Reviewed and Approved:

Steven P. Rice

Steven P. Rice
Chief Counsel

Attachment
cc: Robert R. Hill
James Brekk
Bernie Buenaflor
John Popowich
Jonathan Grabel

LACERA

April 26, 2018

FOR INFORMATION ONLY

TO: Each Member
Board of Investments

FROM: Barry W. Lew
Legislative Affairs Officer

FOR: May 9, 2018 Board of Investments Meeting

SUBJECT: **Update on AB 2571—Race and Gender Pay Equity Policy**

BACKGROUND

Assembly Bill 2571 was introduced on February 15, 2018. AB 2571 would restrict a public investment fund from making new, additional, or renewed investments in alternative investment vehicles[1] unless the investment manager of the investment vehicle has adopted and committed to comply with a race and gender pay equity policy. The bill also would require the investment manager, beginning September 1, 2019, to submit a certified report of its efforts to comply with the policy to the public investment fund. The public investment fund would be required to disclose the pay equity information received from the investment manager at least annually in a public meeting and submit that information to the State Auditor. The bill provides that nothing in its provisions shall require a public investment fund from taking action inconsistent with its constitutional fiduciary duties.

On March 5, 2018, the Board of Investments adopted a "Watch" position on AB 2571.

SUMMARY OF AMENDMENTS

AB 2571 was amended on April 11, 2018 with the following changes:

- Removed the restriction on making new, additional, or renewed investments in alternative investment vehicles by public investment funds unless the investment manager of the investment vehicle has adopted and complied with a race and gender pay equity policy.
- Added a requirement that every public investment fund require each alternative investment vehicle in which it invests to report at least annually information regarding hospitality employers.

---

[1] Alternative investment vehicles, as defined in AB 2571, include a limited partnership, limited liability company, or similar legal structure through which a public investment fund invests in a private equity fund, venture fund, hedge fund, absolute return fund, real estate fund, joint venture, coinvestment vehicle, comingled investment, direct investment, or any other investment that is not a publicly traded security or debt fund.

- Added descriptions of the required information related to race and gender pay equity, sexual harassment complaints, and the name and location of each hospitality employer reporting this information.
- Added the requirement that the data related to race and gender pay equity is reportable for hospitality employers that employ 100 or more employees.
- Added a sunset provision that the requirements of the bill related to data reporting remain in effect until January 1, 2022.
- Added a provision that board members of any public pension or retirement system, other officers and employees, and investments managers under contract with the system be held harmless and eligible for indemnification from the General Fund in connection with actions taken pursuant to the bill.

DISCUSSION

AB 2571 was scheduled to be heard in the Assembly Committee on Public Employees, Retirement and Social Security on April 18, 2018. However, the author pulled the bill, and it was not heard. The bill had a deadline of April 27, 2018 to pass out of committee and was not rescheduled for any subsequent hearing. Consequently, AB 2571 will no longer move forward in the 2018 legislative year. Given the significance of the bill, staff will continue to monitor the bill and provide updates to the Board as necessary.

Reviewed and Approved:

Steven P. Rice

Steven P. Rice, Chief Counsel

Attachments

AB 2571 (Gonzalez Fletcher) as amended on April 11, 2018
Support and Opposition

cc:			
	Robert Hill	Christine Roseland	Jude Perez
	James Brekk	Jonathan Grabel	Scott Zdrazil
	JJ Popowich	Christopher Wagner	Joe Ackler, Ackler & Associates
	Bernie Buenaflor	Jim Rice	
	Steven P. Rice	John McClelland	

AMENDED IN ASSEMBLY APRIL 11, 2018

california legislature—2017–18 regular session

ASSEMBLY BILL No. 2571

Introduced by Assembly Member Gonzalez Fletcher

February 15, 2018

An act to *amend Section 16642 of, and to* add *and repeal* Section 7513.76 ~~to~~ *of,* the Government Code, relating to retirement.

legislative counsel's digest

AB 2571, as amended, Gonzalez Fletcher. Public employee retirement systems: investments: race and gender pay equity.

The California Constitution grants the retirement board of a public employee retirement system plenary authority and fiduciary responsibility for investment of moneys and administration of the retirement fund and system. The California Constitution qualifies this grant of powers by reserving to the Legislature the authority to prohibit investments if it is in the public interest and the prohibition satisfies standards of fiduciary care and loyalty required of a retirement board.

Existing law requires every public investment fund, including any fund of any public pension or retirement system, to require each alternative investment vehicle in which it invests to make prescribed annual financial disclosures.

This bill, if consistent with fiduciary responsibilities of a public investment fund as determined by its board, would ~~restrict new, additional, or renewed investments by~~ *require* a public investment fund to *require* an alternative investment vehicle ~~where, if the investment vehicle is managed by an investment manager, the investment manager has adopted and committed to comply with a race and gender pay equity policy consistent with requirements established in the bill. The bill~~

~~would require an investment manager, beginning September 1, 2019, to submit~~ *to report* at least ~~once~~ annually ~~to the public investment fund a certified report regarding compliance. Because a certified report would be required to be verified under penalty of perjury, this bill would expand the crime of perjury, thereby imposing a state-mandated local program. The bill would require each contractually enforceable instrument for additional or new investments or renewal of existing investments with an investment manager to require that the investment manager take prescribed actions consistent with the bill as a material term of the instrument.~~ *certain information concerning specified hospitality employers relating to race and gender pay equity and sexual harassment.* The bill would require a public investment fund to disclose *race and gender* pay equity ~~reporting~~ *and sexual harassment* information provided to it pursuant to the bill at least once annually ~~to the State Auditor and~~ in a report presented at a meeting open to the ~~public. The bill would define terms for its purposes.~~ *public and would require the fund to provide the report upon request to a member of the Legislature. The bill would authorize the Department of Fair Employment and Housing to issue regulations for the implementation of these reporting requirements. The bill would define terms for purposes of the reporting provisions and repeal the reporting provisions on January 1, 2022.*

Existing law provides that board members and other officers and employees of the Public Employees' Retirement System or the State Teachers' Retirement System, and certain other entities, shall be held harmless and be eligible for indemnification from the General Fund in connection with prescribed actions relating to prohibited investments.

The bill would additionally provide that board members of any public pension or retirement system, other officers and employees, and investment managers under contract with the system shall be held harmless and be eligible for indemnification from the General Fund in connection with actions taken pursuant to the bill.

Because this bill would impose new requirements on local entities, relating to the implementation of the bill, including the collection of information and its presentation at a meeting open to the public, it would impose a state-mandated local program.

The California Constitution requires local agencies, for the purpose of ensuring public access to the meetings of public bodies and the writings of public officials and agencies, to comply with a statutory enactment that amends or enacts laws relating to public records or open meetings and contains findings demonstrating that the enactment furthers the constitutional requirements relating to this purpose.

This bill would make legislative findings to that effect.

~~The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.~~

~~This bill would provide that no reimbursement is required by this act for specified reasons.~~

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

The people of the State of California do enact as follows:

SECTION 1. The Legislature finds and declares all of the following:

(a) More than 50 years after passage of the Equal Pay Act of 1963 and the Civil Rights Act of 1964, pay inequities along race and gender lines *and sexual harassment* remain pervasive. *These problems are particularly acute and well-documented in the hospitality sector, a key and growing part of the California and United States economy.*

(b) The purpose of this act is to ensure that, when it is consistent with and not in violation of their fiduciary responsibilities, California public retirement systems require that ~~investment managers of~~ alternative investment vehicles in which they invest ~~adopt~~ *report specified information concerning* race and gender pay equity ~~policies applicable to themselves and to~~ *and sexual harassment at* the investment vehicles' subsidiary entities in the hospitality ~~sector, a key area of public investment and of the California economy in which pay disparities are well documented.~~ *sector.*

(c) The ~~data~~ *information* required to meet the reporting obligations in this act are readily available, consistent with existing federal reporting requirements, and do not impose an unreasonable burden on those required to prepare reports.

SEC. 2. Section 7513.76 is added to the Government Code, to read:

7513.76. (a) Nothing in this section shall require a public investment fund board to take any action that the board determines to be inconsistent with its fiduciary responsibilities, as described in Section 17 of Article XVI of the California Constitution.

~~(b) On and after January 1, 2019, a public investment fund shall make new, additional, or renewed investments in an alternative investment vehicle only where, if the investment vehicle is managed by an investment manager, the investment manager has adopted and committed to comply with a race and gender pay equity policy consistent with this section.~~

~~(c) The race and gender pay equity policy shall contain at minimum the following elements:~~

~~(1) The investment manager, with respect to its own employees, shall do both of the following:~~

~~(A) Identify and eliminate racial or gender pay differentials that are not explained by bona fide nondiscriminatory factors.~~

~~(B) Prepare a certified report containing the pay equity reporting information outlined in subdivision (g).~~

~~(2) The investment manager shall cause any subsidiary entity of the alternative investment vehicle that is a hospitality employer, and any hospitality employer with which any subsidiary entity contracts to operate a facility owned by the subsidiary entity, to do both of the following:~~

~~(A) Identify and eliminate racial or gender pay differentials that are not explained by bona fide nondiscriminatory factors.~~

~~(B) Submit a certified report to the investment manager containing the pay equity reporting information outlined in subdivision (g).~~

~~(d) The same obligations outlined in paragraph (2) of subdivision (c) shall apply to any labor contractor of such a hospitality employer.~~

~~(e) Beginning September 1, 2019, the investment manager shall submit at least once annually to the public investment fund a certified report demonstrating the steps the investment manager, and any hospitality employers that are subsidiary entities or with which subsidiary entities contract to operate a facility owned by~~

~~a subsidiary entity, have taken to comply with subdivision (c), providing in full the pay equity reporting information for its own employees required pursuant to subparagraph (B) of paragraph (1) of subdivision (c) and for hospitality employers required pursuant to subparagraph (B) of paragraph (2) of subdivision (c). This report should indicate the name and address of each hospitality employer.~~

~~(f) Each contractually enforceable instrument for additional or new investments or renewal of existing investments with an investment manager shall require that the investment manager take the actions described in subdivisions (c), (d), (e), and (h) as a material term of the instrument.~~

~~(g) Every public investment fund shall disclose the pay equity reporting information provided to it pursuant to subdivisions (c), (d), (e), and (h) at least once annually in a report presented at a meeting open to the public. Additionally, every public investment fund shall submit the same information annually to the State Auditor.~~

~~(h) The pay equity reporting information described in subparagraph (B) of paragraph (1), and subparagraph (B) of paragraph (2), of subdivision (c) shall be as follows:~~

~~(1) The annual mean compensation of employees, by gender.~~

~~(2) The annual mean compensation of employees, by ethnic or racial group.~~

~~(3) The number of employees employed in each job category, by gender, for each ethnic or racial group.~~

~~(4) The average annual compensation of employees in each job category, by gender, for each ethnic or racial group.~~

(b) Every public investment fund shall require each alternative investment vehicle in which it invests to report at least annually information concerning any subsidiary entity of the alternative investment vehicle that is a hospitality employer, and any hospitality employer with which any subsidiary entity contracts to operate a facility owned by the subsidiary entity, as follows:

(1) With respect to race and gender pay equity:

(A) The annual mean compensation of employees, by gender.

(B) The annual mean compensation of employees, by ethnic or racial group.

(C) The number of employees employed in each job category, by gender, for each ethnic or racial group.

(D) The average annual compensation of employees in each job category, by gender, for each ethnic or racial group.

(2) With respect to sexual harassment:

(A) The existence, case identifying information including case number, and current status of any complaint alleging sexual harassment filed within the past five years by a current or former employee against the hospitality employer in a state or federal court of law or with an administrative agency.

(B) The existence and financial terms of any settlement entered into by the hospitality employer within the past five years involving the payment of monetary compensation to a current or former employee in exchange for a release of liability concerning an allegation of sexual harassment.

(3) The name and location of each hospitality employer for which information is reported pursuant to this subdivision.

~~(i)~~

(c) For the purposes of *the* reporting ~~pursuant to~~ *requirements described in* subdivision ~~(h):~~ *(b):*

(1) With respect to paragraph (1) of subdivision (b):

(A) An alternative investment vehicle shall be required to report data only with respect to hospitality employers that employ or exercise control over wages, hours, or working conditions of 100 or more employees.

~~(1) Employers~~

(B) Alternative investment vehicles shall use the job categories and ethnic or racial groups included in the EEO-1 form used by the United States Equal Employment Opportunity Commission and the Office of Federal Contract Compliance. If the EEO-1 form is no longer in use or no longer includes job categories or ethnic or racial groups, the Department of Fair Employment and Housing shall issue regulations determining the job categories and ethnic or racial groups to be used for reporting, which, to the extent possible, shall match those of any similar federal reporting requirements applicable to firms covered by this section.

~~(2) The Department of Fair Employment and Housing may issue regulations outlining the job categories in which data for hospitality-specific employee classifications shall be reported.~~

~~(j)~~

(C) An ~~employer~~ *alternative investment vehicle* shall not ~~be obligated to~~ report compensation data ~~otherwise required by~~

~~subdivision (h)~~ if that reporting would reflect the compensation of three or fewer employees.

(2) With respect to paragraph (2) of subdivision (b), an alternative investment vehicle shall not report the name or any other identifying information concerning the person alleging sexual harassment unless a complaint was filed in a court of law or with an administrative agency.

(3) The Department of Fair Employment and Housing may issue regulations consistent with and necessary for the implementation of the reporting requirements of this section.

(d) Every public investment fund shall disclose the race and gender pay equity and sexual harassment information provided to it pursuant to subdivision (b) at least once annually in a report presented at a meeting open to the public and shall provide that report upon request to any member of the Legislature.

~~(k)~~

(e) This section applies to all new contracts the public investment fund enters into on or after January 1, 2019, and to ~~all~~ existing contracts pursuant to which the public investment fund makes a new capital commitment on or after January 1, 2019.

~~(*l*)~~

(f) For the purposes of this section:

(1) "Alternative investment vehicle" means a limited partnership, limited liability company, or similar legal structure through which a public investment fund invests in a private equity fund, venture fund, hedge fund, absolute return fund, real estate fund, joint venture, coinvestment vehicle, comingled investment, direct investment, or any other investment that is not a publicly traded security or debt fund.

~~(2) "Certified report" means a report verified under penalty of perjury.~~

~~(3)~~

(2) "Compensation" means gross income as reported on a W-2 form, including wages, salaries, fees, commissions, tips, taxable fringe benefits, and elective deferrals, provided, however, that the Department of Fair Employment and Housing shall have authority to issue regulations providing an alternative definition of "compensation" to align to the extent possible with any rule adopted by the United States Equal Employment Opportunity

Commission requiring reporting of employee compensation data applicable to employers covered by this section.

(3) "Employee" means a person employed by a hospitality employer or employed by an individual or entity that supplies workers to perform labor within the hospitality employer's usual course of business.

(4) "Gender" refers to a person's self-identified gender identity.

(5) "Hospitality employer" means any individual or entity *in the United States* that acts as an employer in the hospitality sector, including operators of hotels, motels, and resorts as well as operators of restaurants and bars located on the premises of hotels, motels, and resorts and does not mean an investment firm.

~~(6) "Labor contractor" means an individual or entity that supplies, either with or without a contract, a hospitality employer with workers to perform labor within the hospitality employer's usual course of business.~~

~~(7) "Investment manager" means an advisor, general partner, real estate manager, private equity manager, or other entity that receives fees to manage a public investment fund investment in an alternative investment vehicle.~~

~~(8)~~

(6) "Public investment fund" means any fund of any public pension or retirement system, including that of the University of California to the extent consistent with Section 9 of Article IX of the California Constitution.

~~(9) "Public investment fund board" means the governing body of any public investment fund.~~

~~(10) "Racial or gender pay differentials that are not explained by bona fide nondiscriminatory factors" means pay differentials that would be prohibited under the standard set forth in subdivisions (a) and (b) of Section 1197.5 of the Labor Code.~~

(7) "Sexual harassment" means sexual harassment as defined under applicable state or federal law.

~~(11)~~

(8) "Subsidiary entity" means any business organization, including, but not limited to, a corporation, partnership, or limited liability company, over which an alternative investment vehicle ~~managed by an investment manager~~ exercises, or has the right to exercise, control through ownership or control of shares of the business organization possessing more than 50 percent of voting

power, whether directly or indirectly through one or more other subsidiary entities.

(g) This section shall remain in effect only until January 1, 2022, and as of that date is repealed.

SEC. 3. Section 16642 of the Government Code is amended to read:

16642. *(a)* Present, future, and former board members of the Public Employees' Retirement System or the State Teachers' Retirement System, jointly and individually, state officers and employees, research firms described in subdivision (d) of Section 7513.6, and investment managers under contract with the Public Employees' Retirement System or the State Teachers' Retirement System shall be indemnified from the General Fund and held harmless by the State of California from all claims, demands, suits, actions, damages, judgments, costs~~, charges~~ *charges,* and expenses, including court costs and attorney's fees, and against all liability, losses, and damages of any nature whatsoever that these present, future, or former board members, officers, employees, research firms as described in subdivision (d) of Section 7513.6, or contract investment managers shall or may at any time sustain by reason of any decision to restrict, reduce, or eliminate investments pursuant to Sections 7513.6, 7513.7, and 7513.75.

(b) Present, future, and former board members of any public pension or retirement system, including, but not limited to, that of the University of California, jointly and individually, state officers and employees, and investment managers under contract with any public pension or retirement system shall be indemnified from the General Fund and held harmless by the State of California from all claims, demands, suits, actions, damages, judgments, costs, charges, and expenses, including court costs and attorney's fees, and against all liability, losses, and damages of any nature whatsoever that these present, future, or former board members, officers, employees, or contract investment managers shall or may at any time sustain by reason of any decision to restrict, reduce, or eliminate investments pursuant to Section 7513.76.

~~SEC. 3.~~

SEC. 4. The Legislature finds and declares that Section 2 of this act, which adds Section 7513.76 to the Government Code, furthers, within the meaning of paragraph (7) of subdivision (b) of Section 3 of Article I of the California Constitution, the purposes of that constitutional section as it relates to the right of public access to the meetings of local public bodies or the writings of local public officials and local agencies. Pursuant to paragraph (7) of subdivision (b) of Section 3 of Article I of the California Constitution, the Legislature makes the following findings:

The information in the disclosures required under subdivisions (b) to ~~(h),~~ *(e),* inclusive, of Section 7513.76 of the Government Code is necessary to ensure public confidence in the integrity of investments made by public investment fund boards in alternative investment vehicles.

~~SEC. 4. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district under this act would result either from a legislative mandate that is within the scope of paragraph (7) of subdivision (b) of Section 3 of Article I of the California Constitution, or because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.~~

SEC. 5. The provisions of this act are severable. If any provision of this act or its application is held invalid, that invalidity shall not affect other provisions or applications that can be given effect without the invalid provision or application.

SEC. 6. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district under this act would result from a legislative mandate that is within the scope of paragraph (7) of subdivision (b) of Section 3 of Article I of the California Constitution.

O

AB 2571
Support and Opposition
Board of Investments
April 26, 2018

SUPPORT
UNITE HERE, Local 11 *(Sponsor)*
Bendick and Egan Economic Consultants, Inc.
California Federation of Teachers, AFT, AFL-CIO
Central American Resource Center
National Employment Law Project

OPPOSITION
California Business Properties Association
California Chamber of Commerce
California Hotel and Lodging Association
California Lodging Industry Association
California Restaurant Association
California Special Districts Association
California State Association Of Counties
California Travel Association
County of Riverside Board Of Supervisors
League of California Cities

LACERA

FOR INFORMATION ONLY

April 27, 2018

TO: Each Member
Board of Investments

FROM: Jude Perez
Principal Investment Officer

Scott Zdrazil
Senior Investment Officer

FOR: May 9, 2018 Board of Investments Meeting

SUBJECT: **ENHANCING MANAGER DUE DILIGENCE AND MONITORING REGARDING WORKPLACE DIVERSITY AND INCLUSION POLICIES AND PRACTICES**

The Investment Division has developed and will be implementing an enhanced, systematic approach to assessing and monitoring external managers' policies and practices regarding workplace diversity and inclusion, inclusive of due diligence concerning workplace sexual harassment. The intent is to both encourage inclusive talent management at external managers and mitigate the risk of prospective legal, reputational, and operational liabilities that may impact external managers' management of LACERA assets.

An enhanced and more consistent approach to assessing external managers' diversity and inclusivity policies and practices is consistent with LACERA's *Investment Beliefs*, which state that, "LACERA considers the risks of ESG factors as relevant to its investment process."

BACKGROUND

At the March 2018 Board of Investments meeting, the Board requested that staff report back to the Board on strategies to promote workplace diversity and inclusion and mitigate the risks of sexual harassment at external managers and their portfolio companies. The discussion was prompted in part by the introduction of Assembly Bill 2571 ("AB 2571") as well as numerous high-profile incidents of alleged sexual harassment in the marketplace.

Staff identified and assessed LACERA's current manager due diligence practices, which include, but are not limited to, the following assessment and monitoring tools:

- "Request for proposal" ("RFP") and "Request for information" ("RFI") processes;
- Annual compliance reporting;
- External consultants' "due diligence questionnaires;" and
- Investment management and limited partner agreements.

The above procedures vary by asset class and, consequently, address workplace diversity and inclusivity policies and practices in a manner that is not consistent or universal.

The Investment Division, in conjunction with the Legal Office, seeks to enhance its practices by instituting a standardized approach for due diligence of diversity and inclusivity practices.

The Investment Division is developing harmonized and augmented questions to incorporate into all asset classes' due diligence and monitoring practices in an effort to strengthen LACERA's overall comprehensive due diligence practices. Consistent with LACERA's practice and experience in manager due diligence, LACERA recognizes that the quality and detail of managers' responses may vary. Accordingly, LACERA will seek to evaluate the quality and thoroughness of responses in assessing the adequacy, efficacy, and prospective risks of external managers' diversity policies and practices.

LACERA aims to incorporate questions into regular due diligence which will address the following topics:

1. Written Policy *(E.g., does the firm have a formal diversity and inclusion policy?)*
2. Oversight and Reporting Structure *(E.g., what oversight does the firm's board/executive committee exercise of its workplace policies and practices?)*
3. Track Record *(E.g., workforce demographics and recent regulatory or legal infractions.)*
4. Incentives and Risk Mitigation Strategies *(E.g., practices to promote compliance.)*
5. Private Assets Portfolio Company Due Diligence *(E.g., practices to identify and mitigate risks.)*

The above due diligence framework would be implemented in a manner compliant with local market laws and regulations and subject to applicable confidentiality agreements. Prospective risks identified through the above questions would be assessed by the Investment Division in coordination with the Legal Office, as part of LACERA's initial and ongoing comprehensive due diligence in manager searches and monitoring. Material matters would be reported to the Board in adherence to LACERA's existing policies and procedures.

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

FOR INFORMATION ONLY

April 23, 2018

TO: Each Member
Board of Investments
Board of Retirement

FROM: John Nogales
Director, Human Resources

Roberta Van Nortrick
Training Coordinator

FOR: May 9, 2018 Board of Investments Meeting
May 10, 2018 Board of Retirement Meeting

SUBJECT: ***SEXUAL HARASSMENT PREVENTION TRAINING FOR TRUSTEES***

Your Boards approved the Policy on Sexual Harassment Prevention Training for Board Members on January 10 and 11, 2018. This Policy states all LACERA Board Members will receive at least two hours of Sexual Harassment Prevention training and education within the first six months of taking office and every two years thereafter.

To assist with fulfilling these requirements, LACERA's Human Resources Division would like to inform you about two available training dates for your convenience. The first is available to those Board Members who are attending the Spring Conference of SACRS in Anaheim, California. SACRS has scheduled the Sexual Harassment Prevention Training for Trustees on Tuesday, May 15, 2018 from 3:00 pm – 5:00 pm. The presenters will be Ms. Veronica Gray and Mr. John Kennedy from Nossaman, LLP.

We have scheduled the second offering for 9:00 am – 11:00 am on Wednesday, June 6, 2018 in LACERA's Boardroom. Ms. Veronica Gray of Nossaman, LLP, will also present the Sexual Harassment Prevention training. We selected Ms. Gray because of her depth of knowledge in this area and her experience working with Trustees. The topics covered in the Sexual Harassment Prevention Training include the prevalence of sexual harassment; unconscious bias; costs and effects of workplace harassment; and defining workplace sexual harassment, discrimination and retaliation. Please let the Board secretaries or Roberta know if you plan to attend this session on June 6th.

Reviewed and Approved:

John Popowich
Assistant Executive Officer

LACERA

FOR INFORMATION ONLY

April 27, 2018

TO: Each Member
Board of Investments

FROM: Adam Cheng AC
Senior Investment Analyst

FOR: May 9, 2018 Board of Investments Meeting

SUBJECT: **TENNENBAUM CAPITAL PARTNERS - ORGANIZATIONAL UPDATE**

Tennenbaum Capital Partners ("TCP") has managed a private credit mandate for LACERA since November 2014. LACERA's investment in Tennenbaum Senior Loan Fund V has a portfolio market value of $270 million as of March 31, 2018. TCP is an employee-owned firm based in Los Angeles with approximately $9 billion of committed capital and more than 80 investment professionals on staff.

On April 17, 2018, Tennenbaum and BlackRock announced a definitive agreement under which BlackRock will acquire TCP. The official announcement is attached for reference. It states that the combined platform will merge TCP's experience in private performing credit and special situations with BlackRock's global scale, industry expertise, and portfolio and risk management capabilities. A key element of the transaction was the continuity of TCP's successful senior management team, including all five partners (Lee Landrum, Michael Leitner, Howard Levkowitz, Philip Tseng, and Rajneesh Vig). All partners have signed retention contracts and the transaction is expected to close in the third quarter of 2018.

Staff attended TCP's Annual Investor Conference where Lee Landrum and Howard Levkowitz addressed the transaction and synergies brought by the deal. They emphasized the time and planning it took to reach a deal. They explained that the goal was not cost cutting as each TCP employee is expected to receive an offer to join the new firm. Cultural fit was paramount and senior management is very excited and committed to the combined organization.

It remains to be seen whether BlackRock intends to increase the assets under management of the combined entity and how that may affect performance. As such, staff will continue to monitor the acquisition and will report any significant developments to the Board.

Attachment

Noted and Reviewed:

Jon Grabel

Jonathan Grabel
Chief Investment Officer

AC:cll

TCP TENNENBAUM CAPITAL PARTNERS

April 17, 2018

BlackRock, Inc. to Acquire Private Credit Manager Tennenbaum Capital Partners
Strengthens BlackRock's credit platform to provide more diverse range of solutions for clients
Complementary acquisition assures continuity of TCP leadership, strategy, and products

NEW YORK (April 17, 2018) – BlackRock Inc. (NYSE: BLK) and Tennenbaum Capital Partners, LLC ("TCP") today announced a definitive agreement under which BlackRock will acquire TCP, a leading manager focused on middle market performing credit and special situation credit opportunities.

The acquisition augments BlackRock's position as a leading global credit asset manager and advances its goal of providing clients with a diverse range of alternative investment products and solutions to meet their evolving needs.

TCP complements BlackRock's Global Credit business with seasoned investment talent and a strong long-term track record at a time when clients are increasingly turning to private credit as a higher-yielding alternative to traditional fixed income allocations. A key element of the transaction is the continuity of TCP's successful senior management team, including all five partners (Lee Landrum, Michael Leitner, Howard Levkowitz, Philip Tseng, and Rajneesh Vig).

The combined platform will merge TCP's significant experience in private performing credit and special situations investing with BlackRock's global scale, industry expertise, and portfolio and risk management capabilities. Clients of both firms will benefit from this powerful combination, which will result in enhanced scale and a broader origination network. Together, BlackRock and TCP expect to offer clients a premium and expanded set of private credit investment opportunities.

"Investors seeking to generate incremental returns and portfolio diversification are increasingly turning to private credit where both expertise and platform scale can drive returns," said Tim O'Hara, Global Co-Head of Credit at BlackRock. "This acquisition will enhance our ability to deliver clients private credit solutions that meet their investment objectives across a range of risks, liquidity, and geographies."

TCP is based in Los Angeles and has approximately $9 billion of committed client capital as of December 31, 2017. Its more than 80-person team, which will join BlackRock as part of the transaction, has demonstrated strong performance over nearly two decades. TCP currently serves as the investment adviser of TCP Capital Corp. (NASDAQ: TCPC), a business development company. Upon completion of the transaction, TCP is expected to become a wholly-owned subsidiary of BlackRock and, pending the approval of TCP Capital Corp.'s shareholders, remain the investment adviser of TCP Capital Corp. Current members of the TCP team will continue to be responsible for the investments of TCP Capital Corp. and continue to focus on executing the same proven investment strategies and process as they have since TCP Capital Corp.'s inception.

Howard Levkowitz, a Managing Partner of TCP and Chairman and CEO of TCP Capital Corp., said, "We are excited about the growth opportunities for our business as we continue to employ the successful strategy we pioneered nearly two decades ago. Our combination with BlackRock will provide TCPC with increased resources, scale, and market access to continue to build on our long track record in middle market performing credit and to enhance long-term value for our clients and shareholders."

Michael Leitner, a Managing Partner of TCP, said, "Joining BlackRock's Global Credit platform presents a unique and compelling opportunity to expand our combined resources. We look forward to collaborating with our new colleagues and leveraging BlackRock's unparalleled resources to enhance our ability to serve clients and borrowers. We are also excited about the opportunity to be a part of building what we are confident will be the premier business of its kind."

"We are focused on building a private credit business that seizes on long-term secular trends to deliver for clients the best results across risk spectrums and market cycles," said James Keenan, Global Co-Head of Credit at BlackRock. "The acquisition of TCP accelerates our growth plans and augments our position as a leading credit asset manager. With its high-quality team, excellent long-term track record across multiple market cycles, diverse expertise, and proven origination capabilities, TCP is the perfect complement to the existing credit business at BlackRock."

"The acquisition is the next step in BlackRock's efforts to expand its capabilities and impact of its alternatives business globally. We are focused on delivering a range of products and innovative solutions for clients in need of new sources of return and new ways to manage portfolio allocation and risk," said David Blumer, Global Head of BlackRock Alternative Investors.

The transaction, which is expected to close in the third quarter of 2018, is subject to customary regulatory and closing conditions. The financial impact of the transaction is not material to BlackRock earnings. Terms were not disclosed.

About BlackRock
BlackRock helps investors build better financial futures. As a fiduciary to our clients, we provide the investment and technology solutions they need when planning for their most important goals. As of March 31, 2018, the firm managed approximately $6.317 trillion in assets on behalf of investors worldwide. For additional information on BlackRock, please visit www.blackrock.com | Twitter: @blackrock | Blog: www.blackrockblog.com | LinkedIn: www.linkedin.com/company/blackrock.

About Tennenbaum Capital Partners
Tennenbaum Capital Partners, LLC ("TCP") is an alternative investment management firm with approximately $9 billion of committed capital focused on direct lending and special situations for middle-market companies. TCP manages funds and accounts on behalf of global institutional investors. It also manages a publicly-traded business development company, TCP Capital Corp. (NASDAQ:TCPC). Since its founding in 1999, TCP has invested approximately $22 billion in over 560 companies. TCP is headquartered in Los Angeles with additional offices in Atlanta, New York and San Francisco. For more information, please visit: www.tennenbaumcapital.com and www.tcpcapital.com.

Contacts:

For BlackRock

Media:
Tara McDonnell
(212) 810-5337
tara.mcdonnell@blackrock.com

Investors:
Tom Wojcik
(212) 810-8127
tom.wojcik@blackrock.com

For Tennenbaum Capital Partners

Media:
Mark Semer
Kekst
(212) 521-4800

Moira Conlon
Financial Profiles
(310) 622-8220

Investors:
Katie McGlynn
(310) 566-1003
investor.relations@tennenbaumcapital.com

LACERA

FOR INFORMATION ONLY

April 26, 2018

TO: Each Member
Board of Investments

FROM: Ted Wright, CFA, CAIA, FRM, PRM, TW
Principal Investment Officer, Global Equities

FOR: May 9 2018 BOARD OF INVESTMENTS MEETING

SUBJECT: **OPEB MASTER TRUST**

Attached is the quarterly report for the OPEB Master Trust, as of March 31, 2018.

Noted and Reviewed

Jonathan Grabel
Chief Investment Officer

Attachment
TW:st

OPEB MASTER TRUST

for the quarter ended March 31, 2018

COMMENTARY

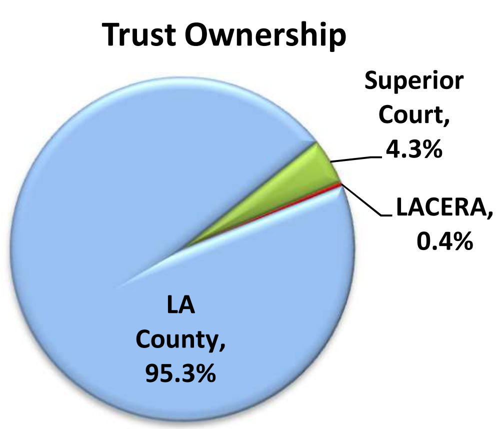
The OPEB Master Trust is comprised of three separate trusts; 1) Los Angeles County 2) LACERA and 3) Superior Court. Currently, the OPEB trusts are invested in two managers; BlackRock Institutional Trust Company manages the global equity index while J.P. Morgan Asset Management manages the cash allocation.

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 -0.91% for the quarter and underperformed the index return of -0.89% by 0.02%. The index performance reflected a return of -0.74% in the U.S., -7.47% in Canada, -1.76% in Europe, -0.39% in the Pacific region, and 1.25% in emerging markets.

The cash component is benchmarked to the Citigroup 6 month T-Bill Index and is invested in high quality, short-term debt instruments. For the quarter, this portion of the account returned 0.39%, outpacing the benchmark return by 0.04%. This modest outperformance was the result of the strategy's allocation to money market instruments and short-dated corporates. The portfolio's exposure to interest rate risk continues to be low, as signified by a duration of 0.29 years.

Fund Name	Inception Date	Market Value	Trust Ownership	Qtr	FYTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Los Angeles County:	Feb-2013	$856,361,103	95.3%						
Gross				-0.63	8.69	12.57	7.39	6.07	----
Net				-0.64	8.66	12.52	7.35	6.03	----
Net All[1]				-0.65	8.63	12.49	7.28	5.98	----
LACERA:	Feb-2013	$3,279,015	0.4%						
Gross				-0.61	8.79	12.69	7.45	6.11	----
Net				-0.62	8.76	12.65	7.41	6.07	----
Net All[1]				-0.67	8.27	11.97	6.74	5.66	----
Superior Court:	Jul-2016	$38,647,971	4.3%						
Gross				-0.64	8.26	11.85	----	----	----
Net				-0.65	8.22	11.81	----	----	----
Net All[1]				-0.67	8.10	11.65	----	----	----
TRUST OWNERSHIP TOTAL:		**$898,288,089**	**100.0%**						

[1] Includes Custody & LACERA's Administrative Fees.



OPEB MASTER TRUST

for the quarter ended March 31, 2018

MANAGER PROFILE	
Firm:	BlackRock Institutional Trust Co.
Location:	San Franciso, CA
Year Founded:	1985
Portfolio Manager:	Lilian Wan, Managing Director
Account Assets:	$699,828,878
Account Inception:	Mar-14
Benchmark:	MSCI ACWI IMI (Net)
Investment Style:	Global Equity

PERFORMANCE (NET)

	Qtr	FYTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
OPEB Global Equity	-0.91	10.47	15.27	8.58	----	----
MSCI ACWI IMI (Net)	-0.89	10.35	15.03	8.27	----	----

MANAGER PROFILE	
Firm:	J.P. Morgan Asset Management
Location:	New York, NY
Year Founded:	1871
Portfolio Manager:	Kyongsoo Noh, Exec. Director
Account Assets:	$168,108,971
Account Inception:	Feb-13
Benchmark:	Citigroup 6-month T-Bill
Investment Style:	Enhanced Cash

PERFORMANCE (NET)

	Qtr	FYTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
OPEB Enhanced Cash	0.37	1.03	1.36	0.92	0.67	----
CG 6-Month T-Bill	0.35	0.90	1.09	0.57	0.37	----

LACERA

OPEB Master Trust - Global Equity

MSCI ACWI IMI Index Fund

Q1 2018
Fact Sheet

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.

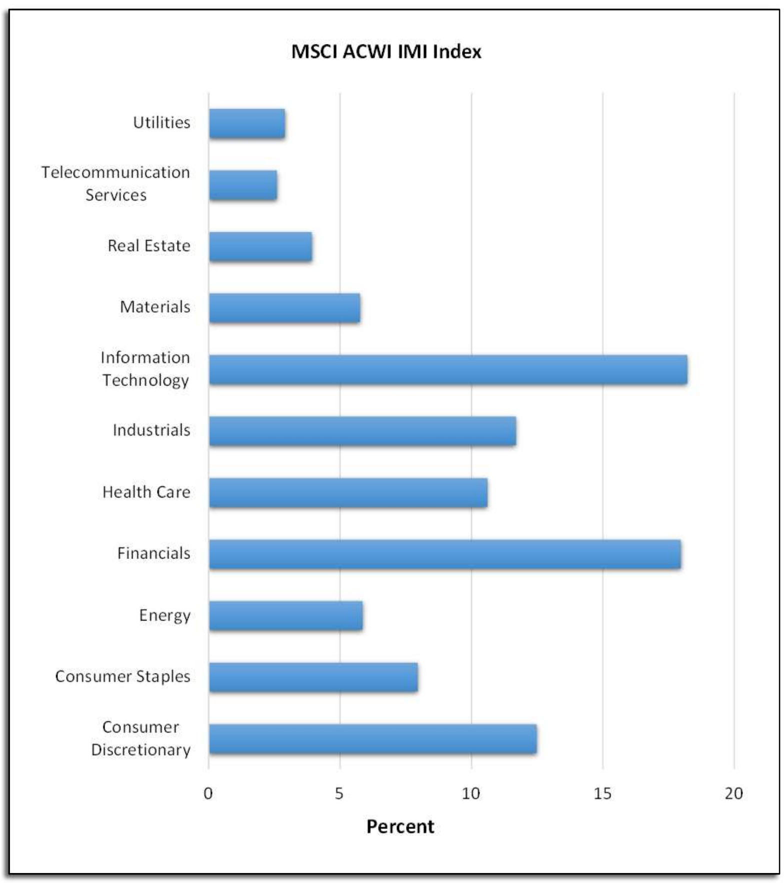
Performance

	MRQ	YTD	1-Year	3-Year	5-Year	Since Inception
OPEB Master Trust Fund Return GOF %	-0.90	-0.90	15.32	8.62	-	7.76
MSCI ACWI IMI Benchmark %	-0.89	-0.89	15.03	8.27	-	7.41
Excess	**-0.01**	**-0.01**	**0.28**	**0.35**	-	**0.36**

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	$2.90 billion
Fund Inception Date	03/23/2010

Benchmark characteristics

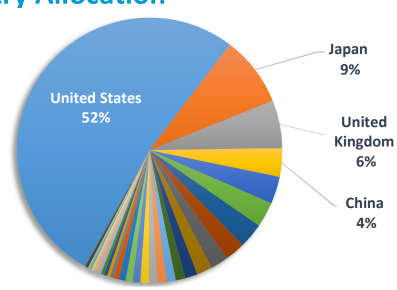
Number of Securities	8,592
Dividend Yield	2.35%

Benchmark Top 10 holdings

Company	Country	Fund (% assets)
Apple Inc.	United States	1.65
Microsoft Corporation	United States	1.28
Amazon.com, Inc.	United States	1.13
JPMorgan Chase & Co.	United States	0.73
Facebook, Inc. Class A	United States	0.73
Johnson & Johnson	United States	0.66
Alphabet Inc. Class C	United States	0.62
Exxon Mobil Corporation	United States	0.61
Alphabet Inc. Class A	United States	0.59
Tencent Holdings Ltd.	Hong Kong	0.57

Portfolio holdings are subject to change and are not intended as recommendation of individual securities.

Country Allocation



France	3.26	Denmark	0.59	Austria	0.12
Germany	3.05	Singapore	0.47	Philippines	0.12
Canada	2.99	Belgium	0.41	New Zealand	0.10
Switzerland	2.43	Russia	0.39	UAE	0.07
Australia	2.17	Finland	0.36	Portugal	0.06
Korea	1.86	Mexico	0.35	Qatar	0.06
Taiwan	1.51	Malaysia	0.32	Colombia	0.05
Netherlands	1.16	Thailand	0.31	Peru	0.05
Hong Kong	1.12	Norway	0.28	Greece	0.04
India	1.06	Indonesia	0.25	Hungary	0.04
Spain	1.04	Israel	0.20	Egypt	0.02
Sweden	0.99	Ireland	0.19	C. Republic	0.02
Italy	0.92	Chile	0.15	Pakistan	0.02
Brazil	0.87	Poland	0.14		
South Africa	0.80	Turkey	0.13		

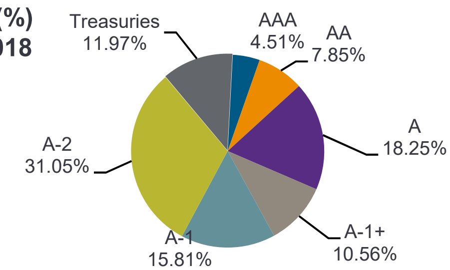
* **DM countries include**: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore Spain, Sweden, Switzerland, the UK and the US.
EM countries include: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russia, Qatar, South Africa Taiwan, Thailand, Turkey and the United Arab Emirates.

FACTSET © 2018 Factset Research Systems Inc. FactSet aggregates and redistributes estimates data and does not conduct any independent research. Nothing in our service constitutes investment advice or FactSet recommendations of any kind. Estimates data is provided for informational purposes only. FactSet has no relationship with creators of Estimates that may reasonably be expected to impair its objective presentation of such estimate or recommendation. FactSet redistributes estimates as promptly as reasonably practicable from research

Portfolio characteristics – LACERA OPEB

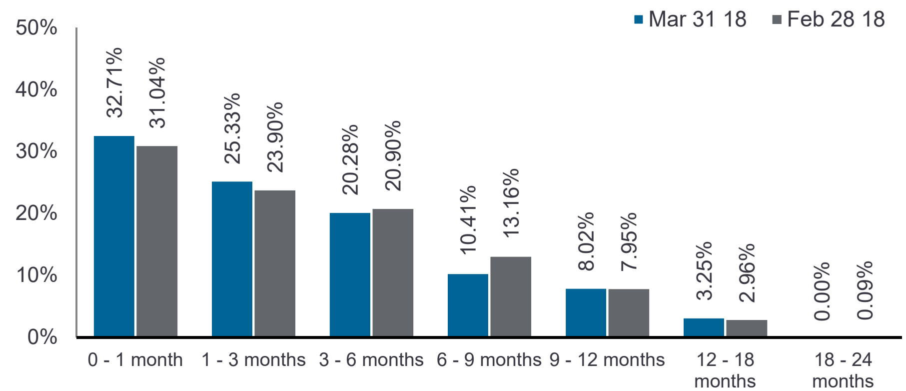
Portfolio Statistics	Mar 31 18	Feb 28 18	Change
Duration (yrs)	0.29	0.32	-0.03
Spread Duration (yrs)	0.28	0.30	-0.02
Average Yield (%)	2.32	2.02	0.30
Average Life (yrs)	0.33	0.36	-0.03
Average Credit Quality	A+	A+	-

Credit quality* (%) as of Mar 31, 2018

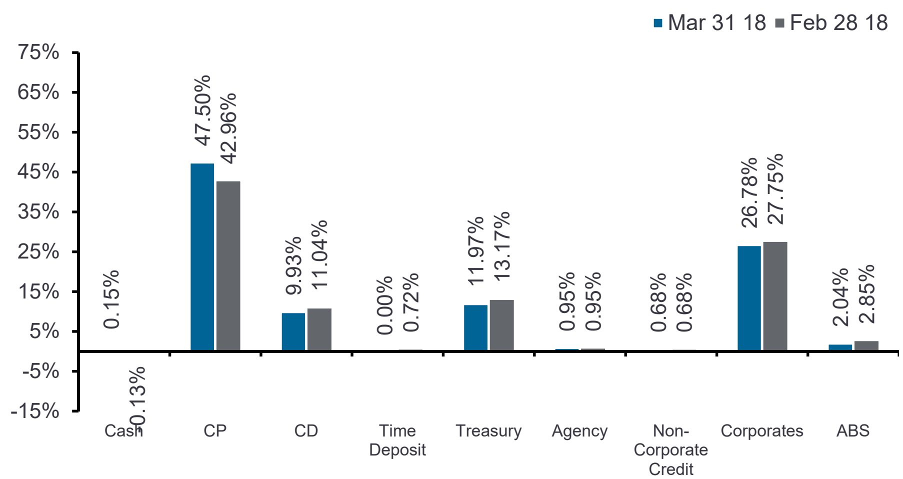


	Mar 31 18	Feb 28 18
Treasuries	11.97%	13.17%
AAA	4.51%	5.06%
AA	7.85%	7.36%
A	18.25%	19.70%
A-1+	10.56%	9.21%
A-1	15.81%	16.51%
A-2	31.05%	28.99%
Total	100.00%	100.00%

Duration Distribution



Sector Allocation



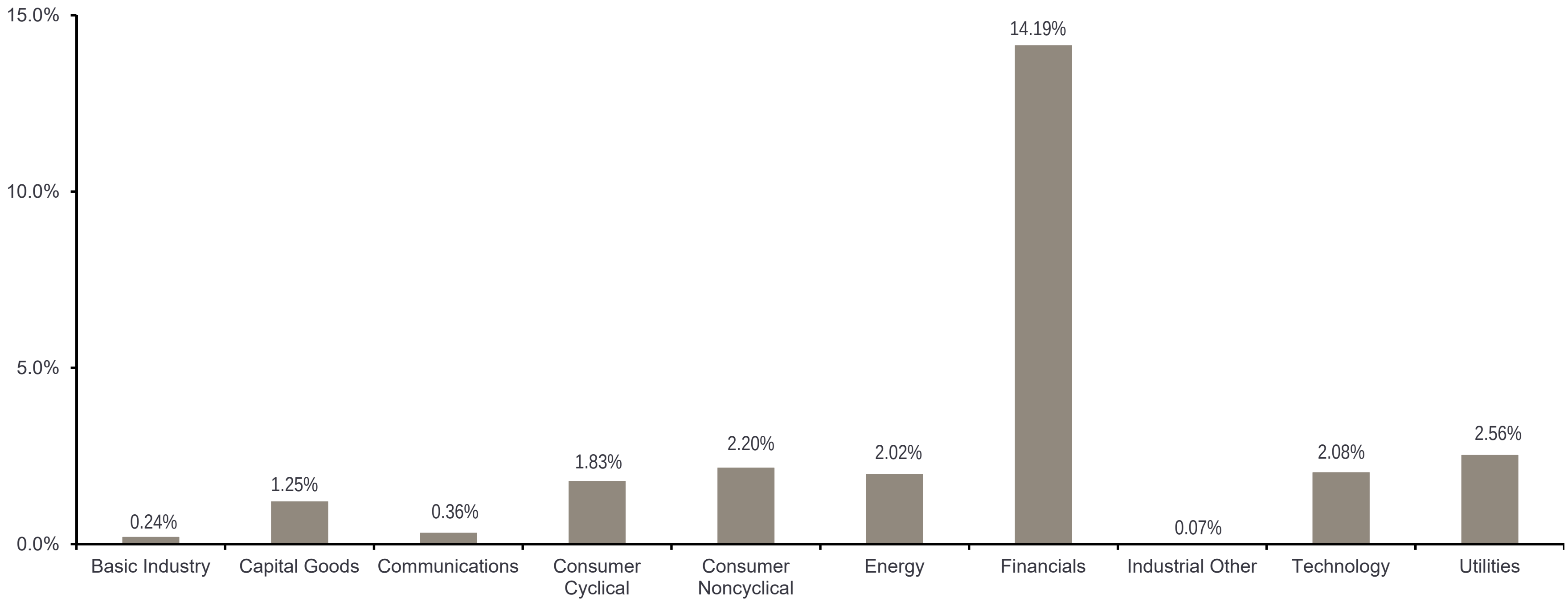
The above information is shown for illustrative purposes only.
*Quality distribution uses the middle of the split ratings.

J.P.Morgan Asset Management

Portfolio corporate sector allocation – LACERA OPEB (290760)

As of March 31, 2018

Corporate Sector Allocation (% Market Value)



The above information is shown for illustrative purposes only.

J.P.Morgan Asset Management

L//.CERA

FOR INFORMATION ONLY

May 1, 2018

TO: Each Member
Board of Investments

FROM: Steven P. Rice SPR
Chief Counsel

FOR: May 9, 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 May 1, 2018.

Attachment

c: Robert Hill
James Brekk
John Popowich
Bernie Buenaflor
Jon Grabel
Vache Mahseredjian
John McClelland
Christopher Wagner
Ted Wright
Jim Rice
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 May 1, 2018

	Project/ Investment	Description	Amount	Board Approval Date	Completion Date	% Complete	Notes
EQUITIES/FIXED INCOME	BlackRock Trust Company	Conversion of Designated Public Equity and Fixed Income Collective Funds to Separate Accounts	$20,800,000,000.00	January 10, 2018	In Progress	75%	Legal review and negotiation of IMA in progress; meetings with business team to discuss IMA terms; calls with Blackrock to discuss deal terms and timing; continue trading comments with Blackrock regarding IMA terms.
EQUITIES/FIXED INCOME	BTC Intermediate Credit Bond Index Fund	Termination Notice	n/a	February 14, 2018	In Progress	50%	Termination will be addressed through the new Blackrock Trust Company Investment management agreement referenced in #1 above.
HEDGE FUNDS	HBK Multi-Strategy Fund, L.P.	Subscription	$250,000,000.00	January 10, 2018	Complete	100%	Documentation completed, executed and sent to fund.
PRIVATE EQUITY	JP Morgan Investment	Private Equity Emerging Manager Separate Account Investment Management Agreement	$300,000,000.00	December 13, 2017	In Progress	25%	Further meetings with business team to discuss terms; final agreement is not expected until second half of the year given manager is still investing funds from prior commitment; expect to send out a draft IMA shortly.
PRIVATE EQUITY	Morgan Stanley (GTB II Capital Partners)	Co-Investment Program Additional Allocation	$100,000,000.00	February 14, 2018	In Progress	75%	Legal review and documents for additional allocation close to finalization.
PRIVATE EQUITY	Juggernaut Capital Partners IV, L.P.	Subscription	$125,000,000.00	April 11, 2018	Complete	100%	Documentation completed and executed; subscription accepted by fund.

PERFORMANCE REVIEW

AS OF MARCH 31, 2018

Table of Contents

EXECUTIVE SUMMARY

for the quarter ended March 31, 2018

TOTAL FUND PERFORMANCE

LACERA's Total Fund generated flat returns in the first quarter but exceeded its policy benchmark return of -0.2% by 20 basis points (bps). Results were mixed as four of the seven asset classes posted negative returns. For the fiscal year-to-date, the Total Fund returned 7.6% and outperformed the policy benchmark by 120 bps. All asset classes generated positive returns for fiscal year-to-date.

LACERA's U.S. Equity composite returned -0.7% for the quarter and trailed its benchmark by 10 bps. Three of seven active managers underperformed their respective benchmarks.

LACERA's Non-U.S. Equity composite also lagged its benchmark of -1.7% by 10 bps for the quarter. Outperformance from emerging markets managers was offset by underperformance from developed markets managers.

LACERA's Fixed Income Composite outperformed its benchmark by 60 bps for the quarter (-0.8% vs. -1.4%). This outperformance was primarily attributable to LACERA's allocation to Opportunistic strategies, combined with solid performance by LACERA's Core and Core Plus managers.

LACERA's Real Estate portfolio lagged its benchmark return of 1.9% by 10 bps. LACERA's Private Equity portfolio rose 5.3% versus its benchmark return of 3.3%, an outperformance of 200 bps. The Hedge Funds portfolio rose 2.0% and surpassed its benchmark by 50 bps. As a reminder, short-term results are not very meaningful for these three categories.

LACERA's Commodities composite outperformed by 30 bps for the quarter (-0.1% vs. -0.4%), with two of the three managers outperforming the Index.

	Qtr	FYTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
U.S. Equity	**-0.7**	**10.2**	**13.6**	**10.0**	**13.0**	**9.7**
RUSSELL 3000 (DAILY)	-0.6	10.5	13.8	10.2	13.0	9.6
Non-U.S. Eq 50% Dev Mkt Hdg'd	**-1.8**	**9.3**	**14.8**	**7.1**	**8.0**	**4.0**
CUSTOM MSCI ACWI IMI N 50%H	-1.7	9.1	14.3	6.4	7.3	3.6
Fixed Income*	**-0.8**	**1.2**	**3.0**	**3.1**	**3.2**	**5.4**
FI CUSTOM INDEX	-1.4	-0.0	1.5	1.7	2.2	4.1
BBG BC U.S. Universal	-1.4	-0.0	1.5	1.7	2.2	4.0
Real Estate**	**1.8**	**6.0**	**7.6**	**10.2**	**10.2**	**3.8**
REAL ESTATE TARGET	1.9	5.4	7.1	9.9	10.8	6.2
Private Equity**	**5.3**	**16.3**	**20.1**	**12.7**	**15.2**	**11.3**
PRIVATE EQUITY TARGET	3.3	9.7	13.1	13.0	13.3	10.5
Commodities	**-0.1**	**9.3**	**6.2**	**-1.3**	**-6.6**	**-5.8**
Bloomberg Commodity Index Total Return	-0.4	6.9	3.7	-3.2	-8.3	-7.7
Hedge Funds***	**2.0**	**5.1**	**5.4**	**3.2**	**4.7**	
HEDGE FUND CUSTOM INDEX	1.5	4.6	6.0	5.5	5.3	
Cash	**0.4**	**1.0**	**1.3**	**0.9**	**0.7**	**0.8**
Citigroup 6 M Treasury Bill Index	0.3	0.9	1.1	0.6	0.4	0.4
Total Fund (Gross of Fees)	**0.0**	**7.6**	**10.6**	**7.3**	**8.4**	**6.3**
TOTAL FUND POLICY BENCHMARK	-0.2	6.4	9.1	6.8	7.8	6.2
Total Fund (Net of Fees)	**-0.1**	**7.4**	**10.4**	**7.1**	**8.1**	**6.1**

All asset class returns shown are Gross of Fees. Yearly returns are annualized.
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.

EXECUTIVE SUMMARY

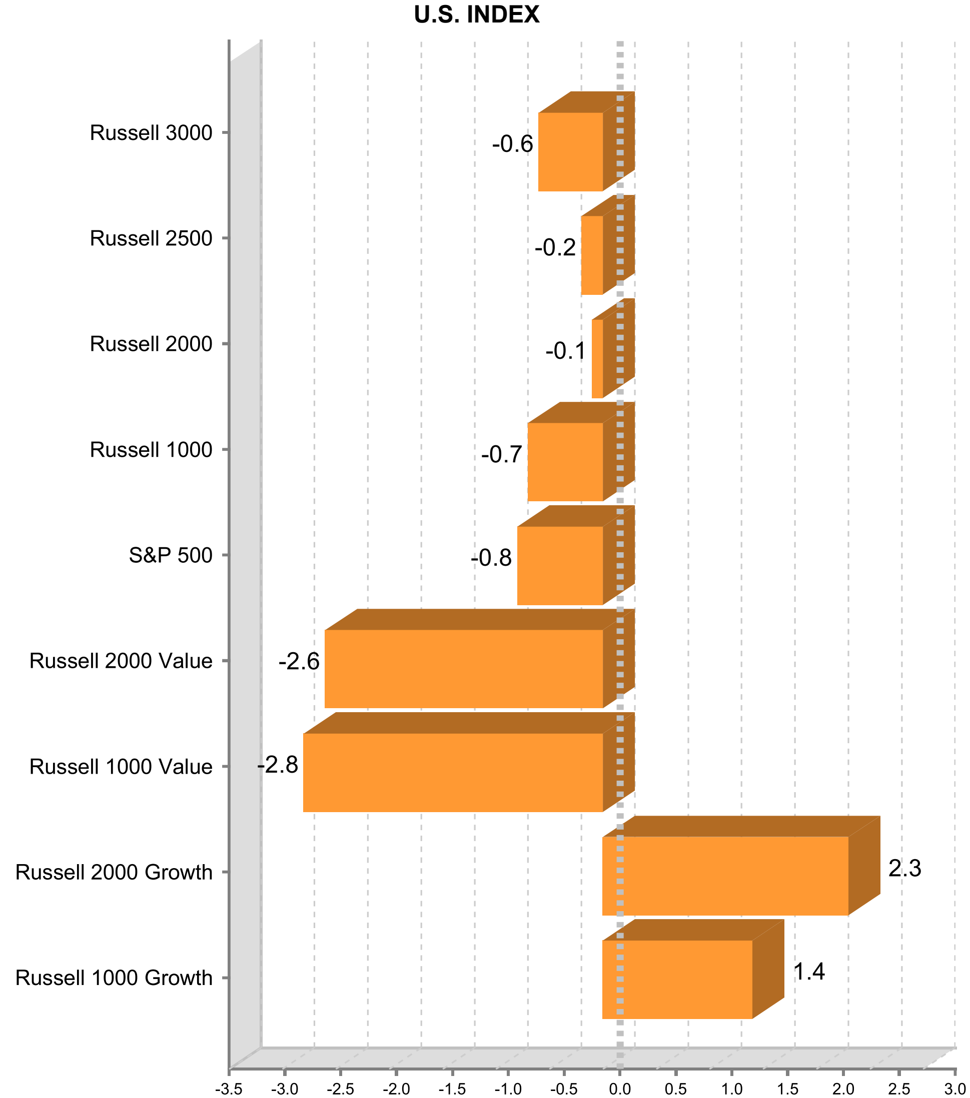
for the quarter ended March 31, 2018

EQUITY MARKET REVIEW

After nine consecutive quarters of positive returns, global equities retreated in the first quarter amid investor concern of rising inflation, the prospect of accelerated interest rate hikes by the U.S. Federal Reserve (Fed), and the impact of potentially strained trade relations between the U.S. and China. The MSCI ACWI IMI index declined 0.9% in the first quarter.

