VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

BOARD OF RETIREMENT

BUSINESS MEETING

February 27, 2017

AGENDA

PLACE: Ventura County Employees' Retirement Association
Second Floor Boardroom
1190 South Victoria Avenue
Ventura, CA 93003

TIME: 9:00 a.m.

Members of the public may comment on any item under the Board's jurisdiction by filling out a speaker form and presenting it to the Clerk. Unless otherwise directed by the Chair, comments related to items on the agenda will be heard when the Board considers that item. Comments related to items not on the agenda will generally be heard at the time designated for Public Comment.

ITEM:

V. INVESTMENT MANAGER PRESENTATIONS

A. Receive Annual Investment Presentation, Prudential Real Estate Investors – PRISA, Frank Garcia, Mark A. Oczkus and Marcus Berry. 29 – 75

B. Receive Annual Investment Presentation, UBS Asset Management, Thomas C. Klugherz, Stephen Olstein, and Mia Dennis. 76 – 146

VI. INVESTMENT INFORMATION

A. NEPC – Allan Martin and Tony Ferrera
VCERA – Dan Gallagher, Chief Investment Officer

1. Preliminary Performance Report Month Ending January 31, 2017 147 – 155
RECOMMENDED ACTION: Receive and file.

2. 4th Quarter Investment Performance Report 156 – 233
RECOMMENDED ACTION: Receive and file.

3. 2017 NEPC Capital Market Assumptions 234 – 282
RECOMMENDED ACTION: Receive and file.

4. Updated Investment Policy
RECOMMENDED ACTION: Approve.

a. Summary of Changes 283

b. Investment Policy – Redline 284 – 312

c. Investment Policy Final 313 – 329

VII. OLD BUSINESS

A. Follow-Up on Appointment and Election of Trustees Policy Table with Corrections
RECOMMENDED ACTION: Approve.

1. Staff Letter 330

2. Proposed Table Correction 331

B. Response from CIO Regarding North Dakota Placing Adams Street on Watch
RECOMMENDED ACTION: Receive and file.

VII. OLD BUSINESS (continued)

VIII. NEW BUSINESS

VIII. NEW BUSINESS (continued)

F. Request for Trustee Bianchi to Attend the CALAPRS Advanced Principles of Pension Management for Trustees in Los Angeles, March 29 – 31, 2017

1. Staff Letter 353

2. CALAPRS Training Brochure 354 – 357

G. Request for Trustees Wilson and Goulet to Attend 2017 Pension Bridge Annual Conference in San Francisco, April 18 – 19, 2017

1. Staff Letter 358

2. Pension Bridge Conference Brochure 359 – 377

H. Report on CALAPRS Trustees' Roundtable, Submitted by Trustee Goulet 378

IX. INFORMATIONAL

A. S&P 500 Investment Return and Volatility Charts 379 – 381

B. The Economist – It Is Not Easy for Investors to Recognize a Bubble 382

X. PUBLIC COMMENT

XI. STAFF COMMENT

XII. BOARD MEMBER COMMENT

XIII. ADJOURNMENT

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

BOARD OF RETIREMENT

DISABILITY MEETING

February 6, 2017

MINUTES

DIRECTORS PRESENT:	Tracy Towner, Chair, Alternate Safety Employee Member William W. Wilson, Vice Chair, Public Member Peter C. Foy, Public Member Mike Sedell, Public Member Robert Bianchi, Public Member Arthur E. Goulet, Retiree Member Will Hoag, Alternate Retiree Member Chris Johnston, Safety Employee Member Ed McCombs, Alternate Public Member
DIRECTORS ABSENT:	Steven Hintz, Treasurer-Tax Collector Deanna McCormick, General Employee Member Craig Winter, General Employee Member
STAFF PRESENT:	Linda Webb, Retirement Administrator Lori Nemiroff, General Counsel Dan Gallagher, Chief Investment Officer Shalini Nunna, Retirement Benefits Manager Vickie Williams, Retirement Benefits Manager Karen Scanlan, Accounting Manager I Donna Edwards, Retirement Benefits Specialist Stephanie Berkley, Retirement Benefits Specialist Chris Ayala, Program Assistant
PLACE:	Ventura County Employees' Retirement Association Second Floor Boardroom 1190 South Victoria Avenue Ventura, CA 93003
TIME:	9:00 a.m.

ITEM:

I. CALL TO ORDER

Chair Towner called the Disability Meeting of January 9, 2017, to order at 9:00 a.m.

Deputy County Clerk, Miranda Nobriga was present to administer the Oath of Office to Mike Sedell, Robert Bianchi and Ed McCombs.

Trustee Goulet commented that someone should inform the County of Ventura that there was an error in action taken by the Board of Supervisors in regards to trustee term limits. Trustee Goulet stated that the term should run January 1, 2017 to December 31, 2019 however the Board of Supervisor's appointment recommendation said the terms were from January 2, 2017 to January 6, 2020.

II. APPROVAL OF AGENDA

Chair Towner stated that the agenda should be amended to remove item "V.B.", Application for Service-Connected Disability Retirement for Karla Dean, Case No. 13-010.

MOTION: Approve the agenda as amended.

Moved by Bianchi, seconded by Johnston.

Vote: Motion carried
Yes: Bianchi, Foy, Goulet, Hoag, Johnston, Sedell, Wilson, Towner
No: -
Absent: McCormick, Hintz, Winter

III. APPROVAL OF MINUTES

Chair Towner stated that proposed corrections and changes to the minutes for the Disability Meeting of January 9, 2017 and the Business Meeting of January 23, 2017 had been presented to the Board in a provided document.

Trustee Sedell identified an error on page 13 of the minutes for January 6, 2017, where it stated that he voted yes, but was also listed as voting no.

A. Disability Meeting of of January 9, 2017.

MOTION: Approve with Corrections.

Moved by Wilson, seconded by Johnston.

Vote: Motion carried
Yes: Bianchi, Foy, Goulet, Hoag, Johnston, Sedell, Wilson, Towner
No: -
Absent: McCormick, Hintz, Winter

B. Business Meeting of January 23, 2017.

MOTION: Approve with Corrections.

Moved by Bianchi, seconded by Sedell.

Vote: Motion carried
Yes: Bianchi, Foy, Goulet, Hoag, Johnston, Sedell, Wilson, Towner
No: -
Absent: McCormick, Hintz, Winter

Ms. Webb said that if anyone wanted a copy of the proposed changes to the minutes, copies would be on file with the Clerk.

Following the vote on this item, the Board advanced to agenda item V.A. and then returned to item IV.

IV. RECEIVE AND FILE PENDING DISABILITY APPLICATION STATUS REPORT

MOTION: Receive and File.

Moved by Goulet, seconded by Bianchi.

Vote: Motion carried
Yes: Bianchi, Foy, Goulet, Hoag, Johnston, Sedell, Wilson, Towner

No: -
Absent: McCormick, Hintz, Winter

Following the vote on this item, the Board advanced to agenda item VI.

V. APPLICATIONS FOR DISABILITY RETIREMENT

A. Application for Service-Connected Disability Retirement – Hugh J. Taylor; Case No. 15-001.

1. Application for Service-Connected Disability Retirement.

2. Member's request to withdraw the Application for Service-Connected Disability Retirement, in order for the Application to go forward as an Application for Non-service Connected Disability Retirement, dated December 20, 2016.

3. Medical Analysis and Recommendation, including Supporting Medical Documentation, submitted by County of Ventura, Risk Management, in support of the Application for Non-service Connected Disability Retirement, dated January 19, 2017.

4. Hearing Notice, dated January 25, 2017.

Steve Roberson, Attorney at Law was present on behalf of County of Ventura Risk Management. John H. Sugden, Attorney at Law was also present on behalf of the applicant.

After discussion by the Board, the following motion was made:

MOTION: Approve the Withdrawal of the Service Connected Disability Retirement Application and Consider as a Non-Service Connected Disability Retirement Application.

Moved by Goulet, seconded by Bianchi.

Vote: Motion carried
Yes: Bianchi, Foy, Goulet, Hoag, Johnston, Sedell, Wilson, Towner
No: -
Absent: McCormick, Hintz, Winter

MOTION: Approve Non-Service Connected Disability Application.

Moved by Goulet, seconded by Bianchi.

Vote: Motion carried
Yes: Bianchi, Foy, Goulet, Hoag, Johnston, Sedell, Wilson, Towner
No: -
Absent: McCormick, Hintz, Winter

Following the vote on this item, the Board returned to agenda item IV.

VI. COMPREHENSIVE ANNUAL FINANCIAL REPORT (CAFR)

A. June 30, 2016 Comprehensive Financial Report (CAFR) – Brown Armstrong, Andrew Paulden, Partner
RECOMMENDED ACTION: Receive and file.

1. Brown Armstrong Presentation by Presenter Andrew Paulden, CPA

2. Independent Auditor's Report

3. Auditor's Report to Management, Year Ending June 30, 2016

Trustee Goulet commented that page 11 of the Audit Report, stated the fiduciary net position as a percentage of the total pension liability, read 80.47%, which is different than the valuation report. Trustee Goulet said that he believed that there should be an explanation for the difference.

Mr. Paulden replied that the difference was the result of the new standards of GASB 67 & 68. Mr. Paulden said that with the implementation of 67, with a departure from the funding valuation and funding percentages, because for financial reporting it is no longer important, but only for financial reporting. Mr. Paulden stated that in the future or in a revision to this report, if deemed necessary, Brown Armstrong could add an explanation for the difference in the Management's Discussion and Analysis section.

Trustee Goulet commented about the date of June 30, 2015 on page 12 of the CAFR report and if the date should be June 30, 2016.

Mr. Paulden replied no, because there were two years of comparative information in the financial statements.

After discussion by the Board, the following motion was made:

MOTION: Receive and File.

Moved by Sedell, seconded by Bianchi.

Vote: Motion carried
Yes: Bianchi, Foy, Goulet, Hoag, Johnston, Sedell, Wilson, Towner
No: -
Absent: McCormick, Hintz, Winter

VII. OLD BUSINESS

A. Consider and Take Possible Action to Approve Changes to VCERA Management Resolution Re: Leave Redemption

1. Letter from Chair Towner
2. Letter from Nossaman, LLC. to County Counsel
3. County Counsel Response to Nossaman, LLC.
4. Proposed Changes to Resolution (Redline)

Chair Towner stated that a month ago the Proposed Management Resolution was presented to the Board and it was decided that the County Counsel and counsel for the Board of Retirement would review the proposal to reach an agreement. Chair Towner said that this management resolution provided was the agreed upon resolution between the two counsels.

Trustee Goulet commented that he did not agree with removing the removal of the requirement that employees take 80 hours of annual leave because it's important that VCERA's employees be required to take time off.

After discussion by the Board, the following motion was made:

MOTION: Approve.

Moved by Sedell, seconded by Bianchi.

Vote: Motion carried
Yes: Bianchi, Foy, Goulet, Hoag, Johnston, Sedell, Wilson, Towner
No: Goulet
Abstain:
Absent: McCormick, Hintz, Winter

Chair Towner commented that in regards to Trustee Goulet's comment about requiring the employees of VCERA to take 80 hours of annual leave, such a requirement was not enforceable according to the Board's counsel.

Trustee Goulet stated that he did not fully discuss some of his issues with the CAFR Report, in which he found a few errors that should be addressed.

Trustee Sedell commented that the Board could ask Ms. Webb to make the corrections to the CAFR.

Ms. Webb stated that staff could make the corrections and present them to the Board for review.

Trustee Goulet said that it would be acceptable.

B. Update on Proposed Amendment to Government Code Section 31522.11

Chair Towner commented that he had sent the proposed amendment to County CEO Powers to review a month ago, but had not heard back. Chair Towner said a lobbyist had been engaged, and Jim Lites, had also lobbied for the Board on AB 1291. Chair Towner also said that he would be meeting with an assembly person to see if they would sponsor this bill and because the Board had missed the filing deadline, the bill would have to be inserted into another bill for submittal.

C. Update on the Upgrade of Board Room Audio System

1. Staff Letter

2. Audio System Phase 1 Quote

Ms. Webb said she knew the Board was aware of the problems with the Board Room sound system. Ms. Webb stated that staff concluded its search for a reasonably priced sound system for present and future needs, and allow for later expansion. Ms. Webb refer the initial quote after eliminating some unnecessary equipment was $36,000, which she would like to spread out by completing the project in phases, with phase one addressing the most immediate needs. Ms. Webb stated the cost of phase one will be $15,331, which should be completed before the next disability meeting or possibly the next business meeting and the Board should notice an immediate improvement in sound quality. Ms. Webb also said that if the Board had any technical questions, they could talk to her or Mr. Ford.

Trustee Goulet asked if the new sound system components could me moved, if VCERA were to change office locations in the future.

Ms. Webb replied yes, and this had been a consideration. Ms. Webb said the vendor came highly recommended by the Ventura County Superior Courts.

VIII. NEW BUSINESS

A. Recommended Review and Update of Appointment and Election of Trustees Policy

1. Staff Letter

2. Appointment of Election of Trustees Policy (Redline)

Ms. Webb stated that she had worked with the General Counsel to update this policy to reflect the most recent legislation that allows the Board to welcome Trustee McCombs. The provided redline item illustrated the proposed changes.

Trustee Goulet stated the sample year column in the table was intended to be the year in which the term starts.

Ms. Webb replied that she believed the reason the dates appear off is because one date represents the election date and the other represents the term.

Trustee Goulet said when the policy was adopted the intention was of the table was to show the year in which a term starts, so that we will be able to tell when you will have to give notice of an election.

Ms. Webb said that the policy read in the same was before the proposed changes, so staff would research and update the table.

Trustee Goulet said that the table did reflect his own term correctly, but it appears to be wrong for the Safety Member's term, because he thought the Safety Member would be having an election in 2017.

Ms. Nemiroff commented that the term dates in the table for the Retired Member are correct for Trustee Goulet.

Ms. Webb stated that she agreed the term dates for the Retired Member appear correct, but the term dates for the Safety Member incorrect because it reflects the election year and not the year the term begins. Ms. Webb the Board approve the changes, with an update to the table at the next meeting.

Trustee Goulet stated that he would also argue that the last added provision on to the statement on master page 333, is unnecessary, because the Board of Supervisors had already appointed an alternate member, which has already been previously stated.

Trustee Goulet said that the policy did not need the phrase, "at the option of the County of Ventura, Board of Supervisor, there shall also be an alternate member for the 4th, 6th and 9th member", because the statue stated this and they had already appointed the alternate member.

Ms. Nemiroff stated that there is no problem with making the suggested changes, but she wanted to explain the why she drafted the policy this way. Ms. Nemiroff said the way the statute is written, it is at the option of the Board of Supervisors and each time they appoint an alternate member they do so by a resolution, which is how they exercise their option to fill the position.

Trustee Goulet stated this differs from the statute for the alternate retiree's position.

Ms. Nemiroff replied that is correct, the language is a little different between the two.

Trustee Goulet said that he was fine with leaving the statement regarding the alternate member unchanged after Ms. Nemiroff's explanation.

Ms. Webb said that she would work on correcting the table.

After discussion by the Board, the following motion was made:

<u>MOTION</u>: Adopt with the Edits to the Terms of Office Table.

Moved by Foy, seconded by Bianchi.

Vote: Motion carried
Yes: Bianchi, Foy, Goulet, Hoag, Johnston, Sedell, Wilson, Towner
No: -
Abstain:
Absent: McCormick, Hintz, Winter

B. AB 2376 – Addition of Section 31520.6 to CERL, Expanding Voting Rights of Alternate Retired Member

1. Letter from General Counsel

Ms. Nemiroff stated that at the last Board Meeting, Trustee Goulet correctly pointed out that the Alternate Retired Member was able to vote because of the absence of the two general members. Ms. Nemiroff said she would just like to formally explain and give notice to the Board, because this is an expansion of the voting rights for the alternate retired member, which was enacted and became effective January 1st 2017. Ms. Nemiroff also said previously the alternate member could only vote if the retired member were absent, but the alternate retired member may now vote if both the general members are absent or if one of the general members and one of the safety members are absent.

C. Retirement Administrator's Quarterly Report
To be provided

Ms. Webb said that her quarterly report was in the Board's materials for the meeting and that she would answer any questions.

Trustee Goulet said that he did not have the report in his materials.

Chair Towner stated that an e-mail from Ms. Webb went out to the Board on the previous Friday regarding the report.

Trustee Goulet replied that he did not receive the e-mail.

Ms. Webb stated that there had been a problem with Trustee Goulet receiving her e-mails in the past and that she would look into the problem.

After discussion by the Board, the following motion was made:

<u>MOTION</u>: Receive and File.

Moved by Wilson, seconded by Bianchi.

Vote: Motion carried
Yes: Bianchi, Foy, Hoag, Johnston, Sedell, Wilson, Towner
No: -
Abstain: Goulet
Absent: McCormick, Hintz, Winter

Trustee Goulet said that he would abstain, since he had not reviewed the report.

D. Request for Retirement Administrator to attend the CALAPRS General Assembly in Monterey, CA, March 5th – 7th

1. Staff Letter

2. General Assembly Agenda

<u>MOTION</u>: Approve.

Moved by Wilson, seconded by Bianchi.

Vote: Motion carried
Yes: Bianchi, Foy, Goulet, Hoag, Johnston, Sedell, Wilson, Towner
No: -
Abstain:
Absent: McCormick, Hintz, Winter

IX. INFORMATIONAL

A. CALAPRS Advanced Principles Training at UCLA

Ms. Webb said that this course was particularly recommended by CALAPRS for Trustees who have completed their base education.

X. PUBLIC COMMENT

None

XI. STAFF COMMENT

Ms. Webb commented that staff would be meeting with the Auditor/Controller staff on the 11th to discuss unresolved errors and adjustments that had not been resolved, particularly ones since V3 went live. Ms. Webb said she had suggested the meeting to create a plan and a timeline for addressing those issues.

Ms. Webb stated she had a phone conversation with Human Resources Director, Mr. Atin the previous week and both understood they were coming from two different viewpoints regarding the discretionary pay items. She would return to ask for Board clarification for market based premium pay and other discretionary pay items under PEPRA. Ms. Webb said that she would let Mr. Atin know what her recommendation to the Board would be before the meeting, so that he could be prepared to speak about these issues before the Board if he would like.

Ms. Webb informed the Board, that although VCERA issued 1099R's to members from V3 on time, they were printed with an incorrect Employer ID number. Ms. Webb said staff was in the process of determining the reason. Once notified of the error on February 1st, staff immediately posted a notice on the website, sent out a post card to retired members about the error and worked to have the forms revised and reissued.

Trustee Goulet said that he thought the staff's response was excellent, once the error was detected.

Ms. Nemiroff commented that she had placed a confidential memo for the Board in their folders on the recent court ruling that was in VCERA's favor in regards to paying a survivors continuance. Ms. Nemiroff stated it's been an established law that survivors' continuances are not paid once there has been a divorce and a division of property, but what has not been well settled at the appellate court level is what happens with the legally separated spouse. Ms. Nemiroff also said that after the issuance of a decision in the Santa Barbara Superior Court a few years ago, VCERA re-examined its procedures and made a policy change that would fall in line with that decision and no longer award survivor continuances to legally separated spouses. Ms. Nemiroff stated that after VCERA's policy change, the Contra Costa Retirement Association also fought the same battle in superior court, which issued a ruling that was in line with the Santa Barbara case. VCERA then had the same issue and denied a continuance to a legally separated spouse and the local superior court also upheld the decision. Ms. Nemiroff stated that the Contra Costa case is being appealed and VCERA should be receiving a ruling from the appeals courts in the future and she will keep the Board updated.

Ms. Webb commented that staff was ready to begin using Board Books for the board meetings.

Trustee Wilson commented that the only suggestion he had would be to not wait too long between the time of training and the time of implementation.

XII. BOARD MEMBER COMMENT

None.

XIII. ADJOURNMENT

The meeting was adjourned at 9:51 a.m.

Respectfully submitted,

Linda Webb

LINDA WEBB, Retirement Administrator

Approved,

TRACY TOWNER, Chairman

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
REPORT OF REGULAR AND DEFERRED RETIREMENTS AND SURVIVORS CONTINUANCES

JANUARY 2017

FIRST NAME	LAST NAME	G/S	DATE OF MEMBERSHIP	TOTAL SERVICE	OTHER SERVICE	DEPARTMENT	EFFECTIVE DATE
REGULAR RETIREMENTS:							
Andrew	Delao	G	8/19/1979	8.13 *	C= 29.071	Air Pollution Control District (deferred)	12/31/2016
Willie J.	Deon	G	11/3/1985	4.92 *	C= 28.4270	Probation Agency (deferred)	12/17/2016
Lolita	Fernandez	G	8/2/1993	23.22		Health Care Agency	12/11/2016
Barry	Fisher	G	6/25/2001	16.05	B= 0.7757	Health Care Agency	10/2/2016
Lauri	Flack	G	6/28/1998	18.34		Human Services Agency	12/31/2016
Christy	Hempel	G	3/4/2014	2.80 *	C= 9.3980	General Services Agency	12/31/2016
Laura	Hocking	G	4/19/1998	18.63		Resource Management Agency	12/21/2016
Florante	Ingel	G	5/27/2001	14.24		Sheriff's Department (deferred)	12/31/2016
Maria	Juarez	G	7/4/1993	23.07	B= 0.1122	Human Services Agency	12/3/2016
Colleen	Kelly	G	3/3/1991	25.92	B= 0.1112	Health Care Agency	12/17/2016
Carolann	Kitzak	G	5/4/1986	24.52		Health Care Agency	12/1/2016
Linda	Kodman	G	8/12/2007	8.45	A= 1.9326	Health Care Agency (deferred)	12/25/2016
Alice	Martinez	G	12/16/1984	29.36		Health Care Agency	12/31/2016
Patricia	Morse	G	6/8/2003	3.67		Health Care Agency (deferred)	12/16/2016
Christine	Rettura	S	7/24/1988	28.33		Sheriff's Department	12/17/2016
Russell	Robinson	S	5/21/2006	10.59		District Attorney	12/17/2016
Lilia	Sarzaba	G	11/25/1990	23.69		Health Care Agency	12/1/2016
Denise	Schaefer	G	12/9/1990	28.88		Health Care Agency	12/3/2016
James	Schmitt	S	9/25/1994	21.64		Probation Agency	11/20/2016
Timothy	Scott	S	7/14/1985	3.84	A= 3.8356	Sheriff's Department (deferred)	12/30/2016
Susan	Winover	G	12/17/2006	10.03		Health Care Agency	12/31/2016
DEFERRED RETIREMENTS:							
Sabrina	Brewer	G	01/24/1999	15.30		Health Care Agency	12/30/2016
Fernando	Cervantes	G	10/11/1999	17.22		Health Care Agency	01/06/2017
Aurora	Juarez-Gonzalez	G	03/19/2000	14.85		Health Care Agency	01/06/2017
Linda C.	Le	G	08/12/2007	9.28		Treasurer-Tax Collector	12/31/2016
Caitlin M.	Marshall	G	09/05/2010	6.27		Board of Supervisors	12/17/2016
Michelle	McDonald	G	05/23/2010	5.59		District Attorney	01/07/2017
Brett W.	Reynolds	S	08/23/2009	7.34		Fire Protection District	12/22/2016
Jeffrey	Smith	G	03/03/2002	14.81		Fire Protection District	01/07/2017
Baltazar Alonzo	Zavala	G	10/23/2005	8.62		Health Care Agency	01/01/2017
SURVIVORS' CONTINUANCES:							
Marlene	Batelaan						
Jean	Everett						
Bill	Hardy						
Vivian	Lockard						
Vicki	Torstenson						
Jay	Turner						

*** = Member Establishing Reciprocity**
A = Previous Membership
B = Other County Service (eg Extra Help)
C = Reciprocal Service
D = Public Service

Date: Monday, February 06, 2017
Time: 11:19AM
User: 103745

Ventura County Retirement Assn

Check Register - Standard

Period: 07-17 As of: 2/6/2017

Report: 03630.rpt
Company: VCERA

Check Nbr	Check Type	Check Date	Vendor ID / Vendor Name	Period To Post	Period Closed	Ref Nbr	Doc Type	Invoice Number	Invoice Date	Discount Taken	Amount Paid
Company:	**VCERA**										
Acct / Sub:	1002		00								
026846	CK	1/4/2017	CALAPRS CALAPRS	07-17		021698	VO	ADMIN EXP	1/4/2017	0.00	2,600.00
026847	CK	1/4/2017	NEPC NEPC, LLC	07-17		021699	VO	INVESTMENT FEES	1/4/2017	0.00	74,157.61
026848	CK	1/4/2017	VOLT VOLT	07-17		021700	VO	ADMIN EXP	1/4/2017	0.00	3,768.56
026849	CK	1/12/2017	ADP ADP, LLC	07-17		021701	VO	ADMIN EXP	1/12/2017	0.00	2,950.39
026850	CK	1/12/2017	MEGAPATH GLOBAL CAPACITY	07-17		021702	VO	IT/PAS	1/12/2017	0.00	603.63
026851	CK	1/12/2017	SEGAL SEGAL CONSULTING	07-17		021703	VO	ACTUARY FEES	1/12/2017	0.00	29,500.00
026852	CK	1/12/2017	SHRED-IT SHRED-IT USA	07-17		021704	VO	ADMIN EXP	1/12/2017	0.00	145.86
026853	CK	1/12/2017	VSG VSG HOSTING, INC	07-17		021705	VO	IT	1/12/2017	0.00	19,500.00
026854	CK	1/19/2017	990002 ARTHUR E. GOULET	07-17		021706	VO	TRAVEL REIMB	1/19/2017	0.00	253.62
026855	CK	1/19/2017	ACCESS ACCESS INFORMATION MAN	07-17		021707	VO	ADMIN EXP	1/19/2017	0.00	330.05
026856	CK	1/19/2017	AT&T AT&T MOBILITY	07-17		021708	VO	IT	1/19/2017	0.00	339.88
026857	CK	1/19/2017	FEDEX FEDEX	07-17		021709	VO	ADMIN EXP	1/19/2017	0.00	63.16
026858	CK	1/19/2017	HARRIS HARRIS WATER CONDITIONI	07-17		021710	VO	ADMIN EXP	1/19/2017	0.00	144.50

Date: Monday, February 06, 2017
Time: 11:19AM
User: 103745

Ventura County Retirement Assn

Check Register - Standard

Period: 07-17 As of: 2/6/2017

Page: 2 of 3
Report: 03630.rpt
Company: VCERA

Check Nbr	Check Type	Check Date	Vendor ID / Vendor Name	Period To Post	Period Closed	Ref Nbr	Doc Type	Invoice Number	Invoice Date	Discount Taken	Amount Paid
026859	CK	1/19/2017	HEXAVEST HEXAVEST INC	07-17		021711	VO	INVESTMENT FEES	1/19/2017	0.00	90,777.36
026860	CK	1/19/2017	LINEA LINEA SOLUTIONS	07-17		021712	VO	IT/PAS	1/19/2017	0.00	53,447.50
026861	CK	1/19/2017	NOSSAMAN NOSSAMAN LLP	07-17		021713	VO	LEGAL FEES	1/19/2017	0.00	13,888.43
026862	CK	1/19/2017	PRISM PRISM	07-17		021714	VO	IT	1/19/2017	0.00	150.00
026863	CK	1/19/2017	TWC TIME WARNER CABLE	07-17		021715	VO	IT	1/19/2017	0.00	294.99
026864	CK	1/19/2017	VITECH VITECH SYSTEMS GROUP, IN	07-17		021716	VO	PAS	1/19/2017	0.00	50,000.00
026865	CK	1/19/2017	WALTER BNY MELLON INV MGMNT CA	07-17		021717	VO	INVESTMENT FEES	1/19/2017	0.00	211,708.35
026866	CK	1/25/2017	990002 ARTHUR E. GOULET	07-17		021718	VO	MILEAGE REIMB	1/25/2017	0.00	36.38
026867	CK	1/25/2017	990008 ROBERT BIANCHI	07-17		021719	VO	MILEAGE REIMB	1/25/2017	0.00	57.78
026868	CK	1/25/2017	BOFA BUSINESS CARD	07-17		021720	VO	ADMINT/IT/PAS	1/25/2017	0.00	981.87
026869	CK	1/25/2017	FEDEX FEDEX	07-17		021721	VO	ADMIN EXP	1/25/2017	0.00	59.94
026870	CK	1/25/2017	LINEA LINEA SOLUTIONS	07-17		021722	VO	PAS	1/25/2017	0.00	3,915.12
026871	CK	1/25/2017	LOOMIS LOOMIS, SAYLES & CO., LP	07-17		021723	VO	INVESTMENT FEES	1/25/2017	0.00	119,201.54

Date: Monday, February 06, 2017
Time: 11:19AM
User: 103745

Ventura County Retirement Assn

Check Register - Standard

Period: 07-17 As of: 2/6/2017

Page: 3 of 3
Report: 03630.rpt
Company: VCERA

Check Nbr	Check Type	Check Date	Vendor ID / Vendor Name	Period To Post	Period Closed	Ref Nbr	Doc Type	Invoice Number	Invoice Date	Discount Taken	Amount Paid
026872	CK	1/25/2017	MF M.F. DAILY CORPORATION	07-17		021724	VO	ADMIN EXP	1/25/2017	0.00	16,960.17
026873	CK	1/25/2017	REAMS REAMS ASSET MANAGEMEN	07-17		021725	VO	INVESTMENT FEES	1/25/2017	0.00	131,672.00
026874	CK	1/25/2017	REUTERS THOMSON REUTERS- WEST	07-17		021726	VO	IT	1/25/2017	0.00	357.00
026875	CK	1/25/2017	CORPORATE STAPLES ADVANTAGE	07-17		021727	VO	ADMIN EXP	1/25/2017	0.00	623.23
026876	CK	1/25/2017	VOLT VOLT	07-17		021728	VO	ADMIN EXP	1/25/2017	0.00	2,042.98
026877	CK	1/25/2017	VITECH VITECH SYSTEMS GROUP, IN	07-17		021729	VO	PAS	1/25/2017	0.00	29,226.95

Check Count: 32

Acct Sub Total: **859,758.85**

Check Type	Count	Amount Paid
Regular	32	859,758.85
Hand	0	0.00
Electronic Payment	0	0.00
Void	0	0.00
Stub	0	0.00
Zero	0	0.00
Mask	0	0.00
Total:	**32**	**859,758.85**

Company Disc Total **0.00** **Company Total** **859,758.85**

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
BUDGET SUMMARY FISCAL YEAR 2016-2017
January 2017 - 58.33% of Fiscal Year Expended

EXPENDITURE DESCRIPTIONS	Adopted 2016/2017 Budget	Adjusted 2016/2017 Budget	Jan-17	Year to Date Expended	Available Balance	Percent Expended
Salaries & Benefits:						
Salaries	$ 2,370,800.00	$ 2,397,612.00	$ 193,235.42	$ 1,255,480.27	$ 1,142,131.73	52.36%
Extra-Help	192,400.00	192,400.00	10,011.54	81,421.72	110,978.28	42.32%
Overtime	3,000.00	3,000.00	0.00	0.00	3,000.00	0.00%
Supplemental Payments	74,400.00	75,322.00	3,147.76	29,191.96	46,130.04	38.76%
Vacation Redemption	131,300.00	131,300.00	0.00	158,731.35	(27,431.35)	120.89%
Retirement Contributions	432,100.00	437,235.00	35,218.66	216,327.37	220,907.63	49.48%
OASDI Contributions	141,800.00	143,515.00	12,001.64	65,750.77	77,764.23	45.81%
FICA-Medicare	37,800.00	38,202.00	2,806.83	20,619.41	17,582.59	53.97%
Retiree Health Benefit	4,000.00	4,000.00	0.00	3,970.75	29.25	99.27%
Group Health Insurance	194,300.00	197,212.00	17,350.00	102,420.47	94,791.53	51.93%
Life Insurance/Mgmt	1,100.00	1,125.00	86.50	582.09	542.91	51.74%
Unemployment Insurance	2,400.00	2,427.00	192.97	1,245.82	1,181.18	51.33%
Management Disability Insurance	18,400.00	18,609.00	1,294.16	8,624.83	9,984.17	46.35%
Worker' Compensation Insurance	19,900.00	20,138.00	1,488.07	10,814.71	9,323.29	53.70%
401K Plan Contribution	48,600.00	49,403.00	4,511.88	29,061.22	20,341.78	58.82%
Transfers In	135,500.00	135,500.00	0.00	23,668.92	111,831.08	17.47%
Transfers Out	(135,500.00)	(135,500.00)	0.00	(23,668.92)	(111,831.08)	17.47%
Total Salaries & Benefits	$ 3,672,300.00	$ 3,711,500.00	$ 281,345.43	$ 1,984,242.74	$ 1,727,257.26	53.46%
Services & Supplies:						
Telecommunication Services - ISF	$ 35,400.00	$ 35,400.00	$ 3,041.33	$ 20,277.41	$ 15,122.59	57.28%
General Insurance - ISF	13,100.00	13,100.00	0.00	6,539.50	6,560.50	49.92%
Office Equipment Maintenance	2,000.00	2,000.00	0.00	475.04	1,524.96	23.75%
Membership and Dues	14,700.00	14,700.00	2,150.00	12,095.00	2,605.00	82.28%
Education Allowance	8,000.00	8,000.00	0.00	2,000.00	6,000.00	25.00%
Cost Allocation Charges	89,500.00	89,500.00	0.00	0.00	89,500.00	0.00%
Printing Services - Not ISF	12,000.00	12,000.00	0.00	1,014.61	10,985.39	8.46%
Books & Publications	3,000.00	3,000.00	0.00	358.09	2,641.91	11.94%
Office Supplies	20,000.00	20,000.00	821.90	7,451.57	12,548.43	37.26%
Postage & Express	60,000.00	60,000.00	3,842.90	27,389.27	32,610.73	45.65%
Printing Charges - ISF	18,000.00	18,000.00	0.00	8.50	17,991.50	0.05%
Copy Machine Services - ISF	4,500.00	4,500.00	0.00	536.85	3,963.15	11.93%
Board Member Fees	13,300.00	13,300.00	1,000.00	6,100.00	7,200.00	45.86%
Professional Services	1,292,100.00	1,292,100.00	46,629.18	477,055.38	815,044.62	36.92%
Storage Charges	4,200.00	4,200.00	330.05	2,550.29	1,649.71	60.72%
Equipment	6,000.00	6,000.00	0.00	0.00	6,000.00	0.00%
Office Lease Payments	205,000.00	205,000.00	16,960.17	118,704.65	86,295.35	57.90%
Private Vehicle Mileage	12,500.00	12,500.00	717.31	7,279.90	5,220.10	58.24%
Conference, Seminar and Travel	138,400.00	138,400.00	855.47	63,267.63	75,132.37	45.71%
Furniture	15,000.00	15,000.00	0.00	783.62	14,216.38	5.22%
Facilities Charges	13,300.00	13,300.00	66.00	1,659.00	11,641.00	12.47%
Judgement & Damages	0.00	0.00	0.00	0.00	0.00	#DIV/0!
Transfers In	20,000.00	20,000.00	0.00	2,501.18	17,498.82	12.51%
Transfers Out	(20,000.00)	(20,000.00)	0.00	(2,501.18)	(17,498.82)	12.51%
Total Services & Supplies	$ 1,980,000.00	$ 1,980,000.00	$ 76,414.31	$ 755,546.31	$ 1,224,453.69	38.16%
Total Sal, Ben, Serv & Supp	$ 5,652,300.00	$ 5,691,500.00	$ 357,759.74	$ 2,739,789.05	$ 2,951,710.95	48.14%
Technology:						
Computer Hardware	$ 45,000.00	$ 45,000.00	$ -	3,345.53	$ 41,654.47	7.43%
Computer Software	216,000.00	216,000.00	1,745.80	44,304.77	171,695.23	20.51%
Systems & Application Support	449,000.00	449,000.00	36,842.41	222,191.85	226,808.15	49.49%
Pension Administration System	353,000.00	353,000.00	122,492.07	505,184.01	(152,184.01)	143.11%
Total Technology	$ 1,063,000.00	$ 1,063,000.00	$ 161,080.28	$ 775,026.16	$ 287,973.84	72.91%
Contingency	$ 786,000.00	$ 746,800.00	$ -	$ -	$ 746,800.00	0.00%
Total Current Year	$ 7,501,300.00	$ 7,501,300.00	$ 518,840.02	$ 3,514,815.21	$ 3,986,484.79	46.86%

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
STATEMENT OF FIDUCIARY NET POSITION
DECEMBER 31, 2016 (UNAUDITED)

ASSETS

CASH & CASH EQUIVALENTS	**$179,971,297**
RECEIVABLES	
ACCRUED INTEREST AND DIVIDENDS	2,541,855
SECURITY SALES	3,676,556
MISCELLANEOUS	10,000
TOTAL RECEIVABLES	**6,228,412**
INVESTMENTS AT FAIR VALUE	
DOMESTIC EQUITY SECURITIES	97,280,444
DOMESTIC EQUITY INDEX FUNDS	1,336,225,353
INTERNATIONAL EQUITY SECURITIES	361,887,240
INTERNATIONAL EQUITY INDEX FUNDS	341,371,584
GLOBAL EQUITY	481,253,407
PRIVATE EQUITY	182,551,517
DOMESTIC FIXED INCOME - CORE PLUS	696,518,702
DOMESTIC FIXED INCOME - U.S. INDEX	215,199,689
REAL ESTATE	382,552,273
ALTERNATIVES	396,589,174
CASH OVERLAY - PARAMETRIC	3,175
TOTAL INVESTMENTS	**4,491,432,558**
CAPITAL ASSET - SOFTWARE DEVELOPMENT	**12,961,635**
TOTAL ASSETS	**4,690,593,902**

LIABILITIES

SECURITY PURCHASES PAYABLE	6,286,689
ACCOUNTS PAYABLE	1,542,568
TAX WITHHOLDING PAYABLE	2,919,974
PREPAID CONTRIBUTIONS	76,307,345
TOTAL LIABILITIES	**87,056,576**
NET POSITION RESTRICTED FOR PENSIONS	**$4,603,537,326**

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE SIX MONTHS ENDING DECEMBER 31, 2016 (UNAUDITED)

ADDITIONS	
CONTRIBUTIONS	
EMPLOYER	$87,601,784
EMPLOYEE	33,381,052
TOTAL CONTRIBUTIONS	**120,982,835**
INVESTMENT INCOME	
NET APPRECIATION (DEPRECIATION) IN FAIR VALUE OF INVESTMENTS	210,193,001
INTEREST INCOME	7,185,997
DIVIDEND INCOME	8,353,364
REAL ESTATE OPERATING INCOME, NET	8,269,966
SECURITY LENDING INCOME	260,757
TOTAL INVESTMENT INCOME	**234,263,086**
LESS INVESTMENT EXPENSES	
MANAGEMENT & CUSTODIAL FEES	7,131,696
SECURITIES LENDING BORROWER REBATES	127,190
SECURITIES LENDING MANAGEMENT FEES	47,907
TOTAL INVESTMENT EXPENSES	**7,306,793**
NET INVESTMENT INCOME/(LOSS)	**226,956,293**
TOTAL ADDITIONS	**347,939,128**
DEDUCTIONS	
BENEFIT PAYMENTS	125,944,829
MEMBER REFUNDS	2,308,248
ADMINISTRATIVE EXPENSES	2,985,434
TOTAL DEDUCTIONS	**131,238,511**
NET INCREASE/(DECREASE)	**216,700,617**
NET POSITION RESTRICTED FOR PENSIONS	
BEGINNING OF YEAR	**4,386,836,709**
ENDING BALANCE	**$4,603,537,326**

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
INVESTMENTS AND CASH EQUIVALENTS
DECEMBER 31, 2016 (UNAUDITED)

EQUITY		
DOMESTIC EQUITY		
WESTERN ASSET INDEX PLUS	$97,280,444	$64,569,932
TOTAL DOMESTIC EQUITY	**97,280,444**	**64,569,932**
DOMESTIC INDEX FUNDS		
BLACKROCK - US EQUITY MARKET	1,283,784,079	0
BLACKROCK - EXTENDED EQUITY	52,441,274	0
TOTAL EQUITY INDEX FUNDS	**1,336,225,353**	**0**
INTERNATIONAL EQUITY		
SPRUCEGROVE	184,817,177	0
HEXAVEST	79,915,903	0
WALTER SCOTT	97,154,160	0
TOTAL INTERNATIONAL EQUITY	**361,887,240**	**0**
INTERNATIONAL INDEX FUNDS		
BLACKROCK - ACWIXUS	341,371,584	0
TOTAL INTERNATIONAL INDEX FUNDS	**341,371,584**	**0**
GLOBAL EQUITY		
BLACKROCK - GLOBAL INDEX	481,253,407	0
TOTAL GLOBAL EQUITY	**481,253,407**	**0**
PRIVATE EQUITY		
ADAMS STREET	110,924,664	0
PANTHEON	21,902,794	0
HARBOURVEST	49,271,467	0
DRIVE CAPITAL	452,592	0
TOTAL PRIVATE EQUITY	**182,551,517**	**0**
FIXED INCOME		
DOMESTIC		
LOOMIS SAYLES AND COMPANY	73,617,101	2,068,258
LOOMIS SAYLES - ALPHA	44,432,213	0
REAMS	301,124,192	7,309
WESTERN ASSET MANAGEMENT	277,345,197	2,737,892
TOTAL DOMESTIC	**696,518,702**	**4,813,459**
DOMESTIC INDEX FUNDS		
BLACKROCK - US DEBT INDEX	215,199,689	0
TOTAL DOMESTIC INDEX FUNDS	**215,199,689**	**0**
REAL ESTATE		
PRUDENTIAL REAL ESTATE	135,101,380	1
RREEF	181,509	0
UBS REALTY	247,269,383	0
TOTAL REAL ESTATE	**382,552,273**	**1**

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
INVESTMENTS AND CASH EQUIVALENTS
DECEMBER 31, 2016 (UNAUDITED)

ALTERNATIVES		
BRIDGEWATER	276,516,200	0
TORTOISE (MLP's)	120,072,974	2,444,148
TOTAL ALTERNATIVES	**396,589,174**	**2,444,148**
CASH OVERLAY - PARAMETRIC	**3,175**	**100,393,813**
IN HOUSE CASH		**7,749,944**
TOTAL INVESTMENTS AND CASH	**$4,491,432,558**	**$179,971,297**

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
SCHEDULE OF INVESTMENT MANAGEMENT FEES
FOR THE SIX MONTHS ENDED DECEMBER 31, 2016 (UNAUDITED)

EQUITY MANAGERS	
DOMESTIC	
BLACKROCK - US EQUITY	$126,672
BLACKROCK - EXTENDED EQUITY	9,973
WESTERN ASSET INDEX PLUS	142,766
TOTAL	**279,412**
INTERNATIONAL	
BLACKROCK - ACWIXUS	155,064
SPRUCEGROVE	341,493
HEXAVEST	183,565
WALTER SCOTT	429,103
TOTAL	**1,109,225**
GLOBAL	
GRANTHAM MAYO VAN OTTERLOO (GMO)	297,518
BLACKROCK - GLOBAL INDEX	71,375
TOTAL	**368,893**
PRIVATE EQUITY	
ADAMS STREET	708,175
HARBOURVEST	466,817
PANTHEON	299,863
TOTAL	**1,474,855**
FIXED INCOME MANAGERS	
DOMESTIC	
BLACKROCK - US DEBT INDEX	58,970
LOOMIS, SAYLES AND COMPANY	150,489
LOOMIS ALPHA	88,039
REAMS ASSET MANAGEMENT	263,661
WESTERN ASSET MANAGEMENT	263,369
TOTAL	**824,529**
REAL ESTATE	
PRUDENTIAL REAL ESTATE ADVISORS	571,895
RREEF	2,872
UBS REALTY	1,179,612
TOTAL	**1,754,379**
ALTERNATIVES	
BRIDGEWATER	552,847
TORTOISE	377,208
TOTAL	**930,055**
CASH OVERLAY - PARAMETRIC	**92,834**
SECURITIES LENDING	
BORROWERS REBATE	127,190
MANAGEMENT FEES	47,907
TOTAL	**175,097**

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
SCHEDULE OF INVESTMENT MANAGEMENT FEES
FOR THE SIX MONTHS ENDED DECEMBER 31, 2016 (UNAUDITED)

OTHER	
INVESTMENT CONSULTANT	146,658
INVESTMENT CUSTODIAN	150,856
TOTAL	**297,514**
TOTAL INVESTMENT MANAGEMENT FEES	**$7,306,793**

PRISA

Ventura County Employees' Retirement Association

February 27, 2017

PGIM Real Estate

PGIM

Disclaimer Regarding PRISA Information Presented

Unless indicated otherwise by referencing PRISA SA or PRISA LP specifically, this presentation contains financial and other information about PRISA Composite (“PRISA”, “PRISA Composite” or the “Fund”). PRISA Composite reflects the aggregate holdings, leverage and operations of PRISA SA and PRISA LP. While PRISA Composite is not a fund in which any investor may invest, its performance is indicative of each of PRISA SA and PRISA LP and is reported to ODCE. PRISA SA and PRISA LP are separate investment vehicles with separate terms (including fee structures) that invest in substantially the same assets, as further described in “PRISA Structure” in the Appendix section **PRISA SA, PRISA LP, and Net Returns Addendum**. The performance of each of PRISA SA and PRISA LP, on a separate basis, may differ materially from PRISA Composite.

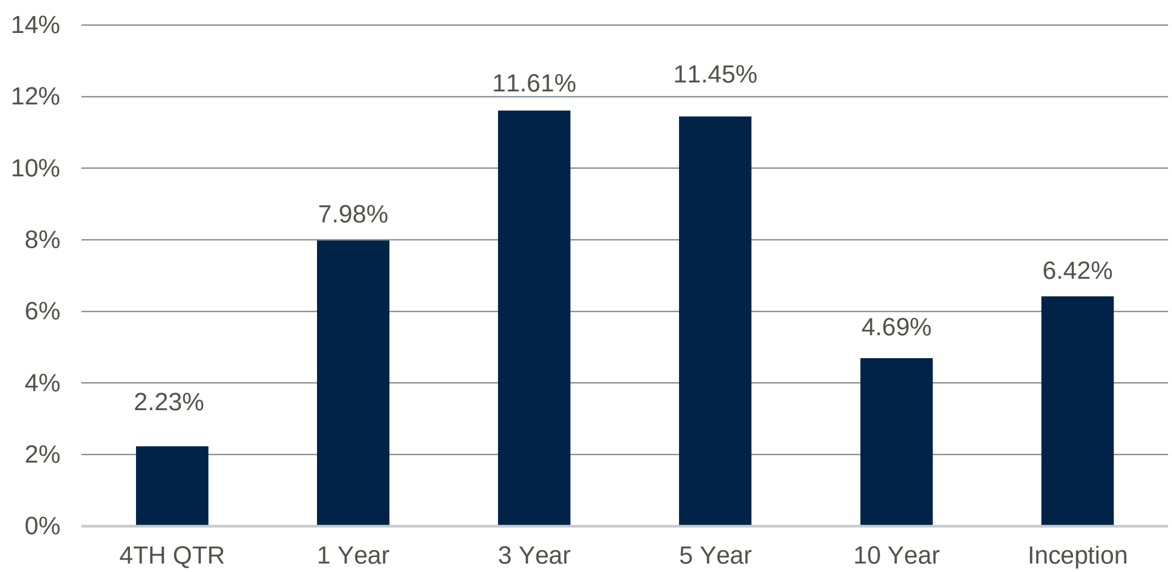
For information about the performance and other data regarding the fund in which they are invested (i.e., PRISA SA or PRISA LP, as applicable), investors should review the **PRISA SA, PRISA LP, and Net Returns Addendum** in the Appendix and consult the statements and reports provided to them pursuant to their investment agreements, including their individual client statements, financial statements and quarterly reports, in each case, which include data exclusively related to PRISA LP or PRISA SA, as the case may be.

Ventura County Employees Retirement Association

PRISA SA Assets as of December 31, 2016

Investment Details	
Contributions (03/31/2005 Inception Date)	
03/31/2005	$40,000,000.00
09/30/2005	$20,000,000.00
Total Contributions	$60,000,000.00
Investment Earnings	
Investment Income	$54,474,662.80
Appreciation	$20,933,136.05
Total Investment Earnings	$75,407,798.85
Disbursements	
Withdrawals	$0
Deducted Fees	($306,418.76)
Cash Flow Distributions	$0
Total Disbursements	($306,418.76)
Market Value	$135,101,380.09

NET DOLLAR-WEIGHTED PERFORMANCE



Operating Cash Flow		Capital Commitments	
Total Distributed	$0	Undrawn Commitments	$0
Total Reinvested	$42,694,948		
Current Election	Reinvesting		
4Q16 Cash Flow	$1,220,778		

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

Historical Cash Flow

2005-2010

Date	Deposits	Withdrawals	Distributed Cash Flow	Reinvested Cash Flow	Deducted Fees	Directly Billed Fees	Fee Rebate	Market Values
3/31/2005	40,000,000.00	-	-			-	-	$40,000,000.00
6/30/2005		-	-		($107,958.16)	-	-	42,399,481.40
9/30/2005	20,000,000.00	-	-	$751,200.94	(114,613.92)	-	-	64,733,409.07
12/31/2005		-	-	735,998.74	(142,364.33)	-	-	68,704,271.73
3/31/2006		-	-	867,466.73	(156,938.03)	-	-	71,587,061.88
6/30/2006		-	-	1,023,109.82	(160,967.38)	-	-	74,249,376.35
9/30/2006		-	-	1,067,532.97	(173,411.65)	-	-	76,865,788.88
12/29/2006		-	-	1,131,098.58	(167,101.11)	-	-	79,802,766.11
3/30/2007		-	-	1,030,320.32	(162,006.97)	-	-	83,028,836.81
6/30/2007		-	-	938,946.35	(178,531.42)	-	-	88,098,099.85
9/30/2007		-	-	1,217,976.72	(182,199.44)	-	-	91,995,460.33
12/31/2007		-	-	1,202,605.84	(178,654.55)	-	-	93,780,696.53
3/31/2008		-	-	1,119,812.84	(179,479.24)	-	-	94,423,398.72
6/30/2008		-	-	1,114,802.14	(176,745.89)	-	-	95,041,883.31
9/30/2008		-	-	1,055,908.48	(196,822.82)	-	-	95,421,404.93
12/31/2008		-	-	1,313,754.74	(174,509.47)	-	-	81,610,284.08
3/31/2009		-	-	923,153.37	(174,716.64)	-	-	68,950,055.24
6/30/2009		-	-	901,906.05	(121,484.77)	-	-	59,817,043.94
9/30/2009		-	-		(122,590.46)	-	-	55,152,669.19
12/31/2009		-	-		(124,110.54)	-	-	53,663,601.40
3/31/2010		-	-		($172,786.02)	-	-	53,555,024.48
6/30/2010		-	-	$795,227.06	($168,198.88)	-	-	57,781,096.67
9/30/2010		-	-	$726,736.71	($168,318.20)	-	-	59,576,057.55
12/31/2010		-	-	$753,365.44	($168,488.31)	-	$33,019.21	63,550,440.22

Historical Cash Flow Cont'd

2011-2016

Date	Deposits	Withdrawals	Distributed Cash Flow	Reinvested Cash Flow	Deducted Fees	Directly Billed Fees	Fee Rebate	Market Values
3/31/2011		-	-	$ 786,132.99	($167,392.79)	-	-	$67,095,550.44
6/30/2011		-	-	$746,595.60	($170,348.08)	-	-	$70,377,535.60
9/30/2011		-	-	$771,776.89	($161,455.88)	-	-	$73,268,879.60
12/31/2011		-	-	$683,092.31	($165,717.95)	-	-	$75,674,860.14
3/31/2012		-	-	$699,701.57	-	($175,678.22)	-	$78,156,154.89
6/30/2012		-	-	$862,852.50	-	($178,269.82)	-	$80,018,267.87
9/30/2012		-	-	$852,897.08	-	($178,017.71)	-	$81,437,991.66
12/31/2012		-	-	$891,833.85	-	($175,442.18)	-	$82,992,278.57
3/31/2013		-	-	$766,381.08	-	($175,764.99)	-	$85,722,824.47
6/30/2013		-	-	$853,312.10	-	($180,630.13)	-	$88,599,276.90
9/30/2013		-	-	$884,942.45	-	($189,290.81)	-	$91,858,664.17
12/31/2013		-	-	$973,343.41	-	($187,551.78)	-	$95,185,594.66
3/31/2014		-	-	$946,054.66	-	($185,709.15)	-	$97,522,348.18
6/30/2014		-	-	$848,831.47	-	($183,646.74)	-	$100,717,415.14
9/30/2014		-	-	$811,534.23	-	($198,752.72)	-	$103,915,046.82
12/31/2014		-	-	$1,064,134.55	-	($197,833.43)	-	$107,886,266.43
3/31/2015		-	-	$1,014,991.59	-	($214,201.13)	-	$111,362,490.32
6/30/2015		-	-	$1,263,628.80	-	($212,015.28)	-	$114,985,249.55
9/30/2015		-	-	$1,191,030.66	-	($218,015.92)	-	$120,621,252.59
12/31/2015		-	-	$1,226,058.82	-	($222,994.01)	-	$124,454,632.06
3/31/2016		-	-	$1,268,646.22	-	($209,317.98)	-	$127,195,743.35
6/30/2016		-	-	$1,038,765.13	-	($218,290.44)	-	$129,647,889.55
9/30/2016		-	-	$1,164,381.12	($151,357.11)*	($132,357.68)	-	$132,029,661.43
12/31/2016		-	-	$1,192,327.26	($155,061.65)*	($133,118.97)	-	$135,101,380.09
Total	$60,000,000.00	$0.00	$0.00	$42,694,947.90	($4,031,494.14)	($3,766,899.09)	$33,019.21	
Total Fees	($7,798,393.23)							

* REIT level fee.

I. PRISA

PGIM Real Estate

PGIM

U.S. Near-Term Real Estate Market Outlook

As of Fourth Quarter 2016

Demand Drivers: Steady Broad-based Expansion	▪ Economic conditions remain favorable for continued improvement in tenant demand. Overall economic activity continues to expand at a modest pace, supported by consumer spending and a recovering housing market. Labor market conditions are solid and wage growth is accelerating. ▪ Business and market sentiment has improved markedly following the election. Anticipation that a pro-growth agenda and potential fiscal stimulus will boost economic activity has raised near-term GDP forecasts. ▪ We expect less regional differentiation in economic growth, with more catch up in late recovering Sun Belt markets offsetting moderating growth in tech markets.
Property Fundamentals Improving	▪ **Apartment:** Demographic trends and job gains are fueling growth in rental demand, however, increased supply additions have led occupancies to stabilize. Rent growth is moderating, but remains broadly healthy in all but a few markets. ▪ **Office:** Office-using employment growth suggests further gains in tenant demand over the next year. We expect occupancies and rents to continue to move higher as supply remains modest compared with historical levels. ▪ **Warehouse:** Tenant demand is very healthy in a growing number of markets, and e-commerce remains a key growth driver. While new supply has picked up considerably, the rate of rental growth remains robust. ▪ **Retail:** Steady consumption trends and lack of supply have pushed vacancies to historically low levels. Rent growth is improving but will likely remain limited by right-sizing among retailers in response to e-commerce. ▪ **Hotel:** Occupancies have flattened as supply pressure continues to mount, particularly in major markets. RevPAR has been decelerating, but the rate of growth is line with their historical average. ▪ **Storage:** Fundamentals showing signs of moderating after years of outperformance as new supply impacts major markets.
Pricing Stabilizing, Moderating Performance	▪ Cap rates appear to have bottomed out at historically low levels, and investors are more cautious paying up for lower-quality assets. With value growth driven by NOI gains, total returns are expected to fall in their historical average range. ▪ Sales activity eased from 2015's pace, but remained solid, posting the third highest year ever. The spread between cap rates and corporate bonds is back in line with historical trends, implying that the market is fairly valued. ▪ Debt markets are generally balanced, although borrowing costs are inching up. Ample credit is available for core, stabilized assets, but scarcer for non-stabilized assets. Regulatory and market pressures have served to constrain loan-to-value ratios, and a drop-off in construction lending.

Sources: PGIM Real Estate. As of 4Q 2016

PRISA[1] Overview

What is PRISA?

- First core, open-end commingled real estate fund for institutional investors
- Long track record of strong performance and innovation
- Well-diversified existing portfolio with a focus on income
- Concentration of irreplaceable assets in major gateway markets
- Transparency in reporting and quarterly external valuations
- Extensive and proven joint venture partner network to access investment opportunities

Leading Real Estate Investment Manager

- Excellent sponsorship from a strong parent, Prudential Financial
- Depth of PGIM Real Estate's global platform
- Best-in-class governance
- Fiduciary, client-focused culture
- Dedicated Portfolio and Asset Management Team
- Research integrated into investment process

Investment Objective[3]

Offer clients a core equity real estate portfolio that produces a total return each year that meets or exceeds the National Council of Real Estate Investment Fiduciaries Fund Index – Open-End Diversified Core Equity (NFI-ODCE) while maintaining the benefits of a broadly diversified, core portfolio.

PRISA Composite Facts (As of December 31, 2016)	
Inception Date	July 1970
Since Inception Gross Return[2]	9.1%
Benchmark	NFI-ODCE
Gross Asset Value	$23.7B
Net Asset Value	$18.6B
Number of Investments	273

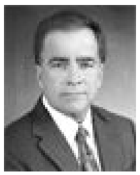
Eleven Times Square (New York, NY)

[1] PRISA Composite (or "PRISA") represents the aggregate or composite of PRISA LP and PRISA Separate Account (PRISA SA). [2] Total since inception net return 8.0%. Please see page 2 for important information regarding PRISA Composite. [3]Return objectives are not guaranteed and actual results may vary.

PRISA Dedicated Portfolio Team

60 Professionals Dedicated to the PRISA Strategy

PORTFOLIO MANAGERS



Frank E. Garcia
Managing Director
Senior Portfolio Manager
Years with the Firm: 3
Real Estate Experience: 24

Joanna Mulford
Managing Director
Portfolio Manager & PRISA's CFO
Years with the Firm: 27
Real Estate Experience: 20

James Glen
Executive Director
Portfolio Manager
Years with the Firm: 2
Real Estate Experience: 16

Jeremy Keenan
Vice President
Assistant Portfolio Manager
Years with the Firm: 5
Real Estate Experience: 10

PRISA'S DEDICATED ASSET MANAGEMENT TEAM

Benefits from additional oversight by PGIM Real Estate's Head of Americas Asset Management

Scott Dalrymple
Years with the Firm: 9
Real Estate Experience: 29

San Francisco

Kristin Paul
Philip Campbell
Pedro Sanchez
Maria Trinh
Preetvir Singh
Harry Ashforth
Sydnee Cua
Joseph Hamwey
Benjamin Hochron
William Yowell

Chicago

Mark Vande Hey
Michael McMains
Ryan Bloom
Daniel Kane
Nora Boneham
Timothy Pyzyk

New York / Madison

Carly Miller
John Sarokhan
Yetta Tropper
Sarah Downey
Michael Harrington
Thomas Ling
Douglas Roberts
Nicole Constantine
Allyson Randolph
Kevin Sullivan
Basel Bataineh
Avery Dorr
Melissa Furman
Nicholas Godino
Rushi Patel

Additional PGIM Real Estate Platform Shared Services

- Research
- Acquisitions & Dispositions
- Business Development
- Capital Markets
- Risk Management
- Human Resources
- Legal & Compliance

Additional PRISA Dedicated Services

- Portfolio Analytics
- Investor Services
- Operations

Note: As of January 2016. A total of 60 dedicated professionals, including 18 from the Operations team and a team of 7 who perform analytical and investor services for the Fund.

PRISA's 2016 Report Card

		Full-Year 2016[2]
Performance	▪ Deliver **gross returns of 8.5% – 11.0%[1]**, including an **income return of 4.5% to 5.0%**	**Income: 4.59%** **Appreciation: 4.08%** **Total: 8.82%[3]**
Income Growth	▪ Income growth of **approximately 4.5%** will drive appreciation as cap rate compression fades, driven by: – Continued gains in rents and occupancy led by office and storage – Targeted new acquisitions with income growth upside	**5.4%** **Full-Year Increase**
Transactions Target	▪ **Acquisition Target: $1.5B – $2.0B** ▪ **Disposition Target: $0.5B – $0.75B** ▪ **Net Investment Target: $1.0B – $1.25B**	**Acquisitions: $2.4B** **Dispositions: $0.6B** **Net Investment: $1.8B (8% of GMV)**
Risk Metrics	▪ Manage **leverage in the 20% – 25% range, in-line with ODCE** and limit **debt to income multiple to a long-term target maximum of 5.0x**. Maintain our low cost of debt, taking advantage of lender flexibility and extending the average remaining term. ▪ Evaluate select non-core opportunities and target non-core exposure within our maximum guideline (10%).	**LTV: 22.3%** **Debt to Income: 5.3x** **Non-Core: 8.7%**

[1] Total net target returns 7.5% - 10.0%. Note: Target returns are not guaranteed. [2] Past performance is not a guarantee or a reliable indicator of future results. [3] Total 2016 net return is 8.02%.

PRISA Composite Snapshot[1]

As of December 31, 2016

Scale	
Gross Asset Value	$23.7B
Net Asset Value	$18.6B
Number of Investments	273
Number of Clients	313

Key Risk Metrics	Actual	Guideline
Core	91.3%	> 90%
Leverage Ratio	22.3%	< 30%
Debt to Income Multiple	5.3x	< 5.0x

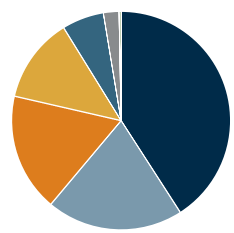
Client Activity	4Q16	Full-Year
Deposits	$227.2M	$1,499.5M
Cash Flow Reinvested	$79.1M	$372.2M
Withdrawals	$310.0M	$1,105.6M
Cash Flow Distributions	$90.9M	$407.5M
Redemption Queue	$250.9M	

Transactions (Gross)	Full-Year	Target
Acquisitions	$2.4B	$1.5B-$2.0B
Dispositions	$0.6B	$0.5B-$0.75B

Post Montgomery (San Francisco, CA)

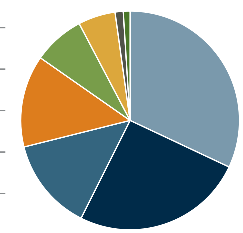
PROPERTY TYPE DIVERSIFICATION[1]

40.9%	Office
20.2%	Apartment
17.5%	Retail
12.6%	Industrial
6.2%	Storage
2.3%	Other[2]
0.3%	Hotel



GEOGRAPHIC DIVERSIFICATION[1]

32.0%	Pacific
25.4%	Northeast
13.7%	Mideast
13.6%	Southeast
7.6%	EN Central
5.5%	Southwest
1.2%	Mountain
1.0%	WN Central



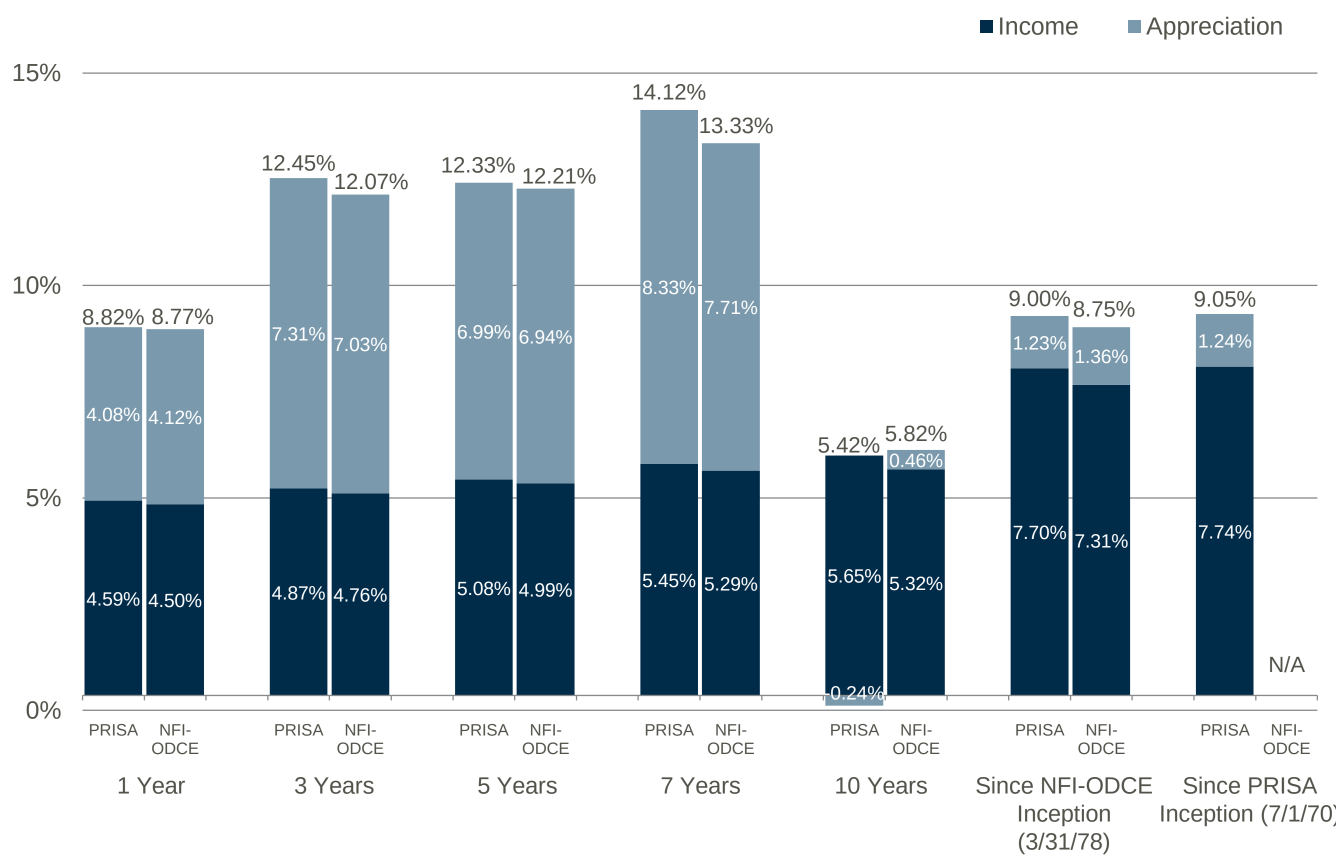
[1] Based on PRISA's share of gross market value in properties and debt investments. [2] Other includes Harbor Garage, Land and Notes Receivables. Note: There is no guarantee these targets will be achieved. Please see page 2 for important information regarding PRISA Composite.

PRISA Composite Gross Performance[1]

As of December 31, 2016

- Performance compares favorably to benchmark, with returns exceeding NFI-ODCE in all but the ten-year time period
- Recent returns led by industrial, storage and CBD office
- Income return exceeds NFI-ODCE in all time periods[2]
- With appreciation decelerating, total returns are in-line with our long-term targets

PRISA COMPOSITE GROSS RETURNS VS. NFI-ODCE GROSS RETURNS



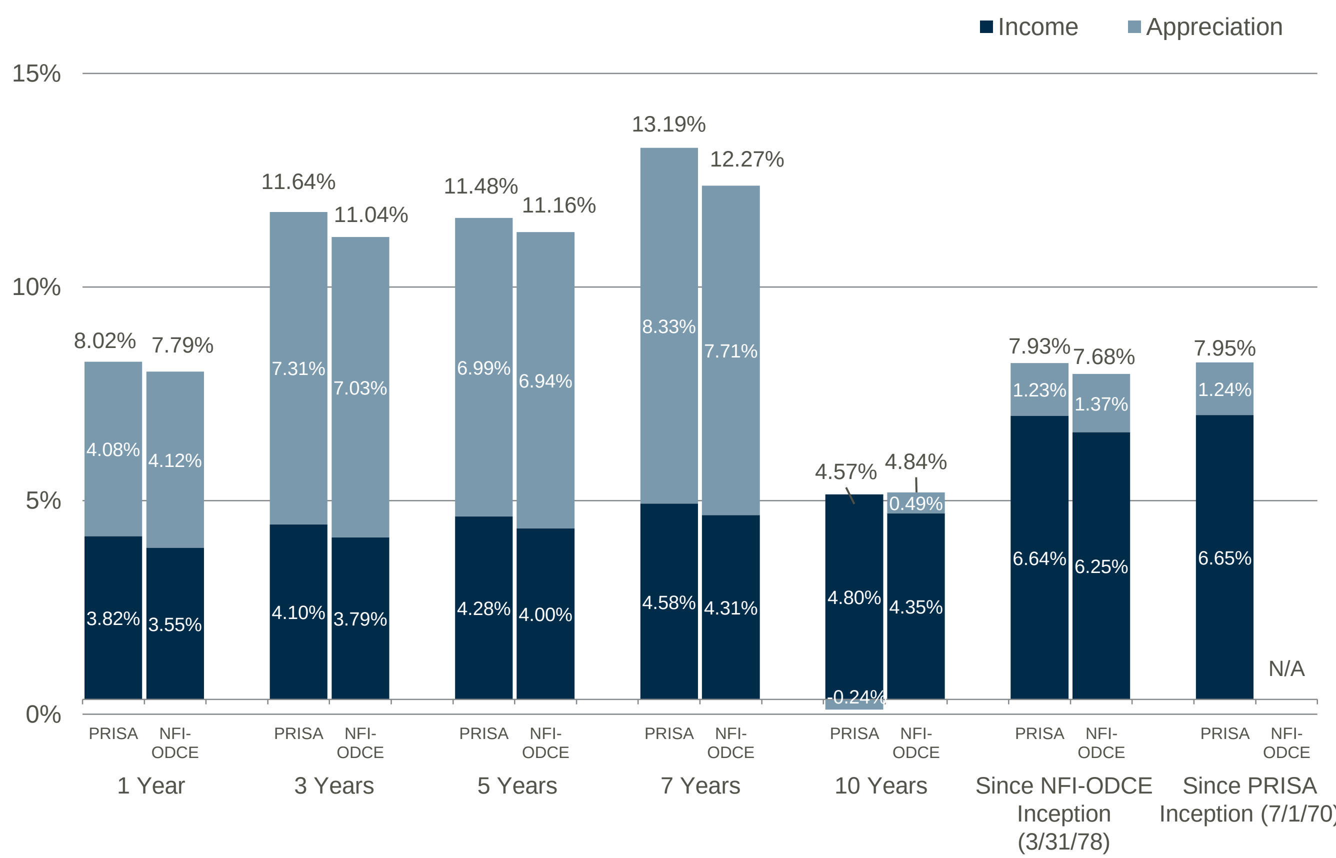
[1] Performance information regarding PRISA SA or PRISA LP, as applicable, along with performance net of manager compensation/fees, appears on the following page. Returns for periods prior to January 1, 2013 are based upon PRISA SA only. Note: Returns shown are time-weighted rates of return calculated in conformity with performance reporting standards and are before the deduction of Manager Compensation/Fees. Returns for NFI-ODCE are based on the final report published by NCREIF on January 30, 2017. [2] Refers to time periods shown above; one, three, five, seven and ten years and since NFI-ODCE inception return periods. Past performance is not a guarantee or a reliable indicator of future results. Please see page 2 for important information regarding PRISA Composite.

PRISA Composite Net Performance[1]

As of December 31, 2016

- PRISA's relative performance generally compares more favorably to the benchmark on a net basis

PRISA COMPOSITE NET RETURNS VS. NFI-ODCE NET RETURNS



[1] Returns shown prior to January 1, 2013 are based upon PRISA SA only.
Note: Returns for NFI-ODCE are based on the final report published by NCREIF on January 30, 2017. Returns shown are time-weighted rates of return after deduction of Manager Compensation/Fees. Past performance is not a guarantee or a reliable indicator of future results. Please see page 2 for important information regarding PRISA Composite.

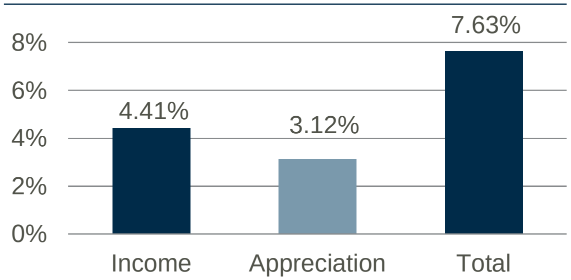
PRISA Drivers of Performance

One-Year Ending December 31, 2016

The Fund's one-year performance is reflective of value increases across all of the major property types, with the strongest total returns in the storage and industrial sectors

Unlevered Returns			
	Income	Appreciation	Total
Storage	5.98%	11.20%	17.67%
Industrial	4.80%	5.29%	10.28%
Retail	5.51%	1.97%	7.56%
Office	4.16%	2.68%	6.92%
Apartment	4.34%	2.21%	6.62%
Hotel	4.93%	-14.51%	-10.13%

PRISA'S TOTAL UNLEVERED RETURNS



Extra Space Storage (Woodbridge, VA)

Storage

The storage portfolio generated the highest total returns, driven by outsized income and value gains

- Appreciation stemmed from strong income growth due to a rise in rental rates
- Over the past year, same property income grew by 11.7% driven by higher rental rates and a same property occupancy of 92.7%

Extra Space Storage Portfolio: This portfolio was acquired in 2005 and currently includes 86 facilities across 19 states concentrated in coastal regions

Pacific Gateway Center (Los Angeles, CA)

Industrial

The industrial portfolio generated the second highest returns

- The outsized value increase was primarily generated by assets located in Southern California
- The industrial sector has the strongest occupancy of 95.9%, an increase of 188 bps over the past year

Pacific Gateway Center: Acquired in 2006, this portfolio of 14 assets, containing over 1 million SF, increased in value over the past year by $11M as a result of increased rental rates at all properties

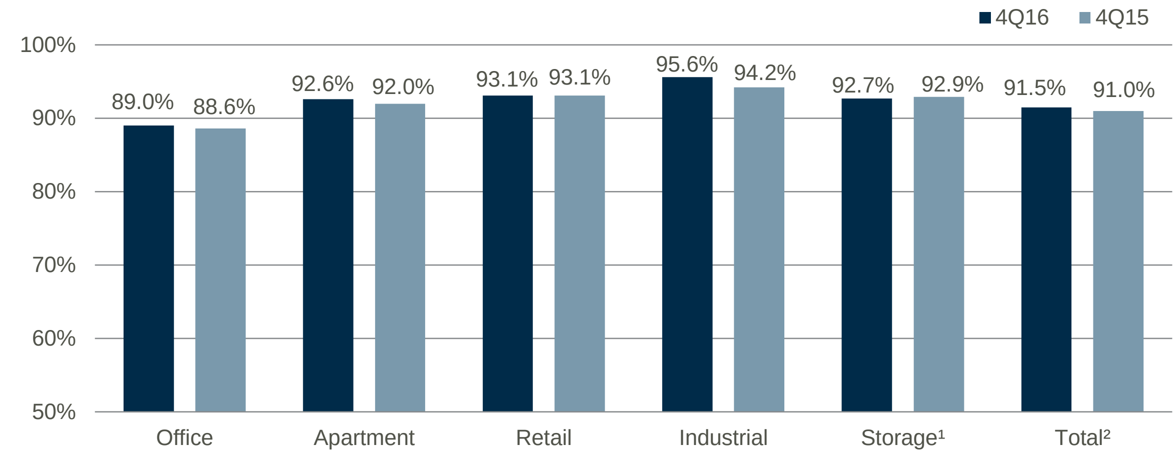
Note: As of December 31, 2016. Past performance is not a guarantee or a reliable indicator of future results.

PRISA Occupancy & Income Growth

As of December 31, 2016

- Same property occupancy for the portfolio has increased to 91.5%. Overall portfolio occupancy is healthy at 91.8%, with all major property types above 90% occupancy
- In the past year, PRISA executed 8.8 million sf of leasing activity, representing 15% of the overall commercial portfolio, 45% of which were new leases
- PRISA posted same property income growth of 5.4%, ahead of expectations
- The largest contributors to income growth were the office, storage and industrial sectors, driven primarily by higher rental rates

SAME PROPERTY LEASED STATUS



Same Property NOI[3]	Trailing Twelve Months Ended 12/31/16 ($ millions)	Trailing Twelve Months Ended 12/31/15 ($ millions)	% Change
Office	$337.4	$307.0	9.9%
Apartment	181.5	177.8	2.1%
Retail	186.1	187.9	-1.0%
Industrial	128.7	121.4	6.0%
Storage	82.4	73.8	11.7%
Hotel	2.6	4.0	-34.6%
Other[4]	11.0	10.4	6.0%
Total Same Property NOI[5]	$929.7	$882.3	5.4%

[1] Represents average leased status for the quarter. [2] Same property leased status for total portfolio weighted based on gross market value and excludes hotels. [3] 100% Property level unlevered. To provide a more meaningful basis for comparison between periods, property net income excludes income from properties that were purchased or sold during the comparative time periods, land and debt investments. Results are not guaranteed. Past performance is not a guarantee or reliable indicator of future results. [4] Other includes Harbor Garage. [5] Same property NOI of $929.7 million represents 87% of PRISA's total NOI. Note: Please see page 2 for important information regarding PRISA Composite.

PRISA's Strategic Plan 2017-2019

Strategy For Current Point in the Cycle & Long-Term Risk Adjusted Performance

- Shift from tactical neutral/overweight to office to long-term underweight over next 18-24 months
- Increase multifamily and industrial through selective acquisitions and build-to-core pipeline
- Continue to diversify (property type, location, tenancy) and upgrade quality
- Remain more selective within non-core component (focus development on apartment and industrial)
- Sell non-strategic assets and exit hotels
- Focus on long-term strategic markets and select tactical markets
- Secure durable, long-term lease income from credit tenants
- Long-term, fixed rate debt for strategic assets, and keep pool of unencumbered assets for flexibility
- Avoid excessive vintage year risk and style drift


The Modern (Fort Lee, NJ)

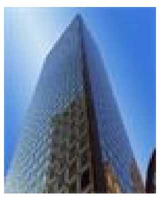

The Brick Yard (Laurel, MD)

PRISA's Strategic Markets

PRISA's strategic market exposure represents 76% of the portfolio (vs. 67% of NFI-ODCE [1])

Chicago
$1,684.7M

7.2% (-99 bps vs. ODCE[1])

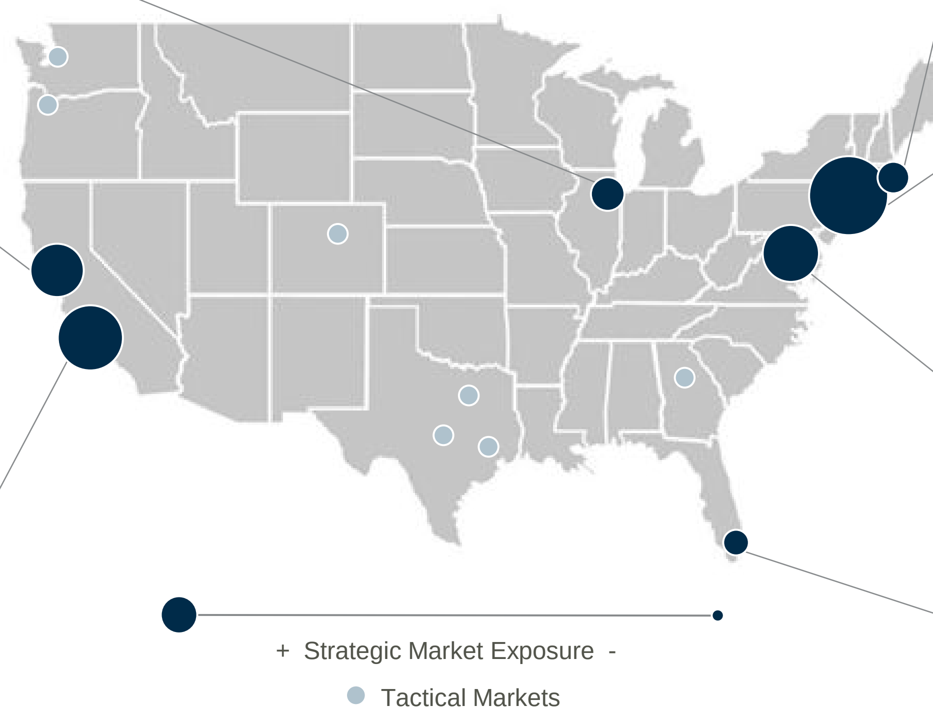


San Francisco
$2,768.4

11.8% (+128 bps vs. ODCE[1])

Los Angeles
$3,449.0M

14.7% (+143 bps vs. ODCE[1])



Boston
$1,599.0M

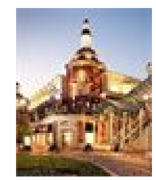
6.8% (+17bps vs. ODCE[1])

New York
$4,090.8M

17.4% (+145 bps vs. ODCE[1])

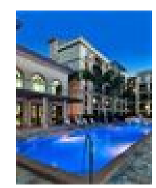
Washington, D.C.
$2,879.1M

12.2% (+443 bps vs. ODCE[1])



Miami
$1,405.7M

6.0% (+128 bps vs. ODCE[1])



[1] NFI-ODCE does not publish detailed property information. Market information is based on CSA definitions and calculated by extracting NFI-ODCE property data from the NCREIF Research Database. Data as of December 31, 2016. Note: Please see page 2 for important information regarding PRISA Composite.

PRISA Investment Strategy

	PRISA 4Q16[1]	NFI-ODCE 12/31/2016[2]	PRISA Target 2017-2019[3]	Projected Movement of Weighting 2017-2019	2017-2019 Plan
Office	40.9%	36.9%	35-40%	↓	Target underweight towards end of plan period through sale of commodity-like assets and acquisition focus on other property types.
Apartments	20.2%	24.3%	20-25%	↑	Acquire or develop assets in longer-term strategic markets and assets in markets with high barriers to entry. Focus on urban, infill projects. Begin to move from underweight to neutral/overweight.
Retail	17.5%	20.2%	15-20%	↔	Target well located experiential and/or necessity oriented centers. Sell non-strategic assets.
Industrial	12.6%	14.7%	10-15%	↑	Select build-to-suit and speculative developments and investment in existing product. Build up concentrations in SoCal, Baltimore-Washington corridor and Miami.
Storage	6.2%	2.2%	5-10%	↔	Target new investment opportunities with best in class operators in order to preserve weighting. Upgrade physical and marketing aspects and leverage operational expertise and efficiencies.
Hotel	0.3%	0.7%	0%	↓	Liquidate remaining hotel portfolio

[1] Based upon PRISA's share of GMV in properties and debt investments. Excludes "Other." [2] Diversification for NFI-ODCE is based on the final report published by NCREIF on January 30, 2017. [3] There is no guarantee that these targets will be achieved. Note: Please see page 2 for important information regarding PRISA Composite.

PRISA Core Component: 91% of Portfolio GMV

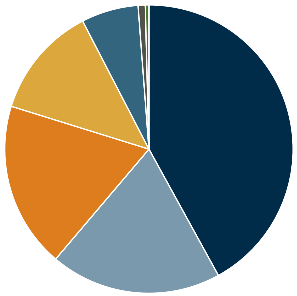
As of December 31, 2016

Core Component Performance	
GMV[1]	$22.2B
TTM NOI	$1,089.3M
NOI Contribution to Fund	100%
Unlevered Income Return (TTM)	4.41%

- Well diversified core portfolio of quality, income producing assets with balanced lease rollover
- 50%[2] of the core portfolio is comprised of unlevered wholly-owned assets

CORE PROPERTY TYPE DIVERSIFICATION[1]

42.3%	Office
18.9%	Apartment
18.4%	Retail
12.9%	Industrial
6.4%	Storage
0.8%	Other[3]
0.3%	Hotel



			% Leased 12/31/16	Avg. Lease Expirations 2016-2020
Office	19.2M	sf	90.8%	6.7%
Apartment	12.898	units	92.5%	N/A
Retail	13.6M	sf	93.3%	8.6%
Industrial	24.5M	sf	97.2%	9.5%
Storage[4]	74,260	units	92.7%	N/A
Hotel[4]	114	keys	91.2%	N/A
Total[5]			92.4%	

[1] Based on PRISA's share of gross market value in properties and debt investments. [2] Based on number of investments. [3] Other includes Harbor Garage. [4] Represents average leased status for the quarter. [5] Leased status for total portfolio weighted based on gross market value and excludes hotels. Note: Please see page 2 for important information regarding PRISA Composite.

PRISA Non-Core Component: 9% of Portfolio GMV

As of December 31, 2016

Non-Core Strategy

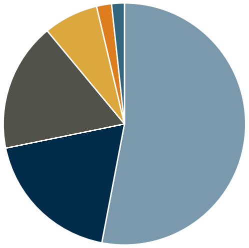
- Focused on build-to-core apartments, build-to-suit and speculative industrial development
- Capitalize on opportunities through our extensive JV Partner network that provides the best operators by product type and market
- PRISA is currently targeting non-core exposure close to our maximum guideline (10%)
- Lease-up assets move to the core portfolio once they achieve leasing of 80%

	# of Projects	% Complete[1]	% Leased	PRISA's GMV ($ millions)[2]
Apartment	8	27%		$985.4
Industrial	6	36%		106.8
Office	1	14%		168.8
Total Development[3]	15			$1,259.1
Office	1		45.8%	$226.5
Industrial	2		64.2%	49.3
Storage	1		30.3%	35.9
Total Lease-Up	4		58.2%	$311.7
Land	22			$361.2
Debt Investments	2			170.3
Total	43			$2,104.2

Perris Valley Logistics Center (Perris, CA)

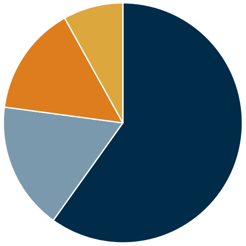
NON-CORE SECTOR DIVERSIFICATION[2,3]

53.0%	Apartment
18.8%	Office
17.2%	Other[4]
7.3%	Industrial
2.0%	Retail
1.7%	Storage



NON-CORE INVESTMENT STRATEGY DIVERSIFICATION[2]

59.8%	Development[3]
17.2%	Land
14.8%	Lease-Up
8.1%	Debt Investments



[1] Weighted based on total cost at completion. [2] Based on PRISA's share of gross market value in properties and debt investments. [3] For development properties, exposure is based on PRISA's share of total development costs at completion. When considering gross amount spent to date of $474M, non-core exposure is 6.6%. [4] Other includes land. Note: Please see page 2 for important information regarding PRISA Composite.

Recent Transaction Activity

One-Year Ending December 31, 2016

Acquisitions: $2.4B (21 assets)

- Focus on core, income-producing assets with durable income located in strategic or other tactical markets
- Non-core focus on build-to-core apartments and industrial
- Acquisitions over the past year broadly diversified geographically

Dispositions: $0.6B (21 assets)

- Improve the overall quality of the portfolio
- Focus on selling non-strategic assets
- Liquidate hotels and begin to reduce office exposure
- 2016 sales market was mixed, with some planned sales not trading

Acquisition: Extra Space NYC Storage Portfolio (New York, NY)

Disposition: Villages at Baldwin Park (Jacksonville, FL)

Acquisition Highlight: 11 Madison, New York, NY

Iconic Office Asset in One of the Most Desirable U.S. Markets

General Description	
Property Type	Office
Year Built/Renovated	1929 / 1994-1996, 2015-2016
Acquisition Date	08/10/2016
Effective Ownership %	40%
Size	2,281,078 sf
Leased Status	97%
Cost[1]	$2,561M ($1,123 psf)
Market Value	$2,617M ($1,147 psf)
Loan Principal Balance	$1,400M
Fixed Interest Rate	3.84%
Risk Profile	Core
Property Certification	Energy Star
Underwriting Metrics (Levered / Unlevered)[2,3]	
5-Yr Avg NOI	5.0% / 4.4%
5-Yr Avg COC	4.2% / 4.0%
10-Yr IRR	6.9% / 5.4%
15-Yr IRR	7.4% / 5.9%
Top Tenants	**SF**
Credit Suisse	1,266,051
Sony	578,791
Yelp	152,232
William Morris	103,426
Millward Brown	99,107

Overview

- PRISA acquired a 40% interest in 11 Madison Avenue, a Class-A, trophy-quality office building located in Manhattan's Midtown South submarket. PRISA's partner is SL Green Realty Corp., the largest office landlord in New York City, and partner on two other PRISA assets: 100 Park Avenue and Tower 46.
- The building is located directly east of Madison Square Park and offers an abundance of walkable amenities and public transportation.
- The Midtown South office submarket has benefited from increasing demand in recent years, driven by TAMI tenants, which has led to one of the lowest vacancy rates of any New York City submarket.
- 11 Madison boasts high quality finishes including a marble, granite and travertine-covered lobby with three-story ceiling heights, vaulted entrances on each of its four corners and large floor plates from 40K sf to 100K sf, which are rare in the submarket.
- The building benefits from high occupancy from credit tenants and minimal turnover, with an average overall remaining lease term of 17 years. In place rents are below market which will allow the Fund to capture additional value as the tenants roll.
- 11 Madison Avenue represents a unique opportunity for PRISA to upgrade the quality of its overall office portfolio and durability of its high quality income stream. The asset will be a long term hold for the Fund.

[1] Cost includes reserved costs for lease stipulated improvements to the property and is net of income support payments described in footnote 3. [2] Based on underwriting metrics estimated as of the date of Investment Committee approval. [3] Underwritten returns include benefit of a income support provided by the joint venture partner during the first year of the hold period. For GAAP purposes, this income support will be reflected in the form of a lower basis for the asset on PRISA's financial statements. Note: As of December 31, 2016 unless otherwise noted. There is no guarantee that returns for these or similar investments in the future will be achieved. Returns are gross of fund level fees and expenses.

Acquisition Highlight: The Avalon, Alpharetta, Georgia

Trophy Mixed-Use Center

General Description[1]	
Property Type	Retail/ Office/ Apartment
Year Built/Renovated	2014
Acquisition Date	07/22/2016
Effective Ownership %	100%
Size	Retail: 384,414 sf Office: 105,364 sf Apartments: 250 units
Leased Status	Retail: 100% Office: 100% Apartments: 96%
Cost	$366M ($577 psf/ $308K per unit)
Market Value	$367M ($571 psf/ $332K per unit)
Risk Profile	Core
Underwriting Metrics (Unlevered)[1,2]	
5-Yr Avg NOI	4.9%
5-Yr Avg COC	4.8%
10-Yr IRR	5.8%
Top Tenants	**SF**
Regal Cinemas	53,565
Whole Foods	45,815
Wakefield Beasley	30,355

Overview

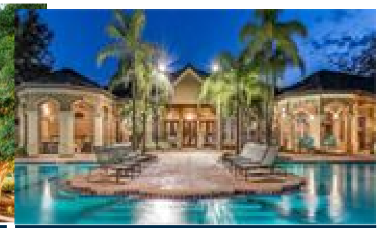
- The Avalon is a trophy quality, open air, mixed-use lifestyle center in Alpharetta, GA. It is a vibrant shopping, dining and entertainment destination that serves the affluent northern Atlanta suburbs.
- PRISA's investment includes 384K sf of high quality retail, 100% leased to national credit tenants as well as 250 class-A residential units and 105K sf of loft office space. In addition, PRISA acquired a 3.3 acre development parcel that is entitled for up to 250K sf of additional office space.
- Phase I is situated within an 86 acre master development, which will ultimately include 2M sf of retail, office, apartments, hotel, conference center and single family homes.
- National tenants represent 85% of the GLA and average 10.7 years of remaining lease term. The retail rents are below market, which will allow the Fund to capture additional upside as tenant leases expire. The multifamily units are some of the highest quality in the area, which appeal to renters by choice with an average age of 46 and average household income of $219,000.
- PRISA also has the right to acquire Phase II upon satisfactory construction completion and meeting leasing thresholds, which is expected in 2017. Phase II will include 88k sf of high quality retail space, which is currently 68% pre-leased to a diverse roster of national tenants, and 276 class-A multifamily units.[3]

[1] Metrics and information shown are for Phase I. [2] Based on underwriting metrics estimated as of the date of Investment Committee approval. [3] As part of the transaction, and to secure the option to acquire Phase II, PRISA extended a convertible mortgage loan to the Seller that will convert to equity when PRISA acquires Phase II. Note: As of December 31, 2016 unless otherwise noted. There is no guarantee that returns for these or similar investments in the future will be achieved. Returns are gross of fund level fees and expenses.