U.S. stocks started the year strong, rising in January on the back of positive macro-economic data. Investors were encouraged by a strong earnings picture, continued strength in the labor market, and a rebound in U.S. consumer confidence. However, stocks declined in February and March amid investor fears of an overdue market correction and a potential trade war between the U.S. and China. The Fed raised interest rates by 0.25% at its March meeting, citing a strengthened economic outlook.

LACERA's U.S. equity benchmark, the Russell 3000 Index, returned -0.6%. In a reversal of last quarter, small capitalization (cap) stocks outperformed large caps. The small cap Russell 2000 Index declined 0.1% compared to a 0.7% decrease in the large cap Russell 1000 Index. Growth stocks continued to outperform their value counterparts across all market capitalizations.



EXECUTIVE SUMMARY
for the quarter ended March 31, 2018

EQUITY MARKET REVIEW

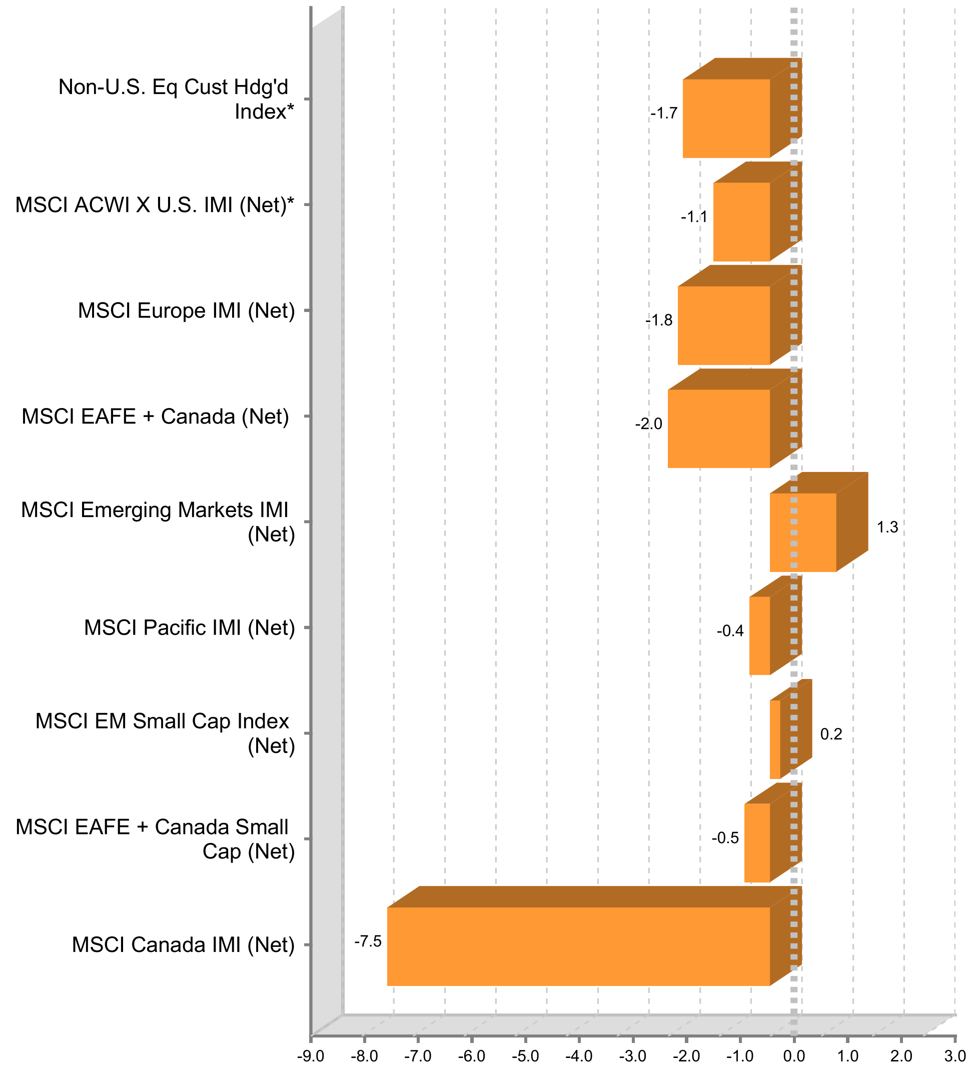
Non-U.S. equity markets, as represented by the MSCI ACWI ex-U.S. IMI (unhedged) index, fell 1.1% for the quarter. Emerging markets posted the strongest returns, rising 1.3%. Canada, Europe, and the Pacific region declined 7.5%, 1.8%, and 0.4% respectively.

The U.S. dollar (USD) had mixed results versus most major currencies. The USD weakened 5.6% versus the Japanese yen, 3.7% versus the British pound, and 2.5% against the Euro. The USD strengthened 2.5% 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 -1.0% for the quarter.

European equities tumbled in the first quarter, posting negative returns for the first time since the fourth quarter of 2016. Most of the economic data released during the quarter was positive, however, concerns about global trade relations, and uncertainty over the pace of the Fed's interest rate hikes weighed on investor sentiment. The ECB left rates unchanged at its March meeting and reiterated that it would continue its asset purchase program of 30 billion euros per month through September 2018, or beyond if necessary.

Pacific Basin stocks followed their developed markets counterparts lower in the first quarter. In local terms, Japan suffered losses; however, the yen appreciation versus the USD boosted returns for U.S. based investors. Japan returned 1.1% in USD terms for the quarter. Emerging markets extended gains from prior quarter for their fifth consecutive quarterly gain. Brazil and Russia helped drive the region higher, propelled mainly by the continued rise in commodity prices.

NON-U.S. INDEX



* See Glossary

EXECUTIVE SUMMARY

for the quarter ended March 31, 2018

EQUITY MANAGER REVIEW

Large Cap

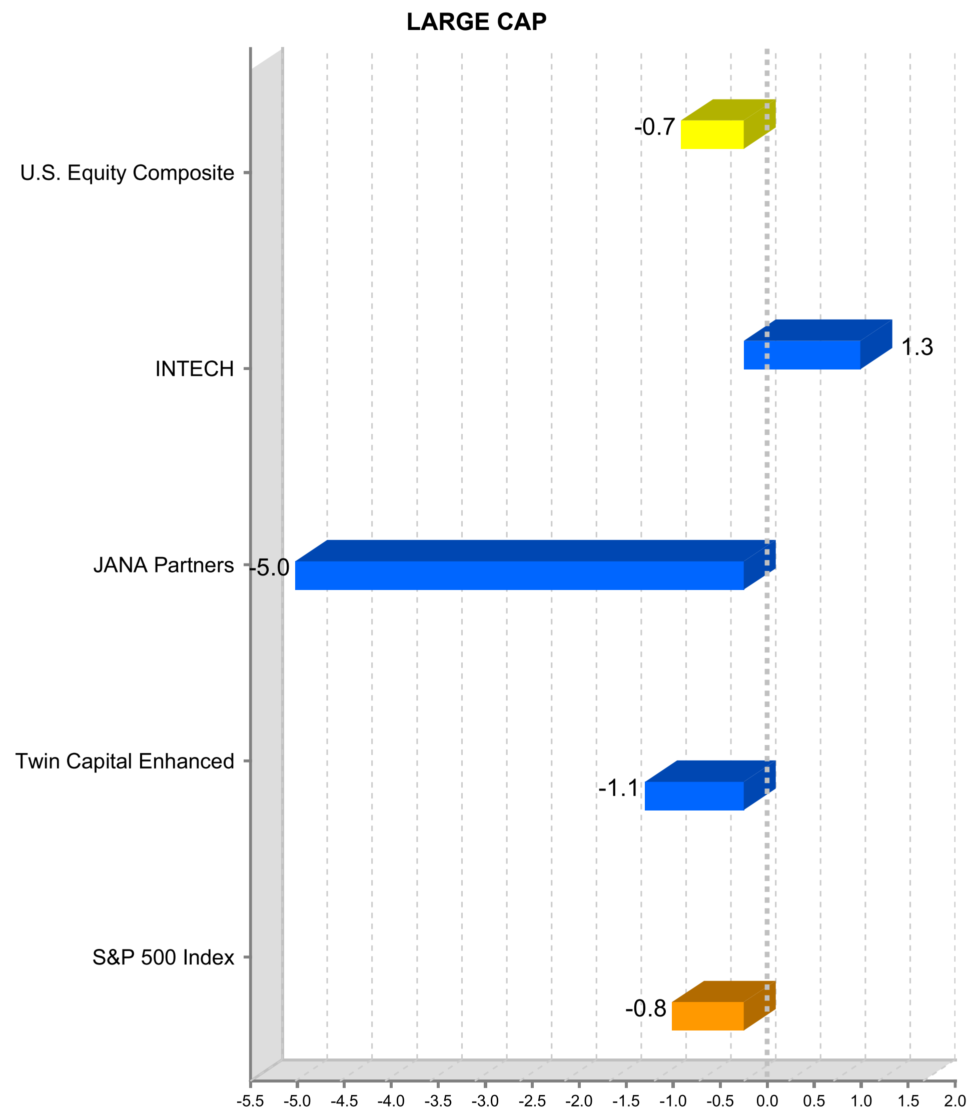
LACERA's active U.S. Large Cap managers posted mixed results as two of the three managers underperformed their respective benchmarks during the quarter. The U.S. equity market posted slightly negative returns as investors were balancing the positive impact on earnings from corporate tax rate changes against rising geopolitical tensions.

INTECH, one of LACERA's two quantitative managers, outperformed its benchmark by 210 bps due to stock selection within the industrials, information technology, financials, and health care sectors.

Twin, the other quantitative manager, underperformed its benchmark by 30 bps through stock selection in the industrials and health care sectors.

JANA Partners, the U.S. focused activist manager, underperformed its benchmark by 420 bps as the manager had large positions in the energy and health care sectors that had a negative price change during the quarter.

As of quarter end, one large cap manager had observations* outside its calculated performance bands: INTECH (one observation above).



See Glossary for all Custom Index definitions.
* Each quarterly observation is based on trailing one year excess returns.

EQUITY MANAGER REVIEW (...cont.)

Small/Mid Cap

LACERA's small/mid cap managers also posted mixed results as two of the four managers outperformed their respective benchmarks but the group underperformed in aggregate.

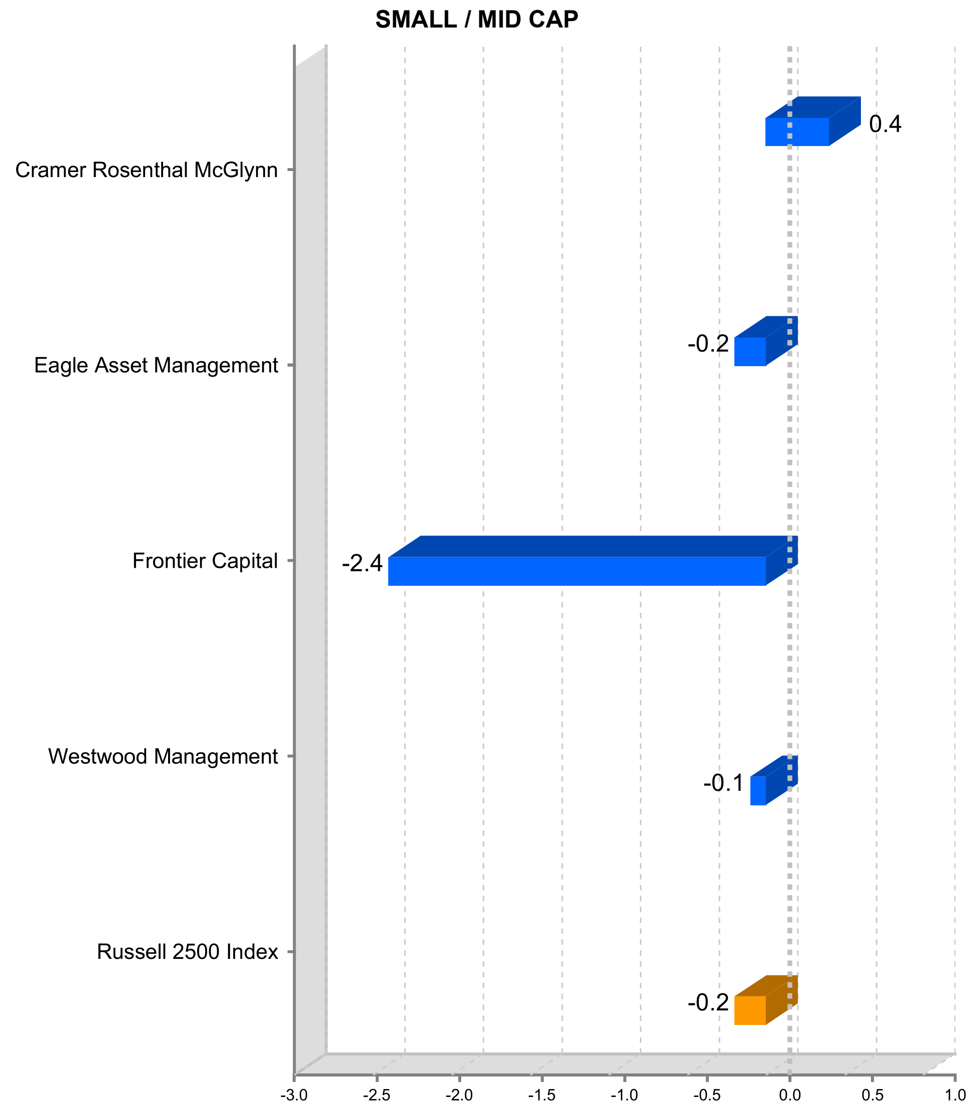
CRM outperformed its benchmark by 60 bps due to positive stock selection in the consumer discretionary and information technology sectors.

Eagle matched its benchmark through positive stock selection in the energy sector.

Frontier underperformed by 220 bps due to an overweight to and stock selection in the materials and information technology sectors.

Westwood outperformed its benchmark by 10 bps driven by stock selection in the energy sector.

As of quarter end, no small/mid cap manager had observations* outside their calculated performance bands.



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

EQUITY MANAGER REVIEW (...cont.)

Non-U.S.

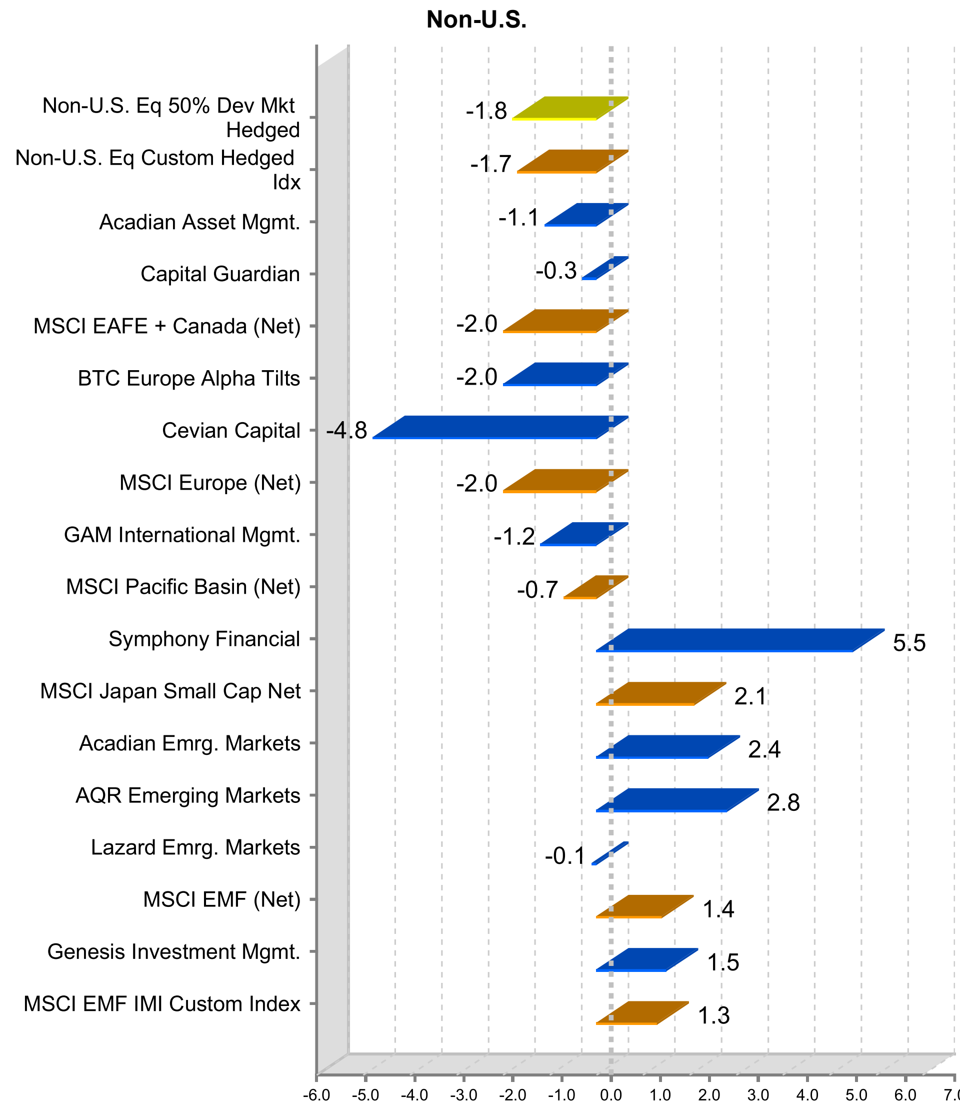
LACERA's non-U.S. equity managers underperformed the composite benchmark as a group as positive results among emerging markets managers were offset by underperformance from developed markets managers.

Among the developed markets managers, **Acadian** surpassed its benchmark by 90 bps due to stock selection in the United Kingdom and in the financials sector. **Capital Guardian's** EAFE+Canada strategy outperformed its benchmark by 170 bps due to an underweight allocation to Canada and stock selection within the financials and industrials sectors.

BlackRock Europe Tilts was flat versus its index as positive stock selection in the United Kingdom and Finland was offset by negative stock selection in the consumer staples sector. **Cevian** trailed its benchmark by 280 bps. Stock selection in Switzerland and the industrials sector was the main detractor. **GAM** lagged its benchmark by 50 bps due to stock selection in Japan and in the consumer discretionary sector. **Symphony** generated 340 bps of relative returns. An overweight to, and stock selection within, the information technology sector drove results.

In emerging markets, **Acadian** exceeded its benchmark by 100 bps, driven by stock selection in China and in the financials sector. **AQR** outperformed by 140 bps mainly due to country and currency positioning. **Lazard's** closed-end fund strategy lagged its index by 150 bps due to an underweight allocation to Latin American funds and selection among Asian funds. **Genesis**' outperformance of 20 bps was mostly attributable to stock selection in India and within the information technology sector.

As of quarter end, one non-U.S. equity manager had observations* outside its calculated performance bands: Acadian Developed (four observations above).



See Glossary for all Custom Index definitions.
* Each quarterly observation is based on trailing one year excess returns.

EXECUTIVE SUMMARY
for the quarter ended March 31, 2018

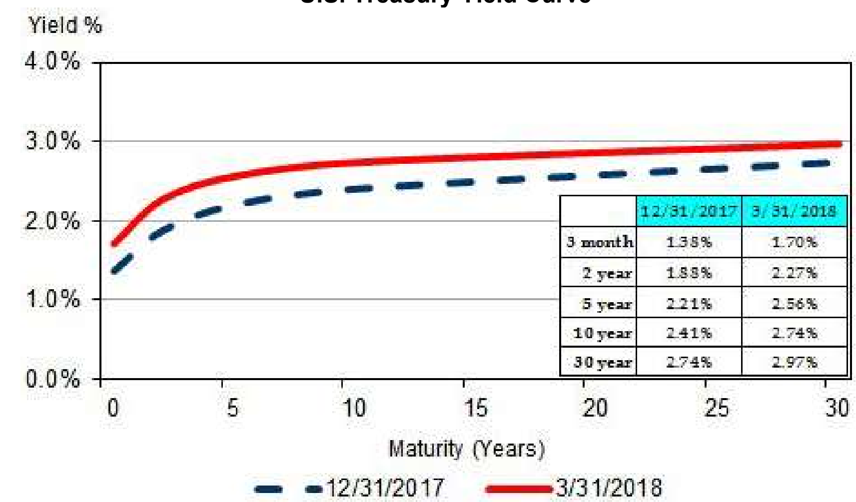
FIXED INCOME MARKET REVIEW

The U.S. fixed income market returned -1.4% for the first quarter (measured by the Bloomberg Barclays U.S. Universal Index). Bond markets declined in January as returns to duration and credit were almost uniformly negative, with only floating rate-loans standing out as providing a positive total return. Market sentiment shifted following the January employment release at month-end. Investors feared that inflation would return due to rising wages. In March, there were further catalysts for market stress as headlines regarding protectionist policies and the threat of trade war made for volatile trading. As a result, investors shifted out of credit and into safe haven bonds like Treasuries and Mortgages.

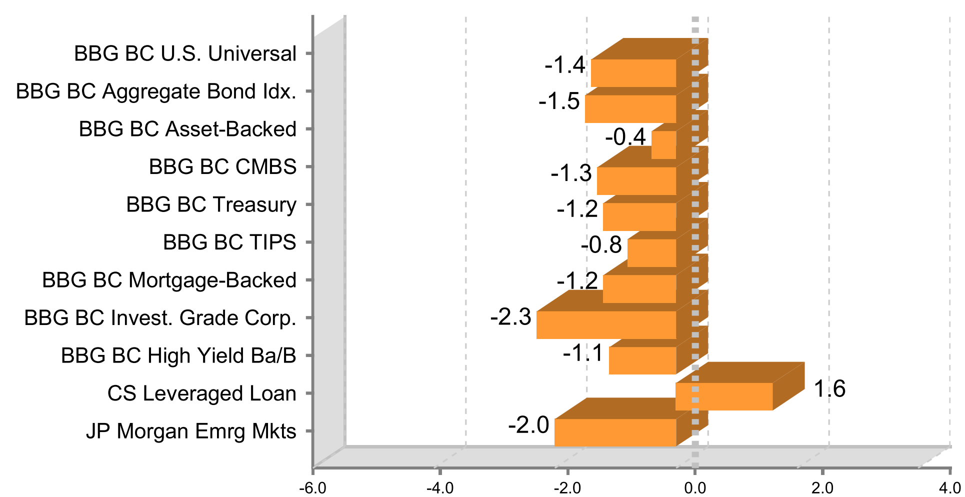
The 10 year Treasury yield opened the quarter at 2.4% and moved higher for most of the quarter, reaching a high of 2.9%, on positive economic data and expected Fed tightening. However, the return of volatility drove yields down to finish the quarter at 2.7%. The Fed hiked rates by 25 bps in March bringing the Fed Funds Target range to 1.5% - 1.8%. The yield curve ended the quarter slightly flatter with the yields of shorter-term bonds rising more than yields of longer-term bonds. Nevertheless, given their shorter duration, shorter-term bonds generally outperformed longer-term bonds.

During the quarter, U.S. fixed income markets produced negative returns across all sectors with the exception of leveraged loans as the CSFB Leveraged Loan Index returned 1.6%. Higher quality corporate issues underperformed lower quality bonds as Investment Grade Credit was the worst performer, returning -2.3% while High Yield bonds fared better, returning -1.1%. Credit sectors as a whole underperformed government bonds (-2.3% vs. -1.2%). TIPS[1] outperformed nominal Treasuries (-0.8% vs. -1.2%) as inflation expectations remained elevated. Among securitized sectors, ABS[1] outperformed MBS[1] (-0.4% vs -1.2%) and CMBS[1] (-1.3%) for the quarter mainly due to its shorter duration.

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 March 31, 2018

FIXED INCOME MANAGER REVIEW

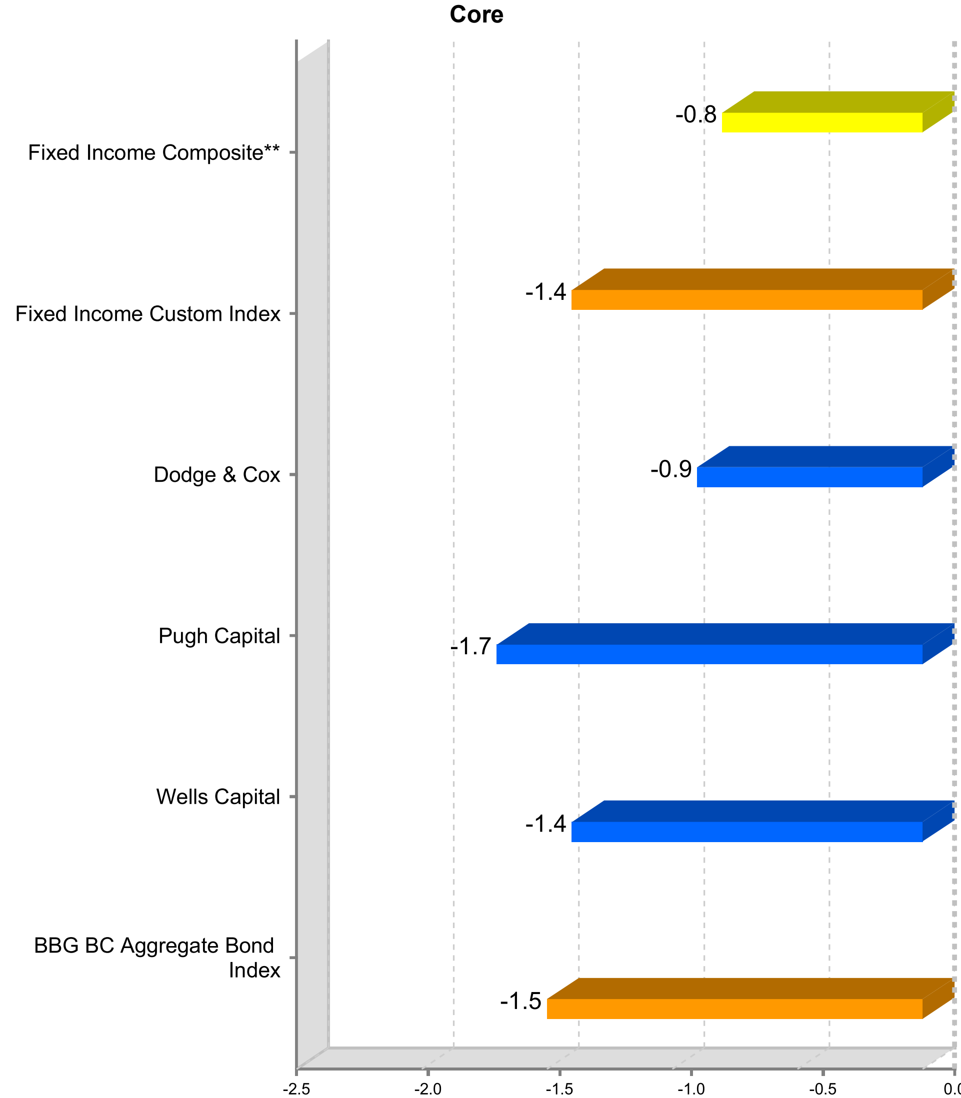
Core

LACERA's three core managers generated mixed results for the quarter. **Dodge & Cox** was the best performing core manager, outpacing the Bloomberg Barclays Aggregate Index by 60 bps. Dodge's shorter-than-benchmark duration was the primary driver of performance, along with security selection within corporate bonds and MBS.

Wells Capital outperformed the benchmark by a few basis points because of positive security selection within consumer ABS, MBS, and corporate sectors.

Pugh Capital trailed the Aggregate Index by 20 bps. An overweight allocation to corporates, the weakest segment of the major index sectors, was the primary driver of underperformance.

As of quarter end, one core manager had observations* outside its calculated performance bands: Dodge & Cox (seven observations above).



* 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 March 31, 2018

FIXED INCOME MANAGER REVIEW (...cont.)

Core Plus

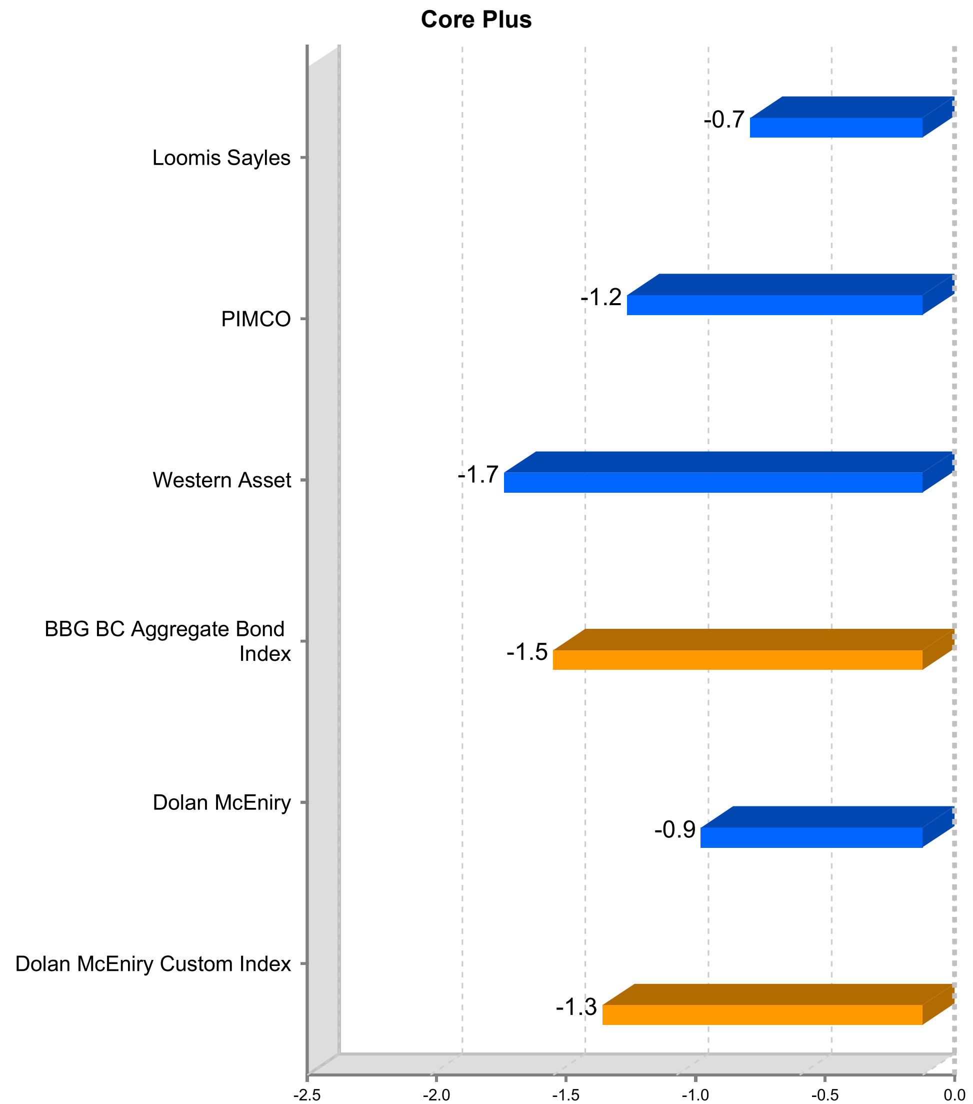
Three of LACERA's four core plus managers outperformed their respective benchmarks for the quarter. **Loomis Sayles** performed the best among these managers, surpassing the Aggregate Index by 80 bps. This outperformance was the result of solid security selection within corporates (investment grade and high yield), underweight exposure to U.S, Treasury securities, positioning in TIPS, and exposure to the Mexican peso.

Dolan McEniry (LACERA's only fixed income emerging manager), outpaced its custom benchmark by 40 bps for the quarter. Dolan's credit selection within corporates (investment grade and high yield), primarily within telecommunications, aerospace, and media sectors, combined with zero exposure to MBS were the key determinants of performance.

PIMCO outperformed the Aggregate Index by 30 bps, due to the positive effects of the portfolio's shorter-than-benchmark duration, corporate security selection, and an out-of-benchmark allocation to Non-Agency MBS.

Western Asset lagged the benchmark by 20 bps for the quarter. The portfolio's longer-than-benchmark duration, combined with security selection within corporates were the primary detractors of performance for the quarter.

As of quarter end, three core plus managers had observations* outside their calculated performance bands: Dolan McEniry and Loomis Sayles (each had seven observations above) and PIMCO (five observations above).



See Glossary for all Custom Index definitions.
* Each quarterly observation is based on trailing one year excess returns.

EXECUTIVE SUMMARY
for the quarter ended March 31, 2018

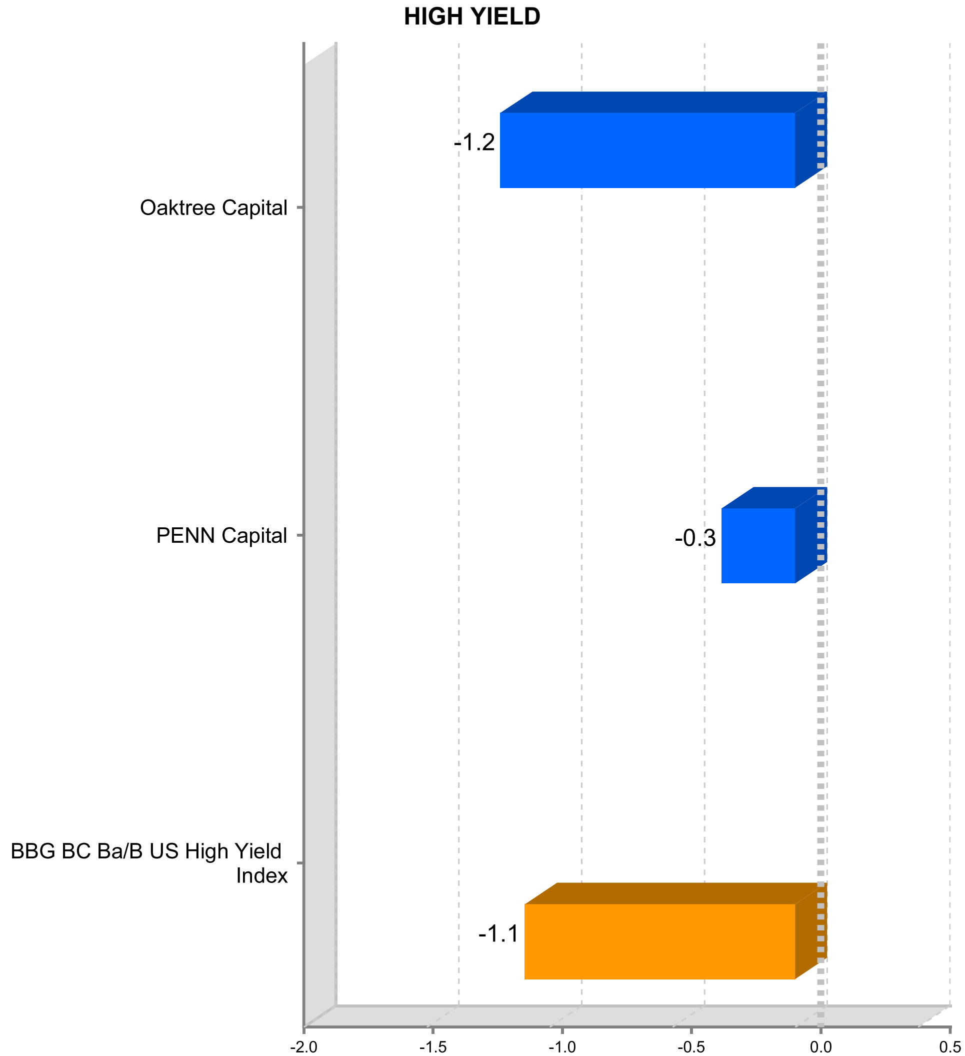
FIXED INCOME MANAGER REVIEW (...cont.)

High Yield

LACERA's high yield managers had differing results for the quarter. **PENN Capital** outperformed the Bloomberg Barclays High Yield Ba/B Index by 80 bps. The portfolio benefited from an overweight to single B-rated credits, security selection in telecommunications, energy, and media/broadcasting sectors, and an underweight to European credits.

Oaktree Capital trailed the Index by 10 bps. This underperformance was the result of an underweight to and security selection within the wireless sector, and credit selection within the independent energy sector.

As of quarter end, one high yield manager had observations* outside its calculated performance bands: Oaktree Capital (two observations below).



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

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. Eligible investments include non-traditional fixed income such as bank loans, high yield corporate bonds, distressed securities, asset-backed bonds, emerging markets debt, and private debt. Collectively, the opportunistic managers continued to surpass the Core and Core Plus sub-composites, outperforming each by 190 bps.

LACERA's emerging market debt managers, **Ashmore** and **Aberdeen**, registered the best and worst relative return amongst the Opportunistic fixed income line-up. Ashmore was the top performer, outpacing the index by 130 bps due to its allocations to local currency bonds. Holdings within Brazil, Mexico, and South Africa boosted relative return. Aberdeen also benefitted from holding local currency debt within Brazil and Mexico, but ultimately lagged the benchmark by 90 bps as a result of portfolio exposure to Venezuelan and Russian debt.

Tennenbaum outperformed the benchmark by 110 bps. Bond selection within utilities, financials, and chemicals drove relative performance. **TCW's** 100 bps of outperformance was a result of sub-prime Non-Agency MBS positions as well as exposure to student loan ABS debt.

Brigade surpassed its index by 80 bps. Bank loan exposure was the primary driver of performance, followed by an allocation to municipal bonds. **Beach Point's** 60 bps of relative outperformance was mainly due to a relative overweight to floating rate debt which rallied early in the quarter.

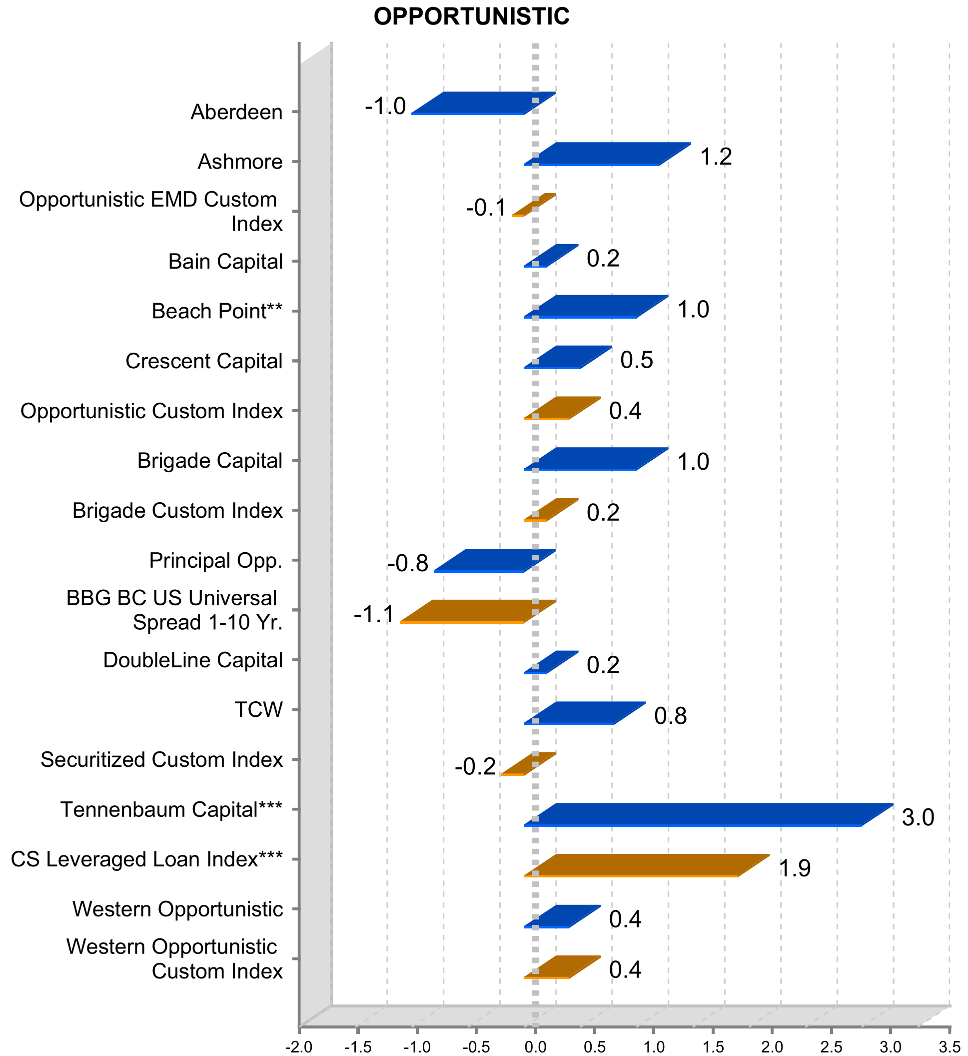
DoubleLine and **Principal** exceeded their benchmarks by 40 and 30 bps, respectively. DoubleLine's CLO and MBS holdings added the most value in the quarter.

Security selection within investment grade corporate bonds drove Principal's performance. Shorter-than-benchmark duration positioning was also additive.

Crescent's portfolio outperformed by 10 bps, mostly through bond holdings within consumer cyclical and financial sectors.

Western performed in line with its benchmark for the quarter: Gains made in exposure to Non-Agency RMBS were offset by their CLO holdings. **Bain** lagged the index by 20 bps through security selection within the media and industrial sectors.

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



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 March 31, 2018

COMMODITIES MARKET REVIEW

The Bloomberg Commodity Index (BCOM) fell 0.4% in the first quarter, with 13 of the 22 Index constituents posting negative returns. As a group, energy and agriculture were the only sectors with positive returns.

Energy, the largest sector in the index, returned a modest 1.8% for the quarter. Oil prices increased on news that OPEC and non-member nations agreed to extend production cuts. As a result, WTI crude, Brent crude, and gasoline rose 8.8%,5.4%, and 0.9%, respectively. Natural gas was the worst performing commodity within energy, declining 6.9% due to reduced demand post the winter heating season.

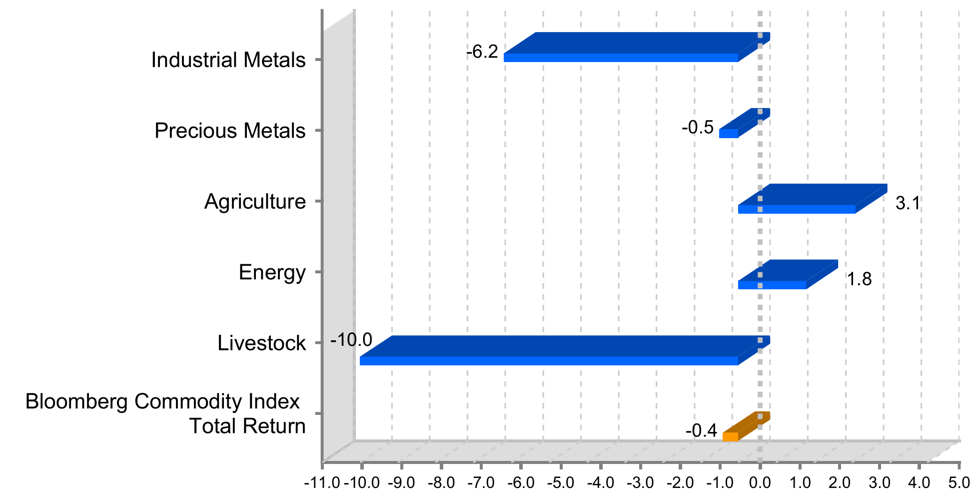
Agriculture, the second largest index sector, posted a 3.1% gain. Softs (coffee, cotton, and sugar) returned -10.1%, while grains gained 7.1%. Grains represent nearly 80% of the sector and were buoyed by the returns of corn (+8.7%), soybeans (+7.9%), and soybean meal (+20.7%). All three commodities benefitted from drought conditions in South America as well as lower-than-expected U.S. planting projections. The negative return for softs was driven by sugar, which fell 17.9% in the quarter due to excess global supplies.

Industrial Metals declined by 6.2% as concerns over a brewing global trade war between China and the U.S. intensified. The two largest components of the sector, aluminum and copper, fell 12.0% and 8.6%. The one stand-out within industrial metals was nickel, which returned 4.2%. Nickel is a key raw material in the batteries of electric vehicles; as global demand for electric cars increased over the quarter, nickel prices rose.

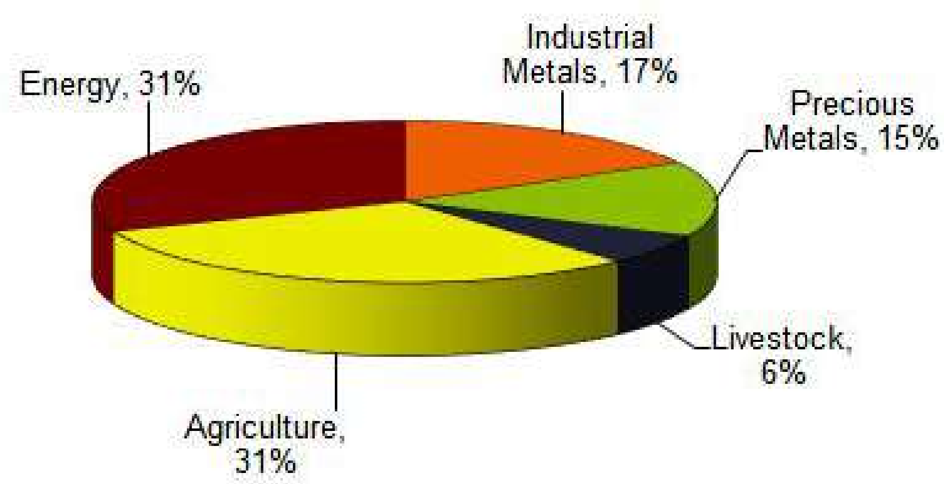
Precious Metals dropped 0.5%, with gold and silver posting mixed results. Gold, the sector's largest component, gained 1.0%, while silver traded down 5.2%. Silver, which is linked to Chinese industrial demand, declined off heightened Sino-U.S. trade tensions.

Livestock suffered the worst return for the quarter, declining 10.0%. Weak domestic demand, abundant supplies, and heightened concern over trade policies drove down the price for both live cattle (-10.4%) and lean hogs (-10.7%).

Bloomberg Commodity Index Total Returns



Bloomberg Commodity Index Sector Weights



EXECUTIVE SUMMARY

for the quarter ended March 31, 2018

COMMODITIES MANAGER REVIEW

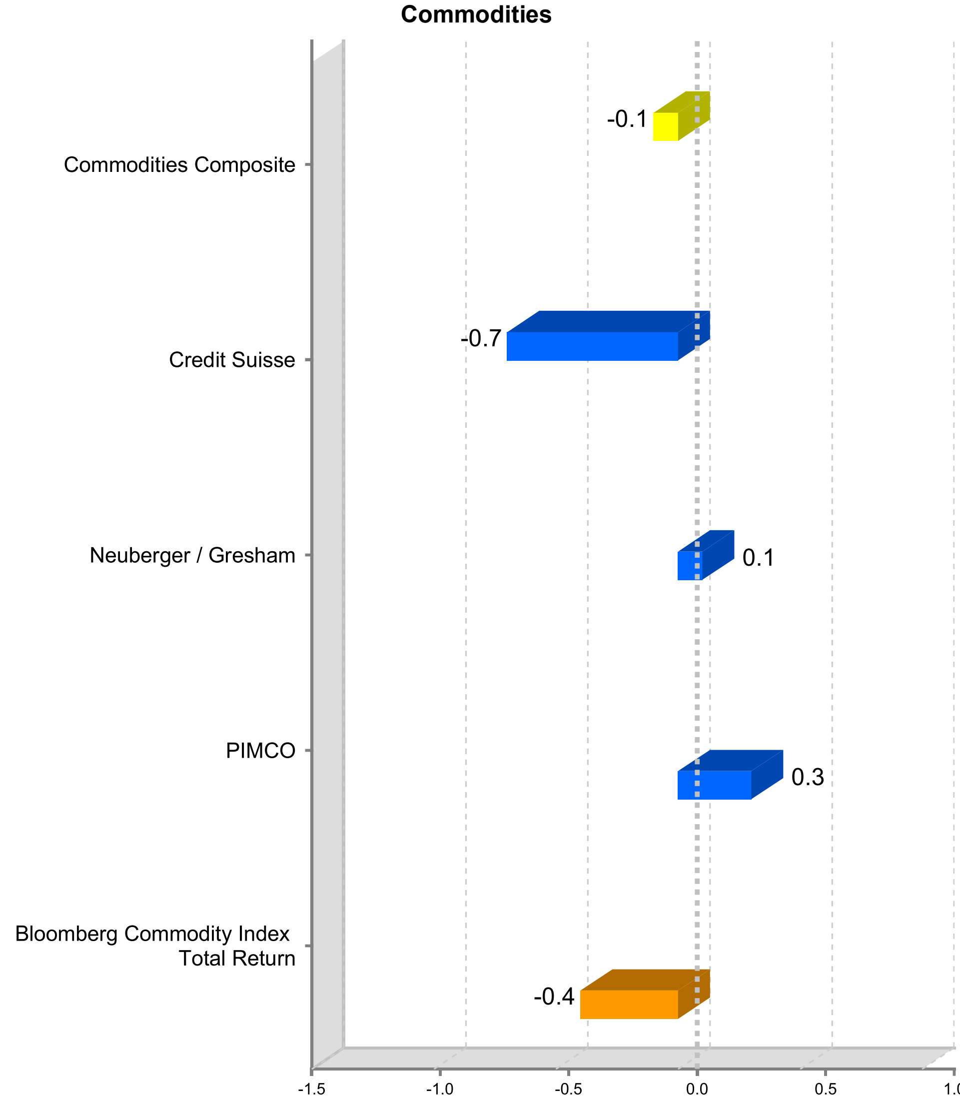
LACERA's commodities composite outperformed the benchmark, the Bloomberg Commodity Index (BCOM), by 30 bps for the quarter (-0.1% versus -0.4%). Two of three portfolio managers outpaced the benchmark for the quarter.

PIMCO bested the index by 70 bps for the quarter, with all of the portfolio's excess return coming from active management of the commodities exposure. Relative value trades as well as positioning within the agriculture and energy sectors were particularly beneficial. PIMCO's management of the fixed income collateral was flat for the quarter as gains made in developed market interest rate exposure were offset by corporate credit holdings.

The **Gresham** and **Neuberger Berman** combination surpassed the benchmark by 50 bps. Gresham's management of the commodities exposure accounted for the vast majority of positive excess return. The relative gain was due to an overweight to strong performing energy commodities (WTI and Brent Crude), along with underweight exposures to sugar and coffee which traded down in the quarter (sugar and coffee). Neuberger Berman manages the underlying collateral portfolio and contributed a few bps of return through sector selection.

Credit Suisse, the most conservative of the three managers, trailed the index by 30 bps for the quarter. Credit Suisse does not actively over- or underweight commodity exposure versus the index for excess return. Instead, the manager attempts to add value through futures trading strategies. Management of the underlying cash collateral was relatively flat during the quarter; commodities trading strategies within the energy sector accounted for all of the manager's underperformance.

As of quarter end, two commodities managers had observations* outside their calculated performance bands: PIMCO (seven observations above), and Gresham/Neuberger (three observations above).