Disposition Highlights

Sale of non-strategic assets to upgrade the quality of the portfolio






	Main & Redhill Irvine, CA	Braker Center Austin, TX	Grand Reserve Tampa, FL	The Boulevard – Phase I Richmond Heights, MO
Property Type	Office	Industrial	Apartment	Retail / Apartment
Year Built/Renovated	1981 and 1983	1999	1999	2005
Acquisition Date	6/23/2004 and 2/28/2007	07/15/1999	11/30/2006	10/31/2005
Effective Ownership %	100%	100%	100%	80%
Size	203,946	296,781	390 units	123,317 sf
Leased Status	96%	90%	99%	99%
Cost	$36M ($174 psf)	$40M ($135 psf)	$53M ($135K per unit)	$56M ($454K per sf)
Gross Sale Price	$45M ($220 psf)	$44M ($148 psf)	$66M ($169K per unit)	$43M ($345K per sf)
Sale Date	4/29/2016	09/28/2016	12/16/16	12/29/2016
Risk Profile	Core	Core	Core	Core

IRR	8.5%	8.4%	7.4%	2.0%
Equity Multiple	2.1x	2.2x	1.8x	1.1x

Note: As of December 31, 2016. There is no guarantee that returns for these or similar investments in the future will be achieved. Returns are gross of fund level fees and expenses.

PRISA Debt Strategy & Structure

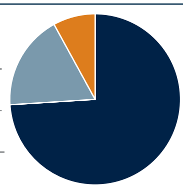
As of December 31, 2016

Leverage Profile[1]	% of GMV
Overall Loan to Value	22.3%
Recourse Loan to Value	4.0%
Debt to Income	5.3x
Weighted Average Maturity	6.1 yrs
Cost of Debt[1]	
Average Fixed-Rate	4.2%
Average Floating-Rate	2.2%
Total Average Cost of Debt	3.6%
Credit Facility	
Size	$750M
$ Drawn	$250M

- PRISA expanded the borrowing capacity for its line of credit by $250M to $750M and extended the terminal maturity date to 2021
- LTV managed to 20 - 25%, in-line with ODCE. Fixed-rate bias with diversified maturities
- Modest portfolio level debt for flexibility and attractive terms
- Reserve debt capacity for long-term assets and JVs; maintain significant pool of unencumbered assets
- 5.3x debt to income multiple driven by acquisition of 11 Madison which came with favorable debt; expect to be in compliance within next 12 months

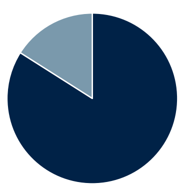
FLOATING/FIXED/FLOATING W/ CAPS[1]

- 74% Fixed
- 18% Floating
- 8% Floating w/ Caps

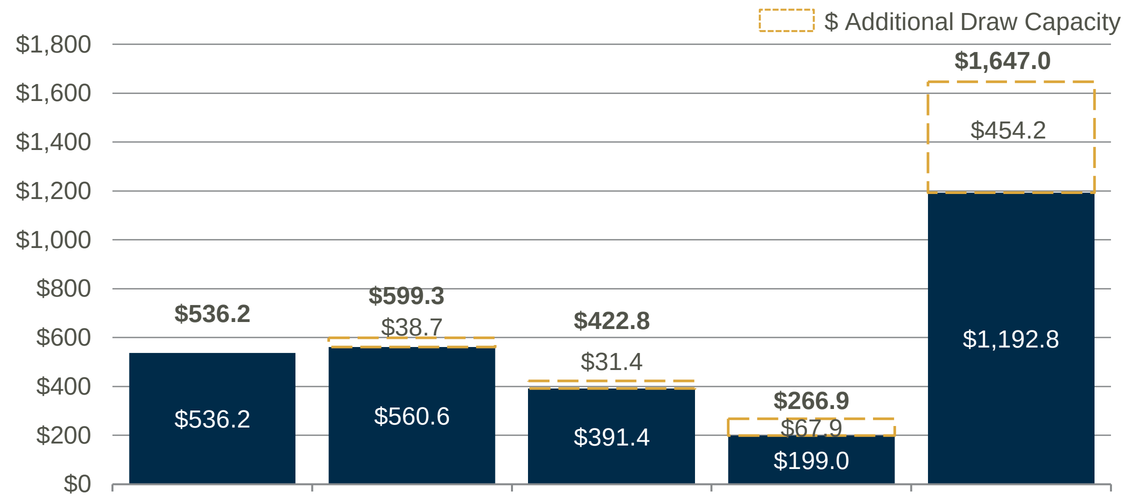


PROPERTY VS. PORTFOLIO LEVEL DEBT[1]

- 82% Property Level
- 18% Portfolio Level



$ OF DEBT MATURING ($ MILLIONS)[2]



	2017	2018	2019	2020	2021
# of Loans[3]	13	17	10	8	13
% Total Debt[3]	8.4%	9.4%	6.6%	4.2%	25.7%

[1] Represents portfolio level debt, 100% wholly owned and PRISA's share of all joint venture debt. Weighted average maturity calculation based on 100% principal. [2] Represents portfolio level debt, 100% wholly owned and consolidated joint venture debt and PRISA's share of debt on equity joint ventures. Orange dashed boxes represent additional draw capacity on existing construction and predevelopment loans. Excludes PRISA's $500M available capacity on the Credit Line. [3] Based on total capacity.

PRISA – Preliminary 2017 Outlook & Objectives

Performance	▪ Performance is expected to be in line with long-term objectives for core real estate, with a total gross return of 7.0% to 9.0%,[1] with 4.5% to 5.0% coming from income.
Income Growth	▪ Healthy market fundamentals coupled with built-in rent gains within the portfolio should result in income growth in excess of 4% for the year. We expect income growth to be the main driver of appreciation.
Transactions Target	▪ PRISA will maintain a disciplined approach to investing and continue to sell non strategic assets. Overall transactions volume is expected to be lower, with PRISA potentially being a net seller. **2017 Acquisitions Target:** $750M - $1.25B **2017 Dispositions Target:** $750M - $1.00B
Risk Metrics	▪ Risk metrics will remain healthy, with a leverage ratio expected to be in the low 20% range and in-line with our long-term debt-to-income target. Non-core exposure is expected to approach the maximum guideline of 10%, with a focus on lower-risk opportunities.

[1] Total net target returns 6.0% - 8.0%. Note: Target returns are not guaranteed. Note: Past performance is not a guarantee or a reliable indicator of future results.

Appendix

PGIM Real Estate

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Appendix: PRISA SA, PRISA LP, and Net Returns Addendum

PGIM Real Estate

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PRISA LP

Management Fee

PRISA Management Fee Schedule	
Investor NAV[1]	Fee Rate
First $25 million	100 bps
Over $25 million up to $50 million	95 bps
Over $50 million up to $100 million	85 bps
Over $100 million up to $200 million	75 bps
Over $200 million up to $300 million	70 bps
Over $300 million	65 bps

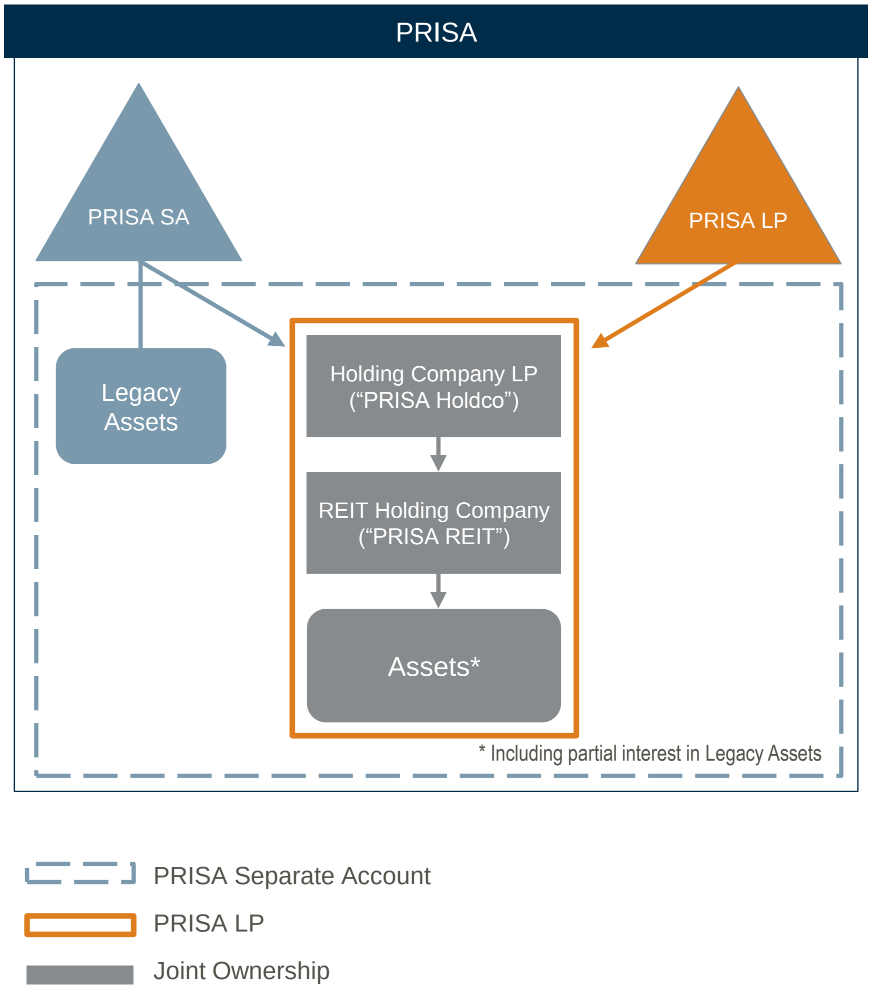
Effective Fees for Different Sized Accounts	
Investor NAV[1]	Fee rate
$25M	100 bps
$50M	98 bps
$100M	91 bps
$150M	86 bps
$250M	81 bps

[1]Cash balances greater than 5% of the Fund's NAV will not incur a fee.

PRISA Structure

Summary of Structure

- PRISA is comprised of PRISA SA, an Insurance Company Separate Account, and PRISA LP, a Delaware Limited Partnership.
- PRISA LP, which was launched in 2013, will invest in all assets PRISA SA elects to acquire, through a real estate investment trust ("PRISA REIT") that is expected to be domestically (U.S.) controlled.
- PRISA SA holds a direct partial interest in certain assets ("Legacy Assets") acquired prior to the launch of PRISA LP. PRISA LP and PRISA SA have exposure to the remaining interest in these properties through PRISA REIT.
- As of December 31, 2016, PRISA SA and PRISA LP represent approximately 79% and 21% of PRISA REIT, respectively.
- With limited exceptions, all new investors in PRISA will invest through PRISA LP.
- Non-U.S. investors with tax structuring needs can invest directly into PRISA LP or indirectly through a vehicle that will act as a "blocker"



Note: "PRISA" represents the aggregate or composite of PRISA SA and PRISA LP vehicles.

PRISA Legacy Assets

As of December 31, 2016

Legacy Assets	Location	Property Type	Acquisition Date	PRISA's Share GMV ($M)	PRISA's Share Cost ($M)	Net Market Value[1] ($M)	% of REIT GMV ($M)
Fillmore Center	CA	Apartment	12/22/04	$620.2	$273.2	$513.2	49.9%
Post Montgomery & Galleria	CA	Office/Retail	12/18/84	660.3	430.5	662.4	48.6%
Triana at Warner Center	CA	Apartment	9/8/08	137.0	109.8	84.3	49.9%
100 Park Avenue	NY	Office	8/1/74	417.8	204.4	240.3	99.6%
EmeryStation East	CA	Office	10/30/08	145.5	79.2	106.6	49.9%
EmeryStation Triangle	CA	Industrial	8/27/07	11.5	5.2	11.6	49.9%
Signature Point	CA	Apartment	9/24/04	133.0	75.8	132.9	50.0%
EmeryStation I	CA	Office	12/31/04	105.5	56.7	83.3	49.9%
N Hollywood - Milano	CA	Apartment	1/29/08	71.3	49.9	71.3	49.9%
EmeryStation II	CA	Office	12/31/04	88.2	46.7	65.7	49.9%
2600 10th Street	CA	Office	1/24/07	30.5	39.3	27.8	49.9%
EmeryStation West	CA	Office	5/27/16	28.6	28.6	26.0	81.7%
Heritage Square	CA	Office	12/31/04	21.8	10.9	14.1	49.9%
Total				$2,471.2	$1,410.4	$2,039.4	$1,137.0
							55.7%

[1] Reflects PRISA's share excluding joint venture partner interests and net of debt.

PRISA SA Key Information

As of December 31, 2016

The Basics[1]	
Gross Asset Value	$23.7B
Net Asset Value	$18.6B
Cash Balance	$380.9M
The Debt Picture	
Fixed/Floating %[2]	74% / 26%
Recourse Leverage Ratio	4.0%
Weighted Average Cost of Debt (Fixed/Floating)	3.6%
Weighted Average Maturity	6.1 Yrs

Strategic Market Exposure		
Market	Exposure[3]	(Under)/Overweight to ODCE[4]
Los Angeles	14.7%	+143 bps
New York	17.4%	+145 bps
Washington, D.C.	12.2%	+443 bps
San Francisco	11.8%	+128 bps
Miami	6.0%	+128 bps
Chicago	7.2%	-99 bps
Boston	6.8%	+17 bps
Total	76.0%	

Returns vs. NFI-ODCE[5]

	Income		Appreciation		Total Return	
Time Period	PRISA SA	NFI-ODCE	PRISA SA	NFI-ODCE	PRISA SA	NFI-ODCE
Current Quarter	1.10%	1.07%	1.34%	1.04%	2.44%	2.11%
1-Year	4.59%	4.50%	4.08%	4.12%	8.80%	8.77%
3-Year	4.86%	4.76%	7.33%	7.03%	12.46%	12.07%
5-Year	5.07%	4.99%	6.99%	6.94%	12.33%	12.21%
10-Year	5.65%	5.29%	-0.23%	0.46%	5.43%	5.82%
Since NFI-ODCE Inception (3/31/78)	7.70%	7.31%	1.23%	1.36%	9.00%	8.75%
Since PRISA Inception (7/1/70)	7.74%	N/A	1.24%	N/A	9.05%	N/A

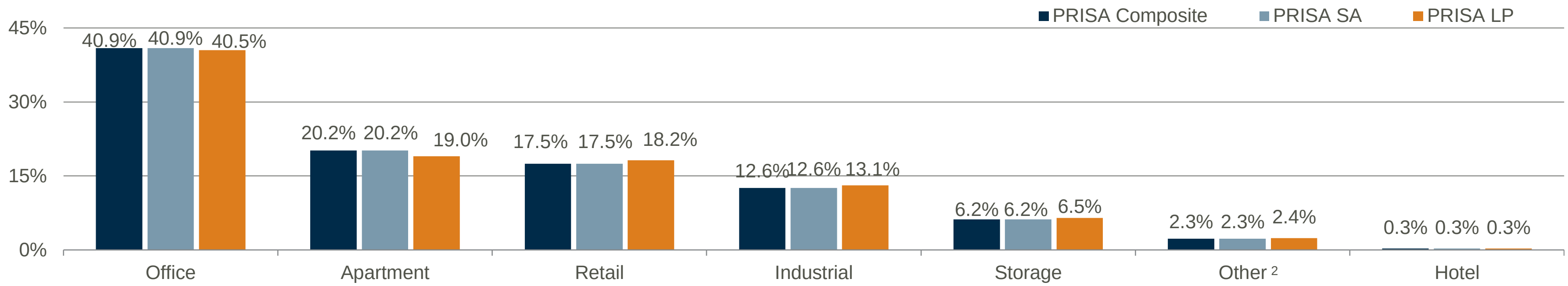
[1] "Gross Asset Value," "Net Asset Value" and Cash Balance represents the value of the assets held by PRISA SA and PRISA LP without netting out PRISA LP's respective interest therein. PRISA SA's net asset value is $14,017.3M as of December 31, 2016. [2] Includes floating rate loans with caps. [3] Based on PRISA SA's share of gross market value in properties and debt investments. [4] NFI-ODCE does not publish detailed property information. Market information is based on CSA definitions and calculated by extracting NFI-ODCE property data from the NCREIF Research Database. Data as of December 31, 2016. [5] Returns shown are time-weighted rates of return calculated in conformity with performance reporting standards and are before the deduction of Manager Compensation/Fees. Returns for NFI-ODCE are based on the final report published by NCREIF on January 30, 2017. Past performance is not a guarantee or a reliable indicator of future results. Please refer to the appendix for further information.

PRISA Risk Metrics & Diversification

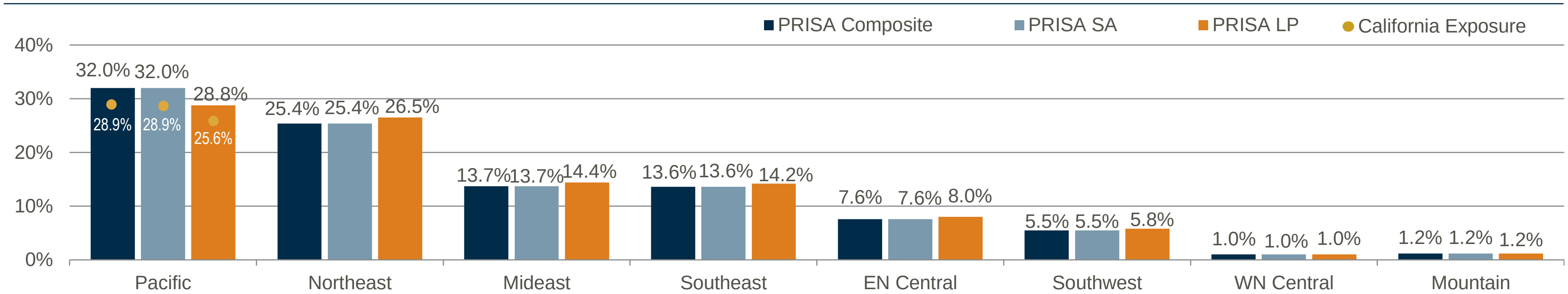
As of December 31, 2016

Key Risk Metrics	Guideline	PRISA Composite	PRISA SA	PRISA LP
Core	≥ 90%	91%	91%	91%
Leverage Ratio	≤ 30%	22.3%	22.3%	22.7%
Debt to Income Multiple	≤ 5x	5.3x	5.3x	5.4x
Single Asset Exposure	< 5%	International Place, 5.9%	International Place, 5.9%	International Place, 6.2%

PROPERTY TYPE DIVERSIFICATION[1]



GEOGRAPHIC DIVERSIFICATION[1]



[1] Based on PRISA's share of gross market value in properties and debt investments. [2] Other includes Harbor Garage, land and Atrium Note Receivable. Note: Please see page 2 for important information regarding PRISA Composite.

Endnotes

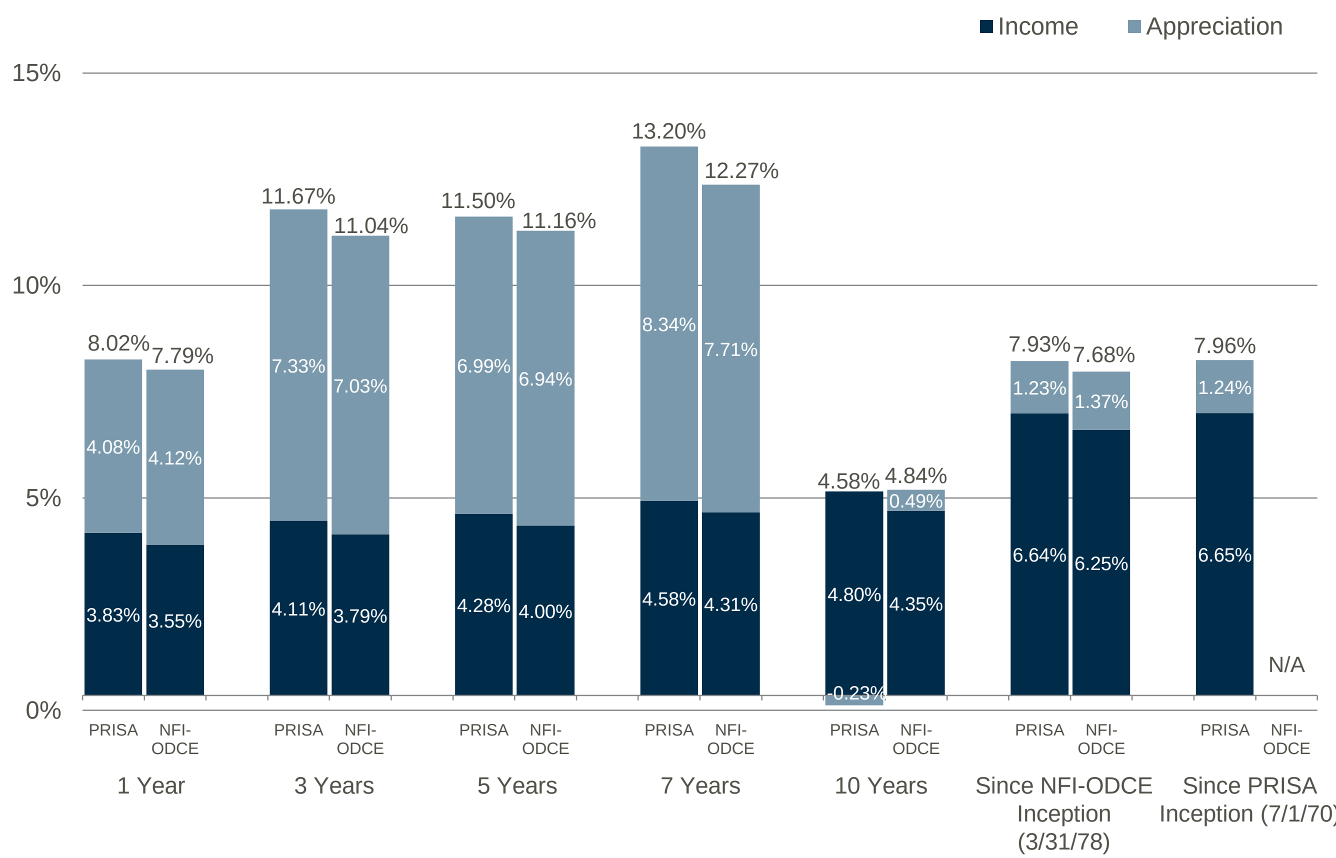
- **PRISA Separate Account ("PRISA SA")** is the original PRISA fund structured as an insurance company separate account with an inception date of July 1970.
- **PRISA LP** is the new investment vehicle formed on January 1, 2013 to invest in substantially all of the existing portfolio of PRISA SA assets (as of December 31, 2012) as well as all assets that PICA, on behalf of PRISA SA, elects to invest in going forward.
- **PRISA or PRISA Composite** reflects the combined performance of all assets held by PRISA SA and PRISA LP. Although this is not an actual fund in which any client is invested, it is indicative of the overall performance of the PRISA investment strategy and, therefore, the PRISA Composite returns and portfolio metrics will be provided to NCREIF for inclusion in the NFI-ODCE and other NCREIF Indices. PRISA may also refer to the PRISA dedicated portfolio and asset management teams.
- **PRISA REIT** is the entity through which PRISA LP will make all of its investments. As of December 31, 2016, PRISA LP and PRISA SA own approximately 20.7% and 79.3% of PRISA REIT, respectively. Any reference to PRISA LP's dollar exposure throughout this document refers to that of PRISA REIT, unless otherwise noted.
- **Important Note on Historical Information:** Economic terms and other portfolio metrics reported for PRISA, PRISA SA or PRISA LP that include periods to the formation of PRISA LP reflect information for PRISA SA for those periods prior to January 1, 2013. Prior to the formation of PRISA LP, PRISA and PRISA SA were one and the same.

PRISA SA Returns After Manager Compensation/Fees

As of December 31, 2016

Net Performance		
PRISA SA	4Q16	2016
Income	0.89%	3.83%
Appreciation	1.34%	4.08%
Total Return	**2.23%**	**8.02%**
NFI-ODCE	**1.88%**	**7.79%**

PRISA SA NET RETURNS VS. NFI-ODCE NET RETURNS



[1] Returns shown prior to January 1, 2013 are based upon PRISA SA only.

Note: Returns for NFI-ODCE are based on the final report published by NCREIF on January 30, 2017. Returns shown are time-weighted rates of return after deduction of Manager Compensation/Fees. Past performance is not a guarantee or a reliable indicator of future results. Please see page 2 for important information regarding PRISA Composite.

PGIM Real Estate's Definition of Core

- Office, retail, warehouse, storage, and residential properties that were more than 80% leased when purchased and hotels that were operating at, or near, market occupancy. (For the sake of clarity, properties will not move out of the core category if their occupancy falls below the 80% threshold subsequent to acquisition)
- Properties (office, retail, warehouse, multi-family or storage) that were developed, renovated or purchased and have now achieved leasing of 80% or more of the total leasable area
- Properties undergoing a minor renovation/expansion that does not have a material impact on the property's occupancy or operation
- Build-to-suit investments which are 80% or more pre-leased and where the Fund has reasonable protection from completion and cost overrun risk
- Investment activities incidental to the Fund's main strategies:
  - Listed securities or purchase money mortgages accepted as part of the consideration in a property sale
  - Senior first mortgages with an LTV at origination of 65% or less

Frank E. Garcia

Managing Director & PRISA Senior Portfolio Manager

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Number of Years of Real Estate Experience: 24
Number of Years with the Firm: 3

Frank Garcia is a managing director at PGIM Real Estate and senior portfolio manager for PRISA, PGIM Real Estate's flagship U.S. core equity real estate fund. Based in San Francisco, Frank is responsible for managing all aspects of the fund including portfolio strategy, investment decisions, and management of the PRISA team. Frank is a member of the U.S. Executive Council and Investment Committee.

Previously, Frank served as a portfolio manager for PRISA. Before joining PGIM Real Estate in 2013, Frank was a managing director at RREEF, where he was a senior portfolio manager for the firm's flagship core fund, responsible for a nearly $5 billion portfolio of assets, and the lead portfolio manager for the firm's flagship value-add fund that reached a peak gross value of $4 billion. He was also a voting member of the firm's investment committee. Earlier, Frank worked at Spieker Properties as a vice president in Northern California, responsible for the development, management ,and leasing of approximately three million square feet of office and industrial space with a total portfolio value of over $250 million. He was also previously an industrial real estate broker with CB Commercial (now CBRE).

Frank has a bachelor's degree from the University of the Pacific with a concentration in business administration.

Joanna Mulford

Managing Director & PRISA Portfolio Manager/Chief Financial Officer

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(973) 683-1743

Number of Years of Real Estate Experience: 20
Number of Years with the Firm: 27

Joanna is a managing director at PGIM Real Estate and the portfolio manager and chief financial officer for PRISA, PGIM Real Estate's flagship U.S. core equity real estate fund. Based in Madison, New Jersey, she is involved in all aspects of managing the fund including portfolio strategy, making investment decisions and management of the PRISA team. As CFO, she has primary responsibility for developing and executing the fund's capital strategy and oversight of financial operations and tax structuring.

Prior to joining the PRISA team in 2008, Joanna was responsible for U.S. real estate investment sales on behalf of PGIM Real Estate's clients.

During her tenure with PGIM Real Estate, Joanna has served as the portfolio manager of several closed-end funds, including a value-add strategy with a private REIT structure. Joanna also helped launch PGIM Real Estate's debt investment platform, raising investor capital for and managing its first mezzanine fund.

Prior to this, she was responsible for the asset management of a portfolio of commercial real estate investments including office, residential, retail, storage and industrial property types and mezzanine loans.

Before joining PGIM Real Estate in 1997, Joanna was a member of Prudential Financial, Inc.'s Private Equity group, working on behalf of the company's domestic and international subsidiaries investing in private equity transactions. Previously, she was a member of the Comptrollers unit of the Prudential Asset Management Company since joining the firm in January of 1990. She provided support to several of Prudential's money management subsidiaries investing in both public and private equities.

Joanna has a bachelor's degree in finance and management and a master of business administration from Rutgers University.

James Glen

Executive Director & PRISA Portfolio Manager

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Number of Years of Real Estate Experience: 16
Number of Years with the Firm: 2

James Glen is an executive director of PGIM Real Estate and portfolio manager for PRISA, PGIM Real Estate's flagship core real estate fund. Based in Madison, New Jersey, James is involved in asset management oversight and transactions, and works with the PRISA team on fund strategy.

Prior to joining PGIM Real Estate, James served as global head of research and strategy within BlackRock's real estate group, with responsibility for monitoring real estate markets globally and formulating investment strategy to support $24 billion of investments across the United States, Europe and Asia Pacific. Previously, he spent more than five years with BlackRock's portfolio management group, where he worked on the core and opportunistic real estate funds in the United States and internationally. James' service with BlackRock's real estate group and its predecessor, SSR Realty Advisors, dates back to 2004. Prior, James was a senior economist at the economic consulting firm Moody's Analytics and began his career as an analyst at JP Morgan Chase.

James earned a bachelor's degree in economics from the University of North Carolina at Greensboro and a master's degree in economics from the University of Delaware. He is a member of the National Council of Real Estate Investment Fiduciaries (NCREIF), the Pension Real Estate Association (PREA), the National Association of Real Estate Investment Managers (NAREIM), and the CFA Institute.

Jeremy Keenan

Vice President & PRISA Assistant Portfolio Manager

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Number of Years of Real Estate Experience: 10
Number of Years with the Firm: 5

Jeremy Keenan is assistant portfolio manager for PRISA. As such, he is involved in many aspects of managing the Fund including portfolio strategy, investment selection, sales, asset management and portfolio reporting.

Previously, Jeremy was Vice President and Corporate Counsel of Prudential Financial, Inc., responsible for supporting PGIM Real Estate. PGIM Real Estate's law department supports all aspects of PGIM Real Estate's investment and advisory activities, which include equity and debt, private investments in real estate, real estate operating companies, REITs and other real estate-related vehicles on behalf of single clients and commingled funds.

Jeremy's responsibilities included acting as lead internal counsel responsible for oversight of all aspects of PRISA, including fund-level matters, REIT compliance, tax structuring and adherence to fund requirements in all PRISA transactions. His responsibilities also included legal analysis in structuring, marketing and launching new PGIM Real Estate products in the United States, structuring and oversight of acquisition transactions, portfolio and property level finance transactions, and providing counsel to other PGIM Real Estate-advised funds and accounts.

Prior to joining Prudential in 2011, Jeremy was an attorney in the Real Estate Department of the New York office of Jones Day, specializing in real estate transactions and real estate private equity funds. Jeremy holds a Bachelor of Arts Degree in Economics from Hamilton College and a J.D. from Cardozo Law School, where he graduated cum laude.

Mark A. Oczkus

Executive Director

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Number of Years of Real Estate Experience: 29
Number of Years with the Firm: 18

Mark A. Oczkus is an executive director at PGIM Real Estate and a member of the U.S. Business Development and Client Relations group. Based in San Francisco, Mark is responsible for managing relationships with institutions in the western United States.

Prior to assuming his current position with PGIM Real Estate in 1998, Mark was a vice president with SSR Realty Advisors, responsible for marketing to corporate pension plans nationwide. Mark was previously the director of marketing for MIG Realty Advisors, and served in a variety of marketing and client-relation functions, including consultant relations and sales to public and corporate pension plans.

Mark has a bachelor’s degree and a master of business administration from the University of California, Berkeley.

Marcus E. Berry III

Vice President

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(415) 486 3832

Number of Years of Real Estate Experience: 12
Number of Years with the Firm: 2

Marcus E. Berry III is a vice president at PGIM Real Estate and a member of the U.S. Business Development and Client Relations group. Based in San Francisco, Marcus is responsible for managing relationships with major corporate, public, and Taft Hartley pension funds in the western United States.

Marcus joined PGIM Real Estate in 2014. Previously, Marcus was a vice president with TA Associates Realty from 2006 to 2014, where his responsibilities included the acquisition of office and industrial assets on the West Coast, the asset management and repositioning of more than three million square feet of value-add office and industrial space, and marketing to major corporate and public pension funds, endowments, and foundations located on the West Coast. Earlier, Marcus worked at Ryder Stilwell Properties where he oversaw a diversified portfolio of office, industrial, multifamily, and retail assets across the west and southwest United States on behalf of high-net-worth clients. Before his career in real estate, Marcus led business development initiatives for a series of venture capital-backed technology companies.

Marcus has a bachelor’s degree in international affairs from the University of Colorado, Boulder, and a master of business administration in real estate finance from the University of Southern California.

Valuation Policy

All properties held by the Fund are accounted for at fair value in accordance with applicable contractual requirements and in compliance with authoritative accounting guidance ("U.S. GAAP"). Property level debt is also accounted for at fair value based on the amount at which the impact of the liability could be measured in a current transaction exclusive of direct transactions costs. The Fund's current valuation procedure is as follows:

The Chief Real Estate Appraiser of PGIM (the "Chief Appraiser") is responsible for the valuation process of the Fund's investments and approves all final gross real estate values. The Chief Appraiser position is independent from PGIM-Real Estate and reports directly to the VP of PGIM Center Finance of PGIM, Inc. The Chief Appraiser retains an independent Appraisal Management Firm ("AMF") to run the day-to-day operation of the appraisal process. The AMF is responsible to assist with the selection, hiring, oversight, rotation and/or termination of third party appraisal firms. Third-party appraisers are typically rotated on a three-year cycle and are selected from the Chief Appraiser's Approved Vendor's List through a competitive bid process. To be included in the list, individual experts are interviewed, referenced and a sampling of their work is reviewed to understand capabilities and competencies of the appraisal team. In addition to the administrative services, the AMF collects asset manager comments and provides independent reviews of the appraisal reports in order to maintain documentation and monitoring of the independence and accuracy of the valuation process, and reasonableness of the conclusions. The reported fair values are based on the external appraisal conclusions following the completion of the formal internal and external reviews and sign-offs. However, in the rare instance a material fact or error be identified and considered unresolved during the AMF review process, the AMF is responsible to provide the substantiation and compelling evidence to make an adjustment to the appraised value and it would be reported to the Fund investors.

All real estate properties and other investments are appraised every quarter with the exception of properties recently acquired or under a letter of intent for sale. The fair value of land held for development is considered to be acquisition cost, including soft costs incurred prior to development, assuming it is the assumption a market participant would use. Cost is considered fair value for properties under development until substantial completion or preleasing has occurred assuming the same premise. If cost is not considered to be representative of market, the properties are independently appraised based on the general policy. All appraisals consider the conventional method of valuation (income, cost and market) and all appraisals and AMF appraisal reviews are performed in accordance with the Uniform Standards of Professional Appraisal Practice ("USPAP"), which is the standard for real estate appraisals in the United States. USPAP is consistent in principle with the Red Book Real Estate Valuation Standards set by Royal Institute Chart of Surveyor and the International Valuation Standards as set forth by the International Valuation Standards Council.

As described above, the estimated market value of real estate and real estate related assets is determined through an appraisal process. These estimated market values may vary significantly from the prices at which the real estate investments would sell, since market prices of real estate investments can only be determined by negotiation between a willing buyer and seller. Valuations should be considered only estimates of value and not a measure of realizable value. In addition, such valuations should be viewed as subject to change with the passage of time.

Disclosures

PGIM is the primary asset management business of Prudential Financial, Inc. PGIM Real Estate is PGIM's real estate investment advisory business and operates through PGIM, Inc., a registered investment advisor. Prudential, the Prudential logo, PGIM Real Estate and the Rock symbol are service marks of Prudential Financial, Inc. and its related entities, registered in many jurisdictions worldwide.

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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 PGIM Real Estate efforts to monitor and manage risk but does not imply low risk.

All performance and targets contained herein are subject to revision by PGIM Real Estate and are provided solely as a guide to current expectations. There can be no assurance that any product or strategy described herein will achieve any targets or that there will be any return of capital. Past performance is not a guarantee or reliable indicator of future results. No representations are made by PGIM Real Estate as to the actual composition or performance of any account.

Disclosures

PRISA: The basis for the performance target set forth within this presentation is based on a fund that is a broadly diversified, core portfolio that invests primarily in existing, income-producing properties with strong cash flow that is expected to increase over time and thereby provide the potential for capital appreciation. Target returns are expected to be achieved over a complete market cycle which can be defined as a period of time whereby valuations have bottomed (hit a trough), rose to a peak and then declined to the trough point again. PGIM Real Estate 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 market or other material changes in regional or local markets specific to this strategy. Factors necessary to achieve this performance target include a property type and geographic diversification strategy, which is intended to reduce risk and maintain a broadly diversified portfolio. Property selection and performance impact the ability to achieve the target returns, including asset location, asset class, and property type assets, investment strategy and the capitalization of investment. Property and Fund performance are subject to healthy economic conditions in the US market and sub-markets where investments are located. Factors that would mitigate against achieving this performance target would include, but are not limited to, unforeseen sudden and drastic changes in economic and capital markets and/or demographic trends affecting the US or a particular market or sub market that could impact property performance and/or investors' demand for commercial real estate. There can be no guarantee that this target will be achieved.

The financial indices referenced herein as benchmarks are provided for informational purposes only. The holdings and portfolio characteristics may differ from those of the benchmark(s), and such differences may be material. Factors affecting portfolio performance that do not affect benchmark performance may include portfolio rebalancing, the timing of cash flows, credit quality, diversification and differences in volatility. In addition, financial indices do not reflect the impact of fees, applicable taxes or trading costs which reduce returns. Unless otherwise noted, financial indices assume reinvestment of dividends. You cannot make a direct investment in an index. The statistical data regarding such indices has not been independently verified by PGIM Real Estate.

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 PGIM Real Estate and, if such securities are held, no representation is being made that such securities will continue to be held.

Net returns shown herein are time-weighted rates of return after deduction of manager compensation. Actual manager compensation schedules and other expenses are described in the individual PRISA SA contracts and the governing documents of PRISA LP and its subsidiaries. Please see Part II of the PGIM Inc. Form ADV, for more information concerning manager compensation.

Disclosures

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

The information contained herein is provided by the PGIM Real Estate, a business unit of PGIM. PGIM is the investment manager of PRISA SA and PRISA LP.

In addition to this document, PGIM Real Estate or its agent may distribute to you an offering memorandum (the "PPM") and the constitutional documents of the Fund (including a limited partnership agreement and/or other governing fund document and a subscription agreement or the Investment Brief for PRISA LP and constitutional documents of PRISA LP together with the PPM, the "Memorandum"). You should review and carefully consider these documents, especially the risk factors explained within them, and should seek advice from your legal, tax, and other relevant advisers before making any decision to subscribe for interests in the Fund. If there is any conflict between this document and the Memorandum and constitutional documents of the Fund, the Memorandum and constitutional documents shall prevail. You must rely solely on the information contained in the Fund's Memorandum and constitutional documents in making any decision to invest.

There can be no assurance that the Fund will meet any performance targets referenced herein. An investor could lose some or all of its investment in the Fund. Investments are not guaranteed by the Fund, PGIM Real Estate, their respective affiliates, or any governmental agency.

Certain securities products and services are distributed by Prudential Investment Management Services LLC, a Prudential Financial company and member of SIPC.

Risk Factors: Investments in commercial real estate and real estate-related entities are subject to various risks, including adverse changes in domestic or international economic conditions, local market conditions and the financial conditions of tenants; changes in the number of buyers and sellers of properties; increases in the availability of supply of property relative to demand; changes in availability of debt financing; increases in interest rates, exchange rate fluctuations, the incidence of taxation on real estate, energy prices and other operating expenses; changes in environmental laws and regulations, planning laws and other governmental rules and fiscal policies; changes in the relative popularity of properties risks due to the dependence on cash flow; risks and operating problems arising out of the presence of certain construction materials; and acts of God, uninsurable losses and other factors which are beyond the control of the Manager and the Fund. As compared with other asset classes, real estate is a relatively illiquid investment. Therefore, investors' withdrawal requests may not be satisfied for significant periods of time. Other than its general fiduciary duties with respect to investors, PGIM Real Estate has no specific obligation to take any particular action (such as liquidation of investments) to satisfy withdrawal requests. In addition, as recent experience has demonstrated, real estate is subject to long-term cyclical trends that give rise to significant volatility in real estate values.

Disclosures

The Interests have not been and will not be registered under the U.S. Securities Act and are being offered and sold in compliance with Regulation D under the U.S. Securities Act. The Interests are subject to restrictions on transferability and resale and may not be transferred or resold except as permitted under Regulation D under the U.S. Securities Act and the applicable state, foreign and other securities laws, pursuant to registration or exemption there from. The transferability of Interests will be further restricted by the terms of the Partnership Agreement of the applicable Fund. Prospective Investors should be aware that they may be required to bear the financial risks of this investment for an indefinite period of time.

NCREIF Fund Index-Open End Diversified Core Equity (NFI-ODCE): The NFI-ODCE, short for NCREIF Fund Index - Open End Diversified Core Equity, is the first of the NCREIF Fund Database products and is an index of investment returns reporting on both a historical and current basis the results of private open-end commingled funds pursuing a core investment strategy, some of which have performance histories dating back to the 1970s. Fund membership requires the following criteria: (1) Private open-end funds; (2) Not more than 40% leverage; (3) At least 80% of assets in the five major property types; (4) At least 95% of assets located in the U.S.; and (5) Not more then 70% of assets in one region or one property type. Reinvestment of dividends is not applicable to this asset class. Note: A benchmark Index is not professionally managed, does not have a defined investment objective, and does not incur fees or expenses. Investors cannot invest directly in an index.

The NCREIF Property Index (NPI): The NCREIF Property Index (“NPI”) is comprised of the NCREIF Classic Property Index (unleveraged) and the NCREIF Leveraged Property Database. The universe of investments includes: (1) Wholly owned and joint-venture investments; (2) Existing properties only -- no development projects; and (3) Only investment-grade, non-agricultural, income-producing properties: apartments, hotels, office, retail, office showroom/R&D, and warehouses. The database fluctuates quarterly as participants acquire properties, as new members join NCREIF, and as properties are sold. Sold properties are removed from the Index in the quarter the sales take place (historical data remains). Each property’s market value is determined by real estate appraisal methodology, consistently applied. Please note that when returns are computed for the NPI, the returns for the levered properties are computed on a de-levered basis, i.e., the impact of financing is excluded. Reinvestment of dividends is not applicable to this asset class. Note: A benchmark Index is not professionally managed, does not have a defined investment objective, and does not incur fees or expenses. Investors cannot invest directly in an index.

For limited distribution to institutional and professional investors only

UBS

Trumbull Property Fund (TPF)

Real estate
investment funds

Presented to: Ventura County Employees' Retirement Association
Presented by: Thomas C. Klugherz, Executive Director

1177 Avenue of Americas, New York, NY

February 27, 2017

General risk disclosure

Certain sections of this presentation that relate to future prospects are forward looking statements and are subject to certain risks and uncertainties that could cause actual results to differ materially. This material is designed to support an in-person presentation, is not intended to be read in isolation, and does not provide a full explanation of all the topics that are presented and discussed.

An investment in real estate will involve significant risks and there are no assurances against loss of principal resulting from real estate investments or that the portfolio's objectives will be attained.

This is not a recommendation. Investors must have the sophistication to independently evaluate investment risks and to exercise independent judgment in deciding to invest in real estate funds. Investors must also have the financial ability and willingness to accept and bear the risks, including, among other things:

- **Risk of illiquidity.** Real estate is an illiquid investment and the account may not be able to generate sufficient cash to meet withdrawal requests from investors. Redemptions may be delayed indefinitely;
- **Risks of investing in real estate.** These risks include adverse changes in economic conditions (local, national, international), occupancy levels and in environmental, zoning, and other governmental laws, regulations, and policies;
- **Use of leverage.** Leverage will increase the exposure of the real estate assets to adverse economic factors, such as rising interest rates, economic downturns, or deteriorations in the condition of the properties or their respective markets and changes in interest rates; and
- **Limitations on the transfer of fund units**. There is no public market for interests in any of our funds and no such market is expected to develop in the future.
- **Legal & Taxation**. Investors should consult their own legal and tax advisers for potential US and/or local country legal or tax implications on any investment

Investors should evaluate all risk and uncertainties before making any investment decision. Risks are detailed in the respective fund's offering memorandum.

Table of contents

Section 1

Organization and Capabilities

UBS

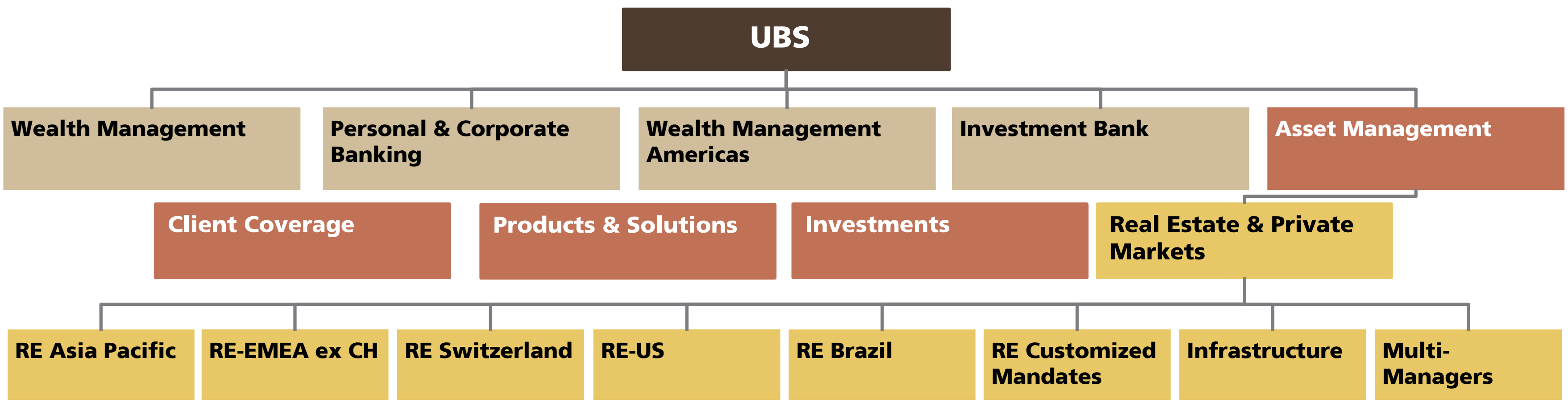
REPM – Solidly positioned within UBS

UBS

- UBS draws on its over 150-year heritage to serve private, institutional and corporate clients worldwide, as well as retail clients in Switzerland
- Present in all major financial centers worldwide, with offices in more than 50 countries and employing circa 60,000 people globally
- UBS remains the best-capitalized large global bank, with a fully applied common equity tier (CET1) capital ratio of 14.0% as of September 30, 2016, above the Bank's target of at least 13%

UBS Asset Management

- UBS Asset Management is a large-scale asset manager with well-diversified businesses across regions, capabilities and distribution channels
- Wide range of traditional asset classes, real estate, infrastructure, private equity and hedge fund investment capabilities
- Invested assets total USD 670 billion as at September 30, 2016
- A leading fund house in Europe, the largest mutual fund manager in Switzerland[2] and one of the largest real estate and fund of hedge funds investment managers in the world



Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017
Notes: Illustrative chart only; does not include regional set-ups and Corporate Center functions

US real estate investment experience and mission

- Over 39 years of core and value added real estate investment experience
- USD 31.7 billion of assets for over 600 clients
- Real estate organization with 209 employees and offices in California, Connecticut, and Texas
- Quality people, properties and relationships

Our mission is to provide both superior risk-adjusted investment performance for our clients through private real estate investment strategies and outstanding client service.

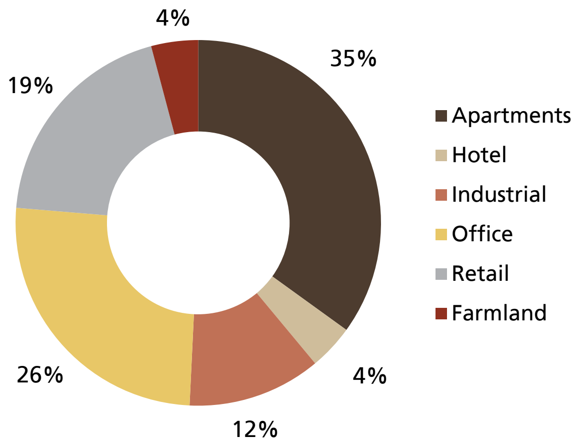
35 West Wacker, Chicago, IL (TPF)

Data as of December 31, 2016. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017.
Includes UBS Farmland Investors LLC

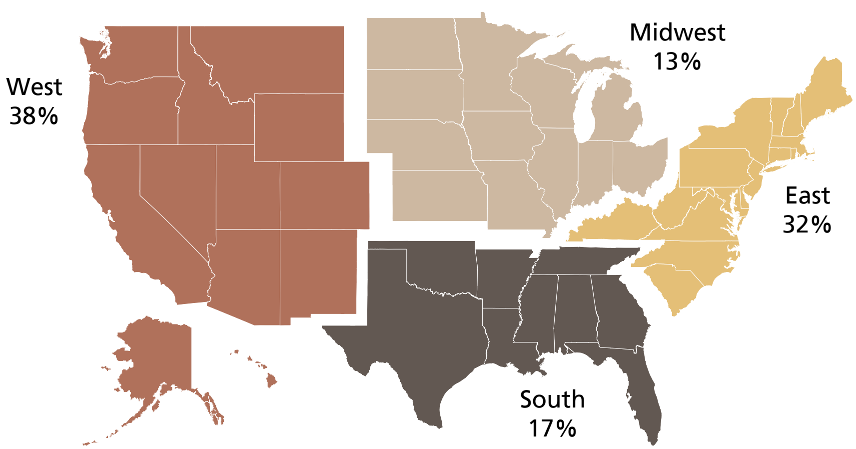
Real Estate funds in the US - Overview

Gross assets – USD 31.7 billion

Assets by property type



Assets by geographic region



Data as of December 31, 2016. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. Notes: Assets by property type and geographic regions represent real estate assets only and exclude other assets, such as cash, which are included in Gross Assets. Assets include UBS Farmland Investors LLC.

US direct real estate funds

	Trumbull Property Income Fund (TPI)	Trumbull Property Fund (TPF)	Trumbull Property Growth & Income Fund (TPG)	AgriVest Farmland Fund, Inc. (UBS-AFF)
Investment strategy	**Core income-oriented investments** – primarily through participating mortgages secured by real estate assets	**Diversified core real estate** – primarily through direct ownership of real estate assets	**Value-added real estate** tactical orientation w/ investments through joint ventures, direct and indirect ownership	**Investing in row,** vegetable and permanent crop farmland in select agricultural areas across the US. Leasing strategies avoid farming and commodity risks
Financial objective[(1)]	Seek to achieve at least a 5% real rate of return over any given 3- to 5-year period [(2)] Seek to provide a positive total return for each quarterly period regardless of market conditions	Seek to outperform the NFI-ODCE index over a full market cycle Seek to achieve at least a 5% real rate of return over any given 3- to 5-year period[(2)]	Seek to outperform the NFI-ODCE Index by at least 200 bps per annum over any given market cycle Seek to achieve at least a 7% real rate of return over any given market cycle[(2)]	Seek to exceed the Core Farmland Index (CFI) over 3- to 5-year period
Leverage	Low or no Leverage 0% at 12/31/2016	Moderate 15.0% at 12/31/2016	Target of approximately 50% of GAV 39.4% at 12/31/2016	Maximum 25% leverage 0% at 12/31/2016
Gross assets	USD 2.9b in 52 investments	USD 23.5b in 219 investments	USD 922.4 million in 21 investments	USD 674.0 million in 58 investments
Inception	1981	1978	2006	2006
Total return[(3)] (gross/net)	One year: 8.80%/7.91% Ten year: 7.42%/6.56%	One year: 7.21%/6.14% Ten year: 5.95%/4.94%	One year: 17.01%/14.57% Ten year: 6.99%/4.94%	One year: 7.22%/6.15% Ten year: 10.18%/9.10%

Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. Notes: [(1)] There is no assurance that the financial objective will ultimately be realized and the possibility of loss does exist.[(2)] Return adjusted for inflation, before fees. [(3)] Returns supplement the respective Composite, previously provided or included herein.

Direct US real estate for multi-asset portfolios in DC plans

UBS Trumbull Diversified Property Collective Fund

Investment Strategy	Actively manage a portfolio of institutional-quality real estate investments; combine existing products on the UBS real estate platform with passive real estate securities to create **a comprehensive real estate solution**
Product Objective	A UBS real estate fund of funds that enables eligible retirement plans to access private real estate within a diversified investment strategy, **providing daily valuation and managed liquidity** [(1)]
Allocation Bands	Long-term target allocation combines diversification and liquidity: 70-90% private real estate, 15-25% public real estate securities and cash equivalents
Portfolio Team	Distinct portfolio management team makes strategic allocations based on a research-driven investment philosophy
Target Investors	Eligible retirement plans, institutional asset managers, and other custom multi-asset retirement portfolios; the Fund will not be offered directly to plan participants as a stand-alone option
Other Features	Bank collective trust structure and ERISA fiduciary fund management Daily valuation Managed liquidity policy Fees: 0.90% management fee based on net asset value (NAV) Minimum investment: USD 1M for defined contribution and defined benefit plans

Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017.
Notes: [(1)] Liquidity is one of the Fund's primary objectives, but it cannot be guaranteed.

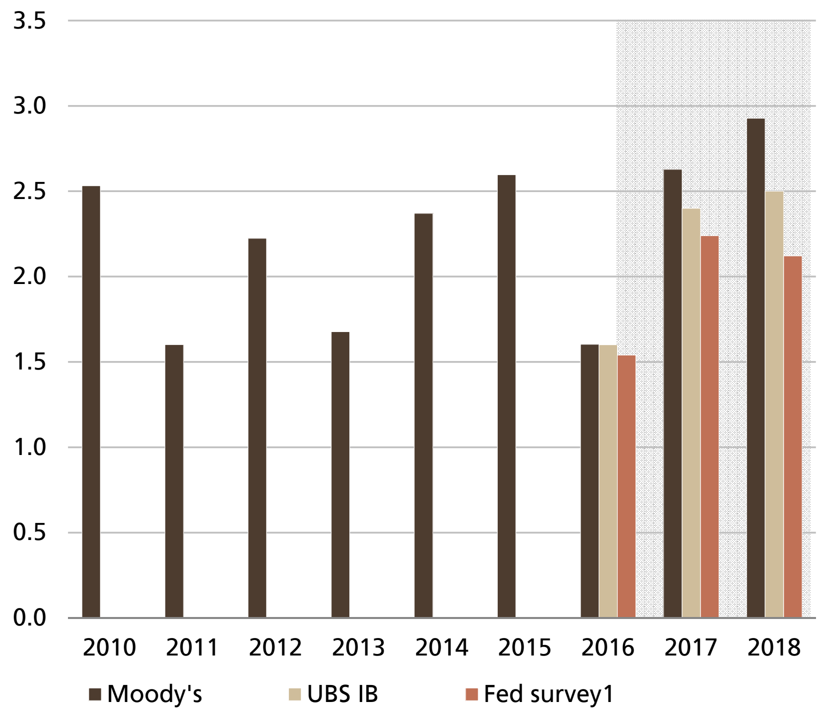
Section 2

Market Overview

UBS

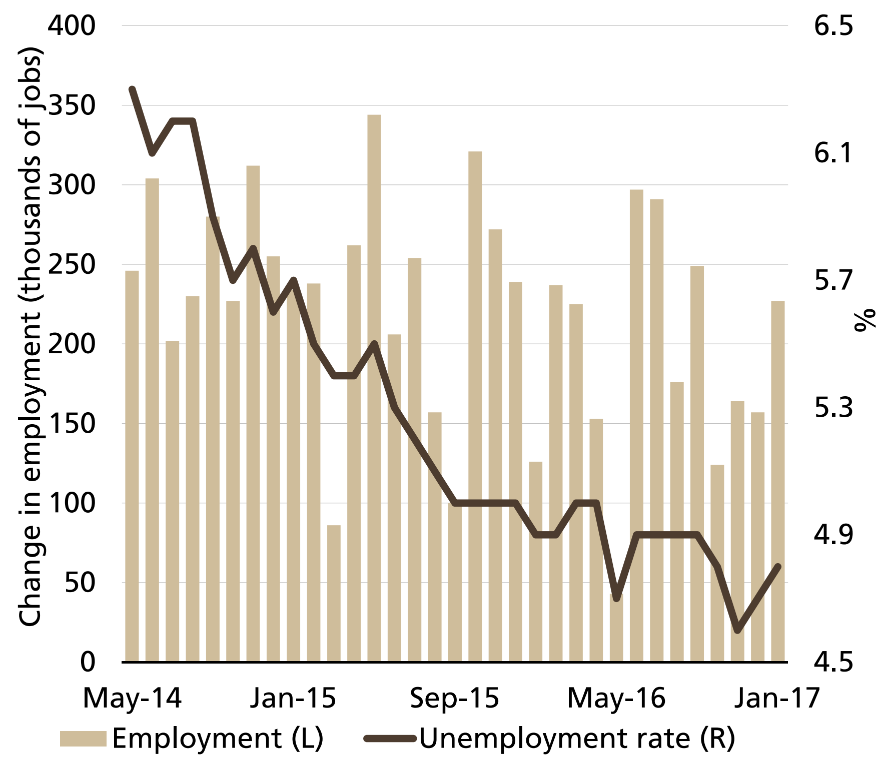
US economy – positive trends

Gross Domestic Product



Source: Moody's Analytics and UBS Investment Bank as of December 2016
1 Fed survey refers to the quarterly Survey of Professional Forecasters released by the Federal Reserve Bank of Philadelphia and is as of November 14, 2016
*Shaded area indicates forecast data
Updated: February 7, 2017

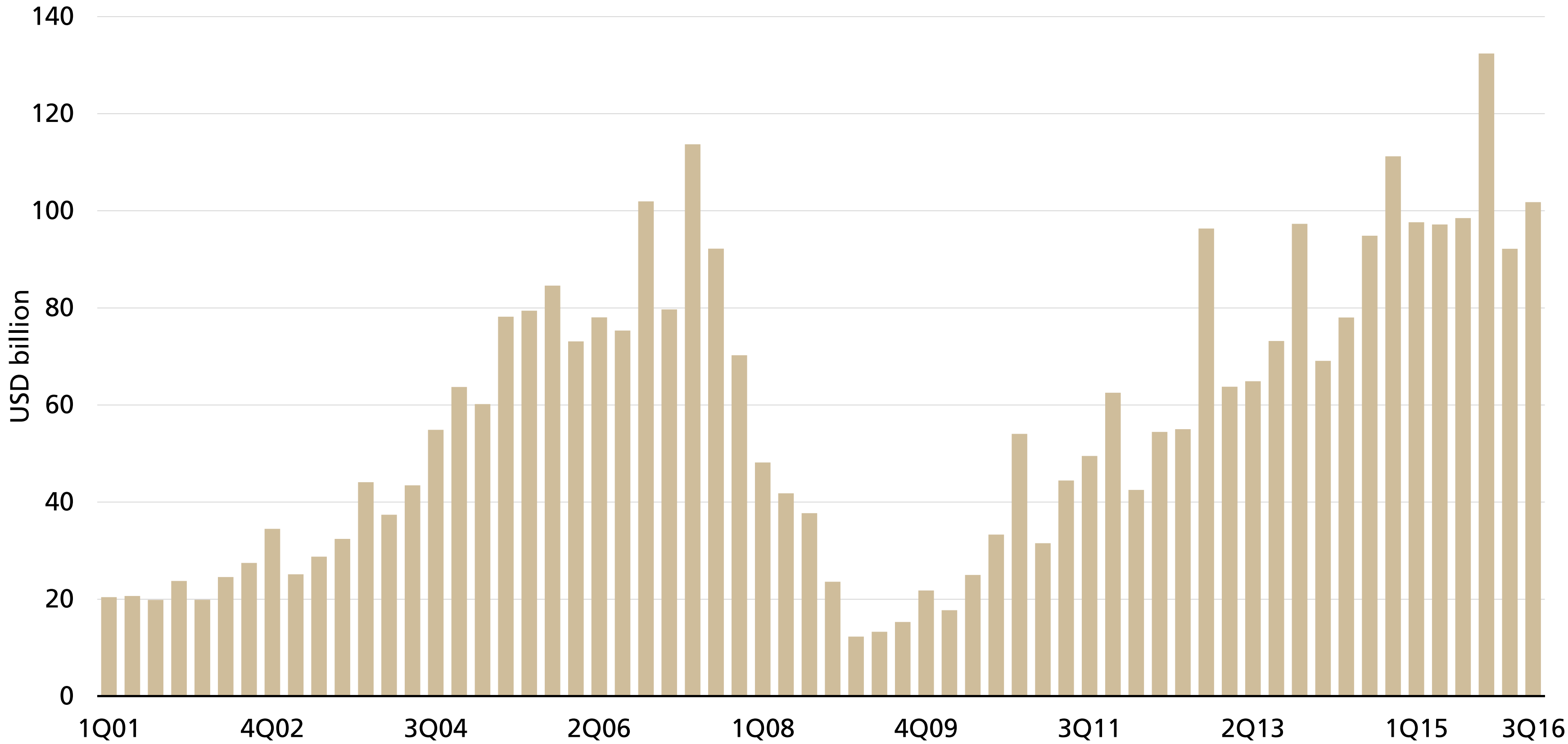
Labor Market



Source: Moody's Analytics as of January 31, 2017
Updated: February 7, 2017

Transactions

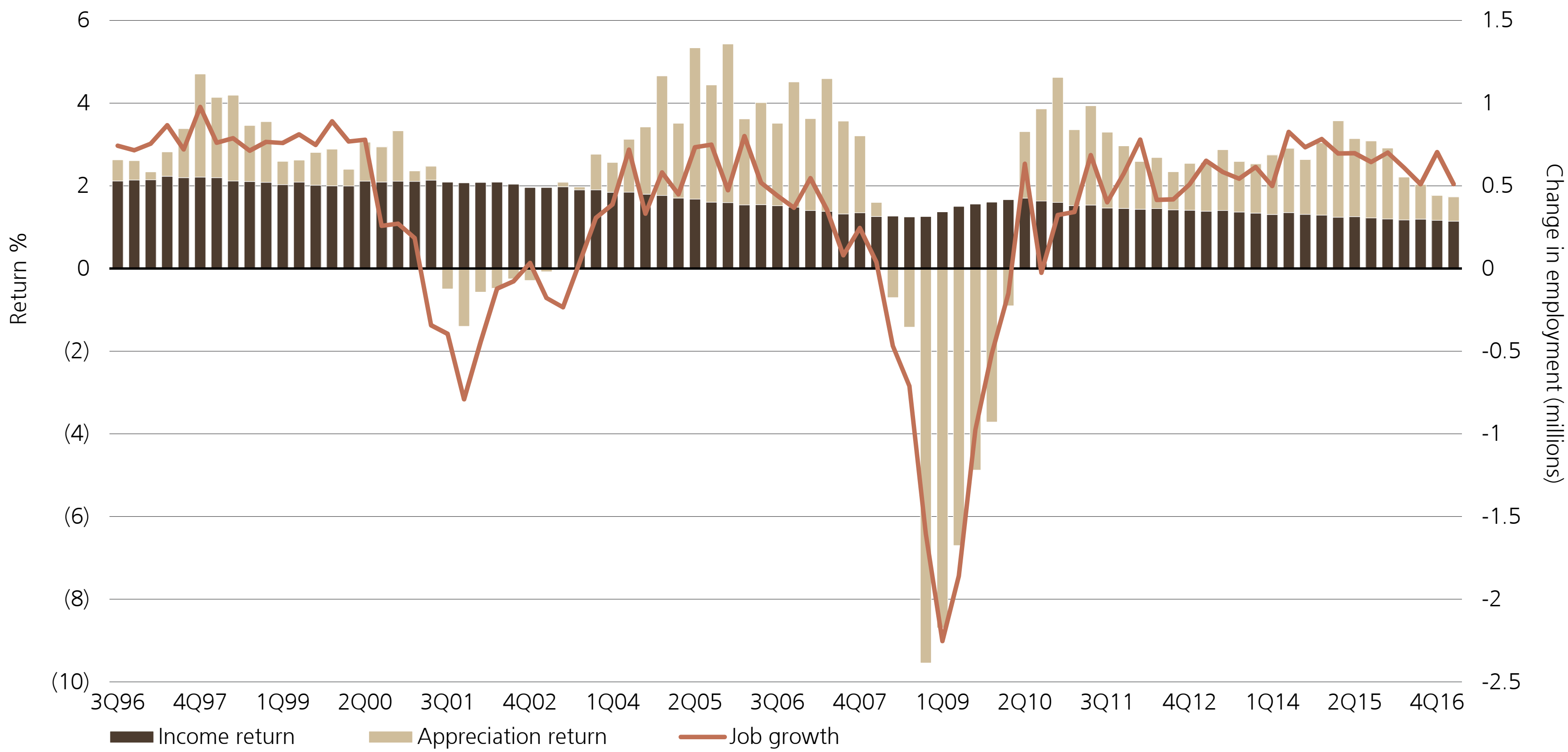
All commercial and multifamily



Source: Real Capital Analytics as of September 2016
Updated: November 14, 2016

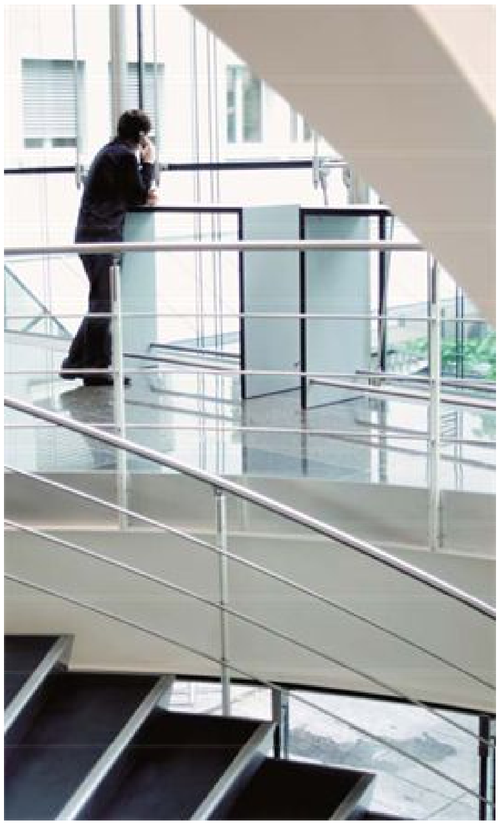
Real Estate Returns

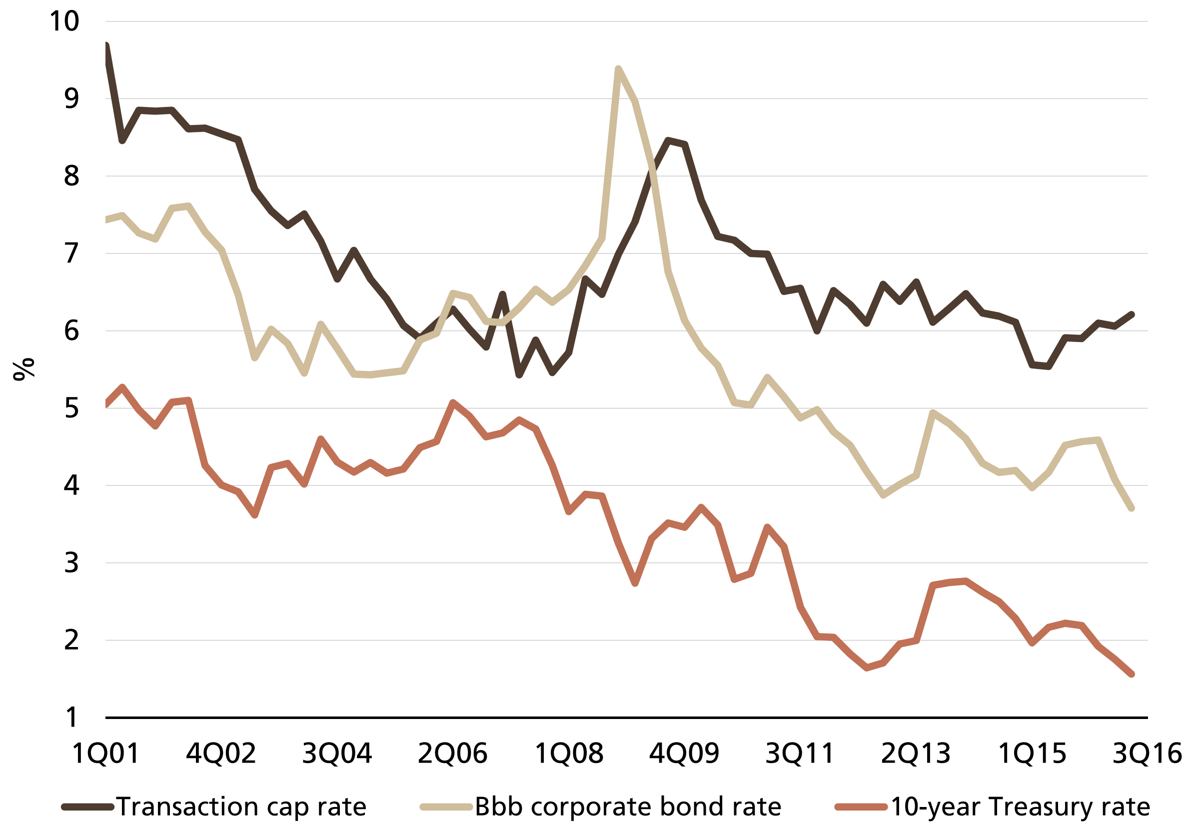
Returns and employment growth



Source: NCREIF and Moody's Analytics as of as of December 2016
Updated: February 7, 2017

Rate comparison – low rates with wide spread





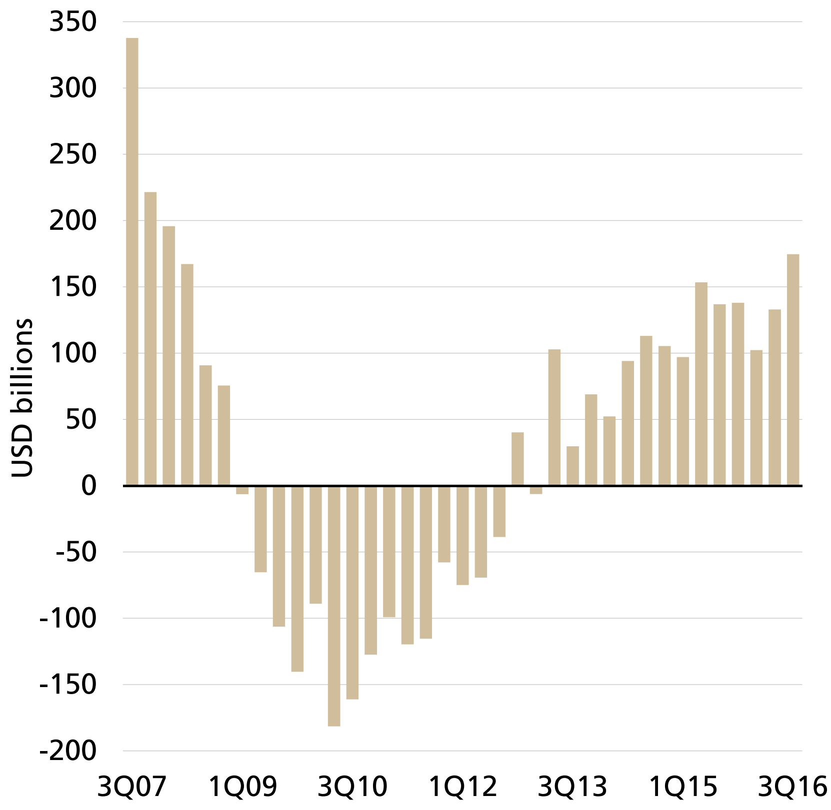
Source: Moody's Analytics and NCREIF as of September 30, 2016
Updated: December 14, 2016

The yields are derived from pricing data on a regularly-replenished population of seasoned corporate bonds in the U.S. market, each with current outstandings over $100 million. The top four notches: ratings Aaa, Aa, A, and Baa are considered "investment-grade" bonds by Moody's Analytics. Lower notches are known as "speculative grade."

Unique conditions for new lending

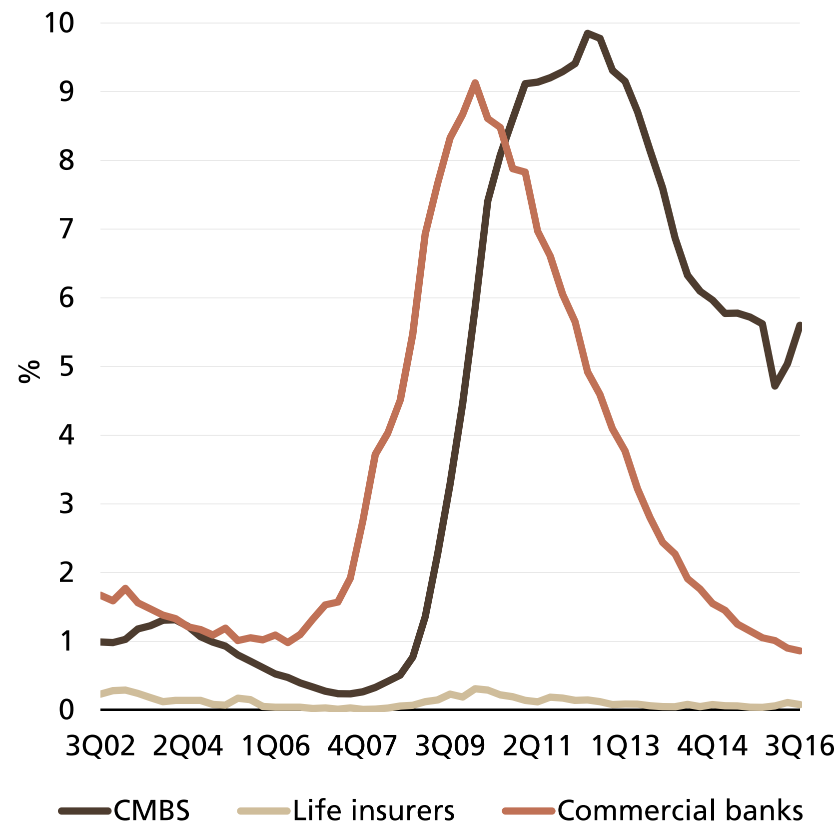
Commercial mortgage loans

Total net flows



Source: Moody's Analytics as of September 2016
Updated: December 13, 2016

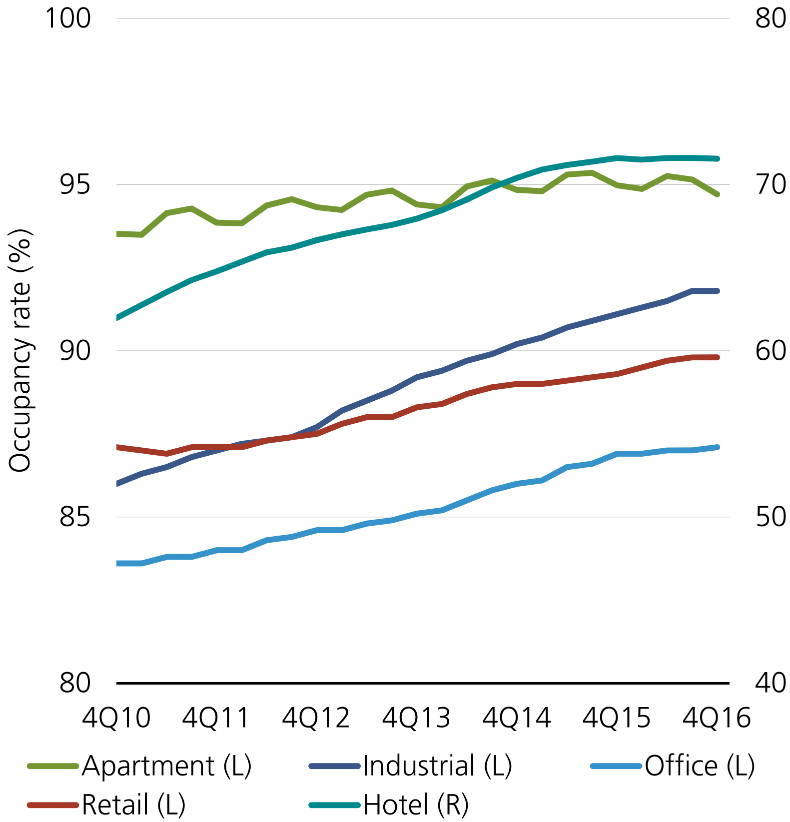
Delinquency rates low for quality properties



Source: Moody's Analytics as of September 2016

US real estate fundamentals

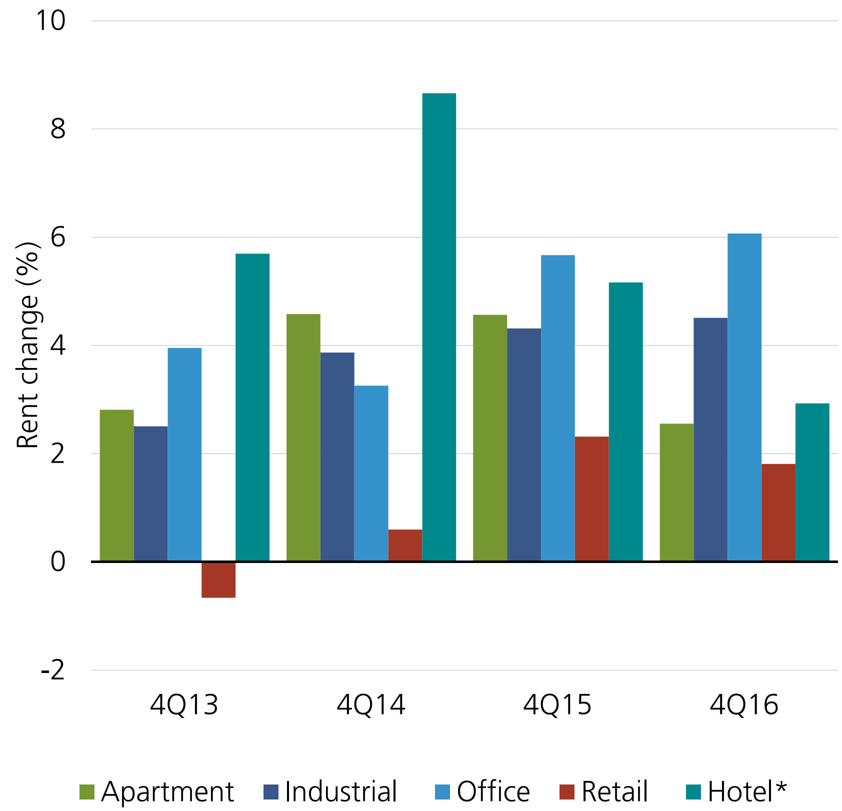
Occupancy by sector



Source: Axiometrics and CBRE-Econometric Advisors as of December 2016

Updated: February 8, 2017

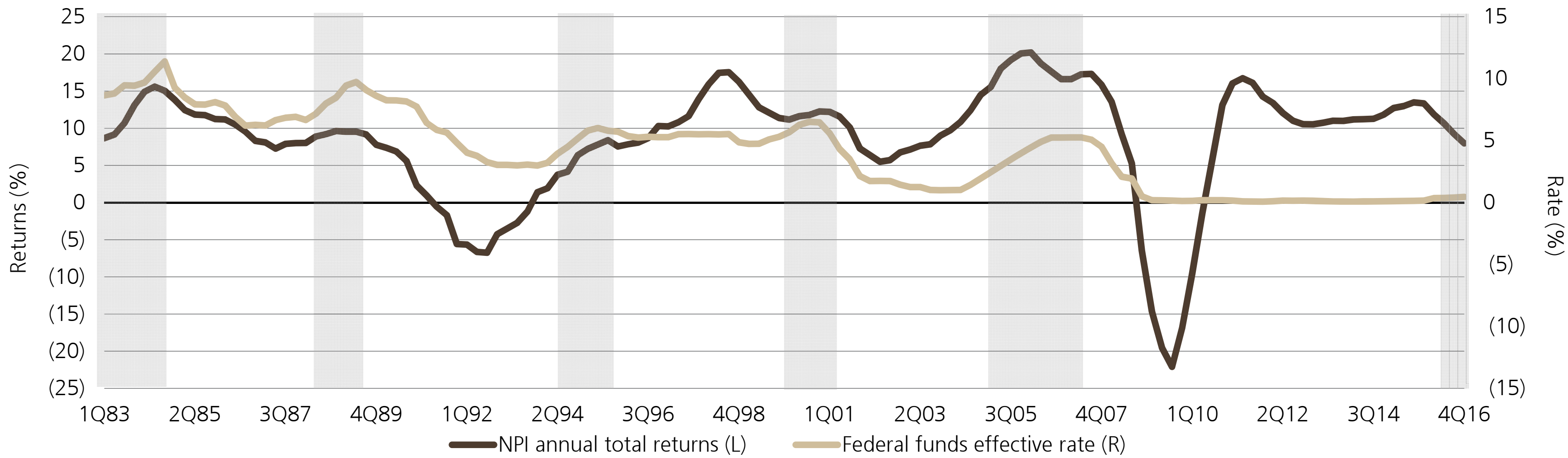
Rent growth by sector



Source: Axiometrics and CBRE-Econometric Advisors as of December 2016
Data are four quarters of growth ending in the fourth quarter. *Hotel data are through 3Q16.