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

TOTAL FUND
ANNUALIZED & ANNUAL RETURNS
for the quarter ended March 31, 2018

Gross of Fees

	Qtr End	1 Year	3 Years	5 Years	7 Years	10 Years	Dec 31 2017	Dec 31 2016	Dec 31 2015	Dec 31 2014
U.S. Equity	**-0.7**	**13.6**	**10.0**	**13.0**	**12.3**	**9.7**	**21.1**	**12.6**	**0.4**	**12.6**
RUSSELL 3000 (DAILY)	-0.6	13.8	10.2	13.0	12.4	9.6	21.1	12.7	0.5	12.6
Non-U.S. Eq 50% Dev Mkt Hdg	**-1.8**	**14.8**	**7.1**	**8.0**	**6.2**	**4.0**	**25.6**	**7.2**	**-1.9**	**0.8**
CUSTOM MSCI ACWI IMI N 50%H	-1.7	14.3	6.4	7.3	5.7	3.6	24.6	6.2	-2.0	0.1
Fixed Income*	**-0.8**	**3.0**	**3.1**	**3.2**	**4.3**	**5.4**	**5.5**	**6.6**	**-0.1**	**5.3**
FI CUSTOM INDEX	-1.4	1.5	1.7	2.2	3.3	4.1	4.1	3.9	0.4	5.6
BBG BC U.S. Universal	-1.4	1.5	1.7	2.2	3.3	4.0	4.1	3.9	0.4	5.6
Real Estate**	**1.8**	**7.6**	**10.2**	**10.2**	**9.9**	**3.8**	**7.9**	**9.2**	**15.0**	**11.2**
REAL ESTATE TARGET	1.9	7.1	9.9	10.8	11.1	6.2	7.1	9.5	14.3	11.8
Private Equity**	**5.3**	**20.1**	**12.7**	**15.2**	**14.3**	**11.3**	**17.6**	**7.9**	**10.8**	**19.6**
PRIVATE EQUITY TARGET	3.3	13.1	13.0	13.3	12.4	10.5	12.8	12.7	13.6	13.5
Commodities	**-0.1**	**6.2**	**-1.3**	**-6.6**	**-7.0**	**-5.8**	**4.4**	**14.9**	**-24.1**	**-16.2**
Bloomberg Commodity Index Total Return	-0.4	3.7	-3.2	-8.3	-8.8	-7.7	1.7	11.8	-24.7	-17.0
Hedge Funds***	**2.0**	**5.4**	**3.2**	**4.7**			**5.9**	**2.2**	**-0.1**	**5.4**
HEDGE FUND CUSTOM INDEX	1.5	6.0	5.5	5.3			5.8	5.3	5.0	5.0
Cash	**0.4**	**1.3**	**0.9**	**0.7**	**0.7**	**0.8**	**1.2**	**0.9**	**0.4**	**0.3**
Citigroup 6 M Treasury Bill Index	0.3	1.1	0.6	0.4	0.3	0.4	0.9	0.4	0.1	0.1
Total Fund (Gross of Fees)	**0.0**	**10.6**	**7.3**	**8.4**	**7.9**	**6.3**	**15.2**	**8.6**	**1.6**	**7.0**
TOTAL FUND POLICY BENCHMARK	-0.2	9.1	6.8	7.8	7.4	6.2	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 March 31, 2018

Net of Fees

	Qtr End	1Year	3 Years	5 Years	7 Years	10 Years	Dec 31 2017	Dec 31 2016	Dec 31 2015	Dec 31 2014
U.S. Equity	**-0.7**	**13.5**	**9.9**	**12.9**	**12.1**	**9.6**	**20.9**	**12.5**	**0.2**	**12.4**
RUSSELL 3000 (DAILY)	-0.6	13.8	10.2	13.0	12.4	9.6	21.1	12.7	0.5	12.6
Non-U.S. Eq 50% Dev Mkt Hdg	**-1.9**	**14.5**	**6.9**	**7.7**	**6.0**	**3.8**	**25.3**	**7.0**	**-2.1**	**0.6**
CUSTOM MSCI ACWI IMI N 50%H	-1.7	14.3	6.4	7.3	5.7	3.6	24.6	6.2	-2.0	0.1
Fixed Income*	**-0.9**	**2.7**	**2.8**	**2.9**	**4.1**	**5.1**	**5.2**	**6.3**	**-0.3**	**5.0**
FI CUSTOM INDEX	-1.4	1.5	1.7	2.2	3.3	4.1	4.1	3.9	0.4	5.6
BBG BC U.S. Universal	-1.4	1.5	1.7	2.2	3.3	4.0	4.1	3.9	0.4	5.6
Real Estate**	**1.5**	**6.8**	**9.3**	**9.3**	**9.0**	**3.1**	**7.2**	**8.4**	**14.1**	**10.0**
REAL ESTATE TARGET	1.9	7.1	9.9	10.8	11.1	6.2	7.1	9.5	14.3	11.8
Private Equity**	**5.3**	**20.1**	**12.7**	**15.2**	**14.3**	**11.3**	**17.6**	**7.9**	**10.8**	**19.6**
PRIVATE EQUITY TARGET	3.3	13.1	13.0	13.3	12.4	10.5	12.8	12.7	13.6	13.5
Commodities	**-0.2**	**5.9**	**-1.7**	**-6.9**	**-7.3**	**-6.2**	**4.1**	**14.5**	**-24.4**	**-16.6**
Bloomberg Commodity Index Total Return	-0.4	3.7	-3.2	-8.3	-8.8	-7.7	1.7	11.8	-24.7	-17.0
Hedge Funds (Net All) ***	**2.0**	**5.3**	**3.1**	**4.6**			**5.8**	**2.0**	**-0.2**	**5.4**
HEDGE FUND CUSTOM INDEX	1.5	6.0	5.5	5.3			5.8	5.3	5.0	5.0
Cash	**0.4**	**1.2**	**0.9**	**0.6**	**0.6**	**0.8**	**1.1**	**0.8**	**0.3**	**0.2**
Citigroup 6 M Treasury Bill Index	0.3	1.1	0.6	0.4	0.3	0.4	0.9	0.4	0.1	0.1
Total Fund (Net of Fees)	**-0.1**	**10.4**	**7.1**	**8.1**	**7.6**	**6.1**	**14.9**	**8.3**	**1.5**	**6.7**
TOTAL FUND POLICY BENCHMARK	-0.2	9.1	6.8	7.8	7.4	6.2	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

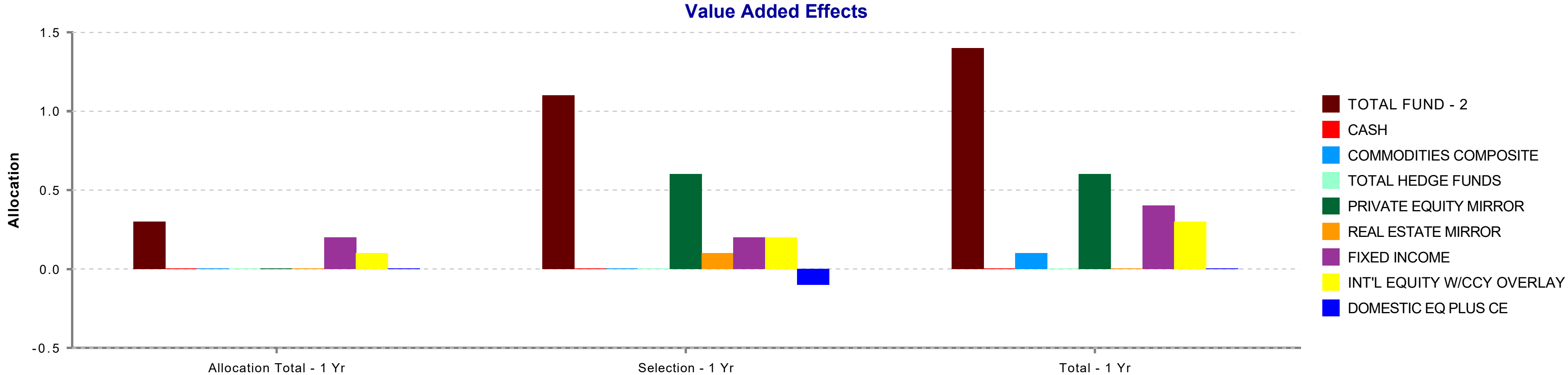
	FYTD	Jun 30 2017	Jun 30 2016	Jun 30 2015	Jun 30 2014	Jun 30 2013
U.S. Equity	**10.2**	**18.7**	**1.6**	**7.4**	**25.8**	**21.8**
RUSSELL 3000 (DAILY)	10.5	18.5	2.1	7.3	25.2	21.5
Non-U.S. Eq 50% Dev Mkt Hdg	**9.3**	**23.0**	**-8.7**	**1.1**	**20.9**	**16.9**
CUSTOM MSCI ACWI IMI N 50%H	9.1	21.7	-9.4	0.9	20.3	16.1
Fixed Income*	**1.2**	**4.3**	**4.7**	**1.6**	**6.6**	**2.6**
FI CUSTOM INDEX	-0.0	0.9	5.8	1.6	5.2	0.2
BBG BC U.S. Universal	-0.0	0.9	5.8	1.6	5.2	0.2
Real Estate**	**6.0**	**8.4**	**13.2**	**12.8**	**9.1**	**8.7**
REAL ESTATE TARGET	5.4	7.8	13.1	12.8	12.2	10.2
Private Equity**	**16.3**	**12.5**	**6.7**	**13.2**	**23.5**	**10.9**
PRIVATE EQUITY TARGET	9.7	12.7	13.0	13.8	13.3	13.2
Commodities	**9.3**	**-3.6**	**-12.7**	**-23.0**	**10.2**	**-5.5**
Bloomberg Commodity Index Total Return	6.9	-6.5	-13.3	-23.7	8.2	-8.0
Hedge Funds***	**5.1**	**7.0**	**-4.2**	**3.1**	**8.3**	**13.5**
HEDGE FUND CUSTOM INDEX	4.6	5.4	5.1	5.0	5.0	5.1
Cash	**1.0**	**1.0**	**0.6**	**0.4**	**0.4**	**0.5**
Citigroup 6 M Treasury Bill Index	0.9	0.5	0.2	0.1	0.1	0.1
Total Fund (Gross of Fees)	**7.6**	**13.0**	**1.1**	**4.3**	**16.8**	**12.1**
TOTAL FUND POLICY BENCHMARK	6.4	11.2	2.2	4.5	15.3	11.4
Total Fund (Net of Fees)	**7.4**	**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 March 31, 2018

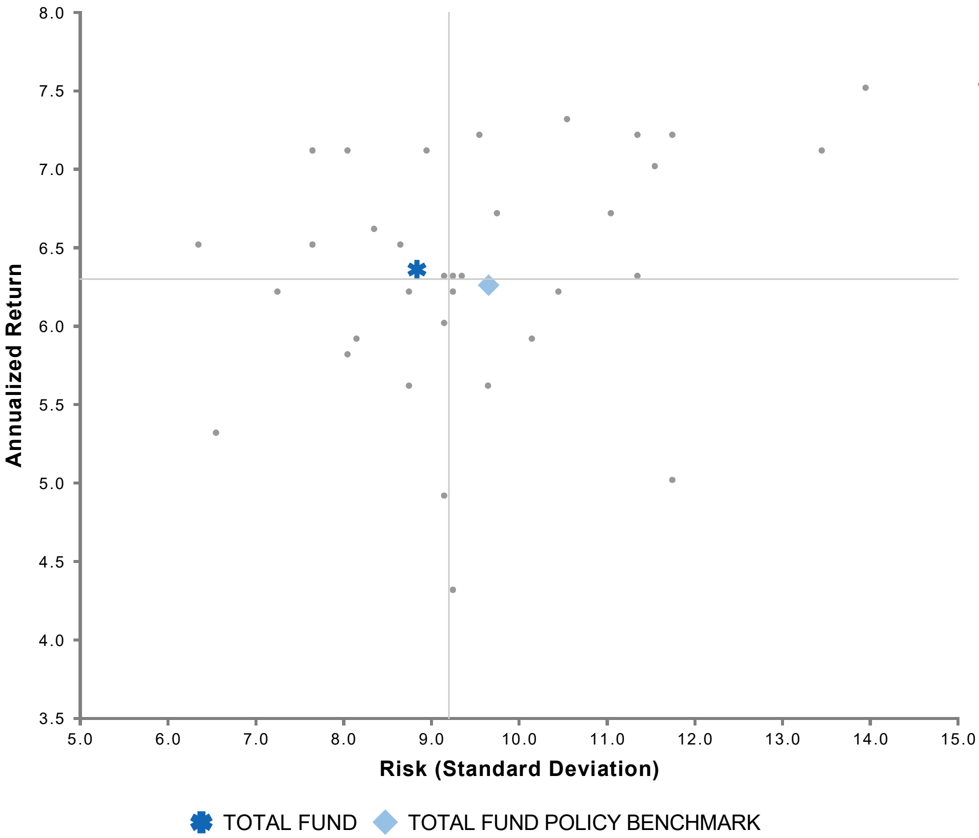


	Fund Weight	Target Weight	Relative	Fund Return	Benchmark Return	Return Difference	Allocation Effect*	Selection Effect**	BM Impact	Residual	Total Value Add
TOTAL FUND - 2	100.0	100.0	0.0	10.6	9.1	1.5	0.3	1.1	0.7	-0.6	1.4
CASH	2.8	2.0	0.8	1.3	1.1	0.2	0.0	0.0	-	-	0.0
COMMODITIES COMPOSITE	2.5	2.8	-0.3	6.2	3.7	2.5	0.0	0.0	-	-	0.1
TOTAL HEDGE FUNDS	2.5	4.2	-1.7	5.4	6.0	-0.6	0.0	0.0	-	-	0.0
PRIVATE EQUITY MIRROR	9.9	10.0	-0.1	20.1	13.1	7.1	-0.0	0.6	-	-	0.6
REAL ESTATE MIRROR	11.4	11.0	0.4	7.6	7.1	0.5	-0.0	0.1	-	-	0.0
FIXED INCOME	24.6	26.6	-2.0	3.0	1.5	1.4	0.2	0.2	-	-	0.4
INT'L EQUITY W/CCY OVERLAY	23.0	21.0	2.0	14.8	14.3	0.6	0.1	0.2	-	-	0.3
DOMESTIC EQ PLUS CE	23.3	22.4	0.9	13.6	13.8	-0.2	0.0	-0.1	-	-	-0.0

* 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 March 31, 2018

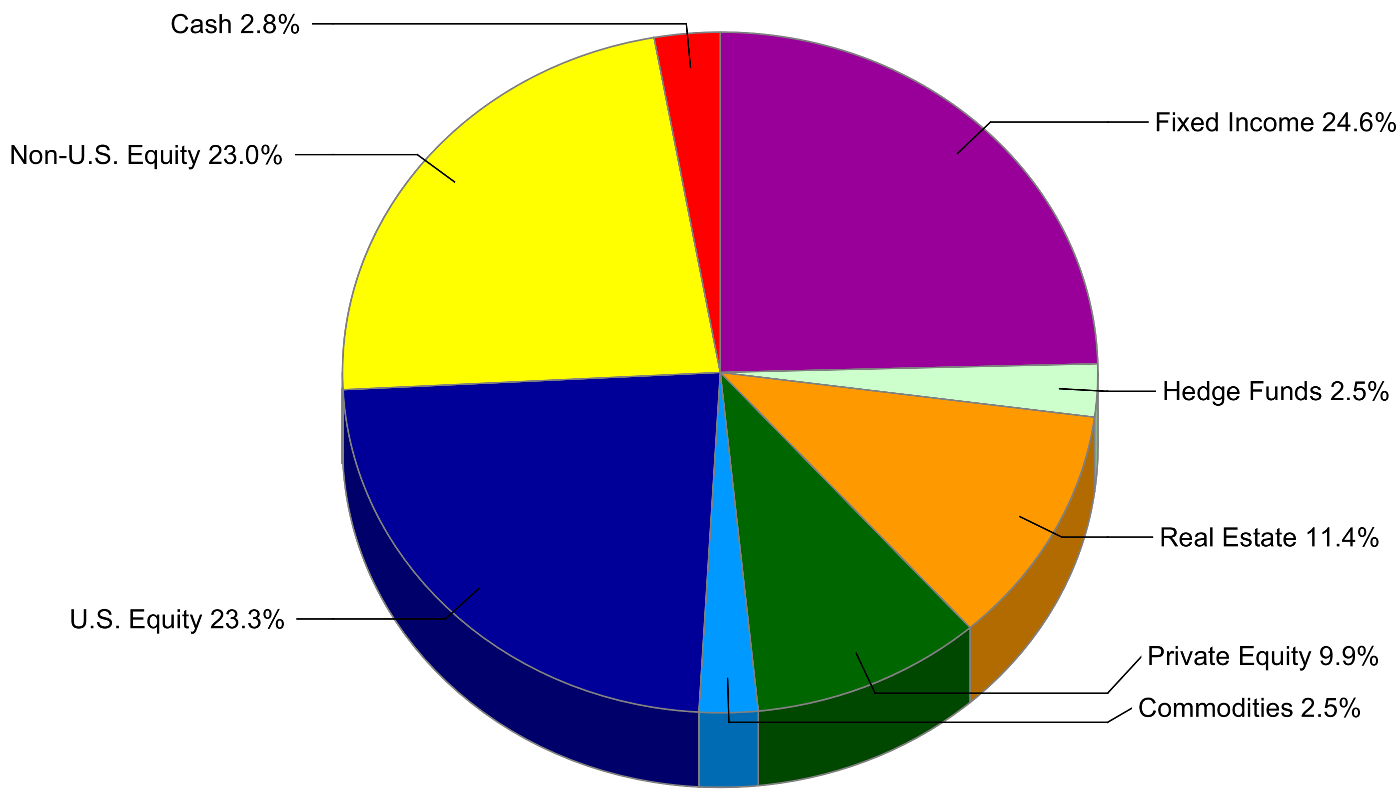
10 Year Risk vs Return



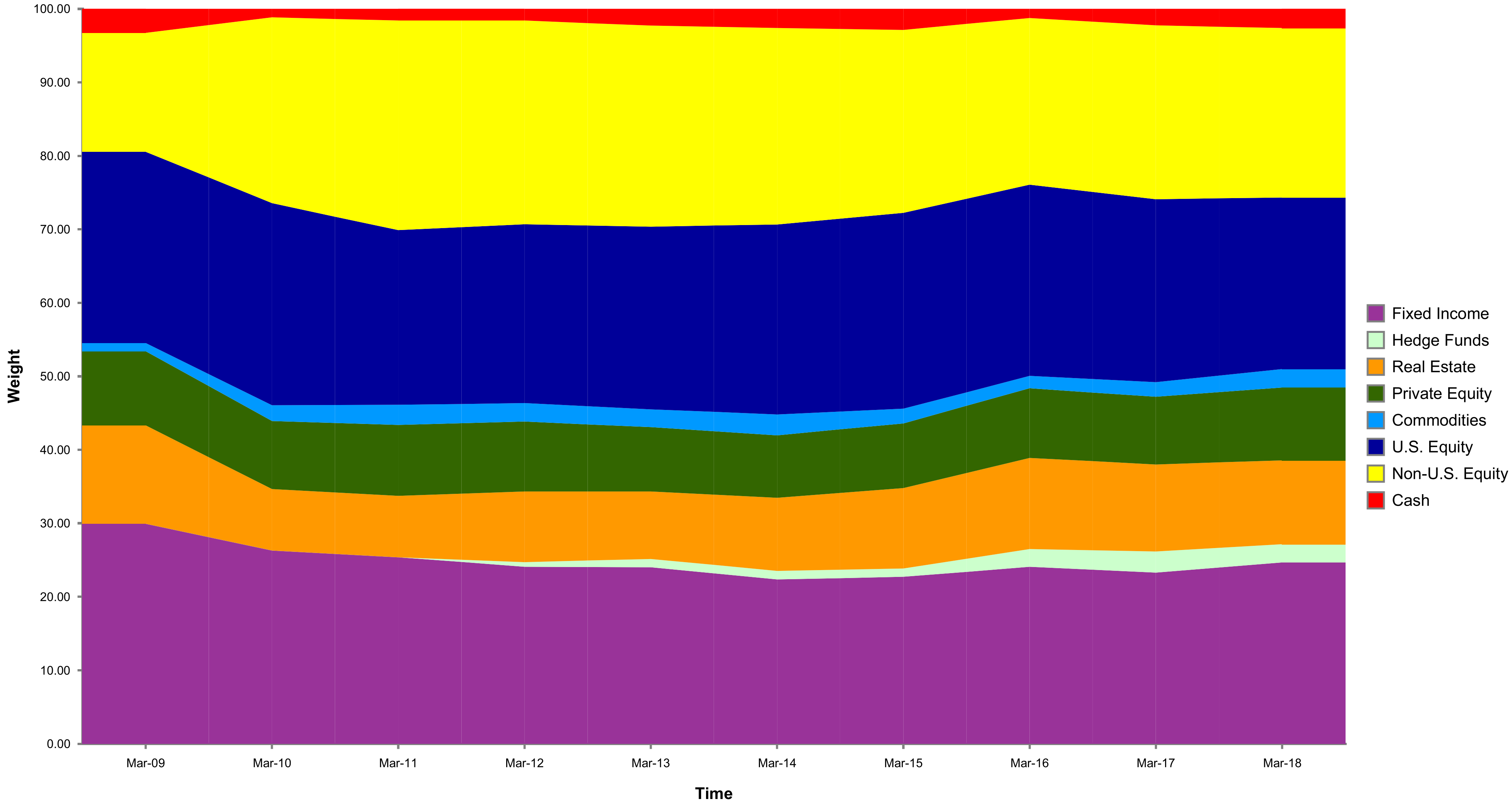
	Rate of Return 10 Years	Standard Deviation 10 Years
TOTAL FUND	**6.3** *48*	**8.7** *34*
TOTAL FUND POLICY BENCHMARK	6.2 *64*	9.5 *61*
5th Percentile	7.4	6.5
25th Percentile	7.1	8.1
50th Percentile	6.3	9.2
75th Percentile	5.9	10.5
95th Percentile	4.9	13.4
Number of Observations	35	35

	Rate of Return 10 Years	Standard Deviation 10 Years	Tracking Error 10 Years
Public Funds (DB) > $1 Billion			
TOTAL FUND - 2	6.3 *48*	8.7 *34*	1.1
TOTAL FUND POLICY BENCHMARK	6.2 *64*	9.5 *61*	

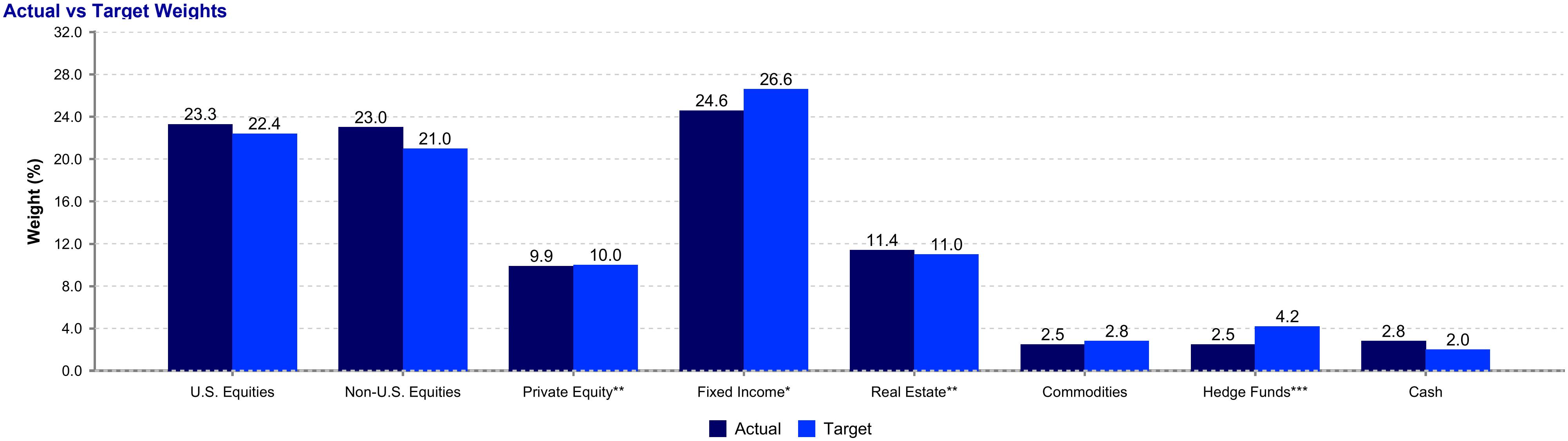
ASSET ALLOCATION
TOTAL FUND
for the quarter ended March 31, 2018



ASSET ALLOCATION
TOTAL FUND
for the quarter ended March 31, 2018



ASSET ALLOCATION
ACTUAL vs. TARGET
for the quarter ended March 31, 2018



	Ending Market Value	Actual	Target	Relative	Min	Max
Total Equity	**25,740,758,464**	**46.3**	**43.4**	**2.9**	**33.4**	**53.4**
U.S. Equities	**12,947,257,784**	**23.3**	**22.4**	**0.9**		
Non-U.S. Equities	**12,793,500,680**	**23.0**	**21.0**	**2.0**		
Fixed Income*	**13,699,946,299**	**24.6**	**26.6**	**-2.0**	**23.6**	**29.6**
Real Estate**	**6,330,243,153**	**11.4**	**11.0**	**0.4**	**8.0**	**16.0**
Private Equity**	**5,504,619,680**	**9.9**	**10.0**	**-0.1**	**7.0**	**14.0**
Commodities	**1,397,983,879**	**2.5**	**2.8**	**-0.3**	**0.0**	**4.8**
Hedge Funds***	**1,366,534,505**	**2.5**	**4.2**	**-1.7**	**1.2**	**6.2**
Cash	**1,564,845,085**	**2.8**	**2.0**	**0.8**	**0.0**	**4.0**
Total Fund	**55,604,931,066**	**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 March 31, 2018

	March 31, 2018 Assets ($ millions)	% of Composite		*December 31, 2017* Assets ($ millions)	% of Composite
PASSIVE			**PASSIVE**		
BTC Russell 1000 Index	9,221.7	71.2	BTC Russell 1000 Index	9,484.0	71.6
BTC Russell 2000 Index	101.4	0.8	BTC Russell 2000 Index	101.5	0.8
BTC Russell 3000 Index	588.5	4.5	BTC Russell 3000 Index	592.5	4.5
LOW RISK			**LOW RISK**		
INTECH	868.3	6.7	INTECH	857.7	6.5
Twin Capital	525.6	4.1	Twin Capital	531.7	4.0
MODERATE / HIGH RISK			**MODERATE / HIGH RISK**		
Cramer Rosenthal McGlynn	274.3	2.1	Cramer Rosenthal McGlynn	273.6	2.1
Eagle Asset Mgmt.	341.9	2.6	Eagle Asset Mgmt.	343.1	2.6
Frontier Capital Mgmt.	674.3	5.2	Frontier Capital Mgmt.	692.0	5.2
JANA Partners	94.3	0.7	JANA Partners	105.9	0.8
Westwood Mgmt. Corp.	256.9	2.0	Westwood Mgmt. Corp.	257.5	1.9
TOTAL U.S. EQUITY	**12,947.3**	**100.0**	**TOTAL U.S. EQUITY**	**13,239.2**	**100.0**

ASSET ALLOCATION
NON-U.S. EQUITY MANAGERS (cont's...)
for the quarter ended March 31, 2018

March 31, 2018	Assets ($ millions)	% of Composite	*December 31, 2017*	Assets ($ millions)	% of Composite
PASSIVE			**PASSIVE**		
BTC Canada Index IMI	682.3	5.3	BTC Canada Index IMI	814.7	6.1
BTC EAFE Index IMI	4,747.0	37.0	BTC EAFE Index IMI	5,010.8	37.5
BTC EAFE Small Cap	209.8	1.6	BTC EAFE Small Cap	209.7	1.6
BTC Emerging Markets Index	1,290.1	10.1	BTC Emerging Markets Index	1,394.9	10.4
BTC Europe Index	376.6	2.9	BTC Europe Index	383.8	2.9
BTC Emerging Markets Small Cap Index	148.5	1.2	BTC Emerging Markets Small Cap Index	148.5	1.1
NON-US DEVELOPED			**NON-US DEVELOPED**		
Acadian Asset Mgmt.	886.2	6.9	Acadian Asset Mgmt.	897.1	6.7
Capital Guardian	382.4	3.0	Capital Guardian	383.7	2.9
REGIONAL DEVELOPED			**REGIONAL DEVELOPED**		
BTC Europe Alpha Tilts	999.4	7.8	BTC Europe Alpha Tilts	1,021.1	7.6
Cevian Capital	288.3	2.2	Cevian Capital	303.9	2.3
GAM International Mgmt.	882.0	6.9	GAM International Mgmt.	893.8	6.7
Symphony Financial Partners	137.3	1.1	Symphony Financial Partners	130.1	1.0
EMERGING MARKETS			**EMERGING MARKETS**		
Acadian Emrg. Markets	432.9	3.4	Acadian Emrg. Markets	423.2	3.2
AQR Emerging Markets	276.6	2.2	AQR Emerging Markets	269.4	2.0
Genesis Investment Mgmt.	725.5	5.7	Genesis Investment Mgmt.	715.7	5.4
Lazard	371.5	2.9	Lazard	372.5	2.8
TOTAL NON-U.S. EQUITY (Unhedged)	**12,836.3**	**100.0**	**TOTAL NON-U.S. EQUITY (Unhedged)**	**13,372.9**	**100.0**

ASSET ALLOCATION
NON-U.S. EQUITY MANAGERS (...cont'd)
for the quarter ended March 31, 2018

March 31, 2018	Assets ($ millions)	December 31, 2017	Assets ($ millions)
PASSIVE HEDGE		**PASSIVE HEDGE**	
Currency Hedge Gain/Loss	-42.8	Currency Hedge Gain/Loss	-2.3
TOTAL NON-U.S. EQUITY (Hedged)	**12,793.5**	**TOTAL NON-U.S. EQUITY (Hedged)**	**13,370.7**

ASSET ALLOCATION

FIXED INCOME MANAGERS & PROGRAMS (cont's...)

for the quarter ended March 31, 2018

March 31, 2018	Assets ($ millions)	% of Composite
CORE		
BTC US Debt Index	3,238.2	23.6
BlackRock*	8.3	0.1
Dodge & Cox	1,285.6	9.4
Pugh Capital Mgmt.	135.0	1.0
Wells Capital Mgmt.	1,340.2	9.8
TOTAL CORE	**6,007.2**	**43.8**
CORE PLUS		
Dolan McEniry Capital Mgmt.	344.1	2.5
LM Capital Group*	298.5	2.2
Loomis, Sayles & Co.	1,077.8	7.9
PIMCO	1,047.1	7.6
Western Asset Mgmt.	1,133.4	8.3
TOTAL CORE PLUS	**3,900.9**	**28.5**

December 31, 2017	Assets ($ millions)	% of Composite
CORE		
BTC US Debt Index	1,978.2	14.5
BTC Intermediate Credit Index	239.9	1.8
BlackRock	719.2	5.3
Dodge & Cox	1,297.5	9.5
Pugh Capital Mgmt.	137.3	1.0
Wells Capital Mgmt.	1,360.0	10.0
TOTAL CORE	**5,732.1**	**42.1**
CORE PLUS		
Dolan McEniry Capital Mgmt.	347.3	2.6
LM Capital Group	456.3	3.4
Loomis, Sayles & Co.	1,085.6	8.0
PIMCO	1,060.6	7.8
Western Asset Mgmt.	1,153.0	8.5
TOTAL CORE PLUS	**4,102.7**	**30.1**

Policy Ranges **Core: 25% - 45%** **Core Plus: 25% - 45%** **High Yield: 0 - 10%** **Opportunistic: 15% - 35%**

* Manager was terminated and market value reflects residual value.

ASSET ALLOCATION
FIXED INCOME MANAGERS & PROGRAMS (...cont'd)
for the quarter ended March 31, 2018

	March 31, 2018 Assets ($ millions)	% of Composite		*December 31, 2017* Assets ($ millions)	% of Composite
HIGH YIELD			**HIGH YIELD**		
Oaktree Capital Mgmt.	403.4	2.9	Oaktree Capital Mgmt.	408.9	3.0
PENN Capital Mgmt.	108.3	0.8	PENN Capital Mgmt.	108.8	0.8
TOTAL HIGH YIELD	**511.8**	**3.7**	**TOTAL HIGH YIELD**	**517.7**	**3.8**
OPPORTUNISTIC			**OPPORTUNISTIC**		
Aberdeen	205.7	1.5	Aberdeen	207.9	1.5
Ashmore	212.3	1.5	Ashmore	210.2	1.5
Bain Capital	301.1	2.2	Bain Capital	301.1	2.2
Beach Point Capital*	384.9	2.8	Beach Point Capital*	382.3	2.8
Brigade Capital Mgmt.	490.8	3.6	Brigade Capital Mgmt.	486.7	3.6
Crescent Capital	272.1	2.0	Crescent Capital	271.0	2.0
DoubleLine Capital	266.5	1.9	DoubleLine Capital	266.4	2.0
Principal Opportunistic	266.9	1.9	Principal Opportunistic	269.2	2.0
TCW Asset Mgmt.	271.9	2.0	TCW	270.2	2.0
Tennenbaum Capital**	269.6	2.0	Tennenbaum Capital**	262.3	1.9
Western Opportunistic	304.7	2.2	Western Opportunistic	303.5	2.2
TOTAL OPPORTUNISTIC	**3,246.3**	**23.7**	**TOTAL OPPORTUNISTIC**	**3,230.8**	**23.7**
MORTGAGE PROGRAM			**MORTGAGE PROGRAM**		
Member Home Loan Program (MHLP)	33.7	0.2	Member Home Loan Program (MHLP)	33.9	0.2
TOTAL FIXED INCOME* **	**13,699.9**	**100.0**	**TOTAL FIXED INCOME*** **	**13,617.3**	**100.0**

Policy Ranges Core: 25% - 45% Core Plus: 25% - 45% High Yield: 0 - 10% Opportunistic: 15% - 35%

* 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 March 31, 2018

	March 31, 2018 Assets ($ millions)	% of Composite		December 31, 2017 Assets ($ millions)	% of Composite
Credit Suisse	454.8	32.5	Credit Suisse	458.4	32.7
Neuberger Berman/Gresham	471.7	33.7	Neuberger Berman/Gresham	471.5	33.7
PIMCO	471.5	33.7	PIMCO	470.7	33.6
TOTAL COMMODITIES	**1,398.0**	**100.0**	**TOTAL COMMODITIES**	**1,400.5**	**100.0**

ANNUALIZED TOTAL RETURNS
U.S. EQUITY MANAGERS
for the quarter ended March 31, 2018

	Gross of Fees Mkt Value ($Mil)	Qtr	1 Yr	3 Yrs	5 Yrs		Net of Fees Mkt Value ($Mil)	Qtr	1 Yr	3 Yrs	5 Yrs
LARGE CAP						**LARGE CAP**					
INTECH	868.3	1.3	17.5	10.7	14.1	INTECH	868.3	1.2	17.3	10.4	13.8
JANA Partners	94.3	-5.0	1.8			JANA Partners	94.3	-5.3	-1.0		
Twin Capital	525.6	-1.1	13.8	10.6	13.4	Twin Capital	525.6	-1.1	13.6	10.4	13.3
S&P 500		-0.8	14.0	10.8	13.3	S&P 500		-0.8	14.0	10.8	13.3
BTC Russell 1000	9,221.7	-0.7	14.0	10.4	13.2	BTC Russell 1000	9,221.7	-0.7	14.0	10.4	13.2
Russell 1000		-0.7	14.0	10.4	13.2	Russell 1000		-0.7	14.0	10.4	13.2
BTC Russell 3000	588.5	-0.6				BTC Russell 3000	588.5	-0.7			
Russell 3000		-0.6	13.8	10.2	13.0	Russell 3000		-0.6	13.8	10.2	13.0
SMALL / MID CAP						**SMALL / MID CAP**					
Cramer Rosenthal McGlynn	274.3	0.4	13.9	6.9	9.9	Cramer Rosenthal McGlynn	274.3	0.2	13.3	6.3	9.3
Eagle Asset Management	341.9	-0.2	10.7	10.2	12.8	Eagle Asset Management	341.9	-0.4	10.1	9.6	12.2
Frontier Capital Management	674.3	-2.4	10.0	7.9	13.5	Frontier Capital Management	674.3	-2.5	9.2	7.0	12.6
Westwood Management	256.9	-0.1	8.2	5.0	9.1	Westwood Management	256.9	-0.3	7.5	4.4	8.4
Russell 2500		-0.2	12.3	8.2	11.5	Russell 2500		-0.2	12.3	8.2	11.5
BTC Russell 2000	101.4	-0.0	12.0	8.7	11.8	BTC Russell 2000	101.4	-0.0	12.0	8.7	11.7
Russell 2000		-0.1	11.8	8.4	11.5	Russell 2000		-0.1	11.8	8.4	11.5

ANNUALIZED TOTAL RETURNS
NON-U.S. EQUITY MANAGERS (cont's...)
for the quarter ended March 31, 2018

Gross of Fees

	Mkt Value ($Mil)	Qtr	1 Yr	3 Yrs	5 Yrs
NON U.S.					
Acadian Asset Management	886.2	-1.1	23.2	12.5	11.1
Capital Guardian	382.4	-0.3	20.1	8.1	8.0
MSCI EAFE + CANADA Net (Daily)		-2.0	13.9	5.3	6.0
BTC EAFE IMI*	4,747.0	-1.3	16.3	6.8	7.5
MSCI EAFE IMI Custom Index		-1.3	16.0	6.5	7.1
BTC EAFE Small Cap	209.8	0.1	23.6		
MSCI EAFE Small Cap Net		0.2	23.5	12.3	11.1
BTC Canada IMI*	682.3	-7.3	4.9	3.3	1.8
MSCI Canada Custom IMI (Net)		-7.5	4.1	2.6	1.0
PACIFIC BASIN					
GAM Pacific Basin	882.0	-1.2	15.0	7.6	7.0
MSCI Pacific (Net)		-0.7	15.8	7.3	6.8
Symphony Financial Partners	137.3	5.5	30.0		
MSCI Japan Small Cap Net		2.1	25.5	15.1	12.5

Net of Fees

	Mkt Value ($Mil)	Qtr	1 Yr	3 Yrs	5 Yrs
NON U.S.					
Acadian Asset Management	886.2	-1.2	22.7	12.0	10.6
Capital Guardian	382.4	-0.3	19.7	7.7	7.6
MSCI EAFE + Canada Net (Daily)		-2.0	13.9	5.3	6.0
BTC EAFE IMI*	4,747.0	-1.3	16.3	6.8	7.4
MSCI EAFE IMI Custom Index		-1.3	16.0	6.5	7.1
BTC EAFE Small Cap	209.8	0.1	23.6		
MSCI EAFE Small Cap Net		0.2	23.5	12.3	11.1
BTC Canada IMI*	682.3	-7.3	4.8	3.3	1.8
MSCI Canada Custom IMI (Net)		-7.5	4.1	2.6	1.0
PACIFIC BASIN					
GAM Pacific Basin	882.0	-1.3	14.5	7.2	6.5
MSCI Pacific (Net)		-0.7	15.8	7.3	6.8
Symphony Financial Partners	137.3	3.6	26.9		
MSCI Japan Small Cap Net		2.1	25.5	15.1	12.5

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 March 31, 2018

Gross of Fees

	Mkt Value ($Mil)	Qtr	1 Yr	3 Yrs	5 Yrs
EUROPE					
BTC Euro Tilts	999.4	-2.0	16.5	7.3	9.4
BTC Europe Index	376.6	-1.9	15.0	5.3	6.9
Cevian Capital	288.3	-4.8	3.2		
MSCI Europe (Net)		-2.0	14.5	4.8	6.4
EMERGING MARKETS					
Acadian Emerging Markets	432.9	2.4	24.7	9.9	5.4
AQR Emerging Markets	276.6	2.8	24.6	9.8	
Lazard Emerging Markets	371.5	-0.1	24.2	8.4	5.3
BTC - Emerging Markets	1,290.1	1.3	24.7	8.7	4.9
MSCI EM Standard (Net)		1.4	24.9	8.8	5.0
BTC Emerging Markets Small Cap	148.5	0.1	18.8	7.1	4.6
MSCI EM Small Cap - Net Return		0.2	18.6	7.2	4.6
Genesis	725.5	1.5	24.9	9.5	5.8
MSCI EM IMI Custom Index		1.3	24.1	8.6	4.9
PASSIVE HEDGE					
BTC Passive Currency Hedge	-42.8	-1.0	-3.4	-0.7	1.1
50% FX Hedge Index		-1.0	-3.4	-0.7	1.1

Net of Fees

	Mkt Value ($Mil)	Qtr	1 Yr	3 Yrs	5 Yrs
EUROPE					
BTC Euro Tilts	999.4	-2.1	16.0	6.8	8.9
BTC Europe Index	376.6	-1.9	15.0	5.3	6.9
Cevian Capital	288.3	-5.1	1.6		
MSCI Europe (Net)		-2.0	14.5	4.8	6.4
EMERGING MARKETS					
Acadian Emerging Markets	432.9	2.3	24.1	9.4	4.9
AQR Emerging Markets	276.6	2.7	23.8	9.1	
Lazard Emerging Markets	371.5	-0.3	23.2	7.5	4.5
BTC - Emerging Markets	1,290.1	1.2	24.6	8.5	4.7
MSCI EM Standard (Net)		1.4	24.9	8.8	5.0
BTC Emerging Markets Small Cap	148.5	0.0	18.6	6.9	4.4
MSCI EM Small Cap - Net Return		0.2	18.6	7.2	4.6
Genesis	725.5	1.4	24.0	8.7	5.0
MSCI EM IMI Custom Index		1.3	24.1	8.6	4.9
PASSIVE HEDGE					
BTC Passive Currency Hedging	-42.8	-1.0	-3.4	-0.7	1.1
50% FX Hedge Index		-1.0	-3.4	-0.7	1.1

See Glossary for all Custom index definitions.

ANNUALIZED TOTAL RETURNS
FIXED INCOME MANAGERS & PROGRAMS (cont's...)
for the quarter ended March 31, 2018

Gross of Fees

	Mkt Value ($Mil)	Qtr	1 Yr	3 Yrs	5 Yrs
CORE					
BTC US Debt Index	3,238.2	-1.5	1.3	1.3	1.9
BlackRock*	8.3				
Dodge & Cox	1,285.6	-0.9	2.3	2.6	3.2
Pugh Capital Mgmt.	135.0	-1.7	1.5	1.4	2.0
Wells Capital Mgmt.	1,340.2	-1.4	1.4	1.6	2.3
BBG BC Aggregate Bond Index		-1.5	1.2	1.2	1.8
CORE PLUS					
Loomis, Sayles & Co.	1,077.8	-0.7	2.9	2.5	2.9
PIMCO	1,047.1	-1.2	3.2	2.7	2.5
Western Asset Mgmt.	1,133.4	-1.7	2.4	2.7	3.2
BBG BC Aggregate Bond Index		-1.5	1.2	1.2	1.8
Dolan McEniry Capital Mgmt.	344.1	-0.9	2.8	3.5	3.8
Dolan McEniry Custom Index		-1.3	1.2	1.8	2.3
LM Capital Group*	298.5				

Net of Fees

	Mkt Value ($Mil)	Qtr	1 Yr	3 Yrs	5 Yrs
CORE					
BTC US Debt Index	3,238.2	-1.5	1.3	1.3	1.9
BlackRock*	8.3				
Dodge & Cox	1,285.6	-0.9	2.2	2.5	3.1
Pugh Capital Mgmt.	135.0	-1.7	1.3	1.2	1.8
Wells Capital Mgmt.	1,340.2	-1.5	1.3	1.5	2.2
BBG BC Aggregate Bond Index		-1.5	1.2	1.2	1.8
CORE PLUS					
Loomis, Sayles & Co.	1,077.8	-0.7	2.8	2.4	2.8
PIMCO	1,047.1	-1.3	3.0	2.5	2.2
Western Asset Mgmt.	1,133.4	-1.7	2.3	2.5	3.0
BBG BC Aggregate Bond Index		-1.5	1.2	1.2	1.8
Dolan McEniry Capital Mgmt.	344.1	-0.9	2.5	3.2	3.5
Dolan McEniry Custom Index		-1.3	1.2	1.8	2.3
LM Capital Group*	298.5				

* 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 March 31, 2018

Gross of Fees

	Mkt Value ($Mil)	Qtr	1 Yr	3 Yrs	5 Yrs
HIGH YIELD					
Oaktree Capital Mgmt.	403.4	-1.2	2.9	4.2	4.3
PENN Capital Mgmt.	108.3	-0.3	4.0	4.7	4.4
BBG BC Ba/B US High Yield Index		-1.1	3.4	4.6	4.7
OPPORTUNISTIC					
Aberdeen	205.7	-1.0			
Ashmore	212.3	1.2			
Opportunistic EMD Custom Index		-0.1			
Bain Capital	301.1	0.2	4.6	5.4	
Beach Point Capital*	384.9	1.0	6.7	9.3	
Crescent Capital Group	272.1	0.5	4.7	4.8	
Opportunistic Custom Index		0.4	4.2	4.8	4.6
Brigade Capital Mgmt.	490.8	1.0	4.5	6.0	5.6
Brigade Custom Index		0.2	4.0	4.5	4.5
Principal Opportunistic	266.9	-0.8	3.3	3.1	3.6
BBG BC US Universal Spread 1-10 Yr.		-1.1	1.8	2.7	2.8
DoubleLine Capital	266.5	0.2	4.9		
TCW	271.9	0.8	5.1		
Securitized Custom Index		-0.2	4.8		
Tennenbaum Capital**	269.6	3.0	8.9	9.2	
CS Leveraged Loan Index**		1.9	4.7	4.5	
Western Opportunistic	304.7	0.4	4.0	3.6	3.3
Western Opportunistic Custom Index		0.4	6.1	3.2	2.8

Net of Fees

	Mkt Value ($Mil)	Qtr	1 Yr	3 Yrs	5 Yrs
HIGH YIELD					
Oaktree Capital Mgmt.	403.4	-1.3	2.5	3.8	3.9
PENN Capital Mgmt.	108.3	-0.4	3.5	4.3	3.9
BBG BC Ba/B US High Yield Index		-1.1	3.4	4.6	4.7
OPPORTUNISTIC					
Aberdeen	205.7	-1.1			
Ashmore	212.3	1.0			
Opportunistic EMD Custom Index		-0.1			
Bain Capital	301.1	-0.0	3.5	4.5	
Beach Point Capital*	384.9	0.7	4.9	7.2	
Crescent Capital Group	272.1	0.4	4.1	4.2	
Opportunistic Custom Index		0.4	4.2	4.8	4.6
Brigade Capital Mgmt.	490.8	0.8	3.8	5.2	4.8
Brigade Custom Index		0.2	4.0	4.5	4.5
Principal Opportunistic	266.9	-0.9	3.1	2.9	3.4
BBG BC US Universal Spread 1-10 Yr.		-1.1	1.8	2.7	2.8
DoubleLine Capital	266.5	0.0	4.1		
TCW	271.9	0.6	4.5		
Securitized Custom Index		-0.2	4.8		
Tennenbaum Capital**	269.6	2.8	7.9	8.1	
CS Leveraged Loan Index**		1.9	4.7	4.5	
Western Opportunistic	304.7	0.4	4.0	3.6	3.3
Western Opportunistic Custom Index		0.4	6.1	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 March 31, 2018

Gross of Fees

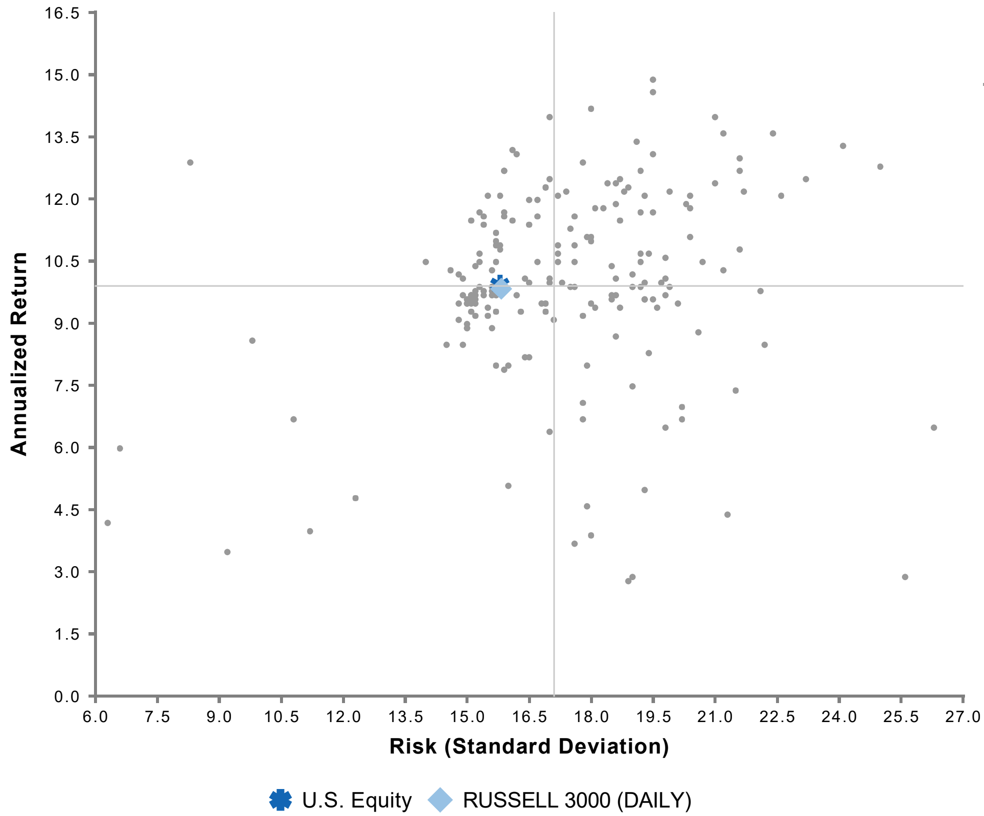
	Mkt Value ($Mil)	Qtr	1 Yr	3 Yrs	5 Yrs
COMMODITIES MANAGERS					
Credit Suisse	454.8	-0.7	3.6	-2.4	-7.6
Neuberger Berman/Gresham	471.7	0.1	8.0	-1.6	-6.6
PIMCO	471.5	0.3	7.0	-0.2	-5.9
Bloomberg Commodity Index Total Return		-0.4	3.7	-3.2	-8.3

Net of Fees

	Mkt Value ($Mil)	Qtr	1 Yr	3 Yrs	5 Yrs
COMMODITIES MANAGERS					
Credit Suisse	454.8	-0.8	3.3	-2.6	-7.8
Neuberger Berman/Gresham	471.7	0.1	7.6	-2.0	-7.0
PIMCO	471.5	0.2	6.6	-0.6	-6.3
Bloomberg Commodity Index Total Return		-0.4	3.7	-3.2	-8.3

U.S. EQUITY
RISK ADJUSTED RETURN
for the quarter ended March 31, 2018

10 Year Risk vs Return



	Rate of Return 10 Years	Standard Deviation 10 Years
U.S. Equity	**9.7** *55*	**15.5** *27*
RUSSELL 3000 (DAILY)	9.6 *59*	15.5 *29*
5th Percentile	13.1	14.5
25th Percentile	11.5	15.4
50th Percentile	9.9	17.1
75th Percentile	9.3	19.1
95th Percentile	4.9	21.6
Number of Observations	221	220

	Rate of Return 10 Years	Standard Deviation 10 Years	Tracking Error 10 Years
U.S. Equity	9.7 *55*	15.5 *27*	0.4
RUSSELL 3000 (DAILY)	9.6 *59*	15.5 *29*	

Universe data: U.S. Equity Funds - plans > $1 billion

U.S. EQUITY - LARGE CAP
INTECH INVESTMENT MANAGEMENT LLC
for the quarter ended March 31, 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

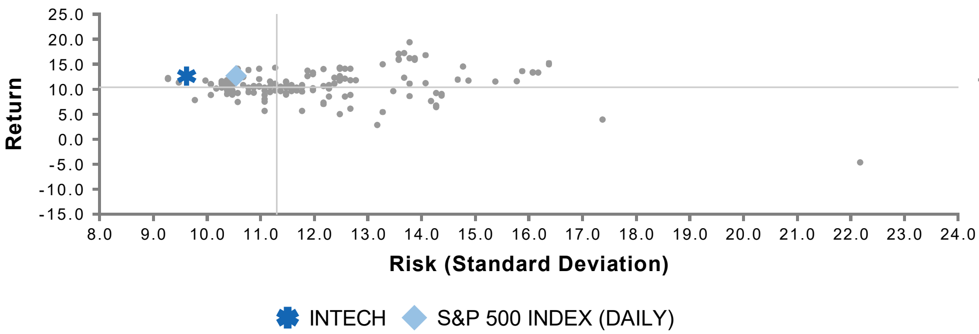
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
INTECH	868.3	1.30	17.53	10.68	14.11	8.80
S&P 500 INDEX (DAILY)		-0.76	13.99	10.78	13.31	8.03

Universe

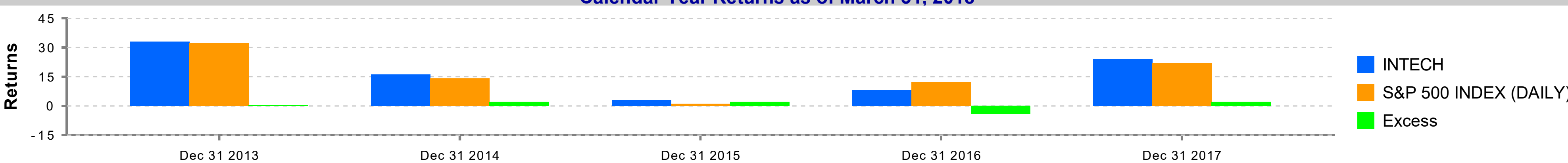
	1 Qtr	1 Year	3 Years	5 Years
US Equity Funds - Large Cap				
Median	-0.73	13.99	10.43	13.26
Number of Observations	187.00	188.00	176.00	151.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
INTECH	10.7 44	9.4 2
S&P 500 INDEX (DAILY)	10.8 41	10.3 14
5th Percentile	15.4	10.0
25th Percentile	11.6	10.4
50th Percentile	10.4	11.3
75th Percentile	9.1	12.5
95th Percentile	5.8	15.7

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Equities Total Large Cap

U.S. EQUITY - LARGE CAP
JANA PARTNERS LLC
for the quarter ended March 31, 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

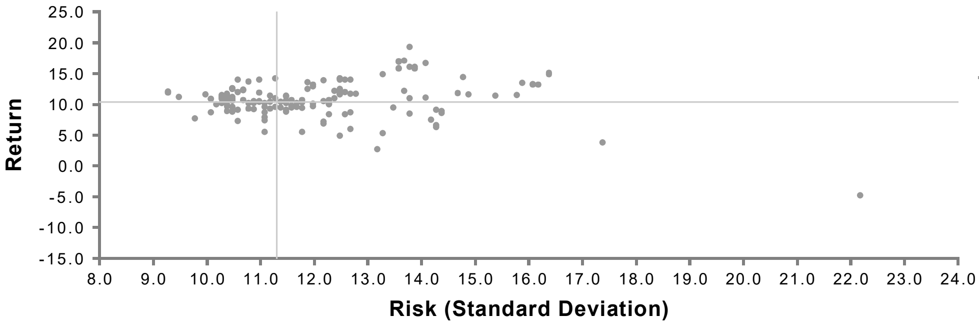
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
JANA Partners	94.3	-4.98	1.77			31.69
S&P 500 INDEX (DAILY)		-0.76	13.99			16.38

Universe

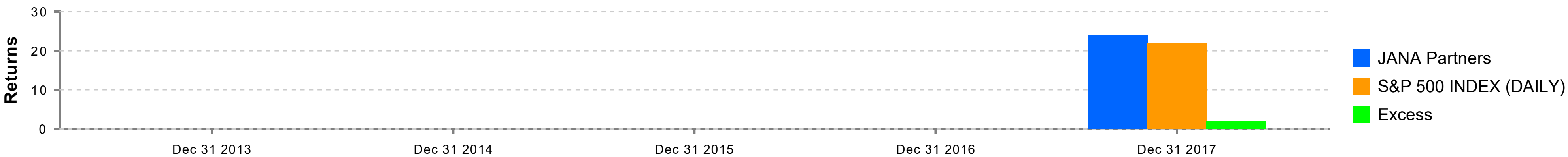
	1 Qtr	1 Year	3 Years	5 Years
US Equity Funds - Large Cap				
Median	-0.73	13.99	10.43	13.26
Number of Observations	187.00	188.00	176.00	151.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
5th Percentile	15.4	10.0
25th Percentile	11.6	10.4
50th Percentile	10.4	11.3
75th Percentile	9.1	12.5
95th Percentile	5.8	15.7

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Equities Total Large Cap

U.S. EQUITY - LARGE CAP
TWIN CAPITAL MANAGEMENT, INC.
for the quarter ended March 31, 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

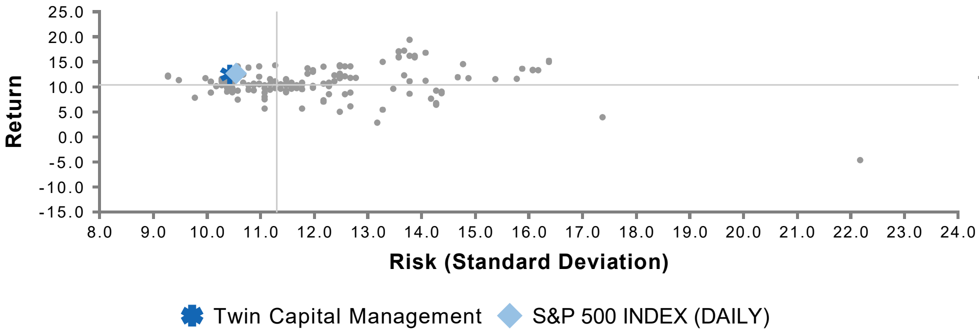
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Twin Capital Management	525.6	-1.10	13.81	10.57	13.43	8.42
S&P 500 INDEX (DAILY)		-0.76	13.99	10.78	13.31	8.03

Universe

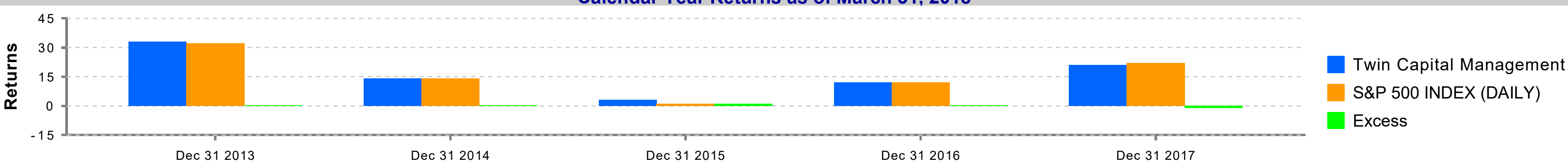
	1 Qtr	1 Year	3 Years	5 Years
US Equity Funds - Large Cap				
Median	-0.73	13.99	10.43	13.26
Number of Observations	187.00	188.00	176.00	151.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
Twin Capital Management	10.6	47	10.2	6
S&P 500 INDEX (DAILY)	10.8	41	10.3	14
5th Percentile	15.4		10.0	
25th Percentile	11.6		10.4	
50th Percentile	10.4		11.3	
75th Percentile	9.1		12.5	
95th Percentile	5.8		15.7	

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Equities Total Large Cap

U.S. EQUITY - SMALL/MID CAP
CRAMER, ROSENTHAL, McGLYNN LLC
for the quarter ended March 31, 2018

Manager Profile

Firm:	Cramer, Rosenthal, McGlynn LLC
Location:	New York, NY
Year Founded:	1973
Contact:	Clair Pomponi, Marketing Associate
Inception Date:	April 2010
Assigned Role:	Small/Mid Cap Equity
Benchmark:	Russell 2500
Investment Style:	Core / Value

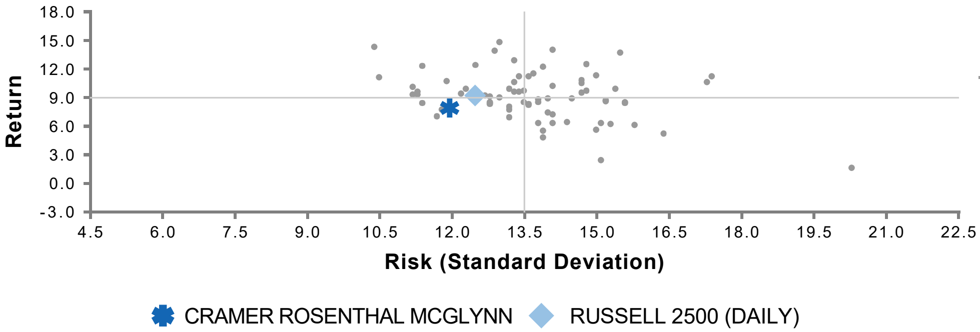
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Cramer Rosenthal McGlynn	274.3	0.37	13.85	6.86	9.92	11.47
RUSSELL 2500 (DAILY)		-0.24	12.31	8.15	11.55	12.68

Universe

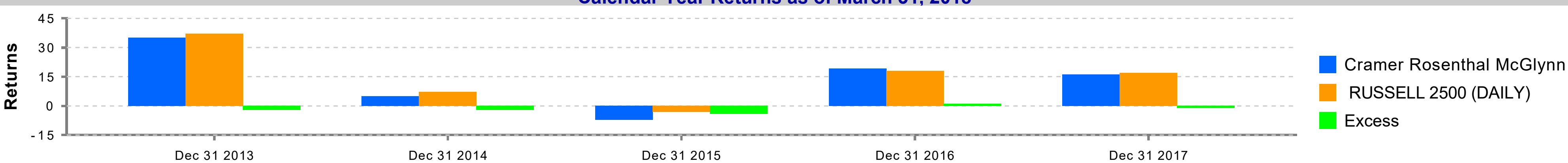
	1 Qtr	1 Year	3 Years	5 Years
US Equity Funds - SMID				
Median	-0.79	11.03	9.01	12.08
Number of Observations	85.00	85.00	83.00	76.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
CRAMER ROSENTHAL MCGLYNN	6.9	84	11.7	17
RUSSELL 2500 (DAILY)	8.2	69	12.2	22
5th Percentile	13.6		11.1	
25th Percentile	10.4		12.6	
50th Percentile	9.0		13.5	
75th Percentile	8.0		14.6	
95th Percentile	5.2		15.7	

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Equities SMID

U.S. EQUITY - SMALL/MID CAP
EAGLE ASSET MANAGEMENT, INC.
for the quarter ended March 31, 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

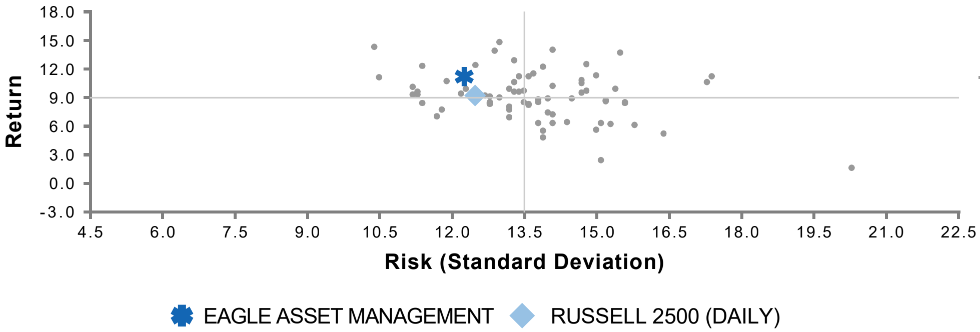
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Eagle Asset Management	341.9	-0.24	10.73	10.24	12.78	10.39
RUSSELL 2500 (DAILY)		-0.24	12.31	8.15	11.55	9.18