Investment environment

Rising interest rates and private commercial real estate returns

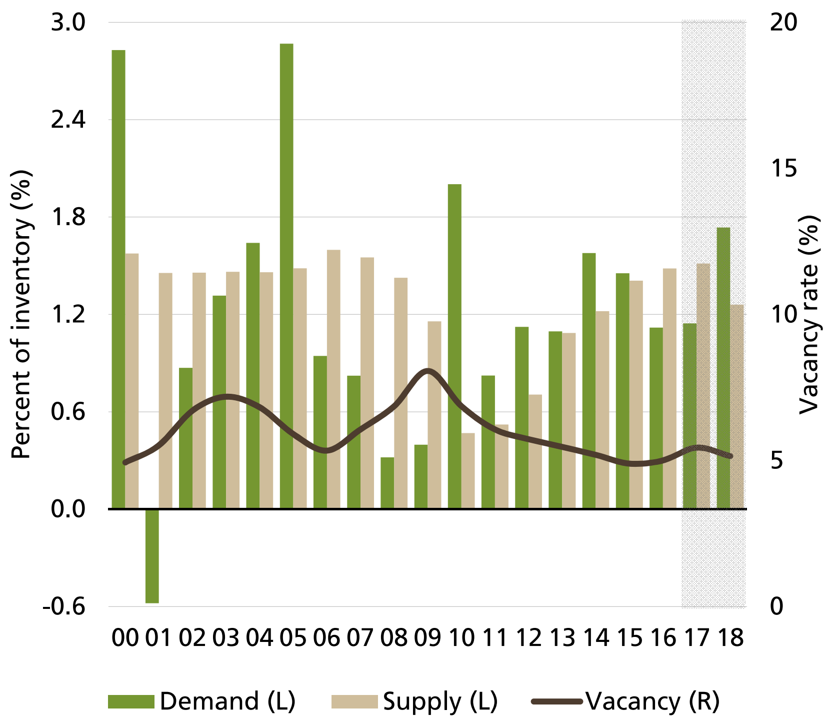


- Historically, private commercial real estate returns have been positive during periods of rising interest rates
- Drivers of real estate performance are complex; interest rates are only part of the story
- Private commercial real estate performance responds to economic growth and expected inflation

Source: NCREIF and Moody's Analytics as of December 2016. NCREIF Property Index (Source NCREIF) is a quarterly time series composite total rate of return measure of investment performance of a very large pool of individual commercial real estate properties acquired in the private market for investment purposes only. All properties in the NPI have been acquired, at least in part, on behalf of tax-exempt institutional investors - the great majority being pension funds. As such, all properties are held in a fiduciary environment.
Updated: January 30, 2016

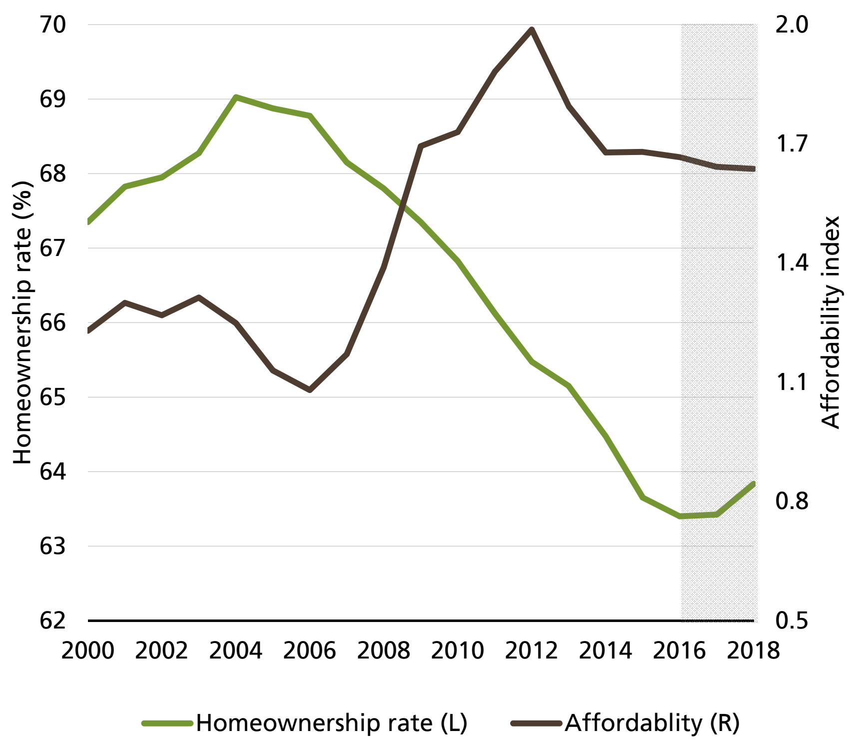
Apartment

Apartment demand, supply and vacancy



Source: Axiometrics as of December 2016
Shaded area indicates forecast data
Updated: February 8, 2017

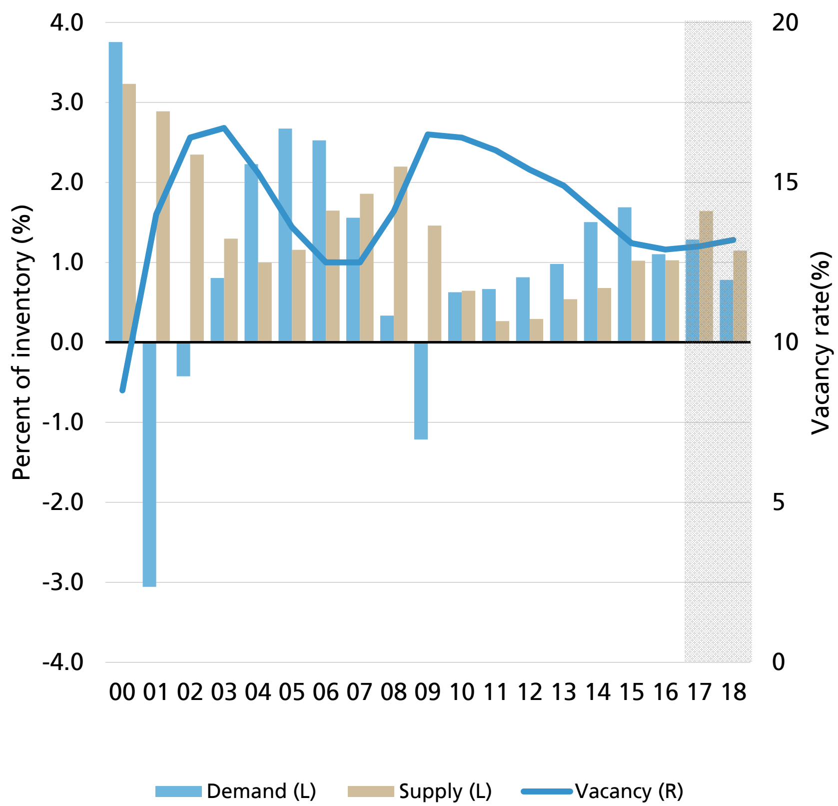
Housing fundamentals



Source: Moody's Analytics as of December 2016. Shaded area indicates forecast data.
Affordability index is through December 2015. An affordability index of 1 indicates that a household earning the median income can afford a home at the median price

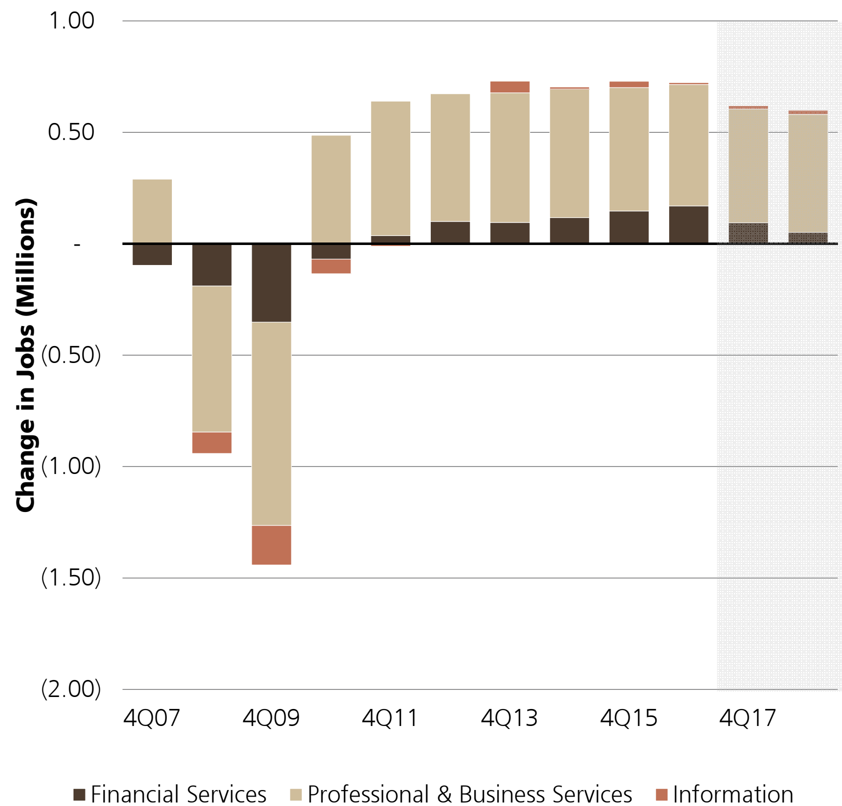
Office

Office demand, supply and vacancy



Source: CBRE-Econometric Advisors as of December 2016
Shaded area indicates forecast data
Updated: February 13, 2017

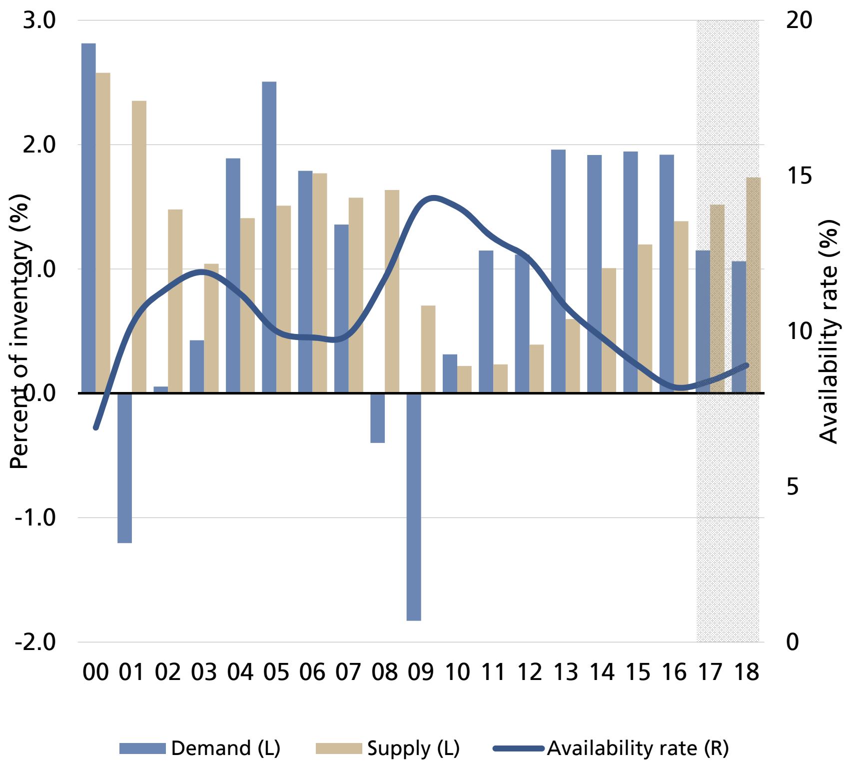
Office-using jobs



Source: Moody's Analytics as of December 31, 2016. Shaded area indicates forecast data.
Data are as of the fourth quarter of each year

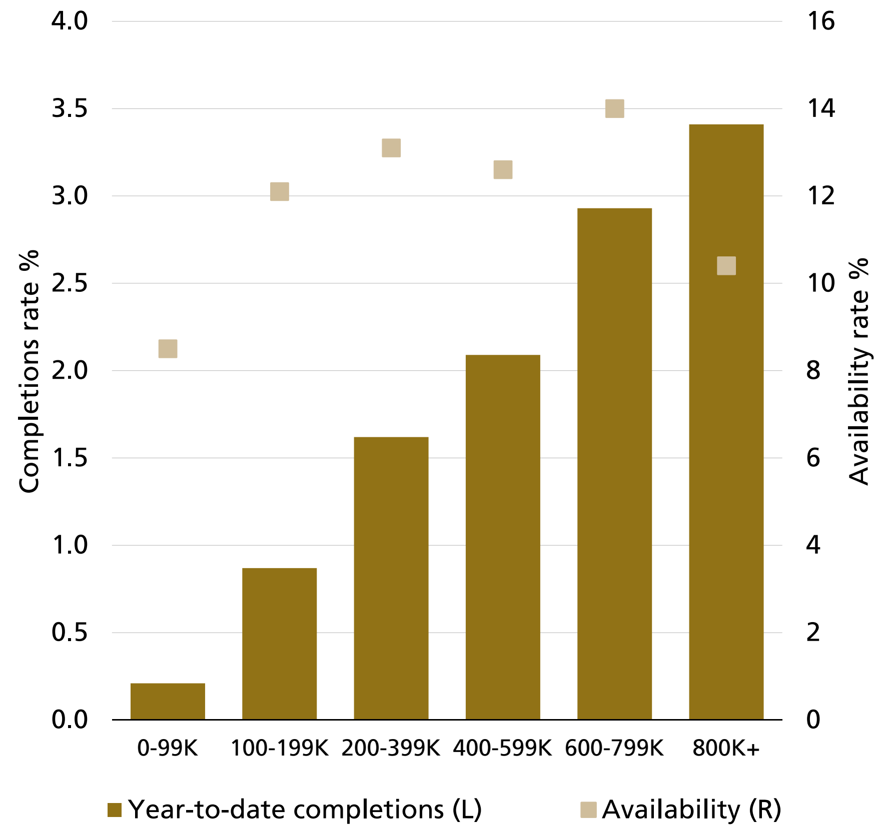
Industrial

Industrial demand, supply and availability



Source: CBRE-Econometric Advisors as of December 2016
Shaded area indicates forecast data
Updated: February 8, 2017

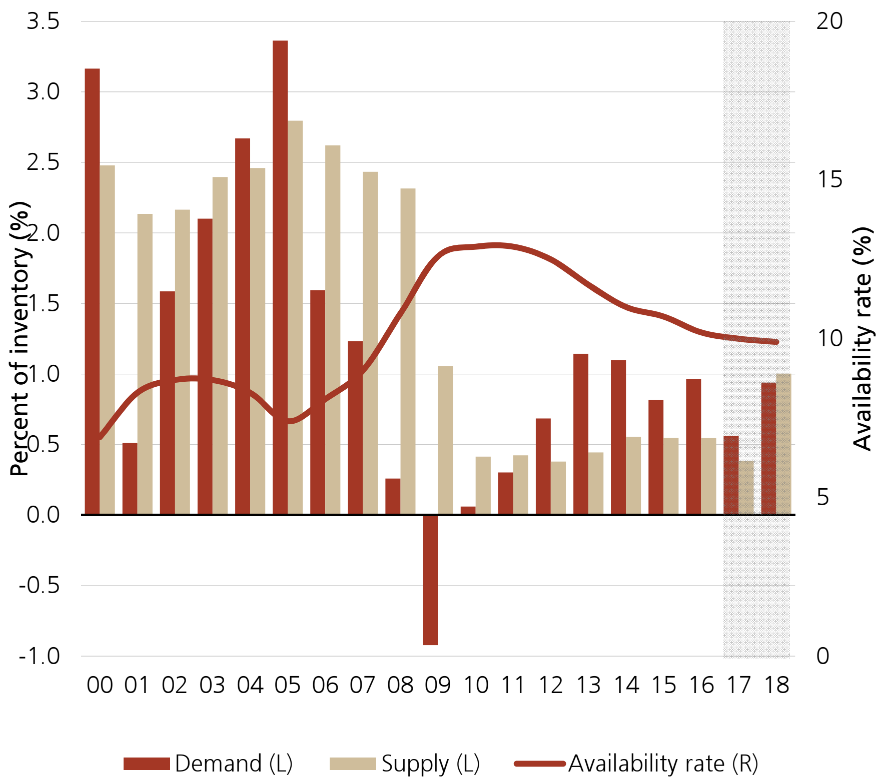
Warehouse development segmented



Source: CBRE-Econometric Advisors as of June 2016

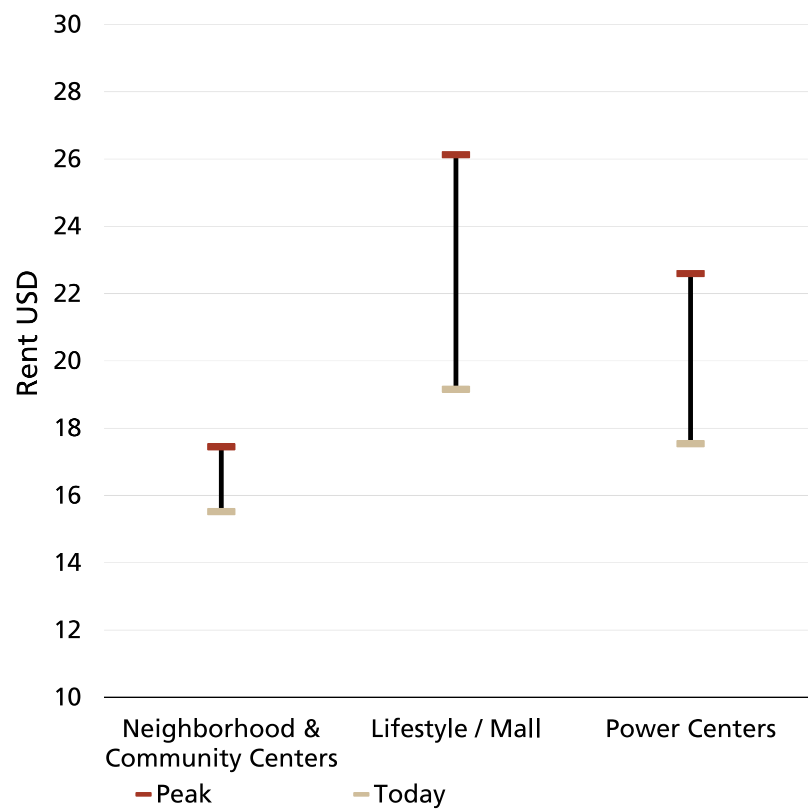
Retail

Retail demand, supply and availability



Source: CBRE-Econometric Advisors as of December 2016
Shaded area indicates forecast data
Updated: February 8, 2017

Net asking rent

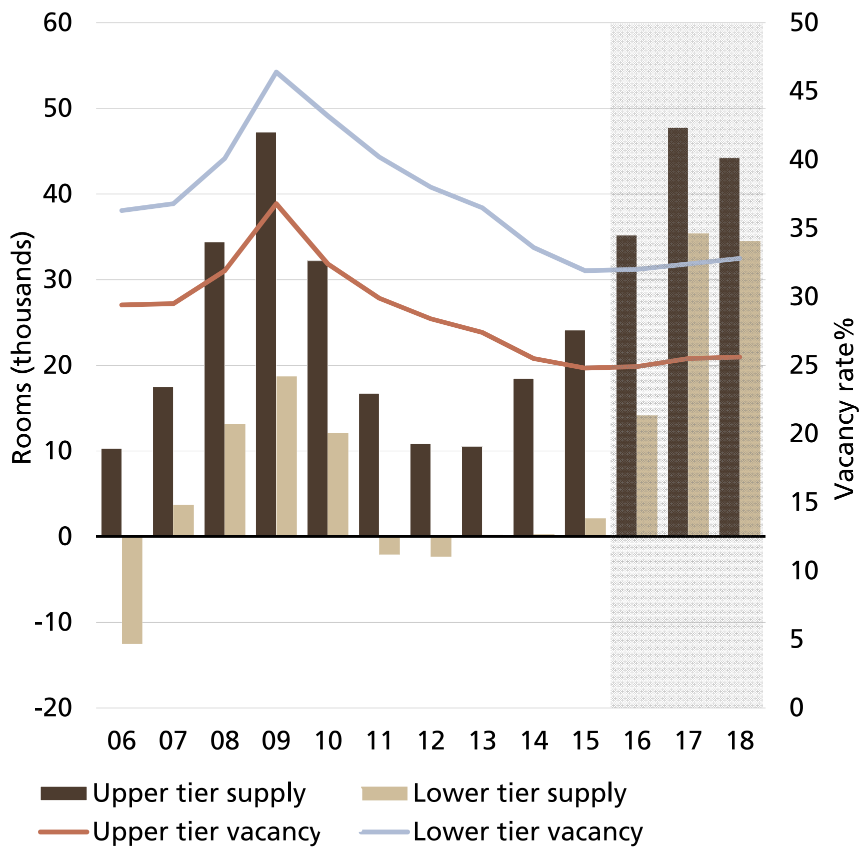


Source: CBRE-Econometric Advisors as of June 2016

Hotels

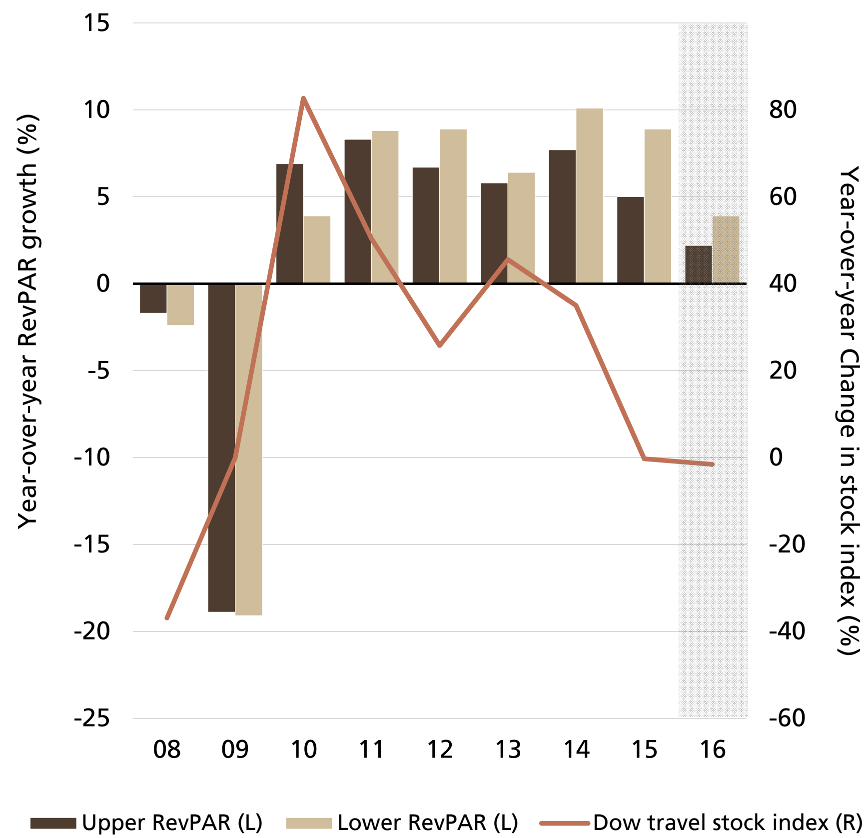
Is this the peak for RevPAR?

Hotel supply and vacancy



Source: CBRE-Econometric Advisors as of September 2016
Shaded area indicates forecast data
Updated: December 15, 2016

RevPAR trend



Source: CBRE-Econometric Advisors as of September 2016 and Moody's Analytics as of December 15, 2016

Section 3

Investment Results

UBS

TPF investment results for Ventura County Employees'

Periods ending December 2016

				Client Net IRR's*				
Year	Deposit	Redemptions/ Distributions	Market Value 12/31/16	12 months ended 12/31/16	3 years ended 12/31/16	5 years ended 12/31/16	10 years ended 12/31/16	Since Inception 3/31/03 to 12/31/16
	$ in thousands							
2003	54,000							
2004	10,000							
2005		10,000						
2009		1,013						
2010	30,000							
2011	30,000							
2013		5,421						
2014		1,355						
	$124,000	$17,789	$247,269	6.15%	9.50%	9.38%	6.19%	8.12%

*Client Net IRRs are dollar-weighted and after fees that were deducted from the account. Past performance is not indicative of future results. This is not an official statement of your account. Refer to your client statement and the quarterly TPF report. Time Weighted Returns are available upon request.

UBS

Section 4

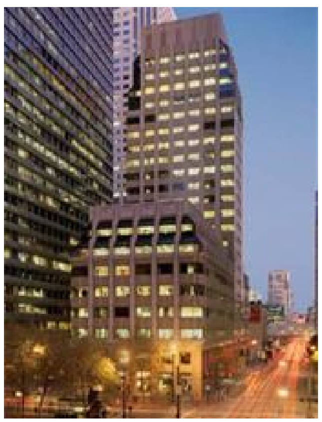
Trumbull Property Fund (TPF)

UBS

Trumbull Property Fund

Representative assets

Liberty Green / Liberty Luxe, New York, NY[1]



455 Market Street, San Francisco, CA

1177 Avenue of the Americas, New York, NY

53 State Street, Boston, MA

1101 K Street, Washington, DC

Water Tower Place, Chicago, IL

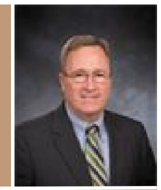
Photographs of current TPF properties are shown for illustrative purposes. The properties within the Fund are expected to change over time as investments are acquired and sold.
[1]Participating mortgage. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017.

Dedicated and experienced team

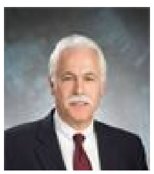
Portfolio Managers average nearly 30 years of industry experience

Kevin Crean
Managing Director

Senior Portfolio Manager



37 years of industry experience , 32 with UBS



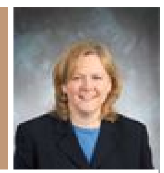
Steve Olstein
Executive Director
Portfolio Manager

Asset Management
Dispositions

37 years of industry experience , 13 with UBS

Pam Thompson
Executive Director
Portfolio Manager

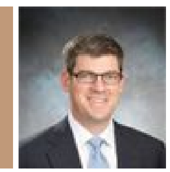
Acquisitions
Financings



25 years of industry experience , 14 with UBS

Timothy Walsh
Executive Director
Assistant Portfolio Manager

Asset management
Performance measurement

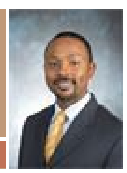


18 years of industry experience , 10 with UBS

Nolan Henry
Director

Financings
Reporting

Experience: 13 / 8



Lan Seto
Associate Director

Portfolio Analytics

Experience: 11 / 9

Debby Sce
Associate Director

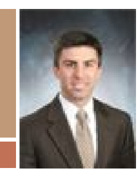
Portfolio Analytics

Experience: 11 / 9

Peter Juliani
Director

Cash Management
Forecasting

Experience: 18 / 12



Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017.
Data as of December 31, 2016

Trumbull Property Fund

An established open-ended core fund with a successful long-term track record

Low end of real estate risk spectrum

Competitive total returns across real estate cycles

Consistently executed core strategy

Income focus	83% of total return from income since inception
Diversification	Research driven Proprietary Inventory Model
Low Leverage	Facilitate favorable acquisitions, Capex
Selective Value Added	Build-to-core, late stage equity
Sustainability	Leader in US diversified funds[2], economically justified

Fund highlights

- 39 year track record
- USD 23.5 B in assets
- Gross Return Since Inception: 9.1%
- Gross Dividend Yield: 4.2%[1]
- 447 Investors
- 219 Investments

Data as of December 31, 2016.
Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. Notes: [1]Gross dividend yield provided is a one-year gross rolling return. [2]Source: GRESB as of 2016/TPF is ranked #2 out of 31 US diversified funds. Return supplements the Firm's Equity Composite previously provided or included herein. TPF since inception date is 1/13/1978. See required notes page at the end of this section or presentation. Past performance is not indicative of future results.

Diversification driven by proprietary inventory model

TPF does not seek to replicate NFI-ODCE

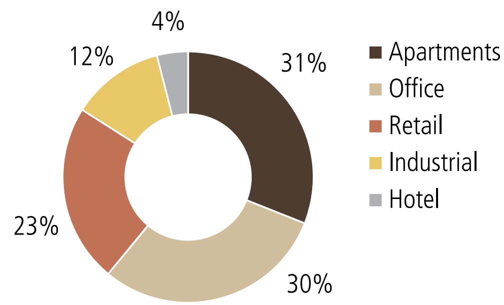
Proprietary inventory model
- USD 4.8 trillion, ten times NPI
- Twenty times larger than ODCE
- Outperforms NPI 30 of 38 years, with a lower standard deviation

By Property type vs NFI-ODCE
- More apartments
- Less office

By Geography
- Coastal focus
- Balanced East & West

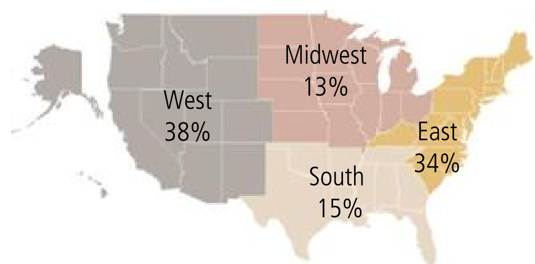
By Economic drivers
- Affirms diversification

Property type allocation (%)



	TPF target ranges	Current TPF allocation	NFI-ODCE
Apartments	23-39	31	24
Office	16-28	30	37
Retail	20-34	23	20
Industrial	8-12	12	15
Hotel/Other	8-12	4	4

Geographic region allocation (%)



	TPF target ranges	Current TPF allocation	NFI-ODCE
East	23-47	34	31
Midwest	8-16	13	10
South	13-27	15	19
West	21-45	38	40

Data as of December 31, 2016. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. NCREIF is the source for NFI-ODCE and NPI. Percentages may not sum due to rounding. Percentages are based on gross market value of real estate investments. The Investable Universe inventory model has provided superior investment returns (relative to NPI) for 30 of the past 38 years, and with a lower standard of deviation. Data for Investable Universe updated as of December 31, 2016 (updated annually). The Investable Universe as tracked by our Research team is an estimate of the market value of Institutional-quality commercial real estate in 64 of the largest US metro areas for the four primary property sectors: apartments, industrial, office and retail. It provides a larger sample size (approximately USD 4.8 trillion) of assets as compared to the USD 471.7 billion tracked by NPI (as of September 30, 2016).

TPF 10 largest markets and assets

Major market exposure and low property concentration risk

Markets by % of Fund

Market	%
New York	14%
Chicago	10%
Los Angeles	9%
San Francisco	8%
Boston	7%
Washington DC	7%
Denver	5%
Dallas	5%
Portland, OR	4%
Phoenix	3%
	72%

Assets	Location	Property type	Gross Market Value (USD Mil)	% Portfolio
53 State Street	Boston	CBD Office	763.0	3%
135 West 50th Street[1]	New York	CBD Office	623.0	3%
CambridgeSide Galleria[1]	Boston	Regional Mall	597.4	3%
Galleria Dallas	Dallas	Regional Mall	585.0	3%
Liberty Green-Liberty Luxe[1][2]	New York	High-rise Apartments	524.0	2%
120 Broadway	New York	CBD Office	513.5	2%
35 West Wacker	Chicago	CBD Office	510.5	2%
Water Tower Place	Chicago	Regional Mall	484.9	2%
1177 Avenue of the Americas	New York	CBD Office	469.6	2%
US Bancorp Tower	Portland	CBD Office	423.2	2%
			5,494.2	**24%**


53 State Street


Water Tower Place


CambridgeSide Galleria


120 Broadway

Data as of December 31, 2016. Source: UBS Asset Management, Real Estate & Private Markets (REPM), January 1, 2017. [1]Converted to Core from an initial Value-added strategy. [2]Participating mortgage investment. Notes: Percentages are based on gross market value of real estate investments. See required notes page at the end of this section or presentation. Amounts may not sum due to rounding. Past performance is not indicative of future results.

TPF is well-positioned

Lower-risk strategy in a mature economy with moderating total returns

- 93% leased, 2017 expirations of 9%
- Forecasted same-property NOI growth of 6.0% in 2017
- Favorable allocations
  - Overweight apartments, underweight office vs NFI-ODCE
  - Expanding urban orientation for apartments, office and retail
  - TPF urban office 79%, NFI-ODCE urban office 61%
- Strong industrial platform – allocation up by almost 200% from 2010
- Value Creation potential -"build-to-core" in dynamic locations
- Low-cost financing with managed maturities
- Well-integrated sustainability strategies

Urban allocation

	TPF	
	1Q 2010	4Q 2016
Office	57%	79%
Apts	34%	68%
Retail	47%	52%

2828 Zuni, Denver, CO

1221 Broadway, Oakland, CA

Monarc at Met 3, Miami, FL

Water Tower Place, Chicago, IL

All data as of December 31, 2016, unless otherwise indicated below. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017 and NCREIF. Note: Leasing numbers exclude hotels, properties in initial lease-up, development and redevelopment properties. Past performance is not indicative of future results. See Required notes page at the end of this section or presentation.

TPF 2016 acquisition activity - previous 12 months

Build-to-core for value creation potential; strategic existing investments for in-place income

Sample acquisitions

Addison Park on Clark, Chicago, IL
- Apartments, retail and parking under construction across from Wrigley Field
- Partnership with experienced Chicago area retail and apartment developers
- USD 156 million committed

Avant at Met Square, Miami, FL
- 43-story apartment tower under construction in downtown Miami
- Partnership with established developer and repeat partner
- USD 148 million committed

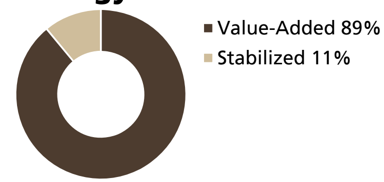
Pacific Industrial - Bandini, Vernon, CA
- 265,000 sf speculative warehouse under construction in infill southern California location
- Partnership with established developer and repeat partner
- USD 39 million committed

Kato II, Fremont, CA
- 302,000 sf warehouse, part of portfolio purchase
- 100% leased to Tesla Motors, Inc. through 6/2028
- USD 43 million purchase price

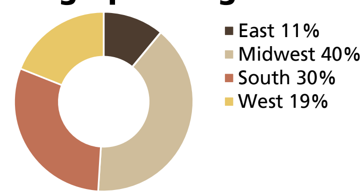
Data as of December 31, 2016. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. Investments shown either reflect a unique investment opportunity or are the largest, based on gross asset value, acquired during the past 12 months.

USD 621.6 M committed in 24 transactions

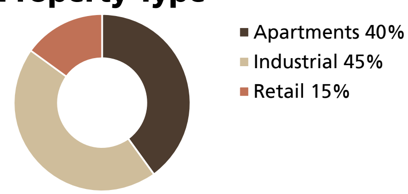
Strategy



Geographic Region



Property Type



Current pipeline over USD 500 M

TPF 2016 disposition activity – previous 12 months

Primarily older properties with increasing capital requirements

Sample dispositions

South Center, Portland, OR
- Strategic sale – reduced suburban office exposure
- Class B property with small tenants
- 32 years old
- USD 44.3 million

Jefferson at Bellingham, Bellingham, MA
- Mature asset sale
- 12 years old, inadequate ROI projected from unit renovation
- Suburban community location
- USD 58.4 million

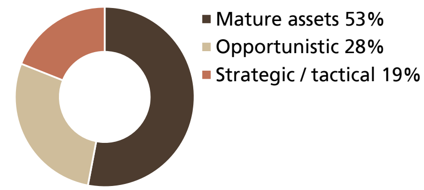
Lodge at Peasley Canyon, Federal Way, WA
- Strategic sale
- Tactical acquisition in 2011 with intent to sell when markets tightened
- Class A suburban apartment
- USD 70.2 million

The Wellington, Laguna Hills, CA
- Mature asset sale
- 28 years old, inadequate ROI projected
- Suburban congregate care facility
- USD 99.0 million

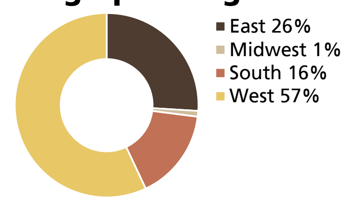
Data as of December 31, 2016. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. Investments shown either reflect a unique investment opportunity or are the largest, based on gross asset value, sold during the past 12 months.

USD 372.0 M closed in ten transactions

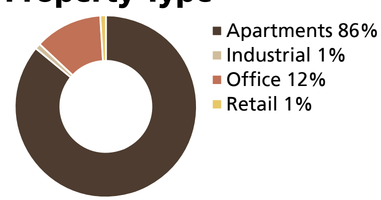
Sale strategies



Geographic Region



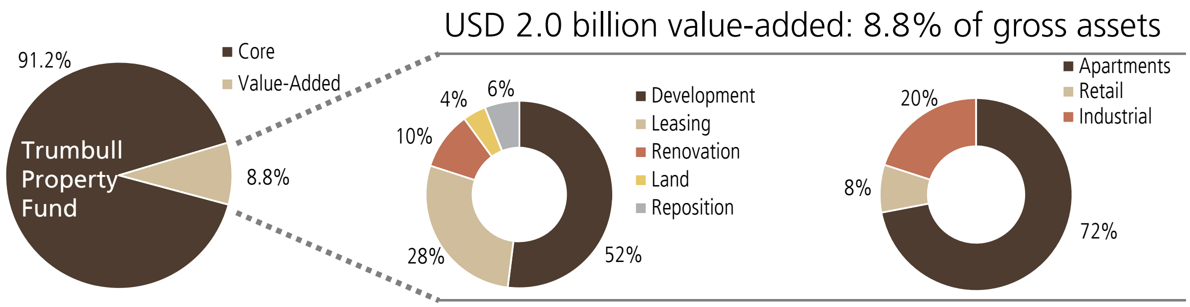
Property Type



Current pipeline over USD 800 M

TPF value added sub-strategy

Value creation through "building to core"



Development:
primarily apartments & industrial

Renovation and leasing:
retail & apartments

Property Name	Property Type	City/State	Development cost (USD millions)	Stabilized property value (USD millions)	Stabilized valuation date	Stabilized value increase over development costs
RiverTrace at Port Imperial	Apartments	West NY, NJ	116.9	166.0	6/30/15	42%
73 East Lake	Apartments	Chicago, IL	116.7	197.7	6/30/15	69%
Element Uptown	Apartments	Charlotte, NC	69.8	105.1	12/31/15	51%
New Village Apts	Apartments	Patchogue, NY	96.2	121.0	3/31/16	26%
The Boulevard	Apartments	Woodland Hills, CA	112.0	153.0	6/30/16	37%
The Brand	Apartments	Glendale, CA	157.8	195.0	9/30/16	24%
Sierra Business Park	Industrial	Fontana, CA	59.7	75.3	12/31/15	26%
5119 District Boulevard	Industrial	Vernon, CA	25.1	27.6	6/30/16	10%
BI-IN Indianapolis-North&NW	Industrial	Indianapolis, IN	26.3	30.6	6/30/16	16%
BI-IL-Lake Zurich-845 Tesler	Industrial	Lake Zurich, IL	3.8	4.4	9/30/16	16%
TOTAL			**784.3**	**1,075.7**		**37%**

Data as of December 31, 2016. Source: UBS Asset Management, Real Estate & Private Markets (REPM), January 1, 2017. Percentages are based on gross market value of real estate investments. Percentage total may not sum due to rounding. Investments shown above are value-added property investments since the beginning of the recovery in 2010 that have achieved stabilized occupancy. Past performance is not indicative of future results. Value creation was 40% for apartments and 20% for industrial assets.

TPF financing update

Increased access to investments, fund major capital and minimize cash

Leverage ratio

- Manage to 20% max / current 15.0%
- NFI-ODCE ratio (excluding TPF) at 22.6%
- Weighted avg LTV for financed assets 35%

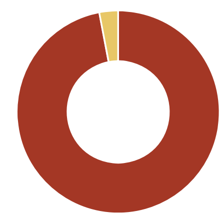
Financing management

- Minimize overall financing costs
- Manage future interest rate risk & maturities
- Maximize property sale flexibility

Current position

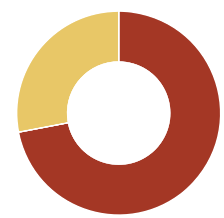
- Weighted avg interest rate is 3.4%; down from 3.8% in prior year
- Weighted avg maturity of 5.9 years

Fixed vs Floating rate debt



97%
fixed rate

Property vs Fund level debt



72%
property level

Property level debt

100%
non-recourse

Data as of December 31, 2016. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. NCREIF is the source of NFI-ODCE. NFI-ODCE leverage ratio including TPF is 21.7%

Sustainability – A leadership position in ODCE

TPF's Goal - Reduce environmental impact, maximize total returns

- #2 of 31 for 2016 US Diversified – Non-listed peer funds, Five Green Star rating by GRESB[1]
- Established goals for reductions in energy, water, waste and GHG. Reduced GHG emissions by 5% last year
- LEED designations achieved for 91% of urban office properties, most new multifamily properties
- UBS Realty Investors LLC recognized as a Premier Member by Energy Star in 2014[2]
- Sustainability case studies for two TPF properties published by GRESB and ULI

53 State Street, Boston, MA

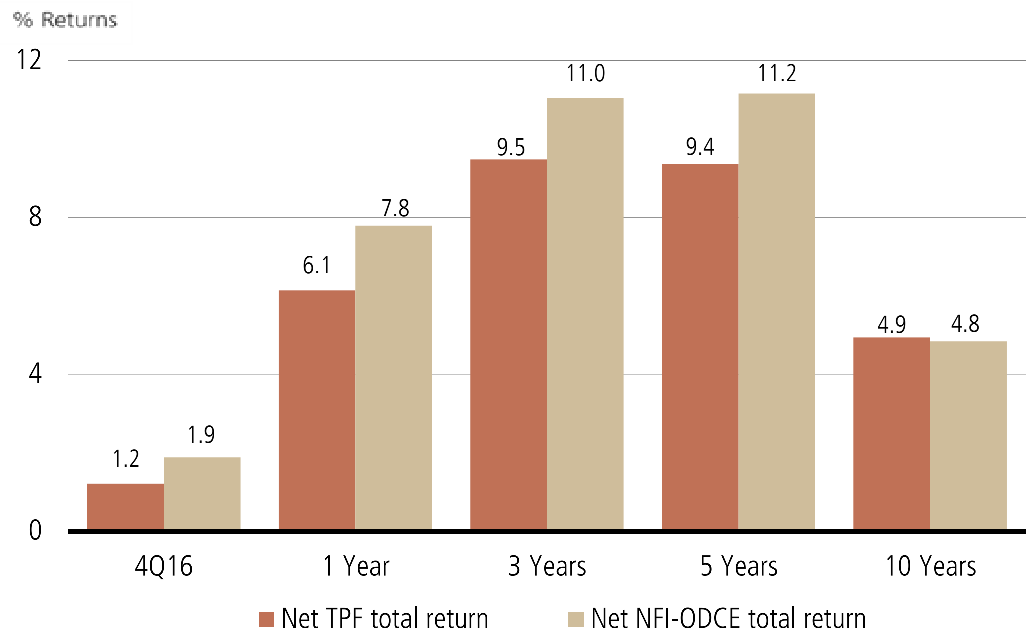
455 Market Street, San Francisco, CA

1670 Broadway, Denver, CO

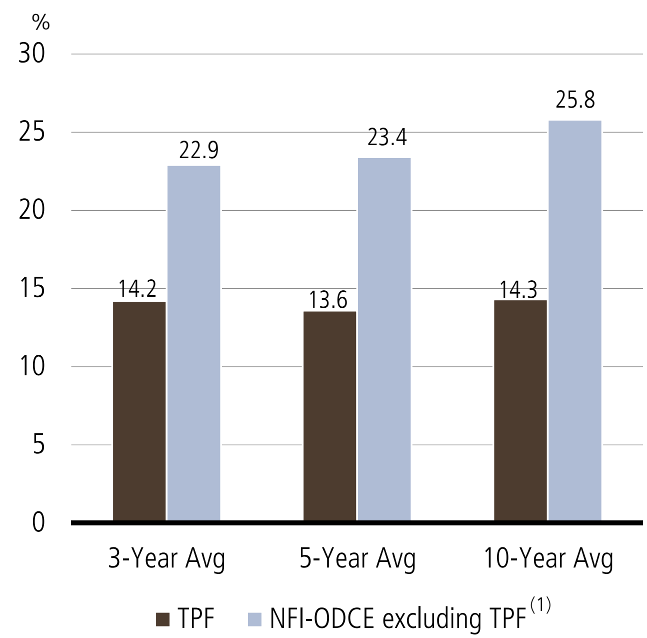
All data as of September 30, 2016. [1]GRESB, which was formerly known as Global Real Estate Sustainability Benchmark. [2]In conjunction with its celebration of the 15th Year of ENERGY STAR for Buildings, The EPA recognized UBS Realty Investors as a Premier Member of the 2014 ENERGY STAR Certification Nation. See required notes page at the end of this section or presentation. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017 and GRESB.

TPF performance

Net TPF total return vs Net NFI-ODCE total return as of December 31, 2016



Weighted Average Leverage Percentage as of December 31, 2016

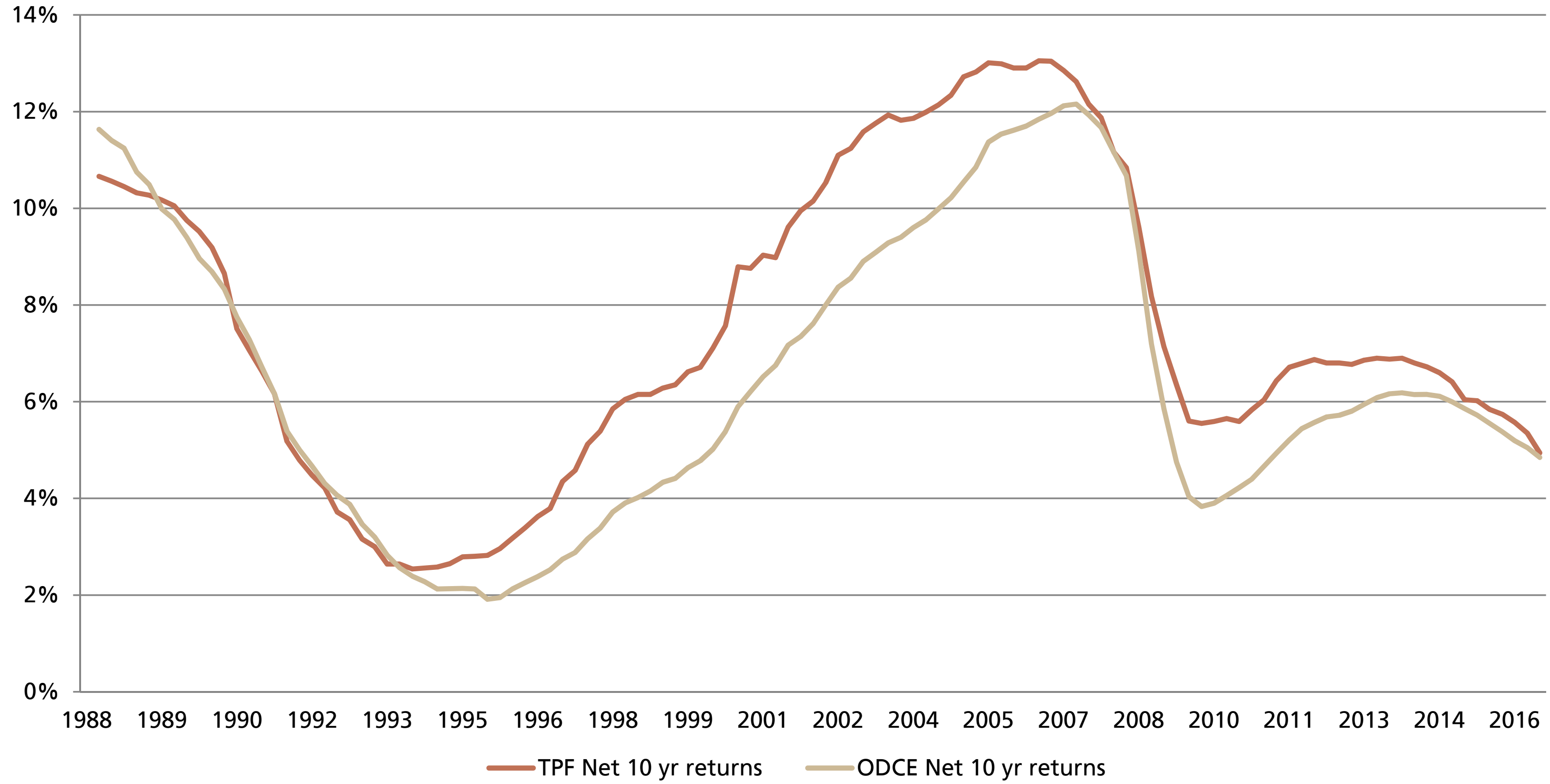


Sources: UBS Asset Management, Global Real Estate – US and NCREIF is the source of NFI-ODCE
Notes: Returns supplement the Firm's Equity Composite previously provided or included herein. See required notes pages at the end of this section or presentation. Past performance is not indicative of future results.
(1)Leverage ratios of NFI-ODCE including TPF are as follows: 3-year average 21.9%, 5-year average 22.2%, 10-year average 24.2%, as of December 31, 2016.

UBS

TPF ten-year rolling net performance

Ten-year rolling net performance vs net NFI-ODCE as of December 31, 2016



Sources: UBS Global Asset Management, Global Real Estate – US and NCREIF is the source of NFI-ODCE

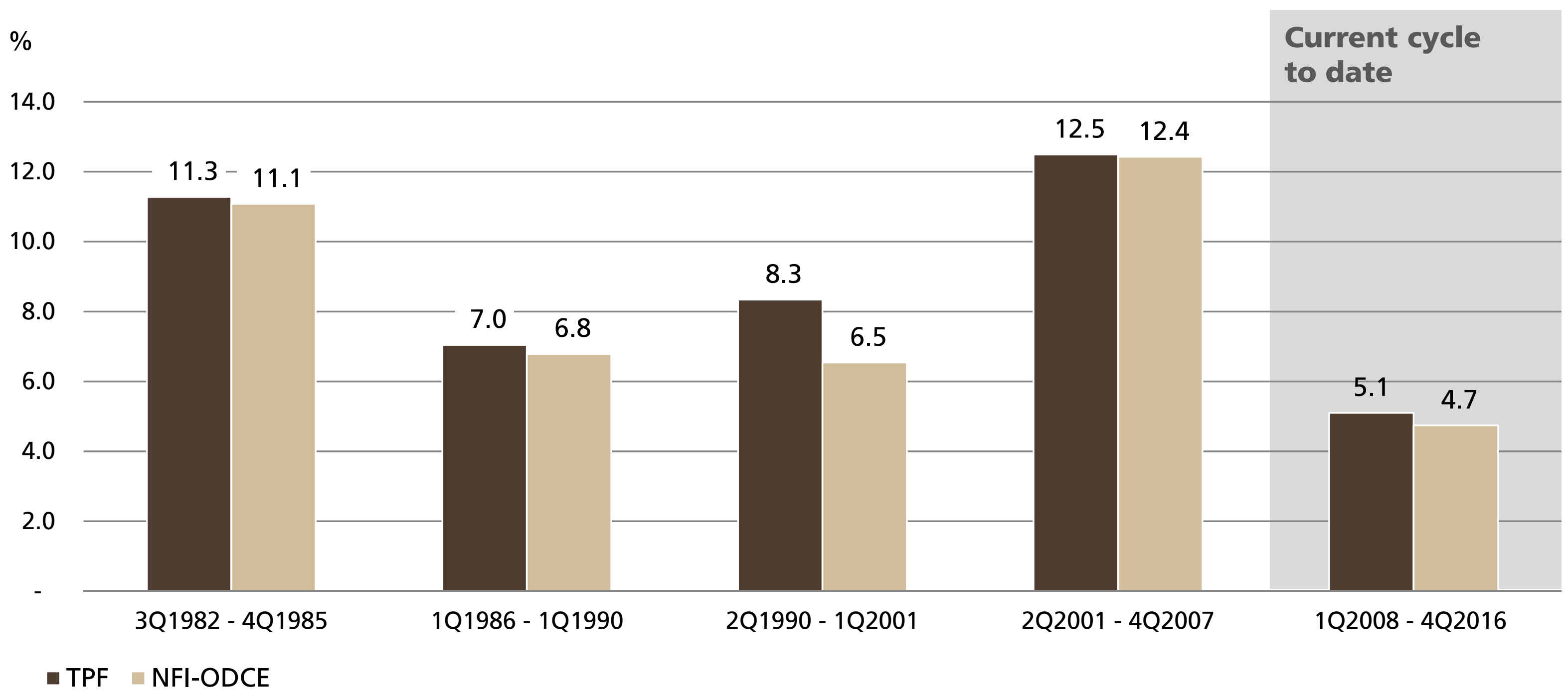
Notes: Returns supplement the Firm's Equity Composite previously provided or included herein. As of December 31, 2016 the NFI-ODCE consisted of 24 active funds with total net assets of USD 167.5 billion. See required notes pages at the end of this section or presentation. Past performance is not indicative of future results.

Updated: February 16, 2017

UBS

Full market cycle total returns – peak to peak

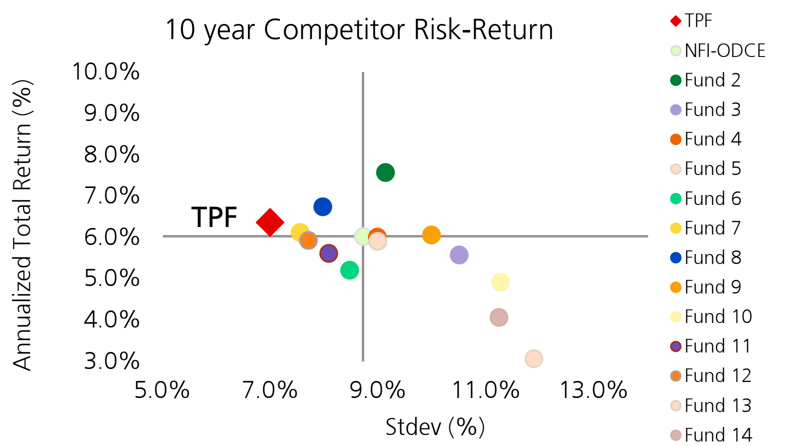
TPF outperformed NFI-ODCE in all full market cycles

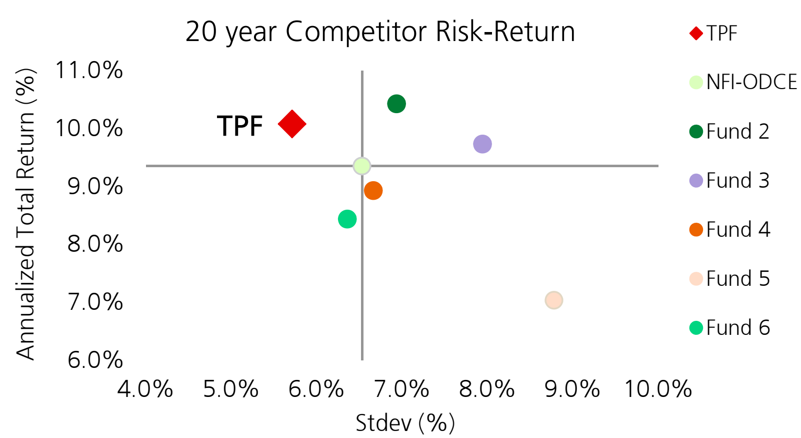


Data as of December 31, 2016. Data shown is back to 1982. All returns are annualized and are gross of fees. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. NCREIF is the source of NFI-ODCE. Notes: For purposes of measuring these performance objectives, a "full market cycle" is defined as a period of time from a peak valuation through a trough and a return to a new peak. The Advisor bases these measurements on assumptions that it believes are reasonable and consistent with industry standards. See required notes pages at the end of this section or presentation. Past performance is not indicative of future results.

TPF risk-return profile vs. NFI-ODCE peers

TPF delivers superior risk adjusted returns across real estate cycles





NCREIF-Reported Risk Characteristics for TPF

Measure	10 year value	Ranking (out of 14 Funds)
Sharpe Ratio	0.81	#1
Standard Deviation	6.99%	#1
Jensen Alpha	1.33%	#2

New Village Apartments, Patchogue, NY

Data as of September 30, 2016 unless otherwise noted. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017 and NCREIF Notes: TPF Risk Characteristics: Sharpe Ratio measures return per unit of risk. Standard Deviation is an annualized standard deviation that measures the variability of fund returns. Jensen Alpha measures the excess fund return adjusted for systematic risk (risk-free rate and beta). Total returns are annualized and are reported gross of management fees. Please see the Required Notes page for additional information. Past performance is not indicative of future results.

Proven manager and a proven product

- **Successful track record managing core real estate for almost forty years**
- **Highly experienced team, disciplined investment process and comprehensive research support**
- **Clearly defined and consistently executed core real estate strategy**
- **Well diversified exposure across assets, sectors and geography**
- **Large relative fund size provides access to major market investments**

✓ **Robust income**

83% of total return since inception has come from income

Income return greater than NFI-ODCE for all time periods tracked

✓ **Low volatility**

Over last 10 years, ranked #1 for Sharpe Ratio & Standard Deviation[1]

✓ **Competitive returns**

Superior risk-adjusted returns, achieving 9.1% since-inception gross return

Delivering superior risk-adjusted investment performance across real estate cycles

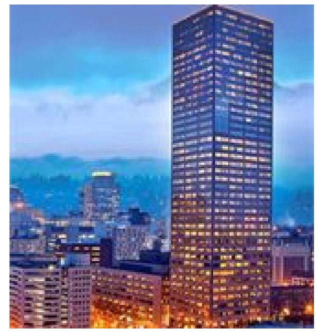
Data as of December 31, 2016.
Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. NCREIF is the source of NFI-ODCE. Past performance is not indicative of future results. Notes: [1]Ranked #1 (out of 14 funds) for Sharpe Ratio and Standard Deviation, on a 10-year basis, as calculated by NCREIF as of September 30, 2016.

Trumbull Property Fund

Representative assets

73 East Lake, Chicago, IL

CambridgeSide Galleria, Cambridge, MA



US Bancorp Tower, Portland, OR

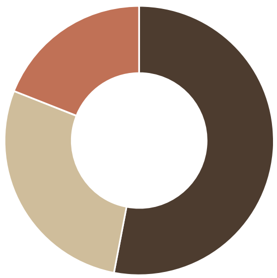
1221 Broadway, Oakland, CA

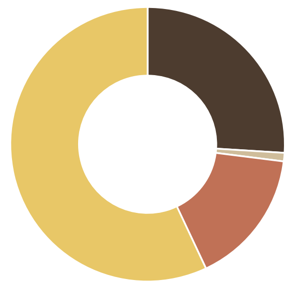
555 17th Street, Denver, CO

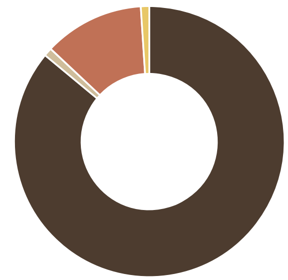
Apex I, Los Angeles, CA

Photographs of current TPF properties are shown for illustrative purposes. The properties within the Fund are expected to change over time as investments are acquired and sold.
Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017.

TPF 2016 dispositions



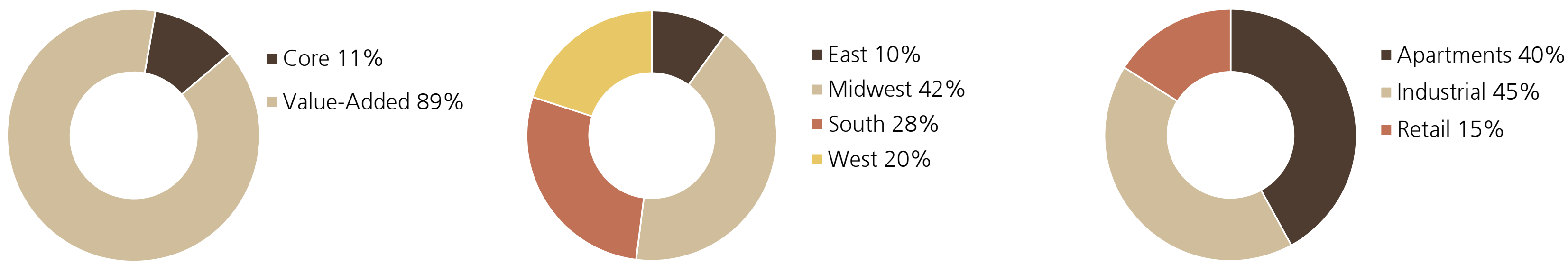




Property	Strategy	Property type	Location	Acquisition Date	Date closed	Size	TPF Gross investment (USD millions)
Deerbrook Land	Opportunistic	Retail	Humble, TX	12/2013	1/2016	8.9 acres	0.9
South Center I to IV	Mature	Office	Tualatin, OR	8/1998	4/2016	341,904 sf	44.3
3050 Windy Hill Road	Opportunistic	Retail	Atlanta, GA	10/2004	8/2016	2 acres	3.5
Lodge at Peasley Canyon Apts	Strategic/tactical	Apartments	Federal Way, WA	6/2011	9/2016	339 units	70.2
Summit Apartments	Mature	Apartments	Mount Laurel, NJ	12/1994	10/2016	288 units	39.0
Jefferson at Bellingham	Mature	Apartments	Bellingham, MA	9/2006	10/2016	285 units	58.4
CNT-Lakeview Corp. Park Land	Opportunistic	Industrial	Pleasant Prairie, WI	9/2007	10/2016	17 acres	1.2
Oaks at Valley Ranch	Mature	Apartment	Irving, TX	8/1985	12/2016	529 units	54.6
CNT-Lakeview Corp. Park Land	Opportunistic	Industrial	Pleasant Prairie, WI	9/2007	12/2016	12 acres	1.0
The Wellington	Opportunistic	Apartment	Laguna Hills, CA	8/1988	12/2016	233 units	99.0
Total							372.0

Data as of December 31, 2016. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. These properties represent some examples of fund investments. These types of investments may not be available or selected by the Fund in the future. Numbers may not sum due to rounding.

TPF 2016 investments



Property	Property type	Location	Strategy	Date closed	Size	Gross investment (USD millions)
WIP-Kato II	Industrial	Fremont, CA	Core	2/16	302,400 sf	43.0
WIP-Whipple	Industrial	Union City, CA	Core	2/16	117,420 sf	17.5
Becknell	Industrial	Whitestown, IN	Value-Added	3/16	38 acres	1.2
Addison Park on Clark	Apartments	Chicago, IL	Value-Added	3/16	148 units	59.3
Addison Park on Clark	Retail	Chicago, IL	Value-Added	3/16	145,628 sf	96.8
Becknell	Industrial	Westchester, OH	Core	3/16	138,750 sf	6.3
Becknell	Industrial	Orlando, FL	Value-Added	3/16	478,400 sf	29.4
The Residences at Port Jefferson	Apartments	Port Jefferson, NY	Value-Added	4/16	112 units	5.0
Becknell	Industrial	Davie, FL	Value-Added	4/16	130,350 sf	15.2

Data as of December 31, 2016
Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. These properties represent some examples of fund investments. These types of investments may not be available or selected by the Fund in the future. Numbers may not sum due to rounding.

TPF 2016 investments

Property	Property type	Location	Strategy	Date closed	Size	Gross investment (USD millions)
PI-Bandini	Industrial	Vernon, CA	Value-Added	4/16	264,220 sf	39.0
Lakeview XVII	Industrial	Pleasant Prairie, WI	Value-Added	4/16	200,607 sf	9.0
Becknell	Industrial	Wichita, KS	Core	5/16	113,524 sf	5.0
Avant at Met Square	Apartments	Miami, FL	Value-Added	6/16	391 units	142.8
Becknell	Industrial	Hobart, IN	Value-Added	7/16	124,800 sf	8.6
Becknell	Industrial	Whitestown, IN	Value-Added	7/16	68,250 sf	7.8
Becknell	Industrial	Grove City, OH	Value-Added	7/16	44 acres	4.1
Becknell	Industrial	Mount Comfort, IN	Value-Added	7/16	100,000 sf	5.3
Becknell	Industrial	Mount Comfort, IN	Value-Added	7/16	34 acres	1.1
Port Jefferson Residences	Apartments	Port Jefferson, NY	Value-Added	7/16	112 units	39.7
Becknell	Industrial	Spartanburg, SC	Value-Added	8/16	201,500 sf	9.9
Becknell	Industrial	Henrico, VA	Value-Added	8/16	216,000 sf	10.6
Becknell	Industrial	Aurora, CO	Value-Added	8/16	251,680 sf	19.5
Becknell	Industrial	Belvidere, IL	Value-Added	9/16	221,844 sf	17.3
Becknell	Industrial	Plainfield, IN	Value-Added	9/16	27 acres	2.6
Becknell	Industrial	Plainfield, IN	Value-Added	10/16	336,000 sf	13.1
Becknell	Industrial	Grove City, OH	Value-Added	11/16	322,000 sf	12.3
Total YTD						621.6

Data as of December 31, 2016. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. These properties represent some examples of fund investments. These types of investments may not be available or selected by the Fund in the future. Numbers may not sum due to rounding.

TPF total sales

Year	Number of properties	Gross Sales proceeds (USD in thousands)	Last independent appraised value (USD in thousands)
1982	4	8,845	8,744
1983	8	34,977	34,531
1984	10	61,732	60,340
1985	13	68,425	65,569
1986	10	94,339	89,612
1987	8	198,001	176,560
1988	4	71,330	67,550
1989	14	349,075	306,360
1990	0	-	-
1991	2	24,400	25,100
1992	8	67,575	65,006
1993	6	32,347	31,250
1994	3	87,983	86,444
1995	2	12,317	11,902
1996	4	43,896	39,508
1997	2	49,058	47,830
1998	0	-	-
1999	1	1,597	1,648

Year	Number of properties	Gross Sales proceeds (USD in thousands)	Last independent appraised value (USD in thousands)
2000	5	75,191	58,319
2001	1	16,994	14,896
2002	4	53,126	48,868
2003	2	17,806	16,194
2004	6	25,472	24,771
2005	10	353,876	332,024
2006	9	143,904	134,162
2007	15	599,515	580,395
2008	9	384,975	366,466
2009	6	207,855	209,122
2010	5	35,482	34,692
2011	2	35,750	34,500
2012	6	292,338	290,640
2013	14	311,059	298,667
2014	2	57,771	55,612
2015	16	864,806	830,920
2016	10	372,007	366,124
Total	**221**	**5,053,824**	**4,814,326**

Data as of December 31, 2016.
Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. Notes: Number of properties sold may include portions of multi-parcel investments, and therefore may not tie to difference in total properties from year to year. Sales proceeds and appraised values are net of debt. From 1982-2007, sales proceeds and appraised values are also net of closing costs. The properties included in the calculation of total sales had been independently appraised or the appraisal reviewed and updated if necessary by an independent appraisal firm generally within six months of the date of sale.

TPF leasing

Percentage leased - end of period

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Apartments	93	94	95	95	94	94	95	95	94
Industrial	94	90	87	91	95	96	97	97	97
Office	93	92	92	90	92	91	94	95	89
Retail	95	92	95	93	94	95	95	95	94
Total	94	92	93	93	93	93	95	95	93

Orchard Town Center, Westminster, CO

Solano at Miramar, Miramar, FL

Burbank Empire Center, Burbank, CA

Data as of December 31, 2016. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017.
Notes: Leasing numbers exclude hotels, properties in initial lease-up, development and redevelopment properties.

TPF annual performance

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
	Percent %													
Net investment income	8.42	9.97	9.68	9.96	9.05	8.87	8.86	8.40	7.53	6.80	5.60	6.06	6.36	7.38
Net realized/unrealized gain (loss)	0.77	3.39	7.47	7.02	0.67	3.76	4.00	1.04	0.17	0.08	0.13	1.89	(10.12)	(12.47)
Total, before management fee	9.24	13.61	17.69	17.49	9.76	12.87	13.12	9.51	7.71	6.88	5.74	8.04	(4.25)	(5.78)
Total, net of management fee	8.26	12.58	16.65	16.42	8.71	11.80	12.07	8.45	6.67	5.84	4.68	6.97	(5.14	(6.48)

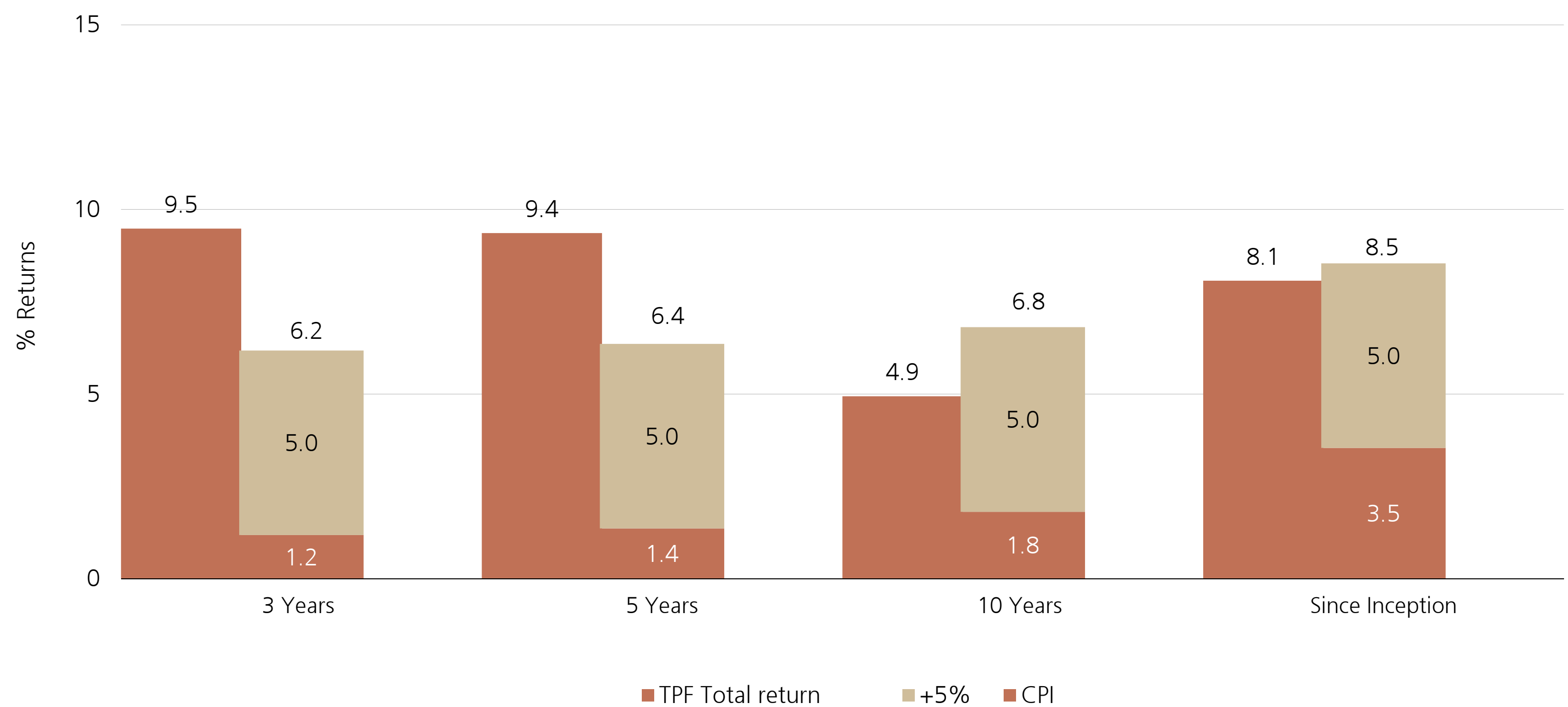
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	Percent %													
Net investment income	7.95	8.60	9.70	9.88	10.33	9.88	8.59	8.73	8.99	8.99	8.38	7.91	7.28	6.85
Net realized/unrealized gain (loss)	(12.01)	(6.76)	2.42	2.14	5.59	12.56	7.33	3.97	7.59	(6.74)	0.51	1.52	6.89	13.61
Total, before management fee	(4.78)	1.41	12.30	12.18	16.34	23.34	16.39	12.96	17.08	1.79	8.93	9.52	14.54	21.13
Total, net of management fee	(5.47)	0.70	11.38	11.09	15.23	22.22	15.33	11.89	15.96	0.86	8.13	8.55	13.49	20.05

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Since Inception	% of total return
	Percent %												
Net investment income	6.07	5.12	4.96	6.69	7.05	5.36	5.35	5.13	5.16	4.97	4.72	7.57	83%
Net realized/unrealized gain (loss)	10.12	8.49	(11.98)	(27.55)	9.32	7.55	4.62	5.12	6.29	7.69	2.40	1.42	17%
Total, before management fee	16.65	13.93	(7.46)	(22.30)	16.85	13.21	10.15	10.44	11.69	12.94	7.21	9.07	100%
Total, net of management fee	15.58	12.84	(8.29)	(22.94)	15.89	12.08	9.04	9.32	10.56	11.83	6.14	8.07	N/A

Data as of December 31, 2016.
Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. Notes: Returns supplement the Firm's Equity Composite previously provided or included herein. See required notes page at the end of this section or presentation. Past performance is not indicative of future results. TPF began operations on January 13, 1978, thus the 1978 return is not for a full year. Returns are annualized.

Net TPF real return performance objective

Seek to provide at least a 5% real rate of return, before management fees, over any given 3- to 5-year period



Data as of December 31, 2016.
Source: UBS Asset Management, Global Real Estate – US, and the source of CPI is Bureau of Labor Statistics.
Notes: CPI is the Consumer Price Index, an inflationary indicator of the standard of living in the US. It is also referred to as the “cost of living” index.
Returns supplement the Firm’s Equity Composite previously provided or included herein. See required disclosures slide at the end of this section or presentation. Fund Inception date January 13, 1978. Past performance is not indicative of future results.

Benefits of a large fund

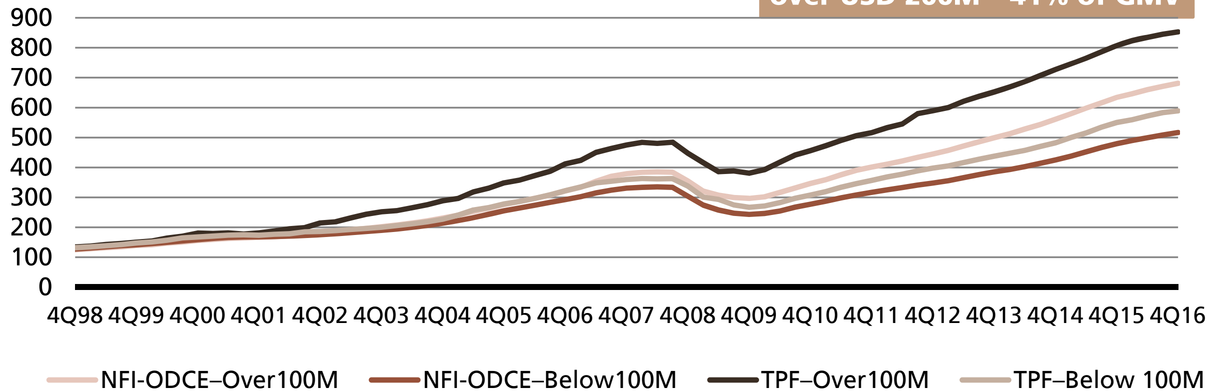
TPF at USD 23.5 billion as of December 31, 2016

- Major market exposure
- Superior diversification
- Ability to acquire larger properties

Outperformance by properties over USD 100M

Index, 2Q97=100

TPF properties:
over USD 100M – 69% of GMV
over USD 200M – 41% of GMV



- NFI-ODCE Properties > USD 100M outperformed smaller assets by 193 bps, > USD 200M by 239 bps.[1]
- TPF properties > USD 100M & >USD 200M outperformed smaller properties.[1]

1177 Avenue of the Americas, New York, NY

Data as of December 31, 2016. Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017. NCREIF is the source for NFI-ODCE.
[1]Ten-year time period. Past performance is not indicative of future results.

TPF strategy and guidelines

Strategy	Provide broad real estate market diversification to maximize risk adjusted returns
Fund Style & Liquidity	Open-end fund, with quarterly liquidity (subject to available capital); USD 5 million minimum
Financial Objective [(1)]	• Seek to outperform the NFI-ODCE index over a full market cycle • Seek to achieve at least a 5% real rate of return (i.e. inflation- adjusted return) before management fees, over any given 3-5 year period
Fund Investment Guidelines [(2)]	• Equity investments at least 70% of Gross Asset Value ("GAV") • Third Party Joint Ventures limited to 50% of GAV • Debt investments maximum of 30% of GAV (construction loans limited to 10% of GAV) • Publicly traded real estate securities or debt instruments limited to 5% of GAV • Combination of all value-added assets will generally range between 5-15% of total Portfolio Assets
Property type and geographic spread	• Apartments, hotels, industrial, retail and office throughout the US • NCREIF property type maximum 50% of GAV • NCREIF region maximum 50% of GAV • Local market (CBSA) maximum of 20% of GAV • Single investment maximum 10% of GAV
Leverage	• Mortgage debt generally not to exceed 20% of GAV • Short-term debt generally not to exceed 15% of GAV
Standard of care	Advisor subject to ERISA Fiduciary standard of care

Data as of December 31, 2016.
Source: UBS Asset Management, Real Estate & Private Markets (REPM); January 1, 2017.
Notes: [(1)] There is no assurance that the financial objective will ultimately be realized and the possibility of loss does exist. There is no guarantee that the investment strategy will perform as expected. [(2)] The Advisor may permit temporary and/or immaterial deviations from the Investment Guidelines from time to time, in its discretion, if the Advisor believes that such deviations are in the best interest of the Fund.

Senior investment professionals - US

Investment Committee members average 33 years of industry experience
Senior investment professionals average 28 years of experience

Investment Committee	
Head of Real Estate US and Committee Chair	Matthew Lynch
Portfolio Management	Paul Canning Kevin Crean Gary Gowdy Jeffrey Maguire
Research & Strategy - Global	William Hughes (1)
Acquisitions (3)	John Connelly (1) Rodney Chu Michael Mistretta William Moreno
Asset Management (2)	William Harrison (1) Thomas Enger James Fishman Alan Green David Ingram
Legal-General Counsel	Steven Kapiloff
Portfolio & Client Services	Thomas O'Shea (1)

Portfolio Management, Investment Operations & Client Services		
Trumbull Property Fund	Kevin Crean Steve Olstein	Pamela Thompson Timothy Walsh
Trumbull Property Income Fund	Gary Gowdy	Chris Clayton
Trumbull Property Growth & Income Fund	Paul Canning	Peter Juliani
Separate Accounts	Jeffrey Maguire	Peter Gilbertie
UBS Trumbull Diversified Property Collective Fund	William Hughes Laurie Tillinghast	Kurt Edwards Kara Foley
Portfolio & Client Services	Thomas O'Shea Maria Bascetta Mia Dennis Thomas Klugherz Ronald Lanier	David Lawson Julie Pierro Wayne Wallace Catherine Schuster
Research & Strategy - US	Tiffany Gherlone	
Engineering	Jeffrey Fraulino	
Dispositions	William Robertson	
Accounting	Carol Kuta	

Notes: (1) Department head. (2) All Asset Management Region Heads are voting members of the Investment Committee for any acquisition / origination transaction. For other Investment Committee approvals, only the responsible Asset Management Region Head for the proposed investment decision is a voting member of the Investment Committee (3)The Acquisition Region Heads are voting members of the Investment Committee for any sale or disposition transaction.

UBS Realty Investors Equity Composite

Year	Number of accounts	Year-end Composite Net Assets (USD millions)	Total Firm Net Assets (USD millions)	Gross of fees (%) Income return	Gross of fees (%) Appreciation (depreciation)	Gross of fees (%) Total return	Benchmark return (%)	Net of fees (%) Total return	Range of Gross Returns (%) Max	Range of Gross Returns (%) Min	Asset weighted standard deviation	% of Composite assets valued externally(1)
2006	10	11,302	13,940	6.03	10.79	17.30	16.32	16.13	40.6	13.9	2.21	100
2007	9	12,155	14,798	5.14	8.85	14.32	15.97	13.20	38.6	11.7	2.93	100
2008	9	10,445	13,285	4.99	(12.21)	(7.67)	(10.01)	(8.47)	(4.2)	(41.0)	1.91	100
2009	9	7,995	10,232	6.68	(27.91)	(22.69)	(29.76)	(23.32)	(11.8)	(62.2)	4.23	100
2010	8	9,687	12,107	7.10	9.37	16.95	16.36	15.92	42.0	4.7	3.20	100
2011	8	12,404	15,241	5.57	8.20	14.10	15.99	12.96	35.3	8.6	2.88	100
2012	9	14,679	17,325	5.45	5.07	10.73	10.94	9.63	25.8	(2.5)	2.53	100
2013	9	16,114	19,206	5.22	5.40	10.83	13.94	9.71	26.5	(38.7)	2.68	100
2014	9	18,788	22,252	5.21	6.61	12.07	12.50	10.94	35.8	6.7	2.46	100
2015	7	21,383	25,379	5.06	8.11	13.47	15.02	12.33	26.3	8.6	2.05	100

1. Compliance Statement Real Estate US claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Real Estate US has been independently verified since January 1, 1993. 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 UBS Realty Investors Equity Composite has been independently examined for the periods January 1, 2006 through December 31, 2015. The verification and performance examination report is available upon request.

2. The Firm The Firm is defined as UBS Realty Investors LLC and UBS Farmland Investors LLC (prior to 2016, the UBS Farmland Investors LLC was known as UBS AgriVest LLC), together Real Estate US . Both entities are registered with the US Securities and Exchange Commission as investment advisors. The Total Firm Gross Assets at December 31, 2015 were USD 30.3 billion, representing the fair value of total Firm assets held under management. Total Firm Net Assets represent the Total Firm Assets held under management less the fair value of liabilities.

3. The Composite The UBS Realty Investors Equity Composite (the "Composite") was created in 2005. All results are presented in US dollars. A complete list and description of Firm composites is available upon request. The Composite comprises all fee-paying, non-taxable discretionary accounts that invest primarily in equity real estate including, but not limited to, the following property types: apartments, office, retail, industrial, and hospitality. The strategy of the accounts in the Composite is to acquire investments in US commercial and multifamily real estate (core and value-added properties) expected to provide attractive risk-adjusted returns consisting of current income and capital appreciation. Since October 2003, a sub-adviser has managed the cash for some pooled accounts included in the Composite. Initially, accounts must have at least USD 30 million in commitments or assets, including debt, to be included in the Composite. Composite dispersion for any year is represented by both the range and the asset-weighted standard deviation of the gross total returns of the accounts that were in the Composite for the entire calendar year. Discretion is broadly defined as the Firm having discretion over the selection, capitalization, asset management, and disposition of investments within the parameters of a given mandate.

4. Valuation An independent appraisal of the underlying real estate for each investment is performed at least annually and includes a complete property inspection and market analysis. Starting October 1, 2009, independent appraisals are generally completed every quarter for most of the underlying real estate investments. For real estate investments that are held in funds where appraisals are not performed on a quarterly basis, the underlying real estate is either scheduled to be appraised once or twice a year. In the interim quarters, updated property and market information is reviewed. If this review indicates a potential material change in the value, the valuation is then updated by the independent appraiser. If this review indicates that any change in value is likely not material, the value is determined to remain unchanged. Valuations of real estate and debt use significant unobservable inputs. In general, each annual property appraisal includes at least an income approach using a discounted cash flow model and a sales comparison approach, which are considered in determining a final value conclusion. All appraisals are certified by members of the Appraisal Institute who hold the MAI designation. Third-party debt is stated at fair value. The valuation of debt is taken into consideration when determining the estimated fair value of the equity in the related investment.

Source: UBS Asset Management, Real Estate & Private Markets (REPM). Past performance is not indicative of future results. (1)Generally for those assets held longer than six months.

UBS Realty Investors Equity Composite

5. Calculation of Performance Returns reflect the impact of leverage, which averaged approximately 14.7% of gross asset value (net asset value plus debt) during 2006 through 2015, and approximately 15.8% in 2015. Leverage has consisted primarily of mortgage loans payable that are collateralized by the related real estate investment. The extent to which leverage is used varies by account strategy and may include either portfolio or property level debt. Expenditures, including tenant improvements and leasing commissions, that extend the useful life or represent additional capital investments benefiting future periods, are capitalized as a component of cost. Annual returns are time-weighted rates of return calculated by linking quarterly returns. The sum of income and appreciation (depreciation) may not equal total returns due to the linking of quarterly returns. Gross of fees returns are presented before all management fees, but after third-party expenses. Net returns are presented net of the management fees and third-party expenses. All returns are presented before any applicable insurance company contract charges in effect on certain funds through February 29, 2008. The policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

6. Investment Management Fees Management fees differ by account and reflect the complexity and value of services chosen, anticipated size, and the number and type of investments involved. Depending upon the services, the fee may represent any one or a combination of: fixed flat amounts; a percentage of purchase price, earnings, assets under management, or of sales proceeds; or incentive fees based on performance. The fee for investment in one of the Firm's commingled funds can be up to 150 bps per annum (decreasing to 125 bps per annum effective January 1, 2016) on net asset value based upon the fee scale and the investor's share of net asset value in the fund and other UBS Realty sponsored funds as of the beginning of the quarter with an incentive fee charged on various performance hurdles, for example, 15% above a 7% real return over sequential 3-year periods, subject to certain clawback provisions depending on the performance of the fund. Please see the applicable fee schedule(s) appropriate to the product or services being presented.

7. Benchmark Effective May 2009, the Firm changed the benchmark retroactively from the property-level National Council of Real Estate Investment Fiduciaries ("NCREIF") Property Index ("NPI") to a fund-level Index, the NCREIF Fund Index-Open End Diversified Core Equity ("NFI-ODCE" or the "Index"). The Firm believes a fund-level index provides a more meaningful comparison for a fund-level composite. The NFI-ODCE, first published mid-2005, is a capitalization-weighted, time-weighted, fund-level return index beginning as of the first quarter of 1978, inclusive. It is presented gross of fees. As of December 31, 2015, the NFI-ODCE consisted of 23 active funds with total net assets of USD 152.1 billion. The NFI-ODCE leverage ratio at December 31, 2015 was 21.7%.

8. Market Conditions Over the past decade, commercial real estate experienced historic highs and lows. Fundamental recovery following the 2001 recession, along with a dramatic increase in the availability and reduction in the cost of debt capital propelled commercial and multifamily performance to the highest level in NCREIF history. In 2005, the NCREIF Fund Index – ODCE returned 21.4%, its highest calendar total return since its inception in 1978. A worldwide credit crisis initiated a new recession during 2008. Liquidity evaporated in most asset classes, including commercial real estate. Total returns turned negative in mid-2008, with 2009 producing the lowest performance on record at negative 29.8%. The downturn was swift, and 2010 through 2013 reflected a period of recovery. By late-2013, expansion was underway as total returns on stabilized properties had recouped losses, led by steady income growth and low supply growth across the broad market. During 2015, the NFI-ODCE produced a gross return of 15.0%, marking the sixth consecutive year of double-digit commercial real estate performance led by above-average appreciation.

Source: UBS Asset Management, Real Estate & Private Markets (REPM). Past performance is not indicative of future results.

UBS Realty Investors Total Composite

Year	Number of accounts[2]	Year-end Composite Net Assets (USD millions)	Year-end Total Firm Net Assets (USD millions)	Gross of fees (%) Income return	Gross of fees (%) Appreciation (depreciation)	Gross of fees (%) Total return	Benchmark return (%)	Net of fees (%) Total return	Range of Gross Returns (%) Max	Range of Gross Returns (%) Min	Asset weighted standard deviation	% of Composite assets valued externally[1]
2006	11	12,670	13,940	6.03	10.74	17.25	16.32	16.14	40.6	13.9	2.07	100
2007	10	13,551	14,798	5.20	8.64	14.16	15.97	13.11	38.6	11.7	2.80	100
2008	10	11,822	13,285	5.03	(11.61)	(7.01)	(10.01)	(7.79)	(1.3)	(41.0)	2.64	100
2009	10	9,042	10,232	6.49	(27.32)	(22.21)	(29.76)	(22.85)	(11.8)	(62.2)	4.17	100
2010	9	10,903	12,107	6.93	9.90	17.34	16.36	16.30	42.0	4.7	3.21	100
2011	9	13,892	15,241	5.52	8.24	14.09	15.99	13.00	35.3	8.6	2.71	100
2012	10	16,413	17,325	5.32	5.26	10.79	10.94	9.71	25.8	(2.5)	2.40	100
2013	12	18,196	19,206	5.09	5.38	10.68	13.94	9.59	26.5	(38.7)	2.57	100
2014	12	21,172	22,252	5.09	6.65	11.99	12.50	10.88	35.8	6.7	2.33	100
2015	10	24,156	25,379	4.97	7.96	13.22	15.02	12.10	26.3	8.6	2.06	100

1. Compliance Statement Real Estate US claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Real Estate US has been independently verified since January 1, 1993. 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 UBS Realty Investors Total Composite has been independently examined for the periods January 1, 2006 through December 31, 2015. The verification and performance examination report is available upon request.

2. The Firm The Firm is defined as UBS Realty Investors LLC and UBS Farmland Investors LLC (prior to 2016, the UBS Farmland Investors LLC was known as UBS AgriVest LLC), together Global Real Estate – US. Both entities are registered with the US Securities and Exchange Commission as investment advisors. The Total Firm Gross Assets at December 31, 2015 were USD 30.3 billion, representing the fair value of total Firm assets held under management. Total Firm Net Assets represent the Total Firm Assets held under management less the fair value of liabilities.

3. The Composite The UBS Realty Investors Total Composite (the "Composite") was created in 1999. Prior to 2006, the Composite name was the UBS Realty Investors Composite. All results are presented in US dollars. A complete list and description of Firm composites is available upon request. The Composite comprises all fee-paying, non-taxable discretionary accounts that invest in real estate including, but not limited to, the following property types: apartments, office, retail, industrial, and hospitality. The strategy of the accounts in the Composite is to acquire investments in US commercial and multifamily real estate (core and value-added properties) expected to provide attractive risk-adjusted returns consisting of current income and capital appreciation. As of December 31, 2015, mortgage assets constituted USD 3.2 billion of the Composite Net Assets. Since October 2003, a sub-adviser has managed cash for some of the pooled accounts included in the Composite. Initially, accounts must have at least USD 30 million in commitments or assets, including debt, to be included in the Composite. Composite dispersion for any year is represented by both the range and the asset-weighted standard deviation of the gross total returns of the accounts that were in the Composite for the entire calendar year. Discretion is broadly defined as the Firm having discretion over the selection, capitalization, asset management, and disposition of investments within the parameters of a given mandate.

Source: UBS Asset Management, Real Estate & Private Markets (REPM). Past performance is not indicative of future results.
[1]Generally for those assets held longer than six months. [2]Includes Accounts managed by UBS Realty Investors LLC that are invested in other Accounts included in this Composite. These Accounts are excluded from the Composite Net Assets and Total Firm Net Assets.

UBS Realty Investors Total Composite

4. Valuation An independent appraisal of the underlying real estate for each investment is performed at least annually and includes a complete property inspection and market analysis. Starting October 1, 2009, independent appraisals are generally completed every quarter for most of the underlying real estate investments. For real estate investments that are held in funds where appraisals are not performed on a quarterly basis, the underlying real estate is scheduled to be appraised either once or twice a year. In the interim quarters, updated property and market information is reviewed. If this review indicates a potential material change in the value, the valuation is then updated by the independent appraiser. If this review indicates that any change in value is likely not material, the value is determined to remain unchanged. Valuations of real estate and debt use significant unobservable inputs. In general, each annual property appraisal includes at least an income approach using a discounted cash flow model and a sales comparison approach, which are considered in determining a final value conclusion. All appraisals are certified by members of the Appraisal Institute who hold the MAI designation. Third-party debt is stated at fair value. The valuation of debt is taken into consideration when determining the estimated fair value of the equity in the related investment.

5. Calculation of Performance Returns reflect the impact of leverage, which averaged approximately 14.5% of gross asset value (net asset value plus debt) during 2006 through 2015, and approximately 14.3% in 2015. Leverage has consisted primarily of mortgage loans payable with the related property serving as the collateral. The extent to which leverage is used varies by account strategy and may include either portfolio or property level debt. Expenditures, including tenant improvements and leasing commissions, that extend the useful life or represent additional capital investments benefiting future periods, are capitalized as a component of cost. Annual returns are time-weighted rates of return calculated by linking quarterly returns. The sum of income and appreciation or depreciation may not equal total returns due to the linking of quarterly returns. Gross of fees returns are presented before all management fees, but after third-party expenses. Net returns are presented net of the management fees and third-party expenses. All returns are presented before any applicable insurance company contract charges in effect on certain funds through February 29, 2008. The policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

6. Investment Management Fees Management fees differ by account and reflect the complexity and value of services chosen, anticipated size, and the number and type of investments involved. Depending upon the services, the fee may represent any one or a combination of: fixed flat amounts; a percentage of purchase price, earnings, assets under management, or of sales proceeds; or incentive fees based on performance. The fee for investment in one of the Firm's commingled funds can be up to 150 bps per annum (decreasing to 125 bps per annum, effective January 1, 2016) on net asset value based upon the fee scale and the investor's share of net asset value in the fund and other UBS Realty sponsored funds as of the beginning of the quarter with an incentive fee charged on various performance hurdles, for example, 15% above a 7% real return over sequential 3-year periods, subject to certain clawback provisions depending on the performance of the fund. Please see the applicable fee schedule(s) appropriate to the product or services being presented.

7. Benchmark Effective May 2009, the Firm changed the benchmark retroactively from the property-level NCREIF Property Index ("NPI") to a fund-level Index, the NCREIF Fund Index-Open End Diversified Core Equity ("NFI-ODCE" or the "Index"). The Firm believes a fund-level index provides a more meaningful comparison for a fund-level composite. The NFI-ODCE, first published mid-2005, is a capitalization-weighted, time-weighted, fund-level return index beginning as of the first quarter of 1978, inclusive. It is presented gross of fees. As of December 31, 2015, the NFI-ODCE consisted of 23 active funds with total net assets of USD 152.1 billion. The NFI-ODCE leverage ratio at December 31, 2015 was 21.7%.

8. Market Conditions Over the past decade, commercial real estate experienced historic highs and lows. Fundamental recovery following the 2001 recession, along with a dramatic increase in the availability and reduction in the cost of debt capital propelled commercial and multifamily performance to the highest level in NCREIF history. In 2005, the NCREIF Fund Index – ODCE returned 21.4%, its highest calendar total return since its inception in 1978. A worldwide credit crisis initiated a new recession during 2008. Liquidity evaporated in most asset classes, including commercial real estate. Total returns turned negative in mid-2008, with 2009 producing the lowest performance on record at negative 29.8%. The downturn was swift, and 2010 through 2013 reflected a period of recovery. By late-2013, expansion was underway as total returns on stabilized properties had recouped losses, led by steady income growth and low supply growth across the broad market. During 2015, the NFI-ODCE produced a gross return of 15.0%, marking the sixth consecutive year of double-digit commercial real estate performance led by above-average appreciation.

Source: UBS Asset Management, Real Estate & Private Markets (REPM). Past performance is not indicative of future results.

UBS Realty Investors Participating Mortgage Funds Composite

Year	Number of accounts	Year-end Composite Net Assets (USD millions)	Year-end Total Firm Net Assets (USD millions)	Gross of fees (%) Income return	Gross of fees (%) Appreciation (depreciation)	Gross of fees (%) Total return	Hybrid Debt Index Total return	Net of fees (%) Total return	% of Composite assets valued externally[1]
2006	1	1,368	13,940	5.93	10.35	16.73	12.49	15.96	96
2007	1	1,397	14,798	5.73	6.93	12.95	12.63	12.21	98
2008	1	1,376	13,285	5.33	(6.35)	(1.27)	(4.68)	(2.07)	100
2009	1	1,046	10,232	5.14	(22.86)	(18.63)	(14.79)	(19.32)	100
2010	1	1,216	12,107	5.62	14.21	20.42	9.06	19.46	100
2011	1	1,488	15,241	5.05	8.81	14.19	9.23	13.30	100
2012	1	1,734	17,325	4.24	6.80	11.25	5.27	10.35	100
2013	1	2,082	19,206	4.08	5.18	9.42	6.68	8.52	100
2014	1	2,384	22,252	4.12	6.98	11.32	6.86	10.40	100
2015	1	2,773	25,379	4.19	6.80	11.21	8.22	10.29	100

1. Compliance Statement Real Estate US claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Real Estate US has been independently verified since January 1, 1993. 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 UBS Realty Investors Participating Mortgage Funds Composite has been independently examined for the periods January 1, 2006 through December 31, 2015. The verification and performance examination report is available upon request.

2. The Firm The Firm is defined as UBS Realty Investors LLC and UBS Farmland Investors LLC (prior to 2016, the UBS Farmland Investors LLC was known as UBS AgriVest LLC), together Real Estate US. Both entities are registered with the US Securities and Exchange Commission as investment advisors. The Total Firm Gross Assets at December 31, 2015 were USD 30.3 billion, representing the fair value of total Firm assets held under management. Total Firm Net Assets represent the Total Firm Assets held under management less the fair value of liabilities.

3. The Composite The UBS Realty Investors Participating Mortgage Funds Composite (the "Composite") was created in 2006. All results are presented in US dollars. A complete list and description of Firm composites is available upon request. The Composite comprises all fee-paying discretionary accounts that invest primarily in mortgages which typically provide both a fixed interest payment and an equity position in the cash flow of income producing properties. The loans are secured by real estate that include, but are not limited to, the following property types: apartments, office, retail, industrial, and hospitality. Occasionally, properties are acquired by exercise of mortgage remedies, options to purchase or the like. As of December 31, 2015, wholly owned real estate consisted of 11% of the fair value of the real estate investments in the Composite. The strategy of the accounts in the Composite is to invest in construction loans (that will convert into permanent loans) or mortgages secured by investments in US commercial and multifamily real estate expected to provide attractive risk-adjusted returns consisting of current income and capital appreciation. Since October 2003, a sub-advisor has managed cash for the pooled accounts included in the Composite. Initially, accounts must have at least USD 30 million in commitments or assets, including debt, to be included in the Composite. Composite dispersion for any year is represented by the range of the gross total returns of the accounts that were in the Composite for the entire calendar year. Since only one account was included in the Composite over the entire reporting period, dispersion is not presented. Discretion is broadly defined as the Firm having discretion over the selection, capitalization, asset management, and disposition of investments within the parameters of a given mandate.

Source: UBS Asset Management, Real Estate & Private Markets (REPM). Past performance is not indicative of future results. [1]Generally for those assets held longer than six months.

UBS Realty Investors Participating Mortgage Funds Composite

4. Valuation An independent appraisal of the underlying real estate for each investment is performed at least annually and includes a complete property inspection and market analysis. Starting October 1, 2009, independent appraisals are generally completed every quarter for the underlying real estate and mortgage investments. Prior to October 1, 2009, the underlying real estate for each investment was scheduled to be appraised twice a year. In the interim quarters, updated property and market information was reviewed. If this review indicated a potential material change in the value, the valuation was then updated by the independent appraiser. If this review indicated that any change in value was likely not material, the value was determined to remain unchanged. Valuations of real estate use significant unobservable inputs. In general, each annual property appraisal includes at least an income approach using a discounted cash flow model and a sales comparison approach, which are considered in determining a final value conclusion. All appraisals are certified by members of the Appraisal Institute who hold the MAI designation. The wholly owned real estate properties in the composite are unleveraged.

5. Calculation of Performance Annual returns are time-weighted rates of return calculated by linking quarterly returns. The sum of income and appreciation (depreciation) may not equal total returns due to the linking of quarterly returns. Gross of fees returns are presented before all management fees, but after third-party expenses. Net returns are presented net of the management fees and third-party expenses. All returns are presented before any applicable insurance company contract charges in effect only through February 29, 2008. Expenditures, including tenant improvements and leasing commissions, that extend the useful life or represent additional capital investments benefiting future periods, are capitalized as a component of cost. Generally, the account in the Composite does not borrow funds to make investments, although it has a line of credit to aid in cash management. The policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

6. Investment Management Fees The fee schedule below represents the schedule for the Trumbull Property Income Fund (“TPI”), the predominant fund in the Composite. The rate equals the investor’s applicable annual base fee percentage (pro-rated for the quarter) times the investor's share of average net asset value, as defined in the fund’s limited partnership agreement, for the quarter. The investor's annual applicable base fee percentage is a blended percentage rate derived by reference to the following fee scale and based on the investor’s share of net asset value in the fund and other designated UBS Realty sponsored funds, as of the beginning of the quarter. To the extent that average cash exceeds 7.5% of the average net assets, the base fee with respect to such excess will be reduced to 20 basis points (pro rated for the quarter). Please see the applicable Confidential Private Offering Memorandum for more information on how fees are calculated and charged.

Investor's Share of Net Asset Value in the Fund (USD)	Annual Base Fee Percentage
First 10 million	0.970%
Next 10 million to 25 million	0.845%
Next 25 million to 100 million	0.815%
Next 100 million to 250 million	0.790%
Above 250 million	0.760%

Effective January 1, 2016, there are two additional Base Fee breakpoints. For investors with net asset values in excess of USD 400 million and USD 600 million, the annual base fee percentage is 0.720% and 0.680%, respectively.