Universe

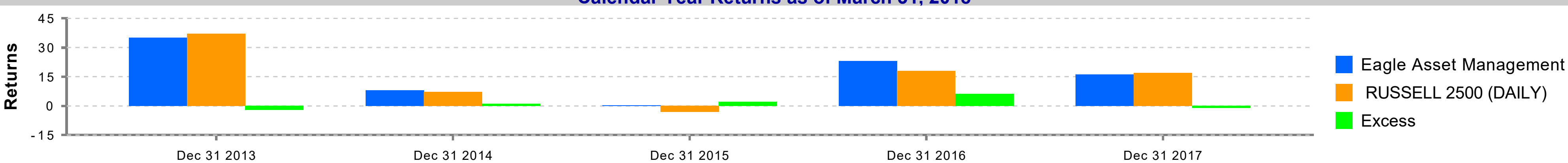
	1 Qtr	1 Year	3 Years	5 Years
US Equity Funds - SMID				
Median	-0.79	11.03	9.01	12.08
Number of Observations	85.00	85.00	83.00	76.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
EAGLE ASSET MANAGEMENT	10.2	28	12.0	19
RUSSELL 2500 (DAILY)	8.2	69	12.2	22
5th Percentile	13.6		11.1	
25th Percentile	10.4		12.6	
50th Percentile	9.0		13.5	
75th Percentile	8.0		14.6	
95th Percentile	5.2		15.7	

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Equities SMID

U.S. EQUITY - SMALL/MID CAP
FRONTIER CAPITAL MANAGEMENT COMPANY, LLC
for the quarter ended March 31, 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

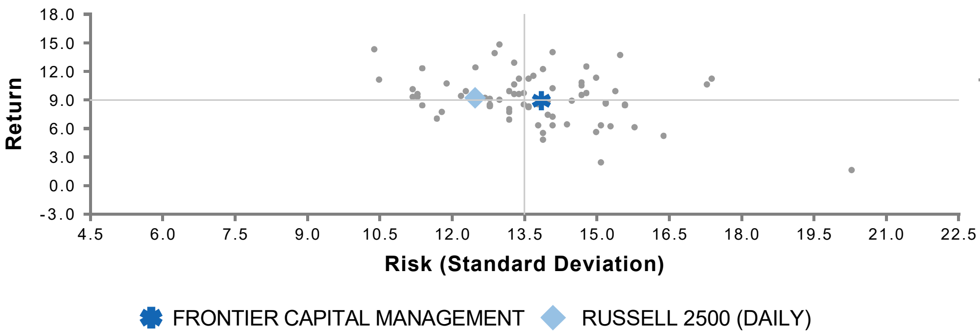
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Frontier Capital Management	674.3	-2.37	10.01	7.86	13.49	11.73
RUSSELL 2500 (DAILY)		-0.24	12.31	8.15	11.55	9.69

Universe

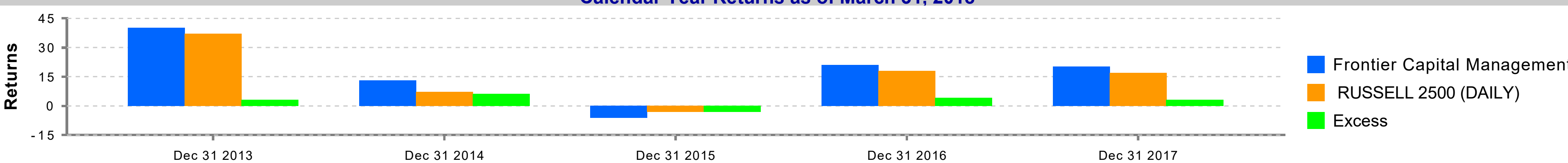
	1 Qtr	1 Year	3 Years	5 Years
US Equity Funds - SMID				
Median	-0.79	11.03	9.01	12.08
Number of Observations	85.00	85.00	83.00	76.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
FRONTIER CAPITAL MANAGEMENT	7.9 78	13.6 55
RUSSELL 2500 (DAILY)	8.2 69	12.2 22
5th Percentile	13.6	11.1
25th Percentile	10.4	12.6
50th Percentile	9.0	13.5
75th Percentile	8.0	14.6
95th Percentile	5.2	15.7

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Equities SMID

U.S. EQUITY - SMALL/MID CAP
WESTWOOD MANAGEMENT CORP.
for the quarter ended March 31, 2018

Manager Profile

Firm:	Westwood Management Corporation
Location:	Dallas, TX
Year Founded:	1983
Contact:	Kim Calhoun, QPA, Sr. Vice President
Inception Date:	April 2009
Assigned Role:	Small/Mid Cap Equity
Benchmark:	Russell 2500
Investment Style:	Core / Value

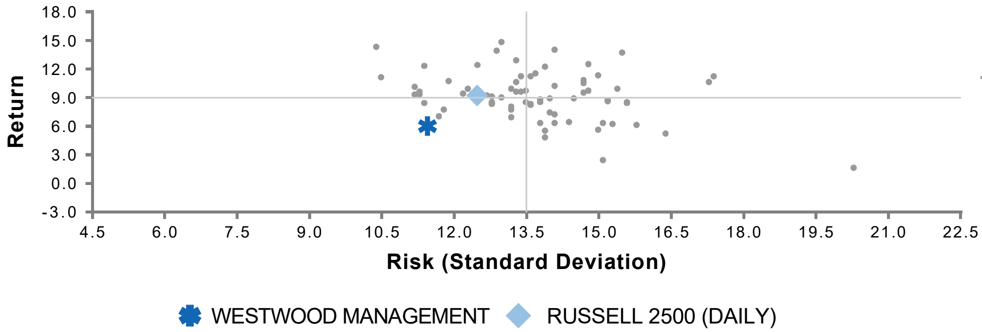
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Westwood Management	256.9	-0.13	8.17	5.05	9.07	15.59
RUSSELL 2500 (DAILY)		-0.24	12.31	8.15	11.55	17.61

Universe

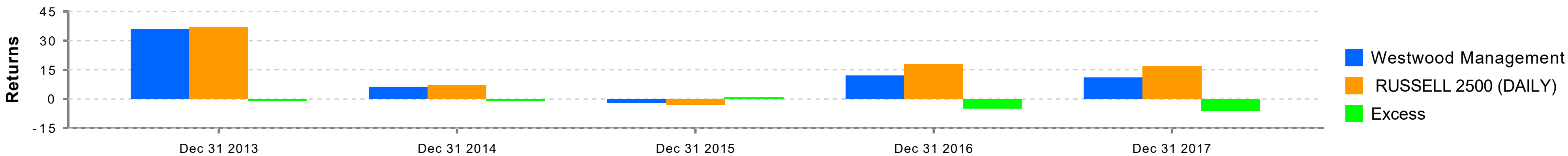
	1 Qtr	1 Year	3 Years	5 Years
US Equity Funds - SMID				
Median	-0.79	11.03	9.01	12.08
Number of Observations	85.00	85.00	83.00	76.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
WESTWOOD MANAGEMENT	5.0	96	11.2	7
RUSSELL 2500 (DAILY)	8.2	69	12.2	22
5th Percentile	13.6		11.1	
25th Percentile	10.4		12.6	
50th Percentile	9.0		13.5	
75th Percentile	8.0		14.6	
95th Percentile	5.2		15.7	

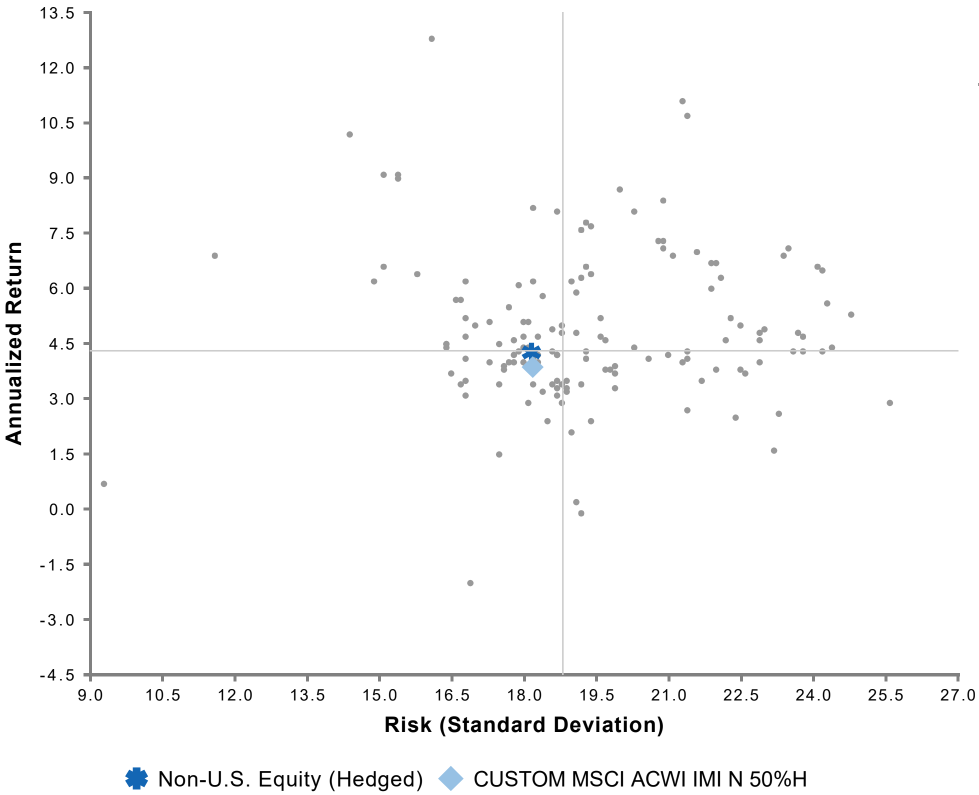
Calendar Year Returns as of March 31, 2018



Universe data: U.S. Equities SMID

NON-U.S. EQUITY
RISK ADJUSTED RETURN
for the quarter ended March 31, 2018

10 Year Risk vs Return



	Rate of Return 10 Years	Standard Deviation 10 Years
Non-U.S. Equity (Hedged)	**4.0** *63*	**17.9** *29*
CUSTOM MSCI ACWI IMI N 50%H	3.6 *74*	17.9 *30*
5th Percentile	8.9	15.3
25th Percentile	6.1	17.6
50th Percentile	4.3	18.8
75th Percentile	3.6	21.2
95th Percentile	1.5	23.7
Number of Observations	152	153

	Rate of Return 10 Years	Standard Deviation 10 Years	Tracking Error 10 Years
Non-U.S. Equity (Hedged)	4.0 *63*	17.9 *29*	0.5
CUSTOM MSCI ACWI IMI N 50%H	3.6 *74*	17.9 *30*	

Universe data: Non-U.S. Equity Funds

NON-U.S. EQUITY
ACADIAN ASSET MANAGEMENT, LLC
for the quarter ended March 31, 2018

Manager Profile

Firm:	Acadian Asset Management, LLC
Location:	Boston, MA
Year Founded:	1986
Contact:	Douglas Coughlin, CFA, Sr. Vice President
Inception Date:	April 2006
Assigned Role:	Non-U.S. Equity
Benchmark:	MSCI EAFE + Canada (Net)
Investment Style:	Core / Value

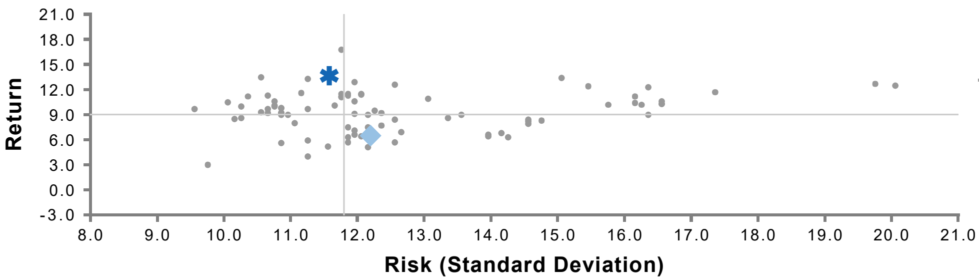
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Acadian Developed Markets	886.2	-1.13	23.21	12.47	11.08	5.13
MSCI EAFE + Canada Net Index		-2.04	13.92	5.30	6.04	3.58

Universe

	1 Qtr	1 Year	3 Years	5 Years
Intl/Global Equity Funds - Core				
Median	-0.33	16.65	8.99	9.83
Number of Observations	103.00	104.00	91.00	65.00

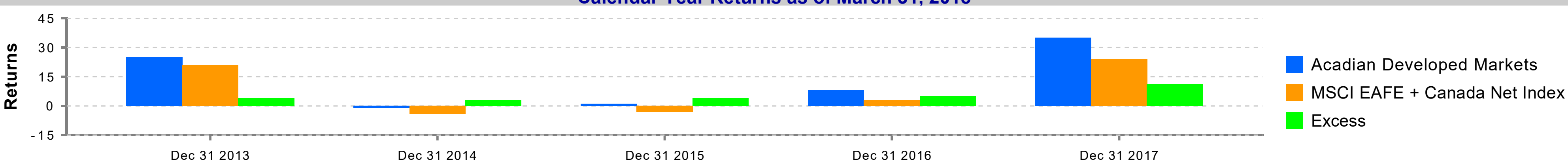
3 Year Risk vs Return



Acadian Developed Markets   MSCI EAFE + Canada Net Index

	3 Year Return	3 Year Standard Deviation
Acadian Developed Markets	12.5 7	11.4 37
MSCI EAFE + Canada Net Index	5.3 95	12.0 60
5th Percentile	12.9	10.1
25th Percentile	10.8	10.8
50th Percentile	9.0	11.8
75th Percentile	7.7	13.5
95th Percentile	5.2	16.5

Calendar Year Returns as of March 31, 2018



LACERA Investments

Universe data: International Equity Funds Core

NON-U.S. EQUITY
CAPITAL GUARDIAN TRUST COMPANY
for the quarter ended March 31, 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

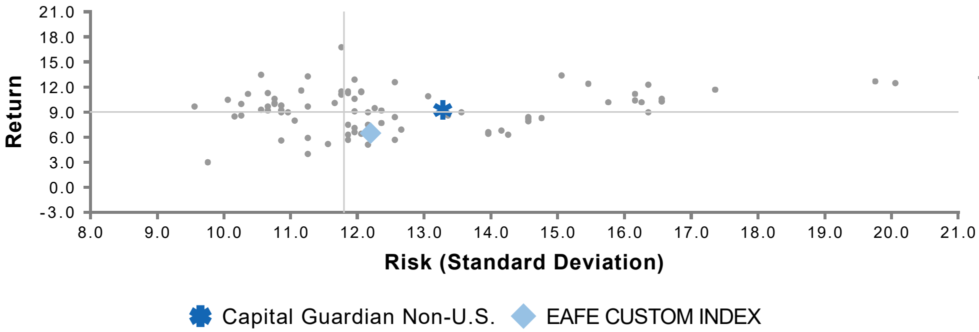
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Capital Guardian Non-U.S.	**382.4**	**-0.25**	**20.14**	**8.11**	**8.04**	**7.76**
EAFE CUSTOM INDEX		-2.04	13.92	5.30	6.04	5.00

Universe

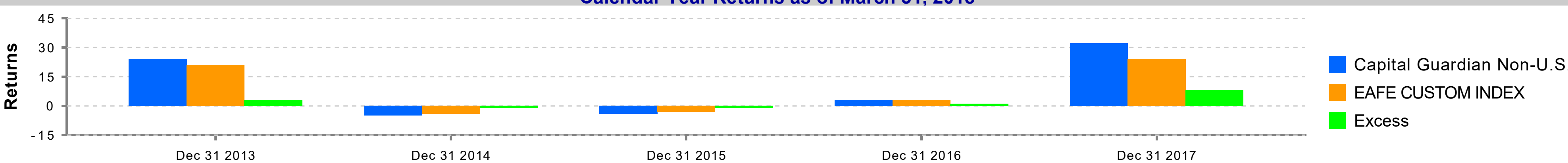
	1 Qtr	1 Year	3 Years	5 Years
Intl/Global Equity Funds - Core				
Median	-0.33	16.65	8.99	9.83
Number of Observations	103.00	104.00	91.00	65.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
Capital Guardian Non-U.S.	8.1	71	13.1	73
EAFE CUSTOM INDEX	5.3	95	12.0	60
5th Percentile	12.9		10.1	
25th Percentile	10.8		10.8	
50th Percentile	9.0		11.8	
75th Percentile	7.7		13.5	
95th Percentile	5.2		16.5	

Calendar Year Returns as of March 31, 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 March 31, 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

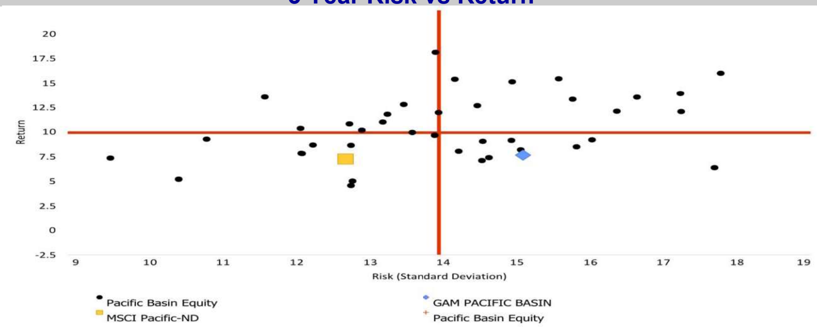
Manager vs. Benchmark: Return through March 31, 2018 (not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
GAM Pacific Basin	882.0	-1.21	14.97	7.65	6.97	7.34
MSCI PACIFIC $ (DAILY)		-0.68	15.78	7.26	6.84	2.83

Universe

	1 Qtr	1 Year	3 Years	5 Years
Pacific Basin Equity				
Median	0.41	21.33	9.94	9.67
Number of Observations	41	41	39	36

3 Year Risk vs Return

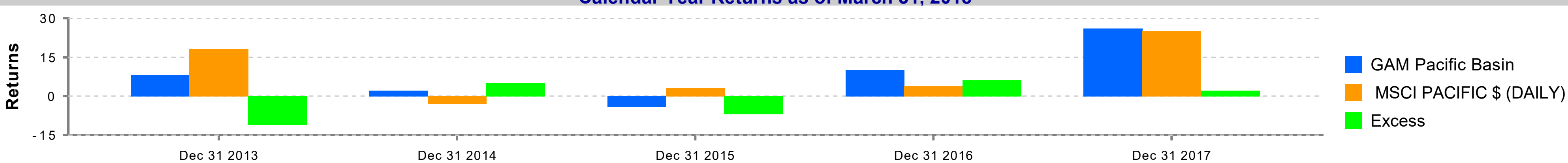


Universe: eVestment Pacific Basin Equity

3 Year Risk vs Return

	3 Year Return		3 Year Standard Deviation (Qtr)	
GAM PACIFIC BASIN	7.6	83	15.1	26
MSCI PACIFIC $ (DAILY)	7.3	88	12.7	79
5th Percentile	15.5		17.3	
25th Percentile	12.7		15.3	
50th Percentile	9.9		13.9	
75th Percentile	8.1		12.7	
95th Percentile	5.2		10.7	

Calendar Year Returns as of March 31, 2018



Universe data: eVestment's Pacific Basin Equity

NON-U.S. EQUITY - PACIFIC BASIN
SYMPHONY FINANCIAL PARTNERS PTE. LTD.
for the quarter ended March 31, 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

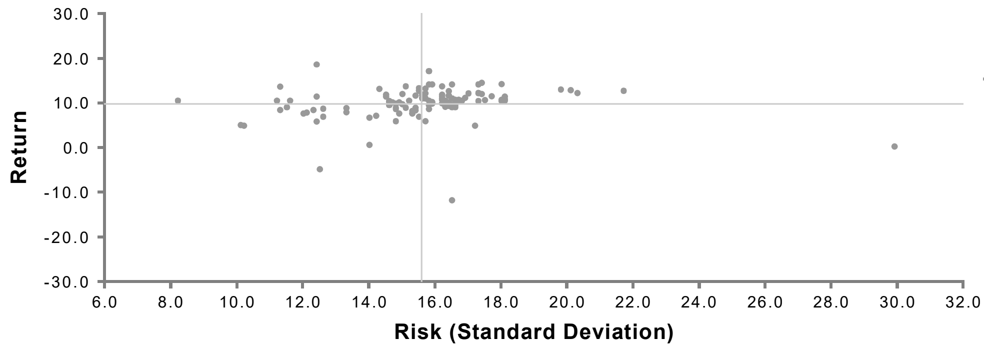
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Symphony Financial Partners	137.3	5.54	30.03			25.11
MSCI JAPAN SMALL CAP NET		2.09	25.51			20.40

Universe

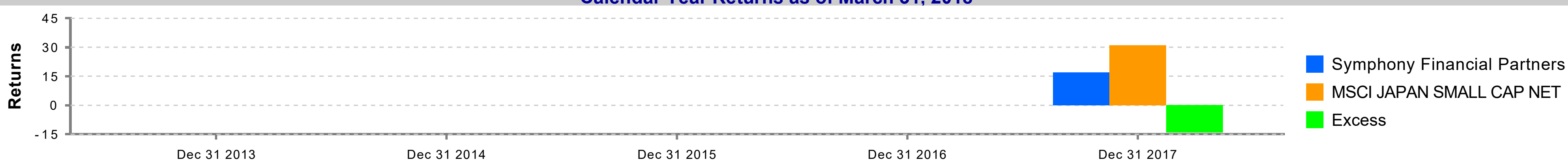
	1 Qtr	1 Year	3 Years	5 Years
Intl Equity Emerging Mkt Funds				
Median	1.79	23.33	9.75	5.53

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
5th Percentile	13.4	11.1
25th Percentile	11.0	14.5
50th Percentile	9.8	15.6
75th Percentile	8.3	16.4
95th Percentile	4.3	18.0

Calendar Year Returns as of March 31, 2018



NON-U.S. EQUITY - EUROPE

BLACKROCK INSTITUTIONAL TRUST COMPANY, N.A. - EUROPE ALPHA TILTS

for the quarter ended March 31, 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

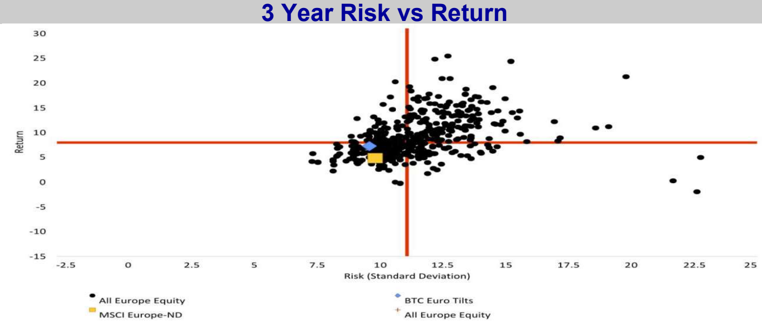
Manager vs. Benchmark: Return through March 31, 2018 (not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
BTC Euro Tilts	999.4	-2.02	16.48	7.26	9.42	3.66
MSCI EUROPE (DAILY)		-1.98	14.49	4.79	6.37	2.19

Universe

	1 Qtr	1 Year	3 Years	5 Years
Europe Equity				
Median	-0.76	18.86	8.00	9.00
Number of Observations	498	498	481	438

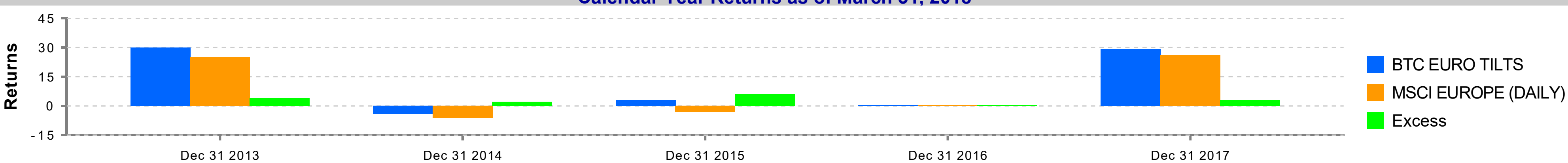
3 Year Risk vs Return



3 Year Risk vs Return

	3 Year Return		3 Year Standard Deviation	
BTC EURO TILTS	7.2	58	9.6	87
MSCI EUROPE (DAILY)	4.8	88	9.8	79
5th Percentile	16.3		14.5	
25th Percentile	11.1		12.4	
50th Percentile	8.0		11.1	
75th Percentile	5.8		10.1	
95th Percentile	4.0		9.0	

Calendar Year Returns as of March 31, 2018



Universe data: eVestment's All Europe Equity

NON-U.S. EQUITY - EUROPE
CEVIAN CAPITAL
for the quarter ended March 31, 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

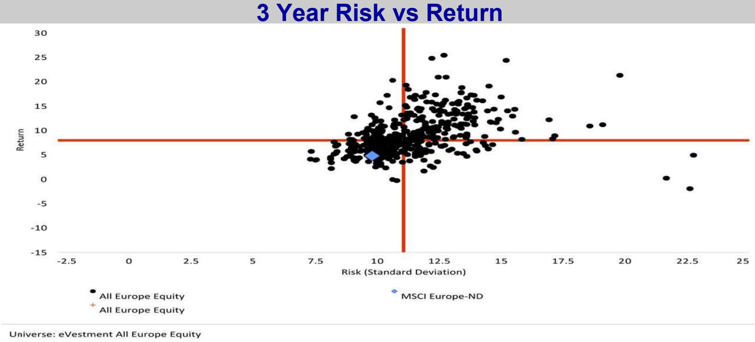
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Cevian Capital	288.3	-4.76	3.16			11.45
MSCI EUROPE (DAILY)		-1.98	14.49			14.52

Universe

	1 Qtr	1 Year	3 Years	5 Years
Europe Equity				
Median	-0.76	18.86	8.00	9.00
Number of Observations	498	498	481	438

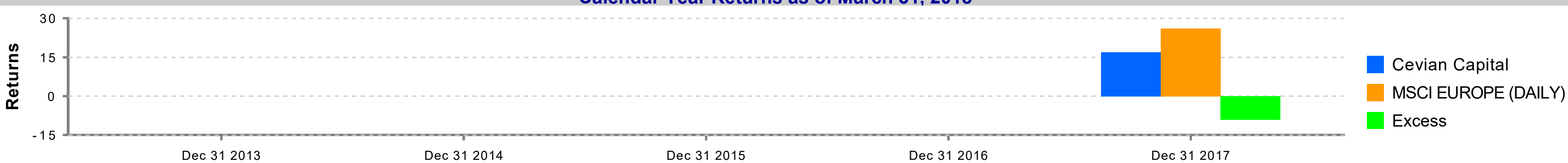
3 Year Risk vs Return



3 Year Risk vs Return

	3 Year Return		3 Year Standard Deviation	
CEVIAN CAPITAL	N/A	-	N/A	-
MSCI EUROPE (DAILY)	4.8	88	9.8	79
5th Percentile	16.3		14.5	
25th Percentile	11.1		12.4	
50th Percentile	8.0		11.1	
75th Percentile	5.8		10.1	
95th Percentile	4.0		9.0	

Calendar Year Returns as of March 31, 2018



NON-U.S. EQUITY - EMERGING MARKETS
ACADIAN ASSET MANAGEMENT, LLC
for the quarter ended March 31, 2018

Manager Profile

Firm:	Acadian Asset Management, LLC
Location:	Boston, MA
Year Founded:	1986
Contact:	Douglas Coughlin, CFA, Sr. Vice President
Inception Date:	January 2013
Assigned Role:	Emerging Markets
Benchmark:	MSCI EMF (Net)
Investment Style:	Core / Value

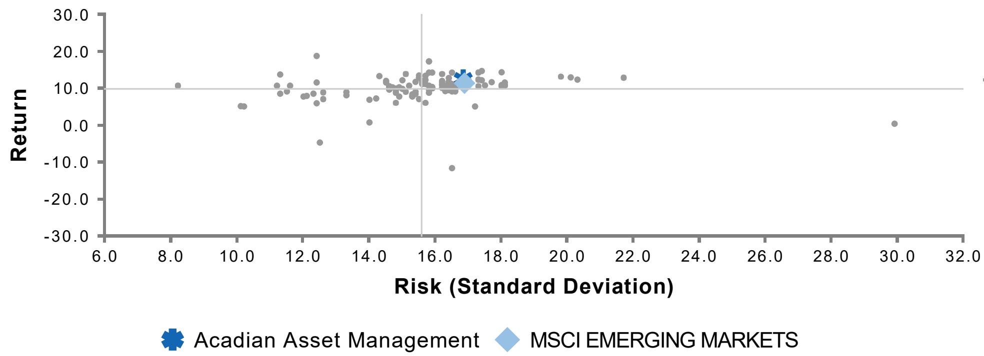
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Incept
Acadian Asset Management	432.9	2.41	24.67	9.91	5.45	5.85
MSCI EMERGING MARKETS		1.42	24.93	8.81	4.99	4.42

Universe

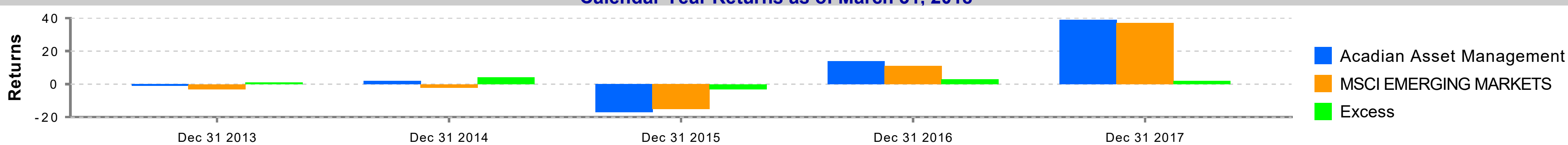
	1 Qtr	1 Year	3 Years	5 Years
Intl Equity Emerging Mkt Funds				
Median	1.79	23.33	9.75	5.53
Number of Observations	150.00	139.00	128.00	106.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
Acadian Asset Management	9.9	42	16.5	77
MSCI EMERGING MARKETS	8.8	69	16.5	76
5th Percentile	13.4		11.1	
25th Percentile	11.0		14.5	
50th Percentile	9.8		15.6	
75th Percentile	8.3		16.4	
95th Percentile	4.3		18.0	

Calendar Year Returns as of March 31, 2018



Universe data: International Equity Funds Emerging Markets

NON-U.S. EQUITY - EMERGING MARKETS
AQR CAPITAL MANAGEMENT, LLC
for the quarter ended March 31, 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

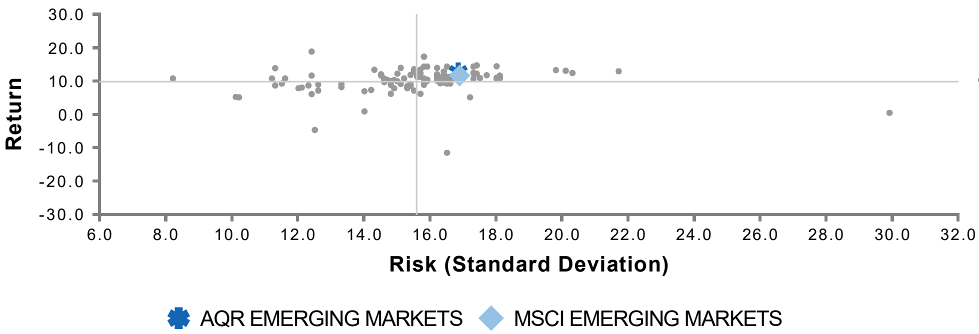
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Incept
AQR Emerging Markets	276.6	2.84	24.56	9.81		8.86
MSCI EMERGING MARKETS		1.42	24.93	8.81		8.00

Universe

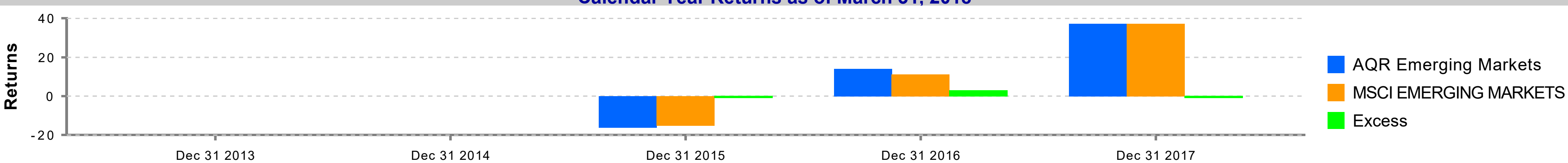
	1 Qtr	1 Year	3 Years	5 Years
Intl Equity Emerging Mkt Funds				
Median	1.79	23.33	9.75	5.53
Number of Observations	150.00	139.00	128.00	106.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
AQR EMERGING MARKETS	9.8	45	16.5	78
MSCI EMERGING MARKETS	8.8	69	16.5	76
5th Percentile	13.4		11.1	
25th Percentile	11.0		14.5	
50th Percentile	9.8		15.6	
75th Percentile	8.3		16.4	
95th Percentile	4.3		18.0	

Calendar Year Returns as of March 31, 2018



Universe data: International Equity Funds Emerging Markets

NON-U.S. EQUITY - EMERGING MARKETS
GENESIS INVESTMENT MANAGEMENT, LLP
for the quarter ended March 31, 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

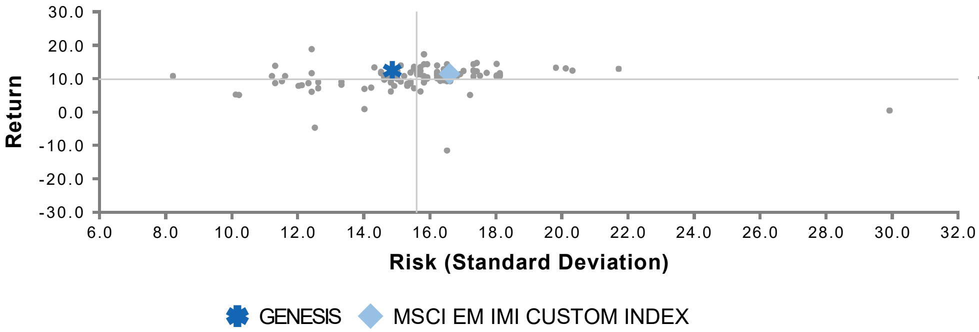
Manager vs. Benchmark: Return through March 31, 2018 (not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Genesis	725.5	1.54	24.91	9.50	5.75	6.23
MSCI EM IMI CUSTOM INDEX		1.25	24.08	8.59	4.93	3.31

Universe

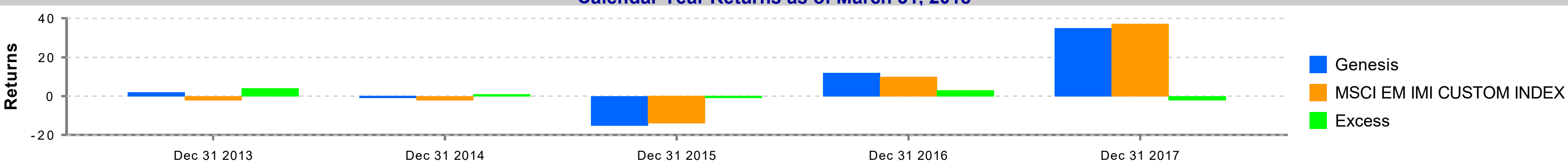
	1 Qtr	1 Year	3 Years	5 Years
Intl Equity Emerging Mkt Funds				
Median	1.79	23.33	9.75	5.53
Number of Observations	150.00	139.00	128.00	106.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
GENESIS	9.5	56	14.5	25
MSCI EM IMI CUSTOM INDEX	8.6	73	16.2	65
5th Percentile	13.4		11.1	
25th Percentile	11.0		14.5	
50th Percentile	9.8		15.6	
75th Percentile	8.3		16.4	
95th Percentile	4.3		18.0	

Calendar Year Returns as of March 31, 2018



Universe data: International Equity Funds Emerging Markets

NON-U.S. EQUITY - EMERGING MARKETS
LAZARD ASSET MANAGEMENT, LLC
for the quarter ended March 31, 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

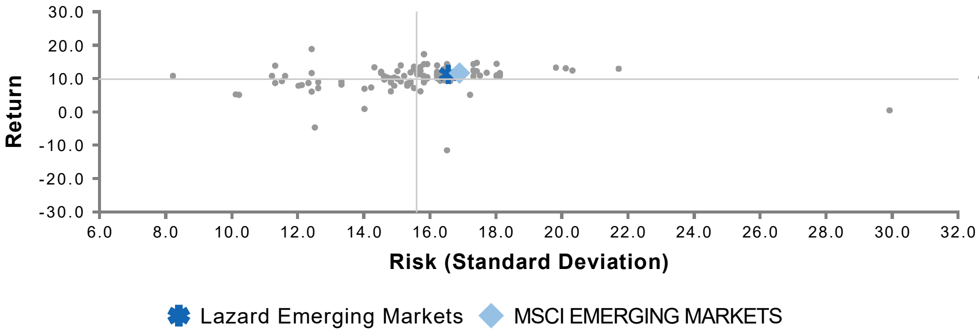
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Incept
Lazard Emerging Markets	371.5	-0.10	24.16	8.38	5.31	4.39
MSCI EMERGING MARKETS		1.42	24.93	8.81	4.99	4.22

Universe

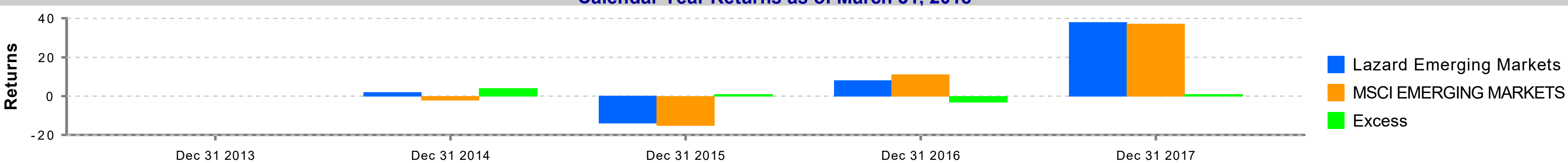
	1 Qtr	1 Year	3 Years	5 Years
Intl Equity Emerging Mkt Funds				
Median	1.79	23.33	9.75	5.53
Number of Observations	150.00	139.00	128.00	106.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
Lazard Emerging Markets	8.4	73	16.2	66
MSCI EMERGING MARKETS	8.8	69	16.5	76
5th Percentile	13.4		11.1	
25th Percentile	11.0		14.5	
50th Percentile	9.8		15.6	
75th Percentile	8.3		16.4	
95th Percentile	4.3		18.0	

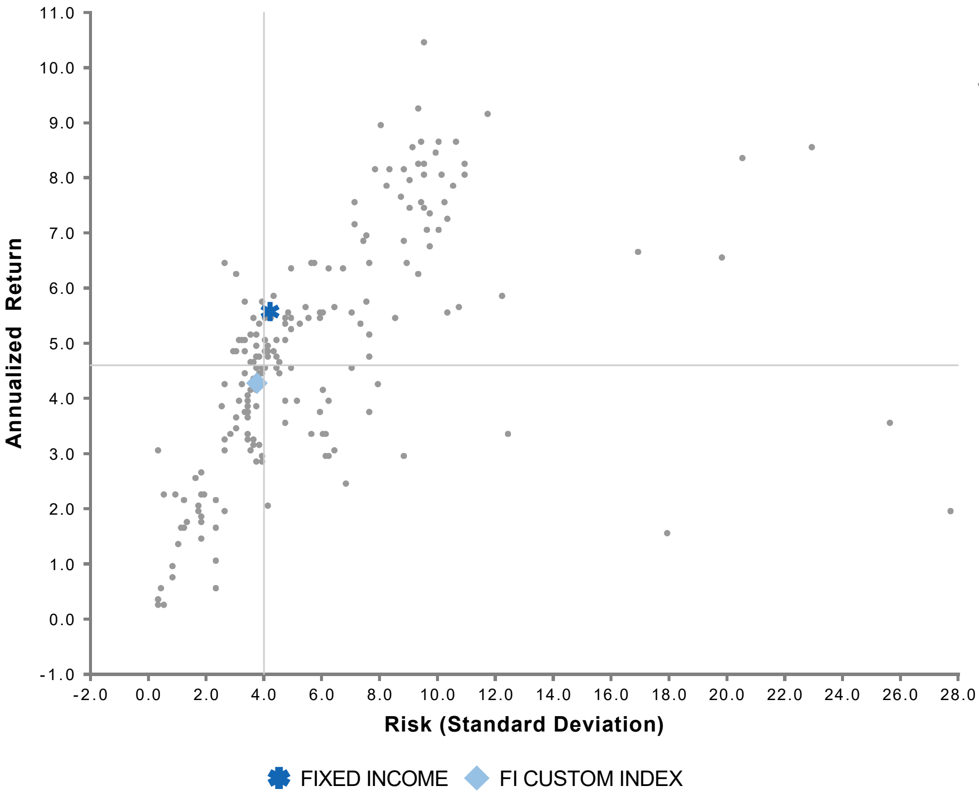
Calendar Year Returns as of March 31, 2018



Universe data: International Equity Funds Emerging Markets

FIXED INCOME
RISK ADJUSTED RETURN
for the quarter ended March 31, 2018

10 Year Risk vs Return



	Rate of Return 10 Years	Standard Deviation 10 Years
FIXED INCOME	**5.4** *35*	**3.8** *45*
FI CUSTOM INDEX	4.1 *61*	3.3 *30*
5th Percentile	8.4	0.7
25th Percentile	5.7	3.2
50th Percentile	4.6	4.0
75th Percentile	3.3	7.2
95th Percentile	1.3	10.6
Number of Observations	216	216

	Rate of Return 10 Years	Standard Deviation 10 Years	Tracking Error 10 Years
FIXED INCOME	5.4 *35*	3.8 *45*	1.7
FI CUSTOM INDEX	4.1 *61*	3.3 *30*	

Universe data: Fixed Income Funds - plans > $1 billion

FIXED INCOME - CORE
DODGE & COX
for the quarter ended March 31, 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

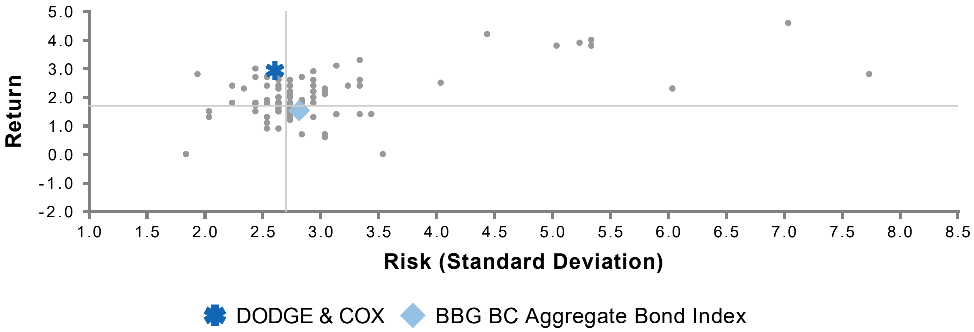
Manager vs. Benchmark: Return through March 31, 2018 (not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Dodge & Cox	1,285.6	-0.90	2.33	2.64	3.19	6.13
BBG BC Aggregate Bond Index		-1.46	1.20	1.20	1.82	5.08

Universe

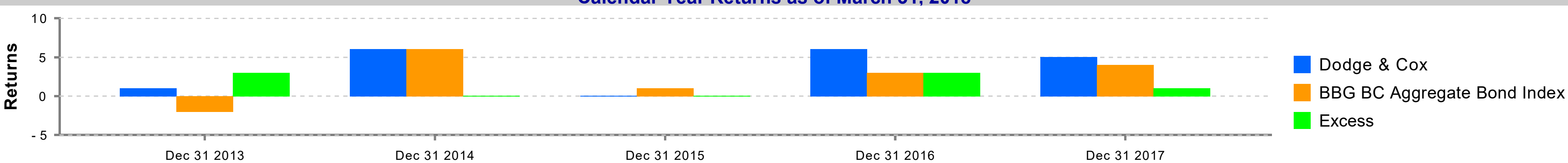
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core				
Median	-1.22	1.74	1.75	2.29
Number of Observations	106.00	105.00	103.00	101.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
DODGE & COX	2.6	12	2.5	14
BBG BC Aggregate Bond Index	1.2	90	2.7	49
5th Percentile	3.2		2.2	
25th Percentile	2.3		2.6	
50th Percentile	1.7		2.7	
75th Percentile	1.4		2.9	
95th Percentile	0.8		5.2	

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds Core

FIXED INCOME - CORE
PUGH CAPITAL MANAGEMENT, INC.
for the quarter ended March 31, 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

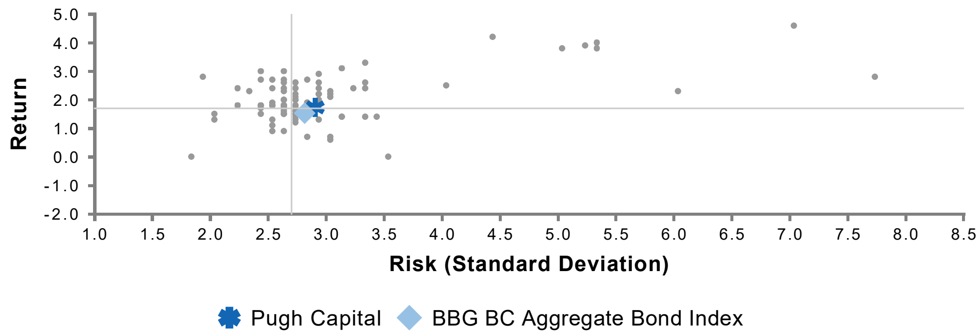
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Pugh Capital	135.0	-1.65	1.47	1.36	2.04	4.47
BBG BC Aggregate Bond Index		-1.46	1.20	1.20	1.82	3.89

Universe

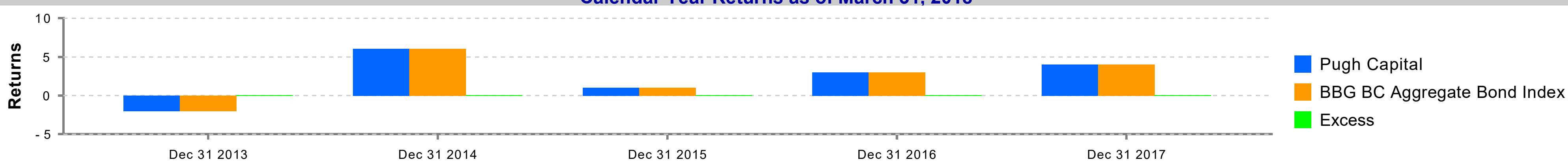
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core				
Median	-1.22	1.74	1.75	2.29
Number of Observations	106.00	105.00	103.00	101.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
Pugh Capital	1.4 83	2.8 65
BBG BC Aggregate Bond Index	1.2 90	2.7 49
5th Percentile	3.2	2.2
25th Percentile	2.3	2.6
50th Percentile	1.7	2.7
75th Percentile	1.4	2.9
95th Percentile	0.8	5.2

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds Core

FIXED INCOME - CORE
WELLS CAPITAL MANAGEMENT
for the quarter ended March 31, 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

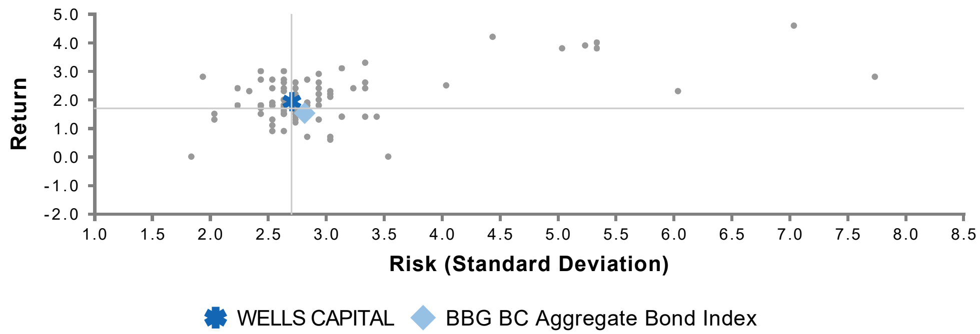
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Wells Capital	1,340.2	-1.43	1.45	1.62	2.29	4.94
BBG BC Aggregate Bond Index		-1.46	1.20	1.20	1.82	3.88

Universe

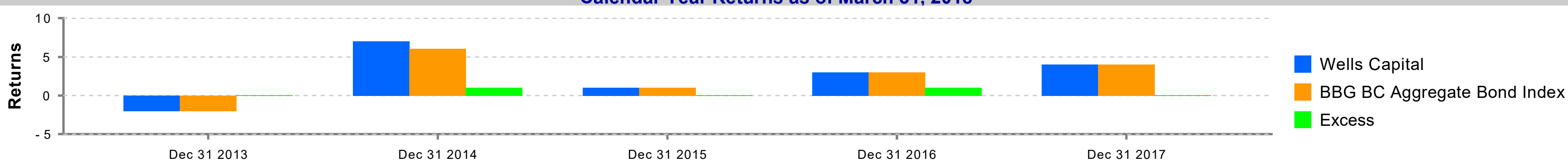
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core				
Median	-1.22	1.74	1.75	2.29
Number of Observations	106.00	105.00	103.00	101.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
WELLS CAPITAL	1.6 64	2.6 32
BBG BC Aggregate Bond Index	1.2 90	2.7 49
5th Percentile	3.2	2.2
25th Percentile	2.3	2.6
50th Percentile	1.7	2.7
75th Percentile	1.4	2.9
95th Percentile	0.8	5.2

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds Core

FIXED INCOME - CORE PLUS
DOLAN McENIRY CAPITAL MANAGEMENT, LLC
for the quarter ended March 31, 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

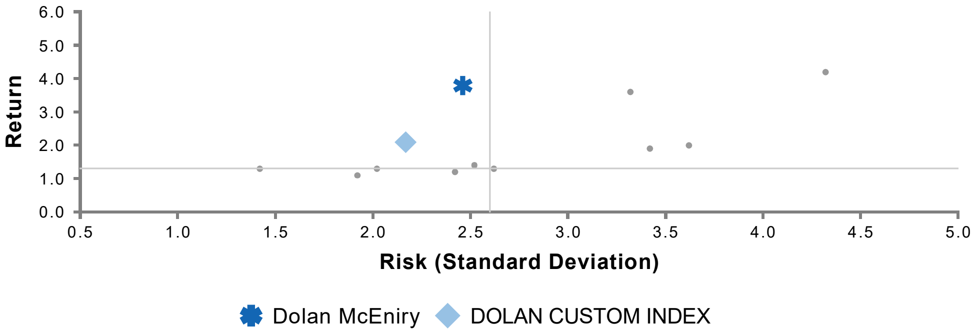
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Dolan McEniry	344.1	-0.88	2.77	3.48	3.76	6.13
DOLAN CUSTOM INDEX		-1.29	1.25	1.83	2.26	4.44

Universe

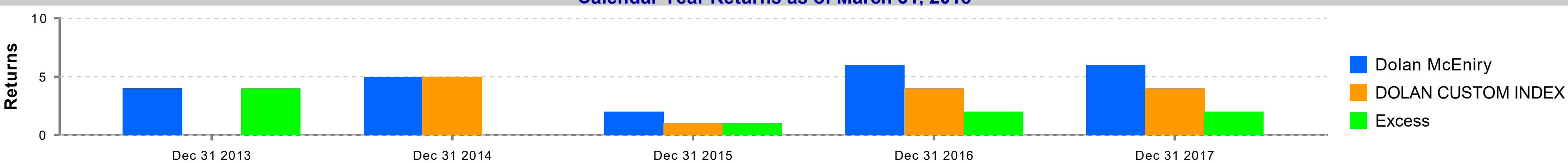
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core Plus				
Median	-1.36	1.28	1.28	1.99
Number of Observations	59.00	57.00	10.00	10.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
Dolan McEniry	3.5 19	2.4 36
DOLAN CUSTOM INDEX	1.8 38	2.1 30
5th Percentile	4.1	1.4
25th Percentile	2.4	2.0
50th Percentile	1.3	2.6
75th Percentile	1.2	3.4
95th Percentile	1.0	4.3

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds Core Plus

FIXED INCOME - CORE PLUS
LOOMIS, SAYLES & COMPANY, LP
for the quarter ended March 31, 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

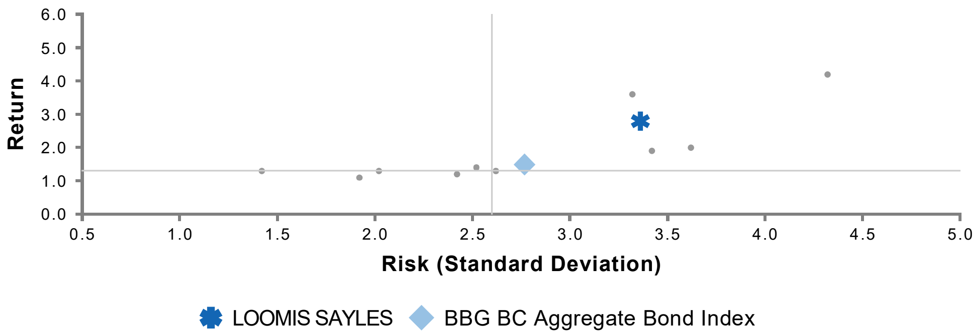
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Loomis Sayles	1,077.8	-0.69	2.89	2.50	2.94	5.97
BBG BC Aggregate Bond Index		-1.46	1.20	1.20	1.82	5.08

Universe

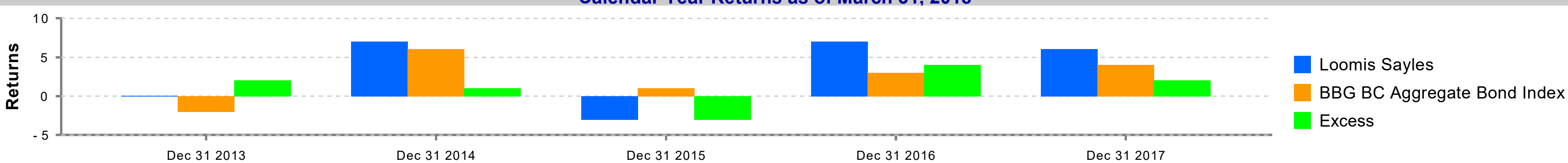
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core Plus				
Median	-1.36	1.28	1.28	1.99
Number of Observations	59.00	57.00	10.00	10.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
LOOMIS SAYLES	2.5 25	3.3 63
BBG BC Aggregate Bond Index	1.2 62	2.7 55
5th Percentile	4.1	1.4
25th Percentile	2.4	2.0
50th Percentile	1.3	2.6
75th Percentile	1.2	3.4
95th Percentile	1.0	4.3

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds Core Plus

FIXED INCOME - CORE PLUS
PACIFIC INVESTMENT MANAGEMENT COMPANY
for the quarter ended March 31, 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

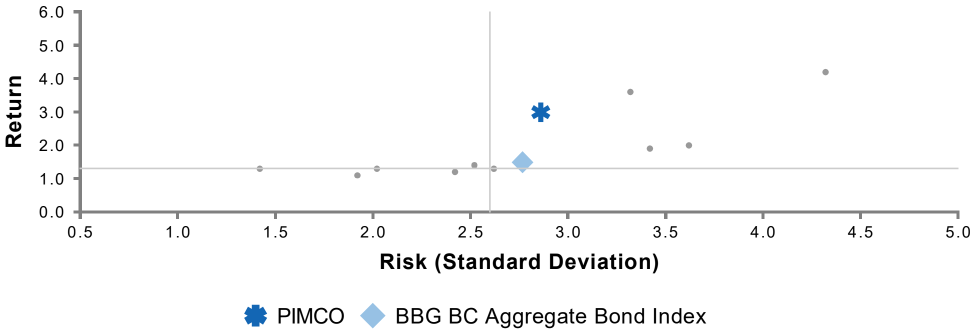
Manager vs. Benchmark: Return through March 31, 2018 (not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
PIMCO	1,047.1	-1.22	3.21	2.70	2.46	5.07
BBG BC Aggregate Bond Index		-1.46	1.20	1.20	1.82	3.88

Universe

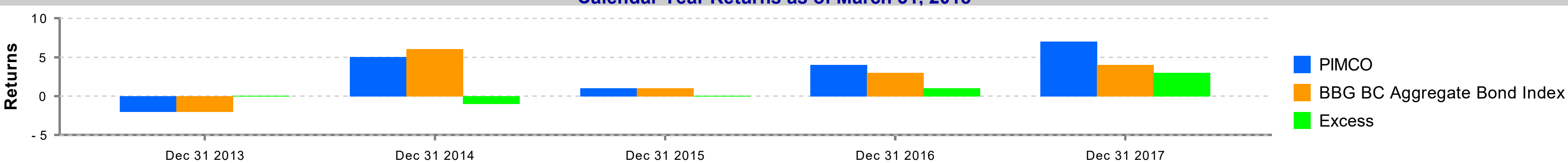
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core Plus				
Median	-1.36	1.28	1.28	1.99
Number of Observations	59.00	57.00	10.00	10.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
PIMCO	2.7 24	2.8 57
BBG BC Aggregate Bond Index	1.2 62	2.7 55
5th Percentile	4.1	1.4
25th Percentile	2.4	2.0
50th Percentile	1.3	2.6
75th Percentile	1.2	3.4
95th Percentile	1.0	4.3

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds Core Plus

FIXED INCOME - CORE PLUS
WESTERN ASSET MANAGEMENT COMPANY
for the quarter ended March 31, 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