7. Benchmark In January 2010, the Firm developed a custom index for TPI. As such, the Firm has retroactively added an index comparison called the Hybrid Debt Index. Like TPI, the Hybrid Debt Index (HDI) has both income and appreciation components. The HDI uses the yield of the Barclays Bond Index as the income component and 75% of the appreciation of NCREIF Fund Index – Open-end Diversified Core Equity (NFI-ODCE) properties that are included in the NCREIF Property Index (NPI) as the appreciation component. The Firm believes that using the NFI-ODCE properties for appreciation will provide a better comparison than using the NCREIF Property Index (“NPI”) itself because NFI-ODCE properties have characteristics similar to TPI investments in that they are in open-end funds and are valued on a quarterly basis and reported unleveraged. Historical benchmark returns may differ slightly from previous reports due to correction of misclassifications by NCREIF.

8. Market Conditions Over the past decade, commercial real estate experienced historic highs and lows. Fundamental recovery following the 2001 recession, along with a dramatic increase in the availability and reduction in the cost of debt capital propelled commercial and multifamily performance to the highest level in NCREIF history. In 2005, the NCREIF Fund Index – ODCE returned 21.4%, its highest calendar total return since its inception in 1978. A worldwide credit crisis initiated a new recession during 2008. Liquidity evaporated in most asset classes, including commercial real estate. Total returns turned negative in mid-2008, with 2009 producing the lowest performance on record at negative 29.8%. The downturn was swift, and 2010 through 2013 reflected a period of recovery. By late-2013, expansion was underway as total returns on stabilized properties had recouped losses, led by steady income growth and low supply growth across the broad market. During 2015, the NFI-ODCE produced a gross return of 15.0%, marking the sixth consecutive year of double-digit commercial real estate performance led by above-average appreciation.

Source: UBS Asset Management, Real Estate & Private Markets (REPM). Past performance is not indicative of future results.

UBS Farmland Investors Composite

Year	Number of accounts	Year-end Composite Net Assets (USD millions)	Year-end Total Firm Net Assets (USD millions)	Gross of fees (%) Income return	Gross of fees (%) Appreciation (depreciation)	Gross of fees (%) Total return	Benchmark return (%)	Net of fees (%) Total return	Range of Gross Returns (%) Max	Range of Gross Returns (%) Min	% of Composite assets valued externally
2006	4	330	13,940	5.20	8.13	13.64	17.08	12.67	16.0	9.4	88
2007	3	144	14,798	4.83	14.77	20.10	16.97	19.08	20.2	14.9	65
2008	2	435	13,285	4.30	7.75	12.28	13.40	11.32	15.7	12.5	85
2009	2	503	10,232	4.21	1.10	5.35	7.30	4.45	5.6	4.9	100
2010	2	542	12,107	4.70	0.53	5.25	7.68	4.30	5.5	4.8	100
2011	2	603	15,241	4.45	7.82	12.53	14.93	11.55	13.8	11.7	100
2012	2	812	17,325	4.21	12.55	17.15	17.33	16.15	17.1	16.9	100
2013	2	950	19,206	4.18	12.74	17.32	15.82	16.29	24.0	10.9	100
2014	2	1,014	22,252	4.24	3.64	8.00	7.92	7.04	8.4	7.6	100
2015	2	1,143	25,379	3.57	2.72	6.37	6.17	5.43	6.6	6.1	100

1. Compliance Statement Global Real Estate - US claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Global Real Estate - US has been independently verified since January 1, 1993. 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 UBS Farmland Investors Composite has been examined for the periods January 1, 2006 through December 31, 2015. The verification report is available upon request.

2. The Firm The Firm is defined as UBS Realty Investors LLC and UBS Farmland Investors LLC (prior to 2016, the UBS Farmland Investors LLC was known as UBS AgriVest LLC), together Global Real Estate – US. Both entities are registered with the US Securities and Exchange Commission as investment advisors. The Total Firm Gross Assets at December 31, 2015 were USD 30.3 billion, representing the fair value of total Firm assets held under management. Total Firm Net Assets represent the Total Firm Assets held under management less the fair value of liabilities.

3. The Composite The UBS Farmland Investors Composite (the "Composite") was created in 1999. Prior to 2016, the Composite name was the UBS AgriVest Composite. All results are presented in US dollars. A complete list and description of Firm composites is available upon request. The Composite comprises all fee-paying, non-taxable discretionary accounts that invest in agricultural real estate. The strategy of the accounts in the Composite is to acquire investments in US agricultural real estate expected to provide attractive risk-adjusted returns consisting of current income and capital appreciation. Initially, accounts must have at least USD15 million in commitments or assets, including debt, to be included in the Composite. Dispersion represented by asset weighted standard deviation is not considered meaningful where less than five portfolios have been in the Composite for the entire year and, therefore, has not been presented. Discretion is broadly defined as the Firm having discretion over the selection, capitalization, asset management, and disposition of investments within the parameters of a given mandate.

Source: UBS Asset Management, Global Real Estate – Farmland. Past performance is not indicative of future results.

UBS Farmland Investors Composite

4. Valuation An independent Accredited Rural Appraiser or Member of the Appraisal Institute appraises assets at least annually, unless otherwise specified by the client. Starting July 1, 2013, the independent appraisals are generally completed each quarter for most farm investments. In general, each property appraisal includes an income approach and a sales comparison approach, which are considered in determining a final value conclusion. Valuation of farm investments use significant unobservable inputs.

5. Calculation of Performance Returns reflect the impact of leverage, which has only been utilized on a short-term basis. Expenditures that extend the useful life or represent additional capital investments benefiting future periods are capitalized as a component of cost. Annual returns are time-weighted rates of return calculated by linking quarterly returns**.** The sum of income and capital returns may not equal total returns due to the linking of quarterly returns. Gross of fees returns are presented before all management fees, but after third party expenses. Net returns are presented net of the management fees and third-party expenses. The policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

6. Investment Management Fees Management fees differ by account and reflect the complexity and value of services chosen, anticipated size and the number and type of investments involved. Depending upon the services, the fee may represent any one or a combination of: fixed flat amounts; a percentage of purchase price, earnings, assets under management, or of sales proceeds; or incentive fees based on performance. The fee schedule for investment in the commingled fund is 100 bps per annum on average gross asset value excluding cash and cash equivalents, and 20 bps per annum on average balances of cash and cash equivalents.

7. Benchmark Effective January 1, 2007, UBS Farmland Investors retroactively changed the benchmark from the National Council of Real Estate Fiduciaries (NCREIF) Farmland Index (NFI) to a custom benchmark, the Core Farmland Index (CFI). The NFI had become increasingly weighted to permanent cropland and owner/operated property over time and no longer reflected core, diversified exposure to US farmland. To create the CFI, starting with the NFI, UBS Farmland Investors excluded the investments in the NFI that were owner/operated and re-weighted the NFI returns to 80% annual cropland and 20% permanent cropland. UBS Farmland Investors considers this to be market-neutral and therefore a more appropriate benchmark for broadly diversified exposure to core US farmland. The composition of the NFI and the CFI that is derived from the NFI differs from that of the Composite since the NFI reflects property level returns and excludes cash and other non-property related assets, liabilities, income and expenses such as management fees. Note: During the first quarter of 2009, NCREIF expanded its farmland database to include properties held for taxable investors. These properties have been acquired, managed and valued on a basis consistent with all properties in the database. Beginning in the first quarter of 2009, the NFI and CFI have been updated back through 2Q2006 to reflect the expanded set of properties.

8. Market Conditions Agricultural real estate appreciated significantly during the period 2004 through 2008 and again in 2011 through 2013. That appreciation reflects periods of strong agricultural returns and falling capitalization rates in most markets.

Source: UBS Asset Management, Global Real Estate – Farmland. Past performance is not indicative of future results.

Required notes

Returns herein, unless otherwise noted, are presented gross of fees.

The Fund's participating mortgages and those construction loans converting to participating mortgages are secured by properties operated by sponsors that the advisor has deemed creditworthy. The Fund does not own these properties.

Returns for periods greater than one year are annualized. For the period ending December 31, 2016 TPF's net total returns for the quarter, one-, three-, five-, ten-, twenty-year periods and since inception were 1.21%, 6.14%, 9.48%, 9.36%, 4.94%, 8.92% and 8.07% respectively, after the deduction of management fees, but before the deduction of contract charges. Contract charges were only applicable through February 29, 2008. TPF returns reflect the reinvestment of income. Returns and dollars are USD denominated.

Additional information on fees is available in the ADV Part 2 for UBS Realty Investors LLC and is also available upon request. As fees are deducted quarterly, the compounding effect will be to increase the impact of the fees by an amount directly related to the gross account performance. For example, on an account with a 1% annual fee, if the gross performance is 10%, the compounding effect of the fees will result in a net performance of approximately 8.93%.

NFI-ODCE (Source NCREIF) is a fund-level, capitalization weighted index of open-ended diversified core equity commercial real estate funds that includes cash balances and leverage and is reported gross of fees. The degree of leverage used varies among the funds included in NFI-ODCE. As of December 31, 2016 the Preliminary NFI-ODCE consisted of 23 active funds with total net assets of USD 176.5 billion.

There is no assurance that the financial objective will ultimately be realized and the possibility of loss does exist. There is no guarantee that the investment strategy will perform as expected. Property photos shown in this presentation represent some examples of Fund investments. These types of investments may not be available or selected by the Fund in the future.

GRESB, which was formerly known as the Global Real Estate Sustainability Benchmark, is an industry-driven organization committed to assessing the environmental, social and governance (ESG) performance of real assets globally, including real estate portfolios (public, private and direct), real estate debt portfolios and infrastructure. More than 250 members, including 60 pension funds and their fiduciaries, use GRESB data in their investment management and engagement process, with a clear goal to optimize the risk/return profile of their investments. In 2016, the survey was completed by 759 entities in 63 countries across six continents, representing a total property value of USD 2.8 trillion (GAV).

Energy Star is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient products and practices. To celebrate the 15th Year of ENERGY STAR for Buildings, the EPA recognized UBS Realty Investors LLC as a Premier Member of the 2014 ENERGY STAR Certification Nation for certifying 38 buildings this year. To earn certification, a building must achieve an Energy Star rating of 75 of higher.

Please note that past performance is not a guide to the future. The value of investments and the income received may go down as well as up, and investors may not get back the original amount invested.

Risks

- Investors should be aware that return objectives are subject to a number of assumptions and factors, a change in any of which could adversely affect returns. Accordingly, investors should note the limitations of an objective.
- Investments in direct real estate and real estate funds involve a high degree of risk. For instance, events in 2008 and 2009 such as the deterioration of credit markets and increased volatility have resulted in a historically unprecedented lack of liquidity and decline in asset values. The value of investments and income from them may increase or decrease. Investors must have the financial ability and willingness to accept and bear the risks (including, among other things, the risk of loss of investment) that are characteristic of real estate investing and investing in commingled fund for an indefinite period of time. Among the risks to be considered are:
  - **Risks of investing in real estate.** Risks include adverse changes in market and economic conditions, zoning, and other governmental laws, regulations, and policies, occupancy levels and the ability to lease space, and environmental risks, and risk of uninsured loses.
  - **Debt investment risk.** Risk includes risks of borrower defaults, bankruptcies, fraud and special hazard losses that are not covered by standard hazard insurance
  - **Restrictions on redemption and transferability of shares or units; illiquidity.** Real estate is an illiquid investment and the account may not be able to generate sufficient cash to meet withdrawal requests from investors.
  - **Reliance on controlling persons and third parties.** The exercise of control over an entity can impose additional risks and the fund can experience a significant loss. The risk of third parties includes a conflict between their objectives and those of the account or fund.
  - **Use of leverage.** Leverage will increase the exposure of the real estate assets to adverse economic factors, such as rising interest rates, economic downturns, or deteriorations in the condition of the properties or their respective markets and changes in interest rates
  - **Legal & Taxation.** Investors should consult their own legal and tax advisers for potential US and/or local country legal or tax implications on any investment
  - **Currency risk.** The funds and accounts managed by UBS Realty Investors LLC are denominated in US Dollars. There is a potential for loss due to currency fluctuations for non-US investors.
  - **Lack of diversification**. Individually managed accounts and funds in their initial investment periods may have investments that are relatively large compared to the account's or fund's anticipated total value. Any limit to diversification increases risk because the unfavorable performance of even a single investment might have an adverse effect on the aggregate return.
  - **Unspecified investments**. There can be no assurance that the advisor will be able to continually locate and acquire assets meeting the fund or account's objective. Competition for assets may generally reduce the number of suitable prospective assets available.
- In considering an investment in a commingled real estate fund, prospective investors must rely on their own examination of the partnership agreement, private placement memorandum, and all terms of the offering, including merits and details of these and other risks involved. If there are any discrepancies in fund terms between this presentation and the private placement (offering) memorandum, the memorandum shall prevail.
- This is not a recommendation to invest in any product or services. Investors must have the sophistication to independently evaluate investment risks and to exercise independent judgment in deciding whether or not to invest in real estate and real estate funds.

Disclaimer – US

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Section 5

Biographies

UBS

Kevin M. Crean

Senior Portfolio Manager
Managing Director

Years of investment industry experience: 38

Education: University of Denver (US), BSBA, MBA

- Kevin Crean is the Senior Portfolio Manager for the Trumbull Property Fund (TPF) for Real Estate US, a business which forms part of Real Estate & Private Markets within UBS Asset Management. TPF is the firm's largest open-end real estate account. Kevin is also a member of the Strategy Team and Investment Committee.
- Prior to this assignment, Kevin was responsible for property dispositions nationally. Over a 15-year period, he oversaw property sales that totaled over 200 transactions valued in excess of USD 3 billion. Kevin joined the firm's predecessor organization in 1984. During his career with the company he has held positions in mortgage lending, asset management, acquisitions, sales and portfolio management.
- Before joining the company, he worked for The Travelers Insurance Company's Real Estate Department, focusing on acquisition and loan production, and for a real estate brokerage firm in Denver where he was involved with office leasing and property sales.

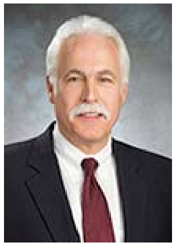
Dated: January 2017

Stephen J. Olstein

Portfolio Manager
Executive Director

Years of investment industry experience: 38

Education: New York University (US), BS



- Steve Olstein is a Portfolio Manager for the Trumbull Property Fund (TPF) for Real Estate US, a business which forms part of Real Estate & Private Markets within UBS Asset Management. Steve is responsible for property level operations/ performance and dispositions.
- He was previously a Director in the Commercial Asset Management Unit and in Acquisitions, where he was responsible for asset management and acquisitions in portions of the Northeast and Mid-Atlantic states.
- Prior to joining UBS in 2003, Steve was Managing Director in the Asset Management and Portfolio Management areas of CIGNA's Real Estate Investment Department. He also has served in various other management areas of CIGNA's real estate operations, including product development, portfolio management for advisory accounts, acquisitions and mortgage loan origination.
- Steve is active in NAREIM and a US Marine Corps veteran.

Dated: January 2017

UBS

Pamela J. Thompson

Portfolio Manager
Executive Director

Years of investment industry experience: 26

Education: University of Connecticut (US), BS, MBA

- Pamela Thompson is a Portfolio Manager for the Trumbull Property Fund (TPF) for Real Estate US, a business which forms part of Real Estate & Private Markets within UBS Asset Management. She is responsible for account operations, reporting, acquisitions and financing.
- Pam has worked at UBS for over 14 years including roles in Acquisitions, Financing, and Multifamily Asset Management.
- Prior to joining UBS, Pam was the Northeast Region Office Head for Bozzuto & Associates, a multifamily development firm, responsible for Regional Property Management and Acquisitions.
- For four years, she worked at CIGNA Realty Investors, where she was the Assistant Portfolio Manager for a separate account. She also had extensive experience in debt placements on their lending team.
- Pam also worked in Problem Loans and Valuations for Aetna Real Estate Investments, and as a Senior Real Estate Analyst for Arthur Andersen & Co.

Dated : January 2017

Timothy D. Walsh

Assistant Portfolio Manager
Executive Director

Years of real estate industry experience: 19

Education: Amherst College (US), BA;
Tuck School at Dartmouth College (US), MBA

- Tim is an Assistant Portfolio Manager for the Trumbull Property Fund (TPF) for Real Estate US, a business which forms part of Real Estate & Private Markets within UBS Asset Management.
- Prior to this assignment, Tim was a member of the teams responsible for acquisitions in the Northeast and Southeast Regions of the United States. He has worked on fee simple, participating mortgage, joint venture, and portfolio recapitalization transactions totaling USD 2.5 billion. He also managed USD 400 million in construction loans.
- Tim was an intern with UBS in the summer of 2005. Prior to that he worked for Pacific Construction Services where he managed construction projects for the City of Chicago and the Federal Government. He also spent five years with TrizecHahn where he first managed super regional shopping centers and later worked in the development group on two mixed-use projects totaling USD 900 million.

Dated: January 2017

Thomas C. Klugherz

Portfolio and Client Services Officer
Executive Director

Years of investment industry experience: 31

Education: San Jose State University (US), BA;
Santa Clara University (US) MBA-Finance

- Tom Klugherz is a member of the Portfolio and Client Services Unit for Real Estate US, a business which forms part of Real Estate & Private Markets within UBS Asset Management. Tom is located in the San Francisco office. He currently has investor relations and new business development responsibilities in the Western region.
- Tom has 31 years of experience working in various capacities as a fiduciary for some of the nation's largest pension plans and institutions. His prior experience includes acquisitions, asset management, portfolio management and day-to-day operations of several investment managers including GE Capital Investments Advisors and SSR Realty Advisors.
- During his career he has been directly involved in sourcing, underwriting and managing more than USD 10 billion of institutional grade investments across the United States. Tom has worked directly with existing and prospective separate account and fund clients to analyze their portfolios and formulate investment strategies.
- Tom is a member of PREA and NAREIM. He previously served as NAREIM's interim President.

Dated: January 2017

Mia Y. Dennis

Portfolio and Client Services Officer
Director

Years of investment industry experience: 20

Education: University of California at Davis (US), BA

- Mia Dennis is a member of the Portfolio and Client Services Unit for Real Estate US, a business which forms part of Real Estate & Private Markets within UBS Asset Management. She is located in the San Francisco office. Mia's primary responsibility is investor relations and new business development in the Western region.
- Mia has 20 years of experience working in various capacities in the real estate investment management industry. Her prior experience includes acquisitions, asset management, loan originations, consulting and client service.
- Prior to joining UBS, Mia spent six years at Callan Associates as a real estate consultant for pension plans nationwide. She also has worked for AEW and J.P. Morgan as a real estate specialist in client services.
- Mia holds her Series 7 and 63 licenses with the Financial Industry Regulatory Authority (FINRA).

Dated: January 2017

UBS

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Ventura County Employees' Retirement Association

Preliminary Performance Report
Month Ending January 31, 2017

Anthony Ferrara, CAIA, Consultant
Allan Martin, Partner

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Ventura County Employees' Retirement Association

Total Fund Performance Detail Net of Fees

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total Fund	**4,732,172,032**	**100.0**	**100.0**	**1.8**	**4.4**	**1.8**	**6.7**	**14.5**	**5.9**	**8.6**	**5.1**	**7.9**	**Apr-94**
Policy Index				1.6	4.2	1.6	6.6	14.1	6.5	8.6	5.4	8.0	*Apr-94*
Over/Under				0.2	0.2	0.2	0.1	0.4	-0.6	0.0	-0.3	-0.1	
Allocation Index				*1.8*	*5.0*	*1.8*	*7.2*	*14.9*	*6.2*	*8.0*	*5.0*	--	*Apr-94*
60% MSCI ACWI (Net)/40% CITI WGBI				*2.0*	*1.6*	*2.0*	*2.5*	*11.1*	*3.0*	*4.9*	*3.9*	--	*Apr-94*
Total Fund ex Parametric	**4,650,673,612**	**98.3**	**--**	**1.7**	**4.2**	**1.7**	**6.1**	**13.7**	**5.8**	**8.4**	**5.0**	**7.9**	**Apr-94**
Total Fund ex Private Equity	**4,549,459,232**	**96.1**	**--**	**1.8**	**4.4**	**1.8**	**6.7**	**14.8**	**5.7**	**8.0**	**--**	**8.6**	**Jan-12**
Policy Index				1.6	4.2	1.6	6.6	14.1	6.5	8.6	5.4	9.3	*Jan-12*
Over/Under				0.2	0.2	0.2	0.1	0.7	-0.8	-0.6		-0.7	
Total US Equity	**1,525,833,106**	**32.2**	**28.0**	**1.9**	**8.7**	**1.9**	**11.1**	**22.1**	**10.4**	**14.2**	**6.9**	**9.0**	**Dec-93**
Russell 3000				1.9	8.5	1.9	10.8	21.7	10.2	13.9	7.2	9.3	*Dec-93*
Over/Under				0.0	0.2	0.0	0.3	0.4	0.2	0.3	-0.3	-0.3	
BlackRock Equity Market Fund	1,308,925,238	27.7		2.0	8.6	2.0	11.0	21.9	10.4	14.0	--	7.6	Dec-07
Dow Jones U.S. Total Stock Market				1.9	8.5	1.9	10.9	21.7	10.2	13.9	7.2	7.5	*Dec-07*
Over/Under				0.1	0.1	0.1	0.1	0.2	0.2	0.1		0.1	
Western U.S. Index Plus	163,353,850	3.5		1.6	7.7	1.6	10.3	21.7	11.3	15.3	--	4.5	May-07
S&P 500				1.9	7.8	1.9	9.9	20.0	10.8	14.1	7.0	6.5	*May-07*
Over/Under				-0.3	-0.1	-0.3	0.4	1.7	0.5	1.2		-2.0	
BlackRock Extended Equity Index	53,554,018	1.1		2.1	12.2	2.1	15.6	29.9	8.0	13.4	7.9	11.7	Oct-02
Dow Jones U.S. Completion Total Stock Market				2.1	12.1	2.1	15.5	29.7	7.8	13.2	7.8	11.7	*Oct-02*
Over/Under				0.0	0.1	0.0	0.1	0.2	0.2	0.2	0.1	0.0	

Policy Index: Currently, 28% Russell 3000, 20% Barclays Aggregate, 15% MSCI ACWI ex U.S., 10%MSCI ACWI, 10% DJ U.S. Total Stock Market Index + 3%, 10% CPI+4% Index, and 7% NCREIF ODCE Real Estate Index.

Prior to January 2016 the Total U.S. Equity Benchmark was a dynamic hybrid using the respective managers' market value weights within the U.S. Equity component toward their benchmark. Prior to May 2013, the Dow Jones U.S. Total Stock Market Index. Prior to May 2007, the Russell 3000 Index.

CPI+4% and CPI+5% are estimated due to CPI monthly lag.

Ventura County Employees' Retirement Association

Total Fund Performance Detail Net of Fees

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total Non-US Equity	**730,437,781**	**15.4**	**15.0**	**3.8**	**4.5**	**3.8**	**10.1**	**18.5**	**2.1**	**5.6**	**1.5**	**6.2**	**Mar-94**
MSCI ACWI ex USA				*3.5*	*3.7*	*3.5*	*9.3*	*16.1*	*0.9*	*4.4*	*1.3*	*4.9*	*Mar-94*
Over/Under				0.3	0.8	0.3	0.8	2.4	1.2	1.2	0.2	1.3	
MSCI EAFE				*2.9*	*4.3*	*2.9*	*8.7*	*12.0*	*0.7*	*6.0*	*1.0*	*4.5*	*Mar-94*
MSCI ACWI ex USA Local Currency				*1.0*	*4.9*	*1.0*	*12.8*	*14.3*	*6.5*	*9.3*	*2.5*	*--*	*Mar-94*
MSCI EAFE Local Currency				*0.1*	*5.9*	*0.1*	*13.6*	*12.0*	*6.8*	*11.0*	*2.0*	*4.7*	*Mar-94*
BlackRock ACWI ex-U.S. Index	353,595,418	7.5		3.6	3.6	3.6	9.2	16.5	1.4	4.8	--	1.4	Mar-07
MSCI ACWI ex USA				*3.5*	*3.7*	*3.5*	*9.3*	*16.1*	*0.9*	*4.4*	*1.3*	*1.0*	*Mar-07*
Over/Under				0.1	-0.1	0.1	-0.1	0.4	0.5	0.4		0.4	
MSCI ACWI ex USA Local Currency				*1.0*	*4.9*	*1.0*	*12.8*	*14.3*	*6.5*	*9.3*	*2.5*	*2.4*	*Mar-07*
Sprucegrove	194,605,072	4.1		5.3	8.1	5.3	17.5	27.3	2.7	6.3	2.3	7.3	Mar-02
MSCI ACWI ex USA				*3.5*	*3.7*	*3.5*	*9.3*	*16.1*	*0.9*	*4.4*	*1.3*	*6.1*	*Mar-02*
Over/Under				1.8	4.4	1.8	8.2	11.2	1.8	1.9	1.0	1.2	
MSCI EAFE				*2.9*	*4.3*	*2.9*	*8.7*	*12.0*	*0.7*	*6.0*	*1.0*	*5.5*	*Mar-02*
MSCI ACWI ex USA Local Currency				*1.0*	*4.9*	*1.0*	*12.8*	*14.3*	*6.5*	*9.3*	*2.5*	*4.9*	*Mar-02*
MSCI EAFE Local Currency				*0.1*	*5.9*	*0.1*	*13.6*	*12.0*	*6.8*	*11.0*	*2.0*	*4.2*	*Mar-02*
Hexavest	81,509,379	1.7		2.0	4.3	2.0	5.3	11.5	1.4	5.4	--	3.5	Dec-10
MSCI EAFE				*2.9*	*4.3*	*2.9*	*8.7*	*12.0*	*0.7*	*6.0*	*1.0*	*3.6*	*Dec-10*
Over/Under				-0.9	0.0	-0.9	-3.4	-0.5	0.7	-0.6		-0.1	
MSCI EAFE Local Currency				*0.1*	*5.9*	*0.1*	*13.6*	*12.0*	*6.8*	*11.0*	*2.0*	*7.3*	*Dec-10*
Walter Scott	100,727,911	2.1		3.6	1.4	3.6	4.6	15.3	3.7	6.1	--	4.1	Dec-10
MSCI ACWI ex USA				*3.5*	*3.7*	*3.5*	*9.3*	*16.1*	*0.9*	*4.4*	*1.3*	*2.2*	*Dec-10*
Over/Under				0.1	-2.3	0.1	-4.7	-0.8	2.8	1.7		1.9	
MSCI ACWI ex USA Local Currency				*1.0*	*4.9*	*1.0*	*12.8*	*14.3*	*6.5*	*9.3*	*2.5*	*6.1*	*Dec-10*
Total Global Equity	**494,468,770**	**10.4**	**10.0**	**2.7**	**5.8**	**2.7**	**9.9**	**18.6**	**4.5**	**8.0**	**2.9**	**5.2**	**May-05**
MSCI ACWI				*2.7*	*5.8*	*2.7*	*9.5*	*17.9*	*5.5*	*8.7*	*3.7*	*6.2*	*May-05*
Over/Under				0.0	0.0	0.0	0.4	0.7	-1.0	-0.7	-0.8	-1.0	
BlackRock MSCI ACWI Equity Index	494,468,770	10.4		2.7	5.8	2.7	9.7	18.5	5.9	--	--	9.8	Aug-12
MSCI ACWI				*2.7*	*5.8*	*2.7*	*9.5*	*17.9*	*5.5*	*8.7*	*3.7*	*9.4*	*Aug-12*
Over/Under				0.0	0.0	0.0	0.2	0.6	0.4			0.4	

Ventura County Employees' Retirement Association

Total Fund Performance Detail Net of Fees

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total Private Equity	**182,712,800**	**3.9**	**10.0**	**-0.5**	**2.9**	**-0.5**	**6.6**	**7.1**	**13.5**	**12.9**	**--**	**13.4**	**Jan-12**
DJ U.S. Total Stock Market Index + 3%				2.2	9.3	2.2	12.8	25.3	13.5	17.3	--	18.2	*Jan-12*
Over/Under				-2.7	-6.4	-2.7	-6.2	-18.2	0.0	-4.4		-4.8	
Adams Street Global Fund Series	111,443,696	2.4		-0.7	2.4	-0.7	5.7	6.3	11.9	11.4	--	12.2	Jan-12
DJ U.S. Total Stock Market Index + 3%				2.2	9.3	2.2	12.8	25.3	13.5	17.3	--	18.2	*Jan-12*
Over/Under				-2.9	-6.9	-2.9	-7.1	-19.0	-1.6	-5.9		-6.0	
Harbourvest- Dover Street VIII	48,974,521	1.0		-0.2	3.1	-0.2	5.5	6.7	17.5	--	--	17.7	Aug-13
DJ U.S. Total Stock Market Index + 3%				2.2	9.3	2.2	12.8	25.3	13.5	17.3	--	14.2	*Aug-13*
Over/Under				-2.4	-6.2	-2.4	-7.3	-18.6	4.0			3.5	
Pantheon Global Secondary Funds	21,902,789	0.5		0.0	5.7	0.0	17.5	15.5	12.7	11.1	--	10.5	Jan-12
DJ U.S. Total Stock Market Index + 3%				2.2	9.3	2.2	12.8	25.3	13.5	17.3	--	18.2	*Jan-12*
Over/Under				-2.2	-3.6	-2.2	4.7	-9.8	-0.8	-6.2		-7.7	
Drive Capital Fund	391,795	0.0		0.0	-29.3	0.0	--	--	--	--	--	-29.3	Sep-16
DJ U.S. Total Stock Market Index + 3%				2.2	9.3	2.2	12.8	25.3	13.5	17.3	--	7.7	*Sep-16*
Over/Under				-2.2	-38.6	-2.2						-37.0	

Please Note:
Private Equity performance is shown on a time-weighted return basis. Values are cash adjusted with current month cash flows.

Drive Capital Fund, funded 9/1/2016

Ventura County Employees' Retirement Association

Private Equity Limited Partnership Performance

Fund Name	Vintage Year	Initial Investment Date	Commitment	Capital Called to Date[1]	Outstanding Commitment[1]	Call Ratio	Add'l Fees[2]	Distributions to Date	Valuation	Total Value	Net Benefit	IRR	Since Inception: Distributions to Paid In Multiple (DPI)	Since Inception: Total Value to Paid In Multiple (TVPI)
Adams Street 2010 U.S. Fund	2010	5/21/2010	$42,500,000	$33,277,500	$9,222,500	78%	$15,213	$14,394,035	$34,297,065	$48,691,100	$15,398,387	0.0%	0.43x	1.46x
Adams Street 2010 Non-U.S. Dev. Mkts Fund	2010	5/21/2010	$25,500,000	$20,591,249	$4,908,751	81%	$1,589	$8,141,472	$16,744,994	$24,886,466	$4,293,628	7.7%	0.4x	1.21x
Adams Street 2010 Non-U.S. Emg Mkts Fund	2010	1/3/2011	$8,500,000	$6,621,500	$1,878,500	78%	$0	$738,789	$7,833,407	$8,572,196	$1,950,696	9.4%	0.11x	1.29x
Adams Street 2010 Direct Fund	2010	5/21/2010	$8,500,000	$7,879,500	$620,500	93%	$6,697	$4,831,957	$7,407,542	$12,239,499	$4,353,302	12.0%	0.61x	1.55x
Total Adams Street 2010	*2010*	*5/21/2010*	*$85,000,000*	*$68,369,749*	*$16,630,251*	*80%*	*$23,499*	*$28,106,253*	*$66,283,008*	*$94,389,261*	*$25,996,013*	*11.5%*	*0.41x*	*1.38x*
Adams Street 2013 Global Fund	2013	6/27/2013	$75,000,000	$44,250,000	$30,750,000	59%	$10,728	$3,108,905	$44,395,263	$47,504,168	$3,243,440	4.4%	0.07x	1.07x
Adams Street 2016 Global Fund	2016	12/22/2016	$60,000,000	$1,500,000	$58,500,000	3%	$0	$0	$1,594,044	$1,594,044	$94,044	0.0%	0x	1.06x
Drive Capital Fund II	2016	9/1/2016	$15,000,000	$523,355	$14,476,645	3%	$3,210	$0	$391,796	$391,795	($134,770)	0.0%	--	0.74x
HarbourVest - Dover Street VIII	2013	5/30/2013	$67,500,000	$56,362,500	$11,137,500	84%	$84,954	$29,369,898	$47,534,125	$76,904,023	$20,456,569	22.7%	0.52x	1.36x
HarbourVest - Dover Street IX	2016	12/16/2016	$60,000,000	$2,400,000	$57,600,000	4%	$0	$841,532	$1,737,342	$2,578,874	$178,874	4.0%	--	--
Pantheon Global Secondary Fund IV	2010	8/20/2010	$15,000,000	$9,960,000	$5,040,000	66%	$0	$8,805,001	$5,690,350	$14,495,351	$4,535,351	13.4%	0.88x	1.46x
Pantheon Global Secondary Fund V	2015	2/26/2015	$50,000,000	$13,391,510	$36,608,490	27%	($87,343)	$12,568	$16,199,876	$16,212,444	$2,908,277	77.7%	--	1.22x
Total VCERA Private Equity Program	**--**	***5/21/2010***	***$427,500,000***	***$196,757,114***	***$230,742,886***	***46%***	***$35,048***	***$70,244,157***	***$183,825,803***	***$254,069,960***	***$57,277,798***	***0.0%***	***0.36x***	***1.29x***

1. Includes recycled/recallable distributions received to date.

2. Add'l Fees represents notional interest paid/(received).

2. Add'l Fees for Pantheon Global Secondary Fund V includes notional interest paid/(received) and management fee rebates paid to VCERA.

Note: Private equity performance data is reported net of fees.

Performance shown is based on 9/30/2016 NAVs cash-adjusted for cash flows through 01/31/2017.

Ventura County Employees' Retirement Association

Total Fund Performance Detail Net of Fees

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total US Fixed Income	**922,166,458**	**19.5**	**20.0**	**0.4**	**-1.1**	**0.4**	**-0.2**	**5.2**	**2.7**	**3.1**	**5.6**	**6.0**	**Feb-94**
BBgBarc US Aggregate TR				0.2	-2.0	0.2	-2.3	1.5	2.6	2.1	4.4	5.4	*Feb-94*
Over/Under				0.2	0.9	0.2	2.1	3.7	0.1	1.0	1.2	0.6	
BlackRock U.S. Debt Fund	215,637,610	4.6		0.2	-2.0	0.2	-2.3	1.4	2.7	2.2	4.5	5.3	Nov-95
BBgBarc US Aggregate TR				0.2	-2.0	0.2	-2.3	1.5	2.6	2.1	4.4	5.2	*Nov-95*
Over/Under				0.0	0.0	0.0	0.0	-0.1	0.1	0.1	0.1	0.1	
Western	282,607,027	6.0		0.5	-1.9	0.5	-1.3	4.0	3.9	3.9	5.3	6.2	Dec-96
BBgBarc US Aggregate TR				0.2	-2.0	0.2	-2.3	1.5	2.6	2.1	4.4	5.3	*Dec-96*
Over/Under				0.3	0.1	0.3	1.0	2.5	1.3	1.8	0.9	0.9	
Reams	302,128,659	6.4		0.3	-0.1	0.3	0.9	7.0	1.1	2.5	5.9	5.6	Sep-01
Reams Custom Index				0.1	0.3	0.1	0.5	0.8	0.5	0.8	3.7	4.1	*Sep-01*
Over/Under				0.2	-0.4	0.2	0.4	6.2	0.6	1.7	2.2	1.5	
BBgBarc US Aggregate TR				*0.2*	*-2.0*	*0.2*	*-2.3*	*1.5*	*2.6*	*2.1*	*4.4*	*4.5*	*Sep-01*
3-Month LIBOR + 3%				*0.3*	*1.0*	*0.3*	*2.3*	*3.8*	*3.5*	*3.4*	*4.2*	*4.8*	*Sep-01*
Loomis Strategic Alpha	44,583,343	0.9		0.3	1.2	0.3	3.8	7.1	2.6	--	--	2.6	Jul-13
BBgBarc US Aggregate TR				0.2	-2.0	0.2	-2.3	1.5	2.6	2.1	4.4	2.7	*Jul-13*
Over/Under				0.1	3.2	0.1	6.1	5.6	0.0			-0.1	
3-Month LIBOR + 3%				*0.3*	*1.0*	*0.3*	*2.3*	*3.8*	*3.5*	*3.4*	*4.2*	*3.4*	*Jul-13*
Loomis Sayles Multi Strategy	77,209,819	1.6		1.0	-0.5	1.0	2.5	10.0	4.2	5.3	6.5	6.5	Jul-05
Loomis Custom Index				0.5	-0.5	0.5	1.0	7.1	3.2	3.5	5.2	5.2	*Jul-05*
Over/Under				0.5	0.0	0.5	1.5	2.9	1.0	1.8	1.3	1.3	
BBgBarc US Govt/Credit TR				*0.3*	*-2.2*	*0.3*	*-2.7*	*1.9*	*2.6*	*2.1*	*4.4*	*4.2*	*Jul-05*

Reams Custom Index: Merrill Lynch 3 Month Libor Constant Maturity Index, prior to February 2013 the Barclays Aggregate.

Loomis Custom Index: 65% Barclays Aggregate, 30% Citigroup High Yield Market Index and 5% JPM Non-US Hedged Bond Index.

Ventura County Employees' Retirement Association

Total Fund Performance Detail Net of Fees

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total Real Estate	**382,552,273**	**8.1**	**7.0**	**0.0**	**1.6**	**0.0**	**3.2**	**6.8**	**10.3**	**10.1**	**3.4**	**7.9**	**Mar-94**
NCREIF ODCE Net				0.0	1.9	0.0	3.7	7.8	11.0	11.2	4.8	8.2	*Mar-94*
Over/Under				0.0	-0.3	0.0	-0.5	-1.0	-0.7	-1.1	-1.4	-0.3	
Prudential Real Estate	135,101,380	2.9		0.0	2.3	0.0	4.2	8.2	11.7	11.5	4.6	6.1	Jun-04
NCREIF ODCE Net				0.0	1.9	0.0	3.7	7.8	11.0	11.2	4.8	7.1	*Jun-04*
Over/Under				0.0	0.4	0.0	0.5	0.4	0.7	0.3	-0.2	-1.0	
NCREIF ODCE				*0.0*	*2.1*	*0.0*	*4.2*	*8.8*	*12.1*	*12.2*	*5.8*	*8.1*	*Jun-04*
UBS Real Estate	247,269,383	5.2		0.0	1.2	0.0	2.7	6.2	9.5	9.4	4.9	7.5	Mar-03
NCREIF ODCE Net				0.0	1.9	0.0	3.7	7.8	11.0	11.2	4.8	7.3	*Mar-03*
Over/Under				0.0	-0.7	0.0	-1.0	-1.6	-1.5	-1.8	0.1	0.2	
NCREIF ODCE				*0.0*	*2.1*	*0.0*	*4.2*	*8.8*	*12.1*	*12.2*	*5.8*	*8.3*	*Mar-03*
RREEF	181,509	0.0		0.0	-0.4	0.0	-12.9	-16.5	4.1	9.9	--	-6.2	Sep-07
NCREIF ODCE Net				0.0	1.9	0.0	3.7	7.8	11.0	11.2	4.8	3.9	*Sep-07*
Over/Under				0.0	-2.3	0.0	-16.6	-24.3	-6.9	-1.3		-10.1	
NCREIF ODCE				*0.0*	*2.1*	*0.0*	*4.2*	*8.8*	*12.1*	*12.2*	*5.8*	*4.8*	*Sep-07*
Total Liquid Alternatives	**412,502,424**	**8.7**	**10.0**	**2.2**	**4.2**	**2.2**	**4.9**	**19.6**	**2.5**	**--**	**--**	**5.1**	**Apr-13**
CPI + 4% (Unadjusted)				0.4	0.9	0.4	2.5	6.0	5.1	9.2	--	6.1	*Apr-13*
Over/Under				1.8	3.3	1.8	2.4	13.6	-2.6			-1.0	
Bridgewater All Weather Fund	284,356,767	6.0		1.1	1.0	1.1	2.7	12.5	3.7	--	--	4.3	Aug-13
CPI + 5% (Unadjusted)				0.4	1.1	0.4	3.1	7.0	6.1	--	--	6.0	*Aug-13*
Over/Under				0.7	-0.1	0.7	-0.4	5.5	-2.4			-1.7	
Tortoise Energy Infrastructure	128,145,657	2.7		4.5	12.2	4.5	10.2	39.0	0.0	--	--	3.8	Apr-13
Wells Fargo MLP Index				3.6	12.3	3.6	10.5	44.2	-3.9	3.5	--	-1.2	*Apr-13*
Over/Under				0.9	-0.1	0.9	-0.3	-5.2	3.9			5.0	
Overlay	**81,498,420**	**1.7**	**0.0**										
Parametric	81,498,420	1.7											

Total Real Estate Benchmark: NCREIF ODCE; prior to January 2006, the NCREIF Property Index.

Real Estate managers and NCREIF ODCE are valued on a quarterly basis. Performance is not applicable in mid-quarter months, therefore 0% return is shown.

CPI+4% and CPI+5% is estimated by carrying the last available month forward.

Real Estate Valuation is as of 12/31/2016.

Ventura County Employees' Retirement Association

Total Fund

Cash Flow Summary

Month Ending January 31, 2017

	Beginning Market Value	Withdrawals	Contributions	Net Cash Flow	Fees	Net Investment Change	Ending Market Value
Adams Street Global Fund Series	$111,847,290	$0	$425,000	$425,000	$0	-$828,594	$111,443,696
BlackRock ACWI ex-U.S. Index	$341,371,584	$0	$0	$0	-$31,133	$12,223,835	$353,595,418
BlackRock Equity Market Fund	$1,283,784,079	$0	$0	$0	-$23,899	$25,141,159	$1,308,925,238
BlackRock Extended Equity Index	$52,441,274	$0	$0	$0	-$3,511	$1,112,744	$53,554,018
BlackRock MSCI ACWI Equity Index	$481,253,407	$0	$0	$0	-$18,149	$13,215,362	$494,468,770
BlackRock U.S. Debt Fund	$215,199,689	$0	$0	$0	-$10,521	$437,922	$215,637,610
Bridgewater All Weather Fund	$281,132,456	$0	$0	$0	-$92,574	$3,224,311	$284,356,767
Drive Capital Fund	$317,822	$0	$73,973	$73,973	$0	$0	$391,795
Harbourvest- Dover Street VIII	$49,057,580	$0	$0	$0	$0	-$83,059	$48,974,521
Hexavest	$79,915,903	$0	$0	$0	-$31,336	$1,593,476	$81,509,379
Loomis Sayles Multi Strategy	$76,449,106	$0	$0	$0	-$25,136	$760,713	$77,209,819
Loomis Strategic Alpha	$44,432,213	$0	$0	$0	-$14,861	$151,130	$44,583,343
Pantheon Global Secondary Funds	$21,902,789	$0	$0	$0	$0	$0	$21,902,789
Parametric	$99,623,281	-$22,844,985	$5,229,454	-$17,615,532	-$7,833	-$509,329	$81,498,420
Prudential Real Estate	$135,101,380	$0	$0	$0	$0	$0	$135,101,380
Reams	$301,131,501	$0	$0	$0	-$44,016	$997,158	$302,128,659
RREEF	$181,509	$0	$0	$0	$0	$0	$181,509
Sprucegrove	$184,817,177	$0	$0	$0	-$60,126	$9,787,895	$194,605,072
Tortoise Energy Infrastructure	$122,519,020	$0	$0	$0	-$66,743	$5,626,638	$128,145,657
UBS Real Estate	$247,269,383	$0	$0	$0	$0	$0	$247,269,383
Walter Scott	$97,154,160	$0	$0	$0	-$72,239	$3,573,751	$100,727,911
Western	$281,028,251	$0	$0	$0	-$47,826	$1,578,776	$282,607,027
Western U.S. Index Plus	$160,786,886	$0	$0	$0	-$32,919	$2,566,964	$163,353,850
Total	**$4,668,717,739**	**-$22,844,985**	**$5,728,427**	**-$17,116,559**	**-$582,823**	**$80,570,852**	**$4,732,172,032**

Information Disclaimer and Reporting Methodology

Information Disclaimer

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodian bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.
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Reporting Methodology

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.

NEPC, LLC

YOU DEMAND MORE. So do we.SM

Ventura County Employees' Retirement Association

Investment Summary
Quarter Ending December 31, 2016

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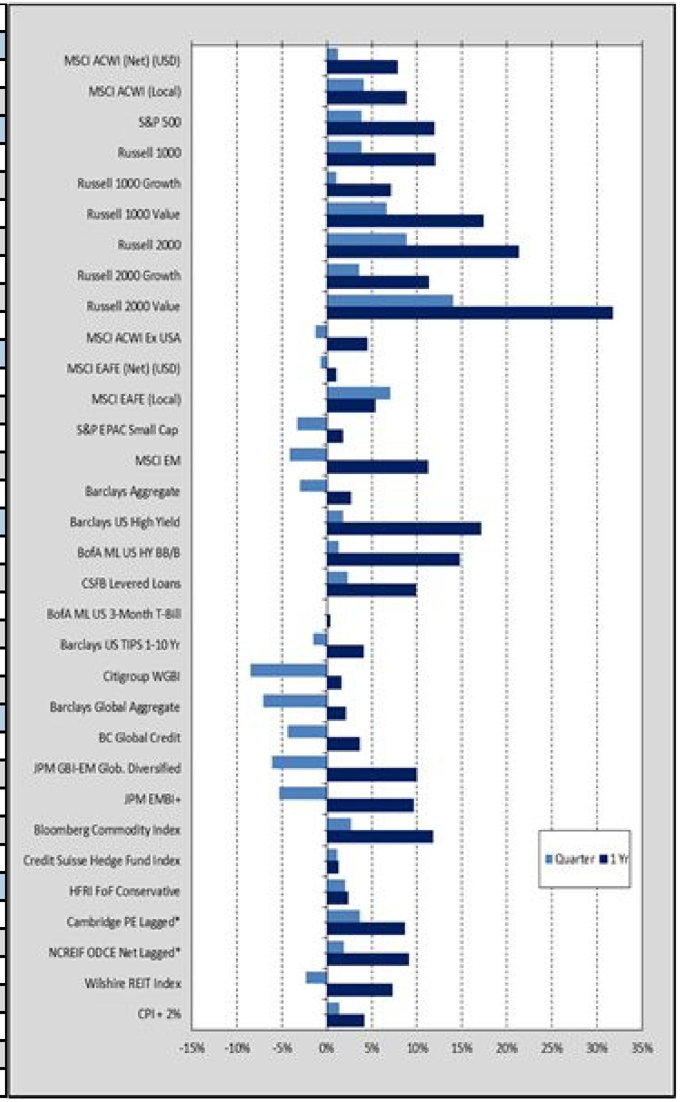
Market Environment and Outlook

Economic Environment

- **Fourth quarter GDP growth rate (advance estimate) printed at a modest 1.9%.**
  - Retail sales ended November at +3.7% on a YoY basis. In the same period last year the YoY growth rate was 1.0%.
  - The inventory-to-sales ratio ended November flat at 1.4 and has remained relatively flat since early 2010.
  - Corporate profits (ended July) as a percent of GDP increased to 9.0% from 8.5% (in April) and remain elevated relative to historical levels.
  - The U.S. trade deficit widened ended November as the rate of change in imports increased to a 15 month high.
- **The unemployment rate decreased to 4.7% in Q4 from 4.9% in Q3; U-6, a broader measure of unemployment, decreased to 9.1% during the fourth quarter from 9.7%.**
- **The Case-Shiller Home Price Index (ended October) increased to 185.06 from 183.3 in July and is at levels higher than that of pre-financial crisis levels of 150.9.**
- **Rolling 12-month seasonally adjusted CPI saw an uptick to 2.09% at the end of December; Capacity Utilization was flat at 75.5% ended Q4.**
- **Fed Funds rate was increased +0.25% to a targeted range of 0.50% - to - 0.75%. The 10-year Treasury Yield (constant maturity) finished Q4 at 2.5% up 0.9% from Q3.**
- **The Fed balance sheet decreased slightly during Q4 2016, while the European Central Bank balance sheet continues to increase.**
  - ECB held its benchmark refinance rate at 0%, deposit rates -0.4% and asset purchases at €80 billion per month of corporate and public securities, announced slowing of bond purchase pace in 2017.
- **S&P valuations increased slightly in Q4 remaining above the 10-year and long-term averages.**
  - Cyclically adjusted Shiller PE ratio (27.84x) is above the long-term average of 16.71x and above the 10-year average of 24.46x.

Market Environment – Q4 2016 Overview

		Qtr.	1 Yr.	3 Yr.	5 Yr.	10 Yr.
World Equity Benchmarks						
MSCI ACWI (Net) (USD)	World	1.2%	7.9%	3.1%	9.4%	3.6%
MSCI ACWI (Local)	World (Local Currency)	4.1%	8.8%	6.4%	11.9%	4.3%
Domestic Equity Benchmarks						
S&P 500	Large Core	3.8%	12.0%	8.9%	14.7%	6.9%
Russell 1000	Large Core	3.8%	12.1%	8.6%	14.7%	7.1%
Russell 1000 Growth	Large Growth	1.0%	7.1%	8.6%	14.5%	8.3%
Russell 1000 Value	Large Value	6.7%	17.3%	8.6%	14.8%	5.7%
Russell 2000	Small Core	8.8%	21.3%	6.7%	14.5%	7.1%
Russell 2000 Growth	Small Growth	3.6%	11.3%	5.1%	13.7%	7.8%
Russell 2000 Value	Small Value	14.1%	31.7%	8.3%	15.1%	6.3%
International Equity Benchmarks						
MSCI ACWI Ex USA	World ex-US	-1.3%	4.5%	-1.8%	5.0%	1.0%
MSCI EAFE (Net) (USD)	Int'l Developed	-0.7%	1.0%	-1.6%	6.5%	0.7%
MSCI EAFE (Local)	Int'l Developed (Local Currency)	7.1%	5.3%	5.5%	11.8%	2.2%
S&P EPAC Small Cap	Small Cap Int'l	-3.3%	1.7%	2.4%	10.7%	3.1%
MSCI EM	Emerging Equity	-4.2%	11.2%	-2.6%	1.3%	1.8%
Domestic Fixed Income Benchmarks						
Barclays Aggregate	Core Bonds	-3.0%	2.6%	3.0%	2.2%	4.3%
Barclays US High Yield	High Yield	1.8%	17.1%	4.7%	7.4%	7.5%
BofA ML US HY BB/B	High Yield	1.3%	14.7%	4.9%	7.1%	6.9%
CSFB Levered Loans	Bank Loans	2.3%	9.9%	3.8%	5.3%	4.3%
BofA ML US 3-Month T-Bill	Cash	0.1%	0.3%	0.1%	0.1%	0.8%
Barclays US TIPS 1-10 Yr	Inflation	-1.5%	4.0%	1.5%	0.7%	3.8%
Global Fixed Income Benchmarks						
Citigroup WGBI	World Gov. Bonds	-8.5%	1.6%	-0.8%	-1.0%	3.0%
Barclays Global Aggregate	Global Core Bonds	-7.1%	2.1%	-0.2%	0.2%	3.3%
BC Global Credit	Global Bonds	-4.4%	3.7%	1.0%	2.6%	3.9%
JPM GBI-EM Glob. Diversified	Em. Mkt. Bonds (Local Currency)	-6.1%	9.9%	-4.1%	-1.3%	3.8%
JPM EMBI+	Em. Mkt. Bonds	-5.3%	9.6%	5.8%	5.1%	6.6%
Alternative Benchmarks						
Bloomberg Commodity Index	Commodities	2.7%	11.8%	-11.3%	-9.0%	-5.6%
Credit Suisse Hedge Fund Index	Hedge Fund	1.1%	1.3%	1.6%	4.4%	3.8%
HFRI FoF Conservative	Fund of Hedge Funds	2.0%	2.3%	1.9%	3.5%	1.3%
Cambridge PE Lagged*	Private Equity	3.7%	8.6%	10.7%	13.1%	10.8%
NCREIF ODCE Net Lagged*	Real Estate	1.8%	9.1%	11.4%	11.3%	5.0%
Wilshire REIT Index	REIT	-2.3%	7.2%	13.8%	12.0%	4.8%
CPI + 2%	Inflation/Real Assets	1.3%	4.1%	3.2%	3.4%	3.8%



* As of 9/30/2016

Market Environment

Global Equity

- **U.S. equities posted modest gains in the fourth quarter (+3.8%) according to the S&P 500. Volatility related to political change and economic uncertainty continued in the quarter.**
- **Small cap stocks outperformed large cap stocks during the quarter, with the Russell 2000 Index returning 8.8% and the Russell 1000 Index returning 3.8%.**
- **International equities underperformed U.S. markets during the quarter, returning -1.3%, as measured by the MSCI ACWI ex-U.S. Index. Emerging markets returned -4.2% as measured by the MSCI Emerging Markets Index in U.S. dollar terms.**
  - Developed international markets returned -0.7% in USD terms, while in local currency terms returned +7.1% as measured by the MSCI EAFE Index.

Private Equity

- **Total fundraising in 2016 was as follows:**
  - Private equity fundraising totaled $395.4 billion.
  - Buyout and Special Situations fundraising totaled $219.7 billion.
    - While leverage multiples are nearly as high as pre-GFC levels, companies' abilities to service their debt is stronger than in prior years.
  - Venture capital fundraising totaled $56.8 billion.
    - Fundraising continues to be strong, largest amounts since the dot-com era.
  - Fund of fund and multi-manager co-investment fundraising totaled $52.8 billion.
  - Growth equity fundraising totaled $23.9 billion.

Market Environment

Fixed Income

- **The nominal yield curve steepened in Q4. Intermediate yields increased 79 –to- 85 basis points and long duration yields increased 74 basis points.**

- **The spread between two and 10-year rates increased to 125 basis points from 83 basis points in Q3. Treasury Inflation-Protected Securities, or TIPS, returned -1.5% during the quarter, as measured by the BBg Barclays US TIPS 1-10 Yr Index.**

- **The BBg Barclays Long Duration Credit Index lost -5.02% as the long end of the curve ended the quarter 74 basis points higher.**

- **Long Treasuries lost -11.67% and investment-grade US corporate debt lost -2.98%.**

- **The BBg Barclays 1-3 year Government/ Credit Index returned -0.39%. US high yield bonds gained +1.8% driven by Energy names and tighter spreads.**

- **Emerging markets debt sustained moderate losses.**
  - US dollar-denominated debt, as measured by the JP Morgan EMBI Index, lost -5.3%; local currency debt lost -6.1%, according to the JP Morgan GBI-EM BD Index.
  - Inflows in 2016 have not made up for outflows since 2013 in local currency EMD.

Market Environment

Real Assets/Inflation-Linked Assets

- **Energy remains attractive.**
  - Private equity and debt opportunities are attractive.
  - Fire sale prices never materialized but focusing on assets outside of the hottest zip codes provides potential for strong returns as market normalizes.

- **Infrastructure – select opportunities to access growth markets.**
  - High quality assets are receiving premium bids from direct investors (Pension Funds and Sovereigns) with low costs of capital and long hold horizons; focus on mismanaged or niche opportunities.

- **Metals & Mining – have commodity prices bottomed?**
  - Peak capex occurred in 2012, lagging commodity price drops that began in 2011.
  - Diverse demand drivers for underlying commodity prices.

- **Timber – low return potential and limited opportunity for outperformance.**

- **Agriculture – near-term slowdown in price appreciation creates opportunity to invest in a strong (very) long term outlook supported by demographic trends.**

Market Environment

Commodities

- **Commodities ended the quarter up +2.3% as measured by the Bloomberg Commodity Index.**
  - Weakness in Gold (lost -12.5%) in the fourth quarter outweighed by positive performance in the broader basket of commodities.

Real Estate

- **NEPC continues to be neutral on core real estate in the US and remains positive on non-core real estate, that is, value-add and opportunistic strategies.**
- **Real estate fundamentals (rent growth, occupancy, net absorption) remain strong; however, valuations are high on an absolute and relative basis.**
  - Rising interest rates have been baked into existing valuations but excess cap rate expansion (beyond general expectations) will reset valuations.
- **Overall, the non-core real estate investment environment in the U.S. is normalizing; however, select areas remain attractive.**
- **REITs, at Q4, are trading below NAV but have been volatile and are still at historically high FFO multiples.**
- **Europe is viewed as the best place for a marginal dollar of non-core real estate investment.**
  - Current US-dollar denominated investors with currency exposure will feel near-term impact of Brexit, but new investors may benefit from a strong US-dollar. Long-term Brexit implications, however, are unclear.

Key Market Themes

Extended US Economic Cycle

Economic cycles don't die of old age

We believe the US economy is in an extended expansionary cycle despite being eight years removed from the last recession

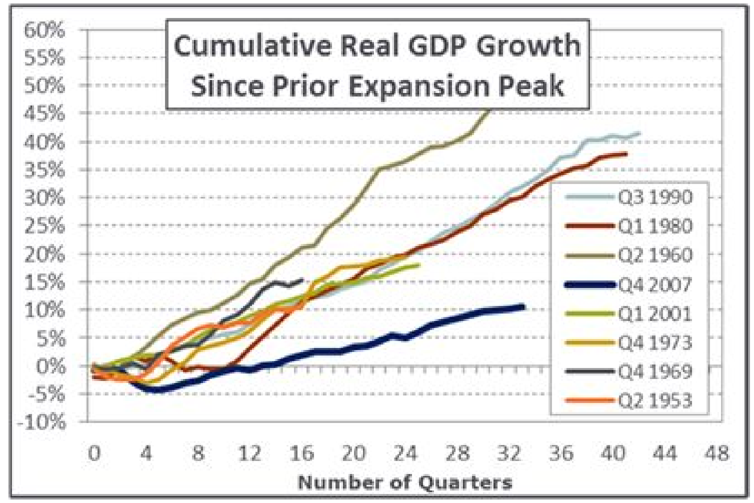
The health of US consumers continue to drive economic growth given relatively low debt levels

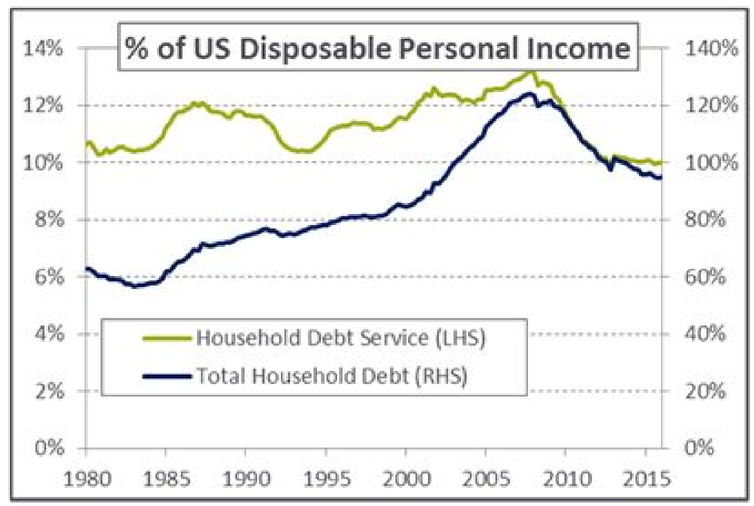
A prolonged US economic expansion can support a continued rally for US equities despite elevated valuation levels

We anticipate inflation will shift marginally higher in the coming years

Improvements in wage growth and the ongoing recovery in housing further support modest upticks in inflation

The strength of the US dollar is likely to restrain inflationary pressures and offset the potential impact of fiscal stimulus in the US





Source: (Top) Federal Reserve Bank of St. Louis
Source: (Bottom) FRED

Key Market Themes

Extended US Economic Cycle

US recession concerns are muted

The US economy is likely to experience slow and steady growth as excess capacity is gradually absorbed by the economy

The labor market recovery has been robust but excess capacity remains as many have yet to return to the workforce

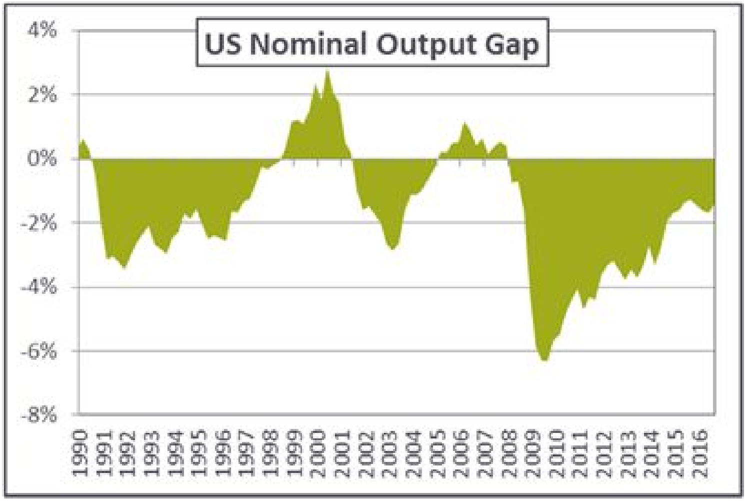
US dollar strength and corporate profitability trends are the primary sources of concern for potential weakness

Fiscal stimulus unlikely to push economic growth into a higher gear

Tax cuts and infrastructure spending modestly improve the US growth profile

The potential of higher US growth is likely muted by corresponding dollar strength

US stimulus may benefit non-US developed economies as marginally higher US growth weakens their currencies and improves competitiveness



Source: (Top) FRED
Source: (Bottom) Congressional Budget Office, Bloomberg

Key Market Themes

Federal Reserve Gradualism

The Federal Reserve is expected to slowly increase interest rates

Expected path of Fed policy through 2019 matters more than timing of the next hike

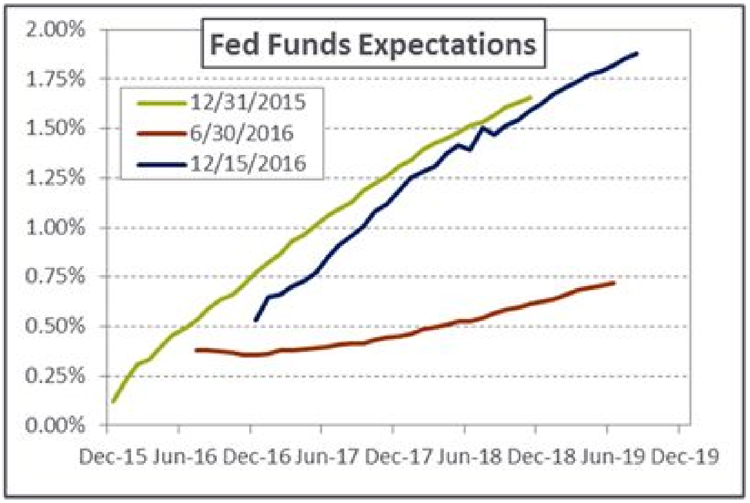
Fed has stated a willingness to let the economy "run hot" and accept some inflation to repair the deflationary effects of the past eight years

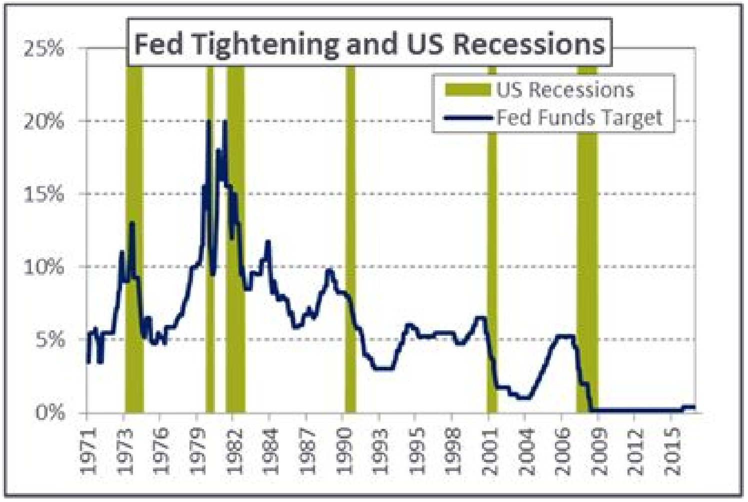
A relatively accommodative Fed is likely to continue, unless there is a dramatic acceleration in inflation

Historically, rapid tightening of Fed policy precedes a US recession

Tighter monetary policy slows inflation by decreasing economic activity

The Fed's monetary policy statements are closely scrutinized and deviations from "lower for longer" can materially impact the market outlook





Source: (Top) Federal Reserve, Bloomberg
Source: (Bottom) Federal Reserve, NBER, Bloomberg

Key Market Themes

Federal Reserve Gradualism

US dollar strength is interconnected with Federal Reserve policy

The US dollar is sensitive to changes in Fed rate expectations and interest rate differentials relative to the rest of the world

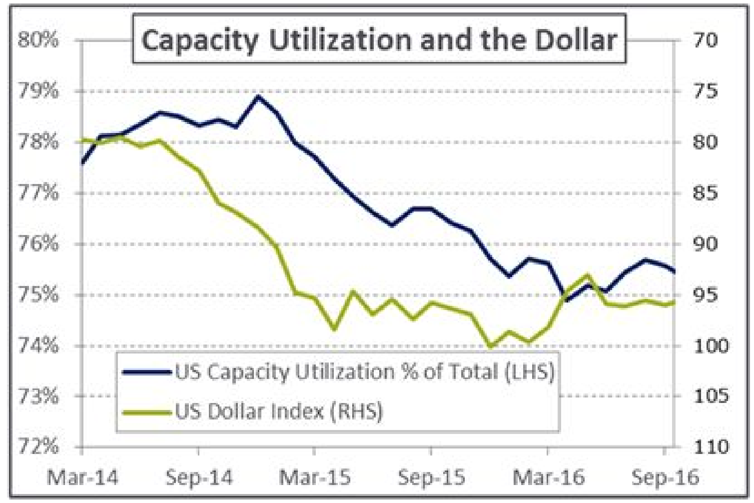
Fed must balance the path of future interest rate increases with the disruptive effects of a strong dollar on global markets

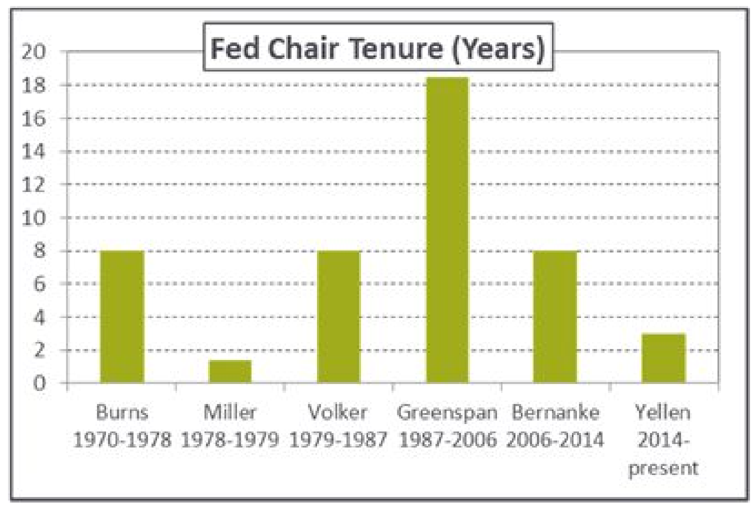
Dollar strength weakens the outlook for US corporate earnings and rapid dollar appreciation likely strains US profit margins

2017 is likely to be a year for greater uncertainty regarding Fed policy

Politics could intersect with Fed policy due to more vocal executive branch and conclusion of Janet Yellen's term in February 2018

The path of Fed rate hikes in 2017 and beyond is less clear due to the potential impact of fiscal stimulus





Source: (Top) Federal Reserve, Bloomberg
Source: (Bottom) Federal Reserve

Key Market Themes

China Transitions

The PBOC is tasked with straddling a delicate path as the economy evolves

China maintains control of its currency and monetary policy but would have to make concessions to open its capital account and allow the free movement of capital

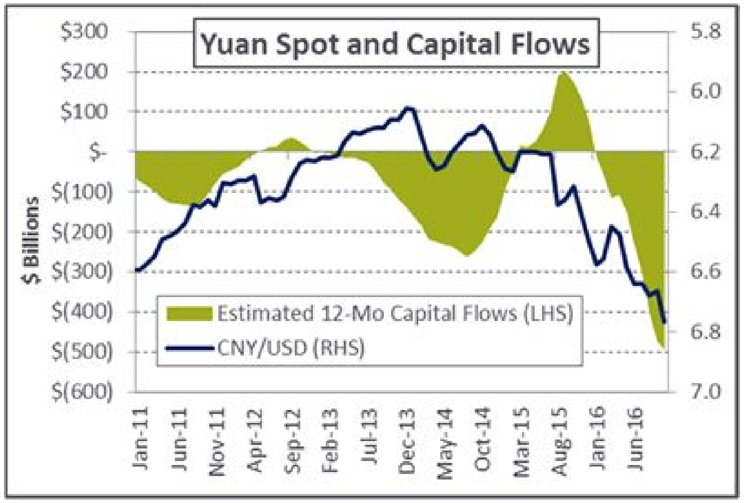
Restrictions on capital markets are slowly being eased, with an eye towards limiting social disruption

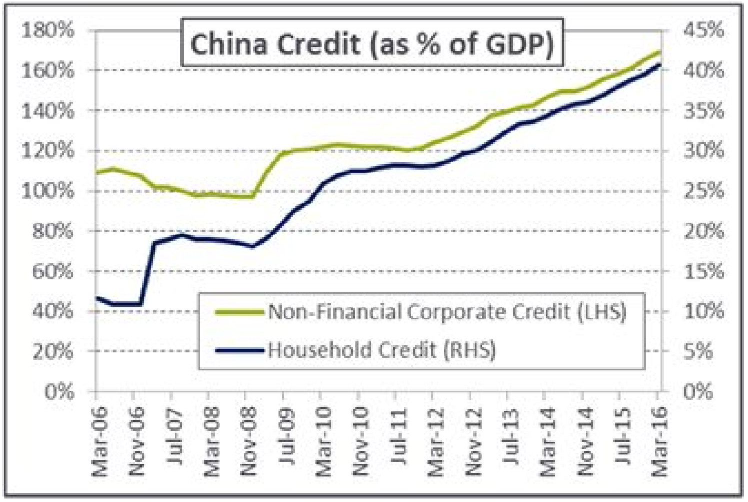
Concerns of a rapid currency devaluation have forced a more managed transition process that likely delays the opening of equity and bond markets to global investors

Managed policy transitions come with significant risks which require balance

Fiscal policy: Consequences of unsustainable credit growth if too accommodative or a hard economic landing if too austere

Monetary policy: Potential for asset price bubbles in real estate and capital markets if policy changes slowly or move rapidly and spur capital flight





Source: (Top) SAFE, Bloomberg
Source: (Bottom) Bank for International Settlements

Key Market Themes

Globalization Backlash

Weak economic growth and uneven wage gains over the last decade have fueled political discontent in the West

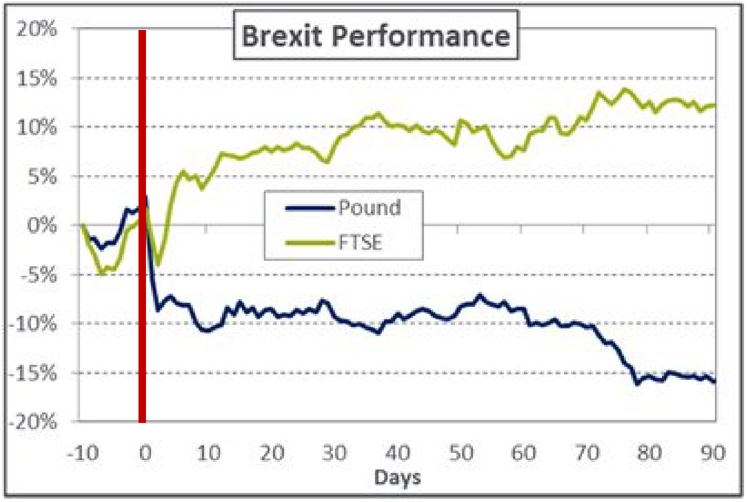
The backlash against globalization does not materially alter the fundamentals of the global capital markets, but does increase economic and market uncertainty

Populist movements destabilize the established political order but are not inevitably bearish for equity markets

Political uncertainty intensifies currency volatility and in cases of depreciation may stimulate local equity markets (e.g. UK)

May bring increased fiscal spending and higher inflation, a welcome benefit for developed market economies

However, a shift away from political orthodoxy heightens low probability political tail-risks such as a US-China trade war or a dissolution of the euro



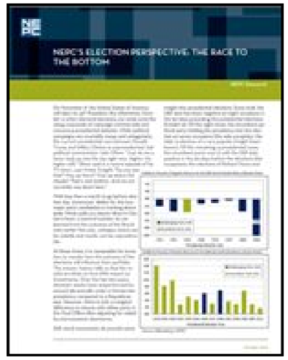
Source: (Top) Bureau of Economic Analysis, Eurostat, Bloomberg
Source: (Bottom) Bloomberg

Highlights of Fourth Quarter Happenings at NEPC

December 2016

NEPC Insights

- NEPC's Election Perspective: The Race to the Bottom *(October 2016)*
- Interest Rate Risk and Asset/Liability Management for Cash Balance Plans *(October 2016)*
- 2016 3rd Quarter Market Thoughts *(October 2016)*
- Behind The Curtain: Operational Capabilities Are A Must for OCIOs *(November 2016)*
- NEPC's 2016 Hedge Fund Operational Due Diligence Survey Results *(November 2016)*
- NEPC Market Chatter: To PE or not to PE… That is the Question *(November 2016)*
- Caution: Construction Ahead – Healthcare Organizations Use Private Equity Investments to Support Innovation *(December 2016)*



Webinar Replays

- Investor Insights – Perspectives on the 2016 US Election *(November 2016)*
- Defined Benefit Plan Trends Survey Results *(December 2016)*
- Digging Deeper on ESG *(December 2016)*

To download NEPC's recent white papers and webinar replays, visit: www.NEPC.com/research

Client Awards

We'd like to congratulate the following clients for their recent award wins at *Chief Investment Officer's* 7th Annual 2016 Industry Innovation Awards:

- Texas Tech University System's CIO, Tim Barrett as 2016 recipient of the Endowment Award
- MoDot & Patrol Employees' Retirement System's CIO, Larry Krummen as the 2016 recipient of the Public Defined Benefit Plan Below $15 Billion Award
- State of Wisconsin Investment Board's CIO, David Villa as the 2016 recipient of the Public Defined Benefit Plan Above $100 Billion Award

MARK YOUR CALENDAR!

Upcoming Events

NEPC's 22nd Annual Investment Conference will be held on May 9-10, 2017 at the InterContinental Hotel in Boston, MA. Details to come in the upcoming months!

NEPC Gives Back

- NEPC employees sorted and prepared 6,853 pounds of food during a volunteer day at the Greater Boston Food Bank, an organization that works to end hunger in the area by providing people in need with healthy food and resources.
- During the month of November, NEPC's Movember team raised over $5,000 to support men's health research.
- In support of Breast Cancer Awareness Month, NEPC employees wore their favorite pair of jeans with a purpose and participated in the American Cancer Society Denim Day by sporting denim and the color pink. Together, we raised over $2,500.
- As part of our Annual United Way campaign, over 50 NEPC employees assembled Literacy Kits for children during the holiday season. The kits were filled with developmental games, arts and crafts supplies, and reading materials.

NEPC, LLC

Total Fund Performance Summary

Ventura County Employees' Retirement Association

Total Fund Performance Summary (Net)

	Market Value	3 Mo	Rank	Fiscal YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank	Return	Since
Total Fund	**$4,668,717,739**	**1.2%**	**32**	**4.9%**	**44**	**8.6%**	**15**	**4.6%**	**37**	**9.0%**	**14**	**5.0%**	**37**	**7.9%**	**Apr-94**
Policy Index		*1.2%*	*31*	*4.9%*	*42*	*8.4%*	*25*	*5.3%*	*13*	*9.1%*	*13*	*5.3%*	*17*	*7.9%*	*Apr-94*
Allocation Index		*1.6%*	*13*	*5.3%*	*27*	*8.5%*	*24*	*4.9%*	*26*	*8.5%*	*38*	*4.9%*	*43*	--	*Apr-94*
60% MSCI ACWI (Net)/40% CITI WGBI		*-2.8%*	*99*	*0.4%*	*99*	*5.5%*	*95*	*1.7%*	*97*	*5.3%*	*95*	*3.7%*	*91*	--	*Apr-94*
InvestorForce Public DB > $1B Net Median		*0.8%*		*4.6%*		*7.7%*		*4.1%*		*8.1%*		*4.8%*		*7.2%*	*Apr-94*

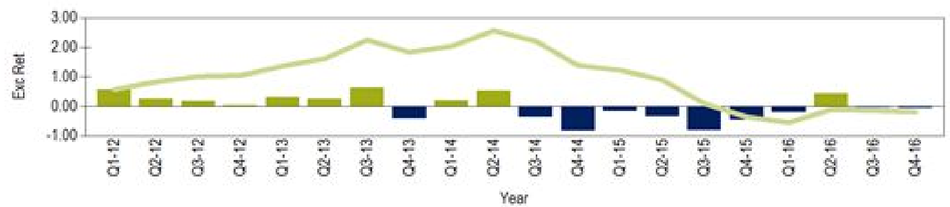
- For the five-year period ending December 31, 2016, the Fund returned 9.0%, trailing the policy index by 0.1% and ranking in the 14th percentile of its peers and outperforming the actuarial assumed rate of 7.5%. The Fund's volatility, as measured by standard deviation, ranked in the 78th percentile of its peers, and the risk-adjusted return, or Sharpe Ratio, ranks in the 43rd percentile. This means that the Fund has earned more return per unit of volatility taken than 57% of its peers.

- For the three-year period, the Fund returned 4.6%, trailing the policy index by 0.7% and ranking in the 37th percentile of its peers. The Fund's volatility ranks ranks in the third quartile of its peers over this period, with the Fund's Sharpe Ratio ranking in the 46th percentile.

- For the one-year period, the Fund returned 8.6%, outperforming the policy index by 0.2% and ranking in the 15th percentile of the InvestorForce Public Funds > $1 Billion Universe (Net of Fees).

- For the one-year period, the Fund experienced a net investment gain of $386 million, which includes a net investment gain of $61 million in the quarter. Assets increased from $4.29 billion one year ago to $4.67 billion.

Quarterly and Cumulative Excess Performance



3 Years Ending December 31, 2016

	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Total Fund	4.6%	37	6.9%	75	0.6	46	1.2	36
Policy Index	5.3%	13	6.6%	68	0.8	26	1.3	20
InvestorForce Public DB > $1B Net Median	4.1%	--	6.2%	--	0.6	--	1.1	--

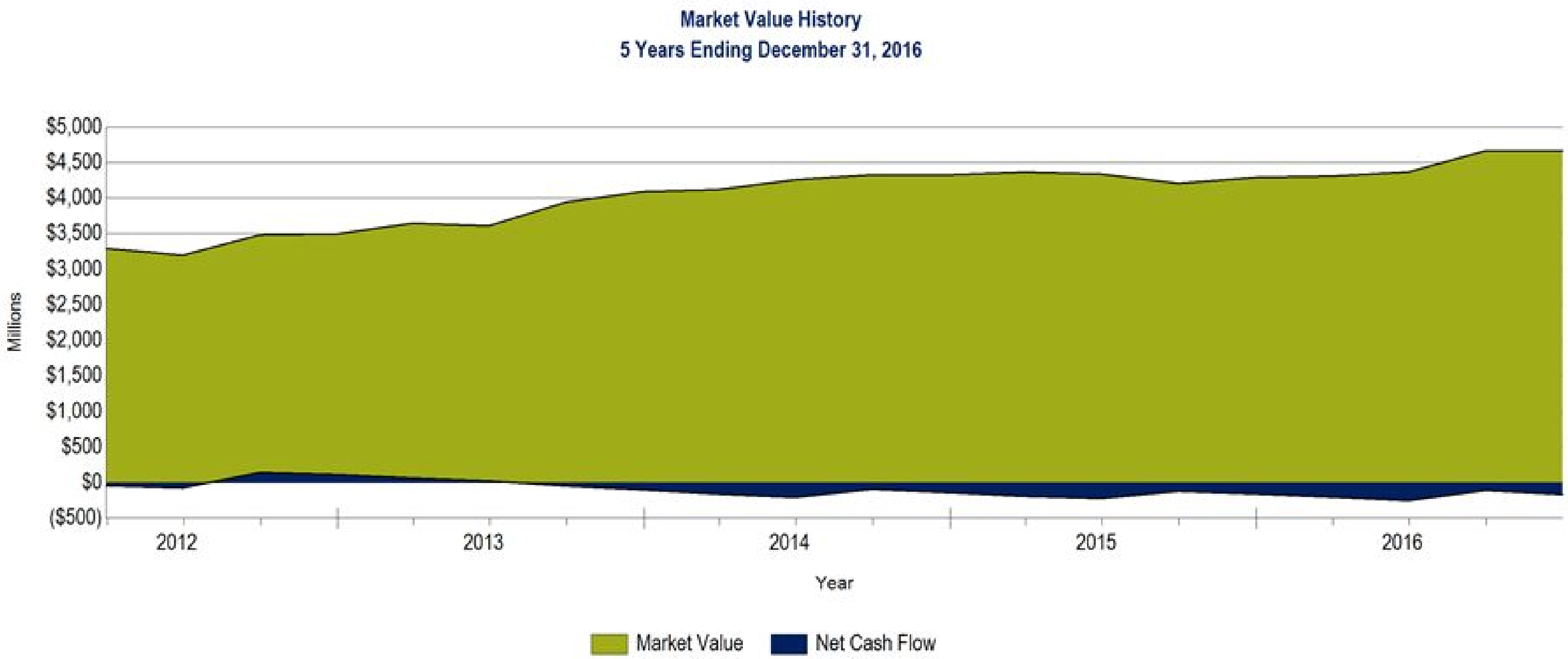
5 Years Ending December 31, 2016

	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank
Total Fund	9.0%	14	7.0%	78	1.3	43	2.0	28
Policy Index	9.1%	13	6.9%	72	1.3	36	2.0	33
InvestorForce Public DB > $1B Net Median	8.1%	--	6.3%	--	1.2	--	1.8	--

Policy Index as of January 2016: 28% Russell 3000, 20% Barclays Aggregate, 15% MSCI ACWI ex U.S., 10% MSCI ACWI, 10% DJ U.S. Total Stock Market Index + 3%, 10% CPI+4% Index, and 7% NCREIF ODCE Real Estate Index.

Ventura County Employees' Retirement Association

Total Fund Asset Growth Summary

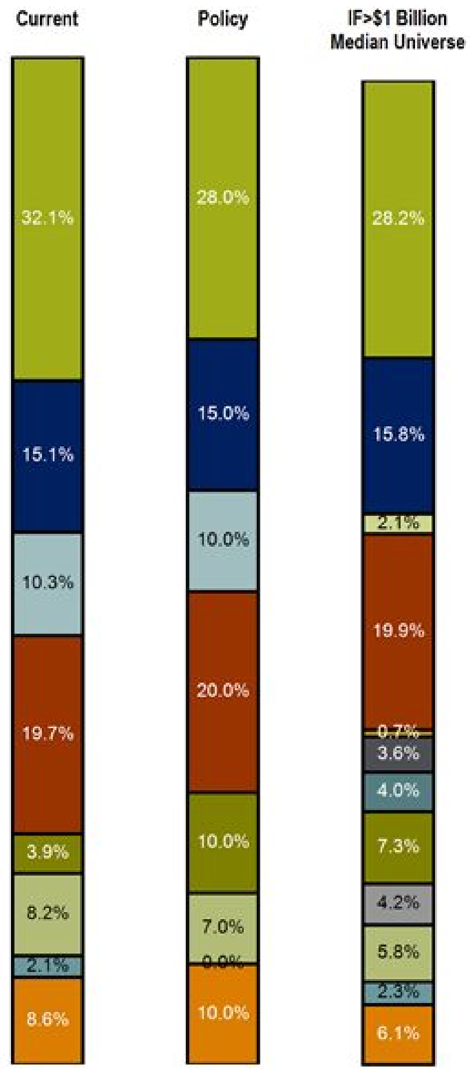


Summary of Cash Flows

	Last Three Months	Fiscal Year-To-Date	One Year	Three Years	Five Years
Beginning Market Value	$4,666,540,419	$4,367,190,644	$4,290,811,595	$4,092,440,847	$3,069,762,197
Net Cash Flow	-$58,429,267	$86,849,161	-$8,084,147	-$65,733,390	-$166,782,939
Net Investment Change	$60,606,587	$214,677,933	$385,990,291	$642,010,281	$1,765,738,481
Ending Market Value	$4,668,717,739	$4,668,717,739	$4,668,717,739	$4,668,717,739	$4,668,717,739

Ventura County Employees' Retirement Association

Total Fund Asset Allocation vs. Policy Targets



Asset Allocation vs. Target

	Current	Current	Policy	Difference*	Policy Range	Within Range
U.S. Equity	$1,497,012,239	32.1%	28.0%	4.1%	24.0% - 32.0%	No
Non-US Equity	$703,258,824	15.1%	15.0%	0.1%	12.0% - 18.0%	Yes
Emerging Markets Equity	--	--	--	0.0%		--
Global Equity	$481,253,407	10.3%	10.0%	0.3%	7.0% - 13.0%	Yes
U.S. Fixed Income	$918,240,759	19.7%	20.0%	-0.3%	16.0% - 24.0%	Yes
Fixed Income - Emerging	--	--	--	0.0%		--
Fixed Income - Global	--	--	--	0.0%		--
Global Asset Allocation	--	--	--	0.0%		--
Private Equity	$183,125,480	3.9%	10.0%	-6.1%	0.0% - 12.0%	Yes
Hedge Funds	--	--	--	0.0%		--
Real Estate	$382,552,273	8.2%	7.0%	1.2%	4.0% - 10.0%	Yes
Cash	$99,623,281	2.1%	0.0%	2.1%	0.0% - 3.0%	Yes
Liquid Alternatives	$403,651,475	8.6%	10.0%	-1.4%	5.0% - 15.0%	Yes
Total	**$4,668,717,739**	**100.0%**	**100.0%**			

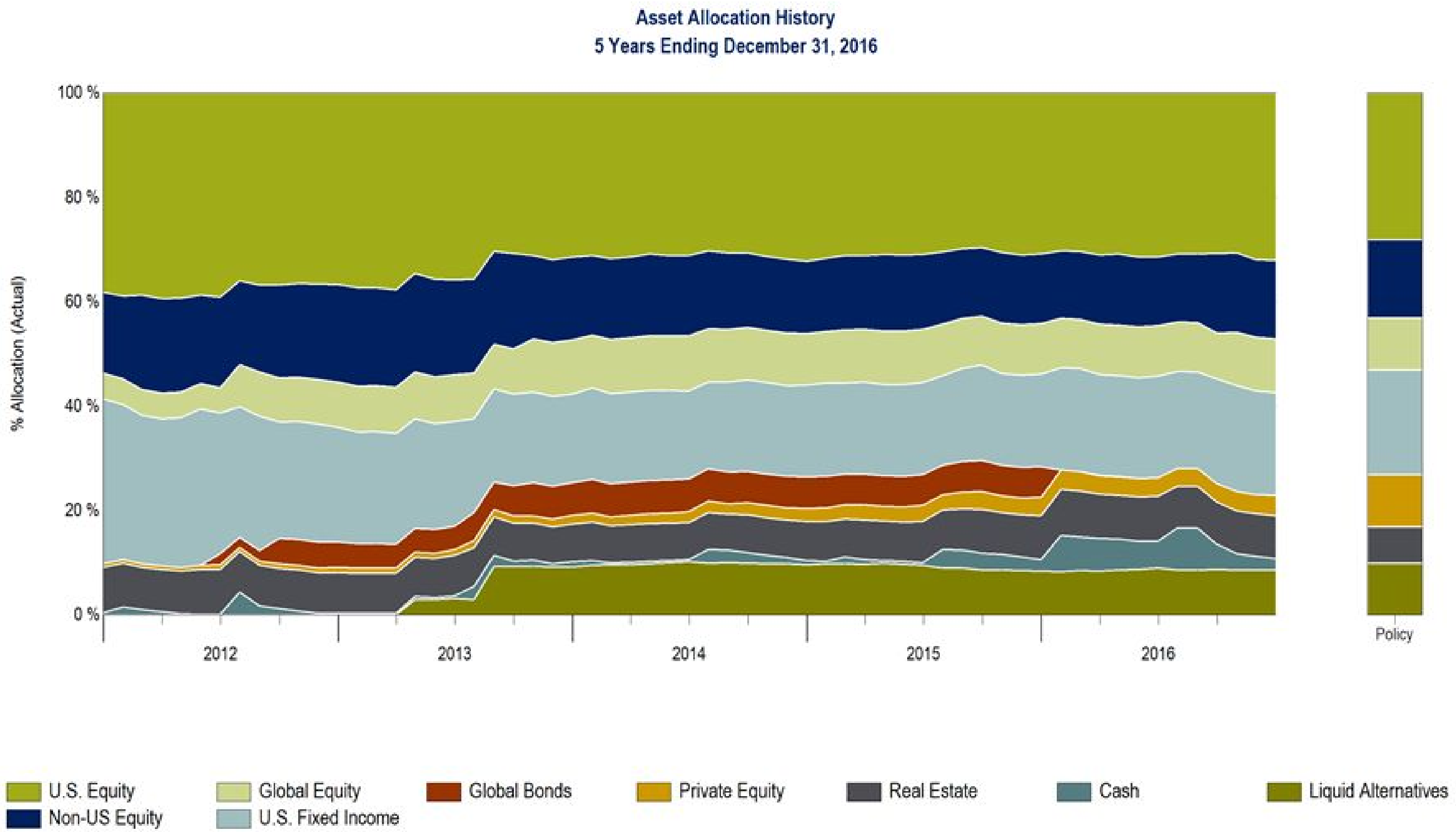
*Difference between Policy and Current Allocation

Cash represents assest in Parametric Overlay.

Policy Index as of January 2016:, 28% Russell 3000, 20% Barclays Aggregate, 15% MSCI ACWI ex U.S., 10% MSCI ACWI, 10% DJ U.S. Total Stock Market Index + 3%, 10% CPI+4% Index, and 7% NCREIF ODCE Real Estate Index.

Ventura County Employees' Retirement Association

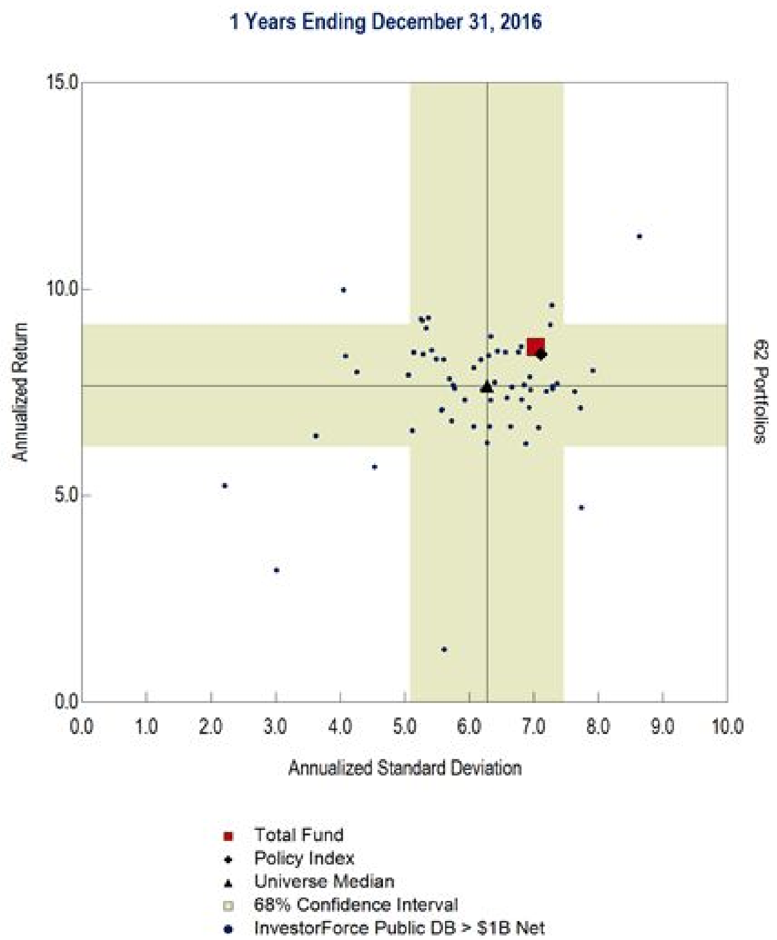
Total Fund Allocation History

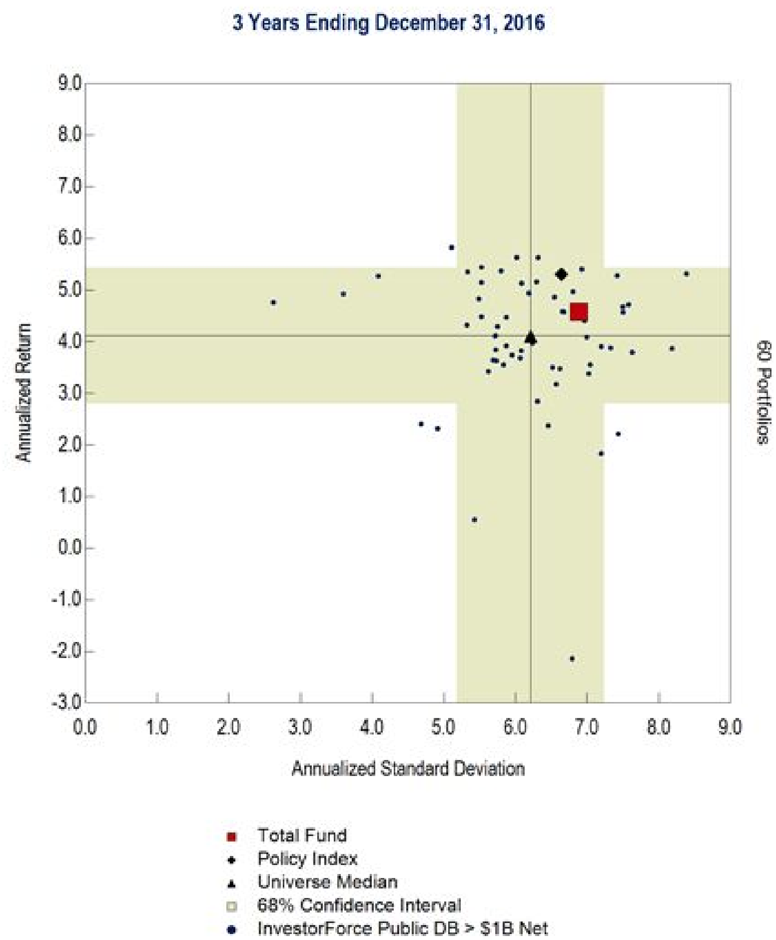


Policy Index shown is most recently approved index

Ventura County Employees' Retirement Association

Total Fund Risk/Return

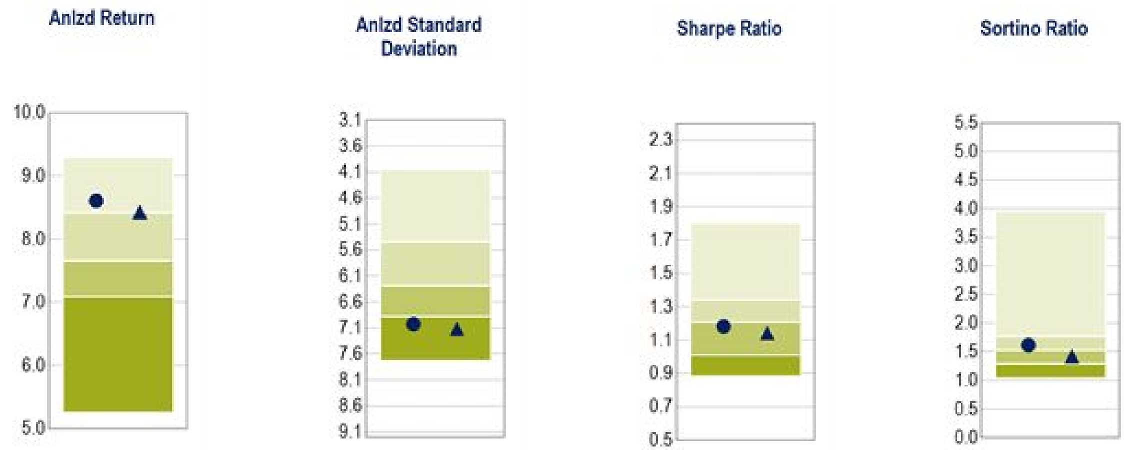




Ventura County Employees' Retirement Association

Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. InvestorForce Public DB > $1B Net
1 Year

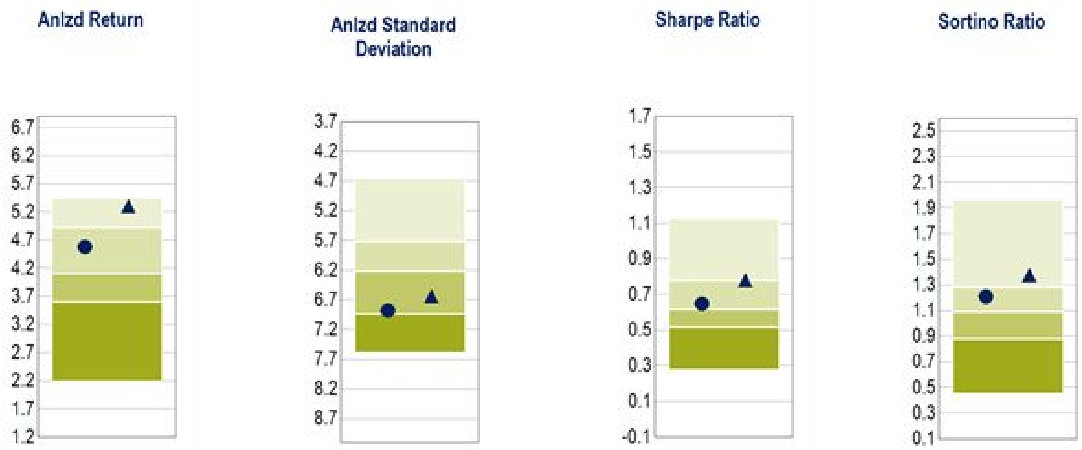


	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Sortino Ratio
● Total Fund				
Value	8.6	7.0	1.2	1.6
Rank	15	82	55	42
▲ Policy Index				
Value	8.4	7.1	1.1	1.4
Rank	25	83	61	65
Universe				
5th %tile	9.3	4.1	1.8	4.0
25th %tile	8.4	5.4	1.3	1.8
Median	7.7	6.3	1.2	1.5
75th %tile	7.1	6.9	1.0	1.3
95th %tile	5.3	7.7	0.9	1.0

Ventura County Employees' Retirement Association

Total Fund Risk Statistics vs. Peer Universe

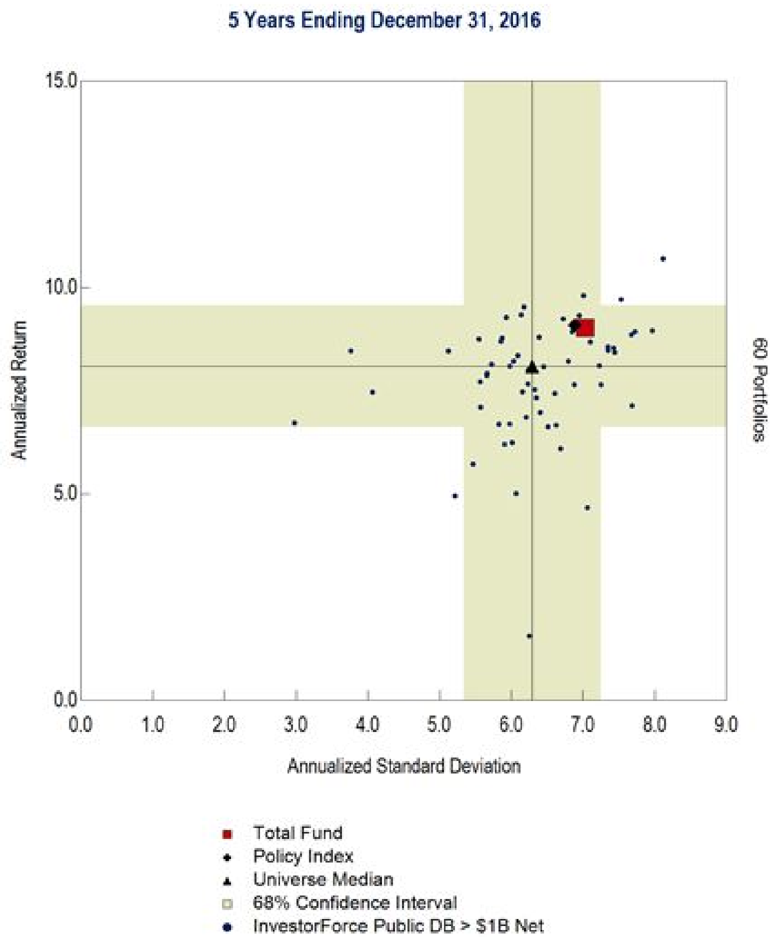
Total Fund vs. InvestorForce Public DB > $1B Net
3 Years

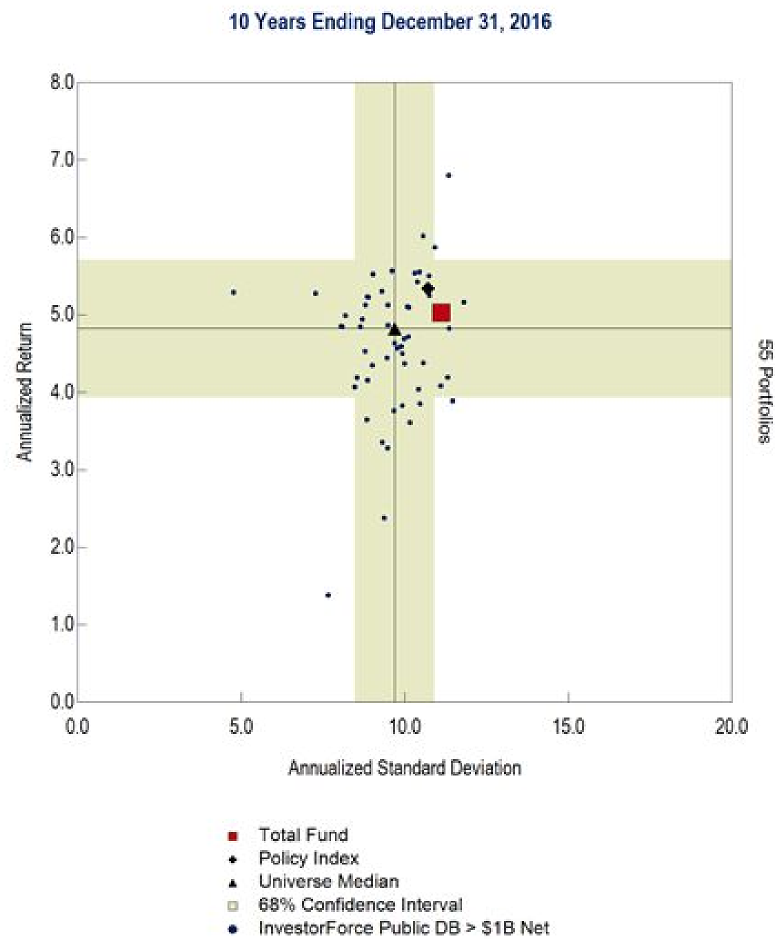


	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Sortino Ratio
● Total Fund				
Value	4.6	6.9	0.6	1.2
Rank	37	75	46	36
▲ Policy Index				
Value	5.3	6.6	0.8	1.4
Rank	13	68	26	21
Universe				
5th %tile	5.4	4.7	1.1	2.0
25th %tile	4.9	5.7	0.8	1.3
Median	4.1	6.2	0.6	1.1
75th %tile	3.6	6.9	0.5	0.9
95th %tile	2.2	7.6	0.3	0.5

Ventura County Employees' Retirement Association

Total Fund Risk/Return

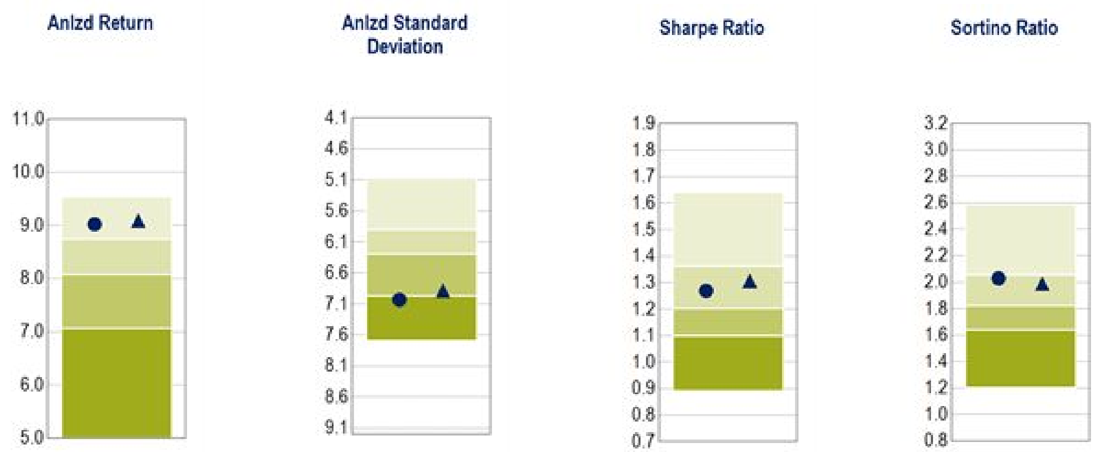




Ventura County Employees' Retirement Association

Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. InvestorForce Public DB > $1B Net
5 Years



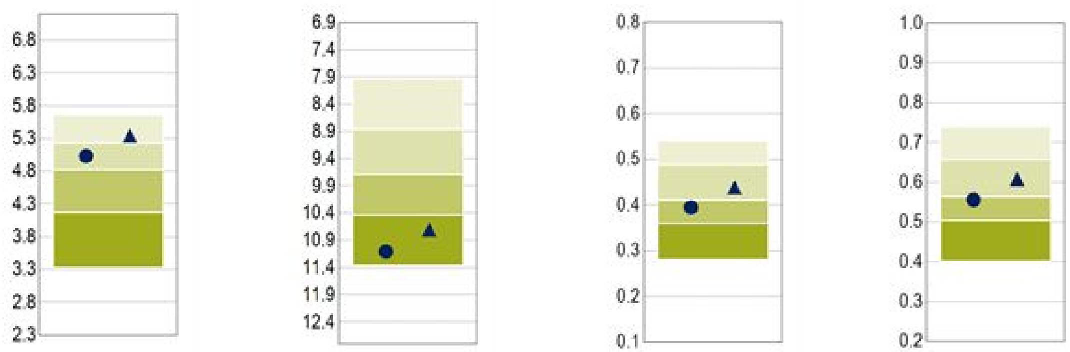
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Sortino Ratio
● Total Fund				
Value	9.0	7.0	1.3	2.0
Rank	14	78	43	28
▲ Policy Index				
Value	9.1	6.9	1.3	2.0
Rank	13	72	36	33
Universe				
5th %tile	9.5	5.1	1.6	2.6
25th %tile	8.8	5.9	1.4	2.1
Median	8.1	6.3	1.2	1.8
75th %tile	7.1	7.0	1.1	1.6
95th %tile	5.0	7.7	0.9	1.2

Ventura County Employees' Retirement Association

Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. InvestorForce Public DB > $1B Net
10 Years

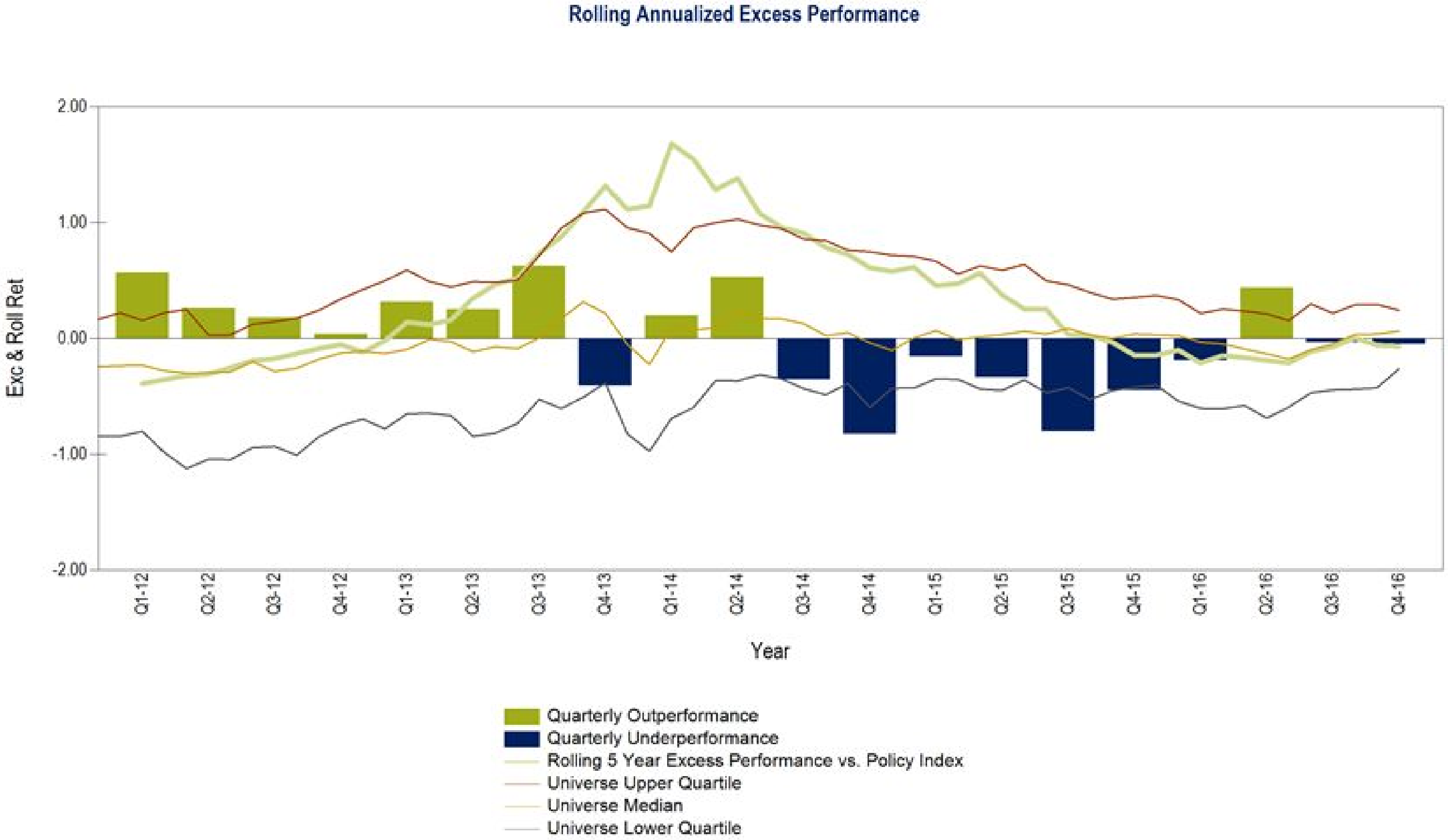
Anlzd Return | Anlzd Standard Deviation | Sharpe Ratio | Sortino Ratio



	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Sortino Ratio
● Total Fund				
Value	5.0	11.1	0.4	0.6
Rank	37	91	68	59
▲ Policy Index				
Value	5.3	10.7	0.4	0.6
Rank	17	83	45	39
Universe				
5th %tile	5.7	7.9	0.5	0.7
25th %tile	5.2	8.9	0.5	0.7
Median	4.8	9.7	0.4	0.6
75th %tile	4.2	10.4	0.4	0.5
95th %tile	3.3	11.3	0.3	0.4

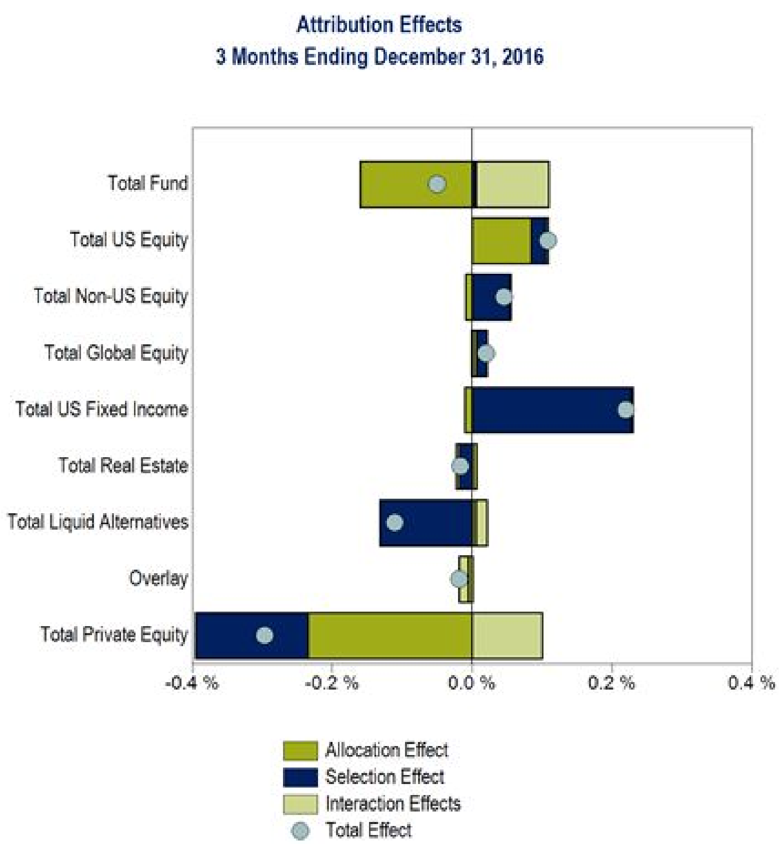
Ventura County Employees' Retirement Association

Rolling 5 Year Excess Returns- Net of Fees



Ventura County Employees' Retirement Association

Total Fund Attribution Analysis

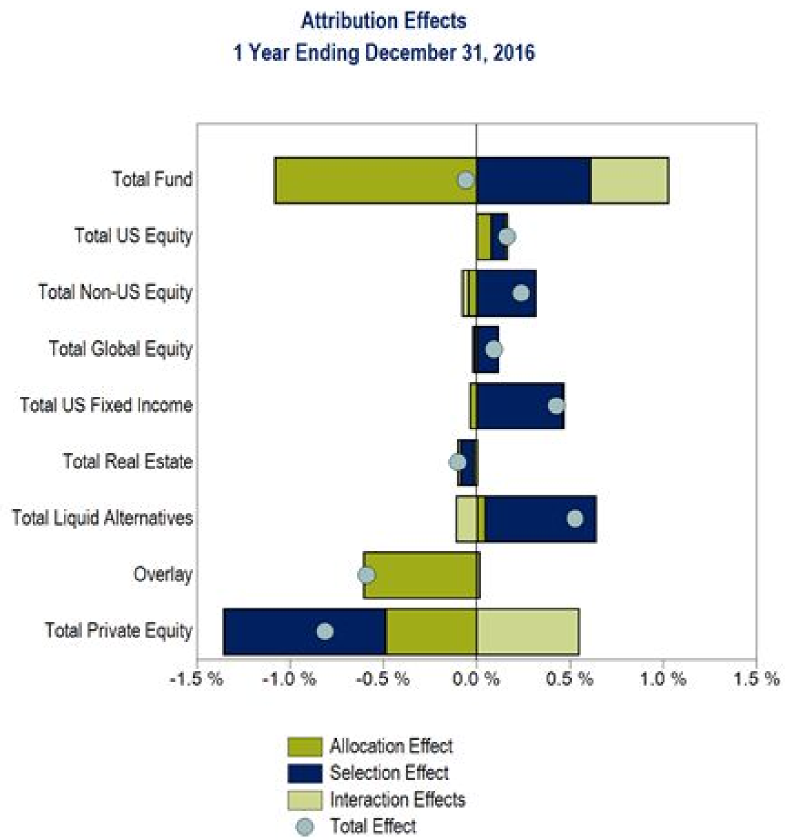


Attribution Summary
3 Months Ending December 31, 2016

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total US Equity	4.3%	4.2%	0.1%	0.0%	0.1%	0.0%	0.1%
Total Non-US Equity	-0.9%	-1.3%	0.4%	0.1%	0.0%	0.0%	0.0%
Total Global Equity	1.3%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Total US Fixed Income	-1.9%	-3.0%	1.1%	0.2%	0.0%	0.0%	0.2%
Total Real Estate	1.6%	1.9%	-0.3%	0.0%	0.0%	0.0%	0.0%
Total Liquid Alternatives	-0.4%	1.0%	-1.3%	-0.1%	0.0%	0.0%	-0.1%
Overlay	-0.2%	0.1%	-0.3%	0.0%	0.0%	0.0%	0.0%
Total Private Equity	3.4%	4.9%	-1.5%	-0.2%	-0.2%	0.1%	-0.3%
Total	**1.2%**	**1.2%**	**-0.1%**	**0.0%**	**-0.2%**	**0.1%**	**-0.1%**

Ventura County Employees' Retirement Association

Total Fund Attribution Analysis

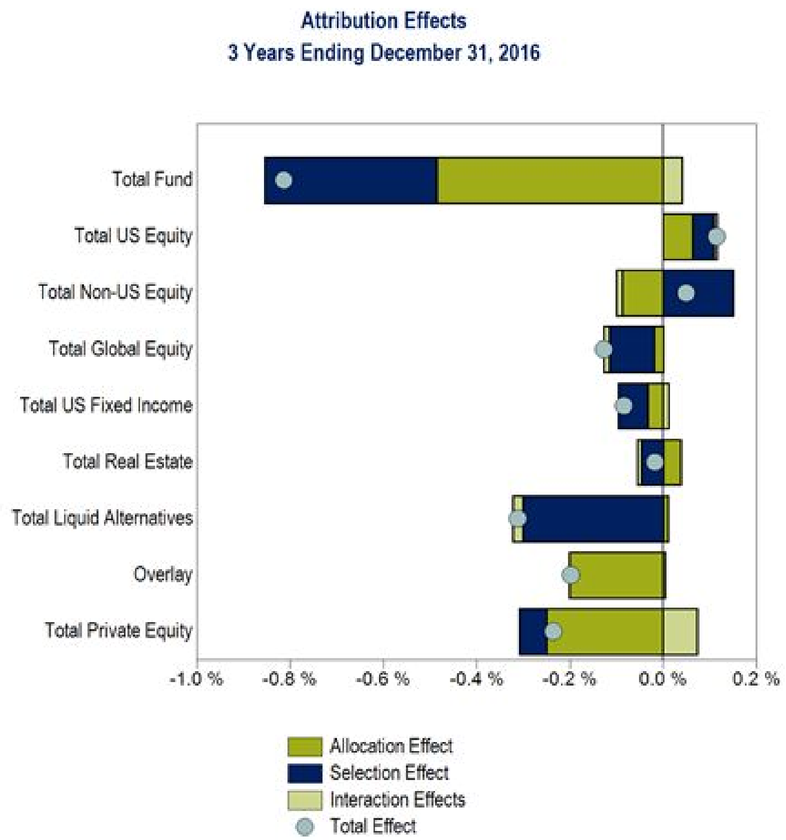


Attribution Summary
1 Year Ending December 31, 2016

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total US Equity	13.0%	12.7%	0.3%	0.1%	0.1%	0.0%	0.2%
Total Non-US Equity	6.6%	4.5%	2.1%	0.3%	0.0%	0.0%	0.2%
Total Global Equity	9.0%	7.9%	1.1%	0.1%	0.0%	0.0%	0.1%
Total US Fixed Income	4.9%	2.6%	2.2%	0.5%	0.0%	0.0%	0.4%
Total Real Estate	6.8%	7.8%	-1.0%	-0.1%	0.0%	0.0%	-0.1%
Total Liquid Alternatives	11.7%	6.2%	5.6%	0.6%	0.0%	-0.1%	0.5%
Overlay	0.5%	0.3%	0.2%	0.0%	-0.6%	0.0%	-0.6%
Total Private Equity	7.6%	16.0%	-8.4%	-0.9%	-0.5%	0.5%	-0.8%
Total	**8.4%**	**8.4%**	**-0.1%**	**0.6%**	**-1.1%**	**0.4%**	**-0.1%**

Ventura County Employees' Retirement Association

Total Fund Attribution Analysis

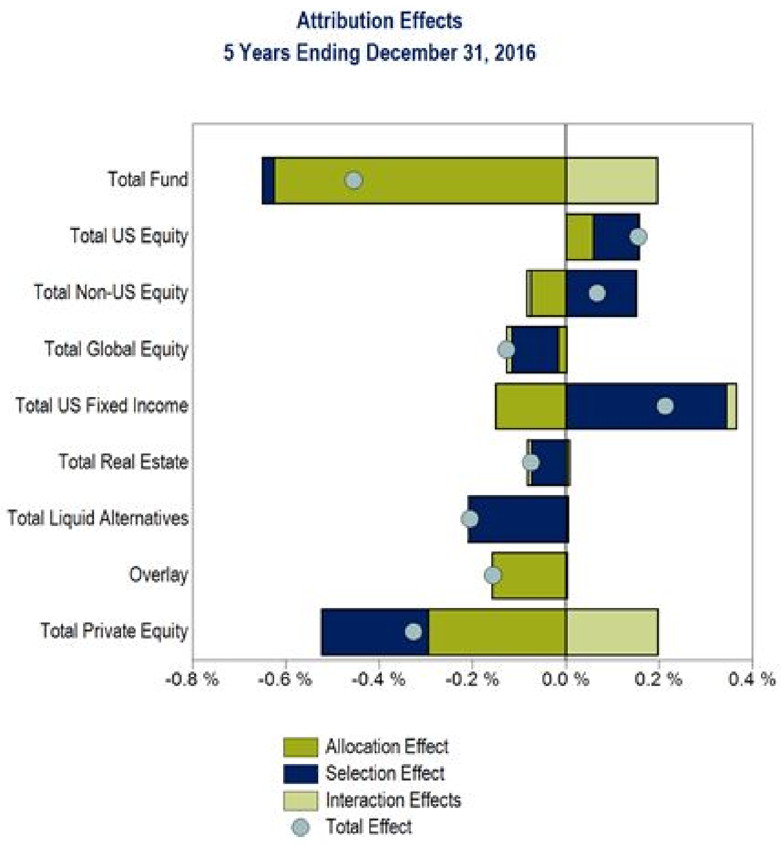


Attribution Summary
3 Years Ending December 31, 2016

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total US Equity	8.5%	8.4%	0.2%	0.0%	0.1%	0.0%	0.1%
Total Non-US Equity	-0.7%	-1.8%	1.0%	0.1%	-0.1%	0.0%	0.0%
Total Global Equity	2.2%	3.1%	-0.9%	-0.1%	0.0%	0.0%	-0.1%
Total US Fixed Income	2.7%	3.0%	-0.3%	-0.1%	0.0%	0.0%	-0.1%
Total Real Estate	10.3%	11.0%	-0.7%	0.0%	0.0%	0.0%	0.0%
Total Liquid Alternatives	2.0%	5.2%	-3.2%	-0.3%	0.0%	0.0%	-0.3%
Overlay	0.1%	0.1%	0.0%	0.0%	-0.2%	0.0%	-0.2%
Total Private Equity	13.6%	11.6%	2.1%	-0.1%	-0.3%	0.1%	-0.2%
Total	**4.7%**	**5.3%**	**-0.7%**	**-0.4%**	**-0.5%**	**0.0%**	**-0.8%**

Ventura County Employees' Retirement Association

Total Fund Attribution Analysis



Attribution Summary
5 Years Ending December 31, 2016

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total US Equity	14.9%	14.6%	0.3%	0.1%	0.1%	0.0%	0.2%
Total Non-US Equity	6.0%	5.0%	1.0%	0.2%	-0.1%	0.0%	0.1%
Total Global Equity	8.3%	9.4%	-1.1%	-0.1%	0.0%	0.0%	-0.1%
Total US Fixed Income	3.5%	2.2%	1.3%	0.3%	-0.2%	0.0%	0.2%
Total Real Estate	10.1%	11.2%	-1.0%	-0.1%	0.0%	0.0%	-0.1%
Total Liquid Alternatives	--	--	--	-0.2%	0.0%	0.0%	-0.2%
Overlay	--	--	--	0.0%	-0.2%	0.0%	-0.2%
Total Private Equity	13.8%	18.0%	-4.2%	-0.2%	-0.3%	0.2%	-0.3%
Total	**9.0%**	**9.2%**	**-0.3%**	**0.0%**	**-0.6%**	**0.2%**	**-0.5%**

Ventura County Employees' Retirement Association

Total Fund Risk Statistics

1 Year Ending December 31, 2016

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Anlzd AJ	Rank	Tracking Error	Rank	Info Ratio	Rank	Beta
Total Equity	57.4%	10.6%	62	11.1%	30	2.9%	64	1.5%		1.8	8	1.0
MSCI ACWI	--	7.9%	76	11.2%	33		76	0.0%		--	--	1.0
Total US Equity	32.1%	13.0%	44	11.3%	32	0.2%	41	0.1%		2.6	2	1.0
Russell 3000	--	12.7%	45	11.3%	31		42	0.0%		--	--	1.0
Total Non-US Equity	15.1%	6.6%	14	12.7%	63	2.4%	17	1.4%	7	1.5	5	0.9
MSCI ACWI ex USA	--	4.5%	44	13.4%	88		53	0.0%		--	--	1.0
Total Global Equity	10.3%	9.0%	22	11.3%	65	1.1%	33	0.8%	4	1.3	10	1.0
MSCI ACWI	--	7.9%	30	11.2%	64		48	0.0%		--	--	1.0
Total Fixed Income	19.7%	4.9%	42	3.5%	66	3.8%	17	4.5%	93	0.6	46	0.4
BBgBarc Global Aggregate TR	--	2.1%	77	7.3%	99		74	0.0%		--	--	1.0
Total US Fixed Income	19.7%	4.9%	39	3.5%	68	2.8%	35	2.3%	73	1.0	49	0.8
BBgBarc US Aggregate TR	--	2.6%	69	3.7%	79		87	0.0%		--	--	1.0
Total Liquid Alternatives	8.6%	11.7%	--	9.1%	--	-15.6%	--	8.8%	--	0.6	--	4.6
CPI + 4% (Unadjusted)	--	6.2%	--	0.7%	--		--	0.0%	--	--	--	1.0

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Real Estate	8.2%	6.8%	84	2.8%	37
NCREIF ODCE Net	--	7.8%	64	3.2%	49
Total Private Equity	3.9%	7.6%	47	4.6%	56
DJ U.S. Total Stock Market Index + 3%	--	16.0%	1	11.3%	99

Total U.S. Equity Benchmark: Russell 3000 Index. Prior to January 2016, the Benchmark is a dynamic hybrid using the respective managers' market value weights within the U.S. Equity component toward their benchmark. Prior to May 2013, the Dow Jones U.S. Total Stock Market Index. Prior to May 2007, the Russell 3000 Index.

Total Non-U.S. Equity Benchmark: MSCI ACWI ex US Free, prior to May 2002, the MSCI EAFE.

Composite rankings are used for Total Equity (InvestorForce Public DB Total Eq consists of 88 portfolios),Total Us Equity (InvestorForce Public DB US Eq consists of 166 portfolios), Total Non-US Equity (InvestorForce Public DB ex-US Eq consists of 126 portfolios),Total Global Equity (InvestorForce Public DB Glbl Eq consists of 32 portfolios),Total Fixed Income (InvestorForce Public DB Total Fix Inc consists of 103 portfolios),Total US Fixed Income (InvestorForce Public DB US Fix Inc consists of 93 portfolios),Total Real Estate (InvestorForce Public DB Real Estate Pub+Priv consists of 50 portfolios) and Total Private Equity(InvestorForce Public DB Private Eq consists of 29 portfolios).

Ventura County Employees' Retirement Association

Total Fund Risk Statistics

3 Years Ending December 31, 2016

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Anlzd AJ	Rank	Tracking Error	Rank	Info Ratio	Rank	Beta
Total Equity	57.4%	4.9%	82	10.9%	24	1.9%	82	1.3%		1.3	10	1.0
MSCI ACWI	--	3.1%	91	11.2%	30		91	0.0%		--	--	1.0
Total US Equity	32.1%	8.5%	24	11.1%	24	0.1%	24	0.1%		1.9	1	1.0
Russell 3000	--	8.4%	26	11.0%	23		26	0.0%		--	--	1.0
Total Non-US Equity	15.1%	-0.7%	28	12.0%	45	0.9%	25	1.2%	5	0.9	6	0.9
MSCI ACWI ex USA	--	-1.8%	69	12.7%	79		57	0.0%		--	--	1.0
Total Global Equity	10.3%	2.2%	74	11.3%	64	-0.9%	99	1.2%	8	-0.8	99	1.0
MSCI ACWI	--	3.1%	71	11.2%	63		86	0.0%		--	--	1.0
Total Fixed Income	19.7%	2.3%	55	2.5%	40	2.3%	7	3.3%	83	0.8	6	0.4
BBgBarc Global Aggregate TR	--	-0.2%	99	5.0%	99		63	0.0%		--	--	1.0
Total US Fixed Income	19.7%	2.7%	65	2.4%	28	1.0%	32	2.2%	82	-0.1	73	0.6
BBgBarc US Aggregate TR	--	3.0%	53	3.0%	59		76	0.0%		--	--	1.0
Total Liquid Alternatives	8.6%	2.0%	--	10.3%	--	-11.9%	--	10.0%	--	-0.3	--	2.7
CPI + 4% (Unadjusted)	--	5.2%	--	1.1%	--		--	0.0%	--	--	--	1.0

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Real Estate	8.2%	10.3%	76	4.3%	46
NCREIF ODCE Net	--	11.0%	66	4.6%	52
Total Private Equity	3.9%	13.6%	27	6.8%	69
DJ U.S. Total Stock Market Index + 3%	--	11.6%	39	11.0%	96

Total U.S. Equity Benchmark: Russell 3000 Index. Prior to January 2016, the Benchmark is a dynamic hybrid using the respective managers' market value weights within the U.S. Equity component toward their benchmark. Prior to May 2013, the Dow Jones U.S. Total Stock Market Index. Prior to May 2007, the Russell 3000 Index.

Total Non-U.S. Equity Benchmark: MSCI ACWI ex US Free, prior to May 2002, the MSCI EAFE.

Composite rankings are used for Total Equity (InvestorForce Public DB Total Eq consists of 75 portfolios),Total Us Equity (InvestorForce Public DB US Eq consists of 151 portfolios), Total Non-US Equity (InvestorForce Public DB ex-US Eq consists of 116 portfolios),Total Global Equity (InvestorForce Public DB Glbl Eq consists of 28 portfolios),Total Fixed Income (InvestorForce Public DB Total Fix Inc consists of 93 portfolios),Total US Fixed Income (InvestorForce Public DB US Fix Inc consists of 86 portfolios),Total Real Estate (InvestorForce Public DB Real Estate Pub+Priv consists of 45 portfolios) and Total Private Equity(InvestorForce Public DB Private Eq consists of 28 portfolios).

Ventura County Employees' Retirement Association

Total Fund Risk Statistics

5 Years Ending December 31, 2016

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Anlzd AJ	Rank	Tracking Error	Rank	Info Ratio	Rank	Beta
Total Equity	57.4%	11.3%	91	10.8%	24	2.5%	93	1.6%		1.3	10	0.9
MSCI ACWI	--	9.4%	97	11.4%	38		99	0.0%		--	--	1.0
Total US Equity	32.1%	14.9%	28	10.7%	21	0.2%	24	0.3%		1.1	1	1.0
Russell 3000	--	14.6%	33	10.7%	20		27	0.0%		--	--	1.0
Total Non-US Equity	15.1%	6.0%	43	12.5%	25	1.3%	29	1.3%	9	0.8	12	0.9
MSCI ACWI ex USA	--	5.0%	69	13.4%	80		65	0.0%		--	--	1.0
Total Global Equity	10.3%	8.3%	64	11.1%	32	-0.8%	89	1.4%		-0.8	99	1.0
MSCI ACWI	--	9.4%	60	11.4%	53		85	0.0%		--	--	1.0
Total Fixed Income	19.7%	3.2%	30	2.7%	39	3.0%	11	2.9%	81	1.0	16	0.5
BBgBarc Global Aggregate TR	--	0.2%	99	4.6%	98		83	0.0%		--	--	1.0
Total US Fixed Income	19.7%	3.5%	26	2.7%	41	1.9%	17	2.0%	79	0.6	41	0.7
BBgBarc US Aggregate TR	--	2.2%	63	2.9%	56		82	0.0%		--	--	1.0
Total Liquid Alternatives	8.6%	--	--	--	--	--	--	--	--	--	--	--
CPI + 4% (Unadjusted)	--	9.6%	--	8.2%	--		--	0.0%	--	--	--	1.0

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Real Estate	8.2%	10.1%	75	4.2%	34
NCREIF ODCE Net	--	11.2%	65	4.6%	44

Total U.S. Equity Benchmark: Russell 3000 Index. Prior to January 2016, the Benchmark is a dynamic hybrid using the respective managers' market value weights within the U.S. Equity component toward their benchmark. Prior to May 2013, the Dow Jones U.S. Total Stock Market Index. Prior to May 2007, the Russell 3000 Index.

Total Non-U.S. Equity Benchmark: MSCI ACWI ex US Free, prior to May 2002, the MSCI EAFE.

Composite rankings are used forTotal Equity (InvestorForce Public DB Total Eq consists of 57 portfolios),Total Us Equity (InvestorForce Public DB US Eq consists of 124 portfolios), Total Non-US Equity (InvestorForce Public DB ex-US Eq consists of 100 portfolios),Total Global Equity (InvestorForce Public DB Glbl Eq consists of 17 portfolios),Total Fixed Income (InvestorForce Public DB Total Fix Inc consists of 75 portfolios),Total US Fixed Income (InvestorForce Public DB US Fix Inc consists of 76 portfolios),Total Real Estate (InvestorForce Public DB Real Estate Pub+Priv consists of 37 portfolios).

Ventura County Employees' Retirement Association

Total Fund Performance Detail (Net)

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Return (%)	Since
Total Fund	**4,668,717,739**	**100.0**	**100.0**	**1.2**	**32**	**4.9**	**44**	**8.6**	**15**	**4.6**	**37**	**9.0**	**14**	**5.0**	**37**	**7.9**	**Apr-94**
Policy Index				*1.2*	*31*	*4.9*	*42*	*8.4*	*25*	*5.3*	*13*	*9.1*	*13*	*5.3*	*17*	*7.9*	*Apr-94*
Over/Under				0.0		0.0		0.2		-0.7		-0.1		-0.3		0.0	
Allocation Index				*1.6*	*13*	*5.3*	*27*	*8.5*	*24*	*4.9*	*26*	*8.5*	*38*	*4.9*	*43*	*--*	*Apr-94*
60% MSCI ACWI (Net)/40% CITI WGBI				*-2.8*	*99*	*0.4*	*99*	*5.5*	*95*	*1.7*	*97*	*5.3*	*95*	*3.7*	*91*	*--*	*Apr-94*
InvestorForce Public DB > $1B Net Median				*0.8*		*4.6*		*7.7*		*4.1*		*8.1*		*4.8*		*7.2*	*Apr-94*
Total Fund ex Parametric	**4,565,095,433**	**97.8**	**--**	**1.1**	**--**	**4.4**	**--**	**8.3**	**--**	**4.5**	**--**	**8.9**	**--**	**4.9**	**--**	**7.8**	**Apr-94**
Total Fund ex Private Equity	**4,485,592,258**	**96.1**	**--**	**1.1**	**37**	**4.8**	**47**	**8.6**	**15**	**4.3**	**46**	**8.4**	**41**	**--**	**--**	**8.4**	**Jan-12**
Policy Index				*1.2*	*31*	*4.9*	*42*	*8.4*	*25*	*5.3*	*13*	*9.1*	*13*	*5.3*	*17*	*9.1*	*Jan-12*
Over/Under				-0.1		-0.1		0.2		-1.0		-0.7				-0.7	
InvestorForce Public DB > $1B Net Median				*0.8*		*4.6*		*7.7*		*4.1*		*8.1*		*4.8*		*8.1*	*Jan-12*
Total US Equity	**1,497,012,239**	**32.1**	**28.0**	**4.3**	**50**	**9.0**	**53**	**13.0**	**44**	**8.5**	**24**	**14.9**	**28**	**6.8**	**60**	**8.9**	**Dec-93**
Russell 3000				*4.2*	*51*	*8.8*	*54*	*12.7*	*45*	*8.4*	*26*	*14.6*	*33*	*7.2*	*50*	*9.2*	*Dec-93*
Over/Under				0.1		0.2		0.3		0.1		0.3		-0.4		-0.3	
eA All US Equity Net Median				*4.2*		*9.3*		*11.7*		*6.8*		*13.5*		*7.2*		*10.0*	*Dec-93*
BlackRock Equity Market Fund	1,283,784,079	27.5		4.2	50	8.9	53	12.8	45	8.5	24	14.7	32	--	--	7.4	Dec-07
Dow Jones U.S. Total Stock Market				*4.1*	*51*	*8.8*	*54*	*12.6*	*46*	*8.4*	*26*	*14.6*	*33*	*7.2*	*50*	*7.4*	*Dec-07*
Over/Under				0.1		0.1		0.2		0.1		0.1				0.0	
eA All US Equity Net Median				*4.2*		*9.3*		*11.7*		*6.8*		*13.5*		*7.2*		*7.3*	*Dec-07*
Western U.S. Index Plus	160,786,886	3.4		4.2	51	8.6	55	13.8	41	9.5	13	16.1	12	--	--	4.3	May-07
S&P 500				*3.8*	*55*	*7.8*	*60*	*12.0*	*49*	*8.9*	*19*	*14.7*	*32*	*6.9*	*56*	*6.3*	*May-07*
Over/Under				0.4		0.8		1.8		0.6		1.4				-2.0	
eA All US Equity Net Median				*4.2*		*9.3*		*11.7*		*6.8*		*13.5*		*7.2*		*6.4*	*May-07*
BlackRock Extended Equity Index	52,441,274	1.1		5.7	46	13.2	38	16.1	43	6.5	41	14.6	26	8.0	43	11.6	Oct-02
Dow Jones U.S. Completion Total Stock Market				*5.5*	*47*	*13.1*	*39*	*15.7*	*48*	*6.4*	*44*	*14.4*	*30*	*7.9*	*46*	*11.6*	*Oct-02*
Over/Under				0.2		0.1		0.4		0.1		0.2		0.1		0.0	
eA US Small-Mid Cap Equity Net Median				*5.3*		*11.2*		*15.1*		*5.7*		*13.4*		*7.7*		*11.3*	*Oct-02*

Color Coding: PERFORMANCE: Green-Over performance, Red-Under performance / Color Coding: RANKS: 1 - 25 Green - Positive Result, 26 - 50 Yellow, 50 - 75 Orange, 76 - 100 Red - Negative Result.

Policy Index: Currently, 28% Russell 3000 Index, 20% Barclays Aggregate, 15% MSCI ACWI ex U.S., 10% MSCI ACWI, 10% DJ U.S. Total Stock Market Index + 3%, 10% CPI+4% Index, and 7% NCREIF ODCE Real Estate Index.

Total U.S. Equity Benchmark: Russell 3000 Index. Prior to January 2016, the Benchmark is a dynamic hybrid using the respective managers' market value weights within the U.S. Equity component toward their benchmark. Prior to May 2013, the Dow Jones U.S. Total Stock Market Index. Prior to May 2007, the Russell 3000 Index.

Ventura County Employees' Retirement Association

Total Fund Performance Detail (Net)

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Return (%)	Since
Total Non-US Equity	**703,258,824**	**15.1**	**15.0**	**-0.9**	**21**	**6.1**	**20**	**6.6**	**14**	**-0.7**	**28**	**6.0**	**43**	**1.2**	**42**	**6.0**	**Mar-94**
MSCI ACWI ex USA				*-1.3*	*27*	*5.6*	*27*	*4.5*	*44*	*-1.8*	*69*	*5.0*	*69*	*1.0*	*46*	*4.7*	*Mar-94*
Over/Under				0.4		0.5		2.1		1.1		1.0		0.2		1.3	
MSCI EAFE				*-0.7*	*18*	*5.7*	*24*	*1.0*	*89*	*-1.6*	*64*	*6.5*	*30*	*0.7*	*62*	*4.4*	*Mar-94*
MSCI ACWI ex USA Local Currency				*4.9*	*1*	*11.6*	*1*	*7.0*	*7*	*4.9*	*1*	*10.1*	*1*	*2.6*	*11*	*--*	*Mar-94*
MSCI EAFE Local Currency				*7.1*	*1*	*13.5*	*1*	*5.3*	*28*	*5.5*	*1*	*11.8*	*1*	*2.2*	*19*	*4.7*	*Mar-94*
InvestorForce Public DB ex-US Eq Net Median				*-2.4*		*4.3*		*4.3*		*-1.3*		*5.5*		*0.8*		*5.1*	*Mar-94*
BlackRock ACWI ex-U.S. Index	341,371,584	7.3		-1.6	28	5.4	28	4.7	24	-1.3	53	5.5	77	--	--	1.1	Mar-07
MSCI ACWI ex USA				*-1.3*	*25*	*5.6*	*27*	*4.5*	*24*	*-1.8*	*58*	*5.0*	*85*	*1.0*	*71*	*0.6*	*Mar-07*
Over/Under				-0.3		-0.2		0.2		0.5		0.5				0.5	
MSCI ACWI ex USA Local Currency				*4.9*	*1*	*11.6*	*2*	*7.0*	*13*	*4.9*	*2*	*10.1*	*4*	*2.6*	*33*	*2.3*	*Mar-07*
eA ACWI ex-US All Cap Equity Net Median				*-3.5*		*2.7*		*1.7*		*-0.7*		*7.1*		*1.8*		*1.7*	*Mar-07*
Sprucegrove	184,817,177	4.0		2.6	1	11.6	2	11.9	3	-0.5	46	6.2	72	1.7	52	7.0	Mar-02
MSCI ACWI ex USA				*-1.3*	*25*	*5.6*	*27*	*4.5*	*24*	*-1.8*	*58*	*5.0*	*85*	*1.0*	*71*	*5.9*	*Mar-02*
Over/Under				3.9		6.0		7.4		1.3		1.2		0.7		1.1	
MSCI EAFE				*-0.7*	*21*	*5.7*	*27*	*1.0*	*55*	*-1.6*	*56*	*6.5*	*58*	*0.7*	*80*	*5.3*	*Mar-02*
MSCI ACWI ex USA Local Currency				*4.9*	*1*	*11.6*	*2*	*7.0*	*13*	*4.9*	*2*	*10.1*	*4*	*2.6*	*33*	*4.9*	*Mar-02*
MSCI EAFE Local Currency				*7.1*	*1*	*13.5*	*1*	*5.3*	*20*	*5.5*	*1*	*11.8*	*2*	*2.2*	*46*	*4.2*	*Mar-02*
eA ACWI ex-US All Cap Equity Net Median				*-3.5*		*2.7*		*1.7*		*-0.7*		*7.1*		*1.8*		*6.4*	*Mar-02*
Hexavest	79,915,903	1.7		-0.8	33	3.3	54	3.8	20	-0.7	59	6.0	79	--	--	3.2	Dec-10
MSCI EAFE				*-0.7*	*31*	*5.7*	*27*	*1.0*	*46*	*-1.6*	*63*	*6.5*	*66*	*0.7*	*76*	*3.2*	*Dec-10*
Over/Under				-0.1		-2.4		2.8		0.9		-0.5				0.0	
MSCI EAFE Local Currency				*7.1*	*1*	*13.5*	*1*	*5.3*	*12*	*5.5*	*1*	*11.8*	*3*	*2.2*	*34*	*7.4*	*Dec-10*
eA EAFE All Cap Equity Net Median				*-2.4*		*3.6*		*0.6*		*-0.6*		*7.1*		*1.6*		*4.1*	*Dec-10*
Walter Scott	97,154,160	2.1		-4.9	74	1.0	72	5.1	23	0.3	31	6.3	65	--	--	3.6	Dec-10
MSCI ACWI ex USA				*-1.3*	*25*	*5.6*	*27*	*4.5*	*24*	*-1.8*	*58*	*5.0*	*85*	*1.0*	*71*	*1.6*	*Dec-10*
Over/Under				-3.6		-4.6		0.6		2.1		1.3				2.0	
MSCI ACWI ex USA Local Currency				*4.9*	*1*	*11.6*	*2*	*7.0*	*13*	*4.9*	*2*	*10.1*	*4*	*2.6*	*33*	*6.0*	*Dec-10*
eA ACWI ex-US All Cap Equity Net Median				*-3.5*		*2.7*		*1.7*		*-0.7*		*7.1*		*1.8*		*3.6*	*Dec-10*

Ventura County Employees' Retirement Association

Total Fund Performance Detail (Net)

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Return (%)	Since
Total Global Equity	**481,253,407**	**10.3**	**10.0**	**1.3**	**28**	**7.0**	**28**	**9.0**	**22**	**2.2**	**74**	**8.3**	**64**	**2.8**	**38**	**5.0**	**May-05**
MSCI ACWI				*1.2*	*28*	*6.6*	*41*	*7.9*	*30*	*3.1*	*71*	*9.4*	*60*	*3.6*	*29*	*6.0*	*May-05*
Over/Under				0.1		0.4		1.1		-0.9		-1.1		-0.8		-1.0	
InvestorForce Public DB Glbl Eq Net Median				*-0.8*		*6.0*		*6.1*		*4.3*		*10.9*		*1.4*		*5.2*	*May-05*
BlackRock MSCI ACWI Equity Index	481,253,407	10.3		1.3	36	6.8	36	8.4	30	3.6	45	--	--	--	--	9.4	Aug-12
MSCI ACWI				*1.2*	*36*	*6.6*	*37*	*7.9*	*34*	*3.1*	*50*	*9.4*	*67*	*3.6*	*56*	*9.0*	*Aug-12*
Over/Under				0.1		0.2		0.5		0.5						0.4	
eA All Global Equity Net Median				*-0.1*		*4.7*		*5.9*		*3.1*		*10.1*		*3.7*		*9.3*	*Aug-12*

*GMO was terminated on September 19th with assets transitioned to the BlackRock MSCI ACWI Equity Index Fund in early October.

Ventura County Employees' Retirement Association

Private Equity Limited Partnership Performance

													Since Inception	
Fund Name	Vintage Year	Initial Investment Date	Commitment	Capital Called to Date[1]	Outstanding Commitment[1]	Call Ratio	Add'l Fees[2]	Distributions to Date	Valuation	Total Value	Net Benefit	IRR	Distributions to Paid In Multiple (DPI)	Total Value to Paid In Multiple (TVPI)
Adams Street 2010 U.S. Fund	2010	5/21/2010	$42,500,000	$32,852,500	$9,647,500	77%	$15,213	$14,394,035	$33,872,065	$48,266,100	$15,398,387	6.1%	0.44x	1.47x
Adams Street 2010 Non-U.S. Dev. Mkts Fund	2010	5/21/2010	$25,500,000	$20,591,249	$4,908,751	81%	$1,589	$8,141,472	$16,744,994	$24,886,466	$4,293,628	7.7%	0.4x	1.21x
Adams Street 2010 Non-U.S. Emg Mkts Fund	2010	1/3/2011	$8,500,000	$6,621,500	$1,878,500	78%	$0	$738,789	$7,833,407	$8,572,196	$1,950,696	9.4%	0.11x	1.29x
Adams Street 2010 Direct Fund	2010	5/21/2010	$8,500,000	$7,879,500	$620,500	93%	$6,697	$4,831,957	$7,407,542	$12,239,499	$4,353,302	12.0%	0.61x	1.55x
Total Adams Street 2010	*2010*	*5/21/2010*	*$85,000,000*	*$67,944,749*	*$17,055,251*	*80%*	*$23,499*	*$28,106,253*	*$65,858,008*	*$93,964,261*	*$25,996,013*	*11.7%*	*0.41x*	*1.38x*
Adams Street 2013 Global Fund	2013	6/27/2013	$75,000,000	$44,250,000	$30,750,000	59%	$10,728	$3,108,905	$44,395,263	$47,504,168	$3,243,440	4.4%	0.07x	1.07x
Adams Street 2016 Global Fund	2016	12/22/2016	$60,000,000	$1,500,000	$58,500,000	3%	$0	$0	$1,594,044	$1,594,044	$94,044	0.0%	0x	1.06x
Drive Capital Fund II	2016	9/1/2016	$15,000,000	$449,382	$14,550,618	3%	$3,210	$0	$317,822	$317,822	($134,770)	0.0%	--	0.7x
HarbourVest - Dover Street VIII	2013	5/30/2013	$67,500,000	$56,362,500	$11,137,500	84%	$84,954	$29,369,898	$47,534,125	$76,904,023	$20,456,569	22.7%	0.52x	1.36x
HarbourVest - Dover Street IX	2016	12/16/2016	$60,000,000	$2,400,000	$57,600,000	4%	$0	$841,532	$1,737,342	$2,578,874	$178,874	4.0%	--	--
Pantheon Global Secondary Fund IV	2010	8/20/2010	$15,000,000	$9,960,000	$5,040,000	66%	$0	$8,805,001	$5,690,350	$14,495,351	$4,535,351	13.4%	0.88x	1.46x
Pantheon Global Secondary Fund V	2015	2/26/2015	$50,000,000	$13,391,510	$36,608,490	27%	($87,343)	$12,568	$16,199,876	$16,212,444	$2,908,277	77.7%	--	1.22x
Total VCERA Private Equity Program	**--**	***5/21/2010***	***$427,500,000***	***$196,258,141***	***$231,241,859***	***46%***	***$35,048***	***$70,244,157***	***$183,326,830***	***$253,570,987***	***$57,277,798***	***13.0%***	***0.36x***	***1.29x***

1. Includes recycled/recallable distributions received to date.

2. Add'l Fees represents notional interest paid/(received).

2. Add'l Fees for Pantheon Global Secondary Fund V includes notional interest paid/(received) and management fee rebates paid to VCERA.

Note: Private equity performance data is reported net of fees.

Performance shown is based on 9/30/2016 NAVs cash-adjusted for cash flows through 12/31/2016.

Ventura County Employees' Retirement Association

Total Fund Performance Detail (Net)

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Return (%)	Since
Total US Fixed Income	**918,240,759**	**19.7**	**20.0**	**-1.9**	**40**	**-0.6**	**40**	**4.9**	**39**	**2.7**	**65**	**3.5**	**26**	**5.6**	**9**	**6.0**	**Feb-94**
BBgBarc US Aggregate TR				*-3.0*	*92*	*-2.5*	*92*	*2.6*	*69*	*3.0*	*53*	*2.2*	*63*	*4.3*	*49*	*5.4*	*Feb-94*
Over/Under				1.1		1.9		2.3		-0.3		1.3		1.3		0.6	
InvestorForce Public DB US Fix Inc Net Median				*-2.0*		*-1.0*		*4.1*		*3.1*		*2.7*		*4.3*		*5.5*	*Feb-94*
BlackRock U.S. Debt Fund	215,199,689	4.6		-3.0	81	-2.5	81	2.7	57	3.1	48	2.3	62	4.4	50	5.3	Nov-95
BBgBarc US Aggregate TR				*-3.0*	*80*	*-2.5*	*81*	*2.6*	*57*	*3.0*	*50*	*2.2*	*64*	*4.3*	*54*	*5.3*	*Nov-95*
Over/Under				0.0		0.0		0.1		0.1		0.1		0.1		0.0	
eA All US Fixed Inc Net Median				*-1.8*		*-1.0*		*3.3*		*3.0*		*2.9*		*4.4*		*5.1*	*Nov-95*
Western	281,028,251	6.0		-3.1	83	-1.8	68	4.1	42	4.1	27	4.1	37	5.2	31	6.2	Dec-96
BBgBarc US Aggregate TR				*-3.0*	*80*	*-2.5*	*81*	*2.6*	*57*	*3.0*	*50*	*2.2*	*64*	*4.3*	*54*	*5.3*	*Dec-96*
Over/Under				-0.1		0.7		1.5		1.1		1.9		0.9		0.9	
eA All US Fixed Inc Net Median				*-1.8*		*-1.0*		*3.3*		*3.0*		*2.9*		*4.4*		*5.2*	*Dec-96*
Reams	301,131,501	6.4		-0.3	32	0.6	26	6.0	31	0.8	90	2.9	50	5.8	24	5.6	Sep-01
Reams Custom Index				*0.2*	*21*	*0.4*	*27*	*0.7*	*89*	*0.4*	*96*	*1.0*	*87*	*3.7*	*68*	*4.1*	*Sep-01*
Over/Under				-0.5		0.2		5.3		0.4		1.9		2.1		1.5	
BBgBarc US Aggregate TR				*-3.0*	*80*	*-2.5*	*81*	*2.6*	*57*	*3.0*	*50*	*2.2*	*64*	*4.3*	*54*	*4.5*	*Sep-01*
3-Month LIBOR + 3%				*1.0*	*15*	*1.9*	*21*	*3.8*	*46*	*3.4*	*38*	*3.4*	*44*	*4.2*	*57*	*4.8*	*Sep-01*
eA All US Fixed Inc Net Median				*-1.8*		*-1.0*		*3.3*		*3.0*		*2.9*		*4.4*		*4.6*	*Sep-01*
Loomis Strategic Alpha	44,432,213	1.0		1.7	10	3.5	18	6.1	31	2.4	63	--	--	--	--	2.6	Jul-13
BBgBarc US Aggregate TR				*-3.0*	*80*	*-2.5*	*81*	*2.6*	*57*	*3.0*	*50*	*2.2*	*64*	*4.3*	*54*	*2.7*	*Jul-13*
Over/Under				4.7		6.0		3.5		-0.6						-0.1	
3-Month LIBOR + 3%				*1.0*	*15*	*1.9*	*21*	*3.8*	*46*	*3.4*	*38*	*3.4*	*44*	*4.2*	*57*	*3.4*	*Jul-13*
eA All US Fixed Inc Net Median				*-1.8*		*-1.0*		*3.3*		*3.0*		*2.9*		*4.4*		*2.9*	*Jul-13*
Loomis Sayles Multi Strategy	76,449,106	1.6		-2.0	57	1.5	23	8.2	21	4.1	26	6.0	15	6.4	16	6.4	Jul-05
Loomis Custom Index				*-1.5*	*46*	*0.4*	*28*	*7.0*	*26*	*3.4*	*39*	*3.7*	*42*	*5.2*	*31*	*5.2*	*Jul-05*
Over/Under				-0.5		1.1		1.2		0.7		2.3		1.2		1.2	
BBgBarc US Govt/Credit TR				*-3.4*	*87*	*-3.0*	*87*	*3.0*	*52*	*3.0*	*49*	*2.3*	*63*	*4.4*	*51*	*4.2*	*Jul-05*
eA All US Fixed Inc Net Median				*-1.8*		*-1.0*		*3.3*		*3.0*		*2.9*		*4.4*		*4.3*	*Jul-05*

Reams Custom Index: Merrill Lynch 3 Month Libor Constant Maturity Index, prior to February 2013 the Barclays Aggregate

Loomis Custom Index: 65% Barclays Aggregate, 30% Citigroup High Yield Market Index and 5% JPM Non-US Hedged Bond Index

As of January 2016, Loomis Strategic Alpha was moved from the Total Global Fixed Income composite to the Total US Fixed Income composite.

Ventura County Employees' Retirement Association

Total Fund Performance Detail (Net)

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Return (%)	Since
Total Real Estate	**382,552,273**	**8.2**	**7.0**	**1.6**	**45**	**3.2**	**52**	**6.8**	**84**	**10.3**	**76**	**10.1**	**75**	**3.4**	**79**	**7.9**	**Mar-94**
NCREIF ODCE Net				*1.9*	*34*	*3.7*	*40*	*7.8*	*64*	*11.0*	*66*	*11.2*	*65*	*4.8*	*36*	*8.2*	*Mar-94*
Over/Under				-0.3		-0.5		-1.0		-0.7		-1.1		-1.4		-0.3	
InvestorForce Public DB Real Estate Pub+Priv Net Median				*1.5*		*3.3*		*8.1*		*11.6*		*11.6*		*4.2*		*7.2*	*Mar-94*
Prudential Real Estate	135,101,380	2.9		2.3	--	4.2	--	8.2	--	11.7	--	11.5	--	4.6	--	6.1	Jun-04
NCREIF ODCE Net				*1.9*	--	*3.7*	--	*7.8*	--	*11.0*	--	*11.2*	--	*4.8*	--	*7.1*	*Jun-04*
Over/Under				0.4		0.5		0.4		0.7		0.3		-0.2		-1.0	
NCREIF ODCE				*2.1*	--	*4.2*	--	*8.8*	--	*12.1*	--	*12.2*	--	*5.8*	--	*8.1*	*Jun-04*
UBS Real Estate	247,269,383	5.3		1.2	--	2.7	--	6.2	--	9.5	--	9.4	--	4.9	--	7.6	Mar-03
NCREIF ODCE Net				*1.9*	--	*3.7*	--	*7.8*	--	*11.0*	--	*11.2*	--	*4.8*	--	*7.4*	*Mar-03*
Over/Under				-0.7		-1.0		-1.6		-1.5		-1.8		0.1		0.2	
NCREIF ODCE				*2.1*	--	*4.2*	--	*8.8*	--	*12.1*	--	*12.2*	--	*5.8*	--	*8.4*	*Mar-03*
RREEF	181,509	0.0		-0.4	--	-12.9	--	-16.5	--	4.1	--	9.9	--	--	--	-6.3	Sep-07
NCREIF ODCE Net				*1.9*	--	*3.7*	--	*7.8*	--	*11.0*	--	*11.2*	--	*4.8*	--	*3.9*	*Sep-07*
Over/Under				-2.3		-16.6		-24.3		-6.9		-1.3				-10.2	
NCREIF ODCE				*2.1*	--	*4.2*	--	*8.8*	--	*12.1*	--	*12.2*	--	*5.8*	--	*4.8*	*Sep-07*

Total Real Estate Benchmark: NCREIF ODCE; prior to January 2006, the NCREIF Property Index

Ventura County Employees' Retirement Association

Total Fund Performance Detail (Net)

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Return (%)	Since
Total Liquid Alternatives	**403,651,475**	**8.6**	**10.0**	**-0.4**	**--**	**2.7**	**--**	**11.7**	**--**	**2.0**	**--**	**--**	**--**	**--**	**--**	**4.6**	**Apr-13**
CPI + 4% (Unadjusted)				*1.0*	--	*2.2*	--	*6.2*	--	*5.2*	--	*9.6*	--	--	--	*6.2*	*Apr-13*
Over/Under				-1.4		0.5		5.5		-3.2						-1.6	
Bridgewater All Weather Fund	281,132,456	6.0		-1.7	--	1.5	--	10.0	--	3.3	--	--	--	--	--	4.0	Aug-13
CPI + 5% (Unadjusted)				*1.2*	--	*2.6*	--	*7.2*	--	*6.2*	--	--	--	--	--	*6.0*	*Aug-13*
Over/Under				-2.9		-1.1		2.8		-2.9						-2.0	
Tortoise Energy Infrastructure	122,519,020	2.6		2.9	--	5.4	--	15.9	--	-0.8	--	--	--	--	--	2.6	Apr-13
Wells Fargo MLP Index				*3.5*	--	*6.6*	--	*21.0*	--	*-4.9*	--	*3.2*	--	--	--	*-2.2*	*Apr-13*
Over/Under				-0.6		-1.2		-5.1		4.1						4.8	
Overlay	**99,623,281**	**2.1**	**0.0**														
Parametric	99,623,281	2.1															

Overlay performance is not applicable on an individual account level.

Color Coding: PERFORMANCE: Green-Over performance, Red-Under performance
Color Coding: RANKS: 1 - 25 Green - Positive Result, 26 - 50 Yellow, 50 - 75 Orange, 76 - 100 Red - Negative Result

Ventura County Employees' Retirement Association

Total Fund Performance Detail (Net)

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Return (%)	Since
Total Private Equity	**183,125,480**	**3.9**	**10.0**	**3.4**	**33**	**7.1**	**21**	**7.6**	**47**	**13.6**	**27**	**13.8**	**22**	**--**	**--**	**13.8**	**Jan-12**
DJ U.S. Total Stock Market Index + 3%				*4.9*	*7*	*10.4*	*5*	*16.0*	*1*	*11.6*	*39*	*18.0*	*1*	--	--	*18.0*	*Jan-12*
Over/Under				-1.5		-3.3		-8.4		2.0		-4.2				-4.2	
InvestorForce Public DB Private Eq Net Median				*2.5*		*5.0*		*7.5*		*10.8*		*11.4*		*7.7*		*11.4*	*Jan-12*
Adams Street Global Fund Series	111,847,290	2.4		3.2	--	6.5	--	7.1	--	12.2	--	12.6	--	--	--	12.6	Jan-12
DJ U.S. Total Stock Market Index + 3%				*4.9*	--	*10.4*	--	*16.0*	--	*11.6*	--	*18.0*	--	--	--	*18.0*	*Jan-12*
Over/Under				-1.7		-3.9		-8.9		0.6		-5.4				-5.4	
Harbourvest- Dover Street VIII	49,057,580	1.1		3.1	--	5.6	--	6.7	--	17.5	--	--	--	--	--	18.2	Aug-13
DJ U.S. Total Stock Market Index + 3%				*4.9*	--	*10.4*	--	*16.0*	--	*11.6*	--	*18.0*	--	--	--	*13.9*	*Aug-13*
Over/Under				-1.8		-4.8		-9.3		5.9						4.3	
Pantheon Global Secondary Funds	21,902,789	0.5		5.7	--	17.5	--	15.5	--	12.7	--	10.7	--	--	--	10.7	Jan-12
DJ U.S. Total Stock Market Index + 3%				*4.9*	--	*10.4*	--	*16.0*	--	*11.6*	--	*18.0*	--	--	--	*18.0*	*Jan-12*
Over/Under				0.8		7.1		-0.5		1.1		-7.3				-7.3	

Private equity performance shown above is calculated using a time-weighted return methodology. Market values shown are cash-adjusted based on the current period's cash flows.

Adams Street Global Fund Series includes Adams Street 2010 U.S. Fund, 2010 Non-U.S. Developed Markets Fund, 2010 Non-U.S. Emerging Markets Fund, 2010 Direct Fund, and 2013 Global Fund.

Pantheon Global Secondary Funds includes Pantheon Global Secondary Fund IV and Global Secondary Fund V.

Drive Captial Fund, funded 9/1/2016.

Manager Due Diligence

Ventura County Employees' Retirement Association

Due Diligence Monitor

The items below summarize the recent quarter's performance and any changes or announcements from the Plan's managers/products. A "-" indicates there were no material announcements. A "Yes" indicates there was an announcement and a brief summary is provided on the following pages. NEPC's Due Diligence Committee meets every two weeks to review events as they relate to investment managers and determine if any action should be taken (by NEPC and/or by our clients). Events are rated: No Action, Watch, Hold, Client Review or Terminate. NEPC's recommendation in view of the recent quarter's developments (performance, manager events, and any of the longer-term trending data) is refreshed quarterly.

Investment Options	Performance (Recent Quarter)	Changes/ Announcements (Recent Quarter)	NEPC DD Committee Rec.	Plan Rec.	Comments	Last Onsite Conducted
BlackRock Equity Market Index	-	-	-	-		10/2013
Western U.S. Index Plus	-	-	-	-		6/2014
BlackRock Extended Equity Index	-	-	-	-		10/2013
BlackRock MSCI ACWI ex-U.S. Index	-	-	-	-		10/2013
Sprucegrove	Top Decile	-	Hold	Watch (Board Driven)	3Q 2014 Departure & Performance	N/A
Hexavest	-	-	-	-		1/2013
Walter Scott	-	-	-	-		10/2012
BlackRock MSCI ACWI Index	-	-	-	-		10/2013
Adams Street	N/A	-	-	-		11/2013
HarbourVest	N/A	-	-	-		3/2014
Pantheon	N/A	-	-	-		1/2015
BlackRock U.S. Debt Fund	Bottom Quartile	-	-	-		10/2013
Western	Bottom Quartile	-	-	-		6/2014
Reams	-	-	-	-		11/2013
Loomis Sayles Multi-Sector Full Discretion	-	-	-	-		11/2013
Loomis Sayles Strategic Alpha	Top Decile	-	-	-		11/2013

Ventura County Employees' Retirement Association

Due Diligence Monitor Continued

	Performance (Recent Quarter)	Changes/ Announcements (Recent Quarter)	NEPC DD Committee Rec.	Plan Rec.	Comments	Last Onsite Conducted
Prudential	N/A	-	-	-		7/2014
RREEF	N/A	-	-	-		7/2013
UBS	N/A	-	-	-		8/2011
Bridgewater	N/A	-	-	-		9/2012
Tortoise	N/A	-	-	-		8/2013
Parametric/Clifton	N/A	-	-	-		7/2013

NEPC Due Diligence Committee Recommendation Key	
No Action	Informational items have surfaced; no action is recommended.
Watch	Issues have surfaced to be concerned over; manager can participate in future searches, but current and prospective clients must be made aware of the issues.
Hold	Serious issues have surfaced to be concerned over; manager cannot participate in future searches unless a client specifically requests, but current and prospective clients must be made aware of the issues.
Client Review	Very serious issues have surfaced with an Investment Manager; manager cannot participate in future searches unless a client specifically requests. Current clients must be advised to review the manager.
Terminate	We have lost all confidence in the product; manager would not be recommended for searches and clients would be discouraged from using. The manager cannot participate in future searches unless a client specifically requests. Current clients must be advised to replace the manager.

Ventura County Employees' Retirement Association

Due Diligence Commentary

Below is a summary of managers that remain on Hold:

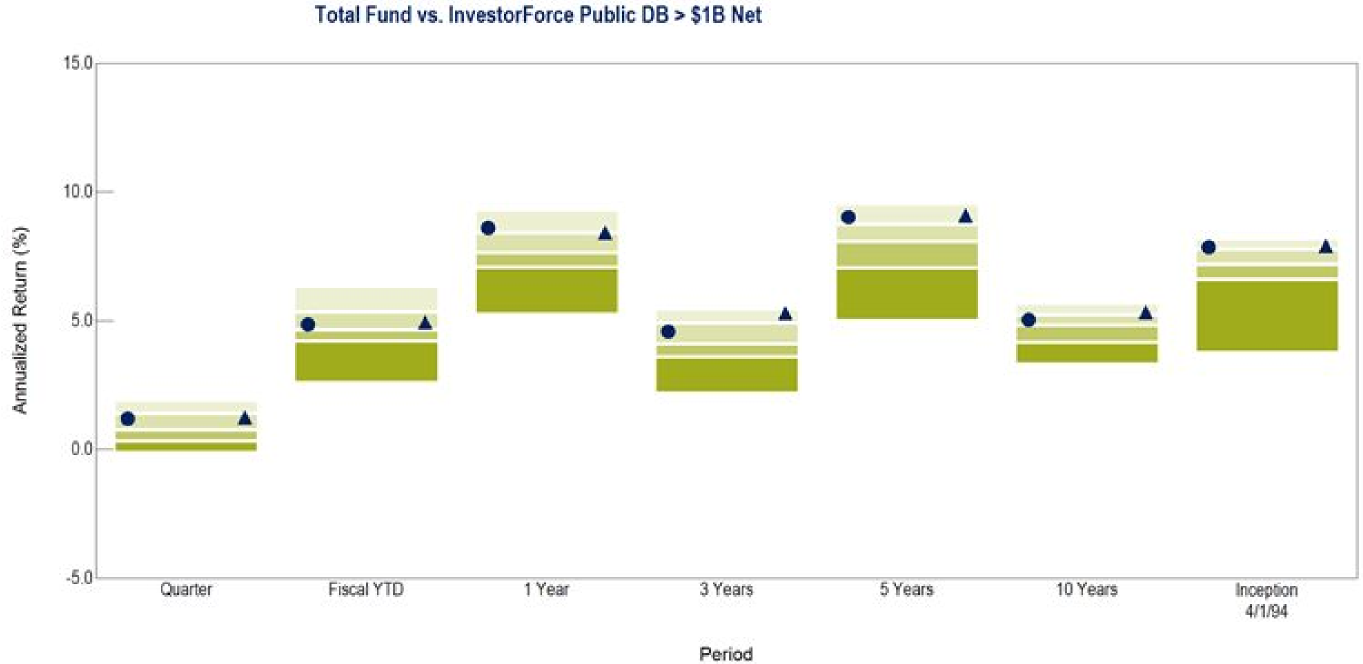
Sprucegrove

On July 27th Sprucegrove announced that they will open all products at the firm for new investment. They had been closed for a number of years, but following a period of poor performance and asset outflows they now have capacity. While this is a positive event, it triggers an opportunity to reconsider any allocation to the products. Assets have been declining. YTD performance has rebounded, but longer term numbers remain challenged.

NEPC recommends maintaining a Hold rating at this time. We will continue to monitor the situation and provide updates as necessary.

Ventura County Employees' Retirement Association

Total Fund Return Summary vs. Peer Universe

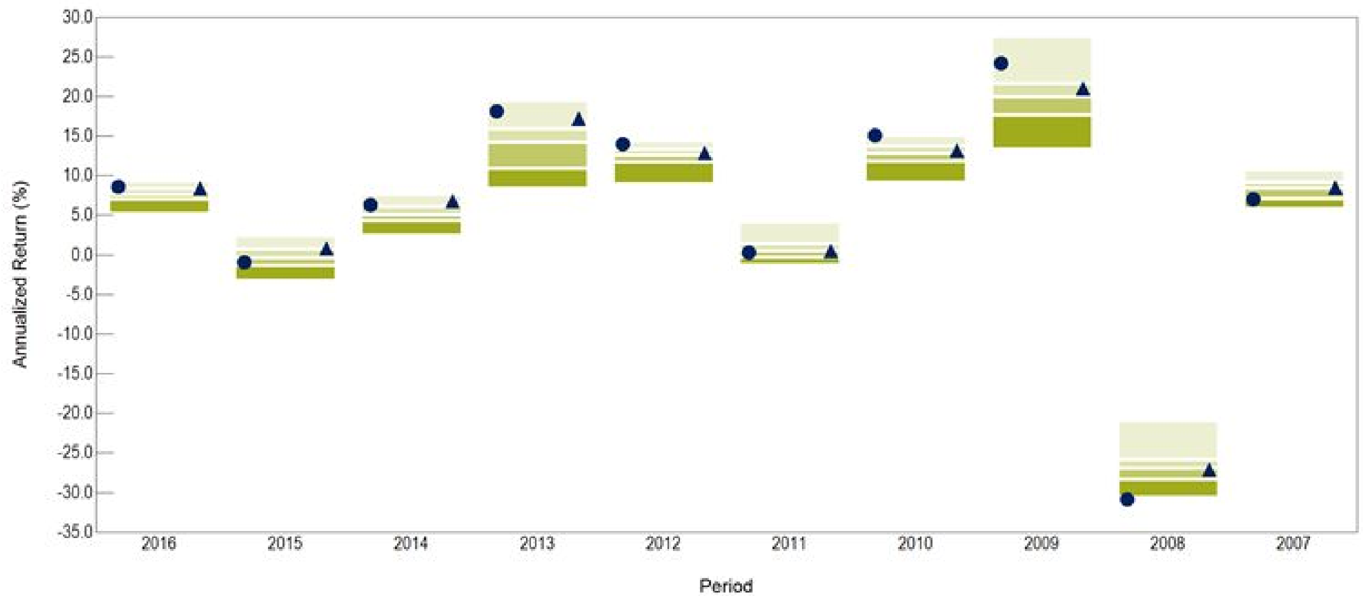


Return (Rank)	Quarter		Fiscal YTD		1 Year		3 Years		5 Years		10 Years		Inception 4/1/94	
5th Percentile	1.9		6.3		9.3		5.4		9.5		5.7		8.2	
25th Percentile	1.4		5.4		8.4		4.9		8.8		5.2		7.8	
Median	0.8		4.6		7.7		4.1		8.1		4.8		7.2	
75th Percentile	0.3		4.2		7.1		3.6		7.1		4.2		6.6	
95th Percentile	-0.1		2.6		5.3		2.2		5.0		3.3		3.8	
# of Portfolios	62		62		62		60		60		55		36	
● Total Fund	1.2	(32)	4.9	(44)	8.6	(15)	4.6	(37)	9.0	(14)	5.0	(37)	7.9	(20)
▲ Policy Index	1.2	(31)	4.9	(42)	8.4	(25)	5.3	(13)	9.1	(13)	5.3	(17)	7.9	(19)

Ventura County Employees' Retirement Association

Total Fund Return Summary vs. Peer Universe

Total Fund vs. InvestorForce Public DB > $1B Net

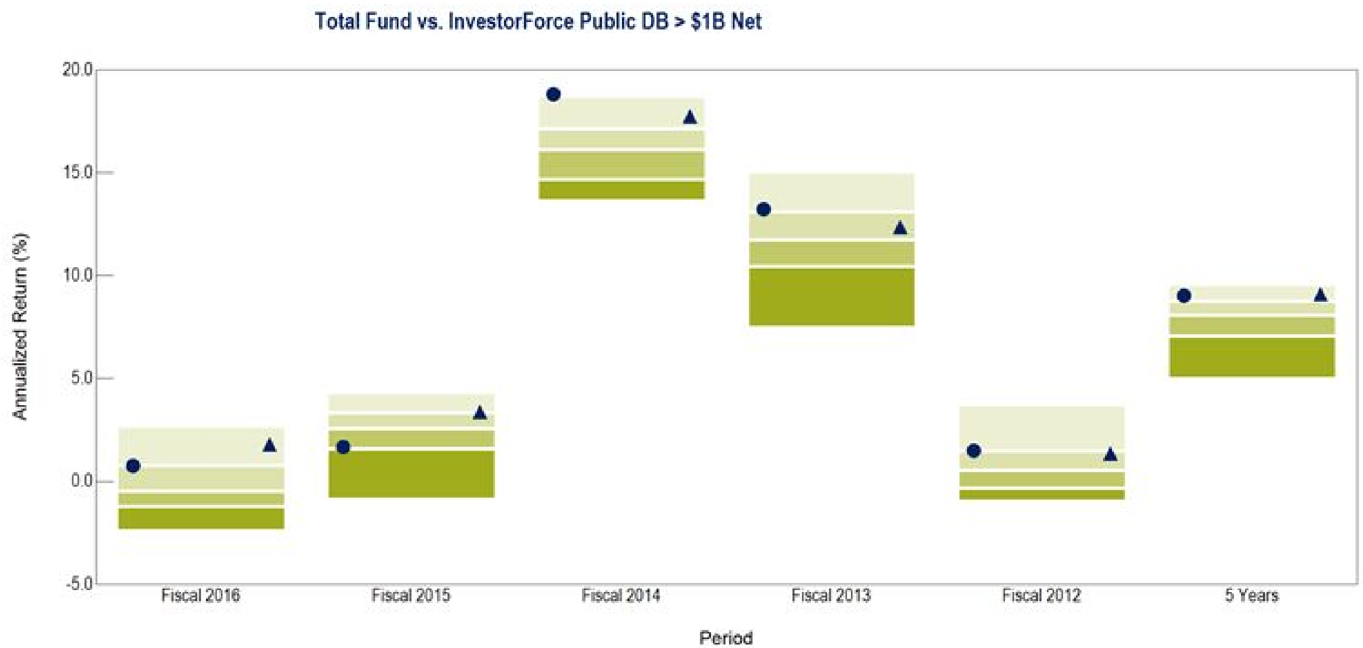


Return (Rank)

	2016		2015		2014		2013		2012		2011		2010		2009		2008		2007	
5th Percentile	9.3		2.4		7.6		19.5		14.3		4.2		15.1		27.5		-20.9		10.7	
25th Percentile	8.4		0.8		6.1		16.0		13.4		1.5		13.8		21.7		-25.7		9.2	
Median	7.7		-0.4		5.1		14.3		12.7		0.6		12.8		20.0		-26.9		8.5	
75th Percentile	7.1		-1.3		4.4		11.0		11.8		-0.3		11.8		17.7		-28.3		7.1	
95th Percentile	5.3		-3.2		2.6		8.5		9.0		-1.2		9.3		13.4		-30.5		5.9	
# of Portfolios	62		57		55		48		44		42		41		40		39		39	
● Total Fund	8.6	(15)	-0.9	(65)	6.3	(20)	18.1	(10)	14.0	(15)	0.3	(61)	15.1	(6)	24.2	(16)	-30.9	(98)	7.0	(77)
▲ Policy Index	8.4	(25)	0.8	(25)	6.8	(12)	17.2	(14)	12.9	(41)	0.5	(55)	13.2	(44)	21.0	(33)	-27.1	(54)	8.5	(50)

Ventura County Employees' Retirement Association

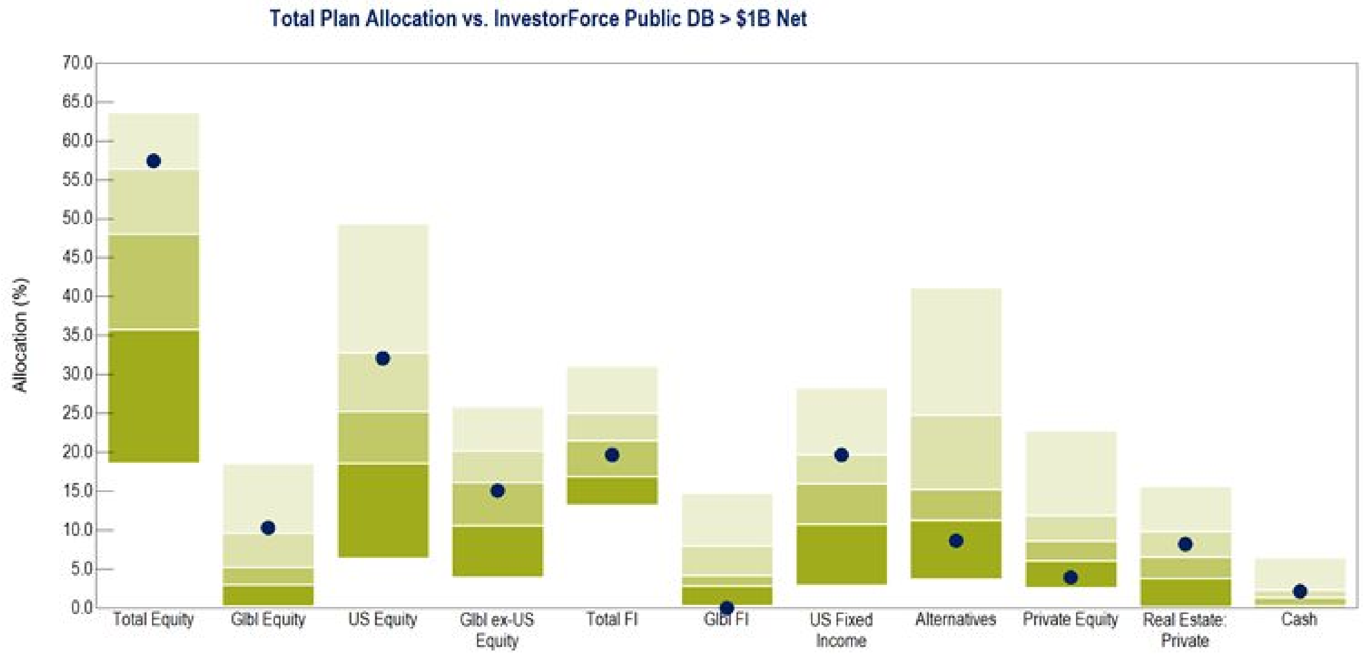
Total Fund Return Summary vs. Peer Universe



	Return (Rank)											
5th Percentile	2.7		4.3		18.7		15.0		3.7		9.5	
25th Percentile	0.8		3.3		17.2		13.1		1.5		8.8	
Median	-0.5		2.6		16.1		11.8		0.5		8.1	
75th Percentile	-1.2		1.6		14.7		10.5		-0.3		7.1	
95th Percentile	-2.4		-0.9		13.6		7.5		-0.9		5.0	
# of Portfolios	55		53		43		56		41		60	
● Total Fund	0.8	(26)	1.7	(71)	18.8	(4)	13.2	(22)	1.5	(25)	9.0	(14)
▲ Policy Index	1.8	(9)	3.4	(25)	17.7	(19)	12.4	(39)	1.4	(27)	9.1	(13)

Ventura County Employees' Retirement Association

Total Fund Allocations vs. Peer Universe

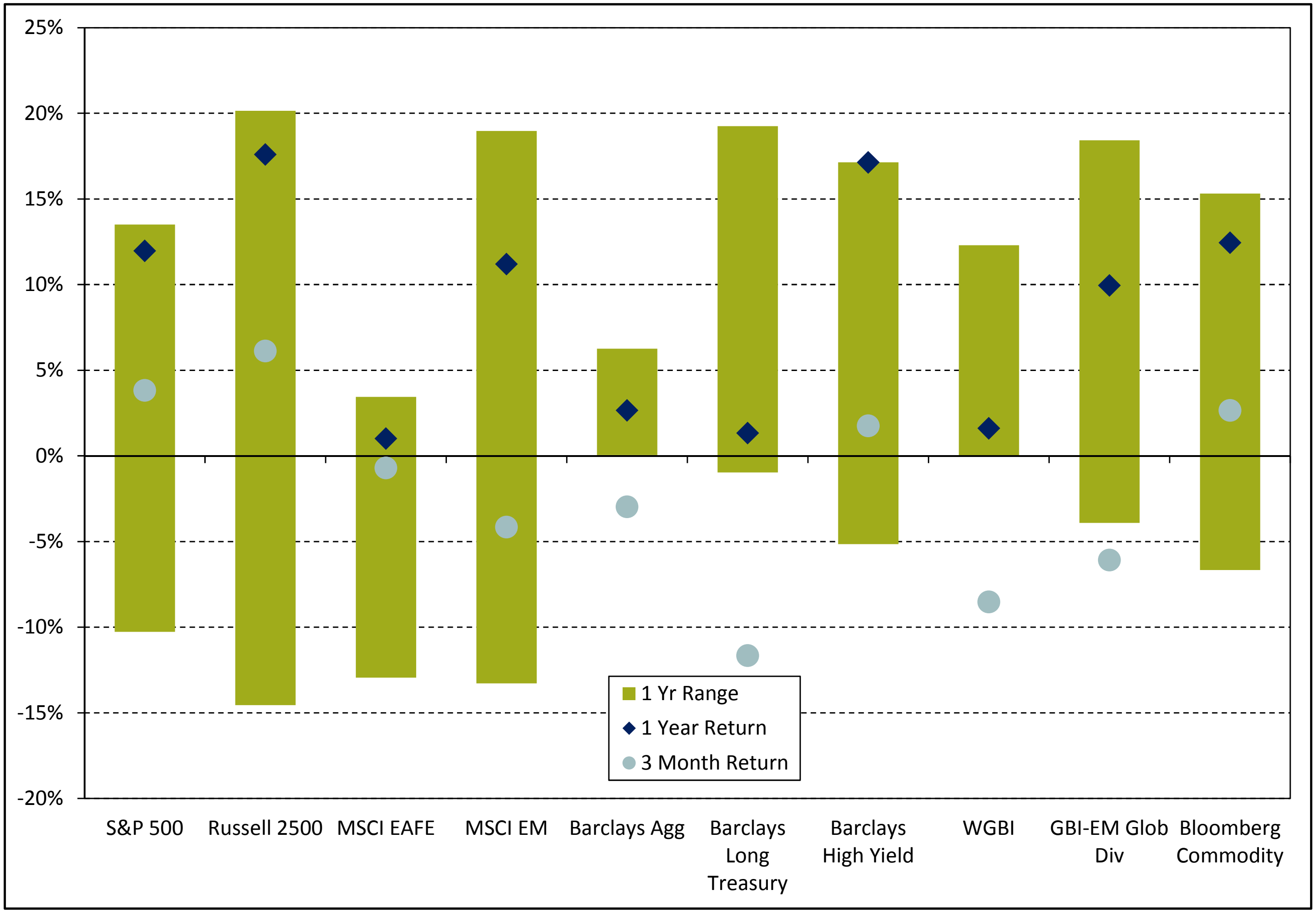


Allocation (Rank)