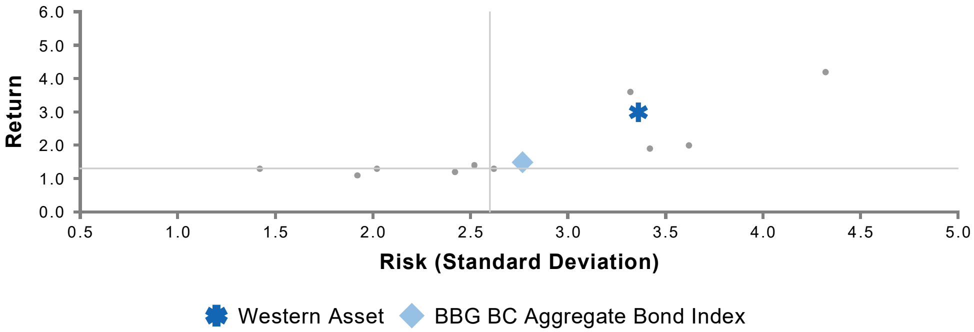
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Western Asset	1,133.4	-1.67	2.39	2.68	3.18	6.43
BBG BC Aggregate Bond Index		-1.46	1.20	1.20	1.82	5.08

Universe

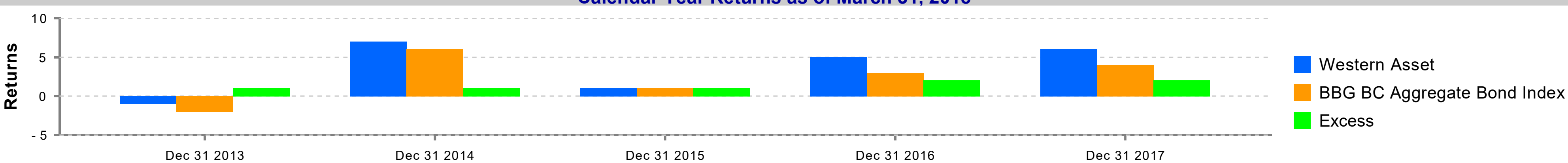
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core Plus				
Median	-1.36	1.28	1.28	1.99
Number of Observations	59.00	57.00	10.00	10.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
Western Asset	2.7 24	3.3 62
BBG BC Aggregate Bond Index	1.2 62	2.7 55
5th Percentile	4.1	1.4
25th Percentile	2.4	2.0
50th Percentile	1.3	2.6
75th Percentile	1.2	3.4
95th Percentile	1.0	4.3

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds Core Plus

FIXED INCOME - HIGH YIELD

OAKTREE CAPITAL MANAGEMENT, L.P.

for the quarter ended March 31, 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

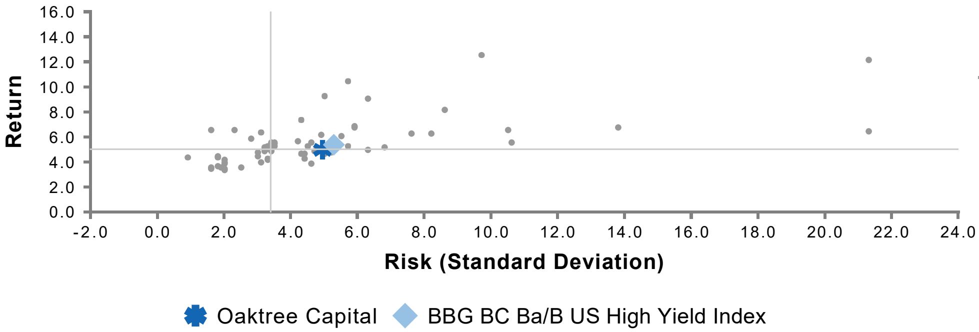
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Oaktree Capital	403.4	-1.25	2.89	4.23	4.35	7.11
BBG BC Ba/B US High Yield Index		-1.10	3.39	4.55	4.72	6.48

Universe

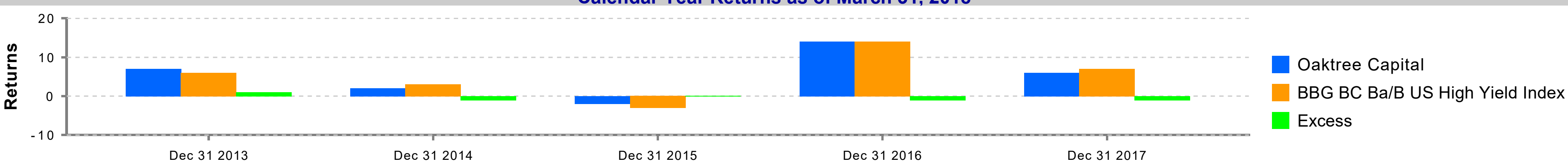
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	-0.50	4.04	4.95	5.45
Number of Observations	81.00	80.00	73.00	69.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
Oaktree Capital	4.2 76	4.6 68
BBG BC Ba/B US High Yield Index	4.6 66	4.9 75
5th Percentile	10.2	1.5
25th Percentile	5.9	2.9
50th Percentile	5.0	3.4
75th Percentile	4.2	4.9
95th Percentile	3.3	10.5

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds High Yield

FIXED INCOME - HIGH YIELD
PENN CAPITAL MANAGEMENT COMPANY, INC.
for the quarter ended March 31, 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

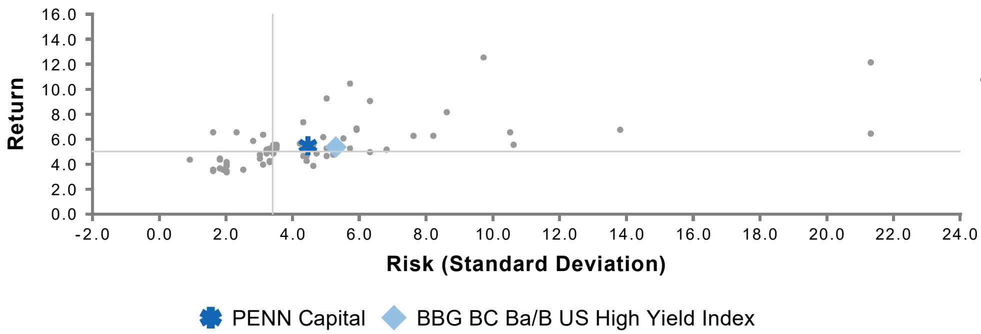
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
PENN Capital	108.3	-0.31	4.00	4.73	4.37	6.70
BBG BC Ba/B US High Yield Index		-1.10	3.39	4.55	4.72	6.88

Universe

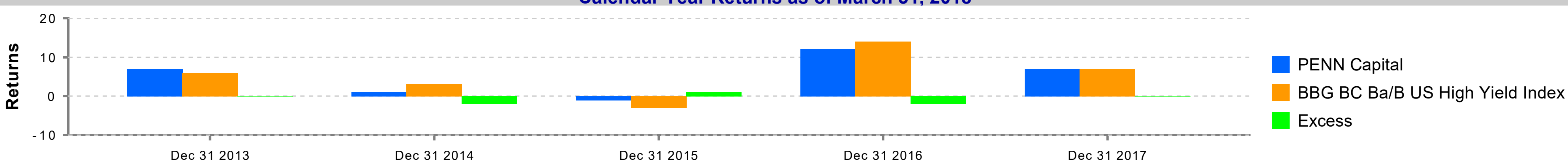
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	-0.50	4.04	4.95	5.45
Number of Observations	81.00	80.00	73.00	69.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
PENN Capital	4.760	4.156
BBG BC Ba/B US High Yield Index	4.666	4.975
5th Percentile	10.2	1.5
25th Percentile	5.9	2.9
50th Percentile	5.0	3.4
75th Percentile	4.2	4.9
95th Percentile	3.3	10.5

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds High Yield

FIXED INCOME - OPPORTUNISTIC
ABERDEEN ASSET MANAGEMENT INC.
for the quarter ended March 31, 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

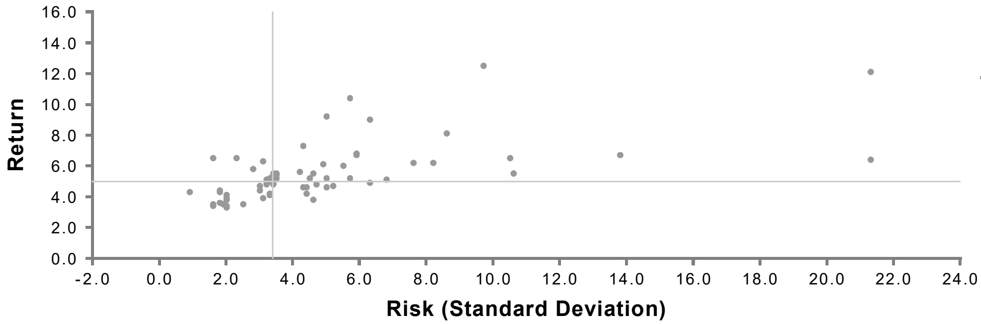
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Aberdeen	205.7	-0.95				4.02
Opportunistic EMD Custom		-0.06				3.67

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	-0.50	4.04	4.95	5.45
Number of Observations	81.00	80.00	73.00	69.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
5th Percentile	10.2	1.5
25th Percentile	5.9	2.9
50th Percentile	5.0	3.4
75th Percentile	4.2	4.9
95th Percentile	3.3	10.5

Calendar Year Returns as of March 31, 2018

Universe data: U.S. Fixed Income Funds High Yield

FIXED INCOME - OPPORTUNISTIC
ASHMORE INVESTMENT MANAGEMENT LIMITED
for the quarter ended March 31, 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

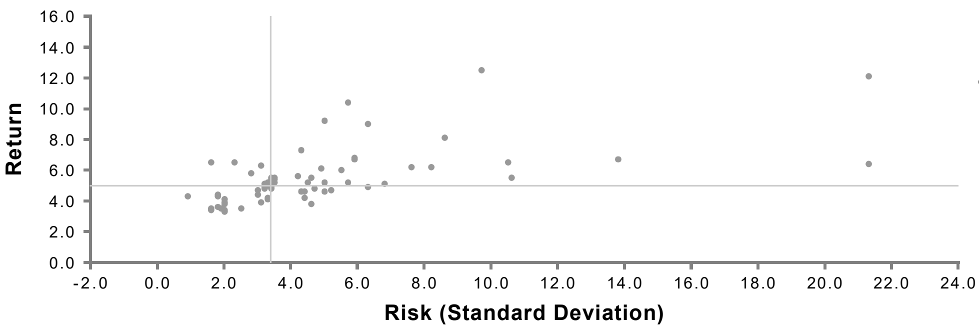
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Ashmore	212.3	1.20				6.65
Opportunistic EMD Custom		-0.06				3.77

Universe

	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	-0.50	4.04	4.95	5.45
Number of Observations	81.00	80.00	73.00	69.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
5th Percentile	10.2	1.5
25th Percentile	5.9	2.9
50th Percentile	5.0	3.4
75th Percentile	4.2	4.9
95th Percentile	3.3	10.5

Calendar Year Returns as of March 31, 2018

Universe data: U.S. Fixed Income Funds High Yield

FIXED INCOME - OPPORTUNISTIC
BAIN CAPITAL CREDIT, LP
for the quarter ended March 31, 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

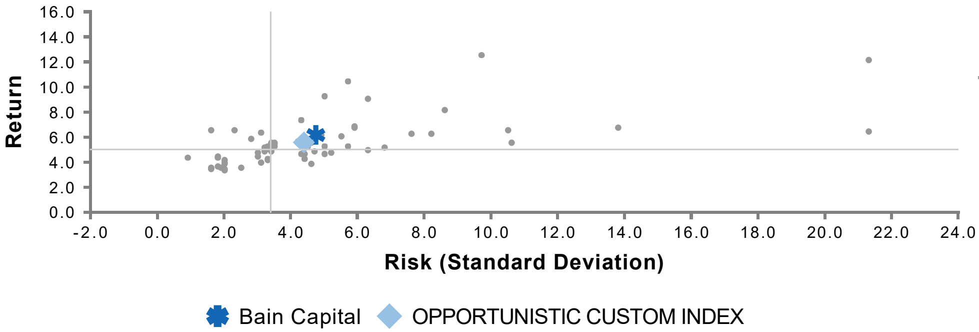
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Bain Capital	301.1	0.15	4.63	5.35		3.94
OPPORTUNISTIC CUSTOM INDEX		0.36	4.21	4.77		4.04

Universe

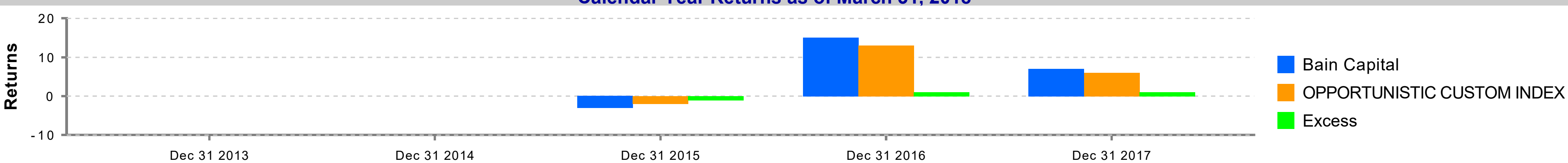
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	-0.50	4.04	4.95	5.45
Number of Observations	81.00	80.00	73.00	69.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
Bain Capital	5.4	30	4.4	63
OPPORTUNISTIC CUSTOM INDEX	4.8	57	4.0	55
5th Percentile	10.2		1.5	
25th Percentile	5.9		2.9	
50th Percentile	5.0		3.4	
75th Percentile	4.2		4.9	
95th Percentile	3.3		10.5	

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds High Yield

FIXED INCOME - OPPORTUNISTIC
BEACH POINT CAPITAL
for the quarter ended March 31, 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

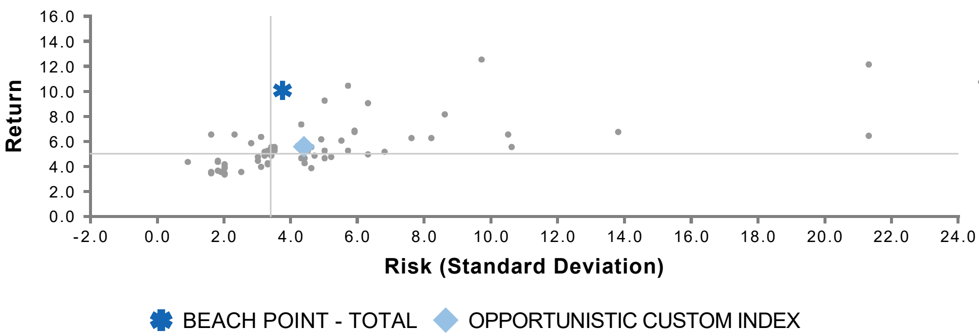
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Beach Point*	384.9	1.03	6.74	9.25		8.11
OPPORTUNISTIC CUSTOM INDEX		0.36	4.21	4.77		4.16

Universe

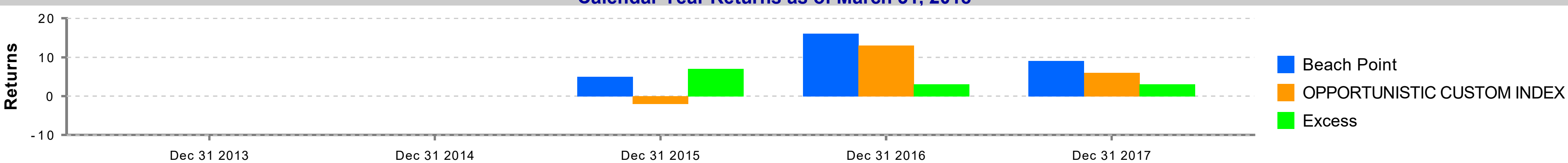
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	-0.50	4.04	4.95	5.45
Number of Observations	81.00	80.00	73.00	69.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
BEACH POINT - TOTAL	9.3 6	3.4 53
OPPORTUNISTIC CUSTOM INDEX	4.8 57	4.0 55
5th Percentile	10.2	1.5
25th Percentile	5.9	2.9
50th Percentile	5.0	3.4
75th Percentile	4.2	4.9
95th Percentile	3.3	10.5

Calendar Year Returns as of March 31, 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 March 31, 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

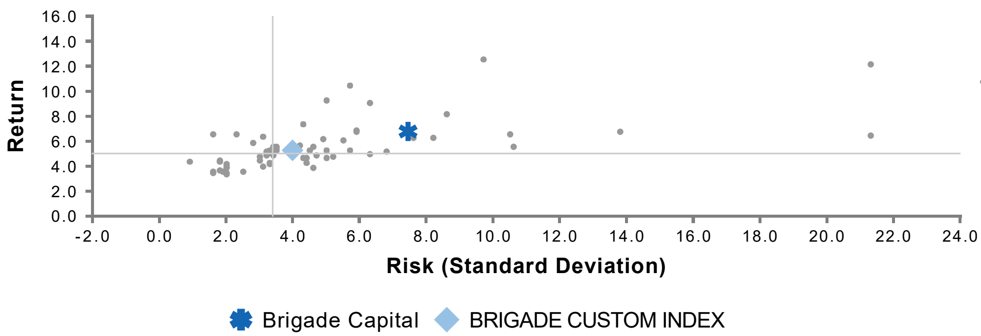
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Brigade Capital	490.8	1.03	4.52	6.05	5.61	8.66
BRIGADE CUSTOM INDEX		0.24	4.02	4.46	4.46	6.30

Universe

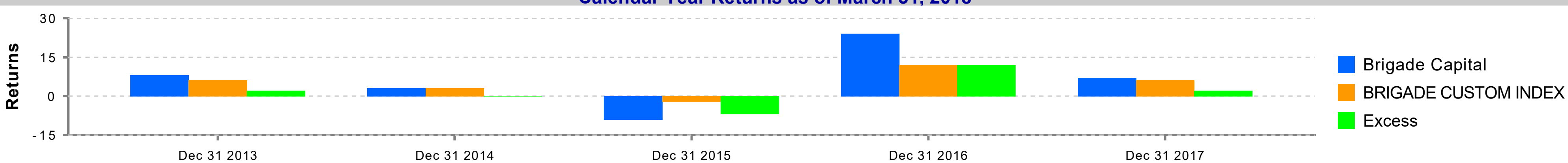
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	-0.50	4.04	4.95	5.45
Number of Observations	81.00	80.00	73.00	69.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
Brigade Capital	6.023	7.187
BRIGADE CUSTOM INDEX	4.569	3.655
5th Percentile	10.2	1.5
25th Percentile	5.9	2.9
50th Percentile	5.0	3.4
75th Percentile	4.2	4.9
95th Percentile	3.3	10.5

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds High Yield

FIXED INCOME - OPPORTUNISTIC
CRESCENT CAPITAL GROUP LP
for the quarter ended March 31, 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

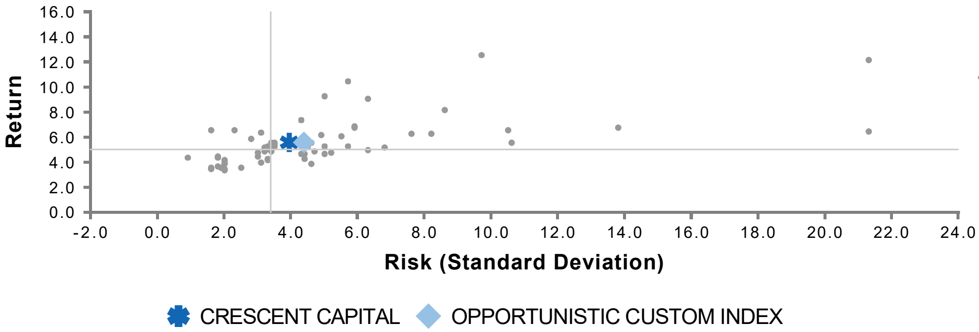
Manager vs. Benchmark: Return through March 31, 2018 (not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Crescent Capital	272.1	0.52	4.73	4.84		3.23
OPPORTUNISTIC CUSTOM INDEX		0.36	4.21	4.77		4.15

Universe

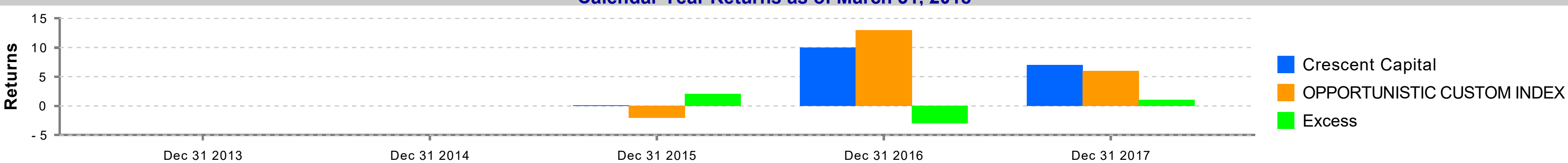
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	-0.50	4.04	4.95	5.45
Number of Observations	81.00	80.00	73.00	69.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
CRESCENT CAPITAL	4.8	55	3.6	55
OPPORTUNISTIC CUSTOM INDEX	4.8	57	4.0	55
5th Percentile	10.2		1.5	
25th Percentile	5.9		2.9	
50th Percentile	5.0		3.4	
75th Percentile	4.2		4.9	
95th Percentile	3.3		10.5	

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds High Yield

FIXED INCOME - OPPORTUNISTIC
DOUBLELINE CAPITAL LP
for the quarter ended March 31, 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

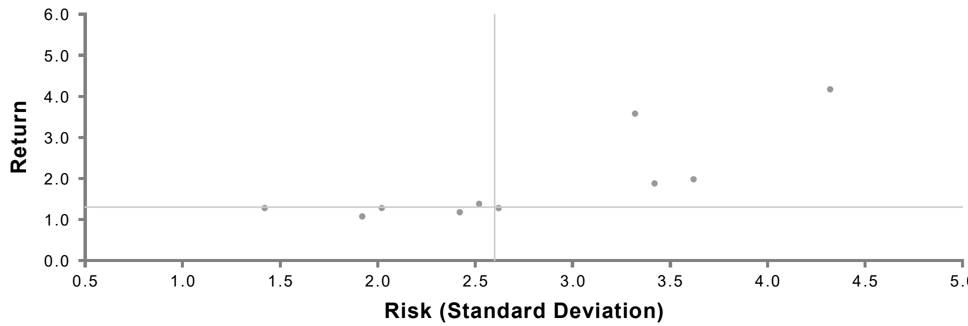
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
DoubleLine Capital	266.5	0.19	4.88			4.60
Securitized Custom Index		-0.21	4.82			4.85

Universe

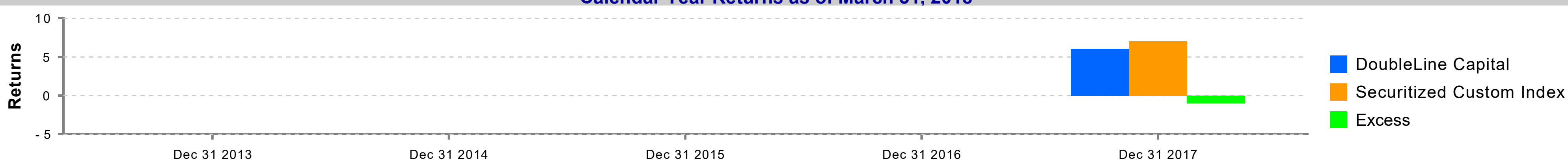
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - Core Plus				
Median	-1.36	1.28	1.28	1.99
Number of Observations	59.00	57.00	10.00	10.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
5th Percentile	4.1	1.4
25th Percentile	2.4	2.0
50th Percentile	1.3	2.6
75th Percentile	1.2	3.4
95th Percentile	1.0	4.3

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds High Yield

FIXED INCOME - OPPORTUNISTIC
PRINCIPAL GLOBAL INVESTORS, LLC
for the quarter ended March 31, 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

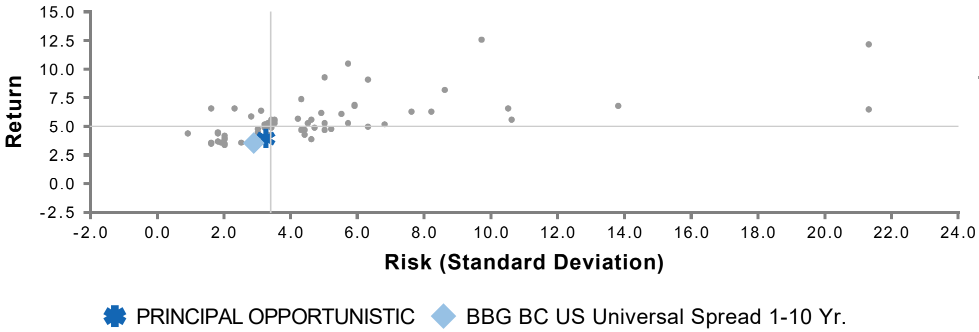
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Principal Opportunistic	266.9	-0.82	3.26	3.09	3.58	4.81
BBG BC US Universal Spread 1-10 Yr.		-1.14	1.80	2.70	2.79	4.00

Universe

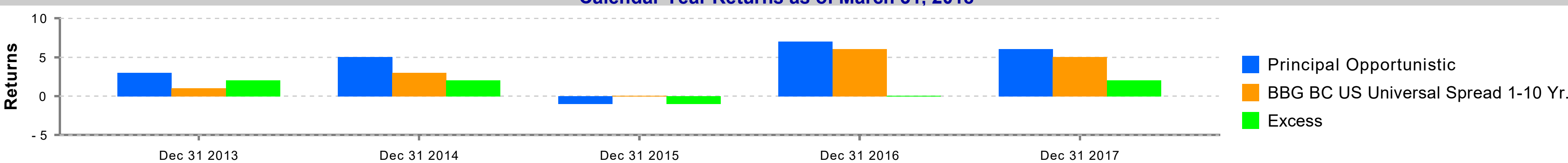
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	-0.50	4.04	4.95	5.45
Number of Observations	81.00	80.00	73.00	69.00

3 Year Risk vs Return



	3 Year Return		3 Year Standard Deviation	
PRINCIPAL OPPORTUNISTIC	3.1	100	2.9	22
BBG BC US Universal Spread 1-10 Yr.	2.7	100	2.5	21
5th Percentile	10.2		1.5	
25th Percentile	5.9		2.9	
50th Percentile	5.0		3.4	
75th Percentile	4.2		4.9	
95th Percentile	3.3		10.5	

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds High Yield

FIXED INCOME - OPPORTUNISTIC
TCW ASSET MANAGEMENT COMPANY
for the quarter ended March 31, 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

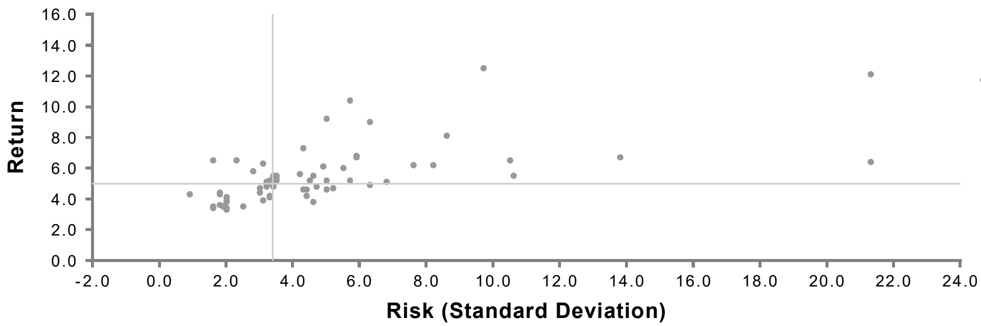
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
TCW	271.9	0.78	5.12			4.66
Securitized Custom Index		-0.21	4.82			5.20

Universe

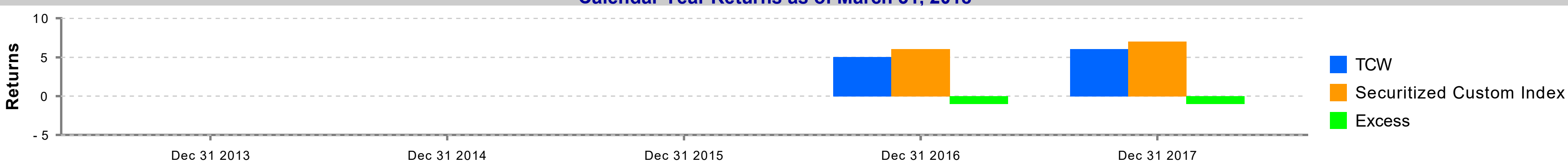
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	-0.50	4.04	4.95	5.45
Number of Observations	81.00	80.00	73.00	69.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
5th Percentile	10.2	1.5
25th Percentile	5.9	2.9
50th Percentile	5.0	3.4
75th Percentile	4.2	4.9
95th Percentile	3.3	10.5

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds High Yield

FIXED INCOME - OPPORTUNISTIC
TENNENBAUM CAPITAL PARTNERS, LLC
for the quarter ended March 31, 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

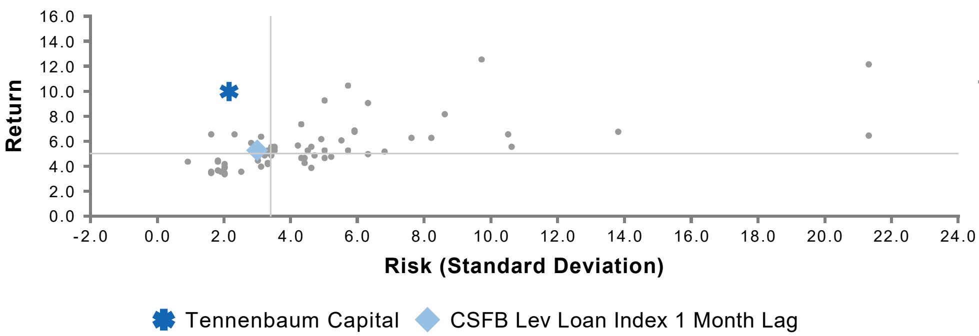
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Tennenbaum Capital*	269.6	3.01	8.90	9.18		8.37
CSFB Lev Loan Index 1 Month Lag		1.93	4.67	4.45		4.29

Universe

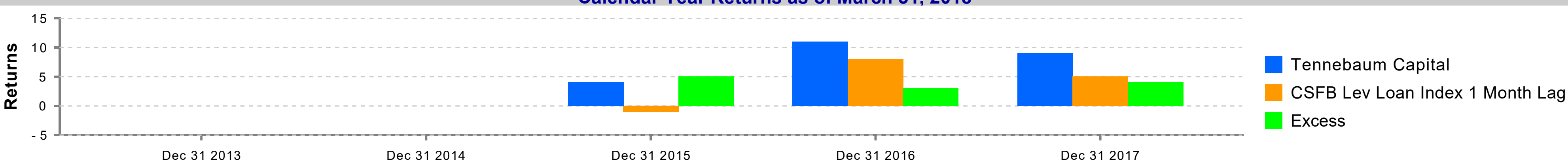
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	-0.50	4.04	4.95	5.45
Number of Observations	81.00	80.00	73.00	69.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
Tennenbaum Capital	9.2 6	1.8 11
CSFB Lev Loan Index 1 Month Lag	4.5 69	2.6 21
5th Percentile	10.2	1.5
25th Percentile	5.9	2.9
50th Percentile	5.0	3.4
75th Percentile	4.2	4.9
95th Percentile	3.3	10.5

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds High Yield
* One-month lag.

FIXED INCOME - OPPORTUNISTIC
WESTERN ASSET MANAGEMENT COMPANY
for the quarter ended March 31, 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

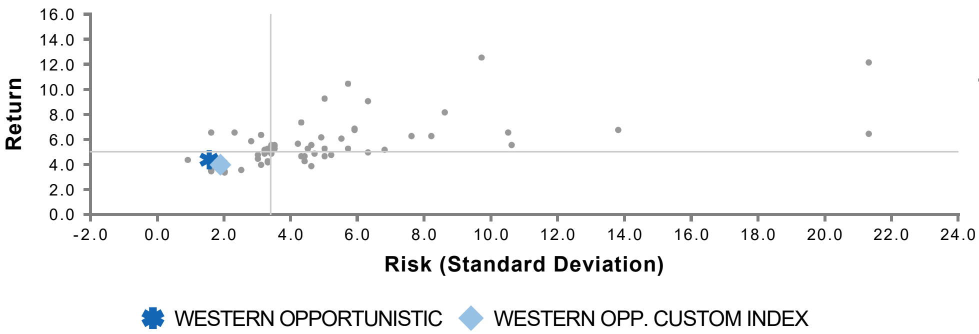
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Western Opportunistic	304.7	0.38	4.04	3.65	3.35	7.71
WESTERN OPP. CUSTOM INDEX		0.42	6.09	3.17	2.82	6.03

Universe

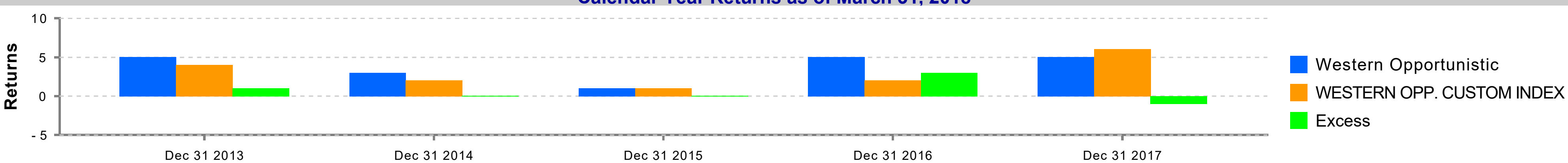
	1 Qtr	1 Year	3 Years	5 Years
US Fixed Income Funds - High Yield				
Median	-0.50	4.04	4.95	5.45
Number of Observations	81.00	80.00	73.00	69.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
WESTERN OPPORTUNISTIC	3.6 88	1.2 2
WESTERN OPP. CUSTOM INDEX	3.2 99	1.5 2
5th Percentile	10.2	1.5
25th Percentile	5.9	2.9
50th Percentile	5.0	3.4
75th Percentile	4.2	4.9
95th Percentile	3.3	10.5

Calendar Year Returns as of March 31, 2018



Universe data: U.S. Fixed Income Funds High Yield

FIXED INCOME - CASH
J.P. MORGAN ASSET MANAGEMENT
for the quarter ended March 31, 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:	Citigroup 6-month T-Bill
Investment Style:	Enhanced Cash

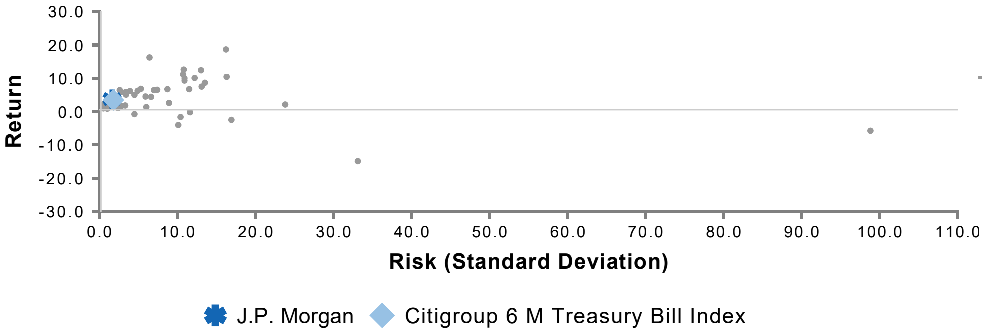
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
J.P. Morgan	2,118.3	0.38	1.29	0.90	0.69	0.66
Citigroup 6 M Treasury Bill Index		0.35	1.09	0.57	0.37	0.35

Universe

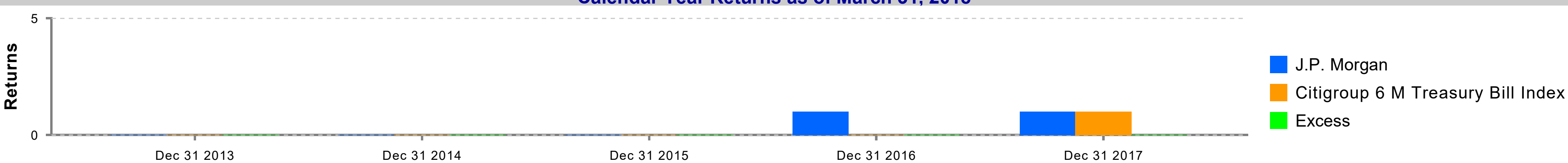
	1 Qtr	1 Year	3 Years	5 Years
Cash Funds				
Median	0.32	1.10	0.63	0.47
Number of Observations	314.00	289.00	251.00	216.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
J.P. Morgan	0.9 27	0.1 30
Citigroup 6 M Treasury Bill Index	0.6 53	0.1 20
5th Percentile	5.9	0.1
25th Percentile	1.0	0.1
50th Percentile	0.6	0.2
75th Percentile	0.4	0.7
95th Percentile	0.0	11.1

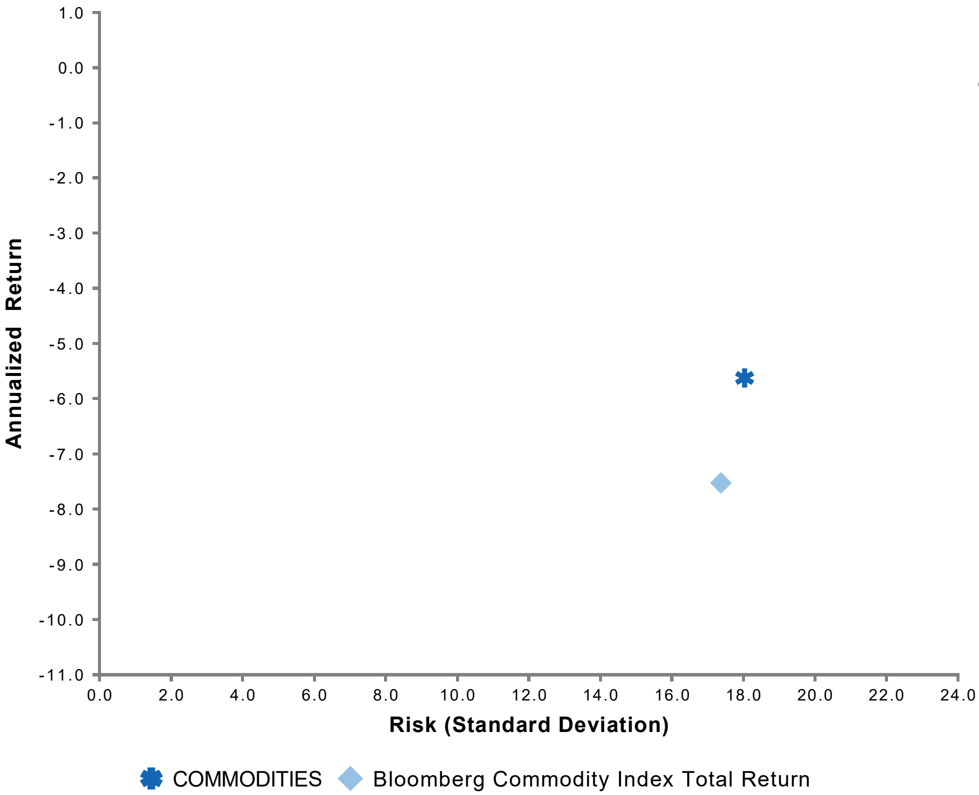
Calendar Year Returns as of March 31, 2018



Universe data: Cash Funds

COMMODITIES
RISK ADJUSTED RETURN
for the quarter ended March 31, 2018

7 Year Risk vs Return



	Rate of Return 10 Years	Standard Deviation 10 Years
COMMODITIES	**-5.8**	**17.7**
Bloomberg Commodity Index Total Return	-7.7	17.0

	Rate of Return 10 Years	Standard Deviation 10 Years	Tracking Error 10 Years
COMMODITIES	-5.8	17.7	2.1
Bloomberg Commodity Index Total Return	-7.7	17.0	

Universe data: Commodities Funds

COMMODITIES
CREDIT SUISSE ASSET MANAGEMENT, LLC
for the quarter ended March 31, 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

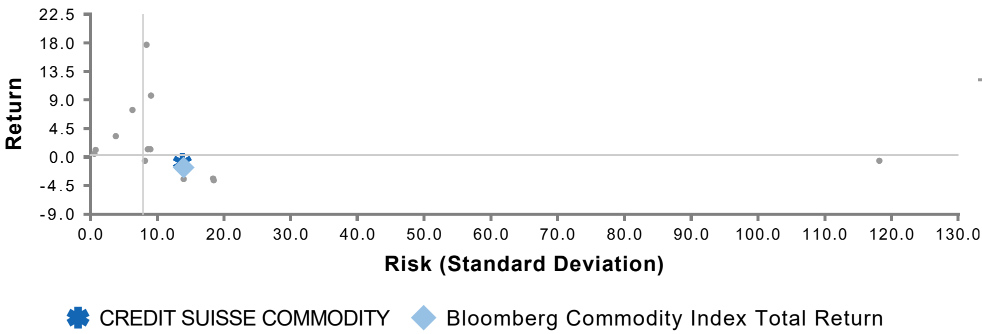
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Credit Suisse Commodity	454.8	-0.72	3.55	-2.36	-7.59	-7.75
Bloomberg Commodity Index Total Return		-0.40	3.71	-3.21	-8.32	-8.41

Universe

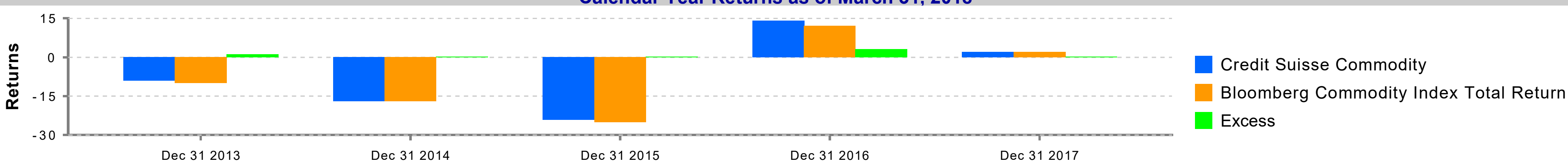
	1 Qtr	1 Year	3 Years	5 Years
Commodity Funds				
Median	0.00	6.28	0.32	0.44
Number of Observations	36.00	31.00	14.00	9.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
CREDIT SUISSE COMMODITY	-2.478	12.072
Bloomberg Commodity Index Total Return	-3.280	12.072
5th Percentile	17.2	0.0
25th Percentile	4.2	2.3
50th Percentile	0.3	7.9
75th Percentile	-1.5	14.1

Calendar Year Returns as of March 31, 2018



Universe data: Commodities Funds

COMMODITIES
NEUBERGER BERMAN ALTERNATIVE FUND MANAGEMENT LLC/GRESHAM
for the quarter ended March 31, 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

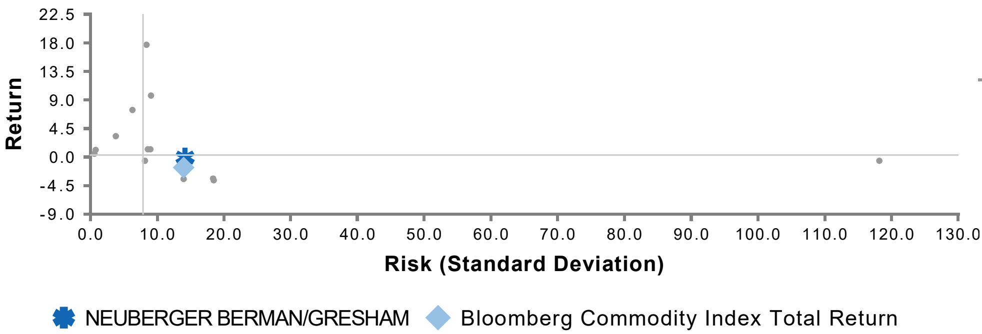
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
Neuberger Berman/Gresham	471.7	0.15	7.97	-1.61	-6.64	-3.43
Bloomberg Commodity Index Total Return		-0.40	3.71	-3.21	-8.32	-5.47

Universe

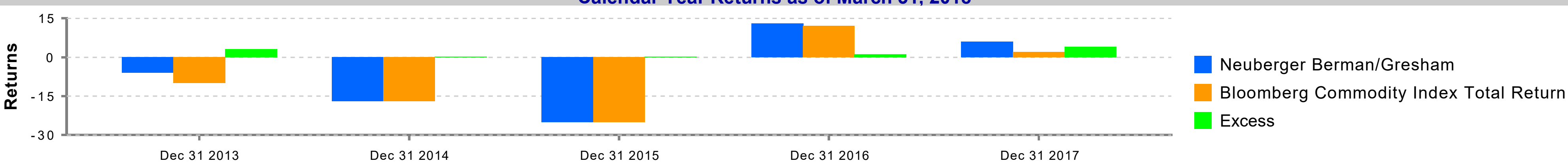
	1 Qtr	1 Year	3 Years	5 Years
Commodity Funds				
Median	0.00	6.28	0.32	0.44
Number of Observations	36.00	31.00	14.00	9.00

3 Year Risk vs Return



	3 Year Return	3 Year Standard Deviation
NEUBERGER BERMAN/GRESHAM	-1.6 76	12.4 72
Bloomberg Commodity Index Total Return	-3.2 80	12.0 72
5th Percentile	17.2	0.0
25th Percentile	4.2	2.3
50th Percentile	0.3	7.9
75th Percentile	-1.5	14.1

Calendar Year Returns as of March 31, 2018



Universe data: Commodities Funds

COMMODITIES
PACIFIC INVESTMENT MANAGEMENT COMPANY
for the quarter ended March 31, 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

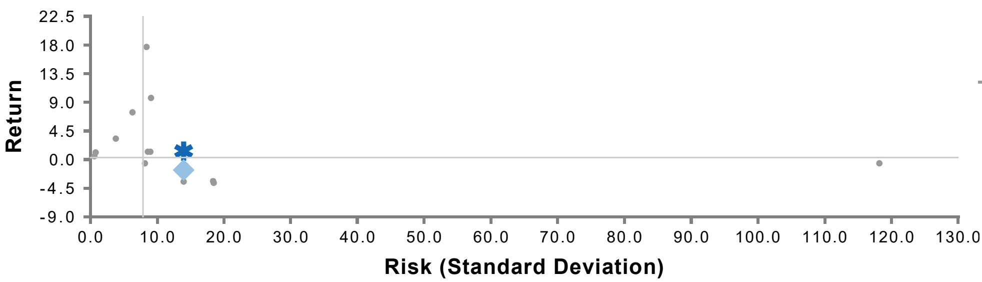
Manager vs. Benchmark: Return through March 31, 2018
(not annualized if less than 1 year)

	Ending Mkt Val ($mil)	1 Quarter	1 Year	3 Years	5 Years	Since Inception
PIMCO Commodity	471.5	0.27	7.04	-0.17	-5.86	-3.44
Bloomberg Commodity Index Total Return		-0.40	3.71	-3.21	-8.32	-5.47

Universe

	1 Qtr	1 Year	3 Years	5 Years
Commodity Funds				
Median	0.00	6.28	0.32	0.44
Number of Observations	36.00	31.00	14.00	9.00

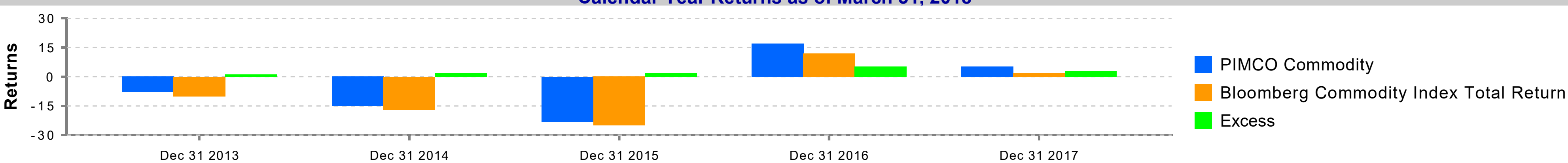
3 Year Risk vs Return



PIMCO Commodity ◆ Bloomberg Commodity Index Total Return

	3 Year Return	3 Year Standard Deviation
PIMCO Commodity	-0.262	12.272
Bloomberg Commodity Index Total Return	-3.280	12.072
5th Percentile	17.2	0.0
25th Percentile	4.2	2.3
50th Percentile	0.3	7.9
75th Percentile	-1.5	14.1

Calendar Year Returns as of March 31, 2018



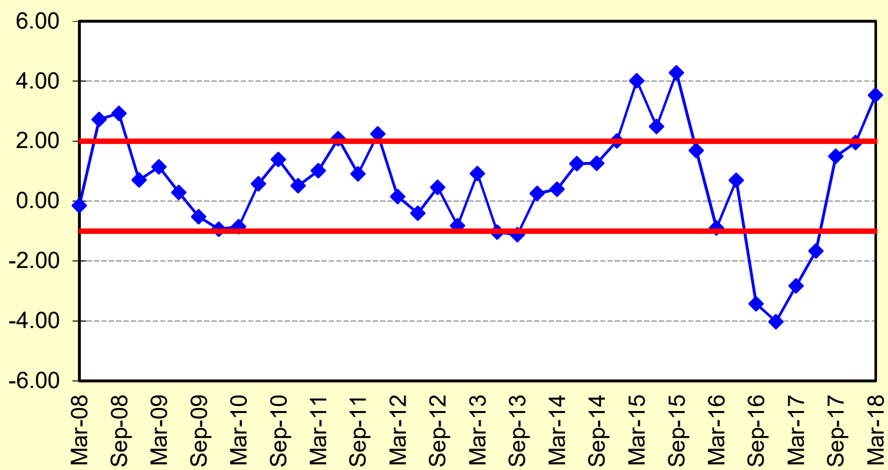
Universe data: Commodities Funds

U.S. EQUITY - LARGE CAP

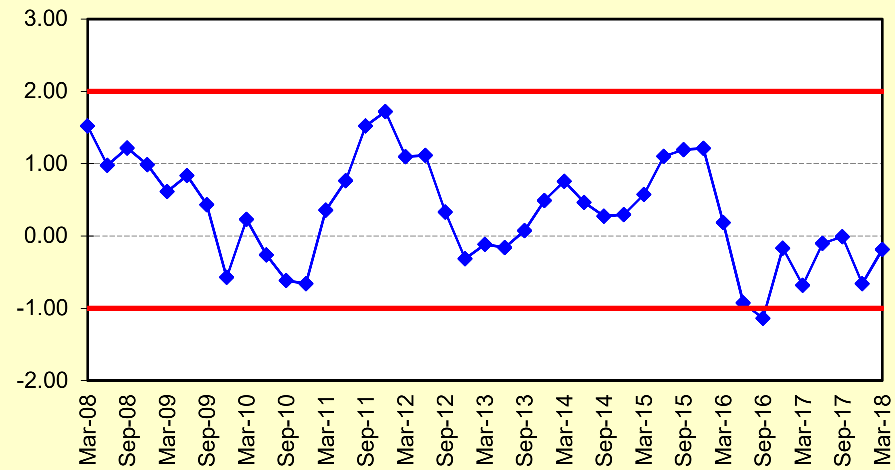
ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended March 31, 2018

INTECH



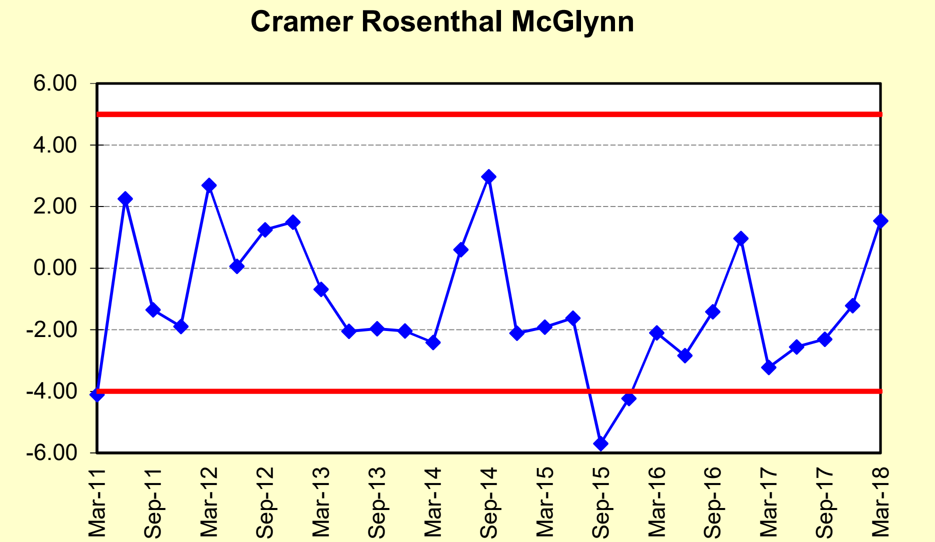
Twin Capital

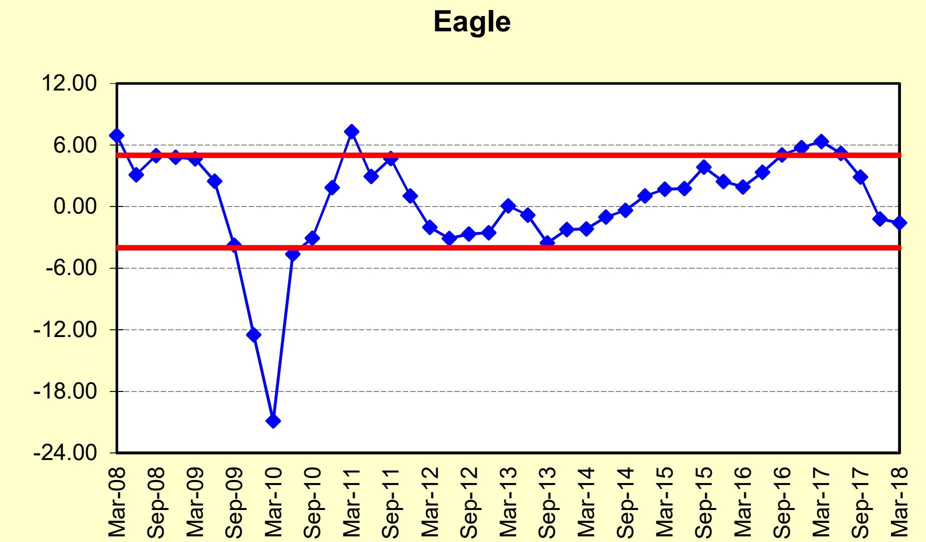


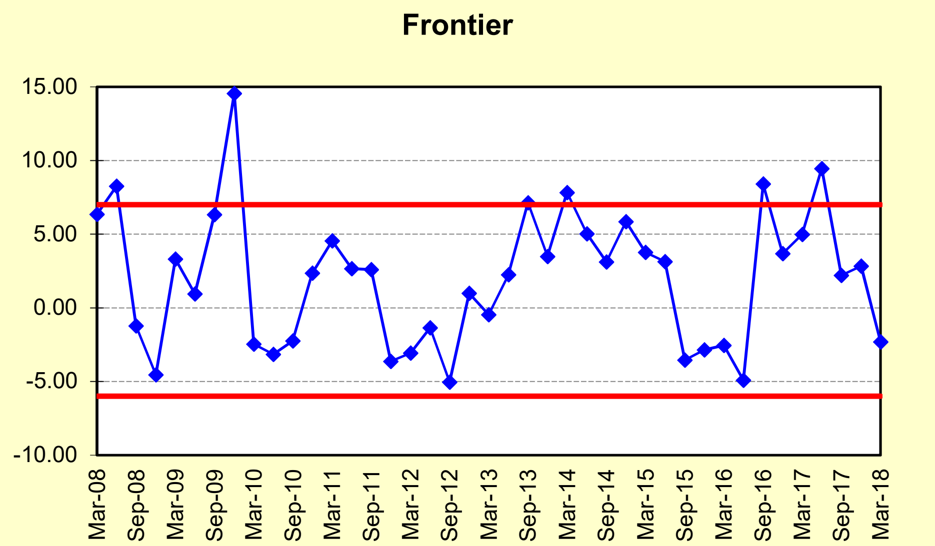
U.S. EQUITY - SMALL/MID CAP

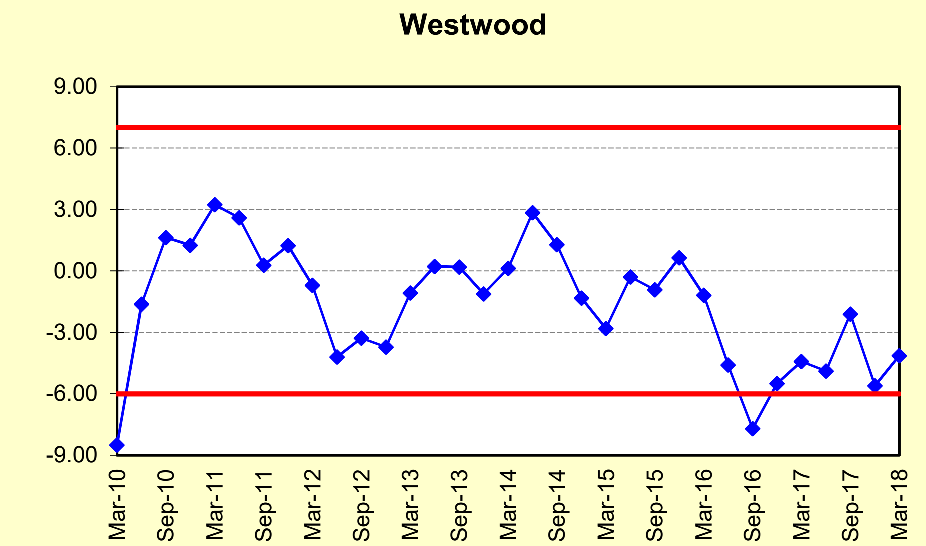
ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended March 31, 2018