	Total Equity	Glbl Equity	US Equity	Glbl ex-US Equity	Total FI	Glbl FI	US Fixed Income	Alternatives	Private Equity	Real Estate: Private	Cash	
5th Percentile	63.7	18.6	49.3	25.8	31.0	14.8	28.3	41.1	22.8	15.7	6.5	--
25th Percentile	56.5	9.7	32.8	20.2	25.1	8.0	19.8	24.9	11.9	9.9	2.4	--
Median	48.1	5.3	25.3	16.2	21.6	4.2	16.1	15.3	8.7	6.7	1.4	--
75th Percentile	35.9	3.0	18.7	10.7	17.0	2.9	10.8	11.3	6.1	3.9	0.4	--
95th Percentile	18.6	0.3	6.5	4.0	13.3	0.3	3.0	3.8	2.7	0.2	0.1	--
# of Portfolios	58	23	53	51	59	28	57	56	53	48	55	--
● Total Fund	57.4 (20)	10.3 (21)	32.1 (28)	15.1 (53)	19.7 (59)	0.0 (97)	19.7 (29)	8.6 (85)	3.9 (87)	8.2 (39)	2.1 (28)	--

Appendix: Market Environment

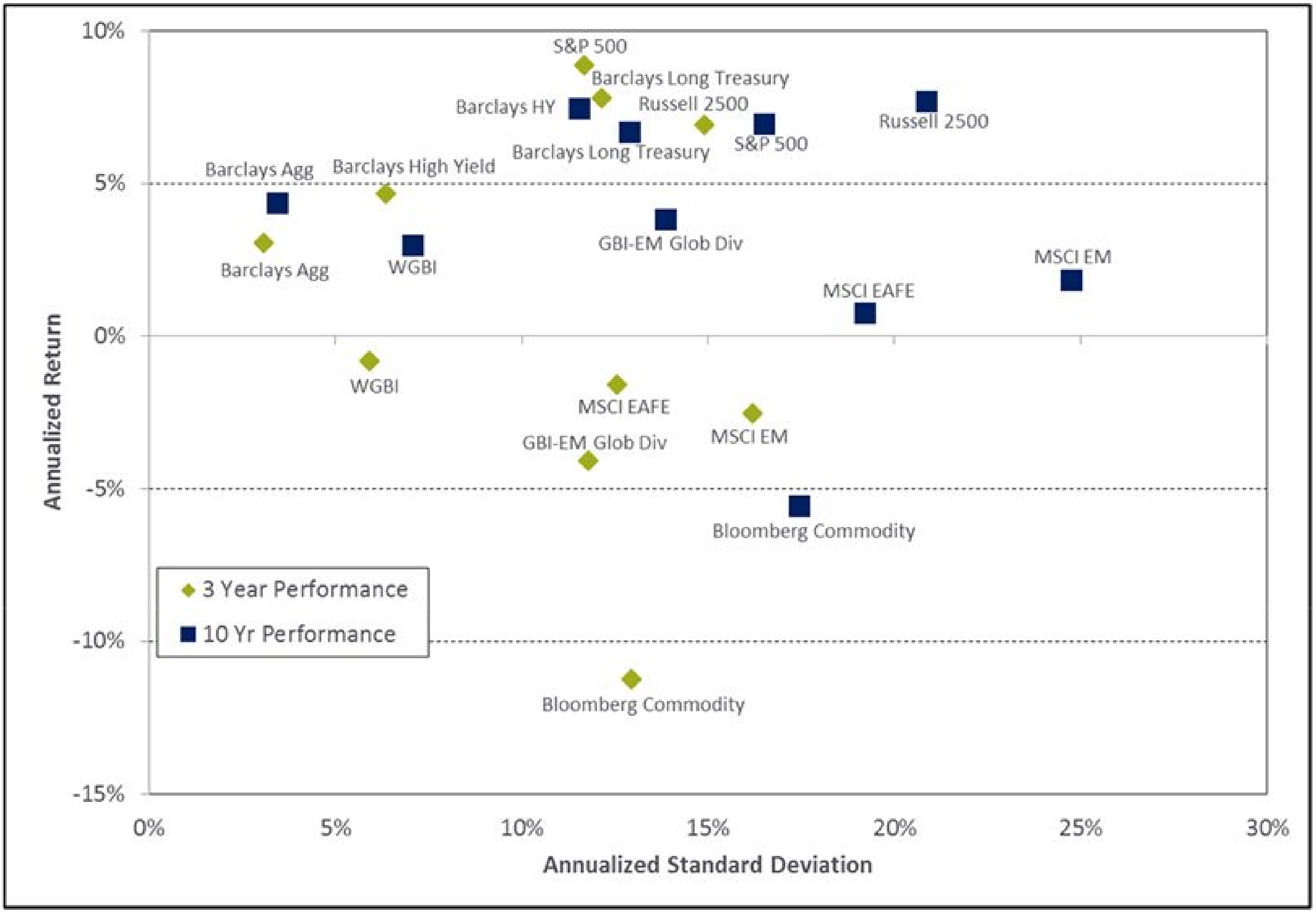
Near Term Broad Market Performance Summary as of 12/30/2016



Source: Bloomberg, Standard and Poors, Russell, MSCI, Barclays, Citigroup, JP Morgan

**1 Yr Range: Represents range of cumulative high/low daily index returns for an investment made one year ago*

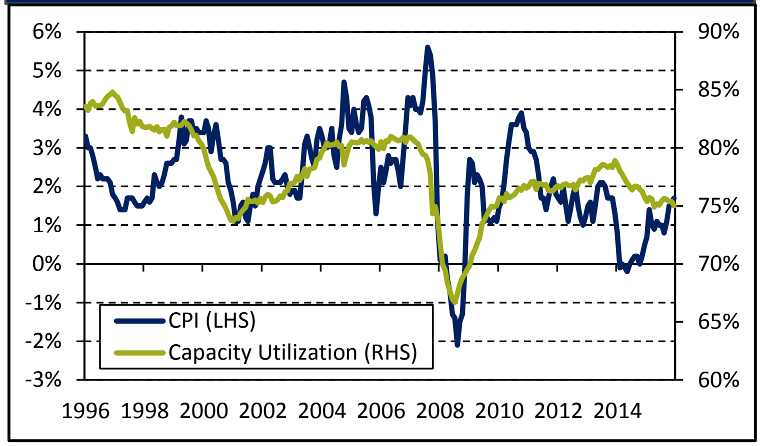
Long Term Broad Market Performance Summary as of 12/30/2016



Source: Bloomberg, Standard and Poors, Russell, MSCI, Barclays, Citigroup, JP Morgan

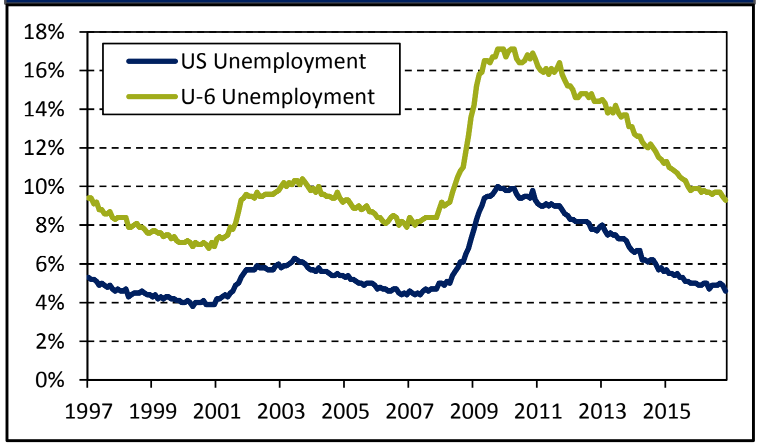
US Economic Indicators

Inflation continues rising



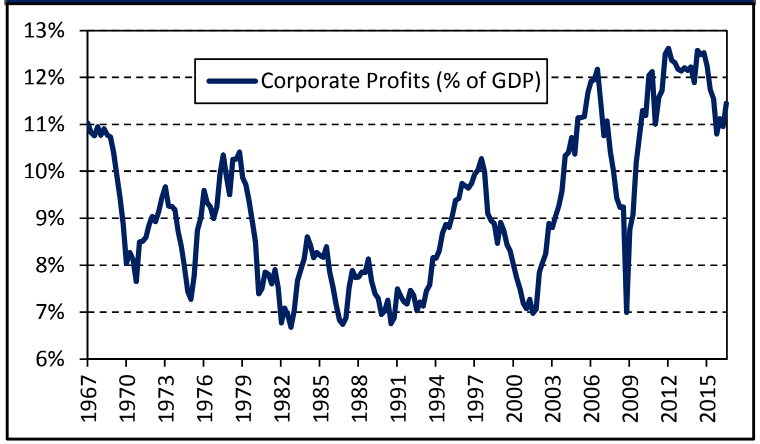
Source: Bloomberg, Federal Reserve, Bureau of Labor Statistics

Unemployment has steadied



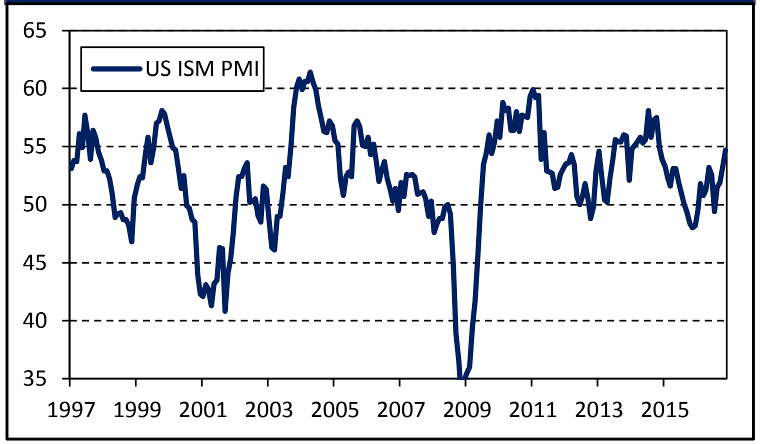
Source: Bloomberg, Bureau of Labor Statistics

Corporate profits experience an uptick



Source: Bloomberg, Bureau of Economic Analysis

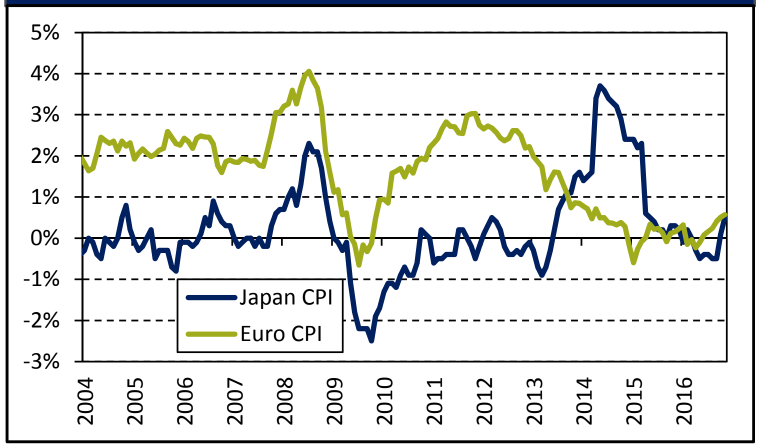
Manufacturing shows modest strength



Source: Bloomberg, Institute for Supply Management

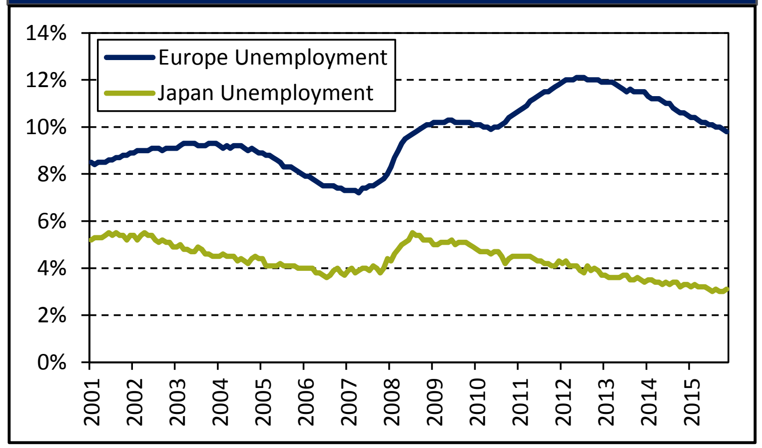
International Economic Indicators

Inflation has increased



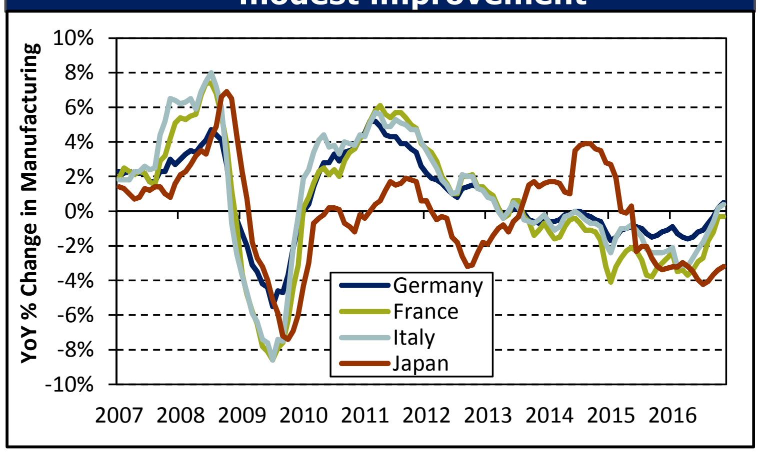
Source: Bloomberg, Japan Ministry of Internal Affairs and Communications, Eurostat

Europe unemployment edges lower



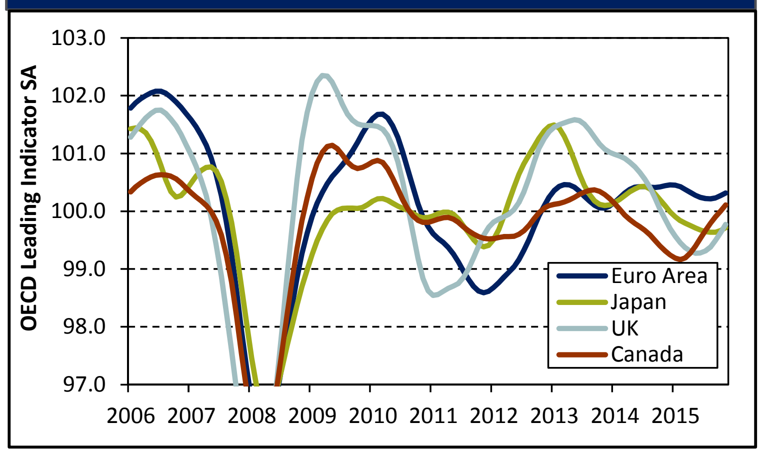
Source: Bloomberg, Japan Ministry of Internal Affairs and Communications, Eurostat

Manufacturing steadies after showing modest improvement



Source: Bloomberg, OECD, Eurostat

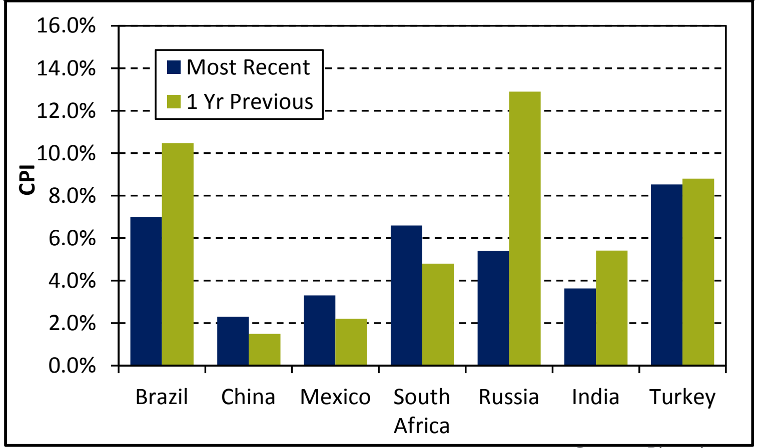
Leading indicators mostly trending higher



Source: Bloomberg, OECD

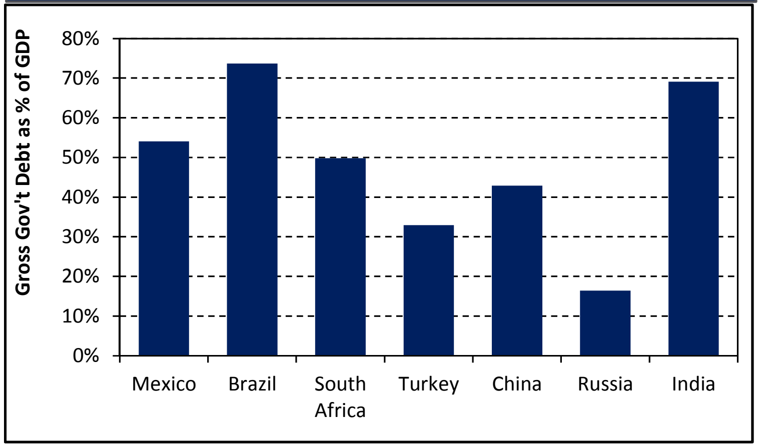
Emerging Market Economic Indicators

EM inflation varies by country



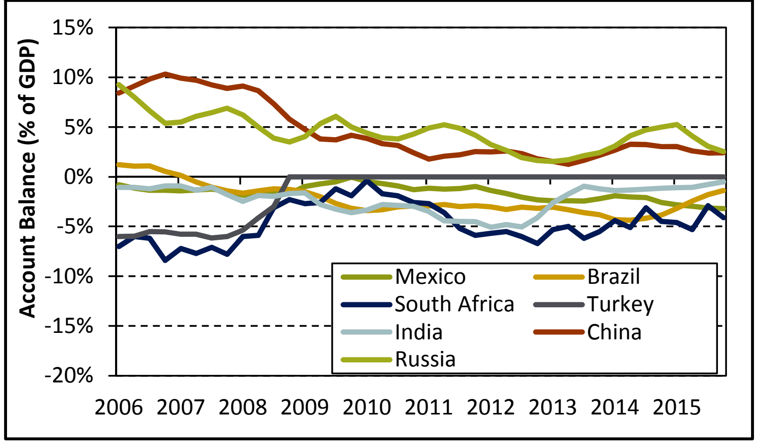
Source: Bloomberg

Relatively healthy Debt/GDP ratios



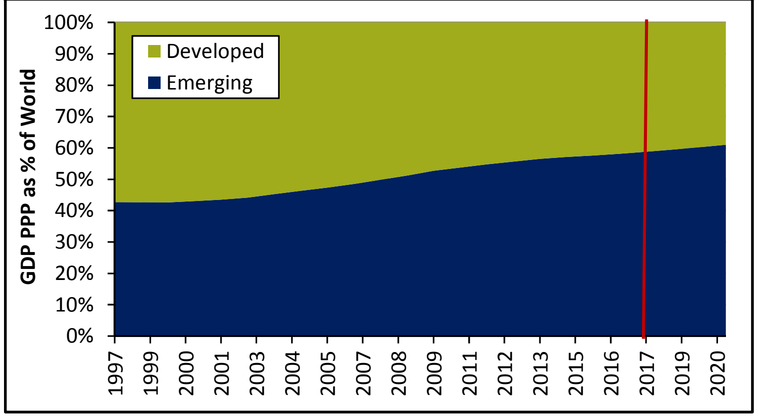
Source: Bloomberg, IMF

Account balances remain steady



Source: Bloomberg

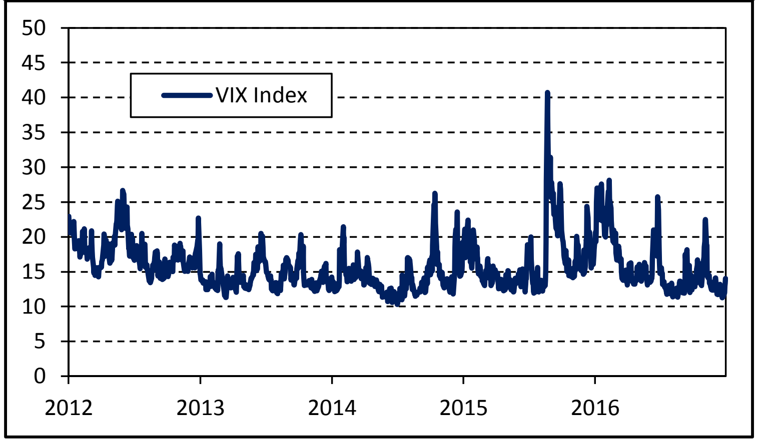
EM continues trending higher as a percent of global output



Source: Bloomberg, IMF

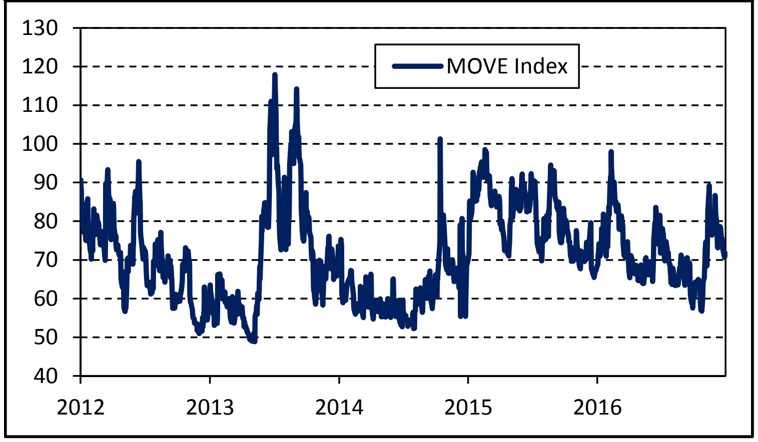
Volatility

Equity volatility remains low



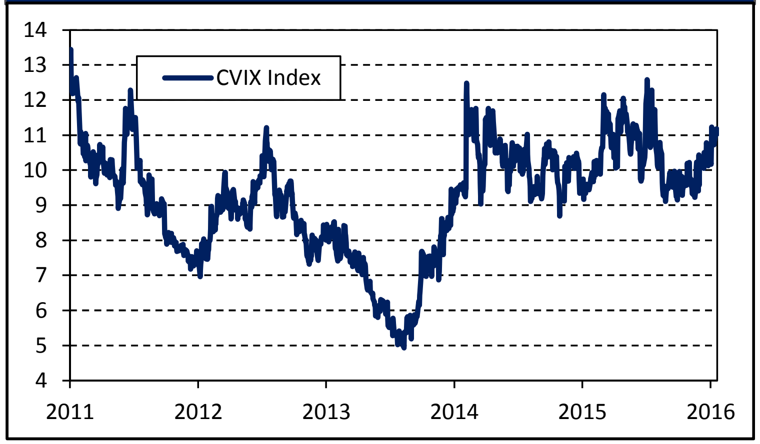
Source: Bloomberg, CBOE

Treasury volatility continues to be elevated



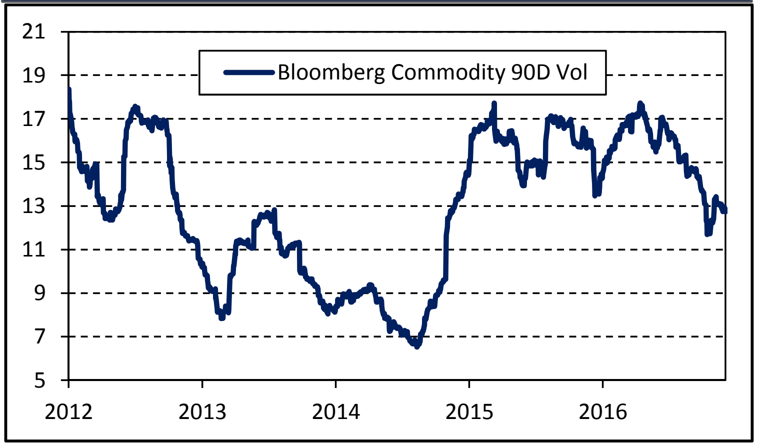
Source: Bloomberg, Merrill Lynch

Currency volatility increased



Source: Bloomberg, Deutsche Bank

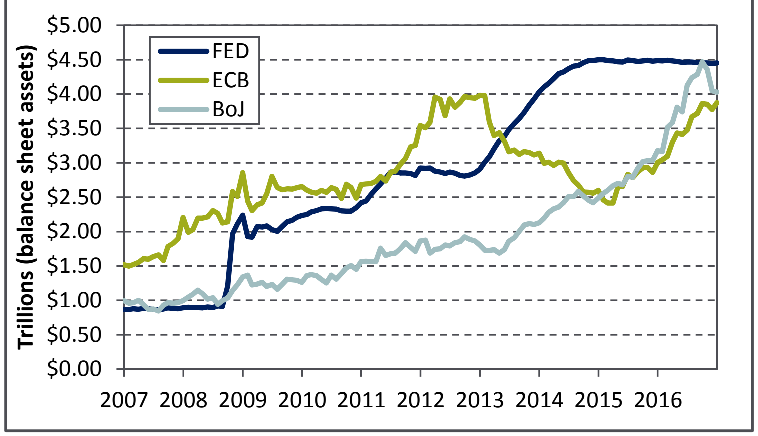
Commodity volatility has subsided



Source: Bloomberg, Merrill Lynch

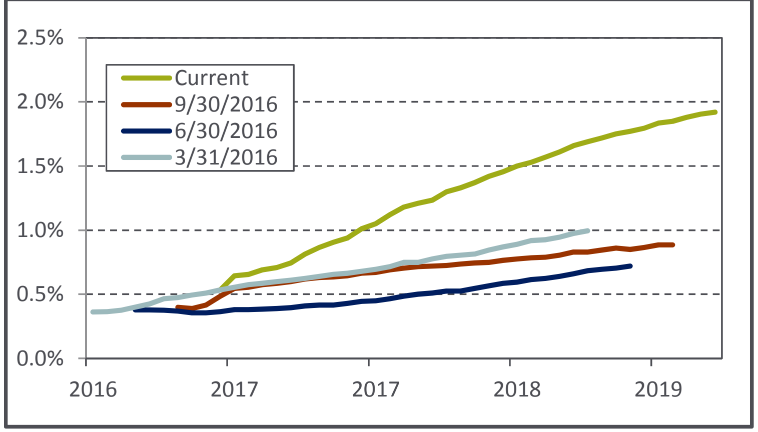
Central Banks

Yen depreciation has decreased the value of BoJ's balance sheet



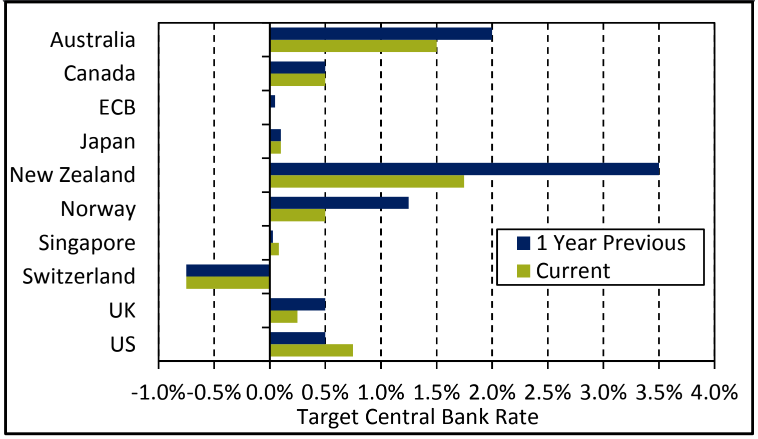
Source: Bloomberg, Federal Reserve, Bank of Japan, ECB, NEPC

Market expectations for interest rates have increased dramatically post rate hike



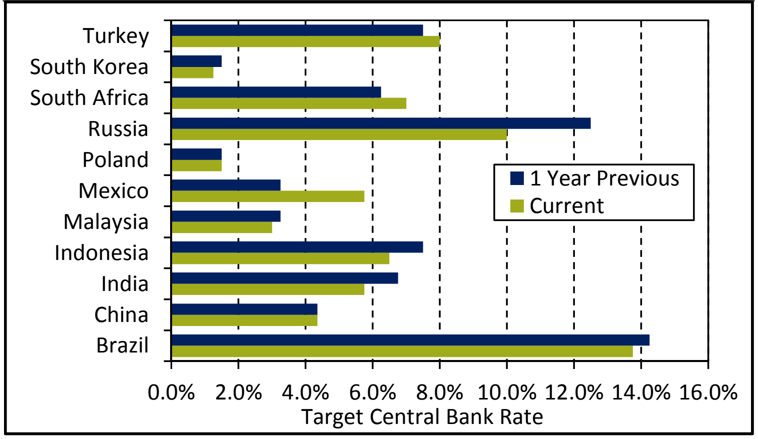
Source: Bloomberg, Federal Reserve

Developed market interest rates are mostly lower than the previous year



Source: Bloomberg

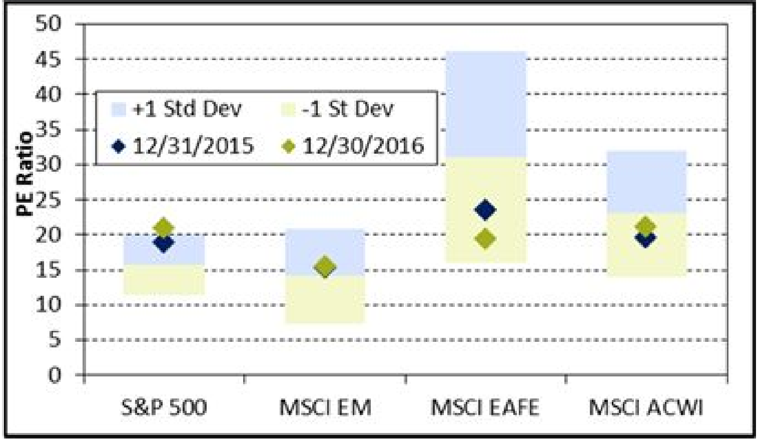
EM central bank policies vary by country-specific economic conditions



Source: Bloomberg

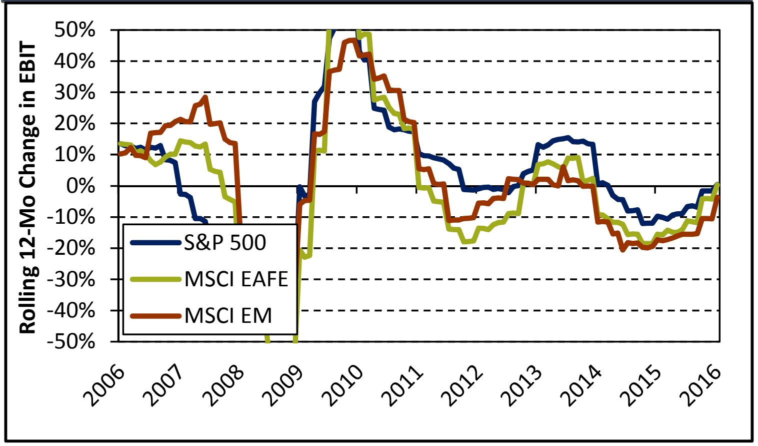
Global Equity

EAFE's current valuation is lower than the previous year



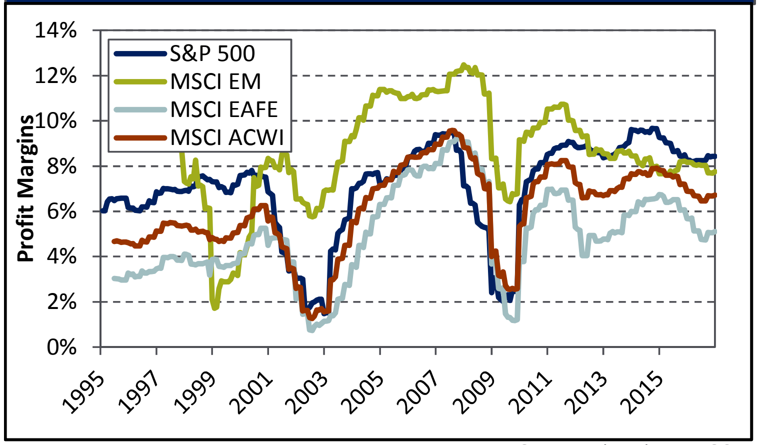
*Source: Bloomberg, Standard and Poors, MSCI *MSCI EAFE is ex UK Telecom*
**Standard deviation calculations on 20 years of data except S&P 500 (30 years)*

Rolling annual earnings growth trending upwards off lows



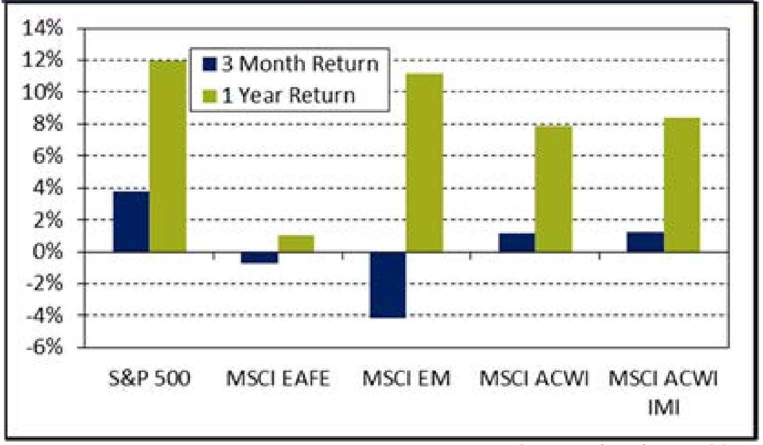
Source: Bloomberg, Standard and Poors, MSCI

Profit margins slightly increased



Source: Bloomberg, MSCI

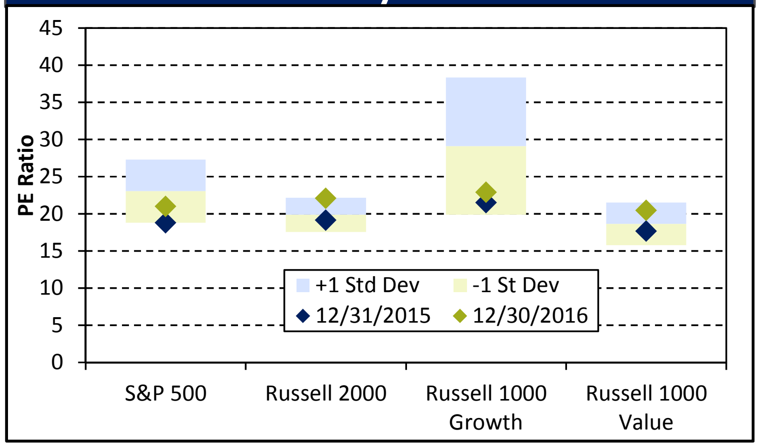
EM has experienced lack-luster short-term performance



Source: Bloomberg, MSCI

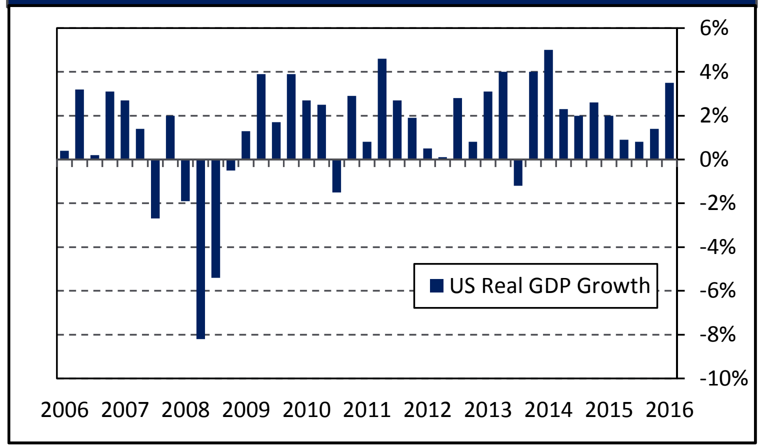
US Equity

US equity valuations are higher than last year



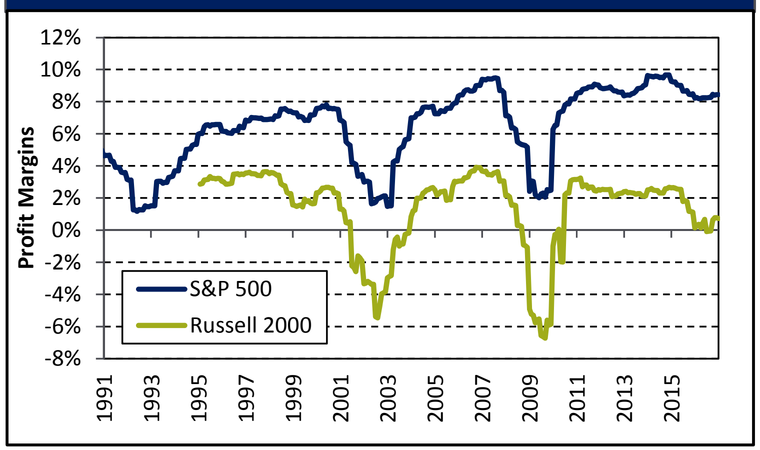
*Source: Bloomberg, Standard and Poors, Russell *Russell 2000 PE is index adjusted positive**
Standard deviation calculations based on 20 years of data

GDP growth remains strong



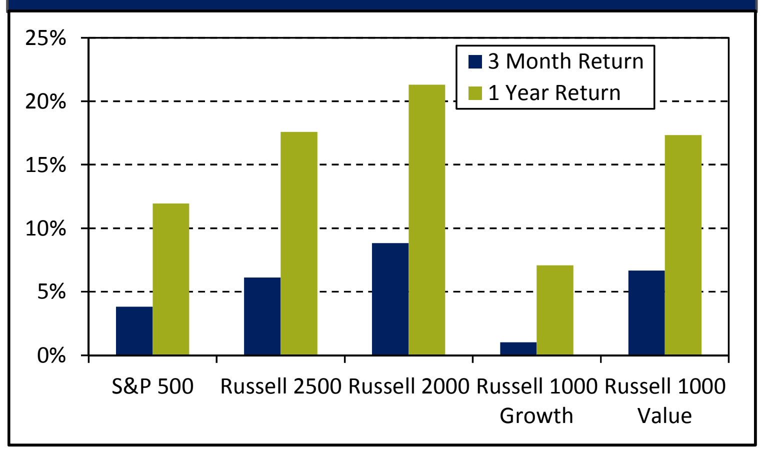
Source: Bloomberg, Bureau of Economic Analysis

Profit margins hold steady



Source: Bloomberg, Standard and Poors, Russell

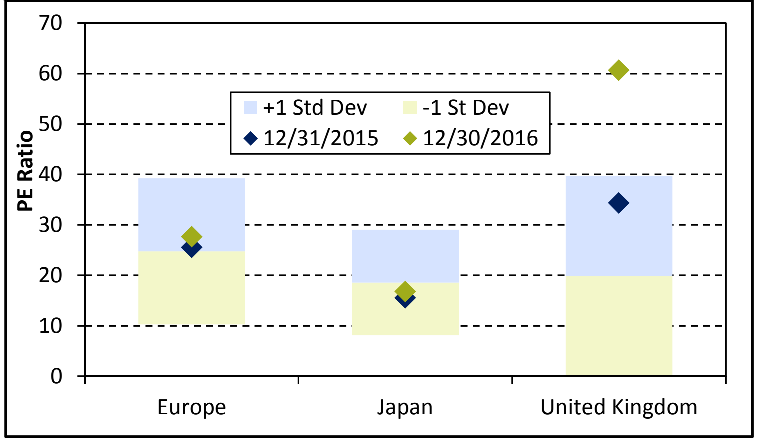
US equity posts positive short-term returns



Source: Bloomberg, Standard and Poors, Russell

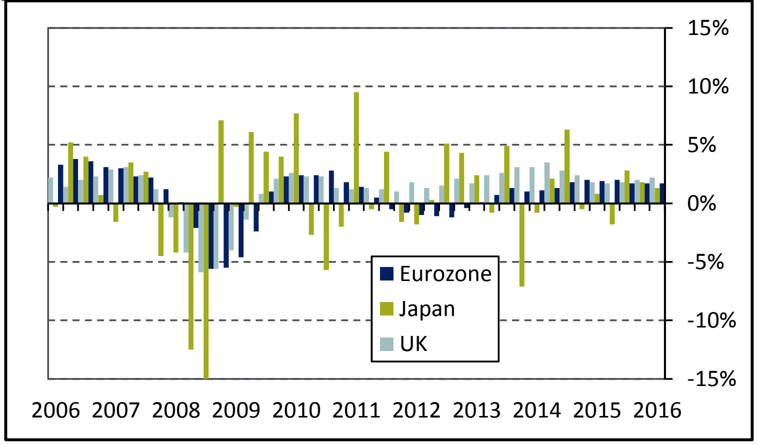
International Equity

UK PE ratios remain elevated



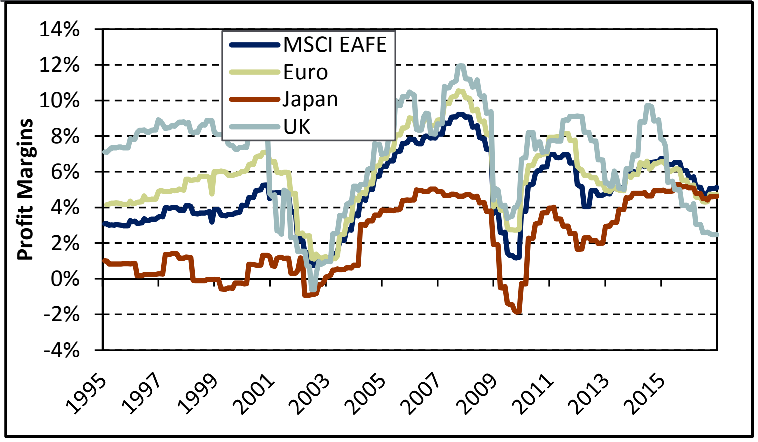
*Source: Bloomberg, MSCI, FTSE *UK represented by FTSE 100 Index*
**Standard deviation calculations based on 20 years of data, with Europe since 12/1998*

International growth steadies



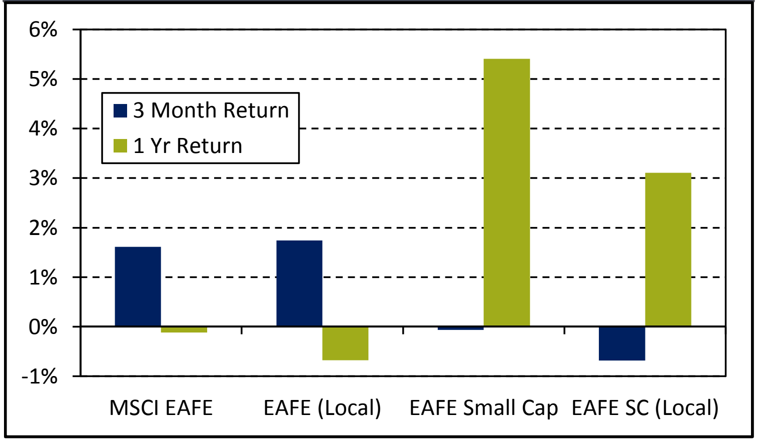
Source: Bloomberg

UK margins continue to decline



Source: Bloomberg, MSCI

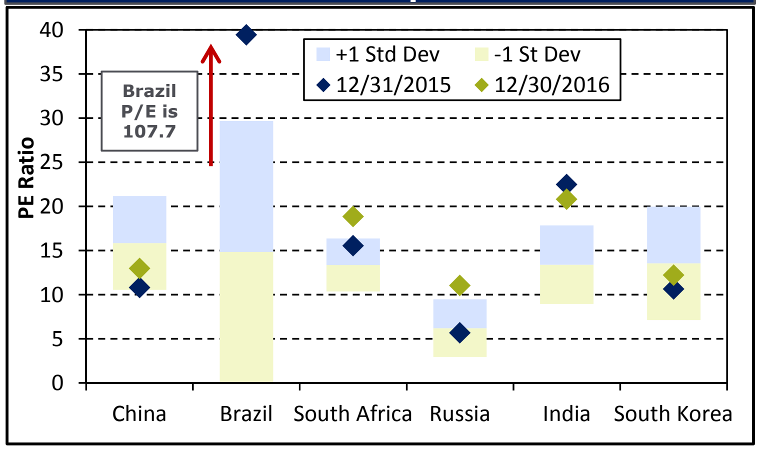
Short-term small cap returns have been lack-luster



Source: Bloomberg, MSCI

Emerging Markets Equity

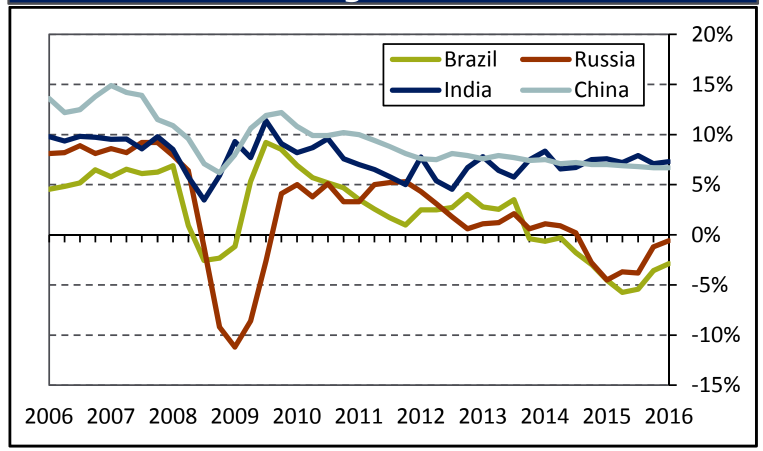
Regional valuations similar year over year with the exception of Brazil



Source: Bloomberg, MSCI

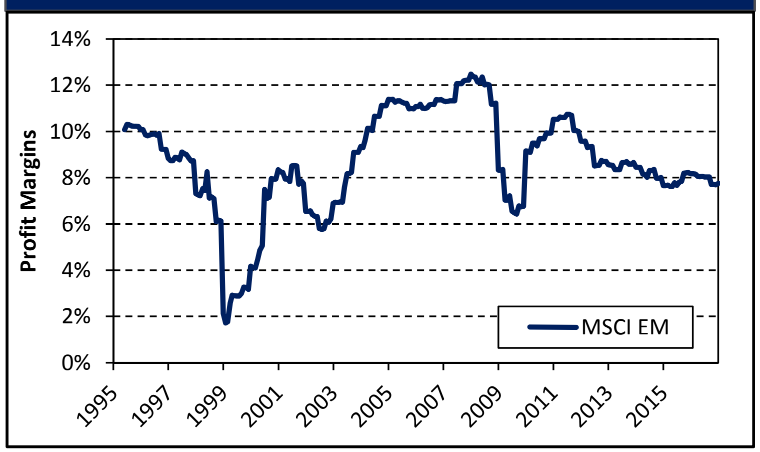
**Standard deviation calculations based on 20 years of data, with Russia since 01/1998*

Russia and Brazil experience rebounds off earnings contractions



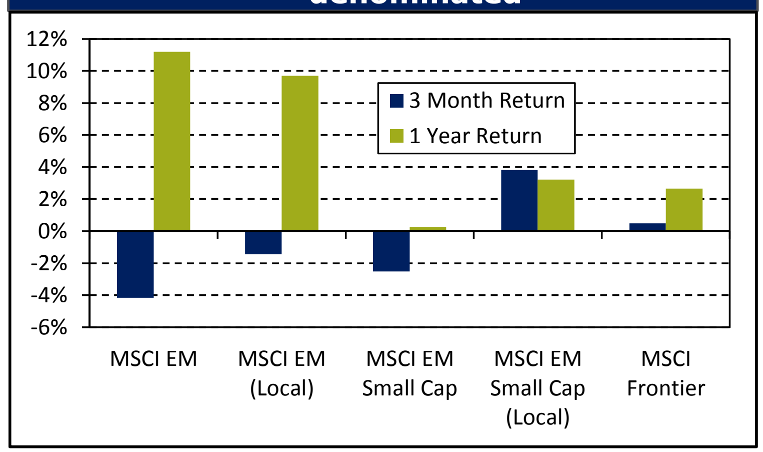
Source: Bloomberg

Profit margins in line with history



Source: Bloomberg, MSCI

EM local indices have outperformed dollar-denominated



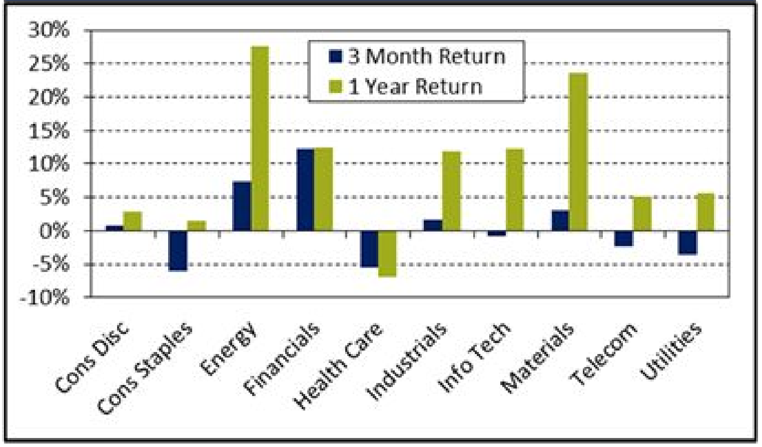
Source: Bloomberg, MSCI

NEPC, LLC

December 31, 2016

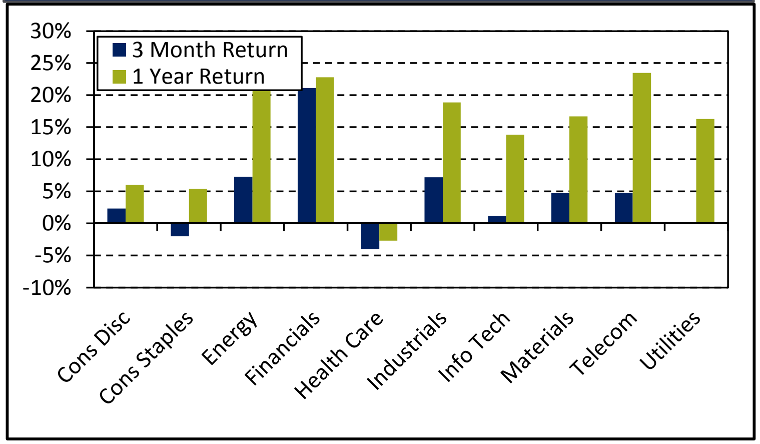
Global Equity by Sector

Energy and Financials lead MSCI ACWI short-term returns



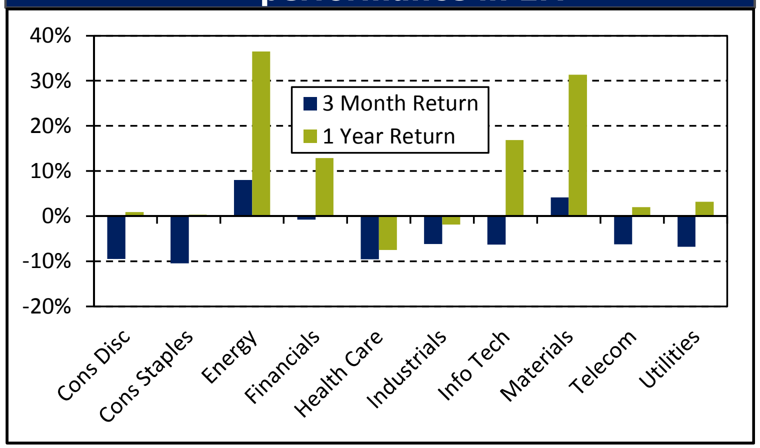
Source: Bloomberg, MSCI

Healthcare and Consumer Staples drag S&P 500 short-term returns



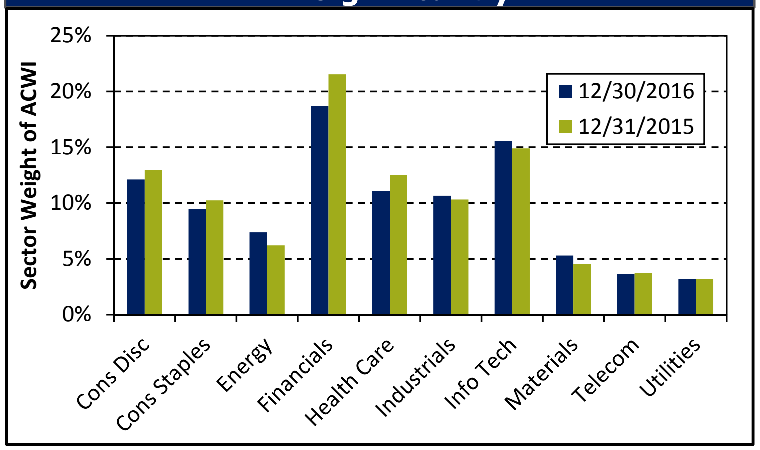
Source: Bloomberg, Standard and Poors

Energy and Materials continue their strong performance in EM



Source: Bloomberg, MSCI

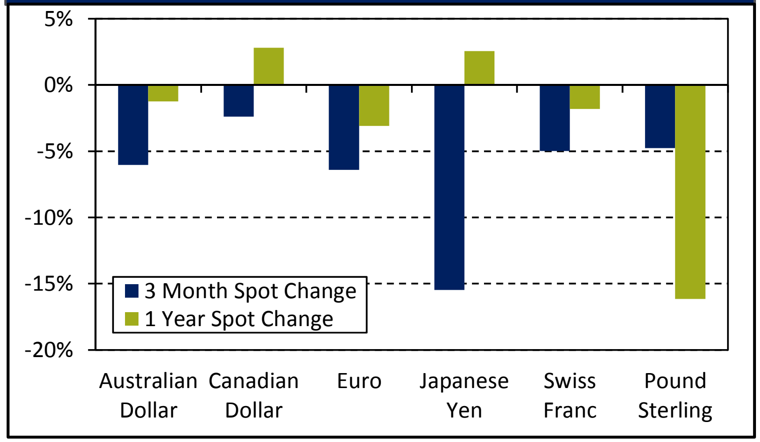
Financials sector weight has decreased significantly



Source: Bloomberg, MSCI

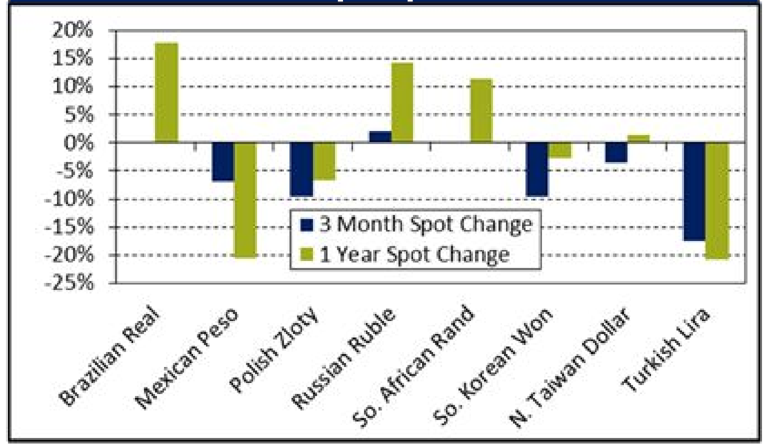
Currencies

Developed currencies have declined versus the dollar



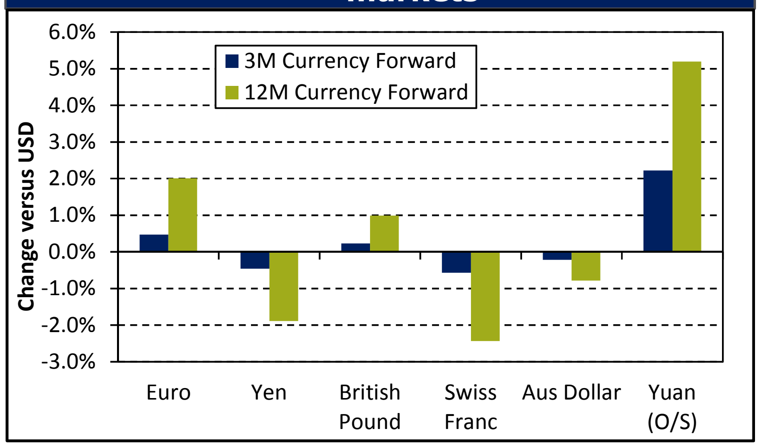
Source: Bloomberg

A number of currencies have experienced sharp depreciation



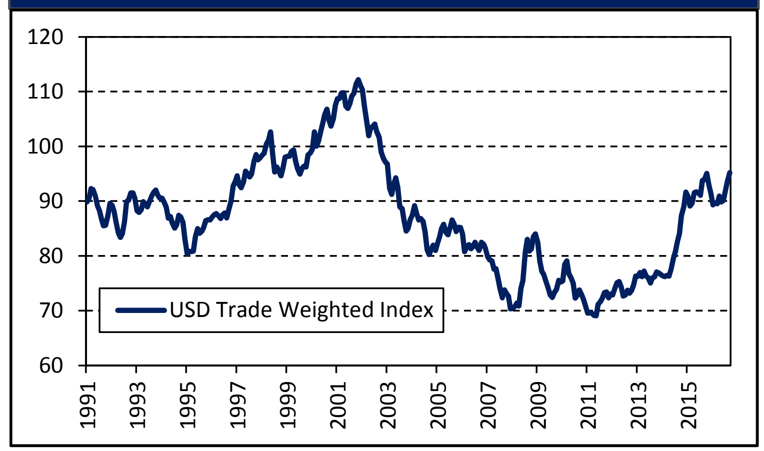
Source: Bloomberg

USD expectations vary across developed markets



Source: Bloomberg

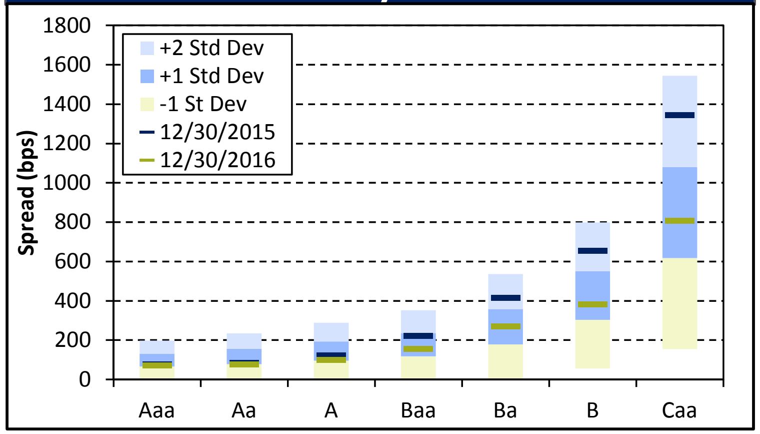
Dollar strength persists



Source: Bloomberg, Federal Reserve

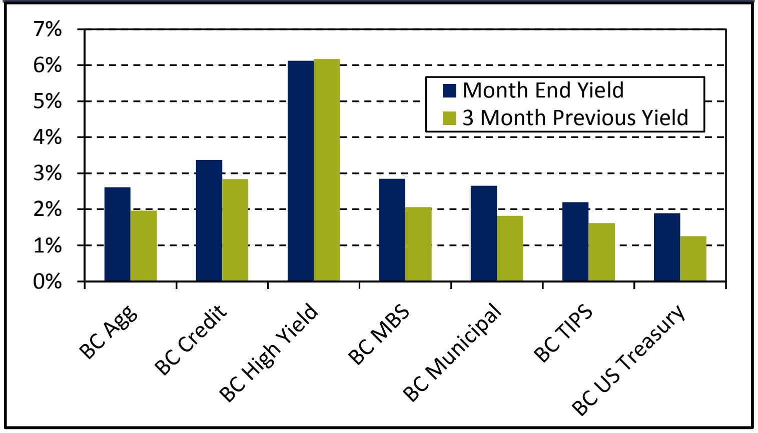
US Fixed Income

Spreads remain lower than the previous year



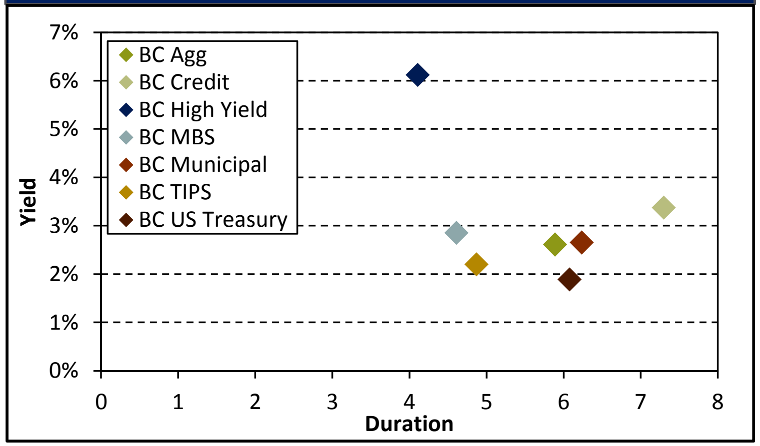
Source: Bloomberg, Barclays
**Standard deviation calculations based on 20 years of data*

Fixed income yields have increased



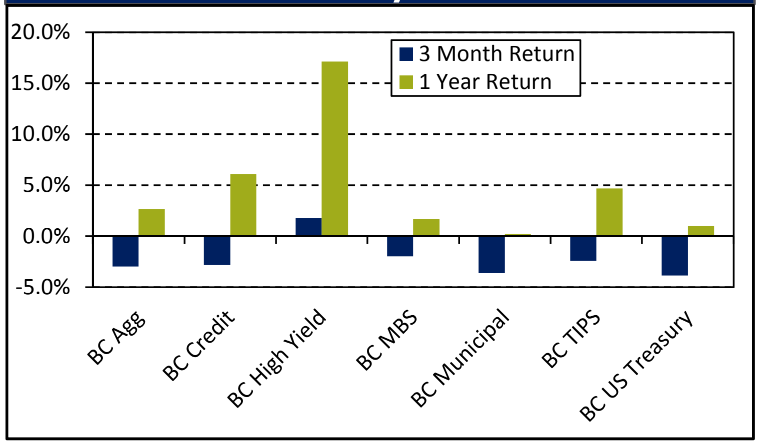
Source: Bloomberg, Barclays

Similar duration/yield profiles among core indices



Source: Bloomberg, Barclays

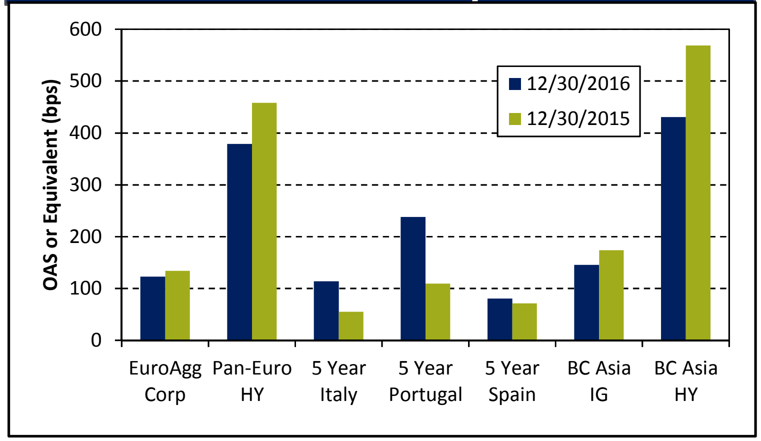
Fixed income returns have broadly declined with recent yield increases



Source: Bloomberg, Barclays

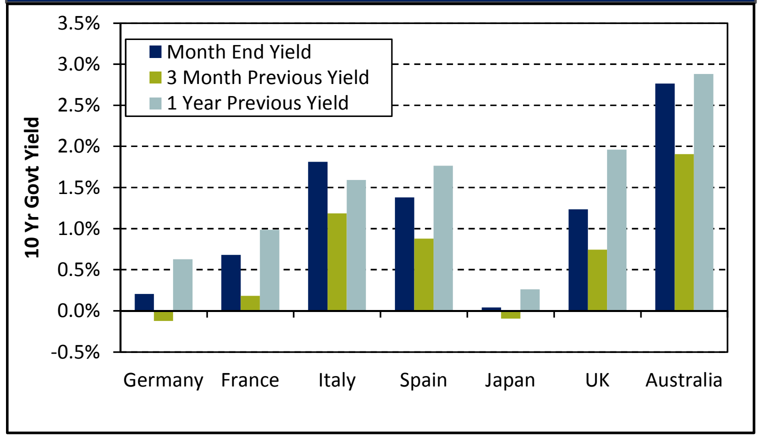
International Developed Fixed Income

European periphery yields vary relative to Germany



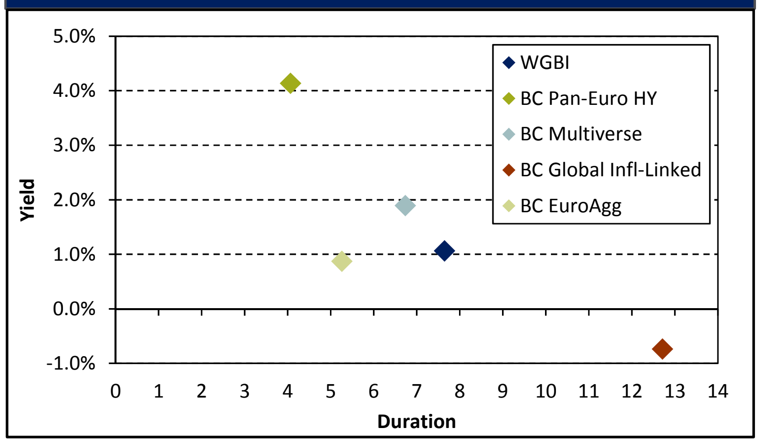
*Source: Barclays, Bloomberg, *European periphery spreads are over equivalent German Bund*

Global yields have increased post rate hike



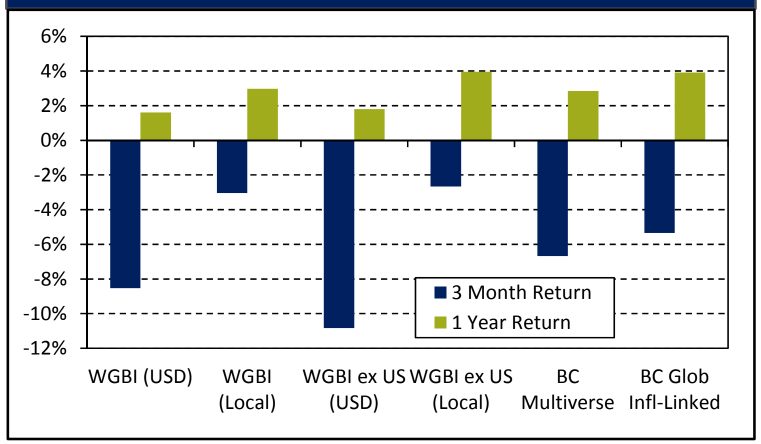
Source: Bloomberg

Low yields persist in global bond universe



Source: Bloomberg, Citigroup, Barclays

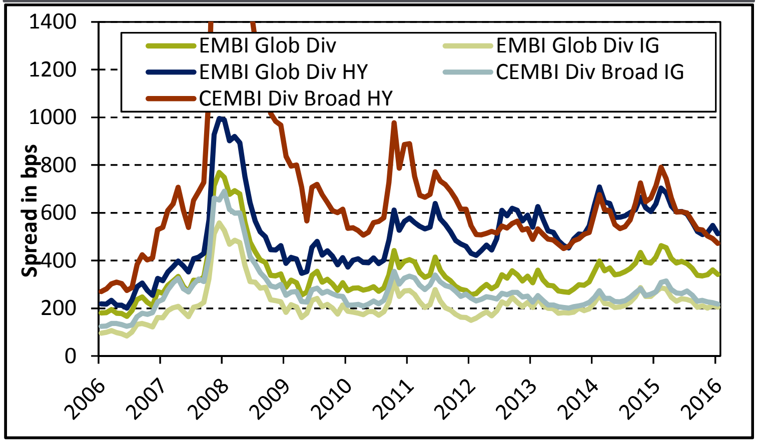
Global bond returns hurt by rising yields



Source: Bloomberg, Citigroup, Barclays

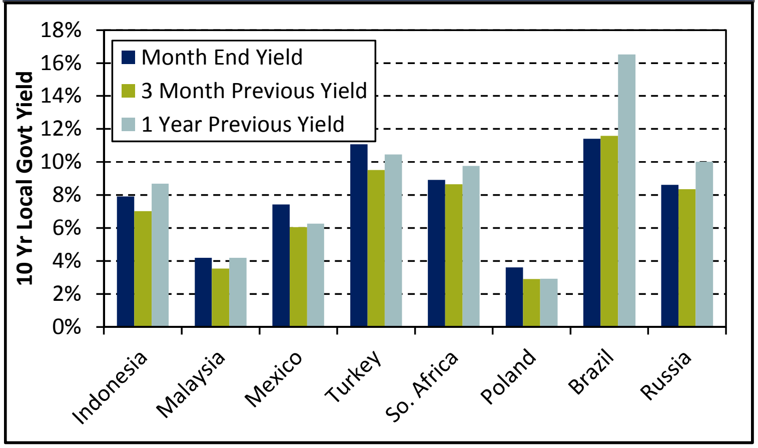
Emerging Markets Fixed Income

Spreads continue to decline



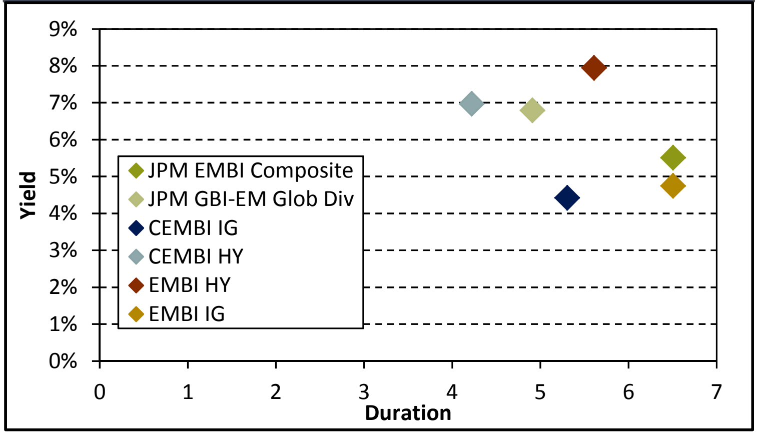
Source: Bloomberg, JP Morgan

EM local bond yields increased slightly



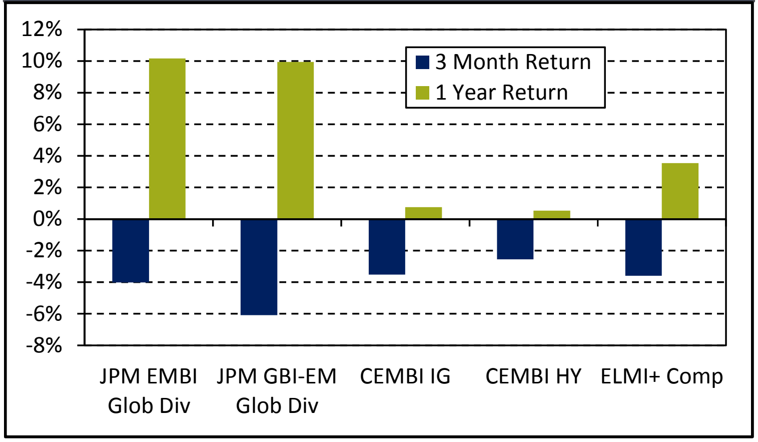
Source: Bloomberg

EM yields remain attractive versus global counterparts



Source: Bloomberg, JP Morgan

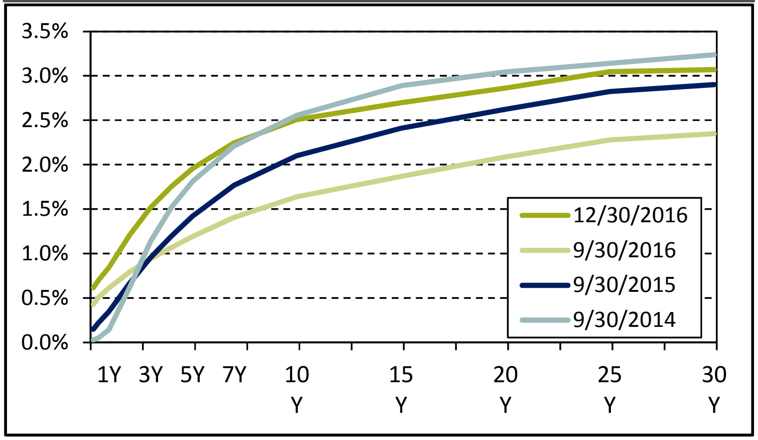
EM debt posts negative short-term returns



Source: Bloomberg, JP Morgan

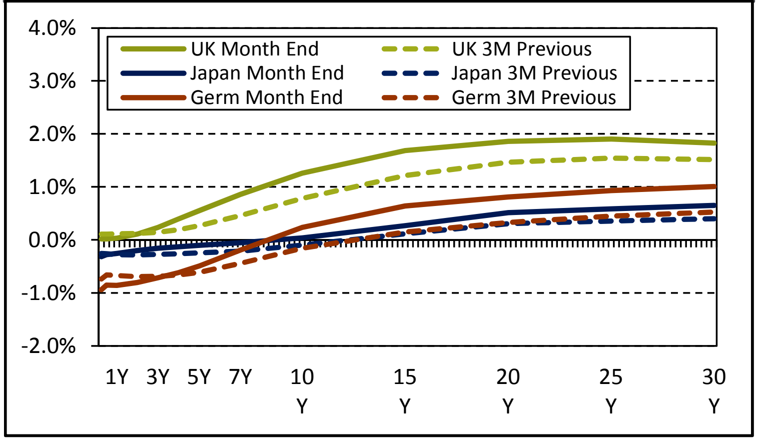
Rates

Rate expectations have increased relative to three months prior



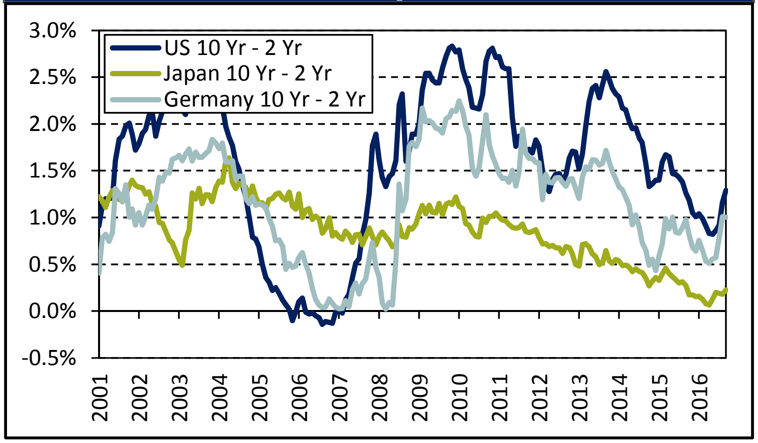
Source: Bloomberg

Interest rate expectations continue increasing



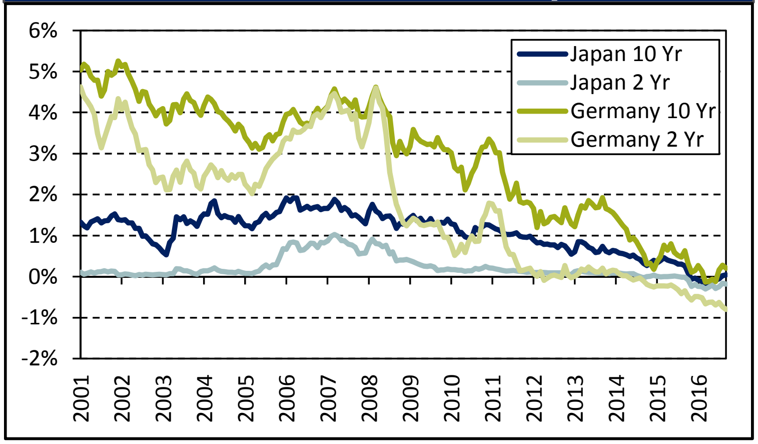
Source: Bloomberg

10-2 spreads spiked with recent increase in yield



Source: Bloomberg

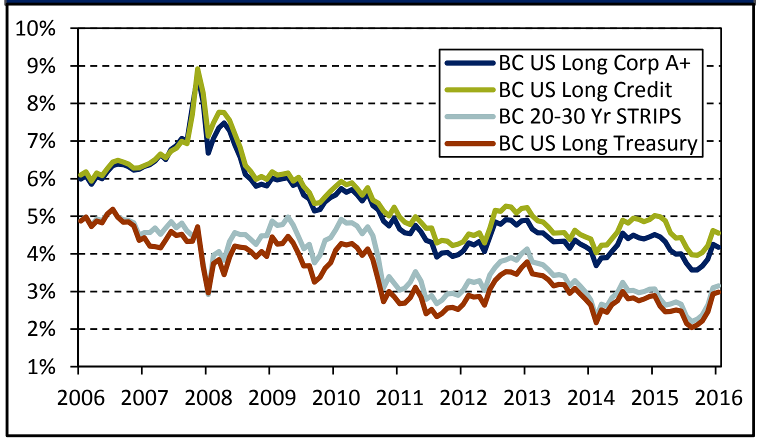
Sovereign bond yields remain in negative or neutral territory



Source: Bloomberg

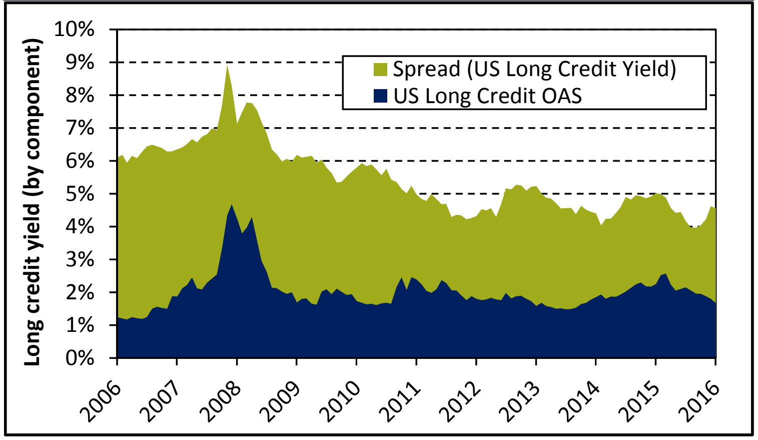
Long Rates and Liability

Long duration yields have steadied



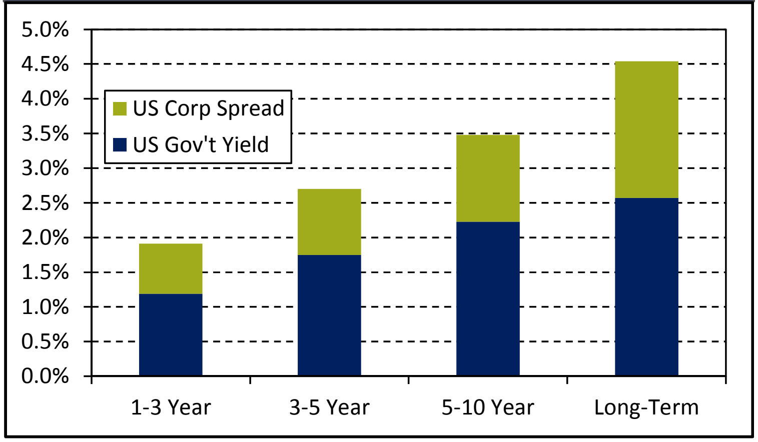
Source: Bloomberg, Citigroup, Barclays

Long credit yield increases



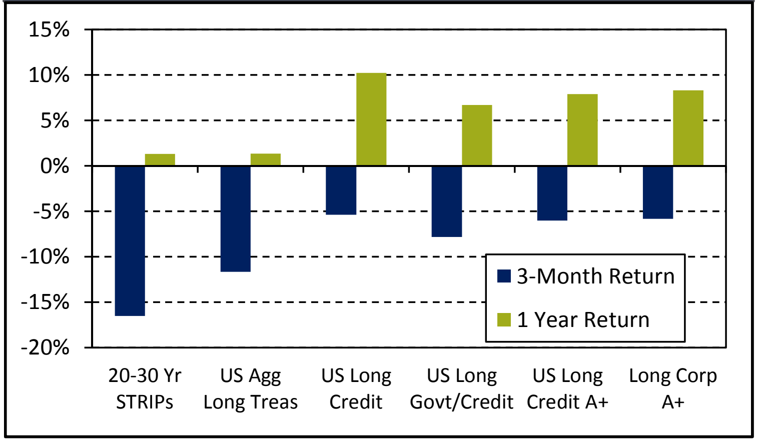
Source: Bloomberg, US Treasury, Barclays, NEPC

Yield and spread components continue to offer modest returns



Source: Bloomberg, Barclays

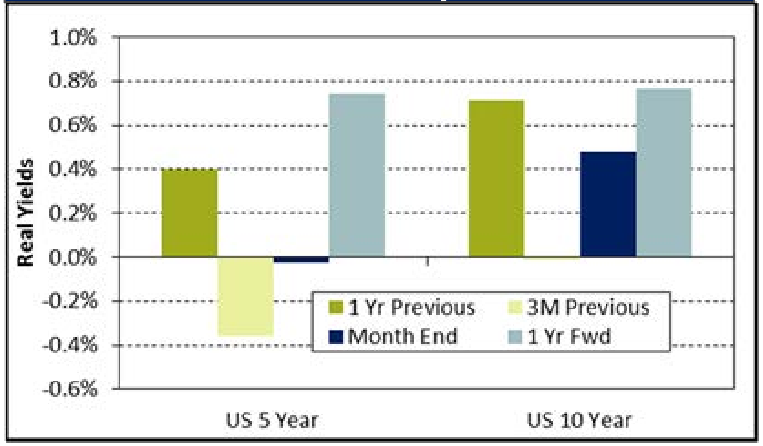
Long duration fixed income posted large short-term losses



Source: Bloomberg, Barclays

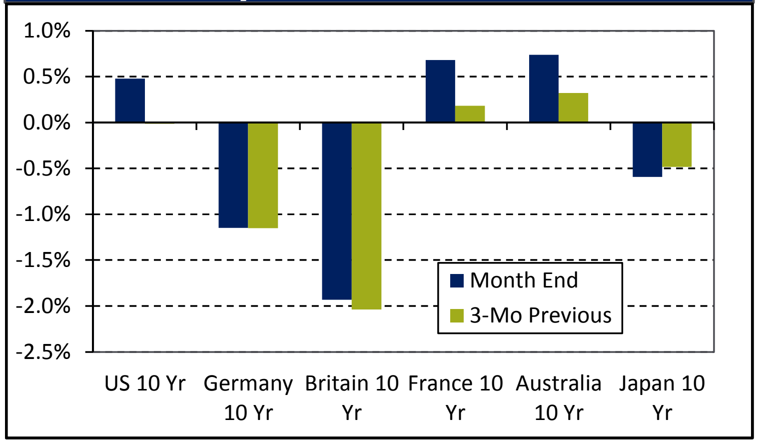
Inflation and Real Rates

US 10-year real yields increased from three months prior



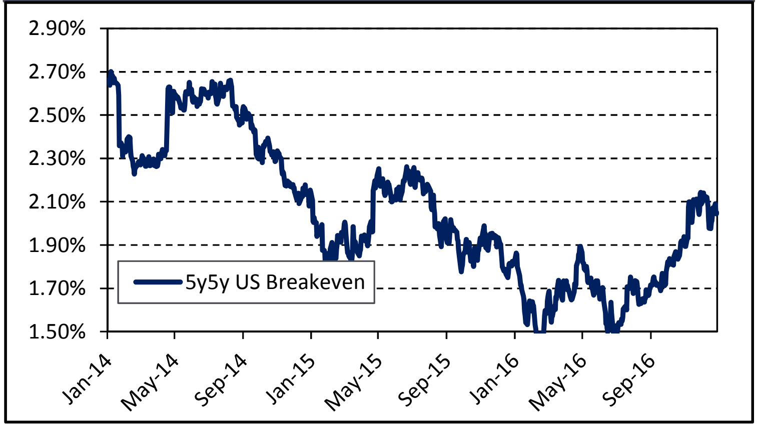
Source: Bloomberg

With the exception of Japan, global real yields have increased



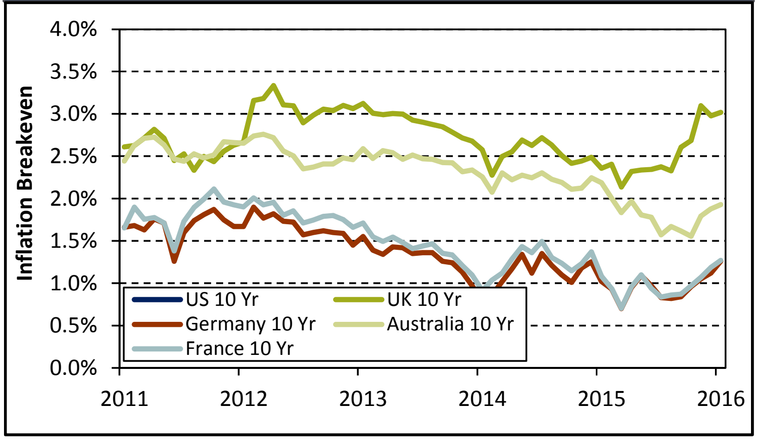
Source: Bloomberg

US inflation expectations have increased but remain low



Source: Bloomberg

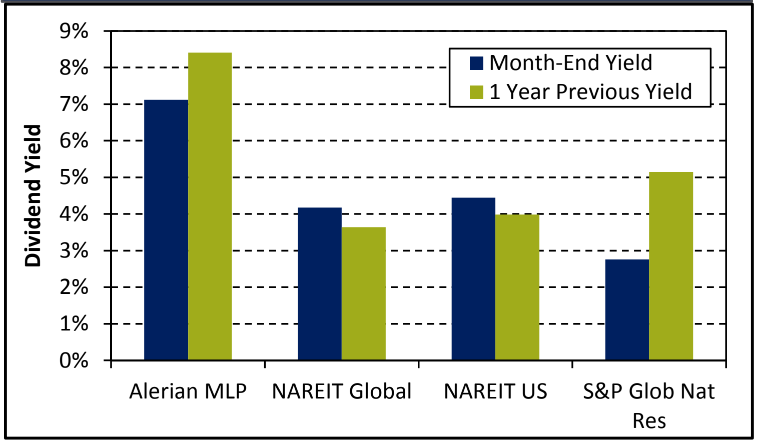
Global inflation expectations continue to increase



Source: Bloomberg

Inflation Sensitive Growth Assets

REITs yields are higher than the previous year

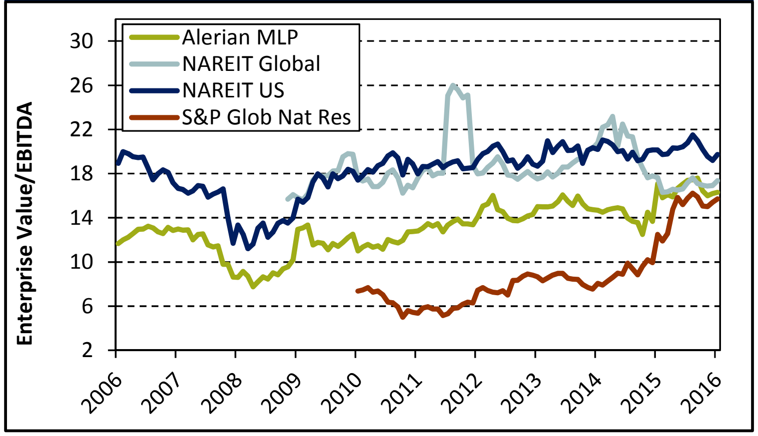


Source: Bloomberg, Alerian, Nareit, Standard and Poors

Sustained recovery in commercial real estate occupancy rates

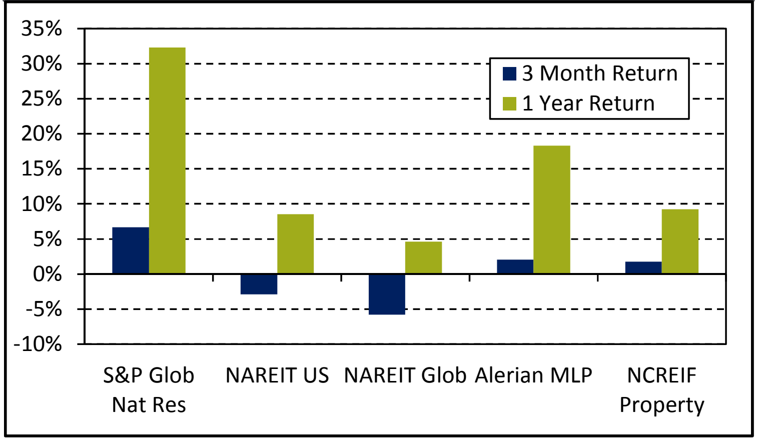
Source: NCREIF

US REIT valuations have steadied



Source: Bloomberg, US Census Bureau

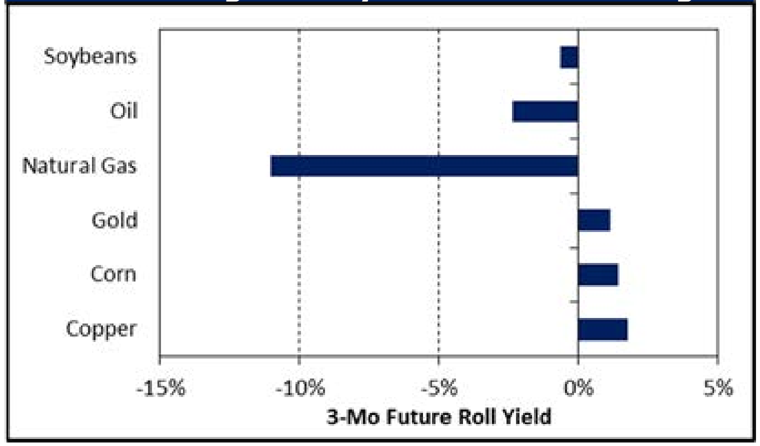
REITs have underperformed in recent months



Source: Bloomberg, Alerian, Nareit, Standard and Poors

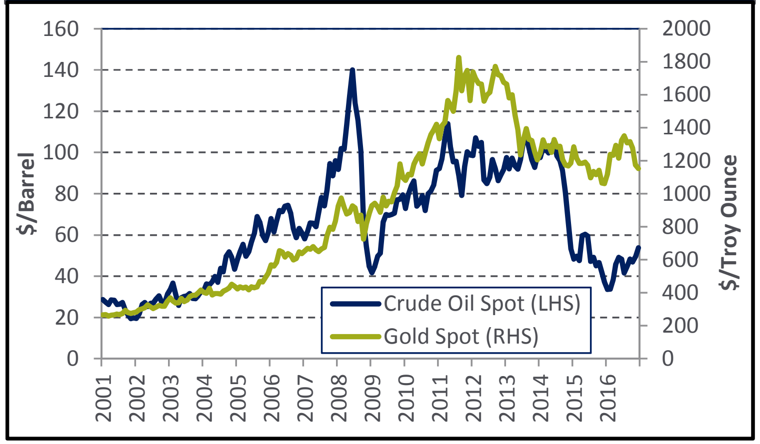
Commodities

Negative roll yields remain a hurdle for investing directly in oil and natural gas



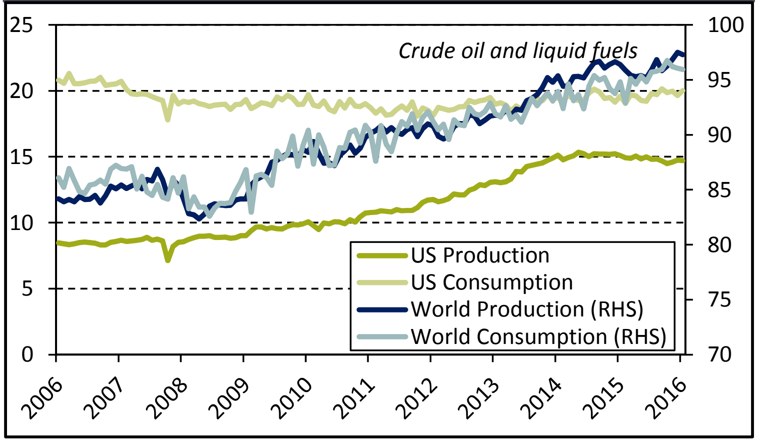
Source: Bloomberg

Gold continues to decline post-election



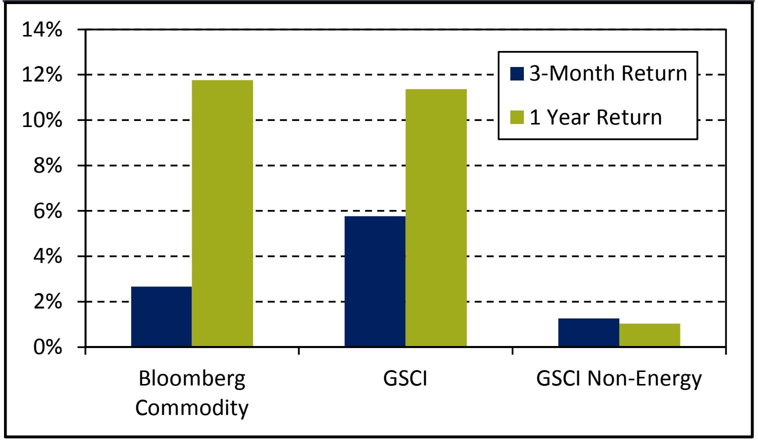
Source: Bloomberg

World production has slightly declined with recent OPEC agreement



*Source: Bloomberg, US Department of Energy *Crude oil and liquid fuels*

Commodities post strong short-term returns



Source: Bloomberg, Standard and Poors

Glossary of Investment Terminology—Risk Statistics

Alpha - Measures the relationship between the fund performance and the performance of another fund or benchmark index and equals the excess return while the other fund or benchmark index is zero.