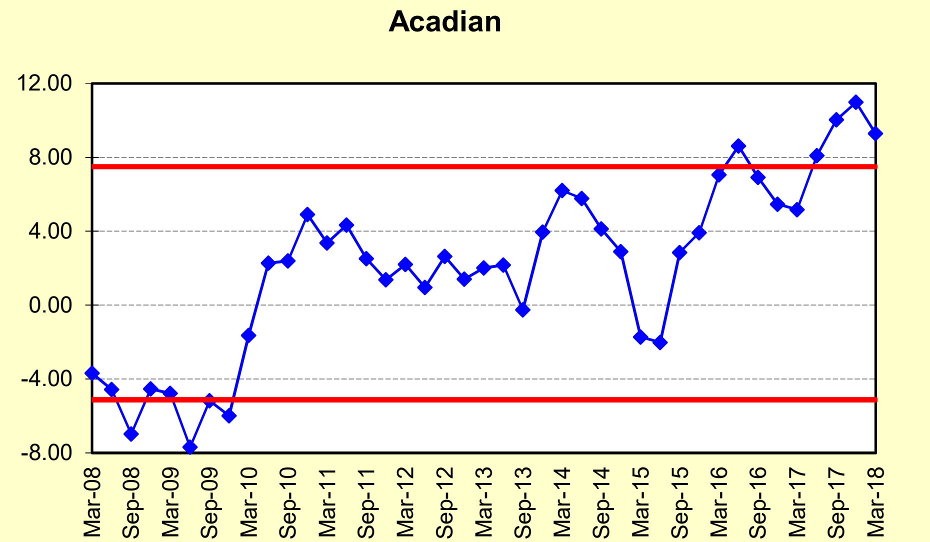


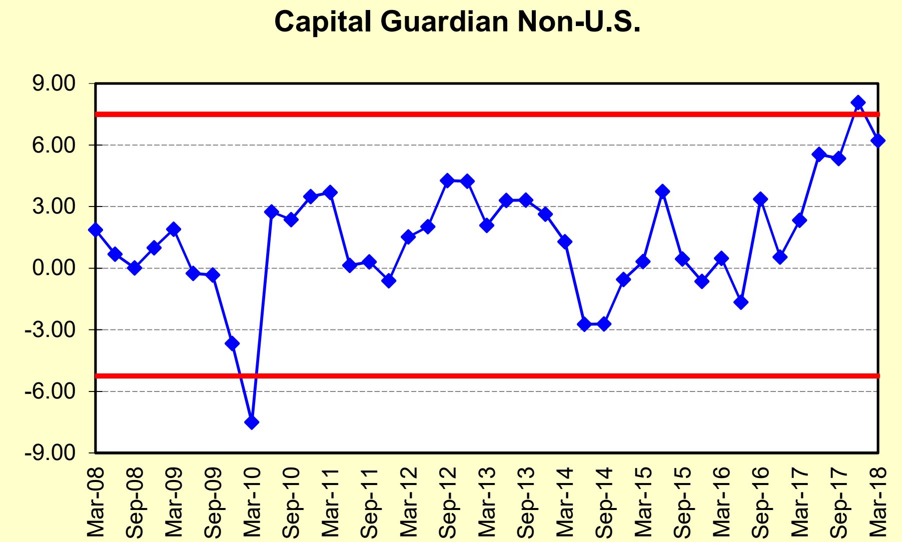


NON-U.S. EQUITY

ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended March 31, 2018

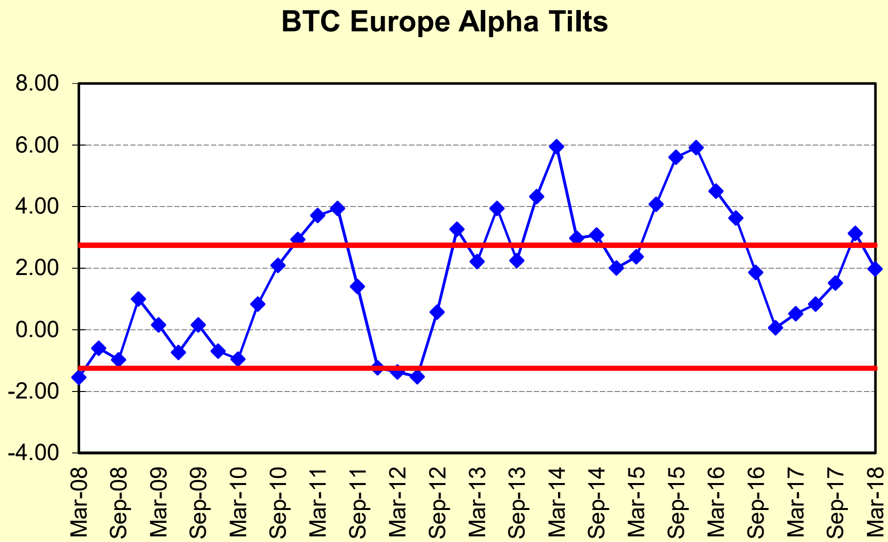


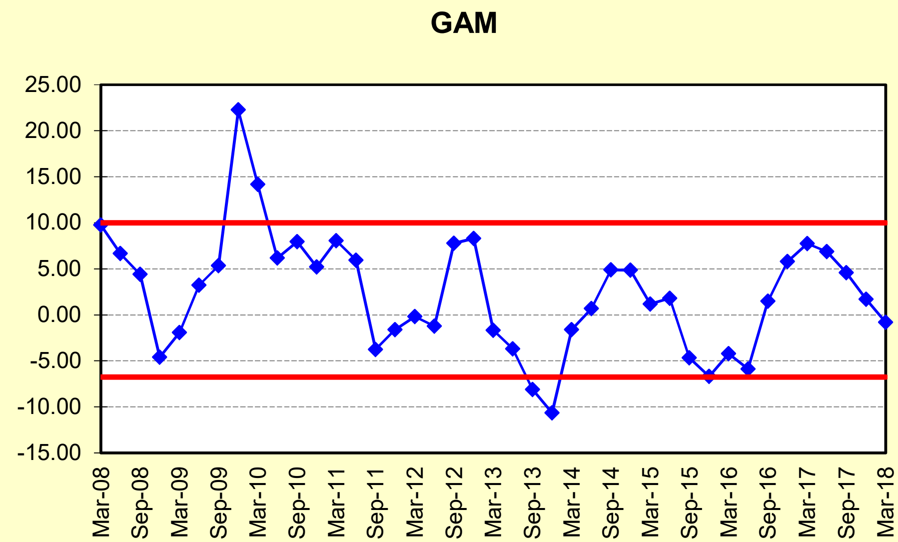


NON-U.S. EQUITY - PACIFIC BASIN & EUROPE

ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended March 31, 2018

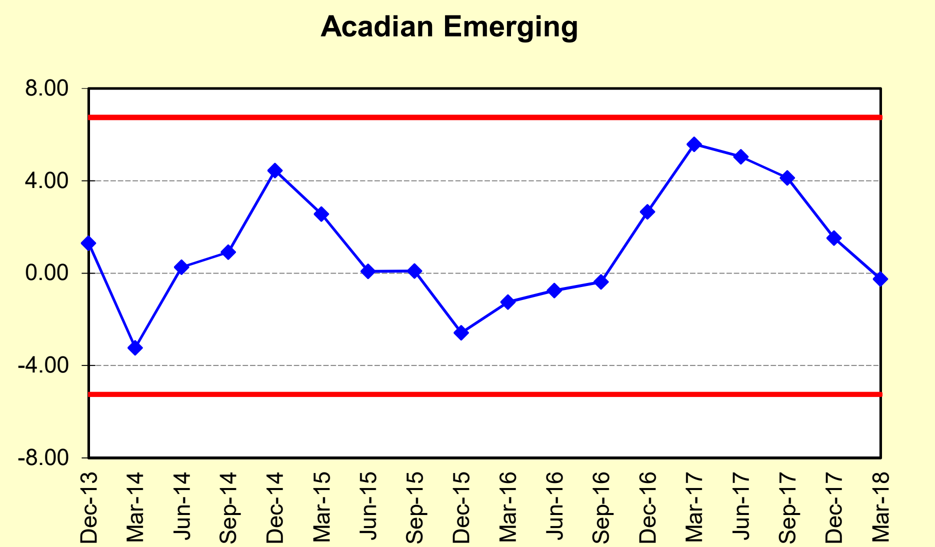


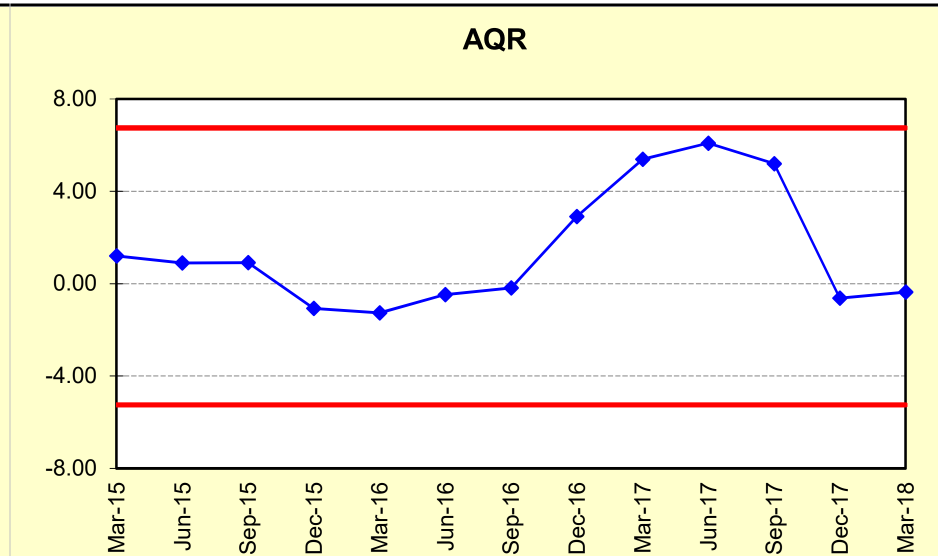


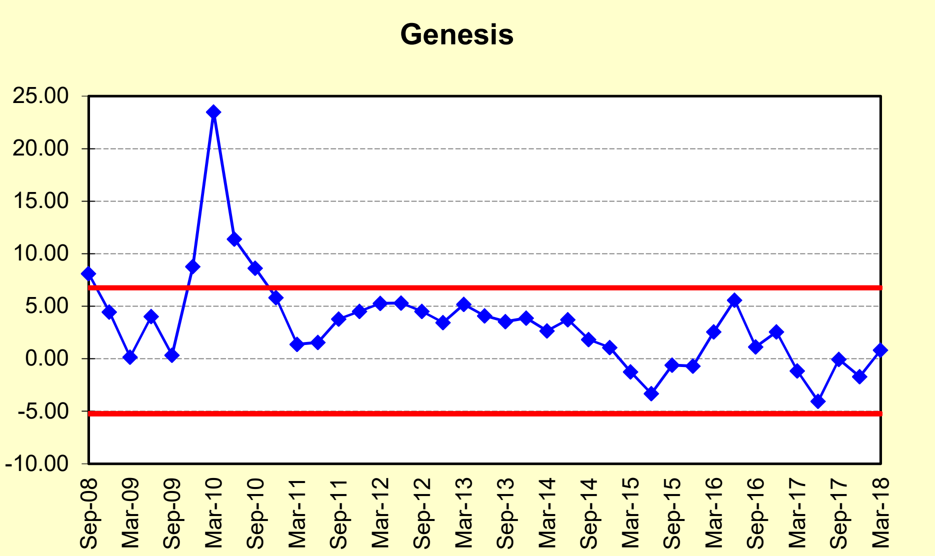
NON-U.S. EQUITY - EMERGING MARKETS

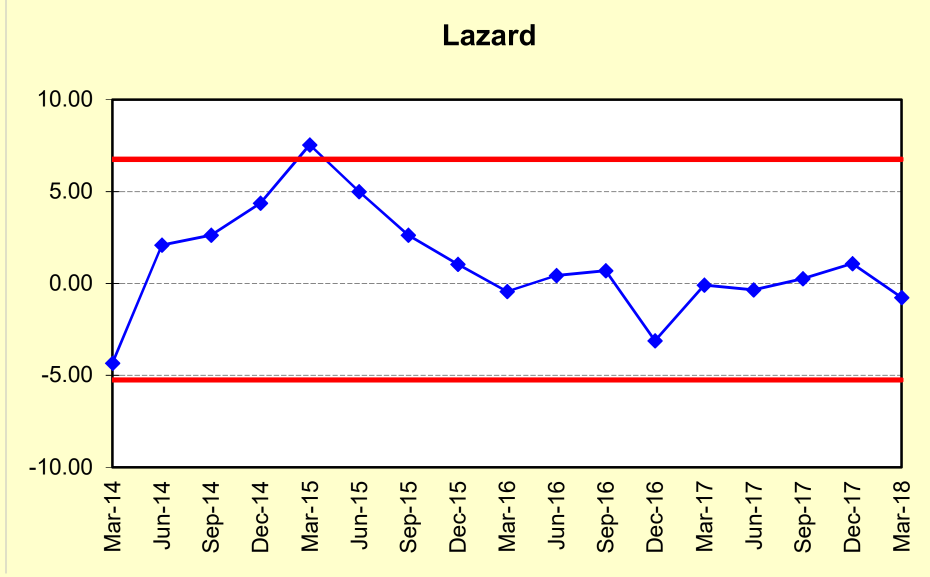
ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended March 31, 2018





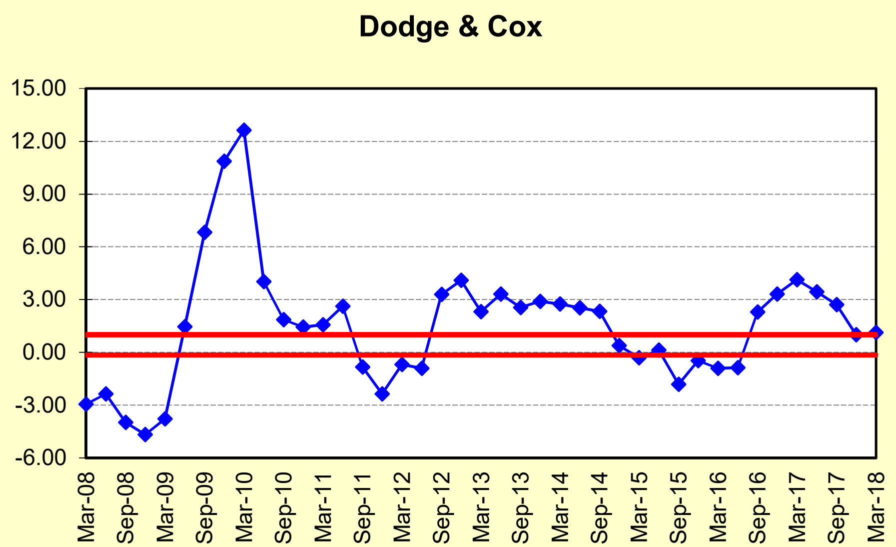


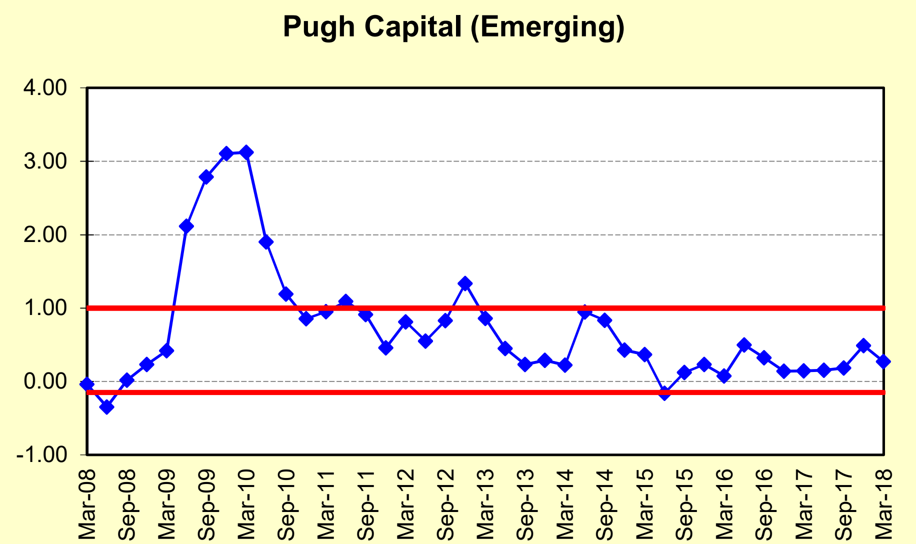


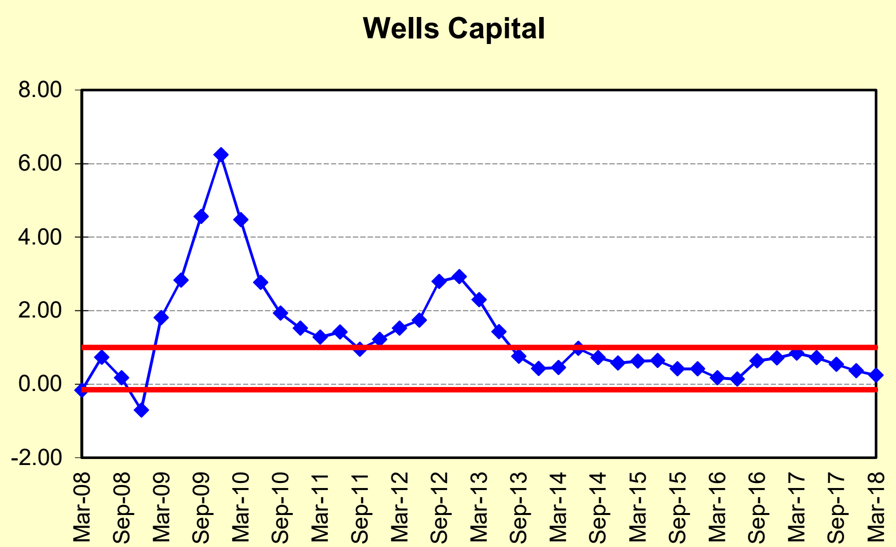
FIXED INCOME - CORE

ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended March 31, 2018



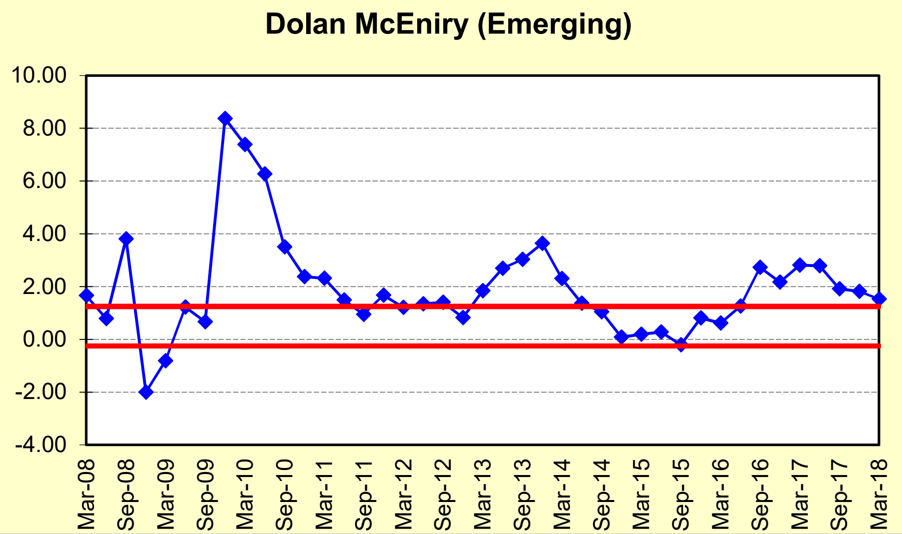


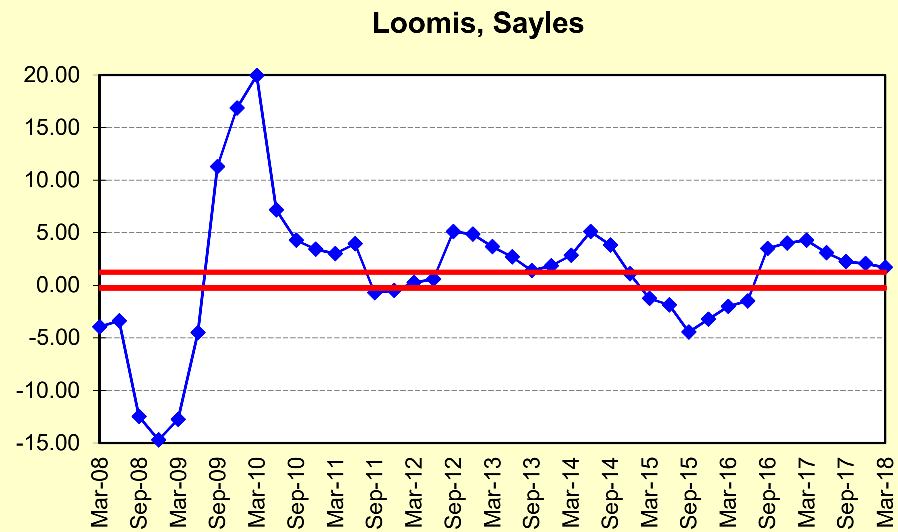


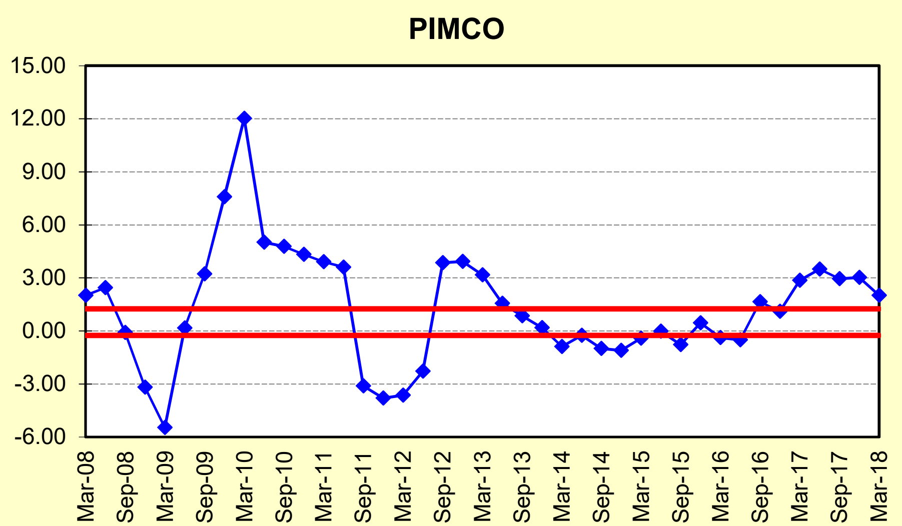
FIXED INCOME - CORE PLUS

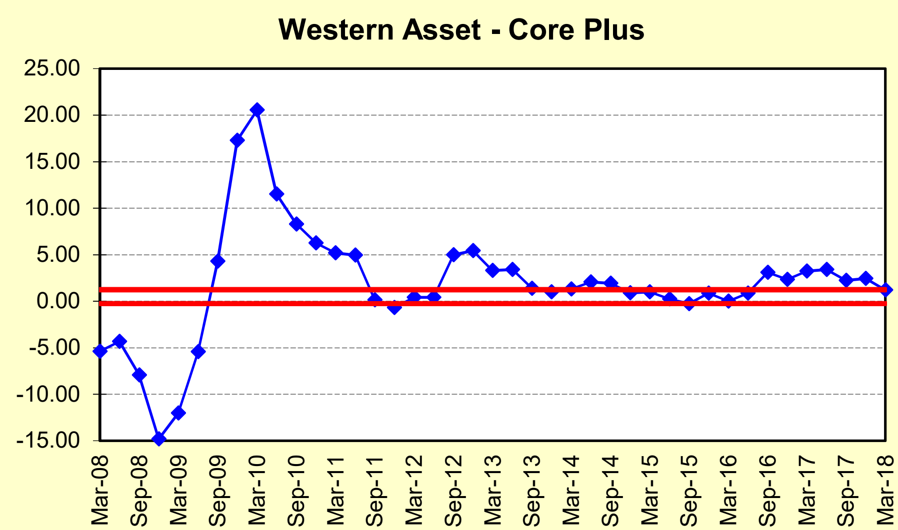
ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended March 31, 2018







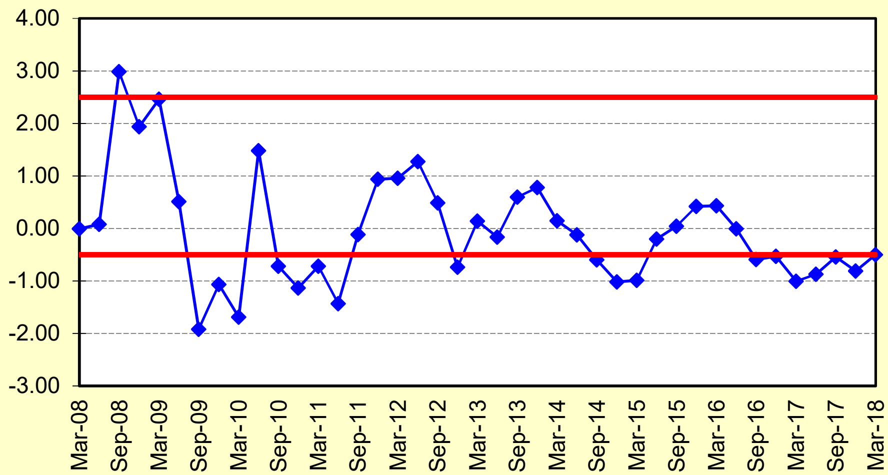


FIXED INCOME - HIGH YIELD

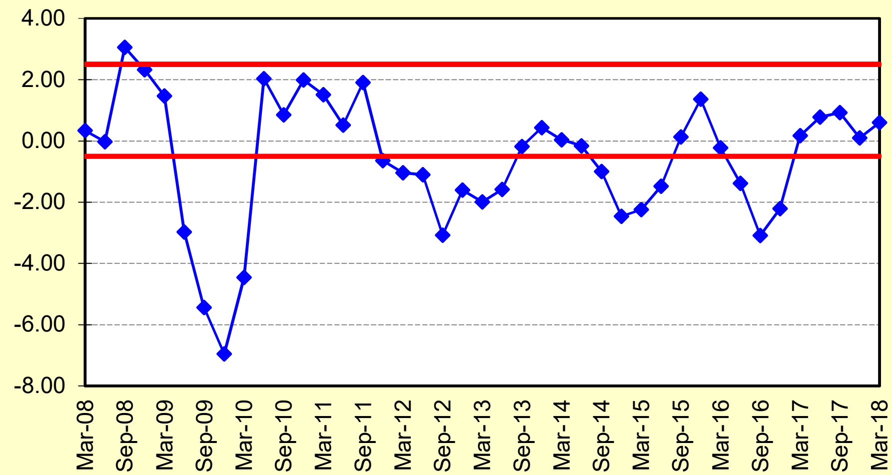
ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended March 31, 2018

Oaktree Capital



PENN Capital (Emerging)



FIXED INCOME - OPPORTUNISTIC

ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended March 31, 2018

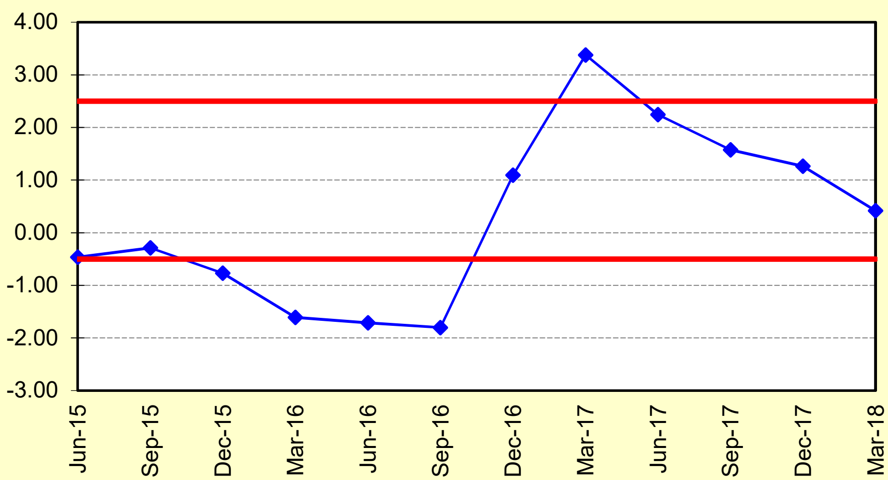
Aberdeen

Insufficient Data

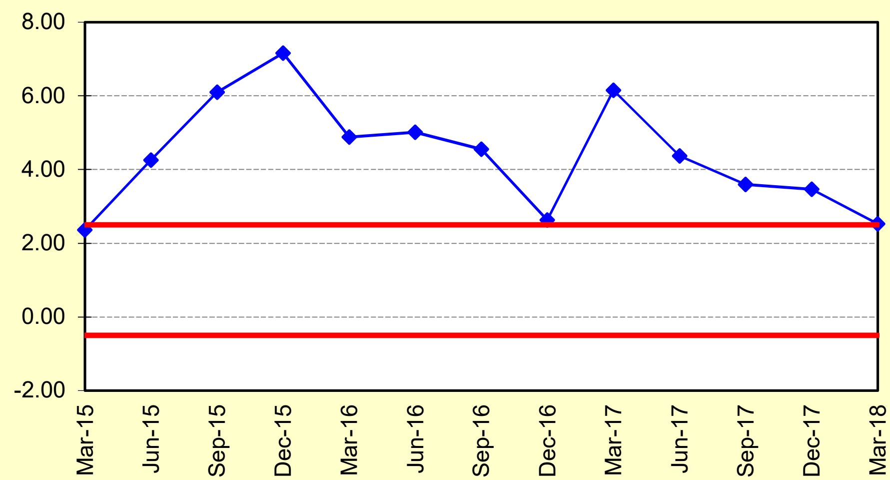
Ashmore

Insufficient Data

Bain Capital



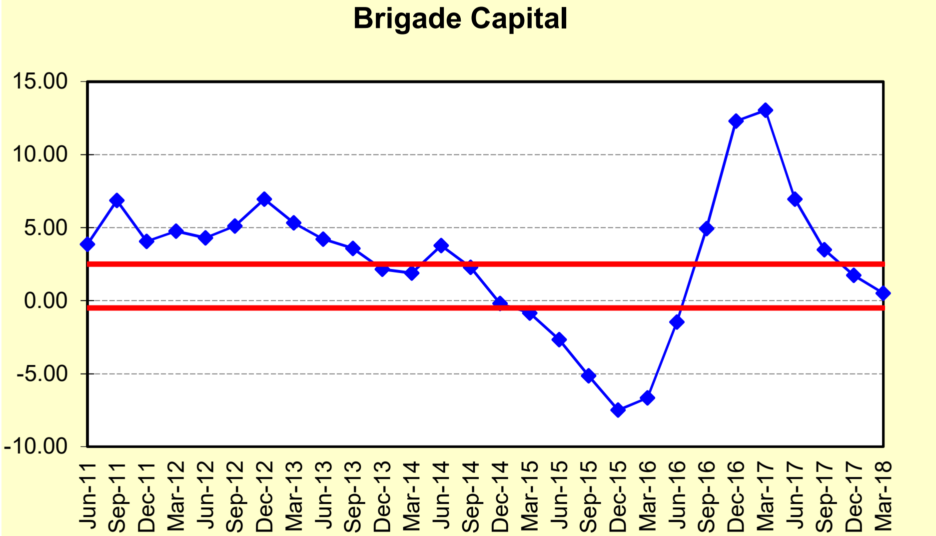
Beach Point

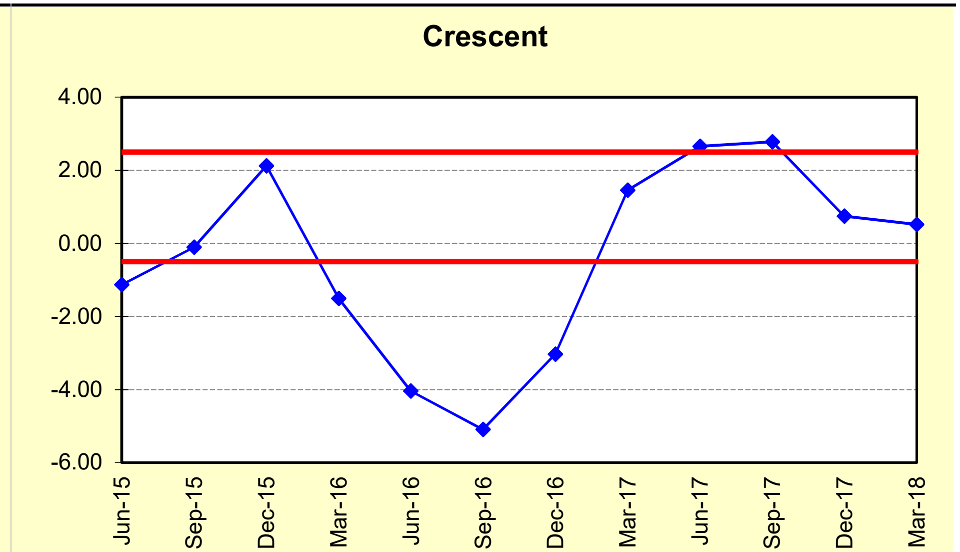


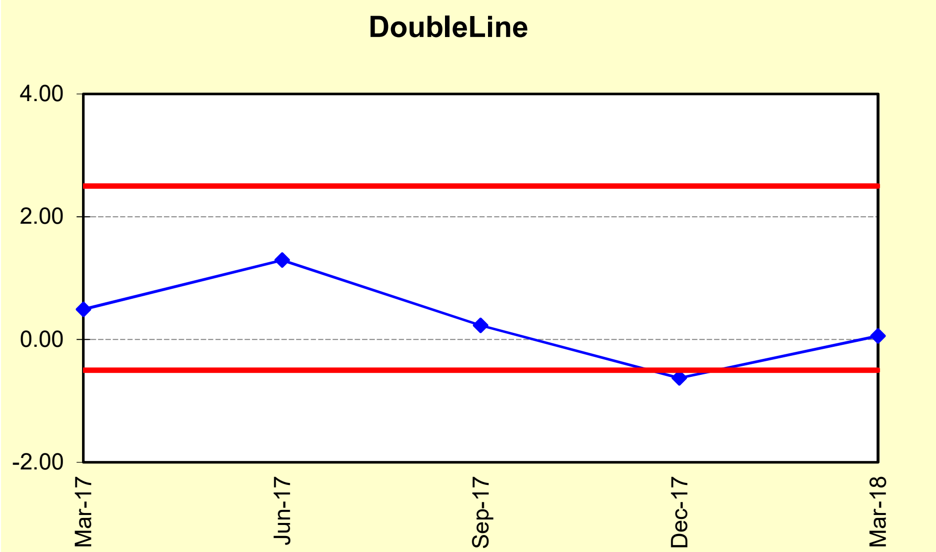
FIXED INCOME - OPPORTUNISTIC

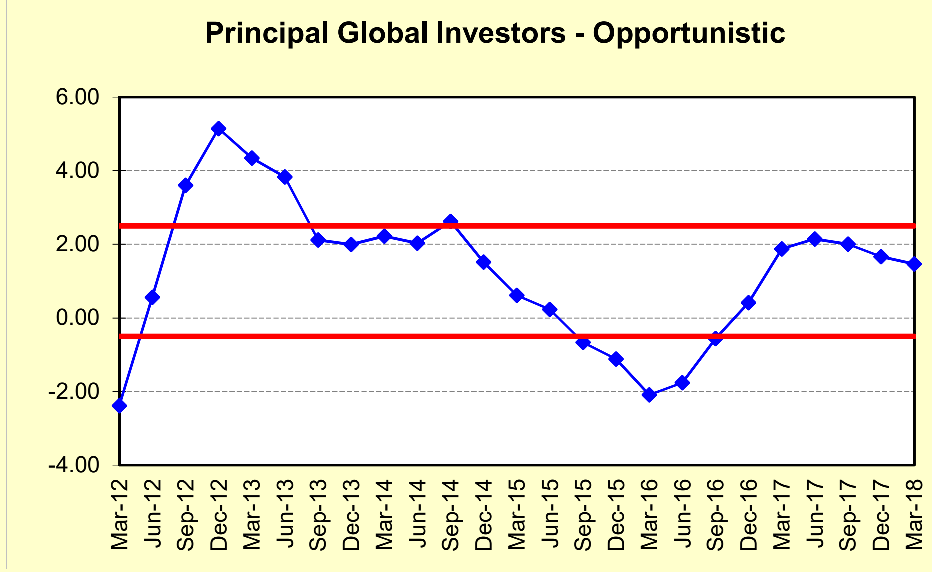
ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended March 31, 2018





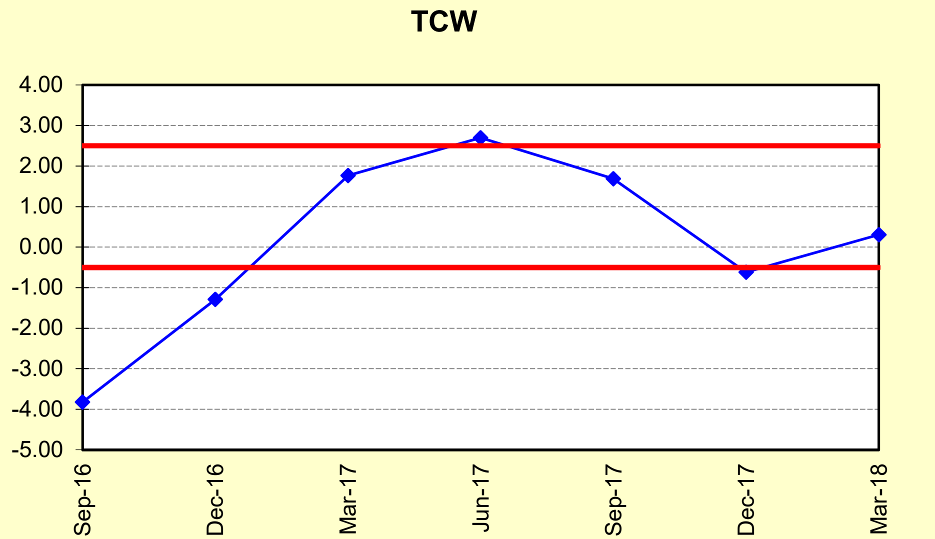


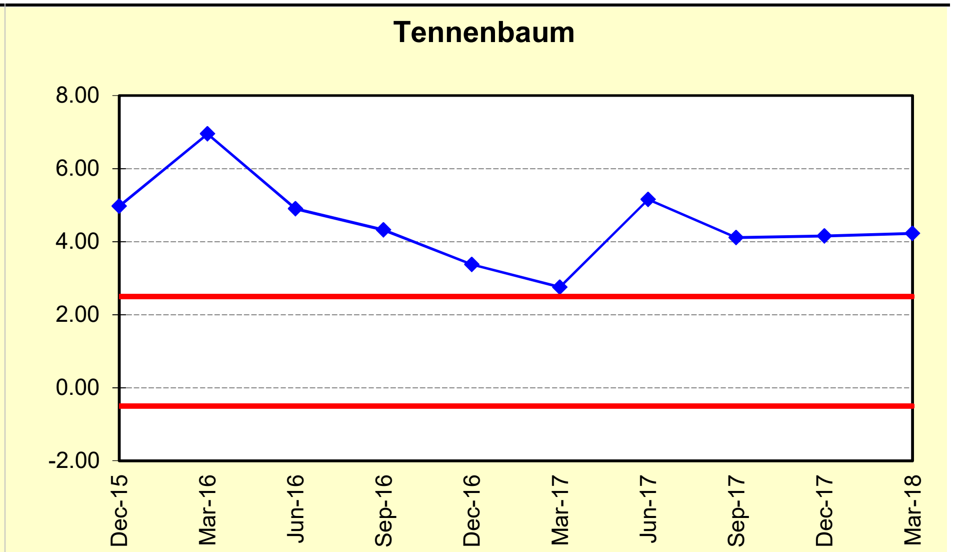


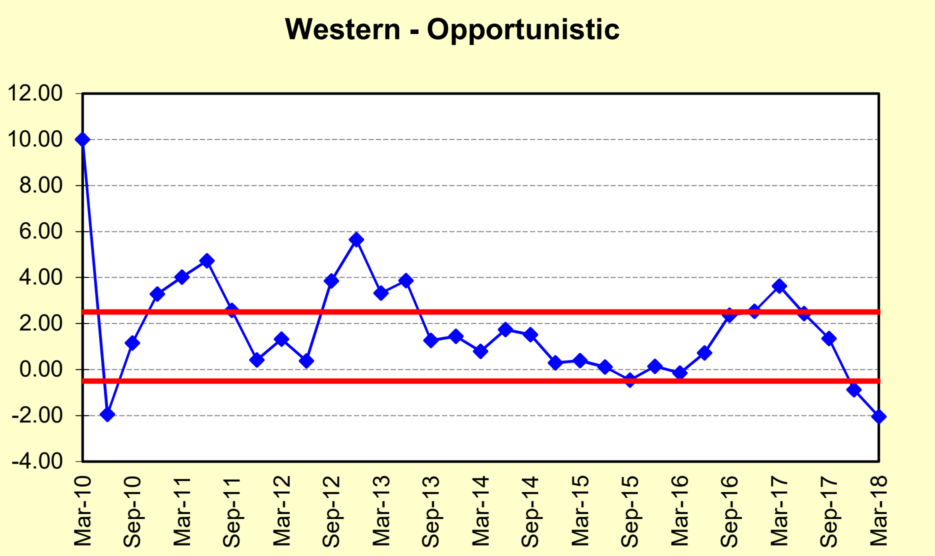
FIXED INCOME - OPPORTUNISTIC

ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended March 31, 2018



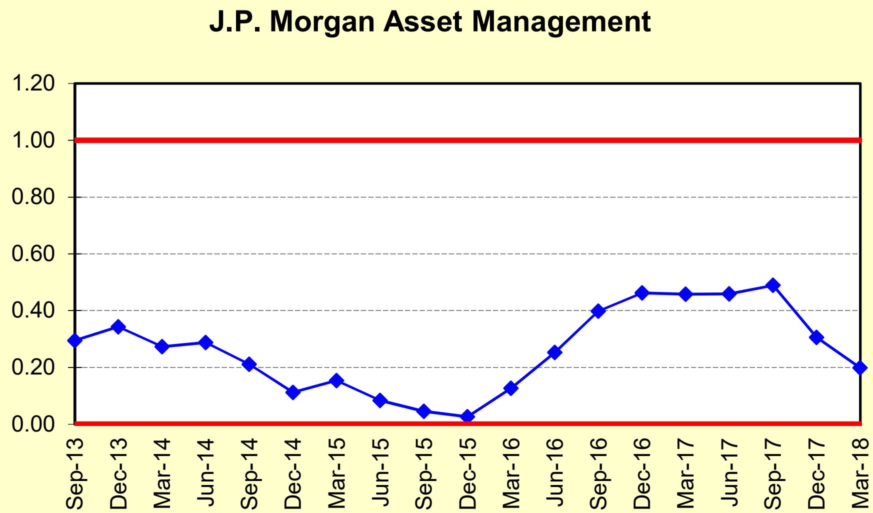




FIXED INCOME - CASH

ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended March 31, 2018

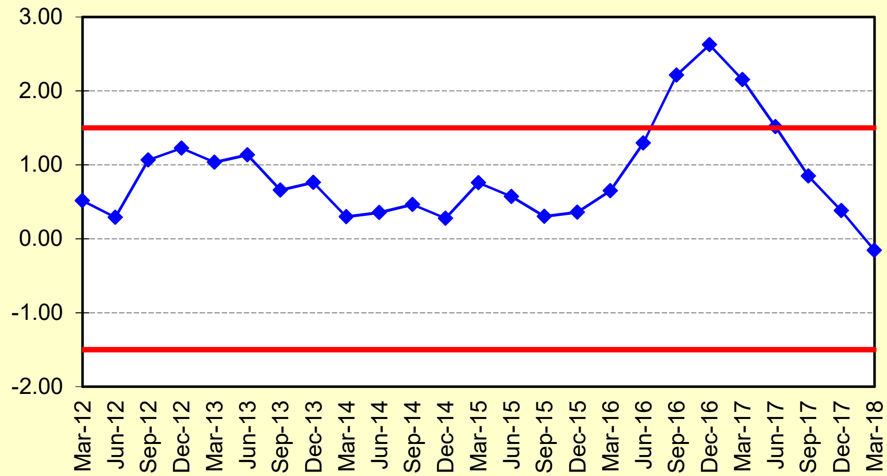


COMMODITIES

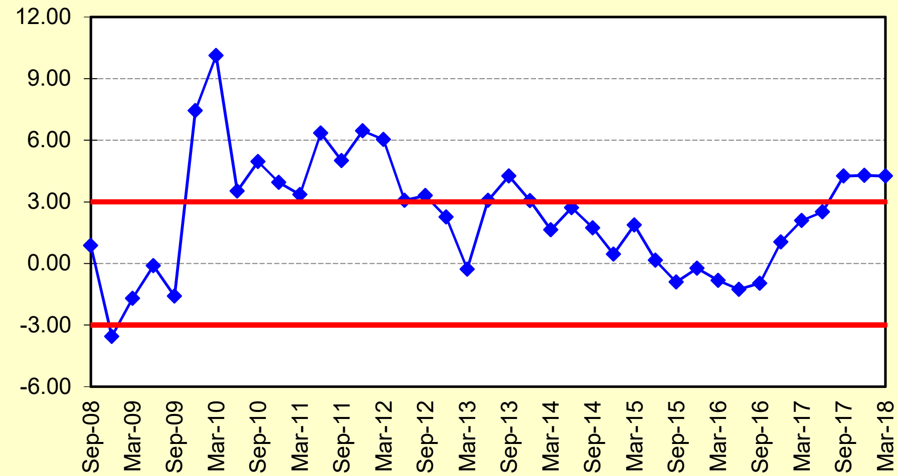
ONE-YEAR ROLLING EXCESS RETURNS

for the quarter ended March 31, 2018

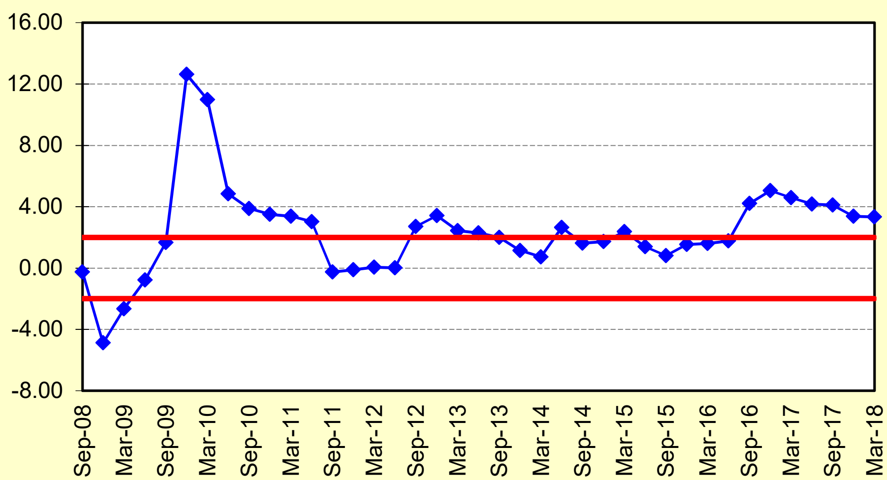
Credit Suisse



Neuberger Berman/Gresham



PIMCO



ESTIMATED FEES[1]

EQUITIES

for the quarter ended March 31, 2018

U.S. EQUITY	**Avg. Market Value (Millions)**	**Fees**	**Annualized Effective Rate**
Active			
Cramer Rosenthal McGlynn	$274.6	$355,879	51.8 bps
Eagle Asset Mgmt.	$343.4	$454,302	52.9 bps
Frontier Capital Mgmt.	$691.0	$1,295,667	75.0 bps
INTECH	$883.6	$493,058	22.3 bps
JANA Partners[2]	$99.5	$300,000	100.0 bps
Twin Capital Mgmt.	$541.0	$202,876	15.0 bps
Westwood Mgmt. Corp.	$258.7	$392,167	60.6 bps
Subtotal:	**$3,092**	**$3,493,950**	**45.2 bps**
Passive			
BTC Russell 1000 Index	$9,554.4	$236,471	1.0 bps
BTC Russell 2000 Index	$101.9	$2,522	1.0 bps
BTC Russell 3000 Index	$604.3	$14,957	1.0 bps
Subtotal:	**$10,261**	**$253,950**	**1.0 bps**
Total U.S. Equity:	**$13,352.5**	**$3,747,900**	**11.2 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.

ESTIMATED FEES[1]

EQUITIES

for the quarter ended March 31, 2018

NON-U.S. EQUITY	Avg. Market Value (Millions)	Fees	Annualized Effective Rate
Active			
Acadian Asset Mgmt.	$904.9	$841,772	37.2 bps
Acadian Emrg. Markets	$441.1	$498,953	45.2 bps
AQR Capital Mgmt.	$282.8	$473,460	67.0 bps
BTC Europe Alpha Tilts	$1,027.9	$1,040,388	40.5 bps
Capital Guardian	$377.3	$336,071	35.6 bps
Cevian Capital	$296.4	$1,152,809	155.6 bps
GAM International Mgmt.	$882.5	$926,255	42.0 bps
Genesis Investment Mgmt.	$743.0	$1,290,574	69.5 bps
Lazard Asset Mgmt.	$386.0	$719,319	74.5 bps
Symphony Financial	$136.0	$246,407	72.5 bps
Subtotal:	**$5,478**	**$7,526,009**	**55.0 bps**
Passive			
BTC Canada Index IMI	$730.6	$27,399	1.5 bps
BTC EAFE Index IMI	$4,948.2	$185,559	1.5 bps
BTC EAFE Small Cap Index	$214.3	$21,429	4.0 bps
BTC Emerging Markets Index	$1,372.7	$308,868	9.0 bps
BTC Emrg. Mkt. Small Cap Index	$152.2	$76,110	20.0 bps
BTC Europe Index	$387.3	$9,586	1.0 bps
Subtotal:	**$7,805**	**$628,952**	**3.2 bps**
Total Non-U.S. Equity:	**$13,283.4**	**$8,154,960**	**24.6 bps**
Currency Hedge			
50% Developed Mkt. Currency Hedge	$9,968.0	$373,801	1.5 bps

[1] Estimations may not match net-of-fee returns on "Annualized Total Returns" pages; reflects investment management fee only.

ESTIMATED FEES[1]

FIXED INCOME

for the quarter ended March 31, 2018

FIXED INCOME	Avg. Market Value (Millions)	Fees	Annualized Effective Rate
Core			
BTC US Debt Index	$2,493.4	$61,712	1.0 bps
Dodge & Cox	$1,290.0	$317,375	9.8 bps
Pugh Capital Mgmt.	$135.1	$63,148	18.7 bps
Wells Capital Mgmt.	$1,339.1	$379,883	11.3 bps
Subtotal:	**$5,258**	**$822,118**	**6.3 bps**
Core Plus			
Dolan McEniry Capital Mgmt.	$344.6	$221,644	25.7 bps
Loomis Sayles	$1,079.3	$346,711	12.8 bps
PIMCO	$1,046.3	$541,989	20.7 bps
Western Asset Mgmt.	$1,133.7	$366,716	12.9 bps
Subtotal:	**$3,604**	**$1,477,061**	**16.4 bps**
High Yield			
Oaktree Capital Mgmt.	$406.4	$410,912	40.4 bps
PENN Capital Mgmt.	$108.9	$122,509	45.0 bps
Subtotal:	**$515**	**$533,421**	**41.4 bps**
Opportunistic			
Aberdeen	$206.8	$204,042	39.5 bps
Ashmore	$212.0	$352,173	66.4 bps
Bain Capital	$301.1	$489,217	65.0 bps
Beach Point Capital	$385.3	$1,163,732	120.8 bps
Brigade Capital Mgmt.	$492.1	$922,723	75.0 bps
Crescent Capital Group	$272.8	$378,532	55.5 bps
Doubleline Capital	$265.2	$501,359	75.6 bps
Principal Global Investors	$267.7	$92,820	13.9 bps
TCW	$261.1	$388,834	59.6 bps
Tennenbaum Capital Partners	$267.2	$597,599	89.5 bps
Western Asset Mgmt.	$304.1	$38,011	5.0 bps
Subtotal:	**$3,235**	**$5,129,041**	**63.4 bps**
Total Fixed Income:	**$12,612.3**	**$7,961,641**	**25.3 bps**
Cash			
J.P. Morgan Asset Mgmt.	$1,837.1	$229,642	5.0 bps

[1] Estimations may not match net-of-fee returns on "Annualized Total Returns" pages; reflects investment management fee only.

ESTIMATED FEES[1]

COMMODITIES

for the quarter ended March 31, 2018

COMMODITIES	**Avg. Market Value (Millions)**	**Fees**	**Annualized Effective Rate**
Credit Suisse	$459.4	$298,150	26.0 bps
Neuberger Berman/Gresham	$475.9	$446,185	37.5 bps
PIMCO	$474.1	$429,629	36.2 bps
Total Commodities:	**$1,409**	**$1,173,964**	**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 March 31, 2018

U.S. EQUITY:

Mandate	Strategic Allocation Range	Actual Allocation
Passive	35-75%	76.6%
Low Risk	0-25%	10.8%
Moderate/High Risk	10-30%	12.6%

U.S. Equity Managers:

Passive – BTC Russell 1000, BTC Russell 2000, BTC Russell 3000.
Low Risk – INTECH, Twin Capital.
Moderate/High Risk – Cramer Rosenthal McGlynn, Eagle, Frontier, JANA Partners, Westwood.

NON-U.S. EQUITY:

Mandate	Strategic Allocation Range	Actual Allocation
Passive Non-U.S.	40-70%	58.1%
Active Non-U.S.	0-40%	9.9%
Active Regional	0-20%	18.0%
Active Emerging Markets	10-30%	14.1%

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.