Alpha Jensen - The average return on a portfolio over and above that predicted by the capital asset pricing model (CAPM), given the portfolio's beta and the average market return. Also known as the abnormal return or the risk adjusted excess return.

Annualized Excess Return over Benchmark - Annualized fund return minus the annualized benchmark return for the calculated return.

Annualized Return - A statistical technique whereby returns covering periods greater than one year are converted to cover a 12 month time span.

Beta - Measures the volatility or systematic risk and is equal to the change in the fund's performance in relation to the change in the assigned index's performance.

Information Ratio - A measure of the risk adjusted return of a financial security, asset, or portfolio.

Formula:
(Annualized Return of Portfolio - Annualized Return of Benchmark)/Annualized Standard Deviation(Period Portfolio Return – Period Benchmark Return). To annualize standard deviation, multiply the deviation by the square root of the number of periods per year where monthly returns per year equals 12 and quarterly returns is four periods per year.

R-Squared – Represents the percentage of a fund's movements that can be explained by movements in an index. R-Squared values range from 0 to 100. An R-Squared of 100 denotes that all movements of a fund are completely explained by movements in the index.

Sharpe Ratio - A measure of the excess return or risk premium per unit of risk in an investment asset or trading strategy.

Sortino Ratio - A method to differentiate between good and bad volatility in the Sharpe Ratio. The differentiation of up and down volatility allows the calculation to provide a risk adjusted measure of a security or fund's performance without upward price change penalties.

Formula:
*Calculation Average (X-Y)/Downside Deviation (X-Y) * 2*
Where X=Return Series X Y = Return Series Y which is the risk free return (91 day T-bills)

Standard Deviation - The standard deviation is a statistical term that describes the distribution of results. It is a commonly used measure of volatility of returns of a portfolio, asset class, or security. The higher the standard deviation the more volatile the returns are.

Formula:
(Annualized Return of Portfolio – Annualized Return of Risk Free) / Annualized Standard Deviation (Portfolio Returns)

Tracking Error - Tracking error, also known as residual risk, is a measure of the degree to which a portfolio tracks its benchmark. It is also a measure of consistency of excess returns. Tracking error is computed as the annualized standard deviation of the difference between a portfolio's return and that of its benchmark.

Formula:
*Tracking Error = Standard Deviation (X-Y) * √(# of periods per year)*
Where X = periods portfolio return and Y = the period's benchmark return
For monthly returns, the periods per year = 12
For quarterly returns, the periods per year = 4

Treynor Ratio - A risk-adjusted measure of return based on systematic risk. Similar to the Sharpe ratio with the difference being the Treynor ratio uses beta as the measurement of volatility.

Formula:
(Portfolio Average Return - Average Return of Risk-Free Rate)/Portfolio Beta

Up/Down Capture Ratio - A measure of what percentage of a market's returns is "captured" by a portfolio. For example, if the market declines 10% over some period, and the manager declines only 9%, then his or her capture ratio is 90%. In down markets, it is advantageous for a manager to have as low a capture ratio as possible. For up markets, the higher the capture ratio the better. Looking at capture ratios can provide insight into how a manager achieves excess returns. A value manager might typically have a lower capture ratio in both up and down markets, achieving excess returns by protecting on the downside, whereas a growth manager might fall more than the overall market in down markets, but achieve above-market returns in a rising market.

UpsideCapture = TotalReturn(FundReturns)/TotalReturns(BMReturn) when Period Benchmark Return is > = 0

DownsideCapture = TotalReturn(FundReturns)/TotalReturns(BMReturn) when Benchmark <0

Data Source: InvestorForce

Glossary of Investment Terminology

 # Of Portfolios/Observations[1] – The total number of data points that make up a specified universe

Allocation Index[3] - The allocation index measures the value added (or subtracted) to each portfolio by active management. It is calculated monthly: The portfolio asset allocation to each category from the prior month-end is multiplied by a specified market index.

Asset Allocation Effect[2] **-** Measures an investment manager's ability to effectively allocate their portfolio's assets to various sectors. The allocation effect determines whether the overweighting or underweighting of sectors relative to a benchmark contributes positively or negatively to the overall portfolio return. Positive allocation occurs when the portfolio is over weighted in a sector that outperforms the benchmark and underweighted in a sector that underperforms the benchmark. Negative allocation occurs when the portfolio is over weighted in a sector that underperforms the benchmark and under weighted in a sector that outperforms the benchmark.

Agency Bonds (Agencies)[3] - The full faith and credit of the United States government is normally not pledged to payment of principal and interest on the majority of government agencies issuing these bonds, with maturities of up to ten years. Their yields, therefore, are normally higher than government and their marketability is good, thereby qualifying them as a low risk-high liquidity type of investment. They are eligible as security for advances to the member banks by the Federal Reserve, which attests to their standing.

Asset Backed Securities (ABS)[3] - Bonds which are similar to mortgage-backed securities but are collateralized by assets other than mortgages; commonly backed by credit card receivables, auto loans, or other types of consumer financing.

Attribution[3] - Attribution is an analytical technique that allows us to evaluate the performance of the portfolio relative to the benchmark. A proper attribution tells us where value was added or subtracted as a result of the manager's decisions.

Average Effective Maturity[4] - For a single bond, it is a measure of maturity that takes into account the possibility that a bond might be called back to the issuer.

For a portfolio of bonds, average effective maturity is the weighted average of the maturities of the underlying bonds. The measure is computed by weighing each bond's maturity by its market value with respect to the portfolio and the likelihood of any of the bonds being called. In a pool of mortgages, this would also account for the likelihood of prepayments on the mortgages.

Batting Average[1] - A measurement representing an investment manager's ability to meet or beat an index.

Formula: Divide the number of days (or months, quarters, etc.) in which the manager beats or matches the index by the total number of days (or months, quarters, etc.) in the period of question and multiply that factor by 100.

Brinson Fachler (BF) Attribution[1] - The BF methodology is a highly accepted industry standard for calculating the allocation, selection, and interaction effects within a portfolio that collectively explains a portfolio's underlying performance. The main advantage of the BF methodology is that rather than using the overall return of the benchmark, it goes a level deeper than BHB and measures whether the benchmark sector, country, etc. outperformed/or underperformed the overall benchmark.

Brinson Hood Beebower (BHB) Attribution[1] - The BHB methodology shows that excess return must be equal to the sum of all other factors (i.e., allocation effect, selection effect, interaction effect, etc.). The advantage to using the BHB methodology is that it is a highly accepted industry standard for calculating the allocation, selection, and interaction effects within a portfolio that collectively explains a portfolio's underlying performance.

Corporate Bond (Corp) [4] - A debt security issued by a corporation and sold to investors. The backing for the bond is usually the payment ability of the company, which is typically money to be earned from future operations. In some cases, the company's physical assets may be used as collateral for bonds.

Correlation[1] - A range of statistical relationships between two or more random variables or observed data values. A correlation is a single number that describes the degree of relationship between variables.

Data Source: [1]InvestorForce, [2]Interaction Effect Performance Attribution, [3]NEPC, LLC, [4]Investopedia, [5]Hedgeco.net

Glossary of Investment Terminology

Coupon[4] – The interest rate stated on a bond when it is issued. The coupon is typically paid semiannually. This is also referred to as the "coupon rate" or "coupon percent rate."

Currency Effect[1] - Is the effect that changes in currency exchange rates over time affect excess performance.

Derivative Instrument[3] - A financial obligation that derives its precise value from the value of one or more other instruments (or assets) at the same point of time. For example, the relationship between the value of an S&P 500 futures contract (the derivative instrument in this case) is determined by the value of the S&P 500 Index and the value of a U.S. Treasury bill that matures at the expiration of the futures contract.

Downside Deviation[1] - Equals the standard deviation of negative return or the measure of downside risk focusing on the standard deviation of negative returns.

Formula:
Annualized Standard Deviation (Fund Return - Average Fund Return) where average fund return is greater than individual fund returns, monthly or quarterly.

Duration[3] - Duration is a measure of interest rate risk. The greater the duration of a bond, or a portfolio of bonds, the greater its price volatility will be in response to a change in interest rates. A bond's duration is inversely related to interest rates and directly related to time to maturity.

Equity/Debt/Cash Ratio[1] – The percentage of an investment or portfolio that is in Equity, Debt, and/or Cash (i.e. A 7/89/4 ratio represents an investment that is made up of 7% Equity, 89% Debt, and 4% Cash).

Foreign Bond[3] - A bond that is issued in a domestic market by a foreign entity, in the domestic market's currency. A foreign bond is most often issued by a foreign firm to raise capital in a domestic market that would be most interested in purchasing the firm's debt. For foreign firms doing a large amount of business in the domestic market, issuing foreign bonds is a common practice.

Hard Hurdle[5] – is a hurdle rate that once beaten allows a fund manager to charge a performance fee on only the funds above the specified hurdle rate.

High-Water Mark[4] - The highest peak in value that an investment fund/account has reached. This term is often used in the context of fund manager compensation, which is performance based. Some performance-based fees only get paid when fund performance exceeds the high-water mark. The high-water mark ensures that the manager does not get paid large sums for poor performance.

Hurdle Rate[4] - The minimum rate of return on an investment required, in order for a manager to collect incentive fees from the investor, which is usually tied to a benchmark.

Interaction Effects[2] - The interaction effect measures the combined impact of an investment manager's selection and allocation decisions within a sector. For example, if an investment manager had superior selection and over weighted that particular sector, the interaction effect is positive. If an investment manager had superior selection, but underweighted that sector, the interaction effect is negative. In this case, the investment manager did not take advantage of the superior selection by allocating more assets to that sector. Since many investment managers consider the interaction effect to be part of the selection or the allocation, it is often combined with the either effect.

Median[3] - The value (rate of return, market sensitivity, etc.) that exceeds one-half of the values in the population and that is exceeded by one-half of the values. The median has a percentile rank of 50.

Modified Duration[3] - The percentage change in the price of a fixed income security that results from a change in yield.

Mortgage Backed Securities (MBS)[3] - Bonds which are a general obligation of the issuing institution but are also collateralized by a pool of mortgages.

Municipal Bond (Muni) [4] - A debt security issued by a state, municipality or county to finance its capital expenditures.

Net Investment Change[1] – Is the change in an investment after accounting for all Net Cash Flows.

Performance Fee[4] - A payment made to a fund manager for generating positive returns. The performance fee is generally calculated as a percentage of investment profits, often both realized and unrealized.

Data Source: [1]InvestorForce, [2]Interaction Effect Performance Attribution, [3]NEPC, LLC, [4]Investopedia, [5]Hedgeco.net

Glossary of Investment Terminology

Policy Index[3] - A custom benchmark designed to indicate the returns that a passive investor would earn by consistently following the asset allocation targets set forth in this investment policy statement.

Price to Book (P/B)[4] - A ratio used to compare a stock's market value to its book value. It is calculated by dividing the current closing price of the stock by the latest quarter's book value per share, also known as the "price-equity ratio".

Price to Earnings (P/E)[3] - The weighted equity P/E is based on current price and trailing 12 months earnings per share (EPS).

Price to Sales (P/S)[4] - A ratio for valuing a stock relative to its own past performance, other companies, or the market itself. Price to sales is calculated by dividing a stock's current price by its revenue per share for the trailing 12 months.

Return on Equity (ROE)[4] **-** The amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.

Selection (or Manager) Effect[2] - Measures the investment manager's ability to select securities within a given sector relative to a benchmark. The over or underperformance of the portfolio is weighted by the benchmark weight, therefore, selection is not affected by the manager's allocation to the sector. The weight of the sector in the portfolio determines the size of the effect—the larger the sector, the larger the effect is, positive or negative.

Soft Hurdle rate[5] **–** is a hurdle rate that once beaten allows a fund manager to charge a performance fee based on the entire annualized return.

Tiered Fee[1] – A fee structure that is paid to fund managers based on the size of the investment (i.e. 1.00% fee on the first $10M invested, 0.90% on the next $10M, and 0.80% on the remaining balance).

Total Effects[2] - The active management (total) effect is the sum of the selection, allocation, and interaction effects. It is also the difference between the total portfolio return and the total benchmark return. You can use the active management effect to determine the amount the investment manager has added to a portfolio's return.

Total Return[1] - The actual rate of return of an investment over a specified time period. Total return includes interest, capital gains, dividends, and distributions realized over a defined time period.

Universe[3] - The list of all assets eligible for inclusion in a portfolio.

Upside Deviation[1] – Standard Deviation of Positive Returns

Weighted Avg. Market Cap.[4] - A stock market index weighted by the market capitalization of each stock in the index. In such a weighting scheme, larger companies account for a greater portion of the index. Most indexes are constructed in this manner, with the best example being the S&P 500.

Yield (%)[3] - The current yield of a security is the current indicated annual dividend rate divided by current price.
Yield to Maturity[3] -The discount rate that equates the present value of cash flows, both principal and interest, to market price.

Data Source: [1]InvestorForce, [2]Interaction Effect Performance Attribution, [3]NEPC, LLC, [4]Investopedia, [5]Hedgeco.net

Information Disclaimer

- **Past performance is no guarantee of future results.**
- **The goal of this report is to provide a basis for monitoring financial markets. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.**
- **Information on market indices was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.**
- **All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.**
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Information Disclaimer and Reporting Methodology

Information Disclaimer

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- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
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Reporting Methodology

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.

NEPC, LLC

YOU DEMAND MORE. So do we.SM

Ventura County Employees' Retirement System

NEPC 2017 Overview of Capital Markets

February 27, 2017

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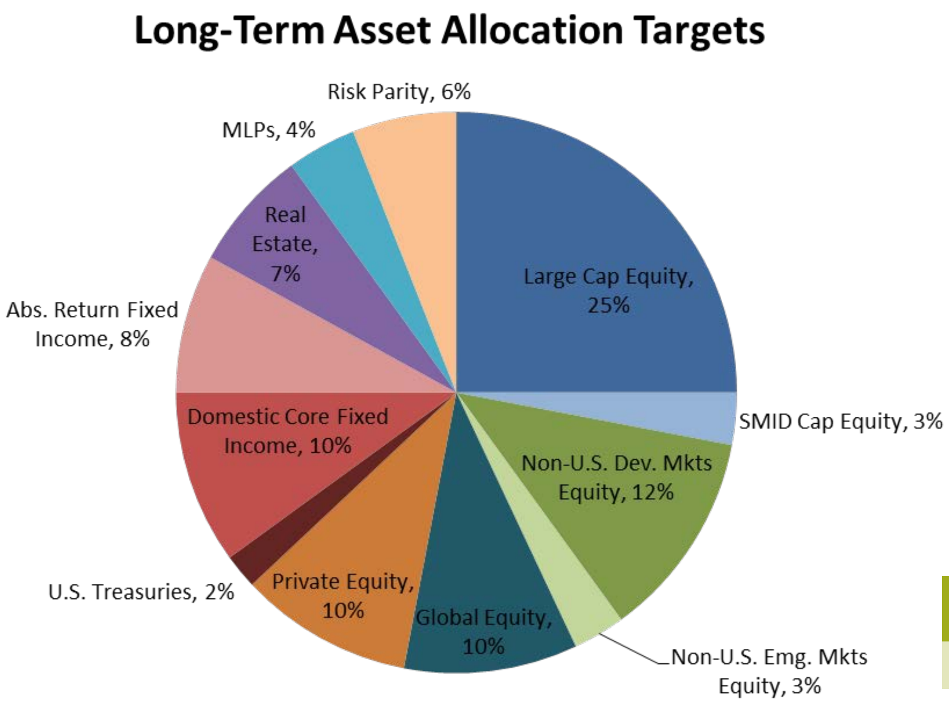
VCERA Portfolio

VCERA Target Mix – Using NEPC's 2017 Assumptions



	5-7 Year		30 Year	
	2016	2017	2016	2017
Expected Return	6.4%	6.3%	7.6%	7.6%
Expected Volatility	12.5%	12.7%	12.5%	12.7%
Sharpe Ratio	0.39	0.36	0.37	0.36

Probabilities Using 2017 Assumptions	
Probability of 1-Year Return Under 0%	30.9%
Probability of 6-Year Return Under 0%	11.1%
Probability of 6-Year Return Over 7.5%	41.2%
Probability of 30-Year Return Over 7.5%	51.2%

**Expected Returns are Geometric*

Obtaining the Actuarial Assumed Rate of Return over 5-7 Years, Still a Challenge

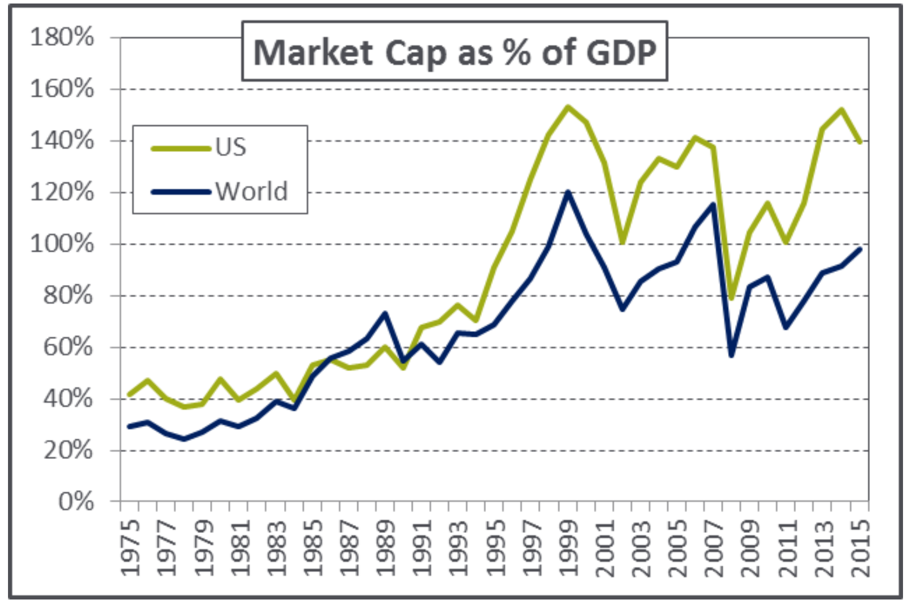
Evaluate Feasibility of Objectives

Asset returns offer less support for investors to achieve target objectives

Asset growth post-2008 is without historical precedent relative to economic growth

Investment program goals are influenced by capital inflows, spending obligations, and asset returns

Future growth is likely to be more dependent on increasing capital inflows and reducing spending commitments

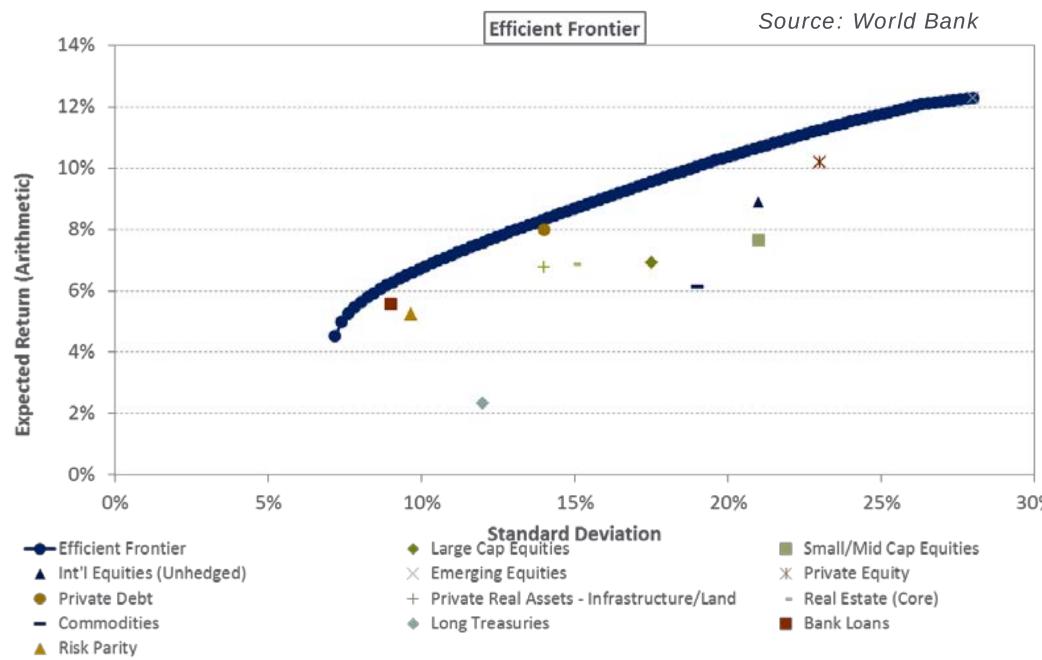


Source: World Bank

Expected returns greater than 7.5% (5% real) will be a high hurdle for diversified investors to realize over the next 5-7 years

Optimization of public market asset classes will not be sufficient to meet elevated return expectations for risk aware investors

Improving the return outlook may involve increasing portfolio risk, expanding alpha opportunities, and/or expanding the use of portfolio leverage



Actuarial Assumed Rates of Return Continue to be Lowered

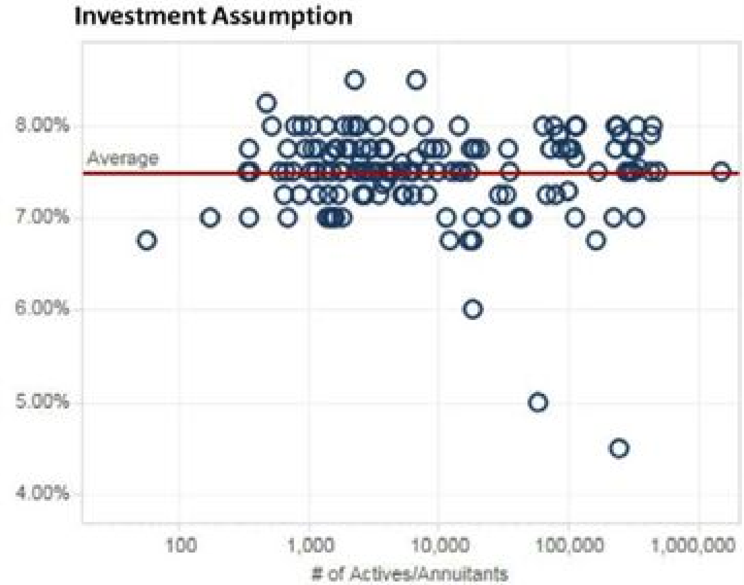
Evaluate Feasibility of Objectives

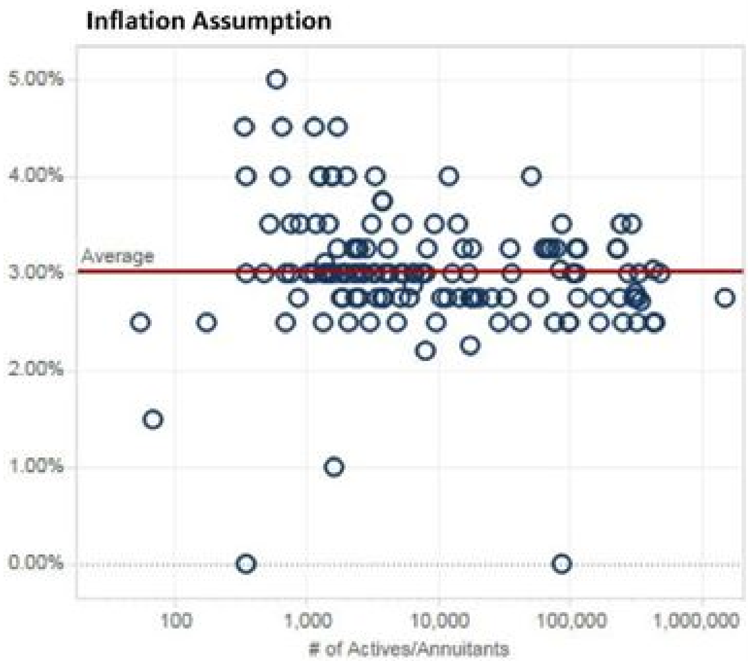
Retirement funds utilize a long-term planning horizon to ensure liabilities are fully funded at the time the liability is due to be paid. To help a fund set contribution rates and measure progress toward meeting its financial obligations, funds make actuarial assumptions to estimate what investment and demographic experience is likely to be over that time horizon.

Such assumptions have powerful effects on the funding level of a plan and what the required contributions will be to pay for future benefits. Assumptions that are overly optimistic (high market returns, lower-than-expected retirement rates) tend to increase a plan's funded level and reduce the contribution rates an employer is obligated to pay today. Conversely, overly pessimistic assumptions reduce the funded level and increase short-term contribution rates.

The average investment assumption for responding funds is 7.5 percent, the same aggregated average as 2015. However, almost a quarter of funds who also responded in 2015 reduced their investment assumption. Among those who made a change from 2015 to 2016, their investment assumption was lowered by 0.26 percent.

The aggregated inflation assumption in 2016 is 3 percent, down 0.2 from 2015. Almost 40 percent of the comparable group reduced their inflation assumption between 2015 and 2016. This group lowered their inflation assumption by an average of 0.39 percent.



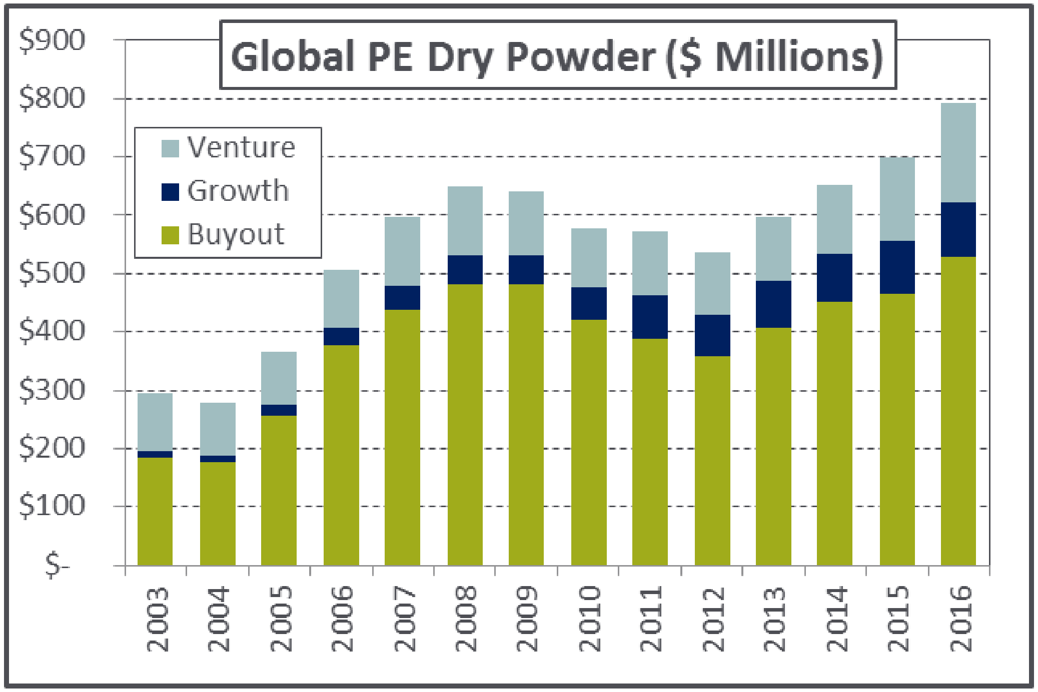


Source: 2016 National Conference on Public Employee Retirement Systems and Cobalt Community Research

Strategy Options

Strategic Policy Actions

Evaluate Feasibility of Objectives



Source: Preqin

A mature private markets portfolio is a key contributor to meeting long-term portfolio objectives

We encourage investors to lay the groundwork to construct a robust private markets (PE, PD, RE portfolio over the coming decade

Building a self-sustaining private markets allocation is a long process but provides meaningful wealth creation

Patience is warranted over the coming years as private markets have become increasingly crowded

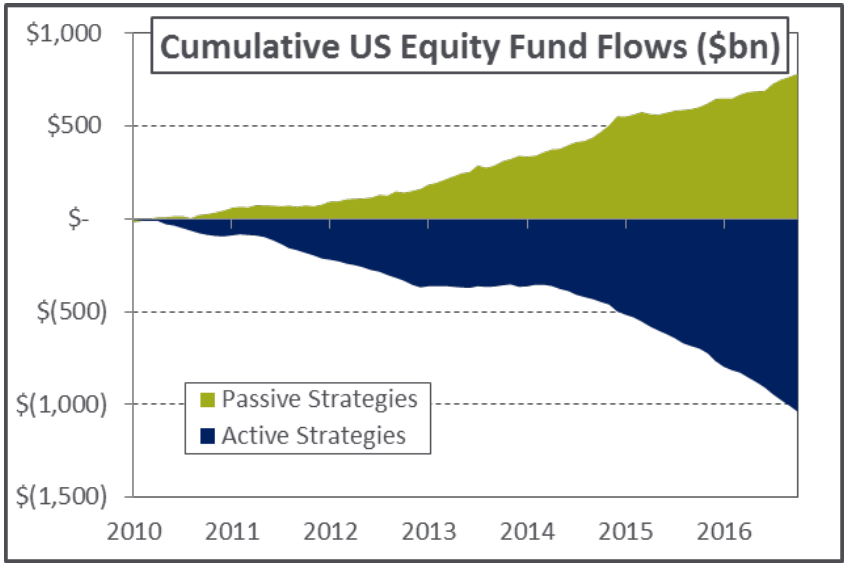
Strategic Policy Actions

Examine the Cost of Core Exposures

Core market beta exposures can be sourced in a low cost manner

Market inertia towards passive is unlikely to moderate in the coming years

Core beta exposures are strategic asset classes and broadly include US equities and interest rate exposures



Source: EPFR

Evaluate the active / passive decision

Asset Class	Market Efficiency	Diversity of Opportunity Set	Active Constraints	Excess Return Expectation	Ease of Indexing
US Large Cap Stocks	High	Low	High	Low	High
US Small Cap Stocks	Moderate	Moderate	Moderate	Moderate	High
Int'l. Developed Equity	Moderate	Moderate	High	Moderate	Moderate
Emerging Market Stocks	Moderate	Moderate	Moderate	Moderate	Moderate
Core Bonds (Gov't/Credit)	High/Moderate	Low/Moderate	High	Low / Moderate	Moderate
Private Equity	Low	High	Low	High	N/A

Asset Class Assumptions

2017 5-to-7 Year Return Forecasts

Geometric Expected Return				
Asset Class	2016	2017	2017-2016	5-7 Year Forecasted Sharpe Ratio
Cash	1.50%	1.75%	0.25%	0
US Treasuries (10 Yr)	1.75%	2.00%	0.25%	0.03
Core Bonds*	2.46%	2.65%	0.19%	0.15
TIPS	2.50%	3.00%	0.50%	0.19
High-Yield Bonds	5.25%	4.75%	-0.50%	0.23
Bank Loans	5.50%	5.25%	-0.25%	0.39
Absolute Return Fixed Income*	3.31%	3.62%	0.31%	0.45
Large Cap Equities	6.00%	5.75%	-0.25%	0.23
Small/Mid Cap Equities	6.25%	6.00%	-0.25%	0.2
Int'l Equities (Hedged)	7.57%	7.57%	-	0.28
Int'l Equities (Unhedged)	7.25%	7.25%	-	0.26
Emerging Int'l Equities	9.75%	9.50%	-0.25%	0.28
Global Equities*	7.23%	7.08%	-0.15%	0.3
Private Debt	7.50%	7.25%	-0.25%	0.75
Private Equity	8.50%	8.25%	-0.25%	0.28
Real Assets	7.65%	7.09%	-0.56%	0.32
Real Estate	6.50%	6.00%	-0.50%	0.28
Risk Parity*	5.29%	4.68%	-0.61%	0.29

* Assumption based on market weighted blend of relative sub-components.

Development of Asset Class Assumptions

We use market data for all asset class assumptions as of November 30th

Assumptions combine historical data and forward looking analysis

- Expected returns based on current market pricing and forward looking estimates
- Volatility informed by history but adjusted to reflect non-normality
- Correlations based on long-term data but recognize ongoing shifts in asset relationships

Forward-looking asset class models to determine expected return are based on current market pricing and a building blocks approach

- Expected return equals yield plus change in price (valuation, roll down, defaults, etc.)
- Country/regional inflation and real growth estimates are key economic observations
- Qualitative inputs and investor sentiment (capital flows, etc.) inform the return outlook

Asset class assumptions are prepared by the Asset Allocation Committee

- Asset Allocation team plus members from consulting practice groups meet to develop ideas for Key Market Themes, Strategic Policy Actions, and Current Opportunities

Partners Research Committee approves asset class assumptions

Changes To Assumption Development

We continue to refine our assumptions process where appropriate and changes are evolutionary rather than revolutionary

Separated the asset class assumption for private real assets into two categories; energy / metals and infrastructure / land

- Draws a more clear distinction between the volatility and return profile of the two assets
- Energy/metals reflects the higher volatility of the underlying commodity input
- Infrastructure/land reflects the lower volatility of infrastructure, timber, and farmland

Refined our equity models to reflect market specific growth and inflation building blocks for each equity asset class

- Building blocks are constructed from country growth and inflation inputs derived from the allocation of revenues across geographic regions
- International equity models expanded to include both a top-down index view and bottom-up country models based upon underlying country index weights

Broadened our global bond country list to reflect a wider range of potential index exposures for both developed and emerging markets

- Global fixed income model now captures more than 30 local interest rate markets

Inflation

Our outlook for US CPI is 2.5% over 5-7 years and 2.75% over 30 years

Our assumption is informed by break-even inflation expectations and local price indices

Inflation is an integral component of our asset allocation assumptions

Represents an essential building block for creating asset class returns

There are multiple inflation sources used to inform our asset class views

Includes forecasts from international organizations (e.g. IMF), local consumer and producer price indices, and break-even inflation expectations

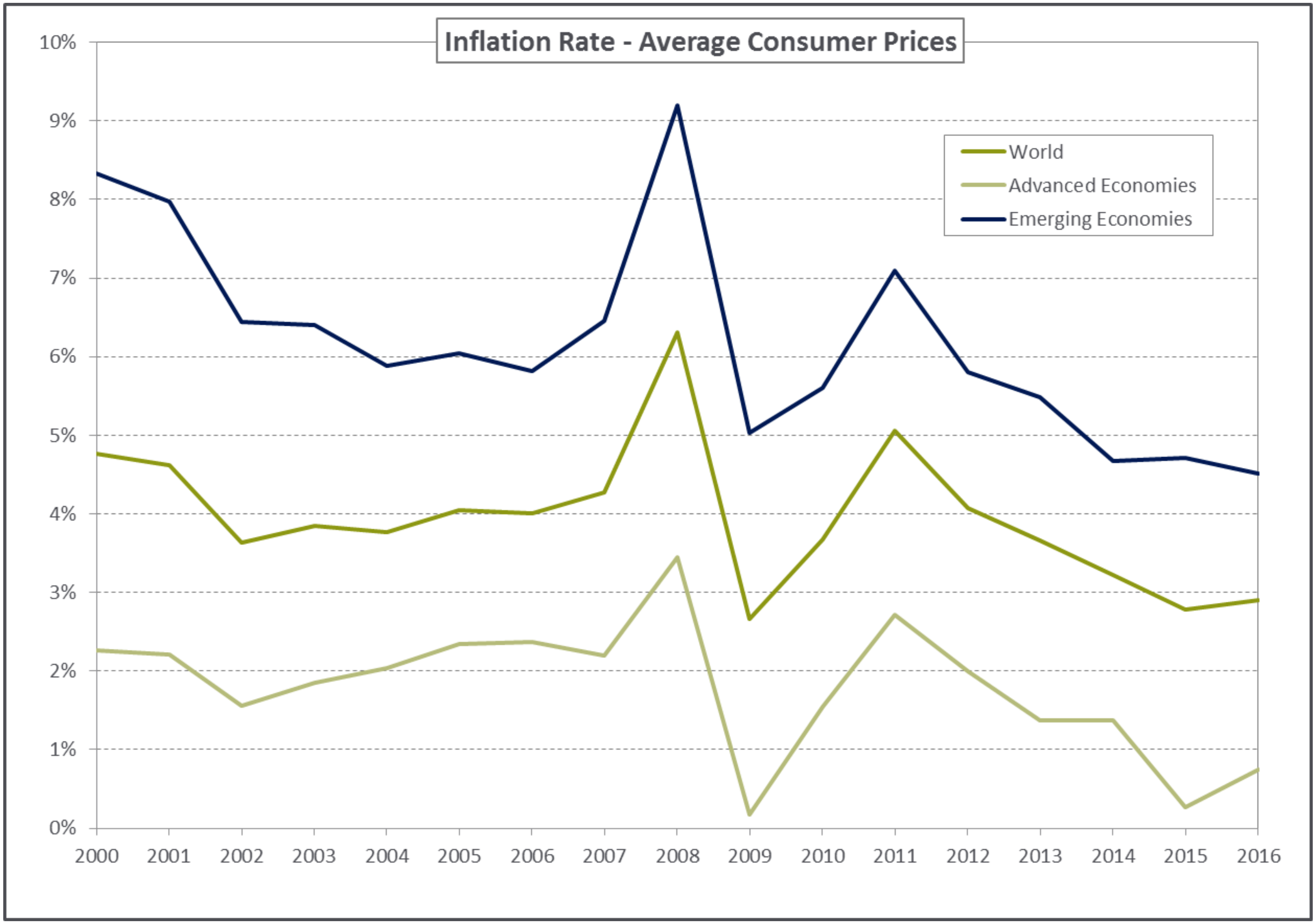
Asset classes include various inflation inputs incorporating global inflation data and/or local market inputs

Equity inflation expectations over 5-7 years are each constructed from country inflation inputs derived from the allocation of revenues across geographic regions

Over 30 years we assume equity markets will converge to a global inflation building block that assumes a terminal value of 3.25%

Fixed income assumptions for developed and emerging markets incorporate country specific inflation expectations as implied by forward interest rate curves

Global Inflation Forecasts



Source: IMF, Bloomberg

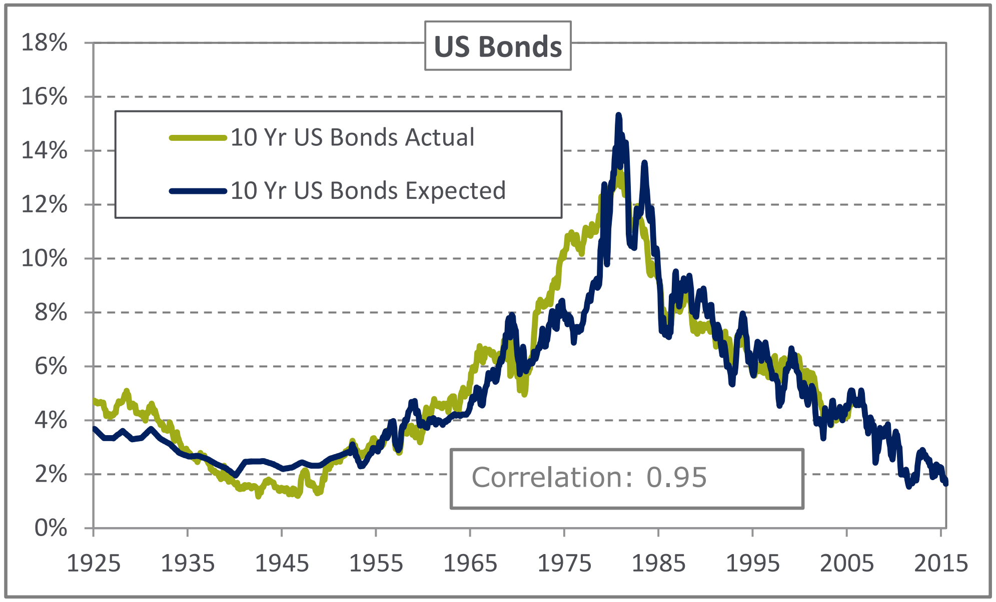
Realized US Inflation Remains Relatively Low

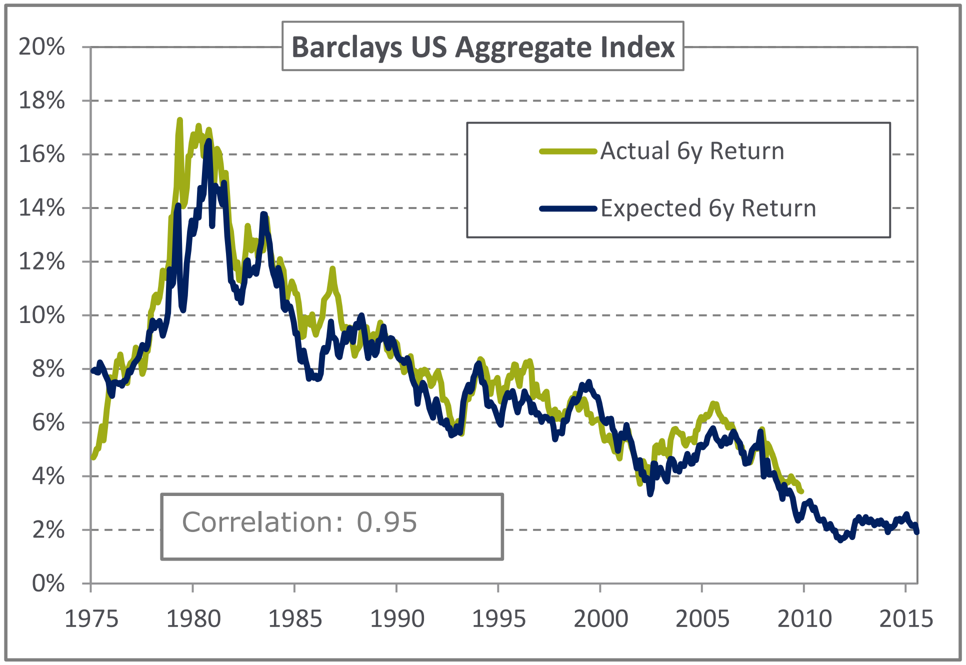
Source: Bureau of Labor Statistics, Bloomberg

Asset Class Building Blocks Summary

- **Global Equity Building Blocks**
  - **Inflation:** Represents global inflation expectation over forecast period
  - **Real Earnings Growth:** Represents assumption for real growth for each market
  - **Profit Margin Adjustment:** Return due to shift of profit margins to forecast value
  - **Dividend Yield:** Represents dividend yield expectation over forecast period
  - **Valuation:** Return due to shift of current price/earnings ratio to forecast value
- **Commodities Building Blocks**
  - **Valuation:** Return from commodity spot price reverting to long term real average
  - **Roll yield:** Average annual yield to roll futures contract over forecast period
  - **Cash:** Expected US cash rate over forecast period
- **Fixed Income Building Blocks**
  - **Sovereign Yield:** Average expected government bond yield over forecast period
  - **Sovereign Price Change:** Expected price change due to changes in interest rates
  - **Roll Down:** Expected price change due to ageing of a bond along the yield curve
  - **Credit Spread:** Average expected credit spread over forecast period
  - **Spread Price Change:** Return due to shift of current credit spread to forecast value
  - **Credit Deterioration:** Return from credit downgrade and default over forecast period
  - **Real Yield:** Average expected government real yield over forecast period (TIPS)
  - **Real Yield Price Change:** Expected price change due to changes in real rates
  - **Inflation Expectation:** Expected inflation accrual over the forecast period (TIPS)
- **Private Markets Building Blocks**
  - **Illiquidity Premium:** Return associated with illiquidity factor specific to asset class
  - **Relative Valuation Adjustment:** Qualitative adjustment reflecting asset class views
  - **Public Market Return:** Return associated with equivalent public market beta

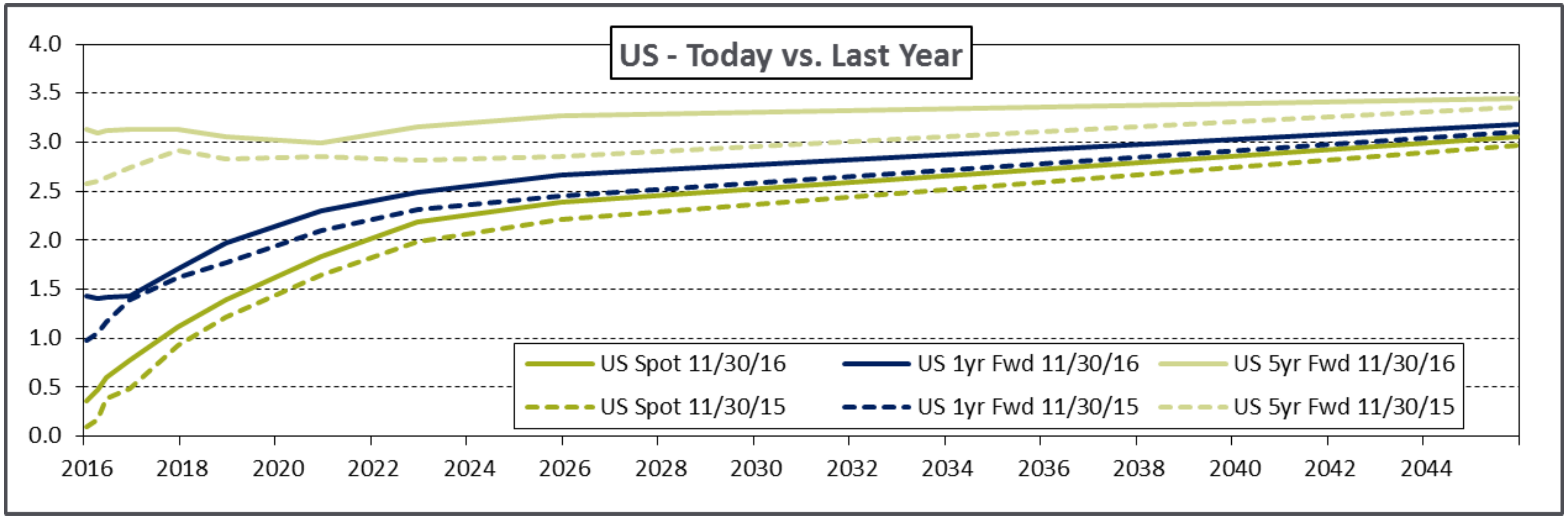
US Treasury Spot and Forward Curves are the Backdrop for Lower Bond Returns



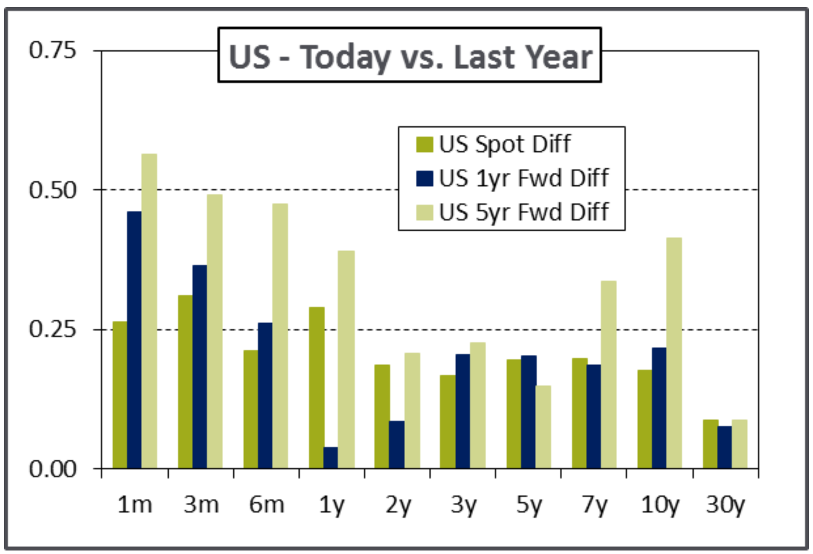


Source: Bloomberg

US Treasury Spot and Forward Curves are the Backdrop for Lower Bond Returns



Source: Bloomberg



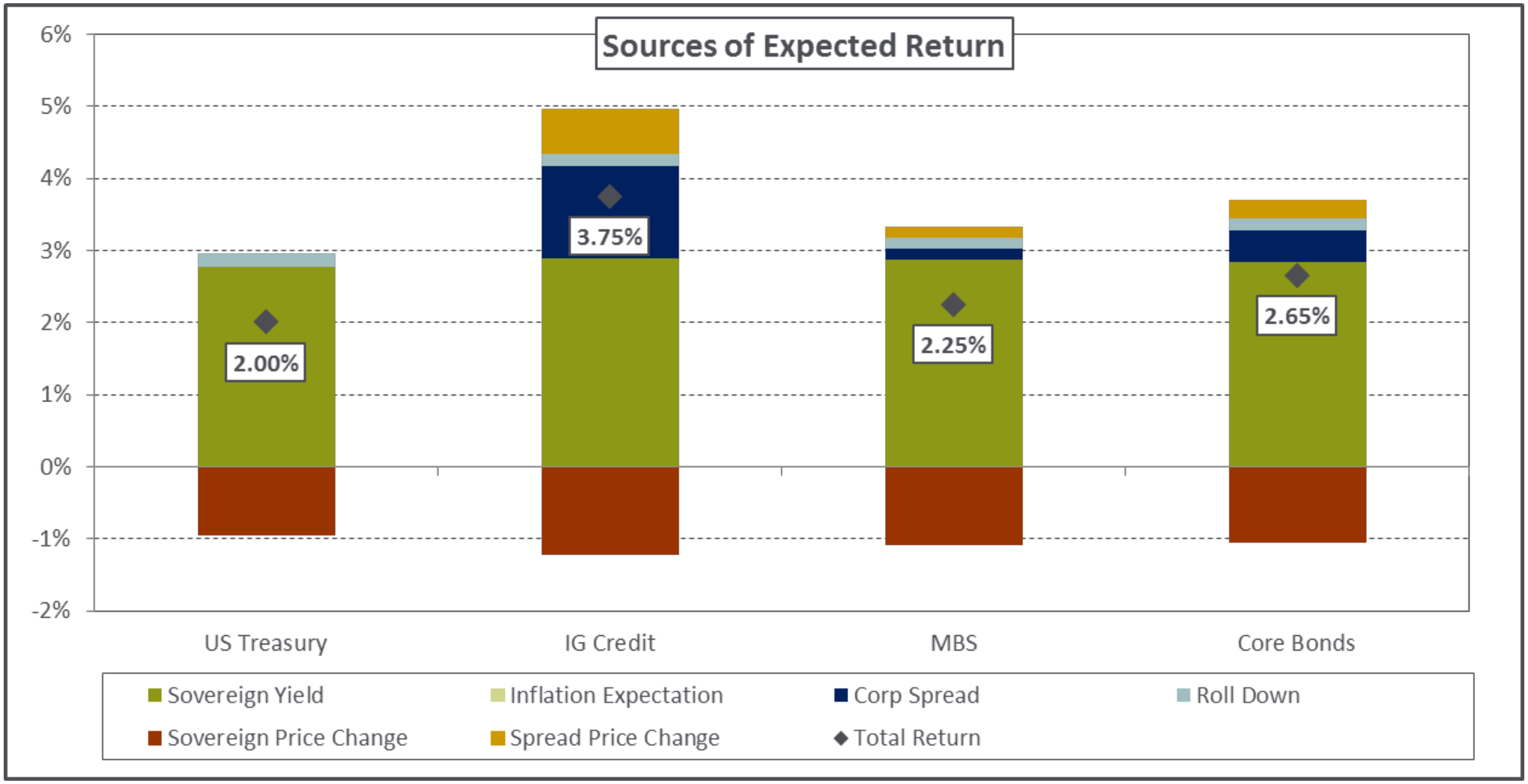
Source: Bloomberg

Spot and futures curves have increased relative to prior year

Short end of the curve experienced the greatest relative change given market expectations for a Fed rate hike

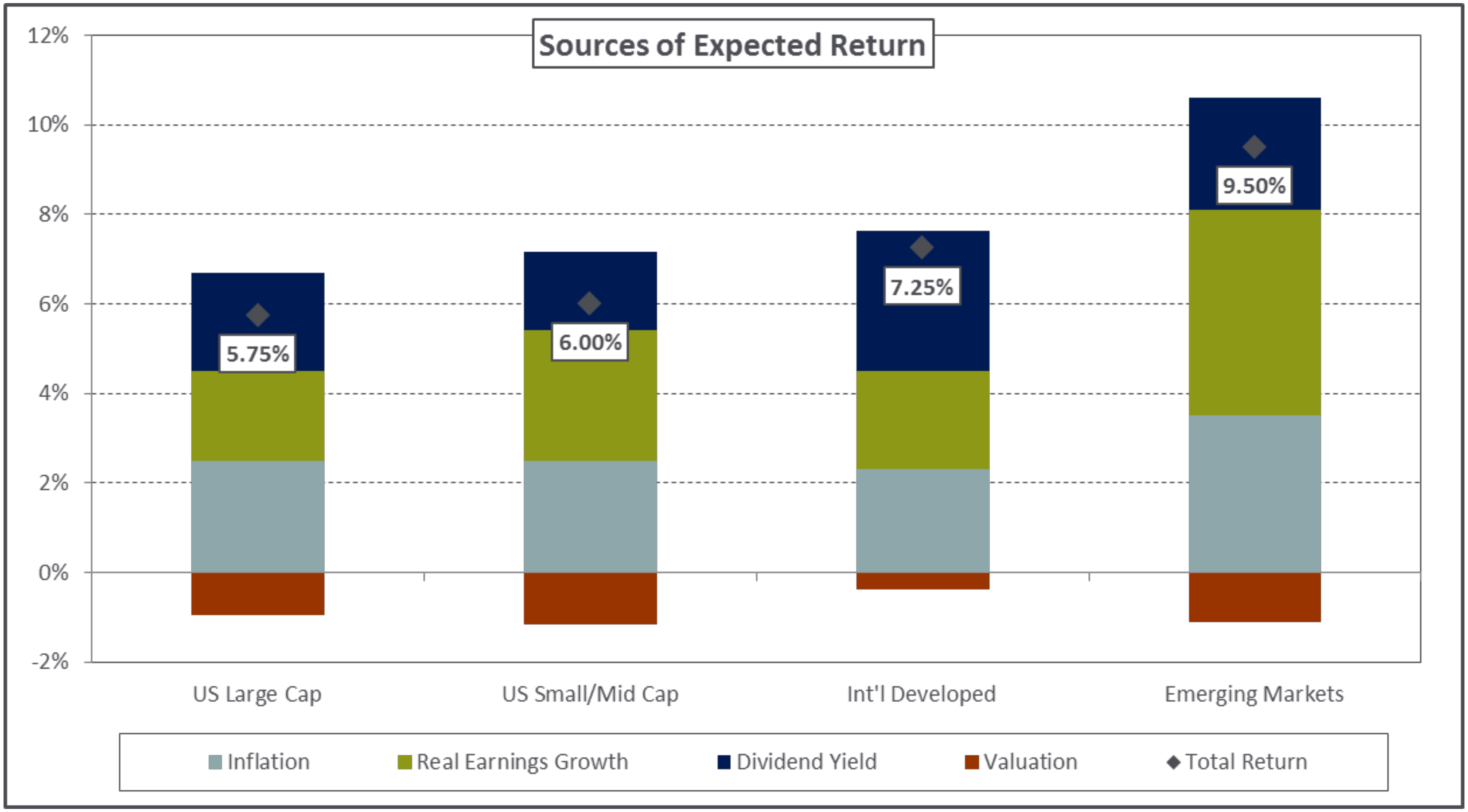
Uneven changes in the five year forward curve cause a slight hump at the short end of the curve

Assumption Development – Core Bonds



Index Current	US Treasury	US Credit	US MBS	US Aggregate
Yield	1.83	3.3	2.8	2.6
OAS	-	1.2	0.2	0.5
Duration	6.1	7.0	4.5	5.9
Quality	AA+/Aaa	A-/A3	AAA/Aaa	A/Aa2
MV (Millions)	6,861,998	5,942,232	5,353,011	19,034,388

Assumption Development – Global Equities



Index Current	US Large Cap	US Small/Mid Cap	Int'l Developed	Emerging Markets
Trailing P/E	20.6	31.6	16.9	14.3
Profit Margin	9.5%	4.2%	6.2%	8.0%
Dividend Yield	2.1%	1.7%	3.3%	2.5%

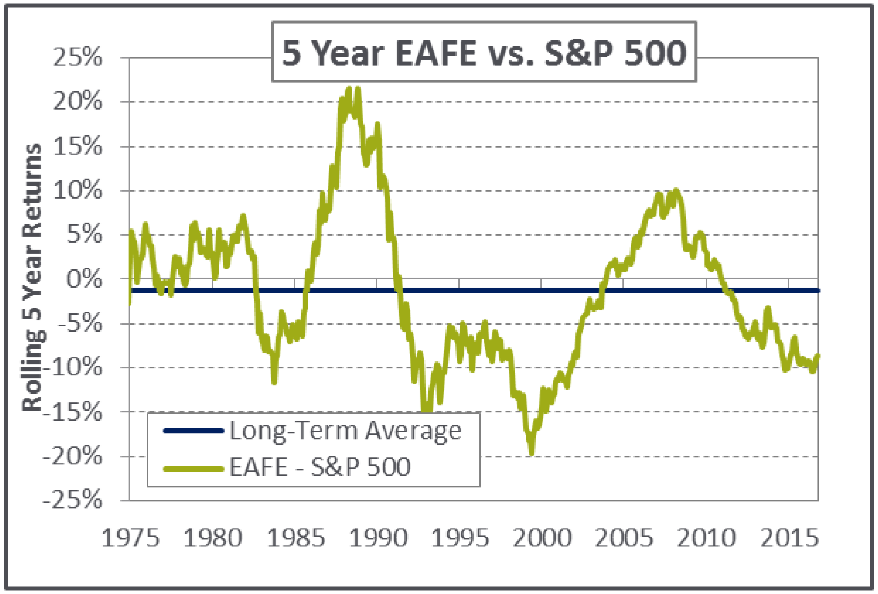
Relative Equity Performance – Int'l. Developed vs. US Large Cap

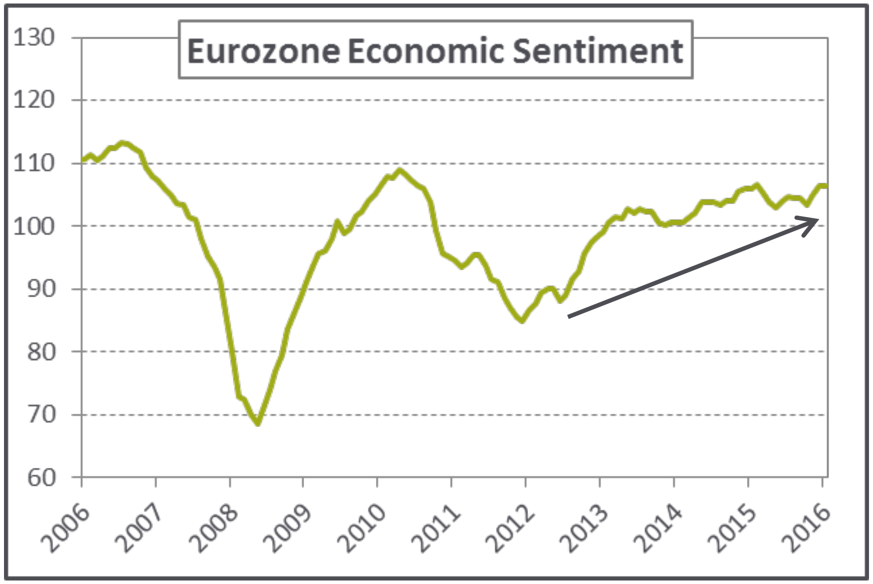
Europe and Japan carry risks but offer a meaningful return opportunity

Catalysts for outperformance are present with shareholder friendly actions in Japan and macroeconomic improvement in Europe.

Central bank support and US dollar strength provide a positive economic backdrop as both the ECB and BoJ are likely to maintain accommodative monetary policies.

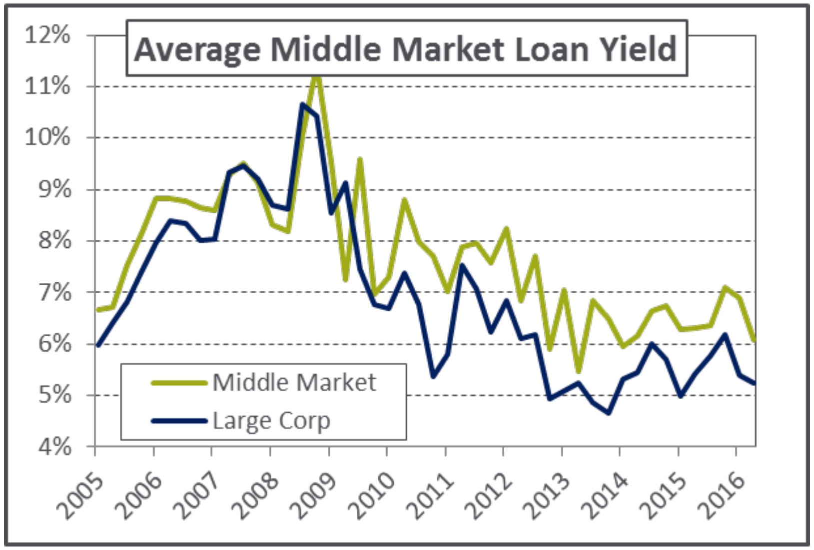
Anti-establishment political parties represent a tail-risk for the stability of the Eurozone with major elections across Europe in 2017.



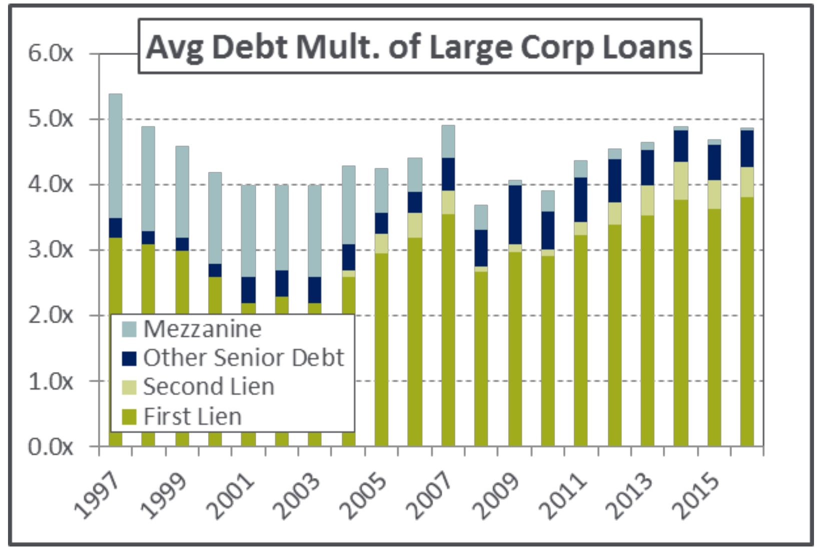


Source: (Top) Standard & Poors, MSCI, Bloomberg
Source: (Bottom) European Commission, Bloomberg

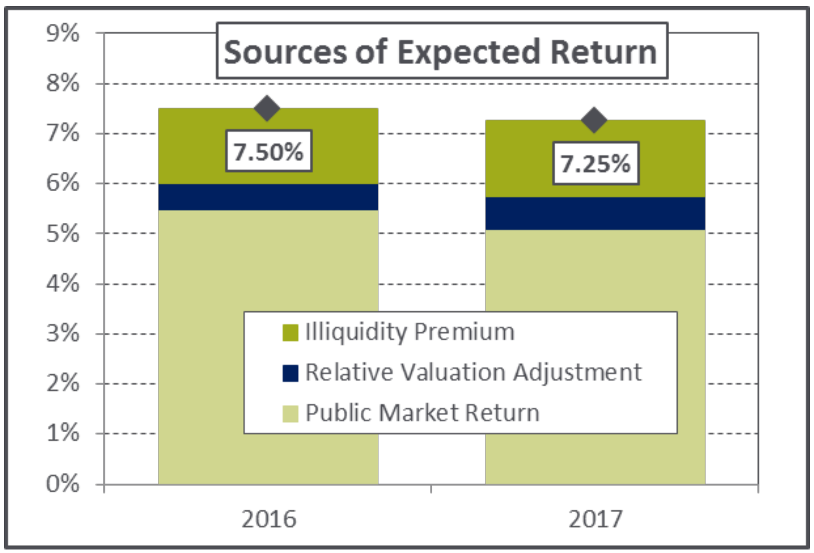
Assumption Development – Private Credit

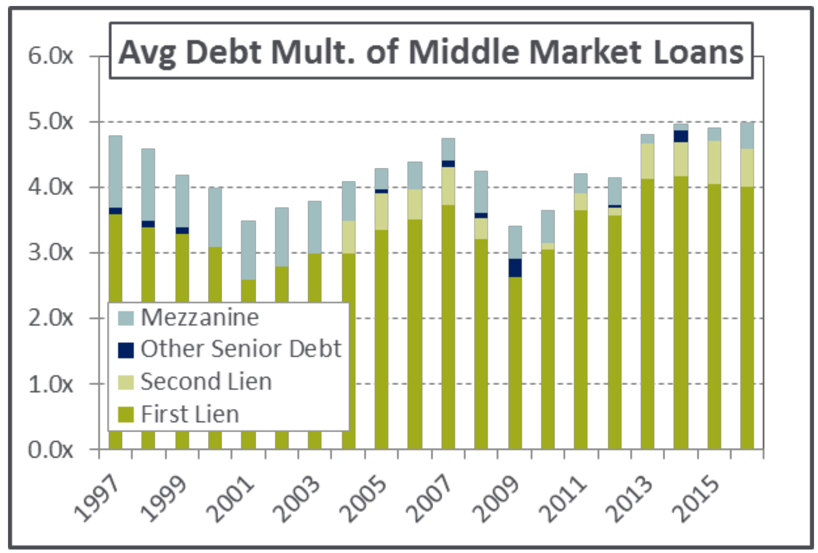


Source: S&P Capital IQ LCD



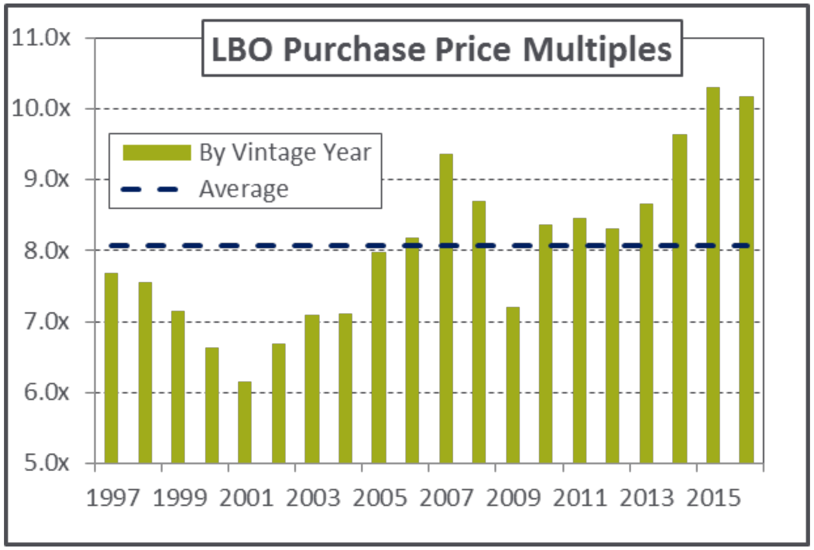
Source: S&P Capital IQ



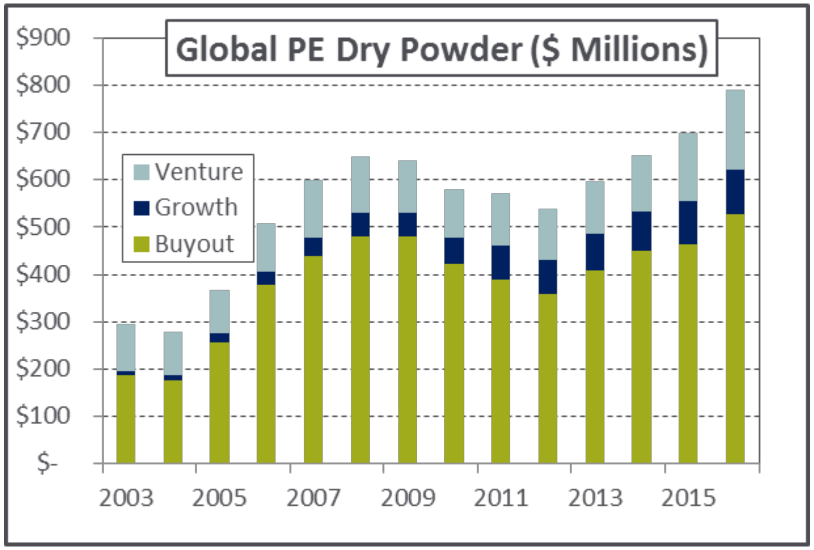


Private debt assumption reflects 50% direct lending, 25% mezzanine, 25% distressed debt. Public market equivalent defined as blend of 50% high yield bonds and 50% bank loans.

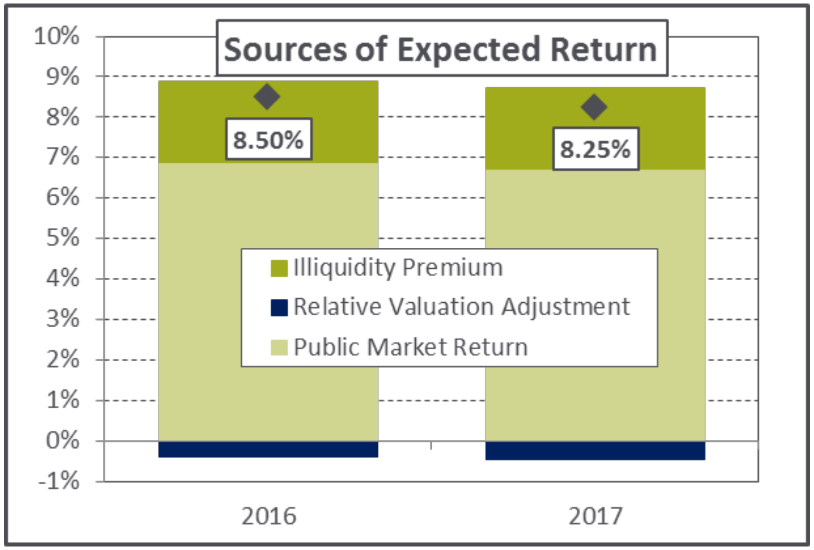
Assumption Development – Private Equity



Source: S&P Capital IQ LCD



Source: Preqin



Slightly lower return expectation for private equity driven by:

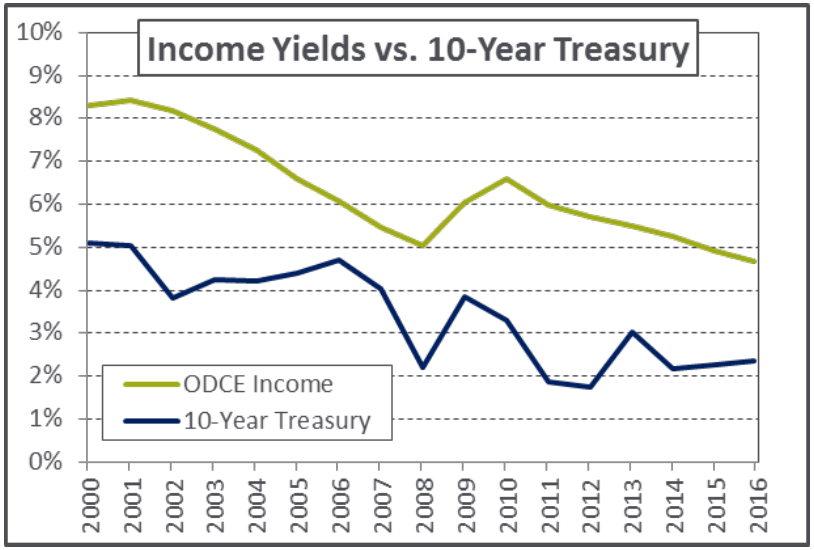
Lower public market return expectation

Broad increase in private commitments crowding the marketplace

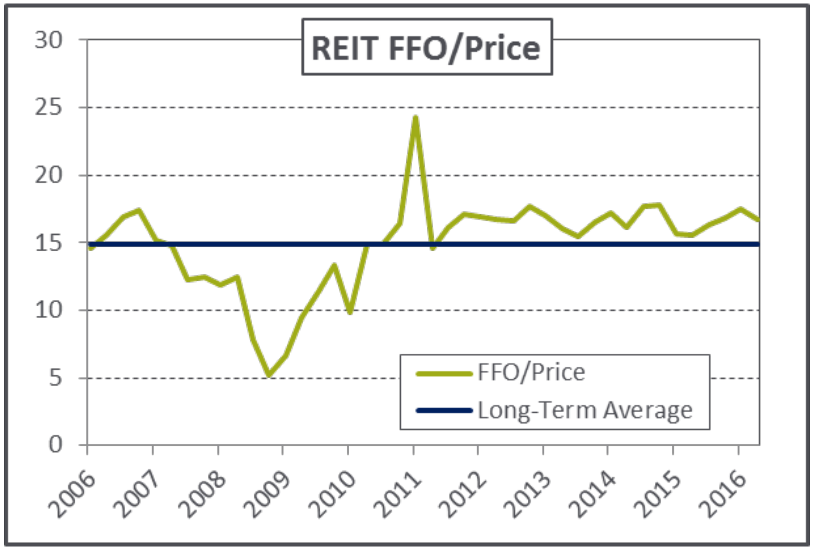
Relatively high purchase price multiples

Private equity assumption reflects 40% buyout, 25% growth equity, 20% secondaries, 15% venture. Public market equivalent defined as blend of 70% US small/mid cap equities and 30% non-US developed market equities.

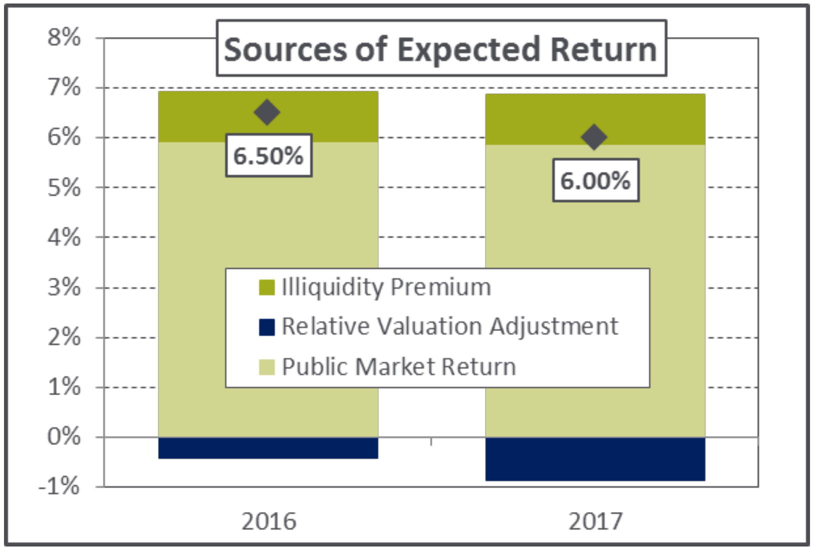
Assumption Development – Real Estate and REITs



Sources: NCREIF, US Department of Treasury



Source: NAREIT, Bloomberg
FFO: Funds From Operations



Core real estate expected return has decreased due to above average valuations and lower income yields

Despite a lower return assumption, real estate remains an important asset allocation tool for diversification and correlation benefits

Real estate assumption reflects US core holdings as represented by the NCREIF ODCE. REIT assumption represented by the FTSE NAREIT Index. Public market equivalent defined as 100% REITs with embedded leverage adjustment (21% for ODCE vs. 41% for NAREIT)

2017 30-Year Return Forecasts

Geometric Expected Return			
Asset Class	**2016**	**2017**	**2017-2016**
Cash	3.00%	3.00%	
US Treasuries (10 Yr)	3.25%	3.50%	0.25%
Core Bonds*	3.89%	4.00%	0.11%
TIPS	4.00%	3.75%	
High-Yield Bonds	5.75%	5.75%	
Bank Loans	6.00%	6.00%	
Absolute Return Fixed Income*	4.41%	4.51%	0.10%
Large Cap Equities	7.50%	7.50%	
Small/Mid Cap Equities	7.75%	7.75%	
Int'l. Equities (Hedged)	8.56%	8.14%	-0.42%
Int'l Equities (Unhedged)	8.00%	7.75%	-0.25%
Emerging Int'l Equities	9.50%	9.50%	
Private Equity	9.50%	9.50%	
Private Debt	8.98%	8.58%	-0.40%
Real Assets	7.37%	7.27%	-0.10%
Real Estate	6.50%	6.50%	
Risk Parity*	5.29%	6.18%	0.89%

* Assumption based on market weighted blend of relative sub-components.

2017 Volatility Forecasts

Volatility			
Asset Class	**2016**	**2017**	**2017-2016**
Cash	1.00%	1.00%	
US Treasuries (10 Yr)	5.50%	5.50%	
Core Bonds*	6.03%	6.03%	
TIPS	6.50%	6.50%	
High-Yield Bonds	13.00%	13.00%	
Bank Loans	9.00%	9.00%	
Absolute Return Fixed Income*	4.81%	4.13%	-0.68%
Large Cap Equities	17.50%	17.50%	
Small/Mid Cap Equities	21.00%	21.00%	
Int'l Equities (Unhedged)	21.00%	21.00%	
Int'l Equities (Hedged)	18.00%	18.00%	-
Emerging Int'l Equities	27.00%	28.00%	1.00%
Private Equity**	23.00%	23.00%	
Private Debt**	8.00%	8.00%	
Real Assets	16.40%	16.92%	0.52%
Real Estate	15.00%	15.00%	
Risk Parity*	10.18%	10.18%	

* Assumption based on market weighted blend of relative sub-components.
**Volatility adjusted to reflect smoothing methodology.