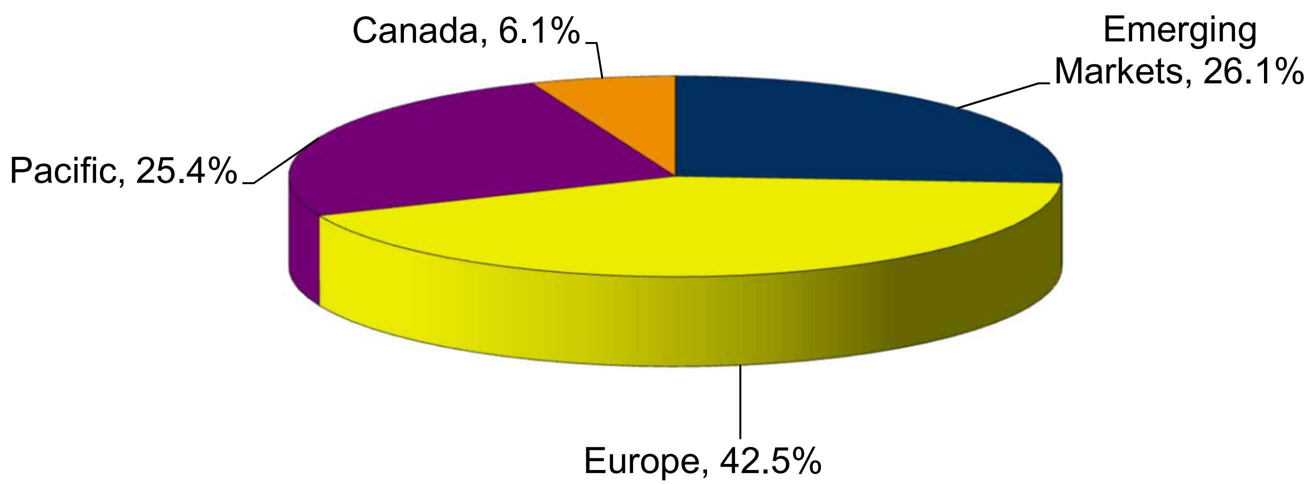
	Market Value (In Millions)	% of Total Market Value
50% Passive Currency Hedge Overlay	$ 4,663	49.3%
Total Non-US Developed Markets	**$ 9,454**	

ALLOCATION RANGES

STRATEGIC vs. ACTUAL (Cont'd)

for the quarter ended March 31, 2018

	Non-U.S. Composite	ACWI X U.S. IMI Net	Difference
Emerging Markets	26.1%	25.1%	1.0%
Europe	42.5%	43.2%	-0.7%
Pacific	25.4%	25.5%	-0.1%
Canada	6.1%	6.2%	-0.1%
	100.0%	**100.0%**	**0.0%**



ALLOCATION RANGES

STRATEGIC vs. ACTUAL

for the quarter ended March 31, 2018

FIXED INCOME STRUCTURE:

Strategy	Strategic Allocation Range	Actual Allocation	Strategic Target
Core[1]	25-45%	44.1%	35%
Core Plus	25-45%	28.5%	35%
High Yield	0-10%	3.7%	5%
Opportunistic	15-35%	23.7%	25%

CASH:

Strategy	Strategic Allocation Range	Actual Allocation	Strategic Target
Cash	0-4%	2.8%	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 Merill 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

31 March 2018

Total Plan Asset Allocation & Analytics

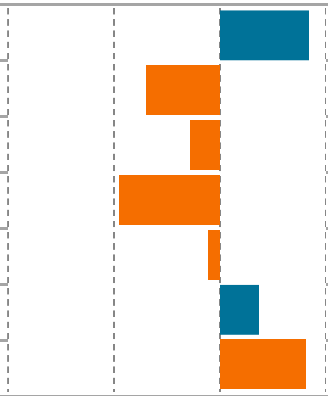
LACERA

31-Mar-2018

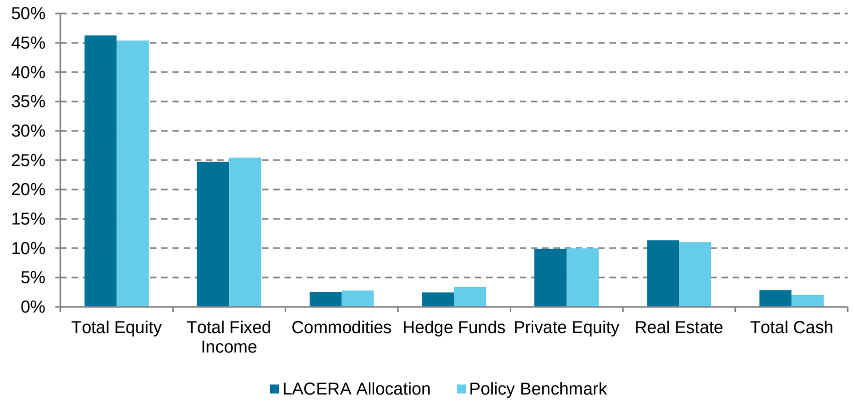
Reporting Currency: USD

Total Plan Allocation vs Policy Benchmark

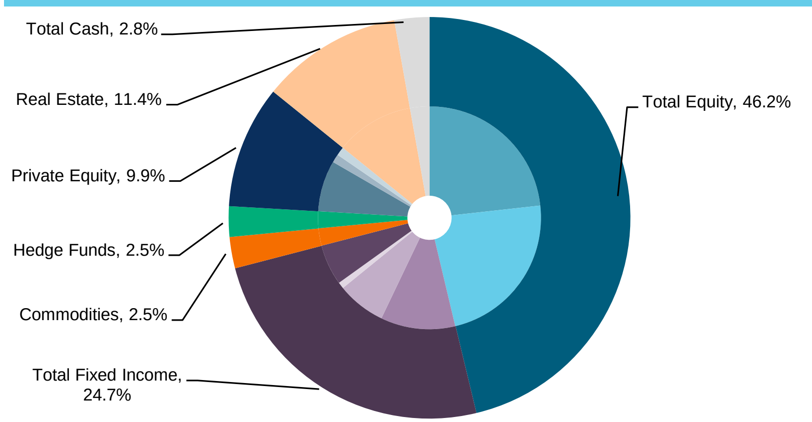
	Market Value (Millions)	Allocation (%)	Policy Benchmark (%)	Benchmark	Relative (%)
Total Equity	25,739	46.2%	45.4%	Equity Composite	0.8%
Total Fixed Income	13,753	24.7%	25.4%	Barclays US Universal	-0.7%
Commodities	1,402	2.5%	2.8%	Bloomberg Commodity Index	-0.3%
Hedge Funds (Proxy)	1,367	2.5%	3.4%	Hedge Fund Composite	-0.9%
Private Equity (Proxy)	5,505	9.9%	10.0%	Private Equity Composite	-0.1%
Real Estate (Proxy)	6,330	11.4%	11.0%	Real Estate Composite	0.4%
Total Cash	1,565	2.8%	2.0%	Citigroup 6M Treas. Bill	0.8%
TOTAL	**55,660**	**100.0%**	**100.0%**		**0.0%**



Total Plan Allocation vs Policy Benchmark



Asset Class Detail



Total Plan Analytics, Volatility & Tracking Error

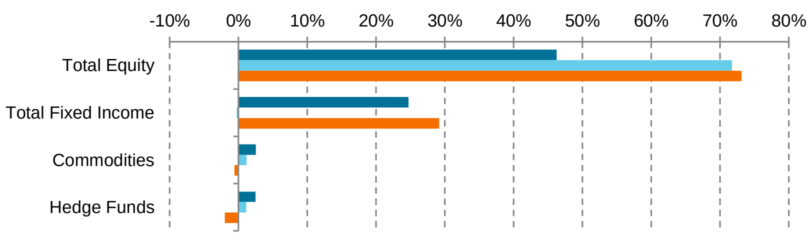
LACERA

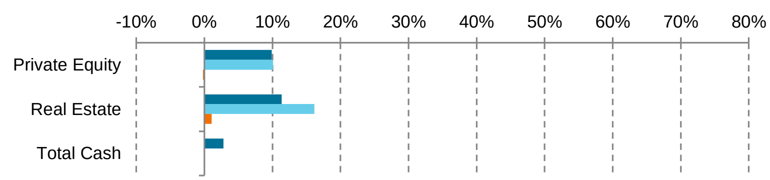
31-Mar-2018
Reporting Currency: USD

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	25,739	46.2%	11.83%	20.44%	9.45%	0.49%
Total Fixed Income	Barclays US Universal	13,753	24.7%	2.58%	4.39%	-0.04%	0.20%
Commodities	Bloomberg Commodity Index	1,402	2.5%	13.08%	22.89%	0.16%	0.00%
Hedge Funds (Proxy)	Hedge Fund Composite	1,367	2.5%	3.44%	6.56%	0.15%	-0.01%
Private Equity (Proxy)	Private Equity Composite	5,505	9.9%	7.24%	12.86%	1.33%	0.00%
Real Estate (Proxy)	Real Estate Composite	6,330	11.4%	11.59%	18.76%	2.12%	0.01%
Total Cash	Citigroup 6M Treas. Bill	1,565	2.8%	0.07%	0.16%	0.00%	0.00%
TOTAL		**55,660**	**100.0%**	**7.45%**	**13.17%**	**13.17%**	***0.68%***
	Weighted Average Benchmark [5]			*7.32%*	*12.37%*	*12.37%*	
Benchmark	**Policy Benchmark**			**7.22%**	**12.24%**	**12.24%**	**0.68%**
						Aggregate Benchmark Structural Risk [6]	**0.00%**

Dollar vs Risk Allocation





■ % Allocation ■ % VaR Contribution ■ % Tracking Error

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]

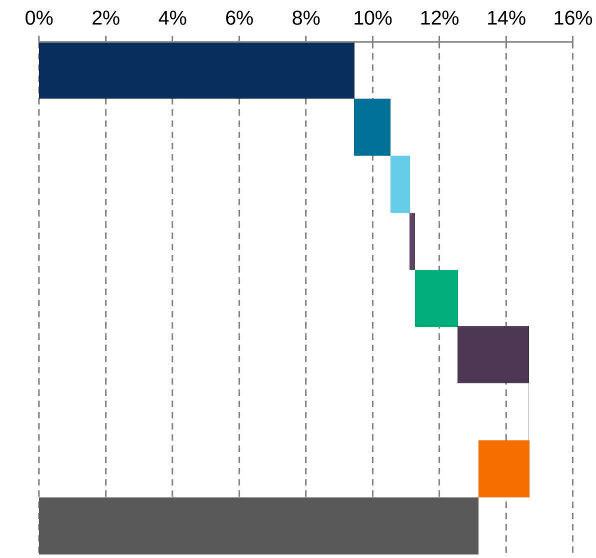
Total Plan Analytics, Volatility & Tracking Error

LACERA

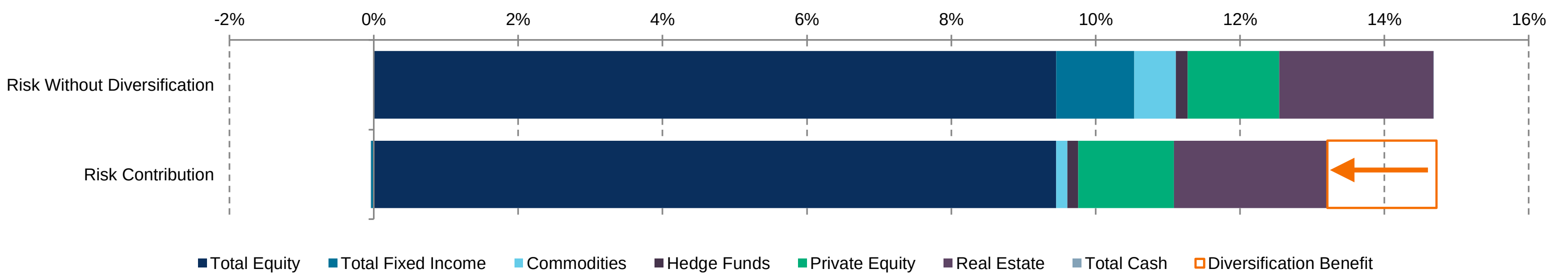
31-Mar-2018
Reporting Currency: USD

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	24.7%	0.3%	1.1%
Commodities	2.5%	0.2%	0.6%
Hedge Funds (Proxy)	2.5%	0.0%	0.2%
Private Equity (Proxy)	9.9%	0.4%	1.3%
Real Estate (Proxy)	11.4%	0.6%	2.1%
Total Cash	2.8%	0.0%	0.0%
Diversification Benefit[2]	-	-0.4%	-1.5%
TOTAL	**100.0%**	**3.8%**	**13.2%**



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.

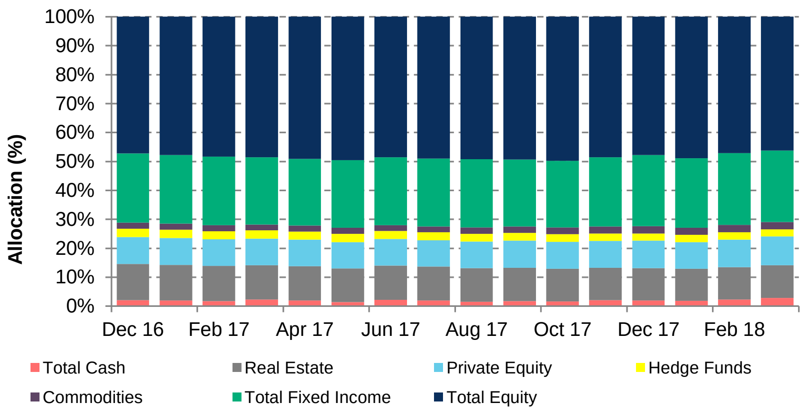
Total Plan Analytics, Volatility & Tracking Error

LACERA

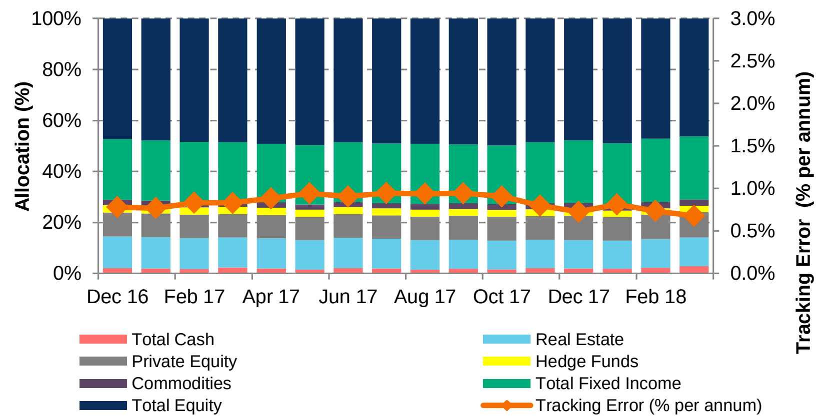
31-Mar-2018

Reporting Currency: USD

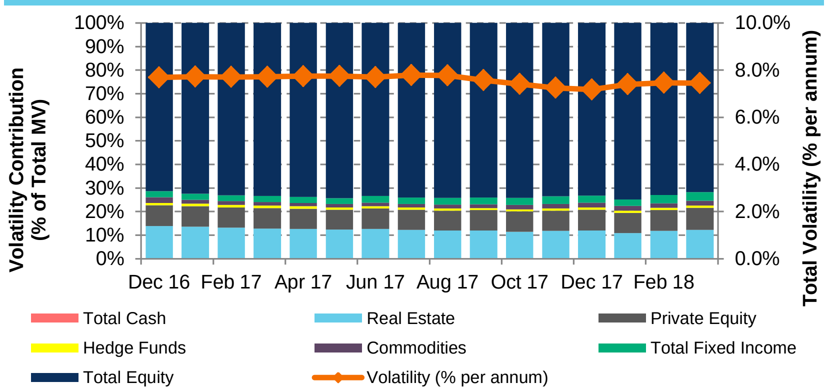
Total Plan Allocation Trend



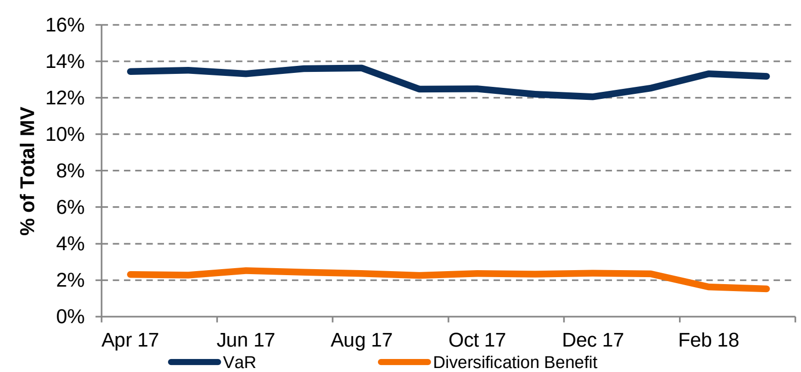
Total Plan Allocation & Tracking Error Trend[1]



Total Plan Volatility & Contribution to Volatility Trend[2]



Total Plan Risk & Diversification Trend[3]



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

LACERA

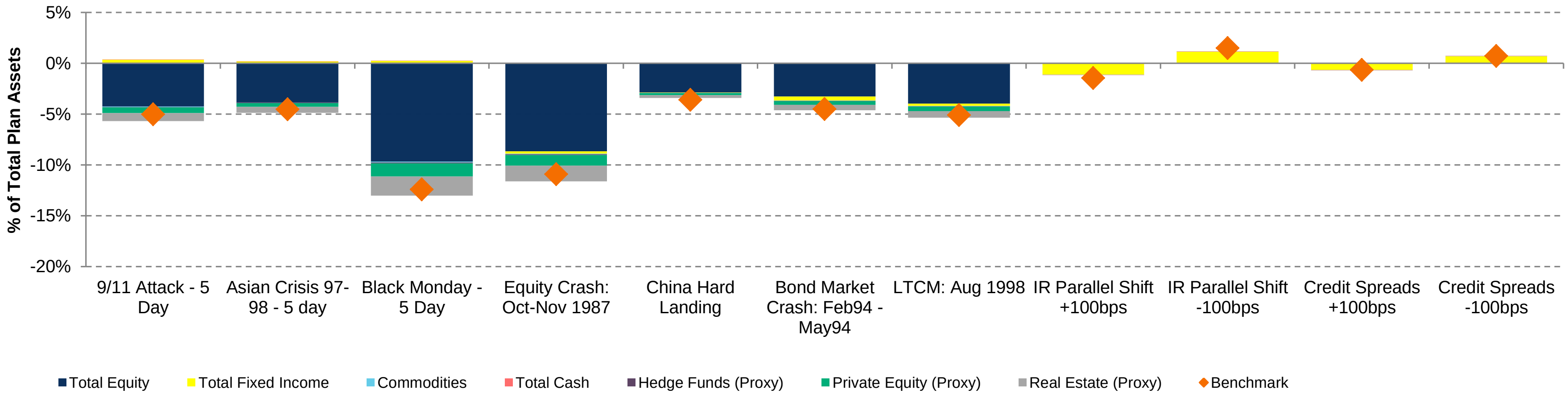
31-Mar-2018

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%	-3.9%	-9.7%	-8.7%	-2.9%	-3.3%	-4.0%	0.0%	-0.0%	-0.0%	0.0%
Total Fixed Income	24.7%	0.4%	0.2%	0.2%	-0.2%	-0.0%	-0.4%	-0.2%	-1.1%	1.1%	-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)	2.5%	-0.0%	-0.0%	-0.1%	-0.1%	-0.0%	-0.0%	-0.0%	0.0%	0.0%	0.0%	0.0%
Private Equity (Proxy)	9.9%	-0.5%	-0.4%	-1.3%	-1.0%	-0.2%	-0.4%	-0.4%	0.0%	0.0%	0.0%	0.0%
Real Estate (Proxy)	11.4%	-0.8%	-0.6%	-1.9%	-1.5%	-0.3%	-0.5%	-0.6%	0.0%	0.0%	0.0%	0.0%
Total Cash	2.8%	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%**	**-11.6%**	**-3.4%**	**-4.6%**	**-5.3%**	**-1.1%**	**1.2%**	**-0.7%**	**0.7%**
Benchmark		-5.0%	-4.5%	-12.4%	-10.9%	-3.6%	-4.5%	-5.1%	-1.5%	1.5%	-0.6%	0.7%

Stress Test Chart



Public Market (Equities & Fixed Income) Analytics By Top 10 Country & Sector

LACERA

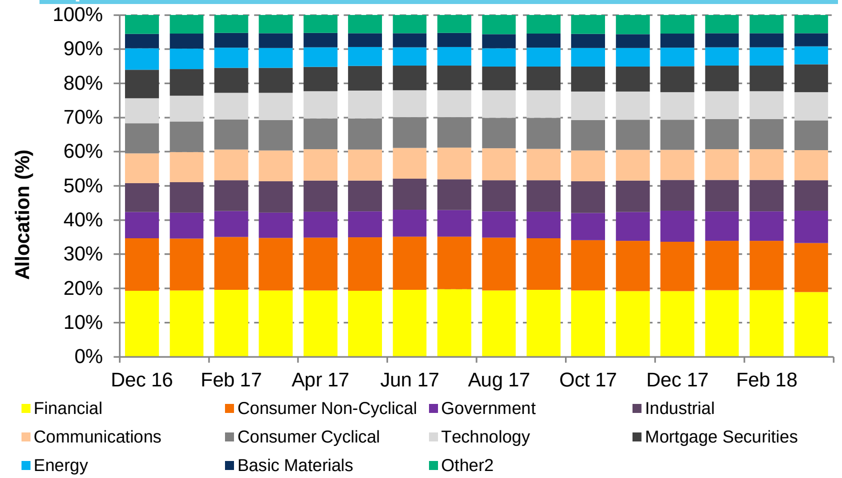
31-Mar-2018

Reporting Currency: USD

Top 10 Sector Analysis

	Market Value (Millions)	Allocation (%)	Volatility (% per annum)[1]
Financial	7,261	18.9%	10.99%
Consumer Non-Cyclical	5,511	14.4%	8.96%
Government	3,621	9.4%	4.23%
Industrial	3,415	8.9%	11.40%
Communications	3,363	8.8%	10.52%
Consumer Cyclical	3,360	8.8%	10.05%
Technology	3,157	8.2%	13.93%
Mortgage Securities	3,133	8.2%	2.11%
Energy	1,989	5.2%	15.64%
Basic Materials	1,498	3.9%	18.17%
Other[2]	2,040	5.3%	-
TOTAL	**38,347**	**100.0%**	**8.17%**

Top 10 Sector Market Value Trend



Top 10 Country Analysis - Public Market Equities

	Market Value (Millions)	Allocation (%)	Volatility (% per annum)[1]
United States	12,684	50.4%	11.81%
Japan	2,037	8.1%	12.04%
United Kingdom	1,520	6.0%	14.27%
Canada	807	3.2%	17.10%
France	754	3.0%	14.74%
Germany	735	2.9%	14.87%
Switzerland	701	2.8%	11.99%
China	637	2.5%	22.97%
Australia	494	2.0%	16.61%
Hong Kong	467	1.9%	16.86%
Other[2]	4,324	17.2%	-
TOTAL	**25,161**	**100.0%**	**12.07%**

Top 10 Country Analysis - Public Market Fixed Income

	Market Value (Millions)	Allocation (%)	Volatility (% per annum)[1]
United States	11,709	88.8%	2.49%
United Kingdom	201	1.5%	3.00%
Canada	154	1.2%	4.04%
Netherlands	145	1.1%	5.91%
Mexico	140	1.1%	9.29%
Luxembourg	95	0.7%	3.29%
Cayman Islands	75	0.6%	1.79%
France	70	0.5%	2.94%
Ireland	48	0.4%	2.50%
Japan	45	0.3%	3.19%
Other[2]	504	3.8%	-
TOTAL	**13,186**	**100.0%**	**2.51%**

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

31-Mar-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.
Tracking Error	An ex-ante (forward looking, or before the event) measure of how closely a portfolio follows the index to which it is compared. It measures the standard deviation of the difference between the portfolio and benchmark scenario returns.
Aggregate Benchmark Structural Risk	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]. This can equally be applied to strategy level benchmarks, compared to the aggregate of the underlying managers' benchmarks.
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.

Stress Tests

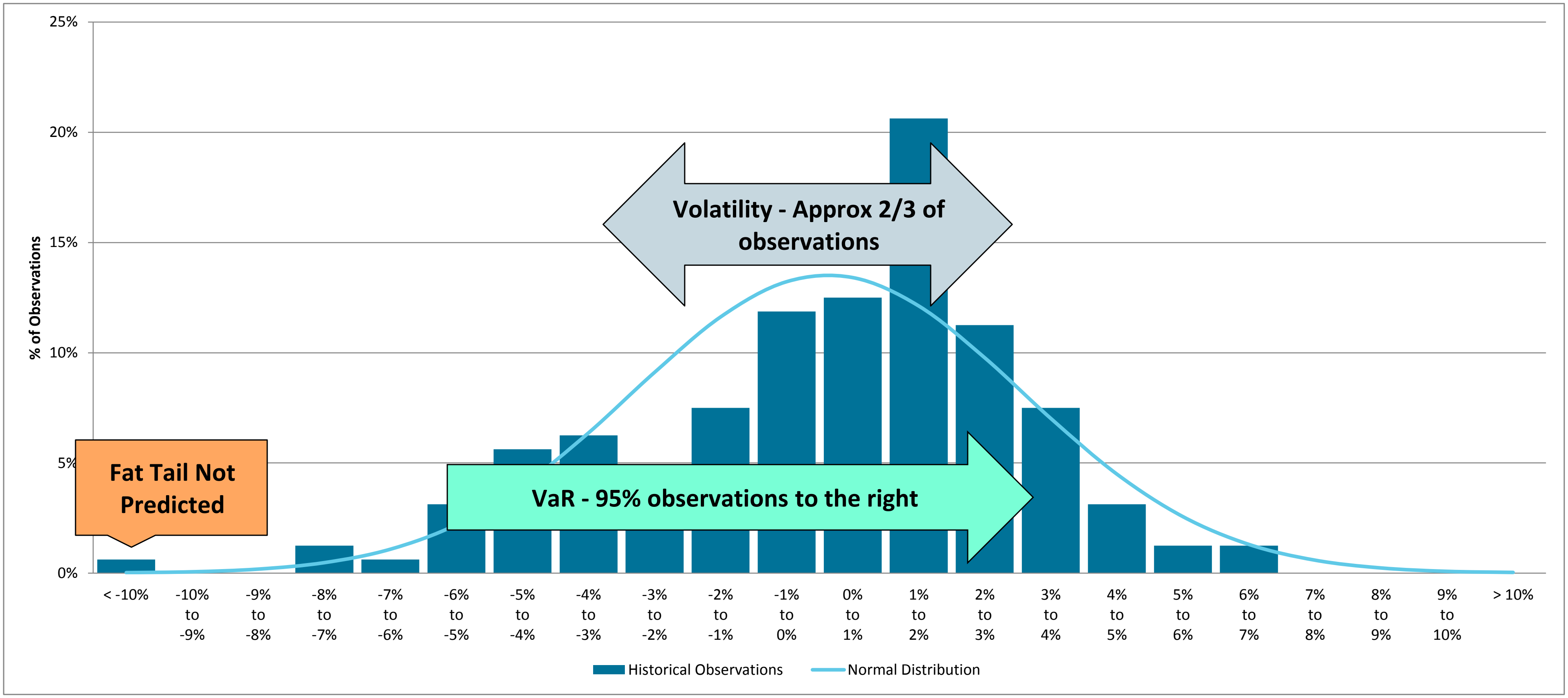
9/11 Attack - 5 Day	Historic stress scenario observed from 9/17/2001 to 9/21/2001 where the US faced an act of terrorism. Trading was suspended on the NYSE and only resumed on 9/17/2001. The US stock market (S&P 500) declined 12%.
Asian Crisis 97-98 - 5 day	Historic stress scenario observed from 10/21/1997 to 10/27/1997 where the Bank of Thailand abandons the Baht's peg to the Dollar and the currency fell 18%. US equity markets fell 7% on the realization that the crisis was no longer localized. Asian currencies were the hardest struck, such as the South Korean Won fell 47.5% and Indonesian Rupiah fell 56%.
Black Monday - 5 Day	Historic stress scenario observed from 10/13/1987 to 10/19/1987 where the US stock market (DJIA) declined 31% with the world market following the decline.
Equity Crash: Oct-Nov 1987	Historic stress scenario observed from 10/5/1987 to 11/02/1987 where the world equity markets feared another Great Depression.
China Hard Landing	This is a macro-economic stress test, developed by State Street Global Exchange's℠ research team. The stress test aims to estimate the potential impact, if China's economy and economic growth were to experience a "hard landing".
Bond Market Crash: Feb94 - May94	Historic stress scenario observed from 2/1/1994 to 9/15/1994 where the FED raised rates by approx. 250 basis points (against market expectations). 1994 became the year of the worst bond market loss in history. The Fed hiked interest rates in 1994 also precipitated a year-long correction in the stock market.
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.

Appendix - Glossary
LACERA

31-Mar-2018
Reporting Currency: USD

VaR and Volatility

Example Illustration of VaR and Volatility
VaR = 5.6%
Volatility = 2.9%
Mean = 0.1%



State Street Global Exchange℠ is a trademark of State Street Corporation (incorporated in Massachusetts) and is registered or has registrations pending in multiple jurisdictions. This document and information herein (together, the "Content") is subject to change without notice based on market and other conditions and may not reflect the views of State Street Corporation and its subsidiaries and affiliates ("State Street"). The Content provided is for informational, illustrative and/or marketing purposes only; it does not take into account any client or prospects particular investment or other financial objectives or strategies, nor any client's legal, regulatory, tax or accounting status, nor does it purport to be comprehensive or intended to replace the exercise of a client or prospects own careful independent review regarding any corresponding investment or other financial decision. The Content does not constitute investment, legal, regulatory, tax or accounting advice and is not a solicitation to buy or sell securities, nor is it intended to constitute any binding contractual arrangement or commitment by State Street of any kind. The Content provided was prepared and obtained from sources believed to be reliable at the time of preparation, however it is provided "as-is" and State Street makes no guarantee, representation, or warranty of any kind including, without limitation, as to its accuracy, suitability, timeliness, merchantability, fitness for a particular purpose, non-infringement of third-party rights, or otherwise. State Street disclaims all liability, whether arising in contract, tort or otherwise, for any claims, losses, liabilities, damages (including direct, indirect, special or consequential), expenses or costs arising from or connected with the Content. The Content is not intended for retail clients or for distribution to, and may not be relied upon by, any person or entity in any jurisdiction or country where such distribution or use would be contrary to applicable law or regulation. The Content provided may contain certain statements that could be deemed forward-looking statements; any such statements or forecasted information are not guarantees or reliable indicators for future performance and actual results or developments may differ materially from those depicted or projected. Past performance is no guarantee of future results. No permission is granted to reprint, sell, copy, distribute, or modify the Content in any form or by any means without the prior written consent of State Street.

© 2018 State Street Corporation, All rights reserved.

Detailed Analytics Board Report

Prepared for LACERA

31 March 2018

Total Fixed Income

Fixed Income Analytics, Volatility & Tracking Error by Manager Category

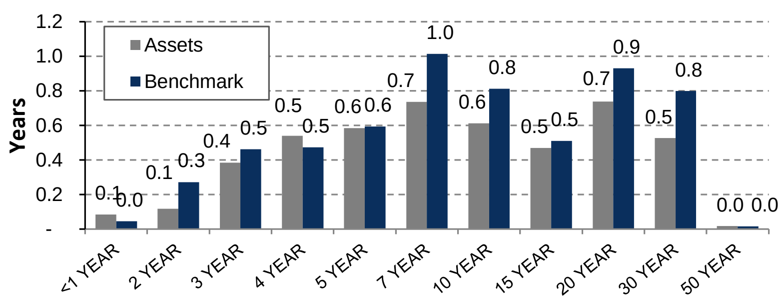
LACERA

31-Mar-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		6,023	43.8%	5.67	3.25%	0.42%	2.92%	5.52%	0.48%
	Barclays US Aggregate			*6.08*	*3.31%*	*0.27%*	*3.15%*	*6.06%*	
Core Plus Managers		3,929	28.6%	5.36	3.19%	0.97%	3.20%	5.64%	1.28%
	Barclays US Aggregate			*6.08*	*3.31%*	*0.27%*	*3.15%*	*6.06%*	
High Yield Managers		519	3.8%	3.87	5.93%	2.75%	4.28%	7.74%	0.82%
	Barclays US High Yield Ba to B			*4.42*	*6.00%*	*2.84%*	*4.58%*	*8.32%*	
Opportunistic Managers		3,282	23.9%	1.87	4.36%	3.35%	2.97%	4.91%	1.80%
	Barclays US High Yield Ba to B			*4.42*	*6.00%*	*2.84%*	*4.58%*	*8.32%*	
TOTAL		**13,753**	**100.0%**	**4.60**	**3.60%**	**1.29%**	**2.58%**	**4.39%**	**0.42%**
	Weighted Average Benchmark[4]			*5.62*	*4.05%*	*0.98%*	*2.84%*	*5.15%*	
Benchmark	**Barclays US Universal**			**5.91**	**3.59%**	**0.60%**	**3.00%**	**5.56%**	**1.16%**
								Aggregate Benchmark Structural Risk[5]	**0.74%**

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	0.30	0.19	0.90
Core Plus Managers	0.94	1.00	0.56	0.46	0.98
High Yield Managers	0.30	0.56	1.00	0.95	0.67
Opportunistic Managers	0.19	0.46	0.95	1.00	0.59
TOTAL	0.90	0.98	0.67	0.59	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

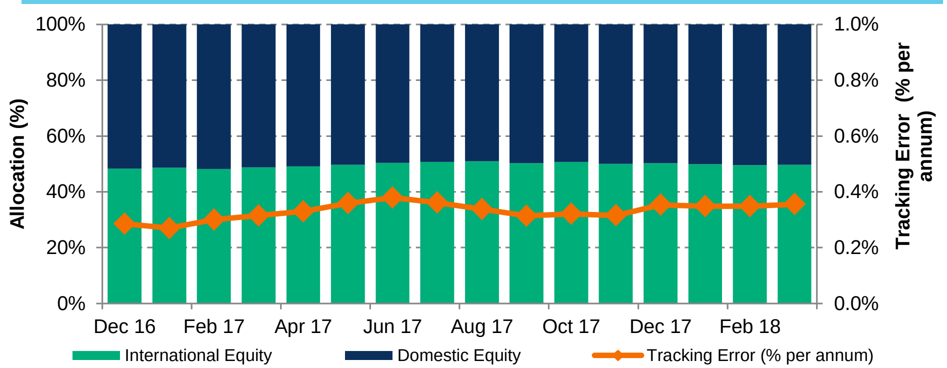
31-Mar-2018

Reporting Currency: USD

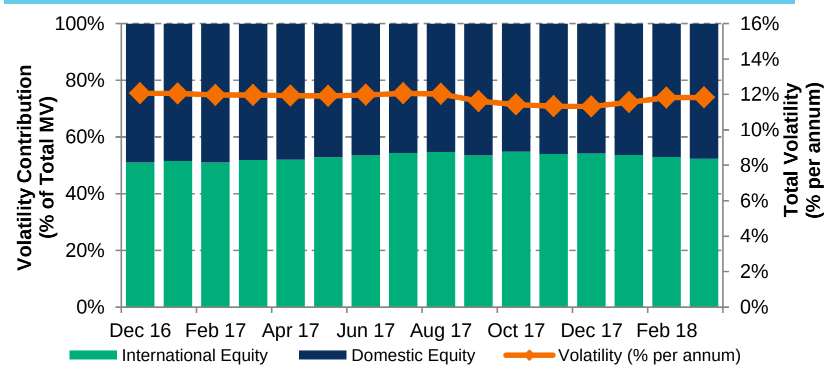
Total Equity Analytics excluding Currency Hedge

	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	**12,947**	**50.2%**	**1.05**	**1.04**	**0.74**	**11.63%**	**19.89%**	**0.46%**
Moderate/High Risk		1,642	6.4%	1.18	1.20	0.82	14.51%	20.78%	
Passive		9,912	38.4%	1.04	1.02	0.73	11.45%	19.70%	
Total Low Risk		1,394	5.4%	1.01	0.99	0.72	11.11%	19.05%	
International Equity	MSCI ACWI IMI exUS	**12,836**	**49.8%**	**1.02**	**0.99**	**1.03**	**12.79%**	**21.28%**	**0.48%**
Passive		7,454	28.9%	1.01	0.97	1.01	15.22%	20.55%	
Total Active Emerging Markets		1,807	7.0%	1.17	1.12	1.22	16.94%	26.14%	
Total Active Non-U.S.		1,269	4.9%	1.00	0.97	0.99	12.90%	19.19%	
Total Active Regional		2,307	8.9%	0.98	0.95	0.95	12.50%	22.88%	
TOTAL[5]		**25,784**	**100.0%**	**1.04**	**1.01**	**0.88**	**11.81%**	**20.40%**	**0.36%**

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

LACERA

31-Mar-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	1,642	12.7%	1.18	1.20	0.82	14.51%	20.78%	2.39%
Passive	Weighted Average Manager Benchmarks	9,912	76.6%	1.04	1.02	0.73	11.45%	19.70%	0.05%
Total Low Risk	Weighted Average Manager Benchmarks	1,394	10.8%	1.01	0.99	0.72	11.11%	19.05%	1.69%
TOTAL	**Weighted Average Manager Benchmarks**	**12,947**	**100.0%**	**1.05**	**1.04**	**0.74**	**11.63%**	**19.89%**	**0.37%**
Benchmark	**Russell 3000**			**1.06**	**-**	**0.74**	**11.56%**	**19.78%**	**0.46%**
							Aggregate Benchmark Structural Risk [5]		**0.09%**

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	1,807	14.1%	1.17	1.12	1.22	16.94%	26.14%	1.99%
Total Active Non-U.S.	Weighted Average Manager Benchmarks	1,269	9.9%	1.00	0.97	0.99	12.90%	19.19%	2.68%
Total Active Regional	Weighted Average Manager Benchmarks	2,307	18.0%	0.98	0.95	0.95	12.50%	22.88%	1.95%
Passive	Weighted Average Manager Benchmarks	7,454	58.1%	1.01	0.97	1.01	13.09%	20.55%	0.06%
TOTAL	**Weighted Average Manager Benchmarks**	**12,836**	**100.0%**	**1.02**	**0.99**	**1.03**	**13.27%**	**21.31%**	**0.48%**
Benchmark	**MSCI ACWI ex US IMI**			**1.02**	**0.99**	**-**	**13.27%**	**20.83%**	**0.48%**
							Aggregate Benchmark Structural Risk [5]		**0.00%**

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: 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

LACERA

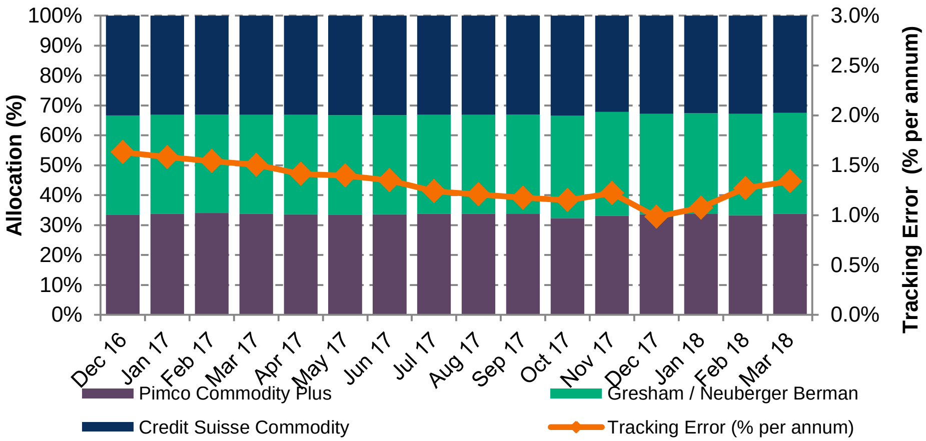
31-Mar-2018

Reporting Currency: USD

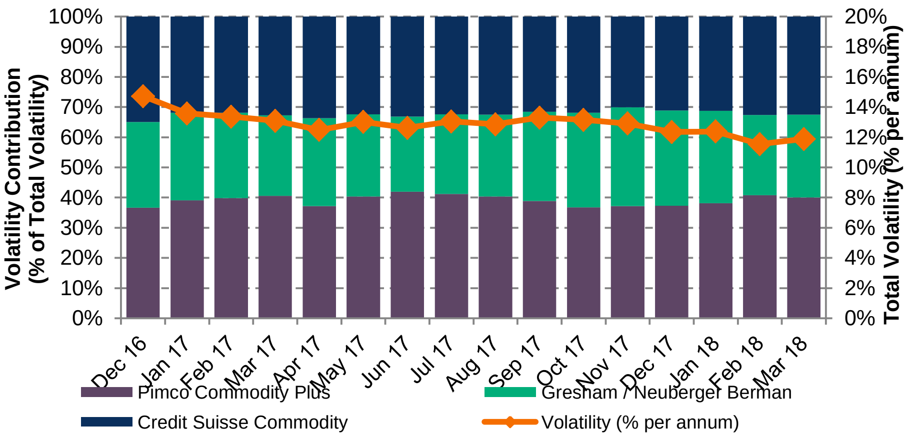
Commodity Analysis

	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	455	32.5%	99.6%	0.95	11.95%	20.08%	1.05%
Gresham / Neuberger Berman	473	33.7%	99.7%	1.06	13.35%	22.69%	2.06%
Pimco Commodity Plus	474	33.8%	85.0%	0.85	10.61%	22.27%	3.19%
TOTAL	**1,402**	**100.0%**	**94.7%**	**0.95**	**11.88%**	**20.60%**	**1.34%**
Benchmark			*100.0%*		*12.67%*	*21.08%*	

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 horizonn 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

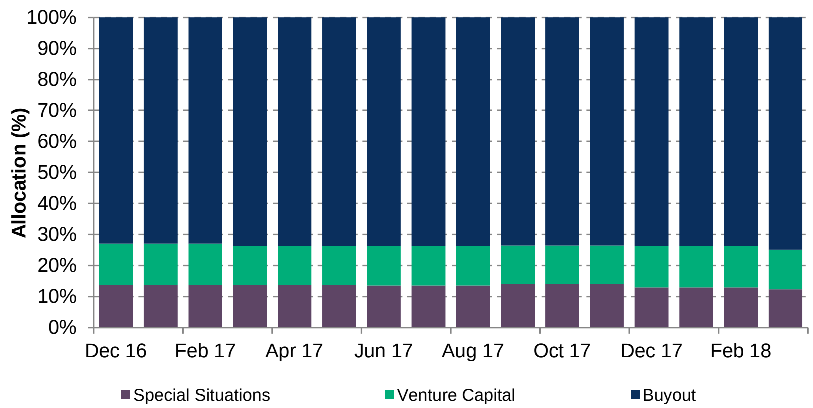
LACERA

31-Mar-2018
Reporting Currency: USD

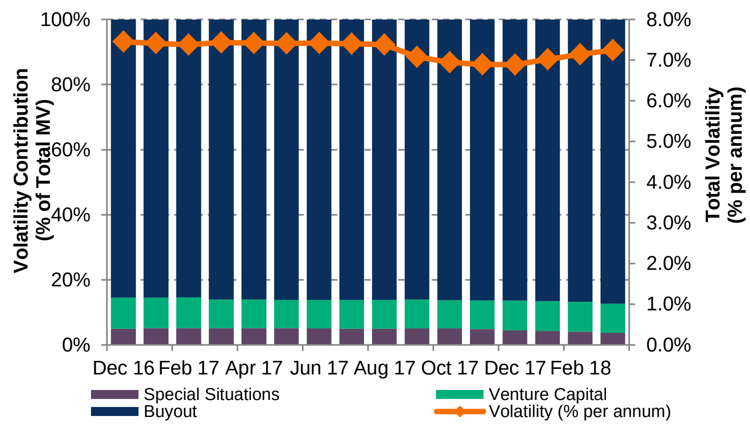
Private Equity Analytics

	Market Value (Millions)	Allocation (%)	Beta S&P 500[1]	Beta Russell 3000[1]	Beta MSCI ACWIxUS[1]	Volatility (% per annum)[2]
Buyout	4,122	74.9%	0.75	0.64	0.72	8.47%
Special Situations	678	12.3%	0.16	0.16	0.17	3.92%
Venture Capital	704	12.8%	0.49	0.34	0.48	5.30%
TOTAL	**5,505**	**100.0%**	**0.64**	**0.54**	**0.62**	**7.24%**

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

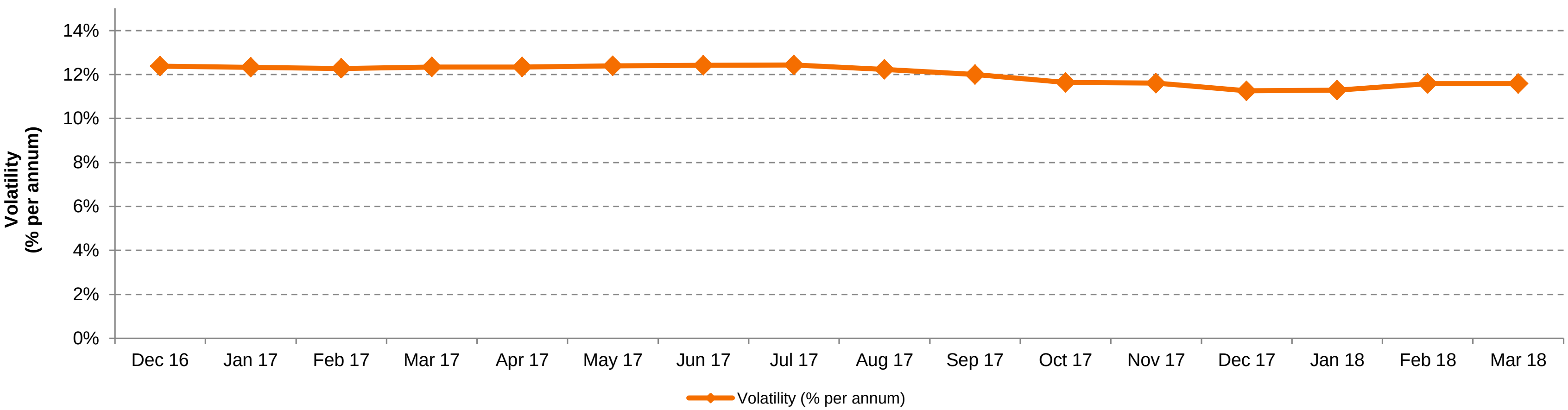
LACERA

31-Mar-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	6,330	0.61	0.44	0.59	11.59%

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

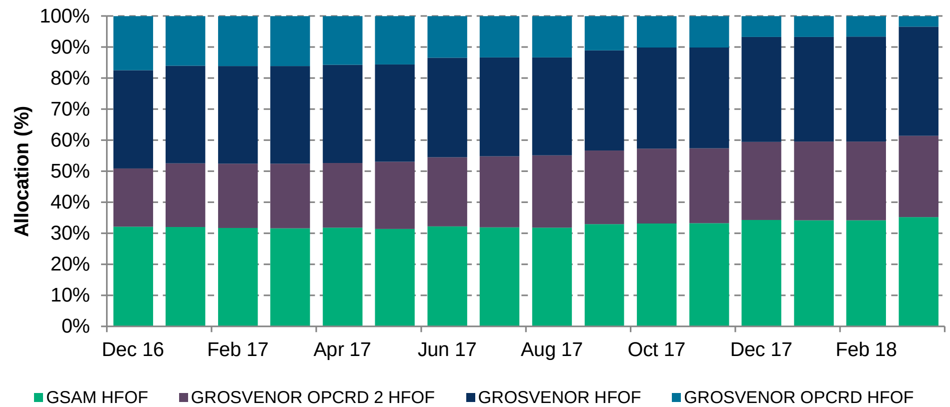
31-Mar-2018

Reporting Currency: USD

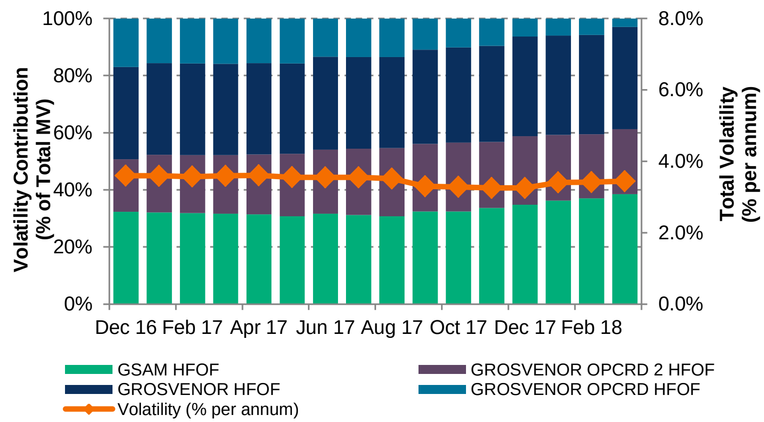
Hedge Funds Analytics

	Market Value (Millions)	Allocation (%)	Beta MSCI ACWI[1]	Beta Barclays US High Yield Ba to B[1]	Beta BCOM[1]	Volatility (% per annum)[2]
GROSVENOR HFOF	479	35.1%	0.26	0.46	0.13	3.52%
GROSVENOR OPCRD 2 HFOF	358	26.2%	0.19	0.48	0.14	3.39%
GROSVENOR OPCRD HFOF	47	3.5%	0.19	0.47	0.14	3.34%
GSAM HFOF	481	35.2%	0.29	0.44	0.11	3.97%
TOTAL	**1,367**	**100.0%**	**0.25**	**0.46**	**0.12**	**3.44%**

Hedge Fund Allocation Trend



Hedge Fund 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 hedge fund.

Glossary

Appendix - Glossary

LACERA

31-Mar-2018

Reporting Currency: USD

Terms and Definitions

Analytics

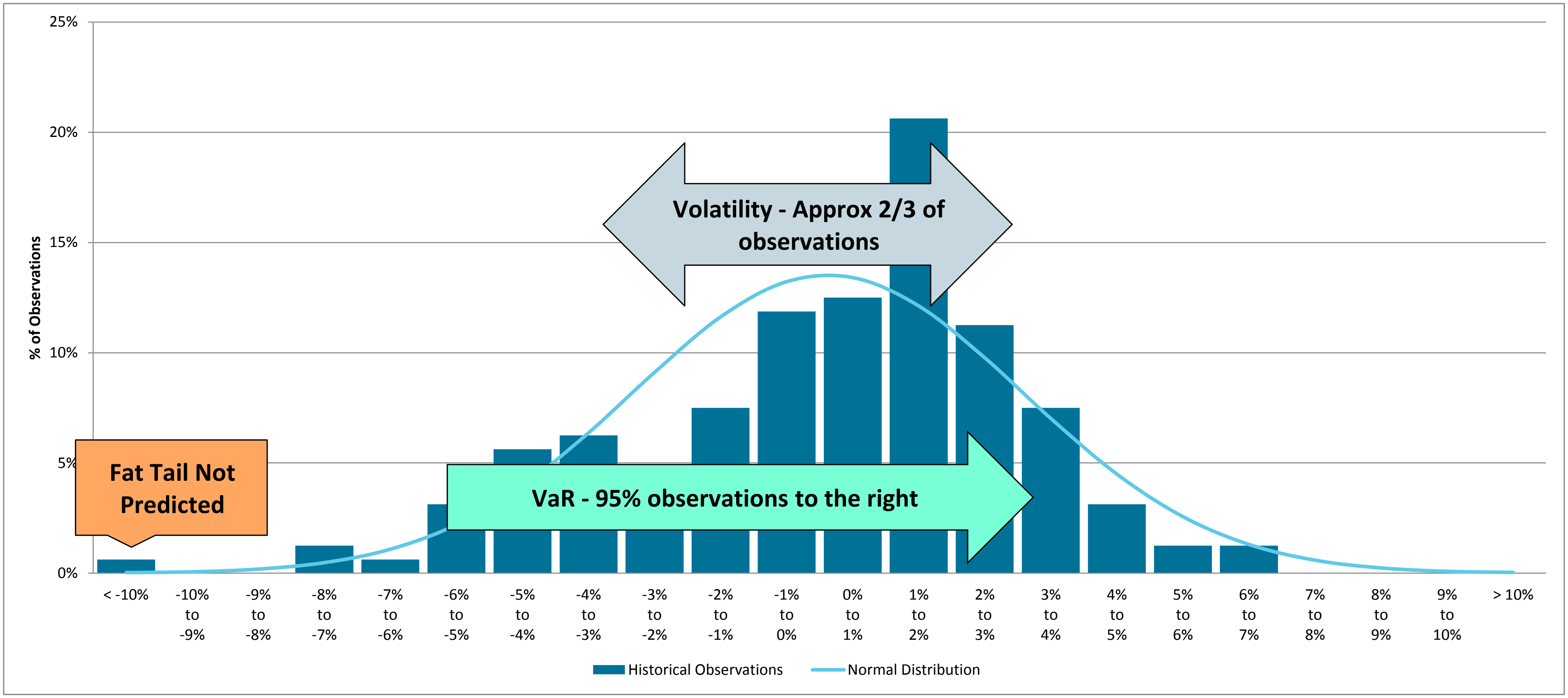
Value-at-Risk 95% (VaR)	Value-at-risk or VaR quantifies the potential loss in a portfolio at a certain level of confidence. VaR 95th percentile means there is a 5% chance of losing more than X%. Alternatively, it can be expressed as there is a 1 in 20 chance of losing more than X% in the next month (or 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.
Tracking Error	An ex-ante (forward looking, or before the event) measure of how closely a portfolio follows the index to which it is compared. It measures the standard deviation of the difference between the portfolio and benchmark scenario returns.
Aggregate Benchmark Structural Risk	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]. This can equally be applied to strategy level benchmarks, compared to the aggregate of the underlying managers' benchmarks.
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.

Stress Tests

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%.
Asian Crisis 97-98 - 5 day	Historic stress scenario observed from 10/21/1997 to 10/27/1997 where the Bank of Thailand abandons the Baht's peg to the Dollar and the currency fell 18%. US equity markets fell 7% on the realization that the crisis was no longer localized. Asian currencies were the hardest struck, such as the South Korean Won fell 47.5% and Indonesian Rupiah fell 56%.
Black Monday - 5 Day	Historic stress scenario observed from 10/13/1987 to 10/19/1987 where the US stock market (DJIA) declined 31% with the world market following the decline.
Equity Crash: Oct-Nov 1987	Historic stress scenario observed from 10/5/1987 to 11/02/1987 where the world equity markets feared another Great Depression.
China Hard Landing	This is a macro-economic stress test, developed by State Street Global Exchange's[SM] research team. The stress test aims to estimate the potential impact, if China's economy and economic growth were to experience a "hard landing".
Bond Market Crash: Feb94 - May94	Historic stress scenario observed from 2/1/1994 to 9/15/1994 where the FED raised rates by approx. 250 basis points (against market expectations). 1994 became the year of the worst bond market loss in history. The Fed hiked interest rates in 1994 also precipitated a year-long correction in the stock market.
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%



State Street Global Exchange℠ is a trademark of State Street Corporation (incorporated in Massachusetts) and is registered or has registrations pending in multiple jurisdictions. This document and information herein (together, the "Content") is subject to change without notice based on market and other conditions and may not reflect the views of State Street Corporation and its subsidiaries and affiliates ("State Street"). The Content provided is for informational, illustrative and/or marketing purposes only; it does not take into account any client or prospects particular investment or other financial objectives or strategies, nor any client's legal, regulatory, tax or accounting status, nor does it purport to be comprehensive or intended to replace the exercise of a client or prospects own careful independent review regarding any corresponding investment or other financial decision. The Content does not constitute investment, legal, regulatory, tax or accounting advice and is not a solicitation to buy or sell securities, nor is it intended to constitute any binding contractual arrangement or commitment by State Street of any kind. The Content provided was prepared and obtained from sources believed to be reliable at the time of preparation, however it is provided "as-is" and State Street makes no guarantee, representation, or warranty of any kind including, without limitation, as to its accuracy, suitability, timeliness, merchantability, fitness for a particular purpose, non-infringement of third-party rights, or otherwise. State Street disclaims all liability, whether arising in contract, tort or otherwise, for any claims, losses, liabilities, damages (including direct, indirect, special or consequential), expenses or costs arising from or connected with the Content. The Content is not intended for retail clients or for distribution to, and may not be relied upon by, any person or entity in any jurisdiction or country where such distribution or use would be contrary to applicable law or regulation. The Content provided may contain certain statements that could be deemed forward-looking statements; any such statements or forecasted information are not guarantees or reliable indicators for future performance and actual results or developments may differ materially from those depicted or projected. Past performance is no guarantee of future results. No permission is granted to reprint, sell, copy, distribute, or modify the Content in any form or by any means without the prior written consent of State Street.

© 2018 State Street Corporation, All rights reserved.

FUND EVALUATION REPORT

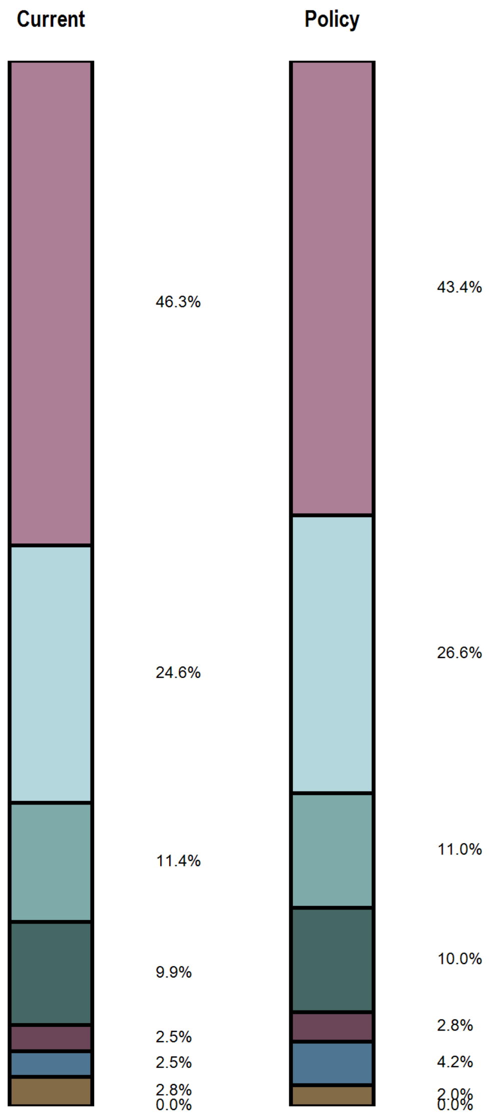
Los Angeles County Employees Retirement Association

March 31, 2018

I:\lacera\review\2018\performance updates\3\000_evaluationcoverdb.docx

Los Angeles County Employees Retirement Association

As of March 31, 2018

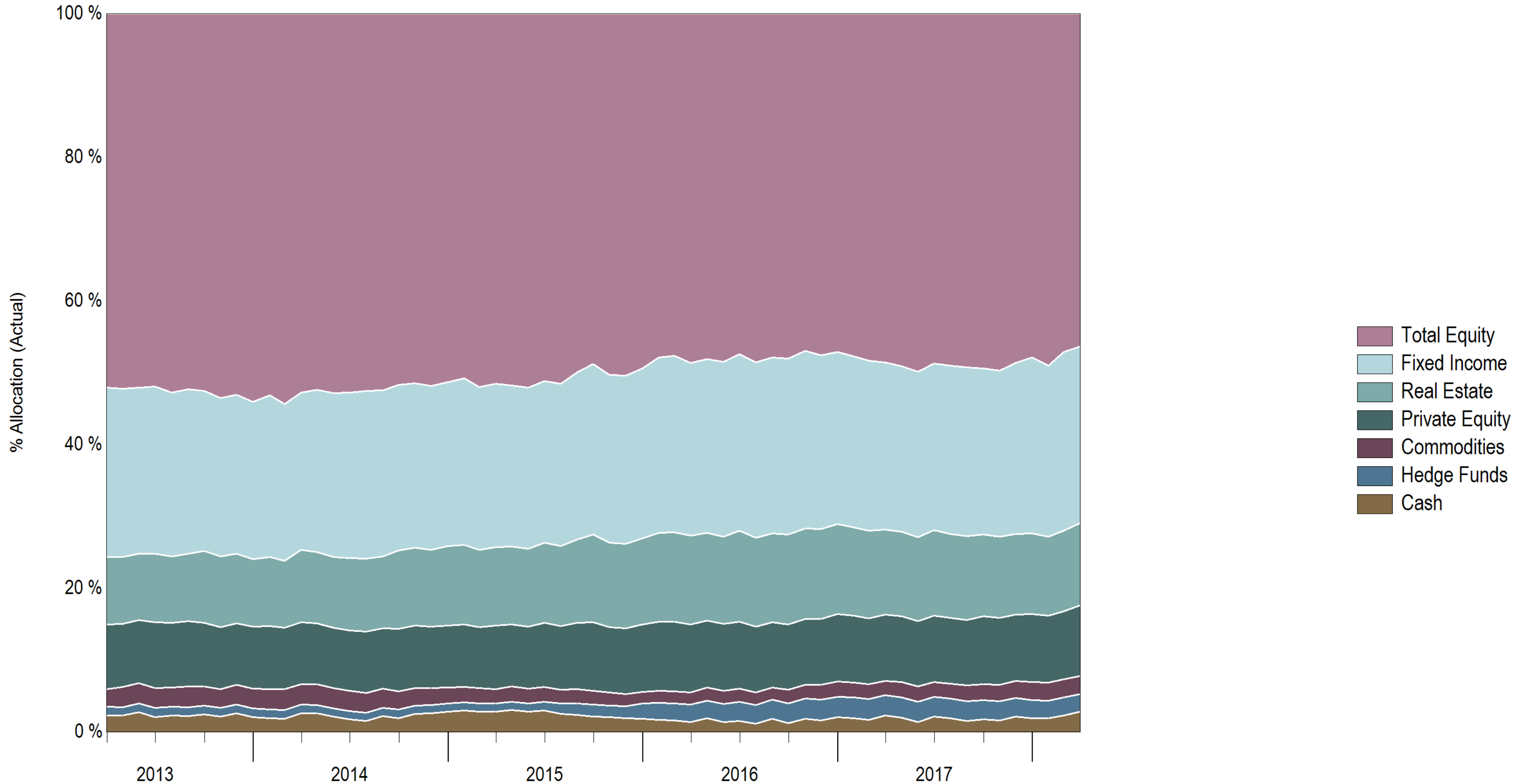


Allocation vs. Target

	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
Total Equity	**$25,740,758,464**	**46.3%**	**43.4%**	**2.9%**	**33.4% - 53.4%**	**Yes**
U.S. Equity	$12,947,257,784	23.3%	22.4%	0.9%	0.0% - 100.0%	Yes
Non-U.S. Equity	$12,793,500,680	23.0%	21.0%	2.0%	0.0% - 100.0%	Yes
Fixed Income[1]	**$13,699,946,299**	**24.6%**	**26.6%**	**-2.0%**	**23.6% - 29.6%**	**Yes**
Fixed Income	$13,699,946,299	24.6%	26.6%	-2.0%	23.6% - 29.6%	Yes
Real Estate[2]	**$6,330,243,153**	**11.4%**	**11.0%**	**0.4%**	**8.0% - 16.0%**	**Yes**
Real Estate	$6,330,243,153	11.4%	11.0%	0.4%	8.0% - 16.0%	Yes
Private Equity[2]	**$5,504,619,680**	**9.9%**	**10.0%**	**-0.1%**	**7.0% - 14.0%**	**Yes**
Private Equity	$5,504,619,680	9.9%	10.0%	-0.1%	7.0% - 14.0%	Yes
Commodities	**$1,397,983,879**	**2.5%**	**2.8%**	**-0.3%**	**0.0% - 4.8%**	**Yes**
Commodities	$1,397,983,879	2.5%	2.8%	-0.3%	0.0% - 4.8%	Yes
Hedge Funds[3]	**$1,366,534,505**	**2.5%**	**4.2%**	**-1.7%**	**1.2% - 6.2%**	**Yes**
Hedge Funds	$1,366,534,505	2.5%	4.2%	-1.7%	1.2% - 6.2%	Yes
Cash	**$1,564,845,085**	**2.8%**	**2.0%**	**0.8%**	**0.0% - 4.0%**	**Yes**
Cash	$1,564,845,085	2.8%	2.0%	0.8%	0.0% - 4.0%	Yes
Other Opportunities	**--**	**--**	**0.0%**	**0.0%**	**0.0% - 5.0%**	**Yes**
Total	**$55,604,931,065**	**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 March 31, 2018



Los Angeles County Employees Retirement Association

As of March 31, 2018

Sources of Fund Growth

Quarter ending March 31, 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	**13,239,212**	**-207,301**	**4,083**	**-84,653**	**12,947,258**	**-.7**
Intech	857,720	-	488	10,629	868,349	1.2
Cramer Rosenthal McGlynn	273,639	-	353	669	274,308	.2
BTC Russell 2000	101,472	-	2	-32	101,441	-.0
Westwood Management	257,499	-	323	-646	256,853	-.3
Eagle Asset Management	343,127	-	448	-1,257	341,870	-.4
BTC Russell 3000	592,458	-	82	-3,917	588,541	-.7
Jana Partners	105,911	-7,622	600	-4,023	94,266	-5.3
Twin Capital	531,706	-	203	-6,063	525,644	-1.1
Frontier Capital Management	691,974	-	1,293	-17,639	674,335	-2.5
BTC Russell 1000	9,483,967	-200,000	232	-62,316	9,221,651	-.7
Non-U.S. Equity	**13,370,667**	**-339,421**	**10,730**	**-237,745**	**12,793,501**	**-1.9**
BTC Emerging Markets	1,394,889	-125,000	316	20,189	1,290,078	1.2
Genesis	715,740	-	1,291	9,739	725,479	1.4
Acadian Emerging Markets	423,178	-	486	9,701	432,879	2.3
AQR Emerging Markets	269,421	-163	473	7,338	276,597	2.7
Symphony Financial Partners	130,087	2,447	2,447	4,755	137,289	3.6
BTC EAFE Small Cap	209,654	-	31	137	209,791	.1
BTC Emerging Markets Small Cap	148,517	-	76	16	148,533	.0
Lazard Emerging Markets	372,505	-	718	-1,048	371,457	-.3
Capital Guardian	383,660	-	329	-1,284	382,376	-.3
BTC Europe Index	383,779	-	9	-7,218	376,561	-1.9
Acadian Developed Markets	897,145	-	840	-10,976	886,168	-1.2
GAM Pacific Basin	893,756	-	939	-11,736	882,020	-1.3
Cevian Capital	303,874	-	1,154	-15,587	288,287	-5.1
BTC Euro Tilts	1,021,134	-	1,045	-21,727	999,407	-2.1
BTC Canada IMI	814,741	-75,000	32	-57,429	682,312	-7.3
BTC EAFE IMI	5,010,765	-200,000	178	-63,800	4,746,965	-1.3
BTC Passive Currency Hedge	-2,252	58,316	365	-98,816	-42,751	-1.0

Los Angeles County Employees Retirement Association

As of March 31, 2018

Sources of Fund Growth

Quarter ending March 31, 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	**13,617,303**	**198,096**	**8,504**	**-115,453**	**13,699,946**	**-.9**
Tennenbaum Capital	262,264	-1	597	7,298	269,561	2.8
Brigade Capital Management	486,714	-1	901	4,120	490,833	.8
Beach Point Capital	382,344	-74	1,319	2,607	384,877	.7
Ashmore Investment Management	210,167	-	352	2,170	212,338	1.0
TCW	270,179	-	389	1,708	271,887	.6
Member Home Loan Program Mirror (MHLP)	33,888	-1,828	22	1,670	33,730	5.1
Western Opportunistic	303,542	-	48	1,117	304,659	.4
Crescent Capital Group	271,033	-	370	1,045	272,078	.4
Doubleline Capital	266,448	-	491	10	266,458	.0
Bain Capital	301,081	-	484	-25	301,057	-.0
PENN Capital Management	108,788	-	119	-461	108,327	-.4
Aberdeen Asset Management	207,854	-	204	-2,184	205,670	-1.1
Principal Opportunistic	269,215	-	91	-2,293	266,922	-.9
Pugh Capital Management	137,346	-	65	-2,332	135,013	-1.7
Dolan McEniry Capital Management	347,326	-	218	-3,259	344,067	-.9
Oaktree Capital Management	408,943	-	394	-5,497	403,446	-1.3
LM Capital Group	456,274	-150,000	187	-7,776	298,498	
Loomis, Sayles & Co.	1,085,605	-	338	-7,795	1,077,810	-.7
Dodge & Cox	1,297,532	-	310	-11,974	1,285,558	-.9
Blackrock	719,247	-698,544	278	-12,374	8,329	
PIMCO	1,060,562	-	529	-13,432	1,047,130	-1.3
Western Asset Management	1,152,951	-	360	-19,574	1,133,377	-1.7
Wells Capital Management	1,359,969	-	373	-19,816	1,340,153	-1.5
BTC Aggregate Index	1,978,165	1,284,901	60	-24,897	3,238,169	-1.5

Los Angeles County Employees Retirement Association

As of March 31, 2018

Sources of Fund Growth

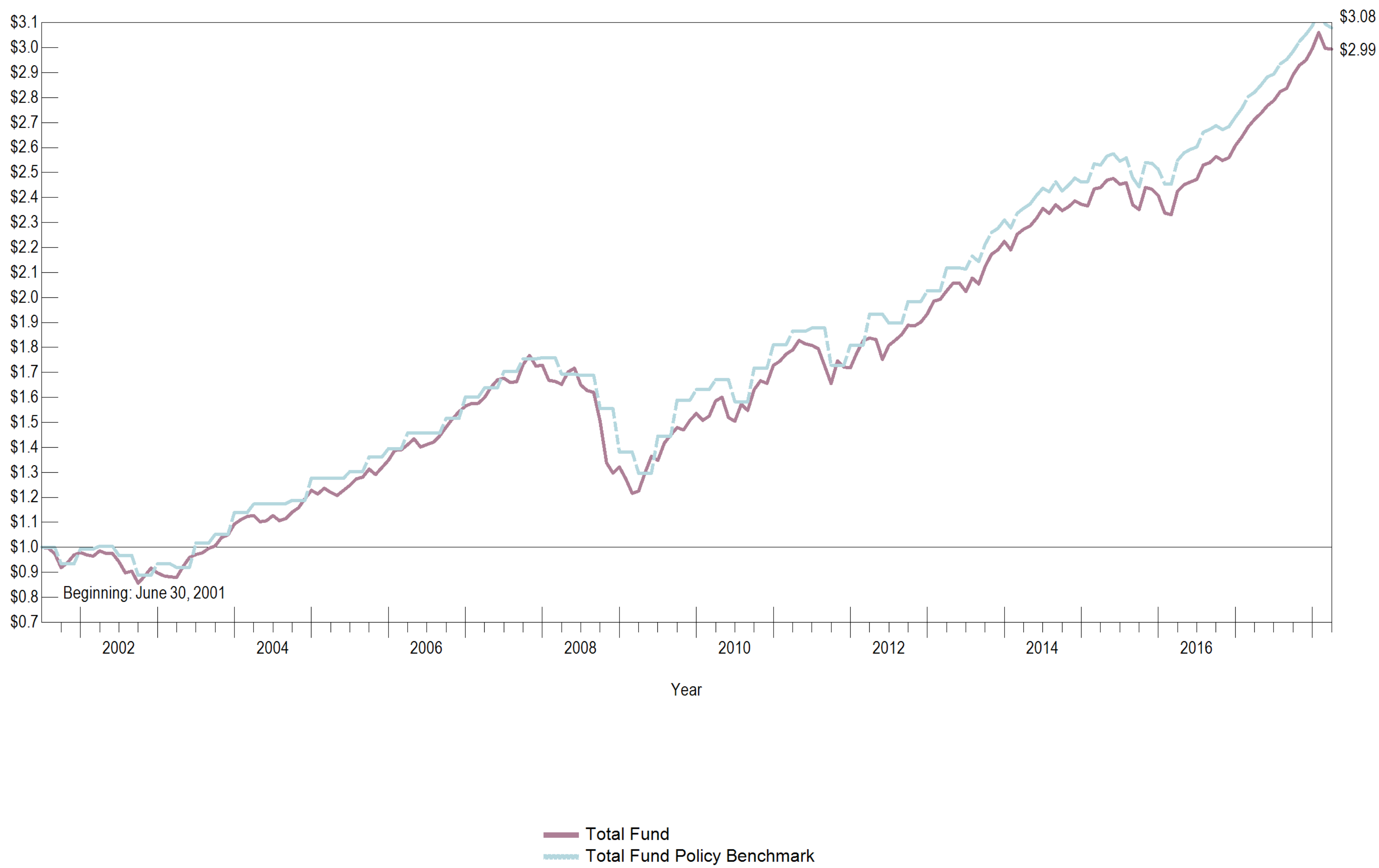
Quarter ending March 31, 2018

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	**6,233,446**	**2,010**	**15,820**	**94,786**	**6,330,243**	**1.5**
Private Equity	**5,270,716**	**-42,780**	**-**	**276,684**	**5,504,620**	**5.3**
Commodities	**1,400,538**	**-**	**1,217**	**-2,555**	**1,397,984**	**-.2**
PIMCO Commodities	470,652	-	472	808	471,460	.2
Neuberger Berman/Gresham	471,472	-	438	262	471,734	.1
Credit Suisse	458,414	-	306	-3,624	454,790	-.8
Total Hedge Funds	**1,386,095**	**-46,848**	**510**	**27,288**	**1,366,535**	**2.0**
Grosvenor HFOF	468,941	-	-	10,523	479,464	2.2
Grovsenor OPCRD 2 HFOF	349,430	-	-	8,930	358,360	2.6
GSAM HFOF	474,848	-48	510	6,443	481,243	1.3
Grosvenor OPCRD HFOF	92,877	-46,800	-	1,392	47,468	1.7
Cash	**1,089,482**	**469,265**	**880**	**6,098**	**1,564,845**	**.4**
Cash	1,089,482	355,165	880	6,098	1,450,745	.5
GSAM HFOF Uninvested Mirror	-	114,100	-	-	114,100	
Total Fund	**55,607,461**	**33,021**	**41,744**	**-35,551**	**55,604,931**	**-.1**

Los Angeles County Employees Retirement Association

As of March 31, 2018

GROWTH OF A DOLLAR



Asset Class Performance Summary (Gross)

	Market Value ($)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Fund	**55,604,931,066**	**100.0**	**0.0**	**7.6**	**10.6**	**7.3**	**8.4**	**6.3**
Total Fund Policy Benchmark			*-0.2*	*6.4*	*9.1*	*6.8*	*7.8*	*6.2*
U.S. Equity	**12,947,257,784**	**23.3**	**-0.7**	**10.2**	**13.6**	**10.0**	**13.0**	**9.7**
Russell 3000			*-0.6*	*10.5*	*13.8*	*10.2*	*13.0*	*9.6*
Non-U.S. Equity	**12,793,500,680**	**23.0**	**-1.8**	**9.3**	**14.8**	**7.1**	**8.0**	**4.0**
Custom MSCI ACWI IMI Net 50% Hedge			*-1.7*	*9.1*	*14.3*	*6.4*	*7.3*	*3.6*
Fixed Income[1]	**13,699,946,299**	**24.6**	**-0.8**	**1.2**	**3.0**	**3.1**	**3.2**	**5.4**
FI Custom Index			*-1.4*	*0.0*	*1.5*	*1.7*	*2.2*	*4.1*
BBgBarc US Universal TR			*-1.4*	*0.0*	*1.5*	*1.7*	*2.2*	*4.0*
Real Estate[2]	**6,330,243,153**	**11.4**	**1.8**	**6.0**	**7.6**	**10.2**	**10.2**	**3.8**
Real Estate Target			*1.9*	*5.4*	*7.1*	*9.9*	*10.8*	*6.2*
Private Equity[2]	**5,504,619,680**	**9.9**	**5.3**	**16.3**	**20.1**	**12.7**	**15.2**	**11.3**
Private Equity Target			*3.3*	*9.7*	*13.1*	*13.0*	*13.3*	*10.5*
Commodities	**1,397,983,879**	**2.5**	**-0.1**	**9.3**	**6.2**	**-1.3**	**-6.6**	**-5.8**
Bloomberg Commodity Index TR USD			*-0.4*	*6.9*	*3.7*	*-3.2*	*-8.3*	*-7.7*
Total Hedge Funds[3]	**1,366,534,505**	**2.5**	**2.0**	**5.1**	**5.4**	**3.2**	**4.7**	**--**
Hedge Fund Custom Index			*1.5*	*4.6*	*6.0*	*5.5*	*5.3*	*--*
Cash	**1,564,845,085**	**2.8**	**0.4**	**1.0**	**1.3**	**0.9**	**0.7**	**0.8**
Citi 6 Month T-Bill			*0.3*	*0.9*	*1.1*	*0.6*	*0.4*	*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.

Total Fund

As of March 31, 2018

Trailing Performance

	Market Value ($)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Fund (Net)	**55,604,931,066**	**100.0**	**-0.1**	**7.4**	**10.4**	**7.1**	**8.1**	**6.1**
Total Fund (Gross)			**0.0**	**7.6**	**10.6**	**7.3**	**8.4**	**6.3**
Total Fund Policy Benchmark			*-0.2*	*6.4*	*9.1*	*6.8*	*7.8*	*6.2*
Excess Return (vs. Net)			0.1	1.0	1.3	0.3	0.3	-0.1
U.S. Equity (Net)	**12,947,257,784**	**23.3**	**-0.7**	**10.1**	**13.5**	**9.9**	**12.9**	**9.6**
U.S. Equity (Gross)			**-0.7**	**10.2**	**13.6**	**10.0**	**13.0**	**9.7**
Russell 3000			*-0.6*	*10.5*	*13.8*	*10.2*	*13.0*	*9.6*
Excess Return (vs. Net)			-0.1	-0.4	-0.3	-0.3	-0.1	0.0
Passive (Net)	**9,911,632,695**	**17.8**						
Passive (Gross)								
BTC Russell 1000 (Net)	9,221,650,889	16.6	-0.7	10.6	14.0	10.4	13.2	9.6
BTC Russell 1000 (Gross)			-0.7	10.6	14.0	10.4	13.2	9.7
Russell 1000			*-0.7*	*10.6*	*14.0*	*10.4*	*13.2*	*9.6*
Excess Return (vs. Net)			0.0	0.0	0.0	0.0	0.0	0.0
BTC Russell 2000 (Net)	101,440,940	0.2	0.0	9.3	12.0	8.7	11.7	10.1
BTC Russell 2000 (Gross)			0.0	9.3	12.0	8.7	11.8	10.1
Russell 2000			*-0.1*	*9.1*	*11.8*	*8.4*	*11.5*	*9.8*
Excess Return (vs. Net)			0.1	0.2	0.2	0.3	0.2	0.3
BTC Russell 3000 (Net)	588,540,866	1.1	-0.7	--	--	--	--	--
BTC Russell 3000 (Gross)			-0.6	--	--	--	--	--
Russell 3000			*-0.6*	--	--	--	--	--
Excess Return (vs. Net)			-0.1					

See Glossary for all Custom index definitions.

	Market Value ($)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Low Risk (Net)	**1,393,992,511**	**2.5**						
Low Risk (Gross)								
Intech (Net)	868,348,983	1.6	1.2	12.4	17.3	10.4	13.8	9.9
Intech (Gross)			1.3	12.6	17.5	10.7	14.1	10.2
S&P 500			-0.8	10.6	14.0	10.8	13.3	9.5
Excess Return (vs. Net)			2.0	1.8	3.3	-0.4	0.5	0.4
Twin Capital (Net)	525,643,529	0.9	-1.1	10.7	13.6	10.4	13.3	9.6
Twin Capital (Gross)			-1.1	10.9	13.8	10.6	13.4	9.8
S&P 500			-0.8	10.6	14.0	10.8	13.3	9.5
Excess Return (vs. Net)			-0.3	0.1	-0.4	-0.4	0.0	0.1
Moderate / High Risk (Net)	**1,641,632,577**	**3.0**						
Moderate / High Risk (Gross)								
Cramer Rosenthal McGlynn (Net)	274,308,397	0.5	0.2	10.0	13.3	6.3	9.3	--
Cramer Rosenthal McGlynn (Gross)			0.4	10.5	13.9	6.9	9.9	--
Russell 2500			-0.2	10.0	12.3	8.2	11.5	--
Excess Return (vs. Net)			0.4	0.0	1.0	-1.9	-2.2	
Eagle Asset Management (Net)	341,869,906	0.6	-0.4	8.0	10.1	9.6	12.2	10.0
Eagle Asset Management (Gross)			-0.2	8.4	10.7	10.2	12.8	10.6
Russell 2500			-0.2	10.0	12.3	8.2	11.5	10.3
Excess Return (vs. Net)			-0.2	-2.0	-2.2	1.4	0.7	-0.3
Frontier Capital Management (Net)	674,335,476	1.2	-2.5	6.2	9.2	7.0	12.6	10.8
Frontier Capital Management (Gross)			-2.4	6.8	10.0	7.9	13.5	11.7
Russell 2500			-0.2	10.0	12.3	8.2	11.5	10.3
Excess Return (vs. Net)			-2.3	-3.8	-3.1	-1.2	1.1	0.5

See Glossary for all Custom index definitions.

	Market Value ($)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Jana Partners (Net)	94,265,929	0.2	-5.3	-7.7	-1.0	--	--	--
Jana Partners (Gross)			-5.0	-5.8	1.8	--	--	--
S&P 500			-0.8	10.6	14.0	--	--	--
Excess Return (vs. Net)			-4.5	-18.3	-15.0			
Westwood Management (Net)	256,852,869	0.5	-0.3	7.1	7.5	4.4	8.4	--
Westwood Management (Gross)			-0.1	7.6	8.2	5.0	9.1	--
Russell 2500			-0.2	10.0	12.3	8.2	11.5	--
Excess Return (vs. Net)			-0.1	-2.9	-4.8	-3.8	-3.1	
Non-U.S. Equity (Net)	**12,793,500,680**	**23.0**	**-1.9**	**9.1**	**14.5**	**6.9**	**7.7**	**3.8**
Non-U.S. Equity (Gross)			**-1.8**	**9.3**	**14.8**	**7.1**	**8.0**	**4.0**
Custom MSCI ACWI IMI Net 50% Hedge			-1.7	9.1	14.3	6.4	7.3	3.6
Excess Return (vs. Net)			-0.2	0.0	0.2	0.5	0.4	0.2
Passive (Net)	**7,454,238,572**	**13.4**						
Passive (Gross)								
BTC Canada IMI (Net)[1]	682,311,535	1.2	-7.3	4.2	4.8	3.3	1.8	1.9
BTC Canada IMI (Gross)			-7.3	4.2	4.9	3.3	1.8	1.9
MSCI Canada IMI Custom Index			-7.5	3.6	4.1	2.6	1.0	1.2
Excess Return (vs. Net)			0.2	0.6	0.7	0.7	0.8	0.7
BTC EAFE IMI (Net)[1]	4,746,964,542	8.5	-1.3	9.1	16.3	6.8	7.4	3.6
BTC EAFE IMI (Gross)			-1.3	9.1	16.3	6.8	7.5	3.6
MSCI EAFE IMI Custom Index			-1.3	9.1	16.0	6.5	7.1	3.2
Excess Return (vs. Net)			0.0	0.0	0.3	0.3	0.3	0.4

[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.

	Market Value ($)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
BTC EAFE Small Cap (Net)	209,790,636	0.4	0.1	14.2	23.6	--	--	--
BTC EAFE Small Cap (Gross)			0.1	14.2	23.6	--	--	--
MSCI EAFE Small Cap			*0.2*	*14.2*	*23.5*	--	--	--
Excess Return (vs. Net)			-0.1	0.0	0.1			
BTC Emerging Markets (Net)	1,290,077,583	2.3	1.2	17.2	24.6	8.5	4.7	2.7
BTC Emerging Markets (Gross)			1.3	17.3	24.7	8.7	4.9	2.9
MSCI Emerging Markets			*1.4*	*17.6*	*24.9*	*8.8*	*5.0*	*3.0*
Excess Return (vs. Net)			-0.2	-0.4	-0.3	-0.3	-0.3	-0.3
BTC Emerging Markets Small Cap (Net)	148,533,190	0.3	0.0	15.2	18.6	6.9	4.4	--
BTC Emerging Markets Small Cap (Gross)			0.1	15.3	18.8	7.1	4.6	--
MSCI Emerging Markets Small Cap			*0.2*	*15.6*	*18.6*	*7.2*	*4.6*	--
Excess Return (vs. Net)			-0.2	-0.4	0.0	-0.3	-0.2	
BTC Europe Index (Net)	376,561,086	0.7	-1.9	6.8	15.0	5.3	6.9	2.6
BTC Europe Index (Gross)			-1.9	6.8	15.0	5.3	6.9	2.6
MSCI Europe			*-2.0*	*6.6*	*14.5*	*4.8*	*6.4*	*2.1*
Excess Return (vs. Net)			0.1	0.2	0.5	0.5	0.5	0.5
Non-US Developed (Net)	**1,268,543,976**	**2.3**						
Non-US Developed (Gross)								
Acadian Developed Markets (Net)	886,168,357	1.6	-1.2	12.0	22.7	12.0	10.6	4.2
Acadian Developed Markets (Gross)			-1.1	12.3	23.2	12.5	11.1	4.7
EAFE Custom Benchmark			*-2.0*	*7.8*	*13.9*	*5.3*	*6.0*	*2.6*
Excess Return (vs. Net)			0.8	4.2	8.8	6.7	4.6	1.6
Capital Guardian (Net)	382,375,618	0.7	-0.3	11.5	19.7	7.7	7.6	3.7
Capital Guardian (Gross)			-0.3	11.8	20.1	8.1	8.0	4.1
EAFE Custom Benchmark			*-2.0*	*7.8*	*13.9*	*5.3*	*6.0*	*2.6*
Excess Return (vs. Net)			1.7	3.7	5.8	2.4	1.6	1.1

See Glossary for all Custom index definitions.

	Market Value ($)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Regional Developed (Net)	**2,307,002,522**	**4.1**						
Regional Developed (Gross)								
BTC Euro Tilts (Net)	999,407,045	1.8	-2.1	7.5	16.0	6.8	8.9	3.4
BTC Euro Tilts (Gross)			-2.0	7.8	16.5	7.3	9.4	3.9
MSCI Europe			-2.0	6.6	14.5	4.8	6.4	2.1
Excess Return (vs. Net)			-0.1	0.9	1.5	2.0	2.5	1.3
Cevian Capital (Net)	288,287,046	0.5	-5.1	-1.3	1.6	--	--	--
Cevian Capital (Gross)			-4.8	-0.1	3.2	--	--	--
MSCI Europe			-2.0	6.6	14.5	--	--	--
Excess Return (vs. Net)			-3.1	-7.9	-12.9			
GAM Pacific Basin (Net)	882,019,566	1.6	-1.3	12.5	14.5	7.2	6.5	5.1
GAM Pacific Basin (Gross)			-1.2	12.8	15.0	7.6	7.0	5.6
MSCI Pacific			-0.7	11.4	15.8	7.3	6.8	4.3
Excess Return (vs. Net)			-0.6	1.1	-1.3	-0.1	-0.3	0.8
Symphony Financial Partners (Net)	137,288,865	0.2	3.6	14.7	26.9	--	--	--
Symphony Financial Partners (Gross)			5.5	17.3	30.0	--	--	--
MSCI Japan Small Cap NR USD			2.1	17.9	25.5	--	--	--
Excess Return (vs. Net)			1.5	-3.2	1.4			
Emerging Markets (Net)	**1,806,412,305**	**3.2**						
Emerging Markets (Gross)								
Acadian Emerging Markets (Net)	432,879,441	0.8	2.3	17.5	24.1	9.4	4.9	--
Acadian Emerging Markets (Gross)			2.4	17.9	24.7	9.9	5.4	--
MSCI Emerging Markets			1.4	17.6	24.9	8.8	5.0	--
Excess Return (vs. Net)			0.9	-0.1	-0.8	0.6	-0.1	

See Glossary for all Custom index definitions.

	Market Value ($)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
AQR Emerging Markets (Net)	276,596,797	0.5	2.7	16.1	23.8	9.1	--	--
AQR Emerging Markets (Gross)			2.8	16.6	24.6	9.8	--	--
MSCI Emerging Markets			*1.4*	*17.6*	*24.9*	*8.8*	--	--
Excess Return (vs. Net)			1.3	-1.5	-1.1	0.3		
Genesis (Net)	725,479,314	1.3	1.4	17.0	24.0	8.7	5.0	5.4
Genesis (Gross)			1.5	17.6	24.9	9.5	5.7	6.2
MSCI EM IMI Custom Index			*1.3*	*17.3*	*24.1*	*8.6*	*4.9*	*3.3*
Excess Return (vs. Net)			0.1	-0.3	-0.1	0.1	0.1	2.1
Lazard Emerging Markets (Net)	371,456,753	0.7	-0.3	14.9	23.2	7.5	4.5	--
Lazard Emerging Markets (Gross)			-0.1	15.5	24.2	8.4	5.3	--
MSCI Emerging Markets			*1.4*	*17.6*	*24.9*	*8.8*	*5.0*	--
Excess Return (vs. Net)			-1.7	-2.7	-1.7	-1.3	-0.5	
Passive Hedge (Net)	**-42,751,398**	**-0.1**						
Passive Hedge (Gross)								
BTC Passive Currency Hedge (Net)	-42,751,398	-0.1	-1.0	-2.0	-3.4	-0.7	1.1	--
BTC Passive Currency Hedge (Gross)			-1.0	-2.0	-3.4	-0.7	1.1	--
50% FX Hedge Index			*-1.0*	*-2.0*	*-3.4*	*-0.7*	*1.1*	--
Excess Return (vs. Net)			0.0	0.0	0.0	0.0	0.0	
Fixed Income (Net)[1]	**13,699,946,299**	**24.6**	**-0.9**	**1.0**	**2.7**	**2.8**	**2.9**	**5.1**
Fixed Income (Gross)			**-0.8**	**1.2**	**3.0**	**3.1**	**3.2**	**5.4**
FI Custom Index			*-1.4*	*0.0*	*1.5*	*1.7*	*2.2*	*4.1*
Excess Return (vs. Net)			0.5	1.0	1.2	1.1	0.7	1.0
BBgBarc US Universal TR			*-1.4*	*0.0*	*1.5*	*1.7*	*2.2*	*4.0*

[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.

	Market Value ($)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Core (Net)	**6,007,221,851**	**10.8**						
Core (Gross)								
BTC Aggregate Index (Net)	3,238,168,820	5.8	-1.5	-0.2	1.3	1.3	1.9	3.7
BTC Aggregate Index (Gross)			-1.5	-0.2	1.3	1.3	1.9	3.8
BBgBarc US Aggregate TR			*-1.5*	*-0.2*	*1.2*	*1.2*	*1.8*	*3.6*
Excess Return (vs. Net)			0.0	0.0	0.1	0.1	0.1	0.1
Blackrock (Net)	8,328,840	0.0						
Blackrock (Gross)								
Dodge & Cox (Net)	1,285,558,064	2.3	-0.9	0.7	2.2	2.5	3.1	5.3
Dodge & Cox (Gross)			-0.9	0.8	2.3	2.6	3.2	5.4
BBgBarc US Aggregate TR			*-1.5*	*-0.2*	*1.2*	*1.2*	*1.8*	*3.6*
Excess Return (vs. Net)			0.6	0.9	1.0	1.3	1.3	1.7
Pugh Capital Management (Net)	135,013,265	0.2	-1.7	-0.3	1.3	1.2	1.8	4.1
Pugh Capital Management (Gross)			-1.7	-0.1	1.5	1.4	2.0	4.3
BBgBarc US Aggregate TR			*-1.5*	*-0.2*	*1.2*	*1.2*	*1.8*	*3.6*
Excess Return (vs. Net)			-0.2	-0.1	0.1	0.0	0.0	0.5
Wells Capital Management (Net)	1,340,152,863	2.4	-1.5	-0.2	1.3	1.5	2.2	4.8
Wells Capital Management (Gross)			-1.4	-0.1	1.4	1.6	2.3	5.0
BBgBarc US Aggregate TR			*-1.5*	*-0.2*	*1.2*	*1.2*	*1.8*	*3.6*
Excess Return (vs. Net)			0.0	0.0	0.1	0.3	0.4	1.2

See Glossary for all Custom index definitions.
Blackrock was terminated; the market value reflects the residual balance.

	Market Value ($)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Core Plus (Net)	**3,900,883,156**	**7.0**						
Core Plus (Gross)								
Dolan McEniry Capital Management (Net)	344,067,147	0.6	-0.9	0.5	2.5	3.2	3.5	6.0
Dolan McEniry Capital Management (Gross)			-0.9	0.7	2.8	3.5	3.8	6.3
Dolan Custom Index			-1.3	-0.1	1.2	1.8	2.3	4.4
Excess Return (vs. Net)			0.4	0.6	1.3	1.4	1.2	1.6
LM Capital Group (Net)	298,498,493	0.5						
LM Capital Group (Gross)								
Loomis, Sayles & Co. (Net)	1,077,810,368	1.9	-0.7	1.4	2.8	2.4	2.8	5.1
Loomis, Sayles & Co. (Gross)			-0.7	1.5	2.9	2.5	2.9	5.3
BBgBarc US Aggregate TR			-1.5	-0.2	1.2	1.2	1.8	3.6
Excess Return (vs. Net)			0.8	1.6	1.6	1.2	1.0	1.5
PIMCO (Net)	1,047,130,034	1.9	-1.3	0.8	3.0	2.5	2.2	4.6
PIMCO (Gross)			-1.2	1.0	3.2	2.7	2.5	4.8
BBgBarc US Aggregate TR			-1.5	-0.2	1.2	1.2	1.8	3.6
Excess Return (vs. Net)			0.2	1.0	1.8	1.3	0.4	1.0
Western Asset Management (Net)	1,133,377,115	2.0	-1.7	-0.2	2.3	2.5	3.0	5.6
Western Asset Management (Gross)			-1.7	-0.1	2.4	2.7	3.2	5.7
BBgBarc US Aggregate TR			-1.5	-0.2	1.2	1.2	1.8	3.6
Excess Return (vs. Net)			-0.2	0.0	1.1	1.3	1.2	2.0

See Glossary for all Custom index definitions.
LM Capital Group was terminated; the market value reflects the residual balance.

	Market Value ($)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
High Yield (Net)	**511,772,436**	**0.9**						
High Yield (Gross)								
Oaktree Capital Management (Net)	403,445,529	0.7	-1.3	0.5	2.5	3.8	3.9	7.1
Oaktree Capital Management (Gross)			-1.2	0.8	2.9	4.2	4.3	7.6
BBgBarc US High Yield BA/B TR			-1.1	1.1	3.4	4.6	--	--
Excess Return (vs. Net)			-0.2	-0.6	-0.9	-0.8		
PENN Capital Management (Net)	108,326,907	0.2	-0.4	1.6	3.5	4.3	3.9	6.6
PENN Capital Management (Gross)			-0.3	2.0	4.0	4.7	4.4	7.1
BBgBarc US High Yield BA/B TR			-1.1	1.1	3.4	4.6	--	--
Excess Return (vs. Net)			0.7	0.5	0.1	-0.3		
Opportunistic (Net)	**3,246,339,140**	**5.8**						
Opportunistic (Gross)								
Aberdeen Asset Management (Net)	205,670,486	0.4	-1.1	3.7	--	--	--	--
Aberdeen Asset Management (Gross)			-1.0	4.0	--	--	--	--
Opportunistic EMD Custom			-0.1	3.7	--	--	--	--
Excess Return (vs. Net)			-1.0	0.0				
Ashmore Investment Management (Net)	212,337,650	0.4	1.0	6.3	--	--	--	--
Ashmore Investment Management (Gross)			1.2	6.8	--	--	--	--
Opportunistic EMD Custom			-0.1	3.7	--	--	--	--
Excess Return (vs. Net)			1.1	2.6				
Bain Capital (Net)	301,056,682	0.5	0.0	1.7	3.5	4.5	--	--
Bain Capital (Gross)			0.2	2.7	4.6	5.4	--	--
Opportunistic Custom Index			0.4	2.7	4.2	4.8	--	--
Excess Return (vs. Net)			-0.4	-1.0	-0.7	-0.3		

See Glossary for all Custom index definitions.

	Market Value ($)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Beach Point Capital (Net)[1]	384,876,996	0.7	0.7	3.2	4.9	7.2	--	--
Beach Point Capital (Gross)			1.0	4.6	6.7	9.3	--	--
Opportunistic Custom Index			0.4	2.7	4.2	4.8	--	--
Excess Return (vs. Net)			0.3	0.5	0.7	2.4		
Brigade Capital Management (Net)	490,832,970	0.9	0.8	2.3	3.8	5.2	4.8	--
Brigade Capital Management (Gross)			1.0	2.9	4.5	6.0	5.6	--
Brigade Custom Index			0.2	2.5	4.0	4.5	4.5	--
Excess Return (vs. Net)			0.6	-0.2	-0.2	0.7	0.3	
Crescent Capital Group (Net)	272,077,804	0.5	0.4	2.5	4.1	4.2	--	--
Crescent Capital Group (Gross)			0.5	2.9	4.7	4.8	--	--
Opportunistic Custom Index			0.4	2.7	4.2	4.8	--	--
Excess Return (vs. Net)			0.0	-0.2	-0.1	-0.6		
Doubleline Capital (Net)	266,457,892	0.5	0.0	2.0	4.1	--	--	--
Doubleline Capital (Gross)			0.2	2.5	4.9	--	--	--
Securitized Custom Index			-0.2	2.9	4.8	--	--	--
Excess Return (vs. Net)			0.2	-0.9	-0.7			
Principal Opportunistic (Net)	266,921,917	0.5	-0.9	1.0	3.1	2.9	3.4	--
Principal Opportunistic (Gross)			-0.8	1.1	3.3	3.1	3.6	--
BBgBarc U.S. Universal Spread 1-10 Year			-1.1	0.3	1.8	2.7	2.8	--
Excess Return (vs. Net)			0.2	0.7	1.3	0.2	0.6	
TCW (Net)	271,886,694	0.5	0.6	2.5	4.5	--	--	--
TCW (Gross)			0.8	3.0	5.1	--	--	--
Securitized Custom Index			-0.2	2.9	4.8	--	--	--
Excess Return (vs. Net)			0.8	-0.4	-0.3			

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.

	Market Value ($)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Tennenbaum Capital (Net)[1]	269,561,166	0.5	2.8	5.8	7.9	8.1	--	--
Tennenbaum Capital (Gross)			3.0	6.5	8.9	9.2	--	--
Credit Suisse Leveraged Loan (1 month lagged)			*1.9*	*3.7*	*4.7*	*4.5*	--	--
Excess Return (vs. Net)			0.9	2.1	3.2	3.6		
Western Opportunistic (Net)	304,658,886	0.5	0.4	2.2	4.0	3.6	3.3	--
Western Opportunistic (Gross)			0.4	2.3	4.0	3.6	3.3	--
Western Opportunistic Custom Index			*0.4*	*4.1*	*6.1*	*3.2*	*2.8*	--
Excess Return (vs. Net)			0.0	-1.9	-2.1	0.4	0.5	
Mortgage Program (Net)	**33,729,715**	**0.1**						
Mortgage Program (Gross)								
Member Home Loan Program Mirror (MHLP) (Net)	33,729,715	0.1	5.1	14.4	14.7	5.8	4.9	5.2
Member Home Loan Program Mirror (MHLP) (Gross)			5.2	14.6	15.0	6.1	5.1	5.5
Real Estate (Net)[2]	**6,330,243,153**	**11.4**	**1.5**	**5.4**	**6.8**	**9.3**	**9.3**	**3.1**
Real Estate (Gross)			**1.8**	**6.0**	**7.6**	**10.2**	**10.2**	**3.8**
Real Estate Target			*1.9*	*5.4*	*7.1*	*9.9*	*10.8*	*6.2*
Excess Return (vs. Net)			-0.4	0.0	-0.3	-0.6	-1.5	-3.1
Private Equity (Net)	**5,504,619,680**	**9.9**	**5.3**	**16.3**	**20.1**	**12.7**	**15.2**	**11.3**
Private Equity (Gross)			**5.3**	**16.3**	**20.1**	**12.7**	**15.2**	**11.3**
Private Equity Target			*3.3*	*9.7*	*13.1*	*13.0*	*13.3*	*10.5*
Excess Return (vs. Net)			2.0	6.6	7.0	-0.3	1.9	0.8

See Glossary for all Custom index definitions. Yearly returns are annualized.

1 Portfolio and benchmark are reported with a one-month lag.

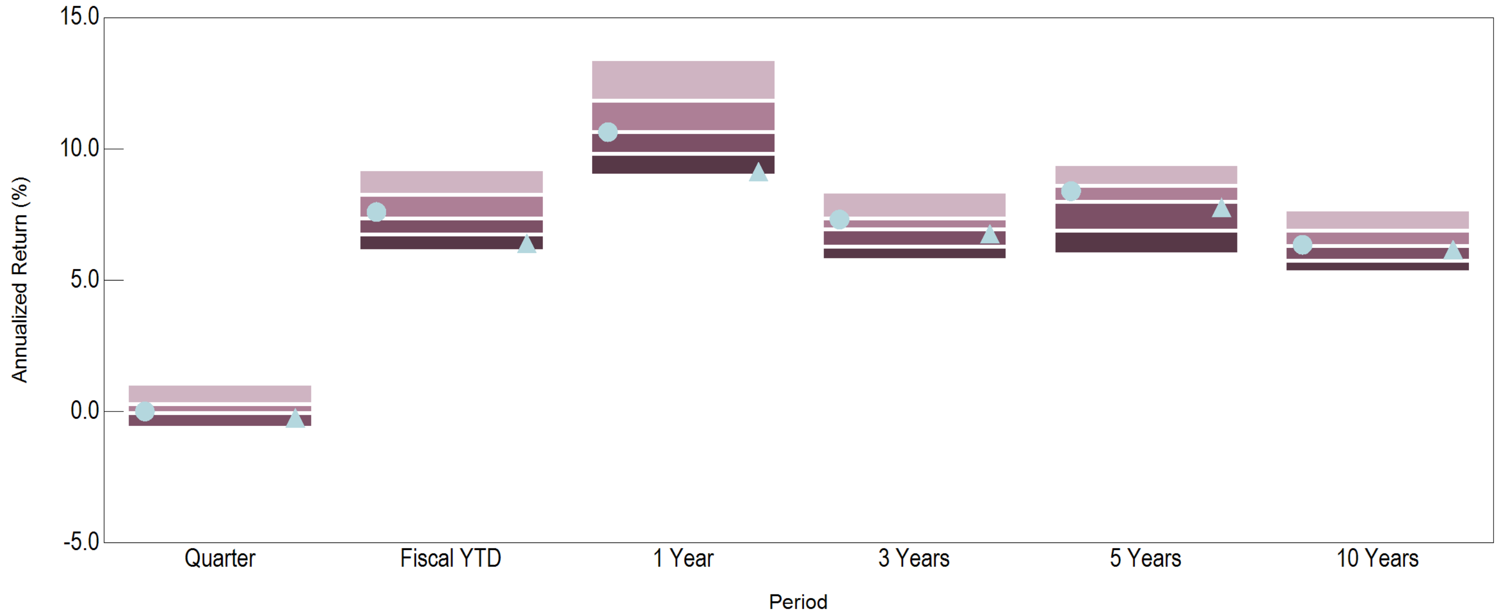
2 Portfolio reported on a quarterly basis with a one quarter lag. Benchmark is reported with a one quarter lag.

	Market Value ($)	% of Portfolio	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Commodities (Net)	**1,397,983,879**	**2.5**	**-0.2**	**9.0**	**5.9**	**-1.7**	**-6.9**	**-6.2**
Commodities (Gross)			**-0.1**	**9.3**	**6.2**	**-1.3**	**-6.6**	**-5.8**
Bloomberg Commodity Index TR USD			*-0.4*	*6.9*	*3.7*	*-3.2*	*-8.3*	*-7.7*
Excess Return (vs. Net)			0.2	2.1	2.2	1.5	1.4	1.5
Credit Suisse (Net)	454,790,373	0.8	-0.8	6.2	3.3	-2.6	-7.8	--
Credit Suisse (Gross)			-0.7	6.4	3.6	-2.4	-7.6	--
Bloomberg Commodity Index TR USD			*-0.4*	*6.9*	*3.7*	*-3.2*	*-8.3*	--
Excess Return (vs. Net)			-0.4	-0.7	-0.4	0.6	0.5	
Neuberger Berman/Gresham (Net)	471,733,544	0.8	0.1	11.0	7.6	-2.0	-7.0	-5.9
Neuberger Berman/Gresham (Gross)			0.1	11.3	8.0	-1.6	-6.6	-5.5
Bloomberg Commodity Index TR USD			*-0.4*	*6.9*	*3.7*	*-3.2*	*-8.3*	*-7.7*
Excess Return (vs. Net)			0.5	4.1	3.9	1.2	1.3	1.8
PIMCO Commodities (Net)	471,459,962	0.8	0.2	9.7	6.6	-0.6	-6.3	-6.1
PIMCO Commodities (Gross)			0.3	10.0	7.0	-0.2	-5.9	-5.7
Bloomberg Commodity Index TR USD			*-0.4*	*6.9*	*3.7*	*-3.2*	*-8.3*	*-7.7*
Excess Return (vs. Net)			0.6	2.8	2.9	2.6	2.0	1.6
Total Hedge Funds (Net)[1]	**1,366,534,505**	**2.5**	**2.0**	**5.0**	**5.3**	**3.1**	**4.7**	**--**
Total Hedge Funds (Gross)			**2.0**	**5.1**	**5.4**	**3.2**	**4.7**	**--**
Hedge Fund Custom Index			*1.5*	*4.6*	*6.0*	*5.5*	*5.3*	--
Excess Return (vs. Net)			0.5	0.4	-0.7	-2.4	-0.7	
Cash (Net)	**1,564,845,085**	**2.8**	**0.4**	**0.9**	**1.2**	**0.9**	**0.6**	**0.8**
Cash (Gross)			**0.4**	**1.0**	**1.3**	**0.9**	**0.7**	**0.8**
Citi 6 Month T-Bill			*0.3*	*0.9*	*1.1*	*0.6*	*0.4*	*0.4*
Excess Return (vs. Net)			0.1	0.0	0.1	0.3	0.2	0.4

See Glossary for all Custom index definitions.

[1] Portfolio and benchmark are reported with a one-month lag.

InvestorForce Public DB > $1B Gross Accounts
Ending March 31, 2018

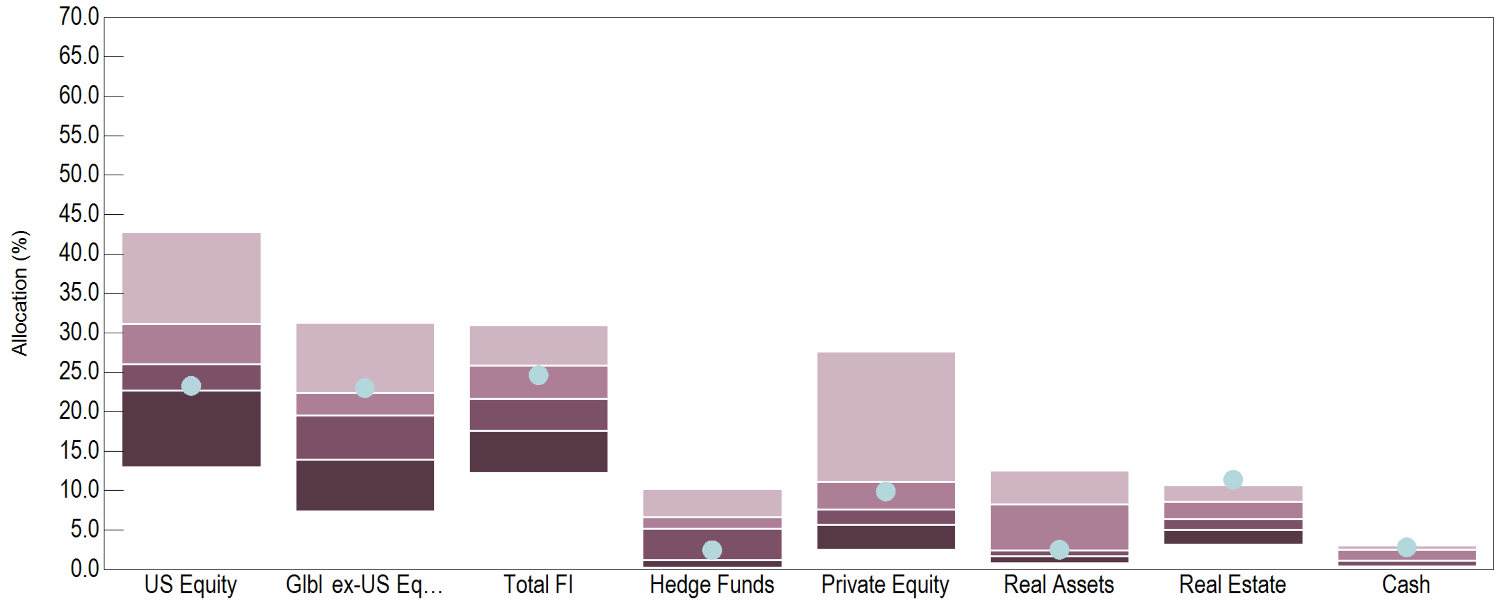


Return (Rank)	Quarter		Fiscal YTD		1 Year		3 Years		5 Years		10 Years	
5th Percentile	1.1		9.2		13.4		8.4		9.4		7.7	
25th Percentile	0.3		8.3		11.8		7.4		8.6		6.9	
Median	0.0		7.4		10.7		7.0		8.0		6.3	
75th Percentile	-0.6		6.7		9.8		6.3		6.9		5.7	
95th Percentile	-0.7		6.1		9.0		5.8		6.0		5.3	
# of Portfolios	28		28		28		28		27		27	
Total Fund	0.0	(43)	7.6	(43)	10.6	(51)	7.3	(31)	8.4	(34)	6.3	(48)
Total Fund Policy Benchmark	-0.2	(59)	6.4	(91)	9.1	(92)	6.8	(70)	7.8	(59)	6.2	(60)

Los Angeles County Employees Retirement Association

As of March 31, 2018

Total Plan Allocation (Actual) vs. InvestorForce Public DB > $1B Gross
As of March 31, 2018

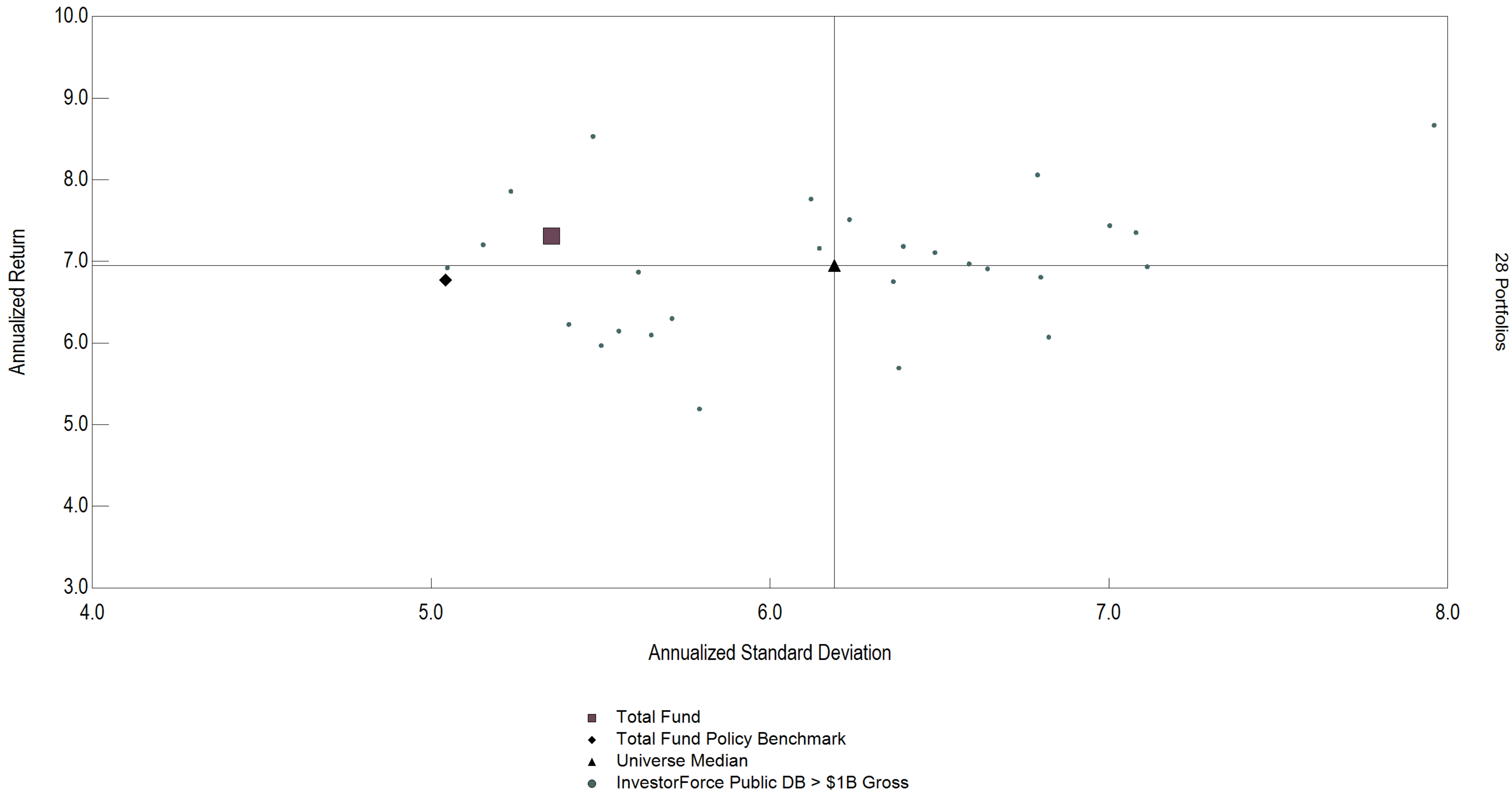


	Allocation (Rank)															
5th Percentile	42.8		31.3		31.0		10.2		27.6		12.6		10.6		3.1	
25th Percentile	31.2		22.5		25.9		6.7		11.2		8.3		8.6		2.6	
Median	26.1		19.6		21.7		5.3		7.7		2.5		6.5		1.2	
75th Percentile	22.8		14.0		17.7		1.2		5.7		1.8		5.1		0.5	
95th Percentile	13.1		7.5		12.3		0.3		2.6		0.8		3.2		0.2	
# of Portfolios	21		22		24		12		18		11		19		22	
Total Fund	23.3	(69)	23.0	(19)	24.6	(36)	2.5	(70)	9.9	(31)	2.5	(50)	11.4	(4)	2.8	(18)

Los Angeles County Employees Retirement Association

As of March 31, 2018

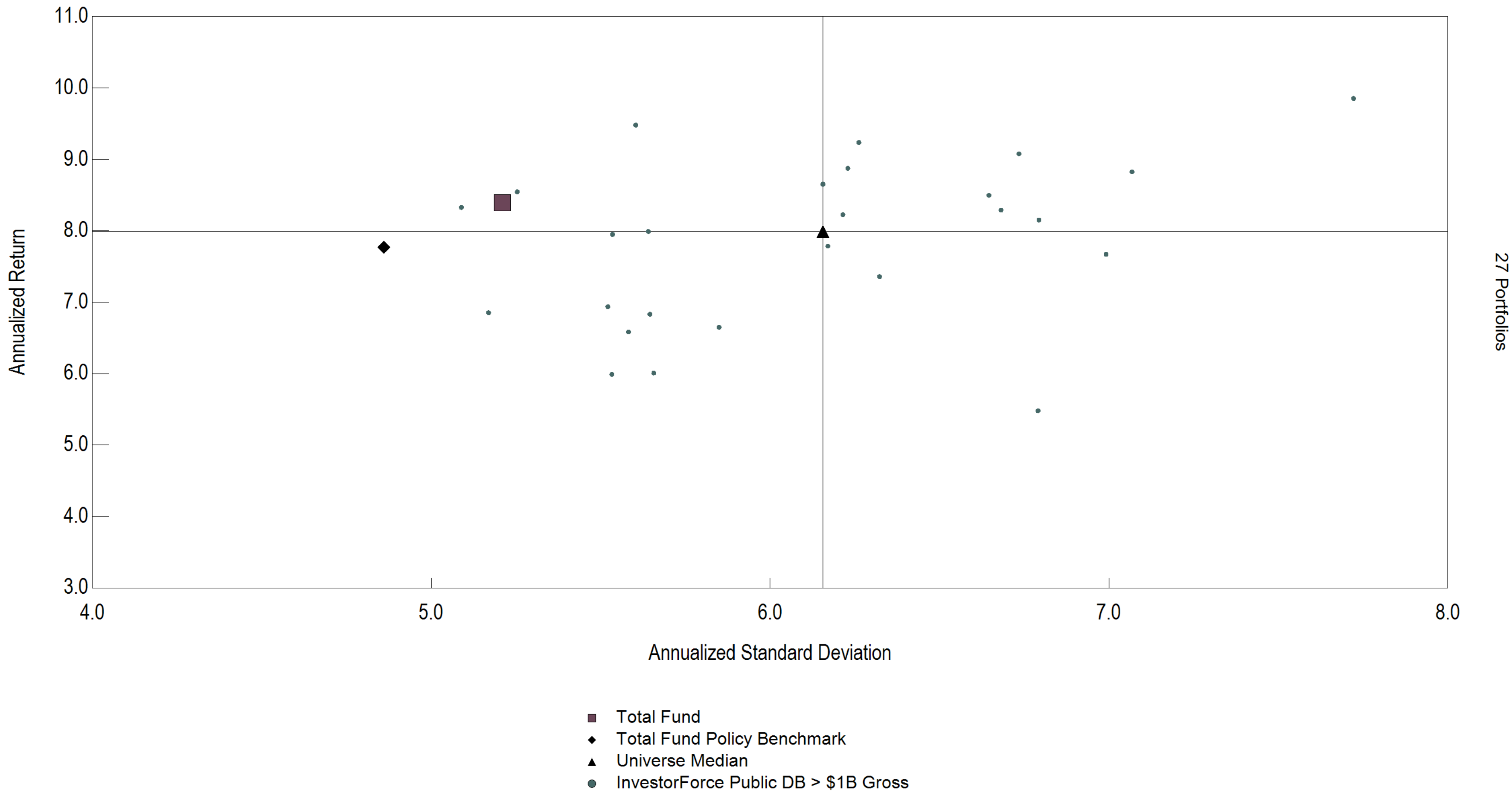
Annualized Return vs. Annualized Standard Deviation
3 Years Ending March 31, 2018



Los Angeles County Employees Retirement Association

As of March 31, 2018

Annualized Return vs. Annualized Standard Deviation
5 Years Ending March 31, 2018



Benchmark History

As of March 31, 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.

LM Custom Index: Composed of 90% Barclays Aggregate and 10% JP Morgan EMBI Plus Indices.

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.

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

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

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

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