2017 Correlations

Asset Class	Cash	Treas.	IG Corp Credit	MBS	TIPS	HY Bonds	Global Bonds	EMD (Ext)	EMD (Lcl)	Large Cap	Small/ Mid Cap	Int'l Eqty	EM Int'l	Priv Equity	Priv Debt	PRA - Energy	PRA – Infr./ Land	Real Estate (Core)	Bank Loans	Risk Parity
Cash	1.00																			
Treasuries	0.20	1.00																		
IG Corp Credit	0.10	0.65	1.00																	
MBS	0.25	0.90	0.75	1.00																
TIPS	0.35	0.65	0.60	0.70	1.00															
High-Yield Bonds	-0.05	0.20	0.55	0.30	0.20	1.00														
Global Bonds	0.10	0.50	0.50	0.45	0.40	0.10	1.00													
EMD (External)	0.05	0.35	0.65	0.35	0.30	0.60	0.25	1.00												
EMD (Local)	0.05	0.30	0.60	0.25	0.25	0.60	0.30	0.80	1.00											
Large Cap Equities	-0.10	-0.10	0.45	0.10	0.00	0.65	0.00	0.55	0.65	1.00										
Small/Mid Cap Equities	-0.15	-0.15	0.45	0.10	-0.10	0.70	-0.05	0.55	0.60	0.90	1.00									
Int'l Equities	-0.10	0.00	0.30	0.05	-0.05	0.65	0.35	0.60	0.70	0.70	0.60	1.00								
Emerging Int'l Equities	-0.10	-0.10	0.25	-0.10	-0.10	0.70	0.05	0.70	0.80	0.60	0.65	0.70	1.00							
Private Equity	-0.20	-0.15	0.30	0.10	-0.10	0.60	-0.15	0.35	0.40	0.70	0.75	0.60	0.45	1.00						
Private Debt	0.00	-0.35	0.15	-0.15	-0.10	0.65	-0.10	0.50	0.60	0.60	0.65	0.75	0.80	0.65	1.00					
Private Real Assets Energy/Metals	-0.05	-0.20	0.20	-0.05	-0.05	0.50	-0.10	0.40	0.40	0.65	0.70	0.55	0.50	0.85	0.65	1.00				
Private Real Assets Infrastructure/Land	0.15	-0.05	0.10	-0.05	0.05	0.40	0.05	0.35	0.40	0.50	0.50	0.45	0.40	0.60	0.50	0.75	1.00			
Real Estate (Core)	0.10	0.10	0.15	0.05	0.10	0.35	0.15	0.25	0.40	0.40	0.40	0.35	0.30	0.50	0.40	0.45	0.70	1.00		
Bank Loans	0.00	-0.35	0.10	-0.20	-0.05	0.65	-0.10	0.25	0.25	0.50	0.55	0.50	0.50	0.55	0.70	0.55	0.35	0.20	1.00	
Risk Parity	0.00	-0.25	0.35	-0.10	0.15	0.60	0.15	0.60	0.70	0.75	0.80	0.80	0.80	0.75	0.80	0.70	0.45	0.20	0.50	1.00

Key Market Themes

Key Market Themes

Extended US Economic Cycle

Economic cycles don't die of old age

We believe the US economy is in an extended expansionary cycle despite being eight years removed from the last recession

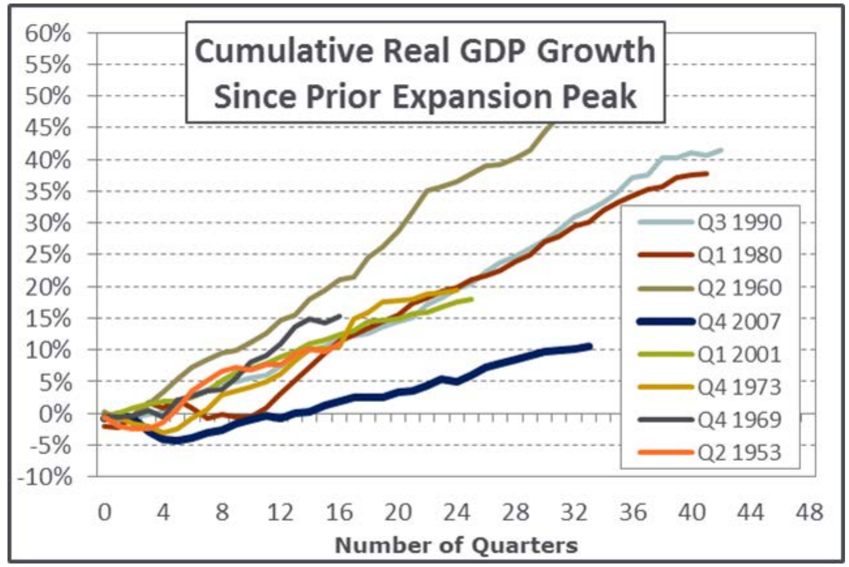
The health of US consumers continue to drive economic growth given relatively low debt levels

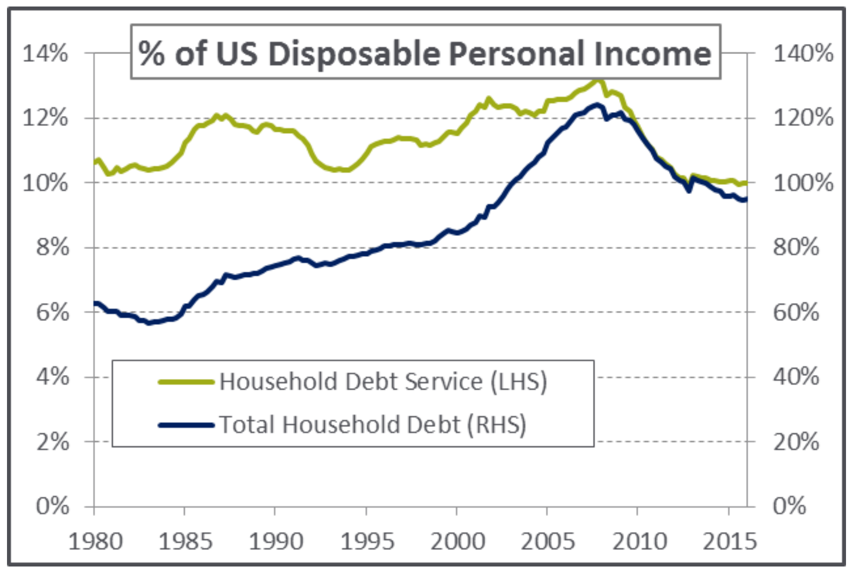
A prolonged US economic expansion can support a continued rally for US equities despite elevated valuation levels

We anticipate inflation will shift marginally higher in the coming years

Improvements in wage growth and the ongoing recovery in housing further support modest upticks in inflation

The strength of the US dollar is likely to restrain inflationary pressures and offset the potential impact of fiscal stimulus in the US





Source: (Top) Federal Reserve Bank of St. Louis
Source: (Bottom) FRED

Key Market Themes

Extended US Economic Cycle

US recession concerns are muted

The US economy is likely to experience slow and steady growth as excess capacity is gradually absorbed by the economy

The labor market recovery has been robust but excess capacity remains as many have yet to return to the workforce

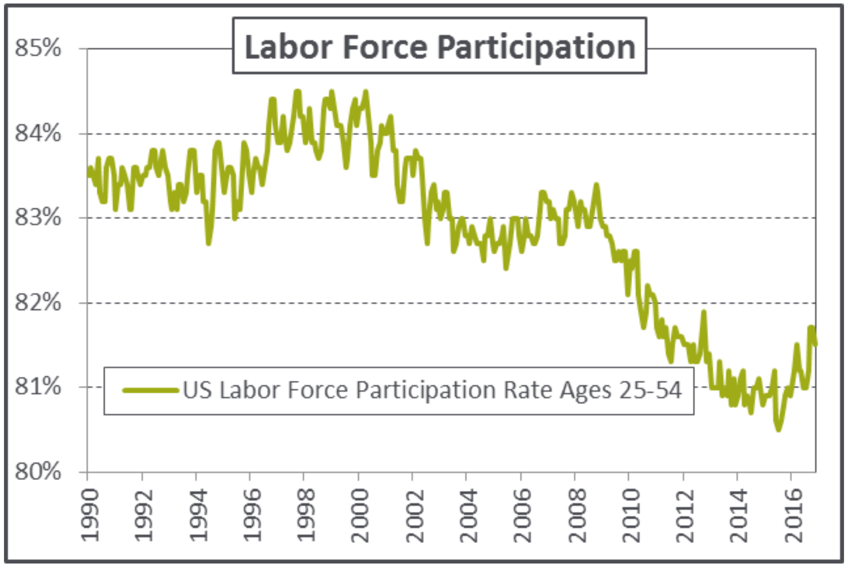
US dollar strength and corporate profitability trends are the primary sources of concern for potential weakness

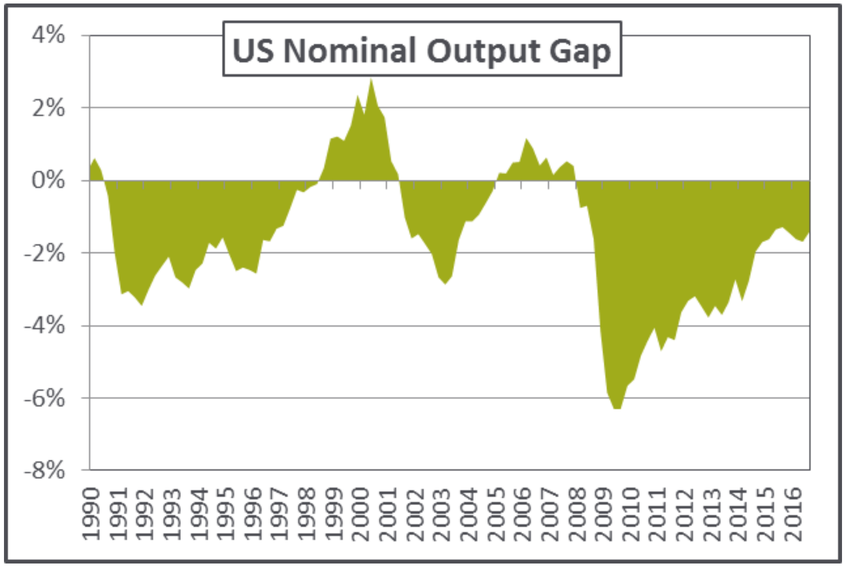
Fiscal stimulus unlikely to push economic growth into a higher gear

Tax cuts and infrastructure spending modestly improve the US growth profile

The potential of higher US growth is likely muted by corresponding dollar strength

US stimulus may benefit non-US developed economies as marginally higher US growth weakens their currencies and improves competitiveness





Source: (Top) FRED
Source: (Bottom) Congressional Budget Office, Bloomberg

Key Market Themes

Federal Reserve Gradualism

The Federal Reserve is expected to slowly increase interest rates

Expected path of Fed policy through 2019 matters more than timing of the next hike

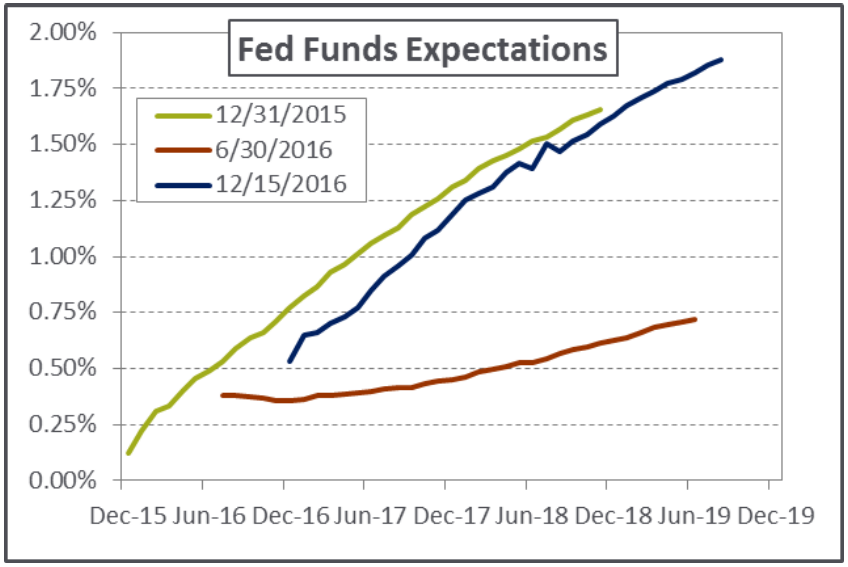
Fed has stated a willingness to let the economy "run hot" and accept some inflation to repair the deflationary effects of the past eight years

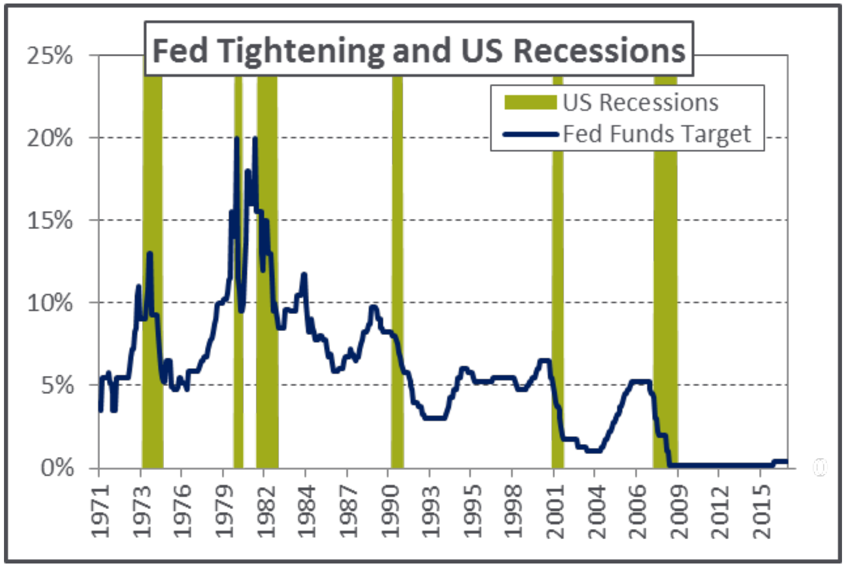
A relatively accommodative Fed is likely to continue, unless there is a dramatic acceleration in inflation

Historically, rapid tightening of Fed policy precedes a US recession

Tighter monetary policy slows inflation by decreasing economic activity

The Fed's monetary policy statements are closely scrutinized and deviations from "lower for longer" can materially impact the market outlook





Source: (Top) Federal Reserve, Bloomberg
Source: (Bottom) Federal Reserve, NBER, Bloomberg

Key Market Themes

Federal Reserve Gradualism

US dollar strength is interconnected with Federal Reserve policy

The US dollar is sensitive to changes in Fed rate expectations and interest rate differentials relative to the rest of the world

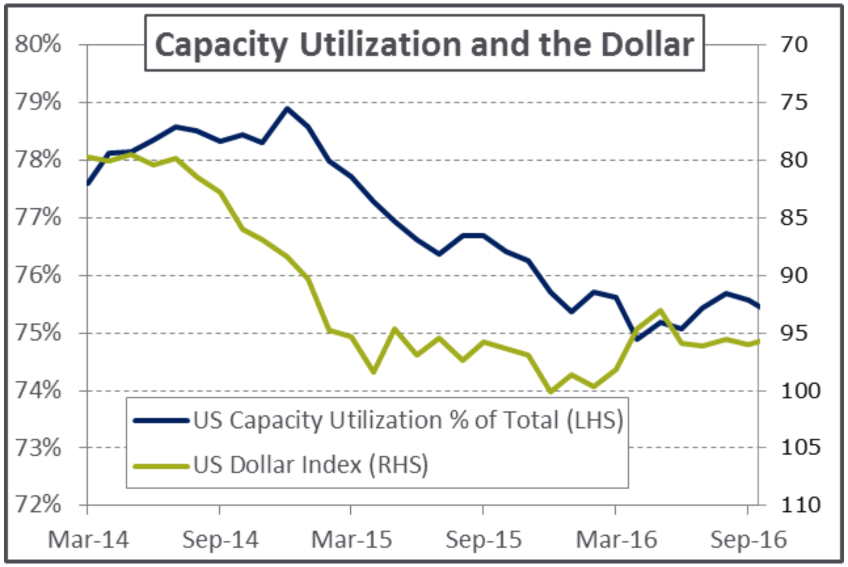
Fed must balance the path of future interest rate increases with the disruptive effects of a strong dollar on global markets

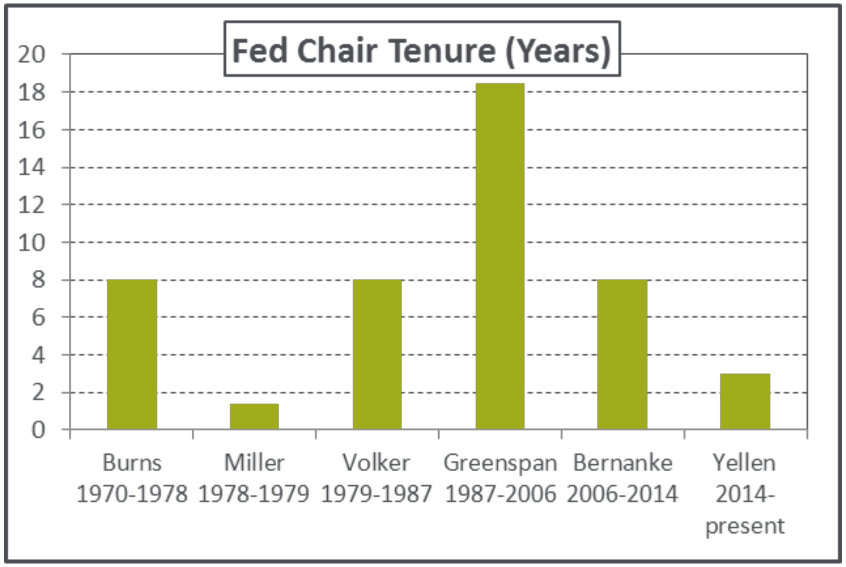
Dollar strength weakens the outlook for US corporate earnings and rapid dollar appreciation likely strains US profit margins

2017 is likely to be a year for greater uncertainty regarding Fed policy

Politics could intersect with Fed policy due to more vocal executive branch and conclusion of Janet Yellen’s term in February 2018

The path of Fed rate hikes in 2017 and beyond is less clear due to the potential impact of fiscal stimulus





Source: (Top) Federal Reserve, Bloomberg
Source: (Bottom) Federal Reserve

Key Market Themes

China Transitions

China is the global growth engine but faces fundamental transitions

Economic evolution: Intrinsic need to evolve from focus on manufacturing – long the driver of growth – to services and innovation

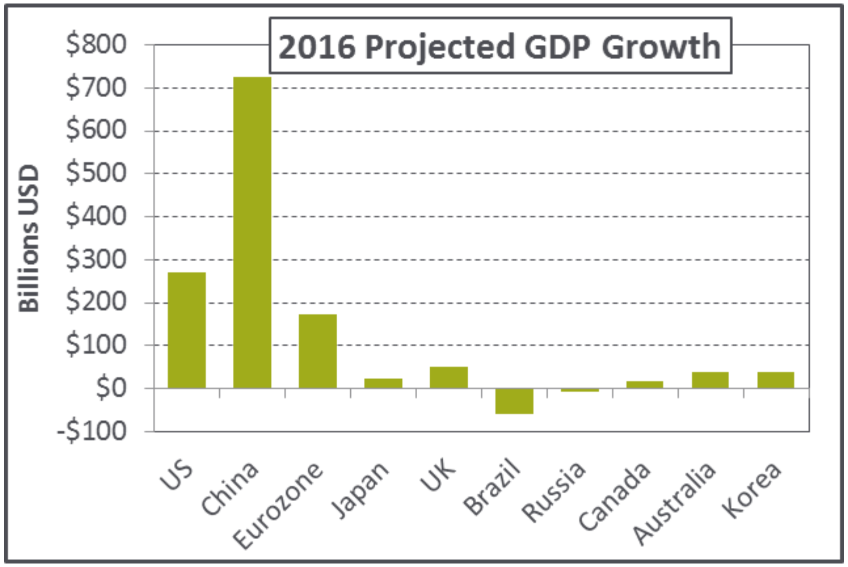
Monetary policy progression: Pressure on the People's Bank of China (PBOC) to balance the status quo and encourage free market reforms

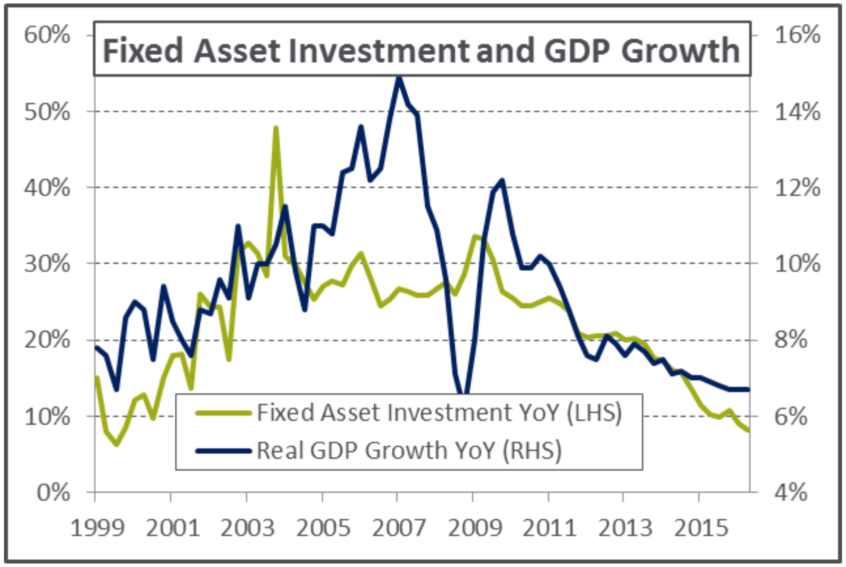
Any disruption to these transitions will have global repercussions due to China's size and role in the global economy

China must manage competing social goals in attempting to sustain growth

Production based economy requires fixed investment to support employment as the rural population moves to urban centers

Future growth in a services based economy requires advancement in productivity, technology, and a more skilled labor force





Source: (Top) IMF, Bloomberg
Source: (Bottom) National Bureau of Statistics of China, Bloomberg

Key Market Themes

China Transitions

The PBOC is tasked with straddling a delicate path as the economy evolves

China maintains control of its currency and monetary policy but would have to make concessions to open its capital account and allow the free movement of capital

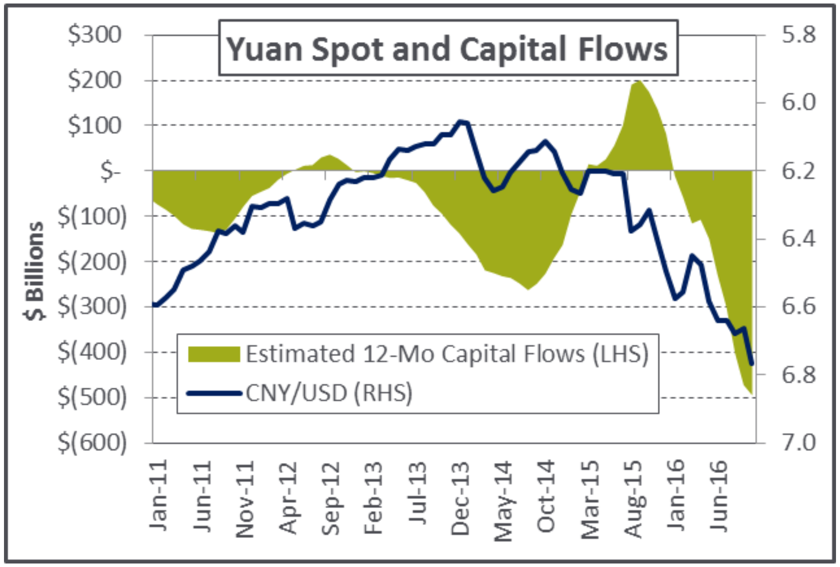
Restrictions on capital markets are slowly being eased, with an eye towards limiting social disruption

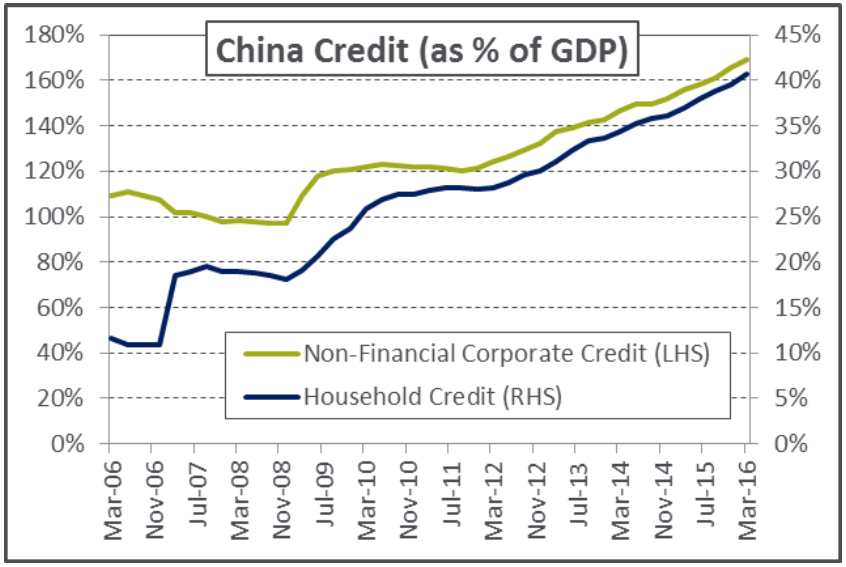
Concerns of a rapid currency devaluation have forced a more managed transition process that likely delays the opening of equity and bond markets to global investors

Managed policy transitions come with significant risks which require balance

Fiscal policy: Consequences of unsustainable credit growth if too accommodative or a hard economic landing if too austere

Monetary policy: Potential for asset price bubbles in real estate and capital markets if policy changes slowly or move rapidly and spur capital flight





Source: (Top) SAFE, Bloomberg
Source: (Bottom) Bank for International Settlements

Key Market Themes

Globalization Backlash

Weak economic growth and uneven wage gains over the last decade have fueled political discontent in the West

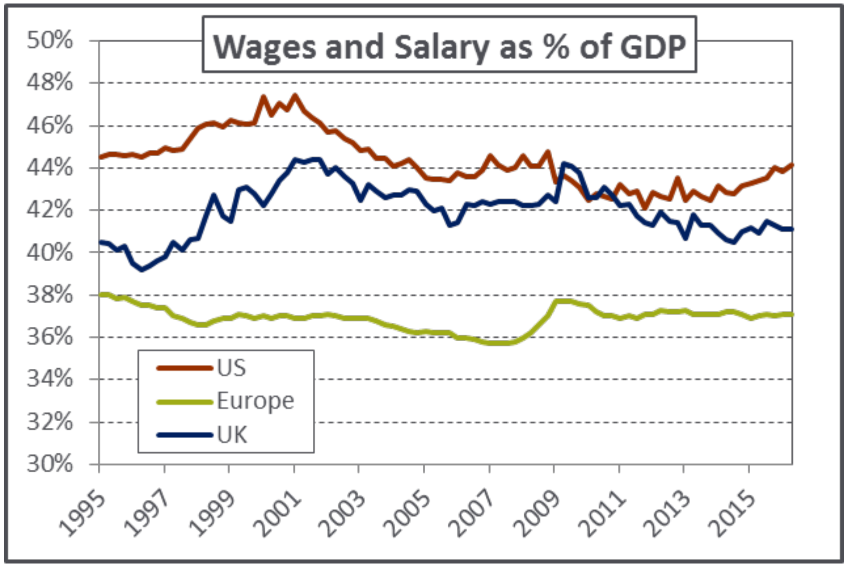
The backlash against globalization does not materially alter the fundamentals of the global capital markets, but does increase economic and market uncertainty

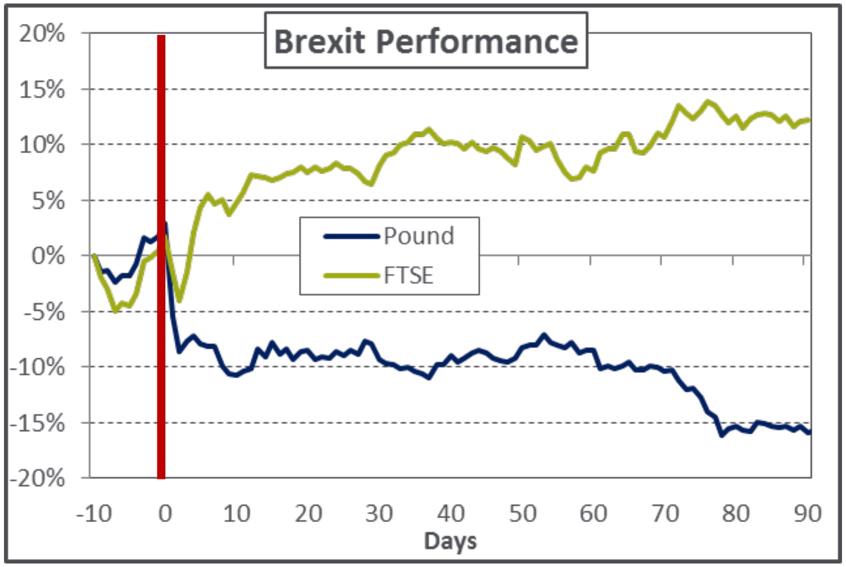
Populist movements destabilize the established political order but are not inevitably bearish for equity markets

Political uncertainty intensifies currency volatility and in cases of depreciation may stimulate local equity markets (e.g. UK)

May bring increased fiscal spending and higher inflation, a welcome benefit for developed market economies

However, a shift away from political orthodoxy heightens low probability political tail-risks such as a US-China trade war or a dissolution of the euro





Source: (Top) Bureau of Economic Analysis, Eurostat, Bloomberg
Source: (Bottom) Bloomberg

Key Market Themes

Globalization Backlash

Have we reached "Peak Trade"?

A secular transition is underway and a shift from free trade policies in the West may reduce long-term economic growth rates

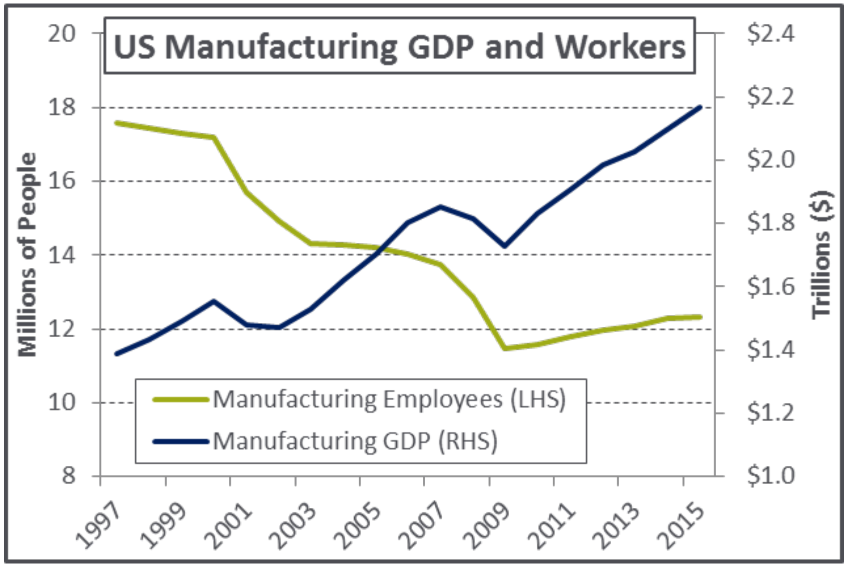
Free trade is blamed but automation is perhaps a greater source of social disruption and job losses

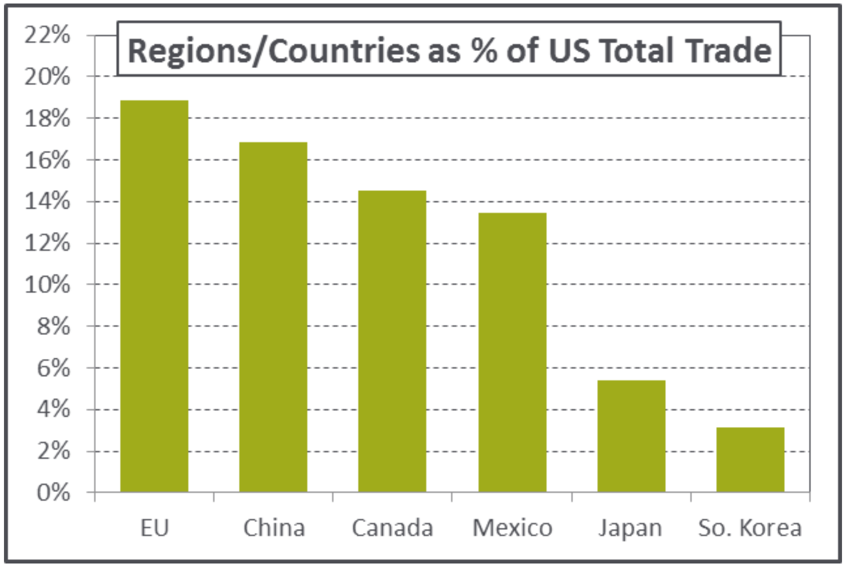
A strong US pivot away from global trade is a tail-risk for the global economy and would likely impact capital markets negatively in the emerging world

For many nations, a turn inward is associated with globalization fatigue

Greater expression of nationalism often translates to increased geopolitical risks as multilateral relationships are reassessed

Anti-establishment political parties reflect the economic unease of voters but are unlikely to initiate the structural economic reforms required in the developed world

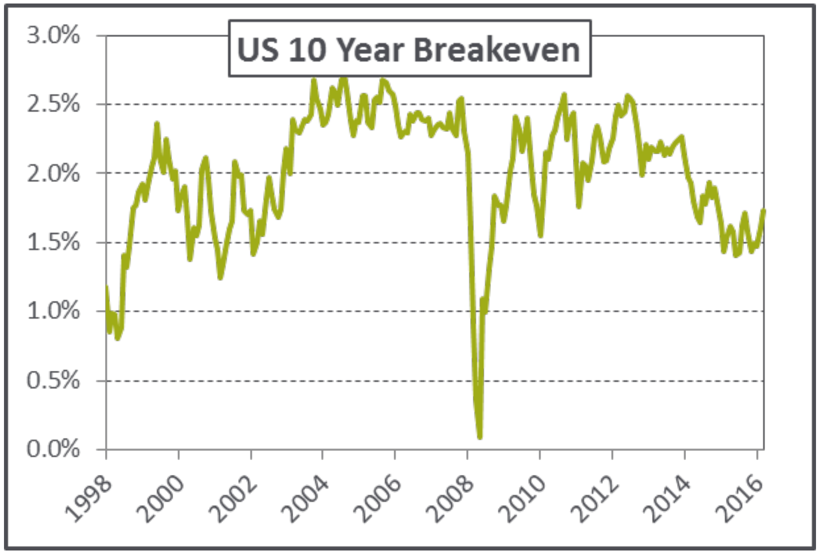




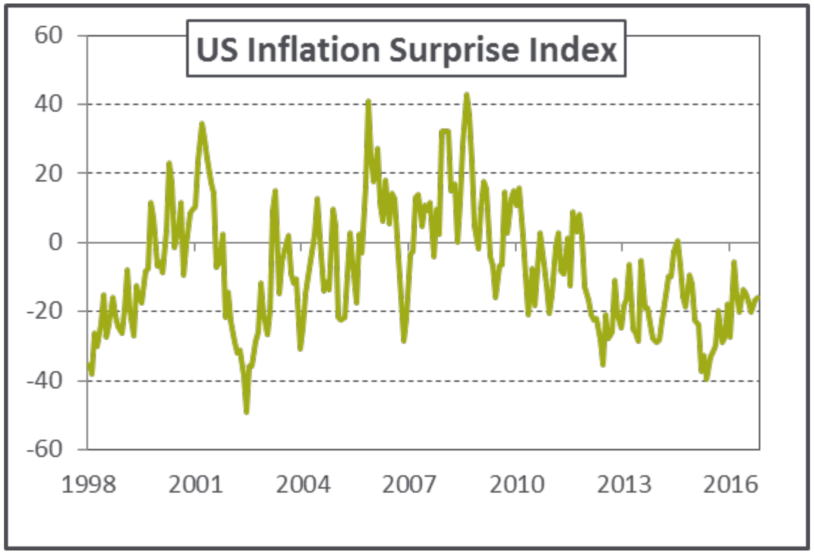
Source: (Top) Bureau of Labor Statistics, Bloomberg
Source: (Bottom) IMF, Bloomberg

Appendix

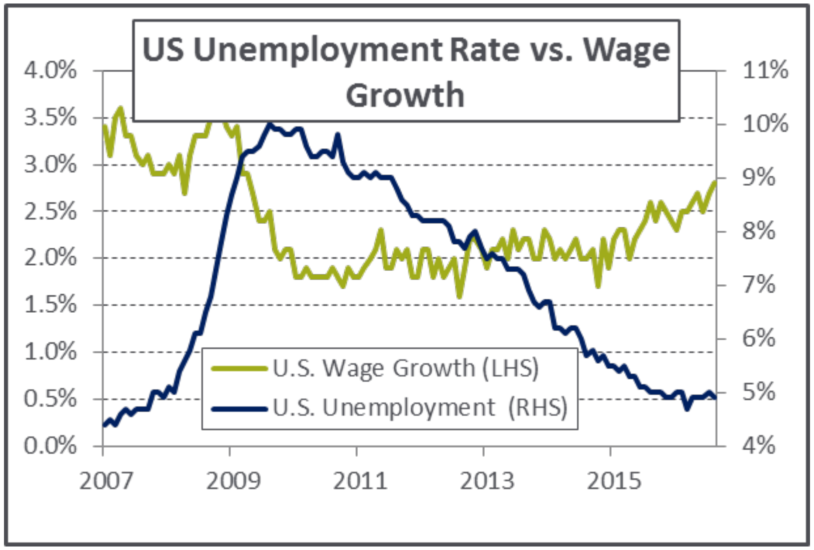
US Markets are Discounting Marginally Higher US Inflation



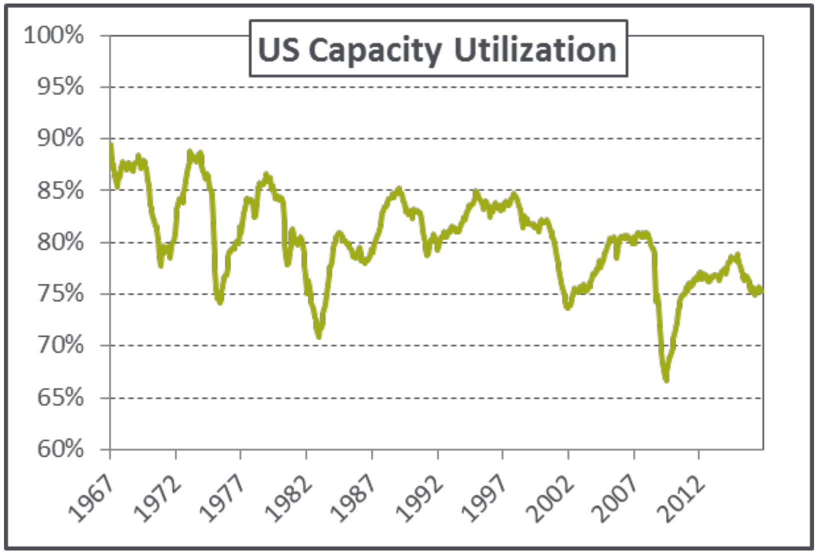
Source: Bloomberg



Source: Citigroup Global Markets, Bloomberg

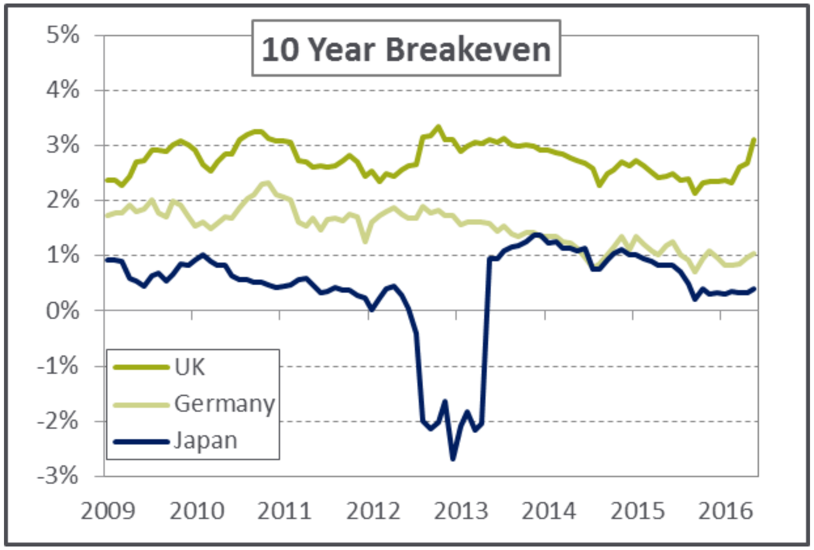


Source: Bureau of Labor Statistics, Bloomberg

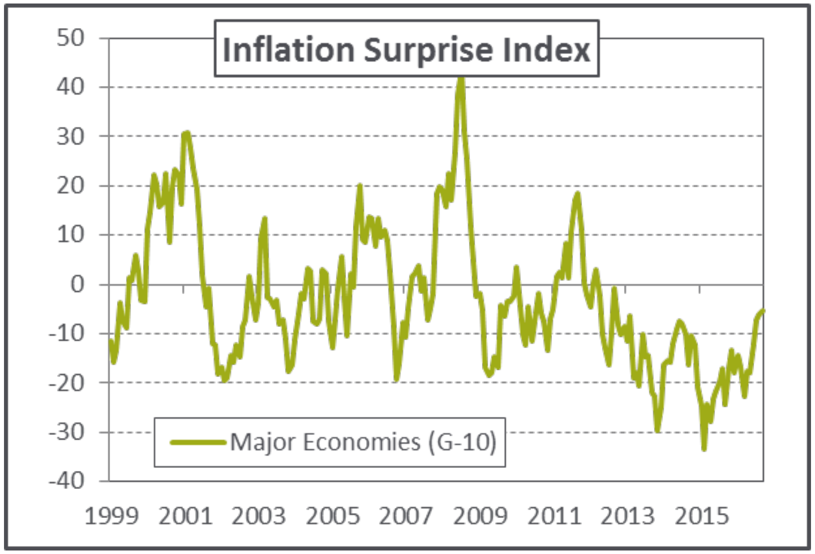


Source: Federal Reserve, Bloomberg

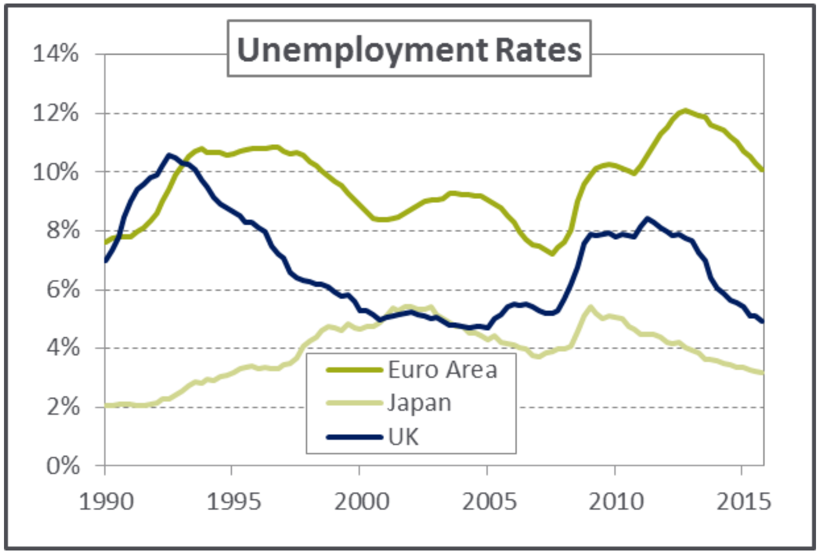
Economic Factors Driving Developed Market Inflation Remain Muted



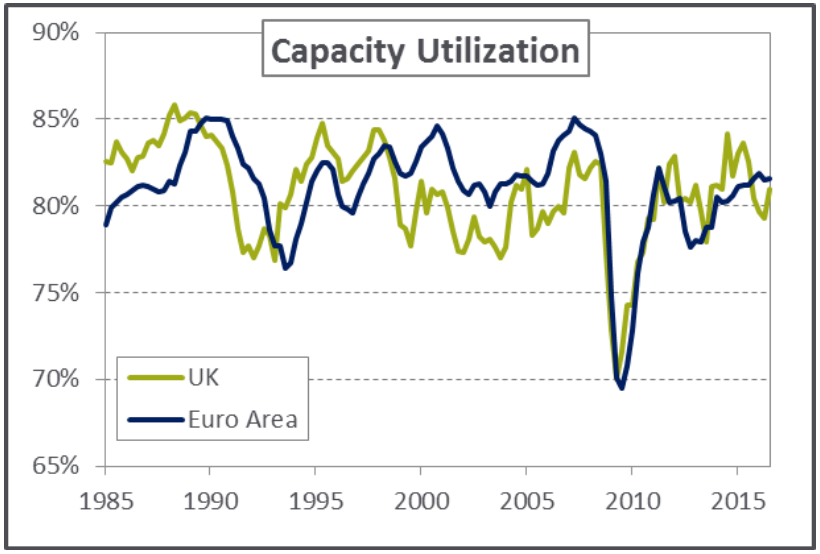
Source: Bloomberg



Source: Citigroup Global Markets, Bloomberg

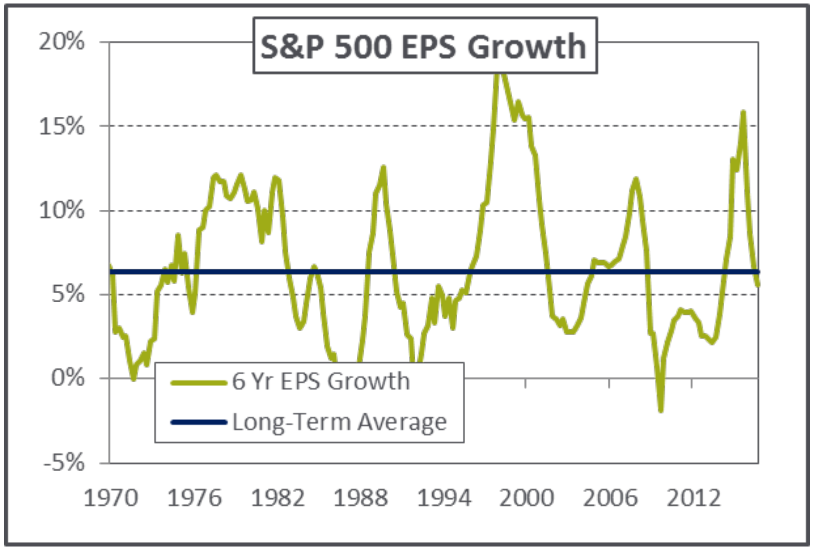


Source: Bloomberg

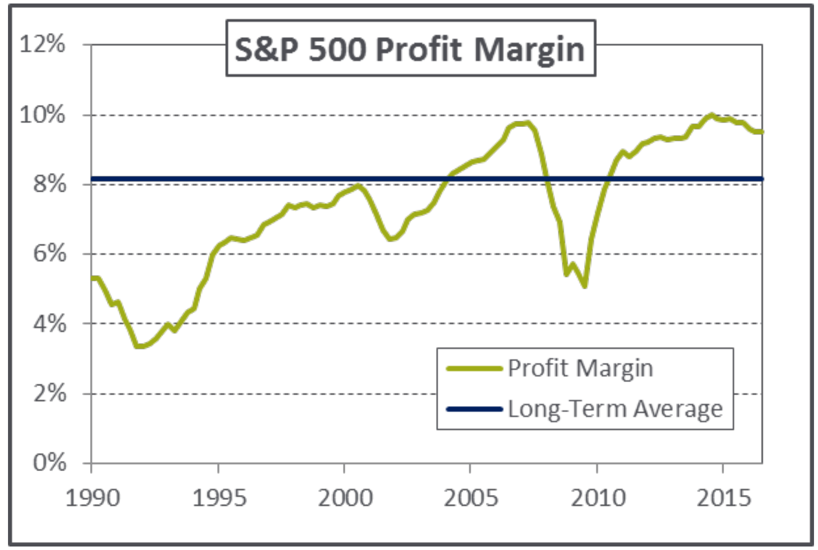


Source: OECD, Bloomberg

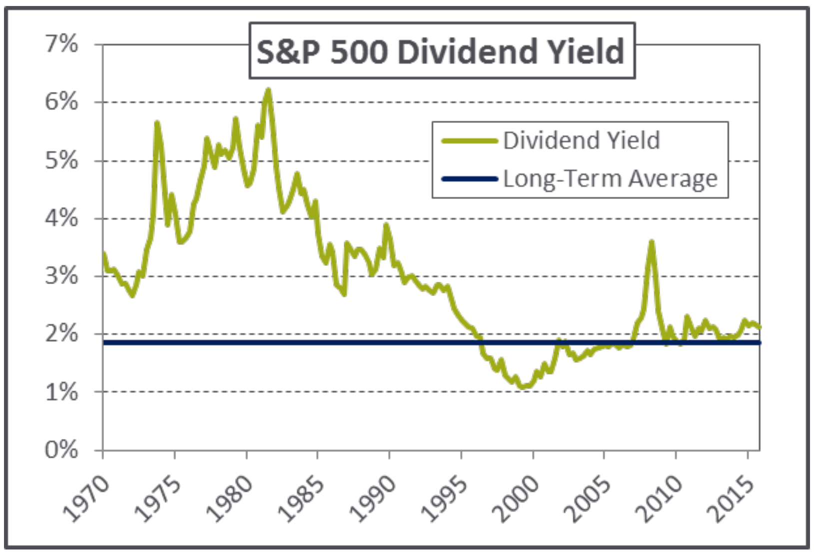
US Large Cap Equity Building Blocks



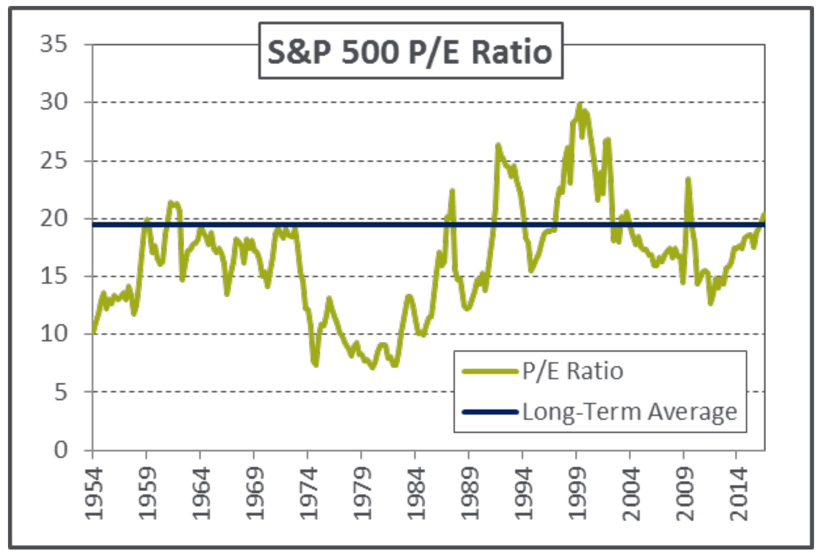
Source: Standard & Poors, NEPC, Bloomberg



Source: Standard & Poors, NEPC, Bloomberg

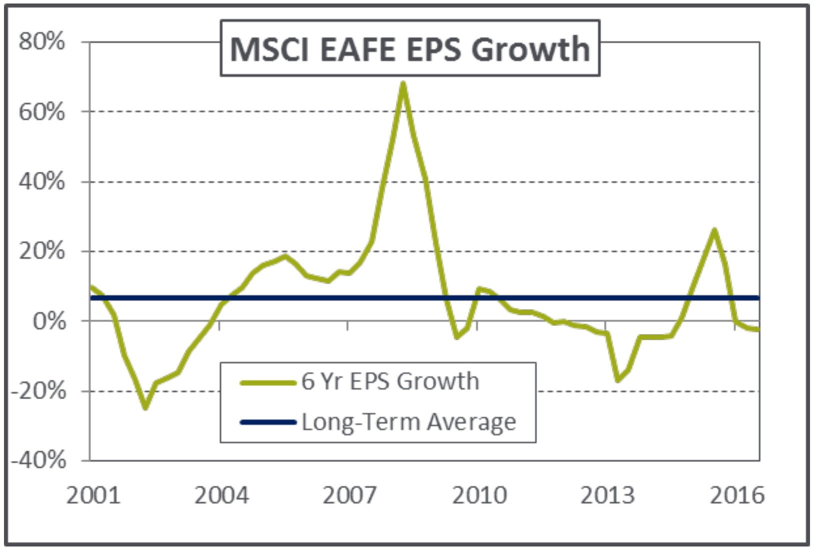


Source: Standard & Poors, NEPC, Bloomberg

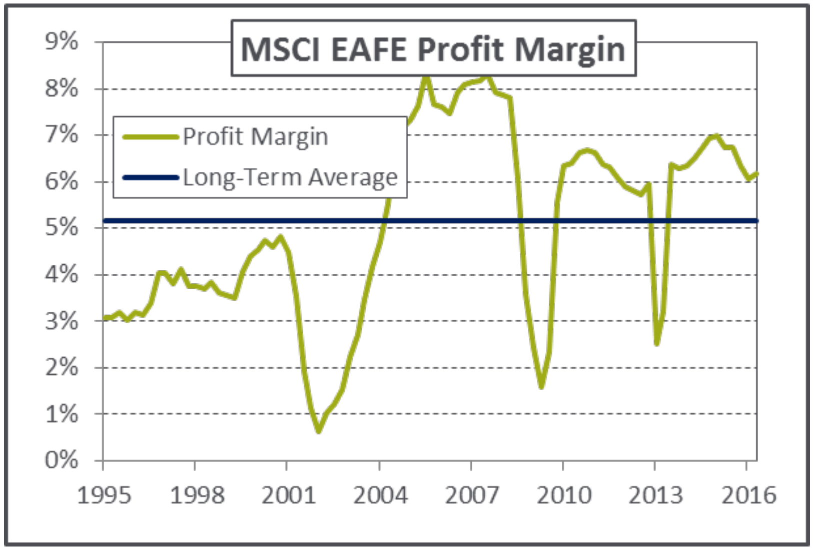


Source: Standard & Poors, NEPC, Bloomberg

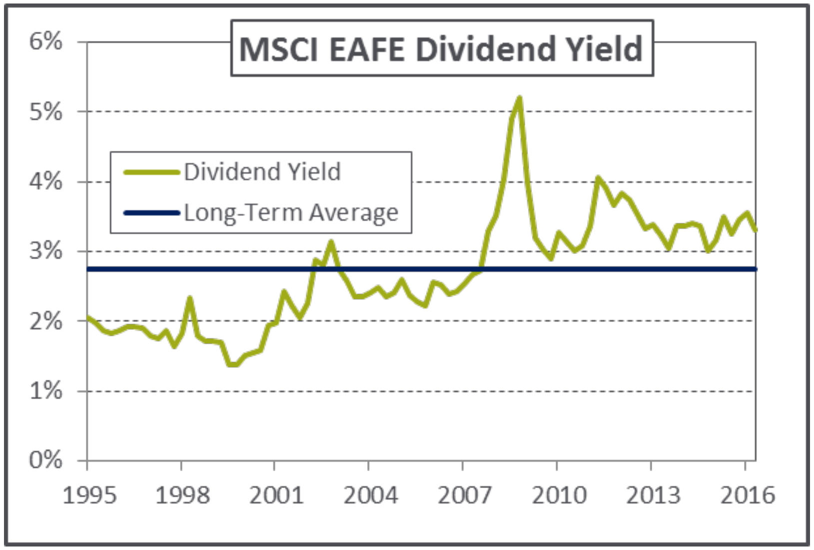
International Developed Equity Building Blocks



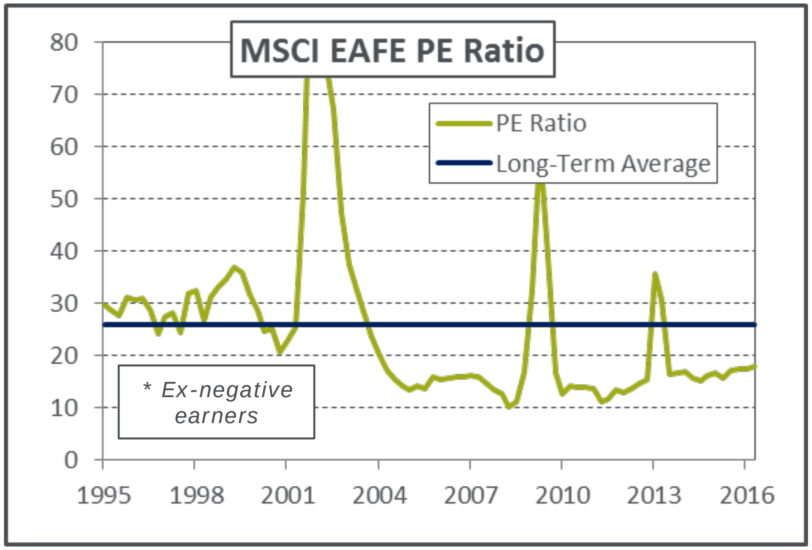
Source: MSCI, NEPC, Bloomberg



Source: MSCI, NEPC, Bloomberg



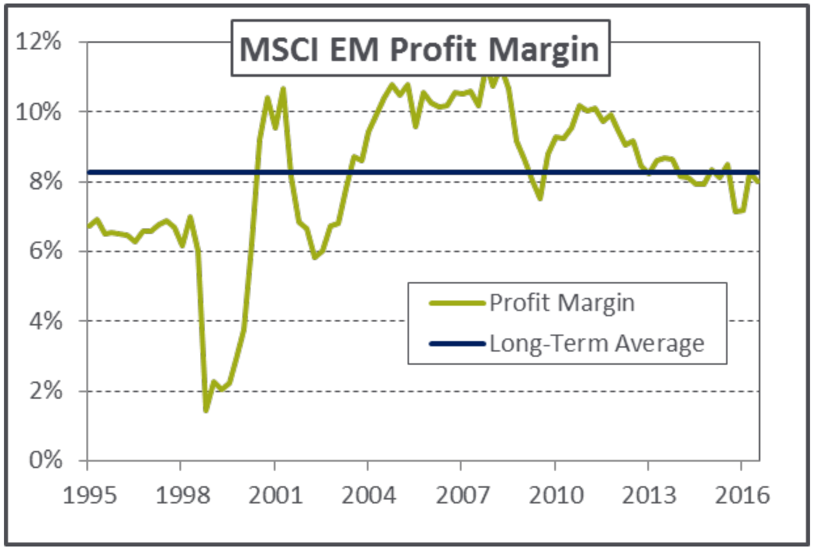
Source: MSCI, NEPC, Bloomberg



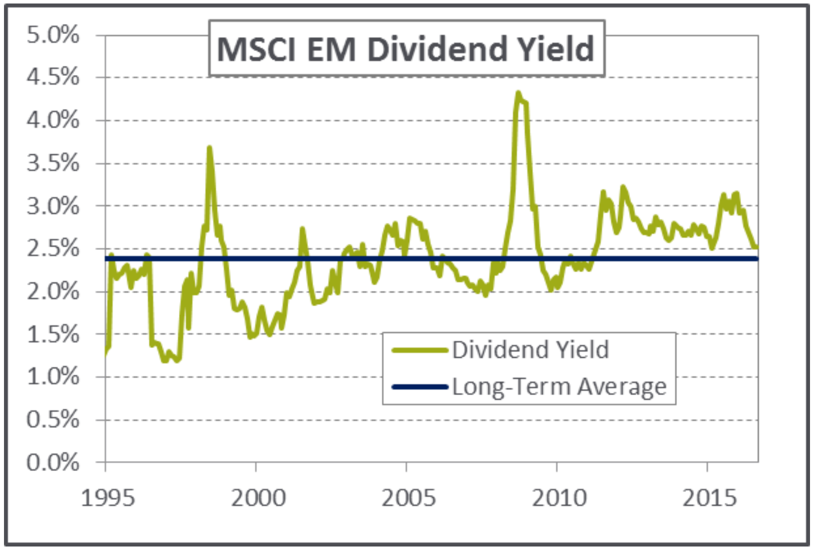
Source: MSCI, NEPC, Bloomberg

Emerging Equity Building Blocks

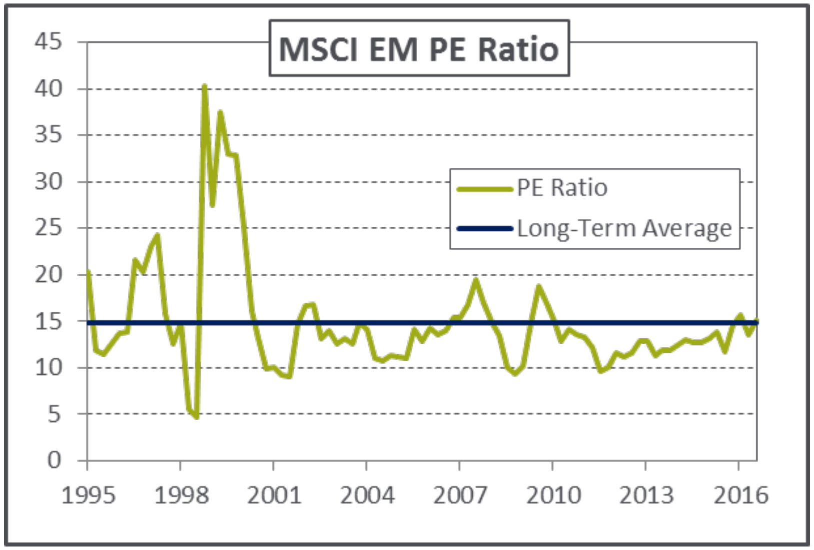
Source: Bloomberg



Source: MSCI, NEPC, Bloomberg

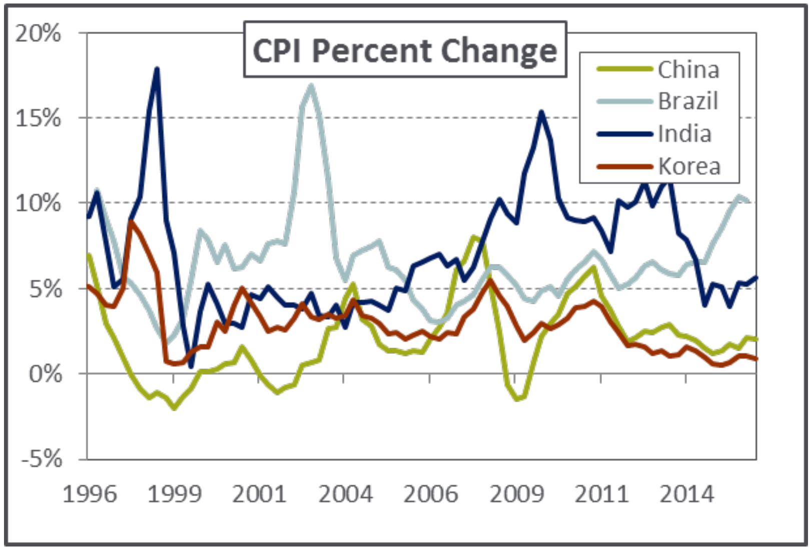


Source: MSCI, NEPC, Bloomberg
* Long-term average uses 10 years of data

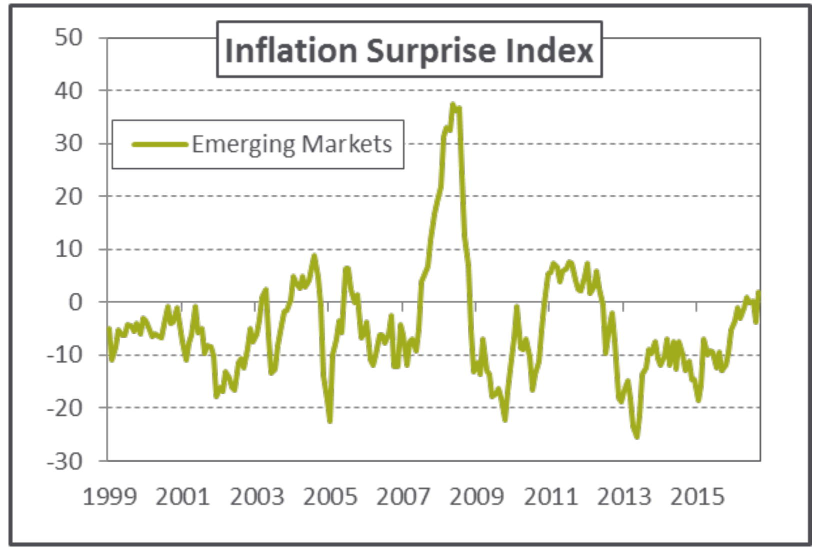


Source: MSCI, NEPC, Bloomberg

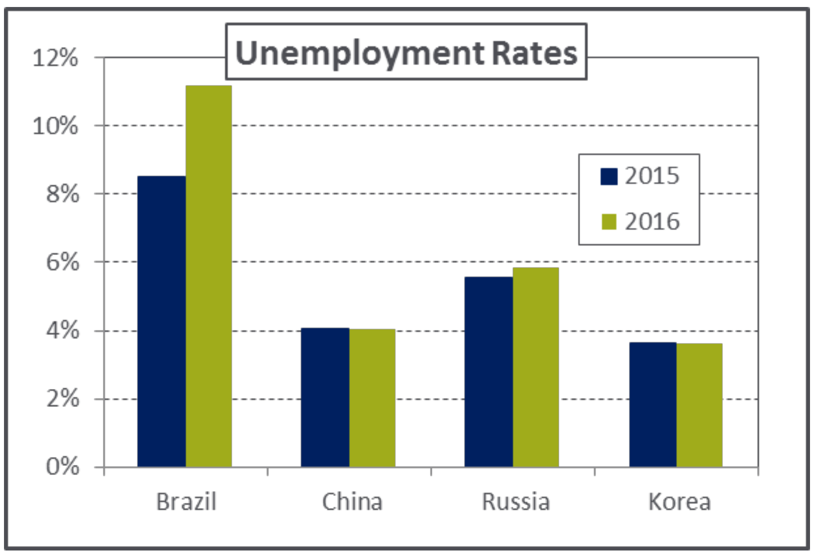
Emerging Market Inflation is Influenced by Country and Regional Dynamics



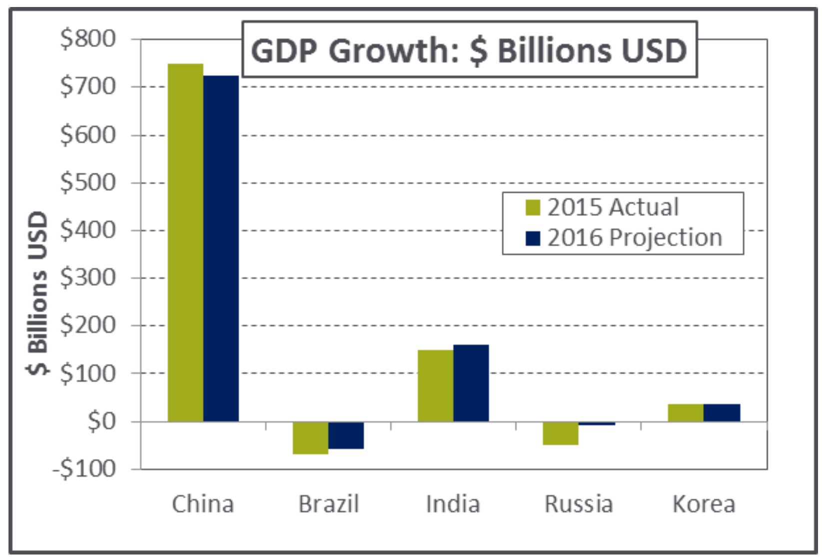
Source: IMF, Bloomberg



Source: Citigroup, Bloomberg

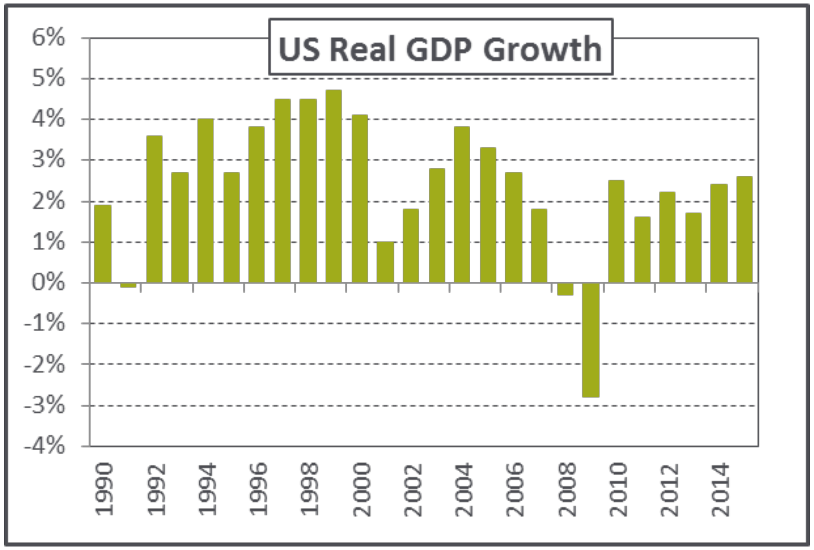


Source: IMF

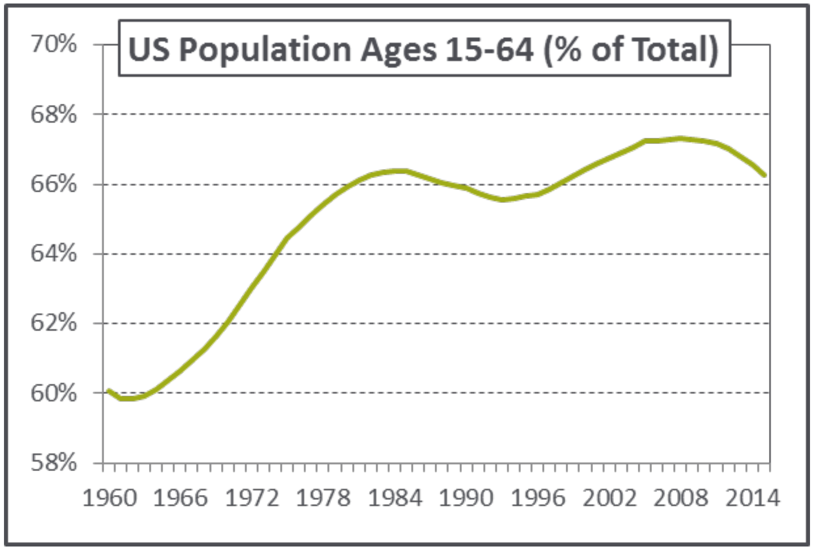


Source: The World Bank, Bloomberg

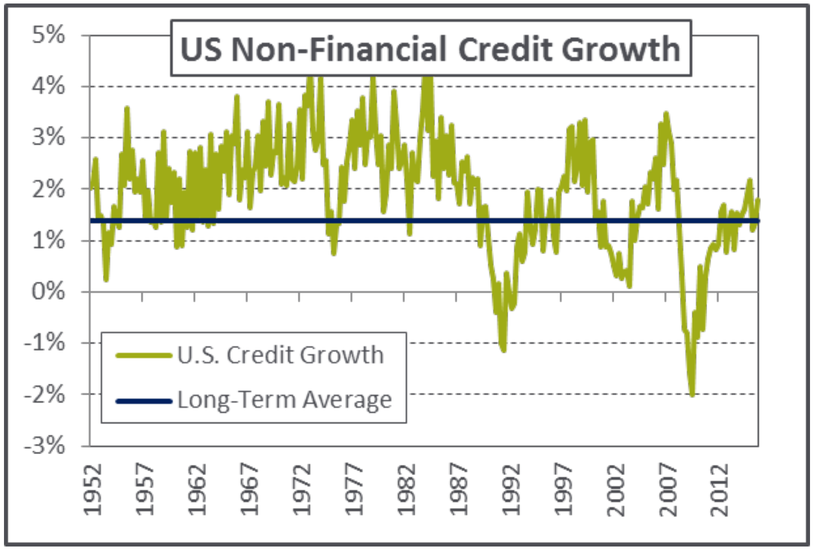
US Growth Remains Subdued Relative to Prior Economic Expansions



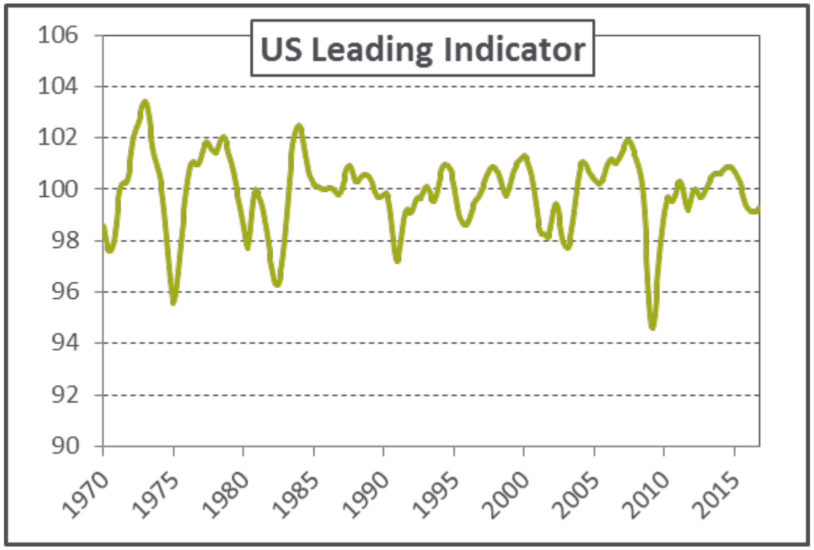
Source: Bloomberg



Source: The World Bank

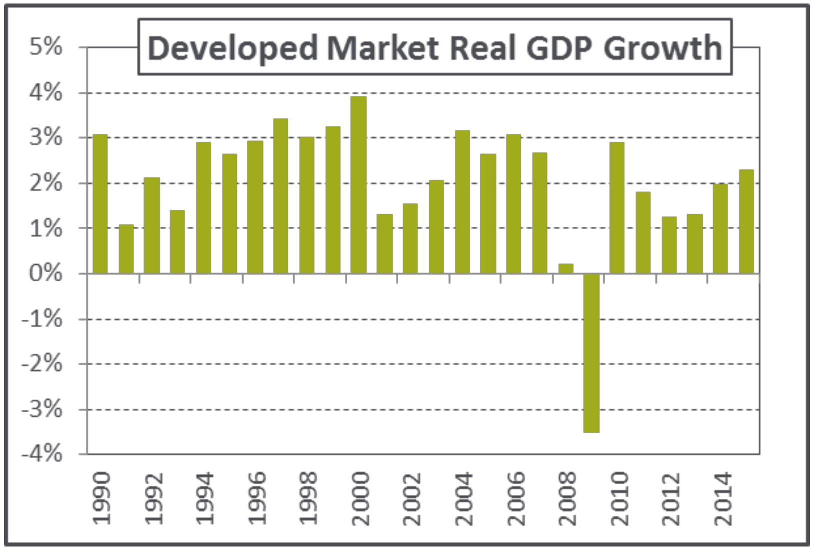


Source: Bank of International Settlements

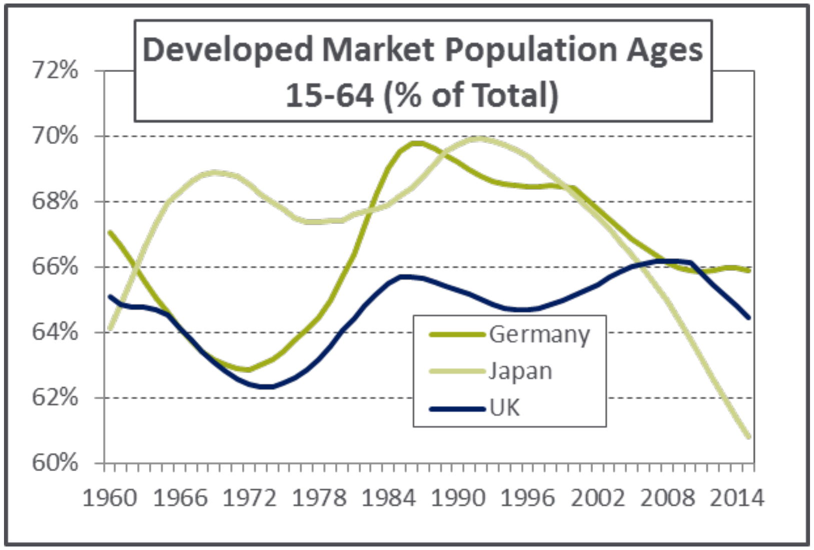


Source: OECD, Bloomberg

Developed Market Growth Rates are Improving



Source: OECD, Bloomberg



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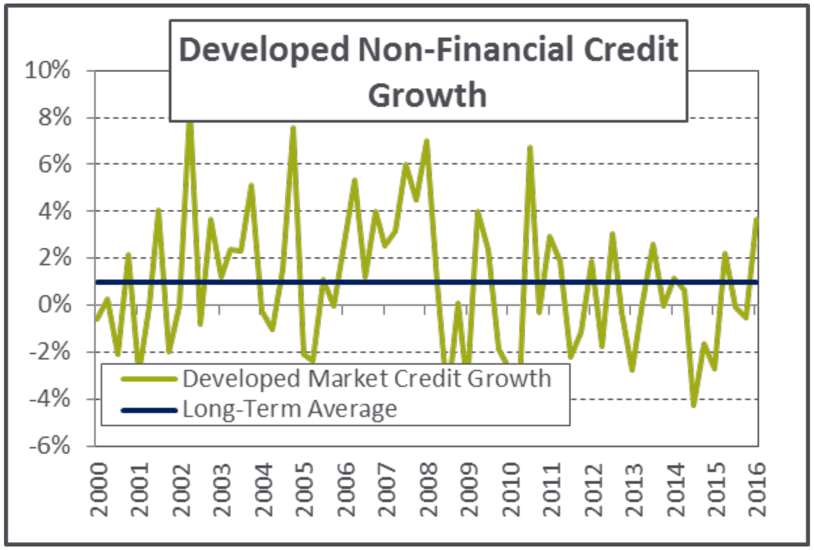
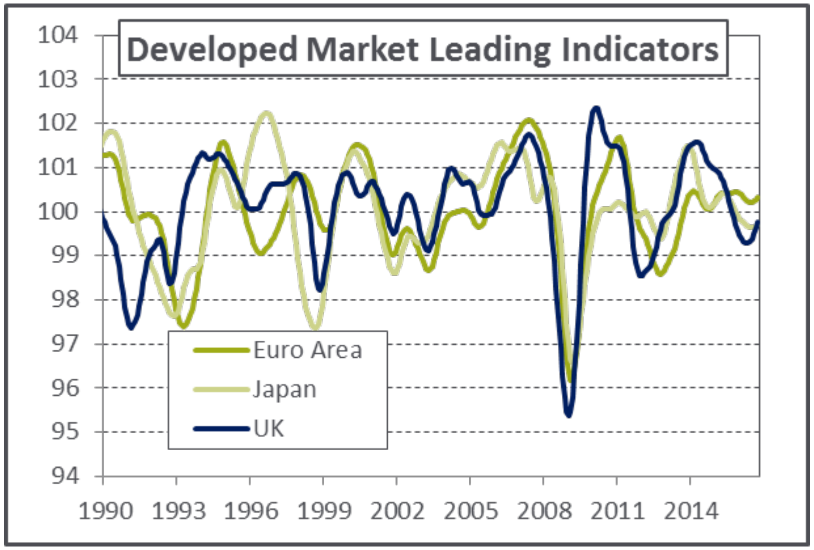
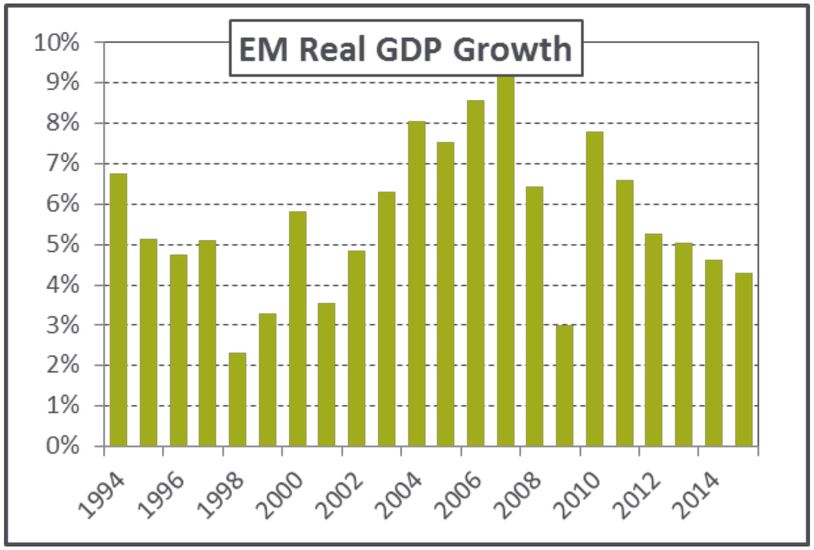


Source: Bank of International Settlements

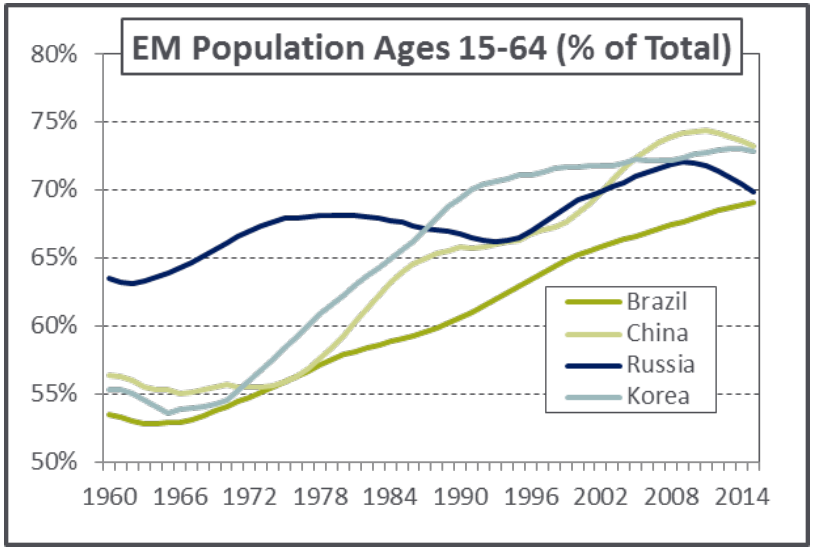


Source: OECD, Bloomberg

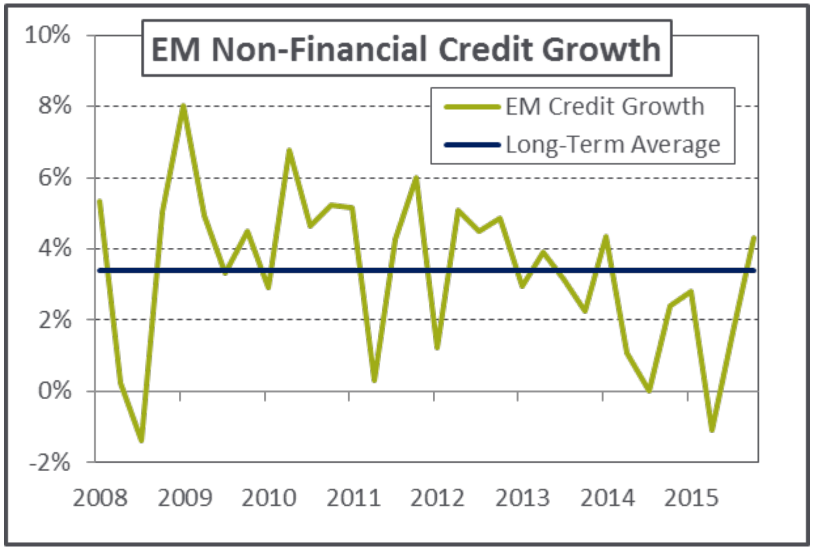
Emerging Market Growth Relative to Developed Markets is Expanding



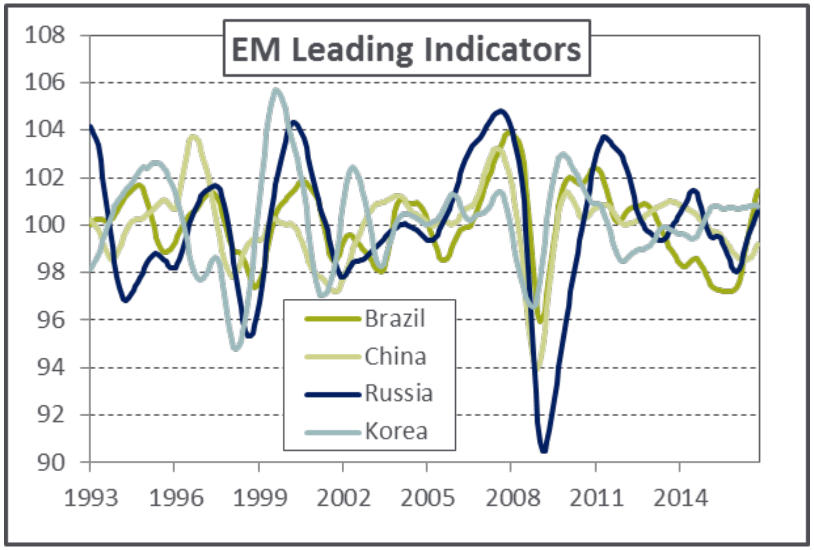
Source: Bloomberg



Source: The World Bank



Source: Bank of International Settlements



Source: OECD, Bloomberg

Information Disclaimer

- **Past performance is no guarantee of future results.**
- **The goal of this report is to provide a basis for substantiating asset allocation recommendations. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.**
- **Information on market indices was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.**
- **All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.**
- **This report is provided as a management aid for the client's internal use only. This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.**

Alternative Investment Disclosures

It is important that investors understand the following characteristics of non-traditional investment strategies including hedge funds and private equity:

1. Performance can be volatile and investors could lose all or a substantial portion of their investment
2. Leverage and other speculative practices may increase the risk of loss
3. Past performance may be revised due to the revaluation of investments
4. These investments can be illiquid, and investors may be subject to lock-ups or lengthy redemption terms
5. A secondary market may not be available for all funds, and any sales that occur may take place at a discount to value
6. These funds are not subject to the same regulatory requirements as registered investment vehicles
7. Managers may not be required to provide periodic pricing or valuation information to investors
8. These funds may have complex tax structures and delays in distributing important tax information
9. These funds often charge high fees
10. Investment agreements often give the manager authority to trade in securities, markets or currencies that are not within the manager's realm of expertise or contemplated investment strategy

NEPC, LLC

To: Ventura County Employees' Retirement Association

From: Allan Martin, Partner, and Tony Ferrara, CAIA, Consultant

Date: February 27, 2016

Subject: Investment Policy Revisions

Summary

The CIO and NEPC revised the Investment Policy to bring the document up to date with VCERA's current program. While there were a number of changes that needed to be made, below we summarize the most noteworthy revisions.

Revision	Commentary
Individual investment manager guidelines removed from the Investment Policy document.	For administrative ease of updating, individual investment manager guidelines put into a separate document to be considered at the April 2017 Board meeting.
Adjusting the Plan's long term objectives to be more focused on funded status and risk-adjusted returns as opposed to real rate of return.	VCERA's goals have evolved from just an inflation based return objective to focusing on funding, contributions, and the risk-return profile of the Plan.
Added a description of the portfolio asset allocation rebalancing policy and process.	Reflection of the actual practice.
Condolidated U.S. equity mid-and small- cap sub asset class descriptions to a SMID sub asset class.	Updates the current portfolio structure.
Absolute Return Fixed Income guidelines added and Global Fixed Income guidelines removed.	Updates the current asset classdescription, adding guidelines for unconstrained fixed income, and eliminating guidelines for global bonds.
Restated the investment manager watch status process language.	Clarifies the language, streamlining the investment manager watch status process.
Revised proxy voting policy and process description.	Updates and streamlines the proxy voting and reporting process.
Clarifying responsibilities of the Board and staff, consultant, custodian, and investment managers.	These were updated to be consistent with the current, respective responsibilities of each.
Revising the asset allocation, benchmarks, and ranges.	Reflects Board adopted asset allocation target and range changes, and includes proposed asset class benchmark revisions.

Investment Policy ~~Manual~~

Ventura County Employees' Retirement Association
February 2017

Ventura County Employees' Retirement Association

INVESTMENT POLICY~~, PROCEDURES, OBJECTIVES AND GUIDELINES~~
~~FOR~~
VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION ~~COUNTY OF VENTURA~~

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I. INTRODUCTION

This document sets forth the framework for the management and oversight of the investment assets of the Ventura County Employees' Retirement Association ("VCERA"). The purpose of the Investment Policy is to assist the Board of Retirement (the "Board") in effectively supervising and monitoring the investments of VCERA. Specifically, it will address the following issues:

- The general goals of the investment program.~~activity~~
- The policies and procedures for the management of the investments.
- ~~Specific asset allocations, rebalancing procedures and I~~investment guidelines for asset classes, specific asset allocations, and portfolio rebalancing.
- Performance objectives and risk tolerance.
- Responsibilities of VCERA's Board and staff, Investment Consultant, custodian, and investment managers.~~Responsible parties~~

The Board establishes this investment policy in accordance with the provisions of the County Employees' Retirement Law of 1937 (Government code Sections 31450 et. seq.). VCERA is considered a separate entity and is administered by a Board consisting of nine members, plus three~~two~~ alternates. VCERA's Board and its officers and employees shall discharge their duties as provided for in Government Code Section 31595:

- Solely in the interest of, and for the exclusive purpose of providing benefits to, participants and their beneficiaries, minimizing employer and employee contributions thereto, and defraying reasonable expenses of administering the system.
- With the care, skill, prudence and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character with like aims.
- Shall diversify the investments of the system so as to ~~minimize the risk of loss and to maximize the rate of return, unless under the circumstances it is clearly prudent not to do so.~~ In addition to the

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statutory requirements, the Board shall seek to minimize employee contributions and maximize risk-adjusted returns.

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- This policy statement is designed to allow for sufficient flexibility in the management oversight process to capture investment opportunities as they may occur, while setting forth reasonable parameters to ensure prudence and care are exercised in the execution of the investment program.

With respect to investments, asset allocation target and ranges, the role of the Board is to ensure VCERA's fiduciary responsibilities are fulfilled, that the investment structure, operation and results of the individual portfolios are consistent with investment objectives established for them, and to ensure competence, integrity and continuity in the management of the assets.

~~II.~~ INVESTMENT POLIC~~Y~~IES
II.

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The following policies, consistent with the above described purpose and state government citations, are adopted:

- The overall goal of VCERA's investment program~~assets~~ is to provide plan participants with retirement, disability, and death and survivor benefits as provided for under the County Employees' Retirement Law of 1937.

- VCERA's assets will be managed on a total return basis. While VCERA recognizes the importance of the preservation of capital, it also adheres to the principle that varying degrees of investment risk are expected to be~~generally~~ rewarded with compensating returns.

- VCERA's Investment Policy has been designed to earn the highest possible long-term rate of return consistent with a level of risk that the Board believes is appropriate given the plan's assets and liabilities, funded status and capital markets outlook, and ~~exceeding a 4% real rate of return~~to generate a real rate of return exceeding 4%. ~~produce a total portfolio, long term (as defined by rolling 10-year periods) real (above inflation) return of 4%.~~ Consequently, prudent risk-taking is warranted within the context of overall portfolio diversification to meet this goal. Investment strategies are considered primarily in light of their impact on total plan assets subject to any restrictions set forth in the County Employees' Retirement Law of 1937, and shall at all times comply with applicable state and federal regulations.

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- All transactions undertaken will be for the sole benefit of VCERA's participants and their beneficiaries and for the exclusive purpose of providing benefits to them; and~~,~~ minimizing employer and employee contributions to the System, and defraying reasonable administrative expenses of the System.

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- VCERA has a long-term investment horizon generally described as a time period greater than 10 years, and utilizes an asset allocation that encompasses a strategic, long-term~~run~~ perspective of capital markets. It is recognized that a strategic long-term~~run~~ asset allocation plan implemented in a consistent and disciplined manner will be the major determinant of ~~the Association~~VCERA's investment performance.

- Investment actions are expected to comply with "prudent person" standards which recognize~~d~~ the importance of diversification of investment risks and opportunities.~~.~~

- Invest funds in accordance with asset allocation targets established by the Board.

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III. INVESTMENT OBJECTIVES OF THE TOTAL FUND

- ~~Produce a total portfolio,~~ Earn the highest possible long-term rate of return consistent with a level of risk that the Board believes is appropriate given the plan's assets and liabilities, funded status and capital markets outlook, and to generate a real rate of return exceeding 4%~~exceeding a 4% real rate of return.~~ ~~long-term (as defined by rolling 10-year periods) real (above inflation) return of 4%;~~

- Exceed an asset allocation policy weighted index return. ~~of its asset allocation policy and component benchmarks over rolling five year periods.~~

IV. ASSET ALLOCATION

This policy is adopted to provide for diversification of assets in an effort to maximize the investment return of ~~the~~ VCERA~~Association~~ consistent with market conditions and the ~~plan's~~Board's risk tolerance. Asset allocation modeling identifies asset classes ~~the Association~~VCERA will utilize and the percentage each class represents in the total fund. Due to the fluctuation of market values, positioning within a specified range is acceptable and constitutes compliance with the policy. It is anticipated that an extended period of time may be required to fully implement the asset allocation policy, and that periodic revisions will occur. VCERA staff and ~~independent consultant~~Investment Consultant will monitor and assess the actual asset allocation versus policy, and will report~~evaluate~~ any variation considered significant.

The portfolio is continually rebalanced using- incoming cash flows to add exposure to under weighted asset classes, and taking outgoing cash from over weighted asset classes by VCERA's overlay investment manager. If Board adopted asset class limits are breached, an asset class threshold range rebalancing is evaluated and executed by the CIO in consultation with the overlay manager and the ~~consultant~~Investment Consultant.

Cash balances will be equitized by VCERA's overlay manager. Sufficient liquidity will be ensured for payment of VCERA's obligations such as the retirement roll, capital calls, investment manager fees, etc., and excess cash will be deployed to VCERA's investment managers.

The policies and procedures of VCERA's investment program are designed to maximize the probability that the investment goals will be fulfilled. Investment policies will evolve as fund conditions change and as investment conditions warrant.

VCERA adopts and implements an asset allocation policy that is predicated on a number of factors, including:

- The actuarially projected liabilities and benefit payments and the cost to both covered employees and employers.~~;~~

- Historical and expected long-term capital market risk and return behavior.~~;~~

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- The perception of future economic conditions, including inflation and interest rate levels.~~;~~
- The risk tolerance of the Board.~~; and~~
- The relationship between current and projected assets of the Plan and its actuarial requirements.

VCERA's ~~current~~asset class target ~~asset~~ allocation (including ranges and benchmarks) is attached as Appendix A~~ to this Policy Statement~~.

The Board will implement the asset allocation policy through the use of specialized investment managers, who will be given full discretion to invest the assets of their portfolios subject to investment guidelines~~ incorporated into the investment management agreement executed with the Association~~. When appropriate, passively managed~~ and~~ index funds~~managers~~, and exchange traded funds (ETFs) will~~ also~~ be utilized.

The Board, in recognition of the benefits of commingled funds as investment vehicles (e.g., the ~~ability~~ potential to diversify more extensively than in a direct investment account and ~~the~~ achieve lower costs ~~that can be associated with these funds~~) may from time to time elect to invest in such funds. The Board recognizes that the practices of such funds will be in accordance with the funds' offering documents. Any significant changes in the offering documents of a fund in which the Board has placed a~~n~~s investment will be promptly delivered to the Board.

~~**Tactical Rebalancing Policy (implementing Hewitt EnnisKnupp's (HEK's) Medium Term Views (MTVs)**~~

V. ROLE OF ASSET CLASSES

VCERA will utilize the following portfolio components to fulfill the asset allocation targets and total fund performance goals established elsewhere in this document.

Equities – VCERA anticipates that total returns to equities will be higher than total returns to fixed income securities over the long-run, but may be subject to greater volatility as well. There are several components of ~~the Association~~VCERA's equity holdings:

U.S. Equities~~Stocks~~ –

- **Large Cap~~Core~~ Equities~~Stocks~~** – This component~~portfolio~~ will provide broadly diversified, core exposure to the U.S. equity market, primarily through holdings in large capitalization companies.
- **SMid (Small and Mid) Cap Equities** – SMid Cap Stocks are generally those of companies with a market capitalization up to $10 billion.

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~~**Small Stocks** – Small cap stocks are generally those with market capitalizations below $1.0 billion.~~ Although more volatile than larger capitalization stocks, SMid~~small~~ cap stocks are generally characterized by faster growth and (historically) higher long-term returns. ~~Low~~Reduced ~~correlation between small caps and large caps leads to portfolio diversification. Small stocks tend to outperform large caps at the onset of economic recoveries, and outperform over time due to the higher risk premium associated with earnings uncertainty.~~

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- **International Equities** – This component~~portfolio~~ provides access to major equity markets outside the U.S. and consequently plays a significant role in diversifying VCERA's equity portfolio. This segment may~~will~~ provide exposure to developed non-U.S. markets, emerging markets, and frontier markets whose growth and returns are not necessarily synchronized with those of the U.S. This core international segment will concentrate on larger companies in established non-U.S. equity markets. Limited discretion will be provided to active managers deemed to have an appropriate level of expertise to invest opportunistically in emerging and frontier markets.

- **Global Equities** – A further diversifying feature that allows for ~~investment managers to select~~ securities domiciled both in the domestic and international stock markets. ~~While most global equity managers invest in the larger capitalization offerings, limited discretion will be placed on the active managers in an effort to allow for a greater level of outperformance.~~ Managers ~~are allowed to~~ invest in U.S. stocks and~~,~~ non-U.S. ~~domiciled~~ stocks.~~, as well as emerging market securities.~~

Fixed Income – The primary role of the fixed income portfolio is to provide a more stable investment return and to generate income while diversifying ~~the Association~~VCERA's investment assets while ~~protecting~~ to hedge against significant drawdowns in the equity markets.~~–~~ The fixed income holdings are comprised of the following:

- **Core Fixed Income~~Bonds~~** – This portfolio will provide core exposure to the U.S. and non-U.S. fixed income markets (maturities from 0~~1~~ to 30 years) such as US~~including~~ Treasury and government agency bonds, corporate debt, mortgages and asset-backed securities. The portfolio will be largely composed of investment grade issues with limited ~~discretion provided to those active managers deemed to have an appropriate level of skill to invest opportunistically~~investment in non-dollar and high yield bonds.

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- **Absolute Return Fixed Income Portfolios -** Due to the historic low interest rates, the Board has a concern that maintaining a duration exposure similar to the Barclays Aggregate index creates the real possibility of significant losses over a long-term rising rate environment. Therefore some of the US and non-US fixed income exposure will be with managers with a more flexible mandate to earn an absolute return with lower down-side risk.

Real Estate – The role of real estate, in general, is to provide a competitive risk adjusted rate of return compared to other asset classes and to provide prudent portfolio diversification consistent with risk and return objectives. This portfolio diversification is due to real estate's low correlation with returns of equity and fixed income. Real Estate also generates income in addition to capital appreciation. Real Estate investments ~~shall consist of the broad range of investment opportunities~~may includ~~ing~~e direct investment in properties, REITs and commingled funds.

Private Equity – The role of private equity, in general, is to provide a superior risk adjusted rate of return compared to other asset classes and to provide prudent portfolio diversification consistent with risk and return objectives. ~~This portfolio diversification is due to private equity's low correlation with returns of equity and fixed income.~~ Private Equity investments are generally long term and illiquid and shall consist of a broad range of investment opportunities and may include investments such as leveraged buyouts, venture capital, growth capital, distressed, ~~investments~~ and mezzanine debt.~~capital.~~

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Liquid Alternatives – The role of liquid alternatives, in general, is to provide a superior risk adjusted rate of return across different economic regimes and to provide prudent portfolio diversification consistent with risk and return objectives. This portfolio diversification is due to liquid alternatives low correlation with returns of traditional equity and fixed income. Liquid alternatives ~~initially shall~~ include Master Limited Partnerships ("MLP's") and risk parity strategies.~~, but it is anticipated that additional liquid alternatives that provide similar uncorrelated returns will be added over time.~~

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~~**Performance Benchmarks** – Please refer to the manager-specific guidelines in the appendix for each manager's specific benchmark. The composite benchmarks for the respective asset classes are:~~

- ~~Domestic Equities~~
  ~~Composite – the DJ U.S. Total Stock Market Index~~
- ~~International Equities~~
  ~~Composite – the MSCI All-Country World Ex-US Index~~
- ~~Global Equities~~
  ~~Composite – the MSCI All Country World Index~~
- ~~Fixed Income~~
  ~~Composite – Barclays Capital Aggregate Index, Barclays Capital Global Aggregate Bond Index~~
- ~~Real Estate~~
  ~~Composite – NCREIF Open-End Fund Property Index~~
- ~~Private Equity~~
  ~~Composite - DJ U.S. Total Stock Market Index + 3%~~
- ~~Liquid Alternatives~~
  ~~Composite - CPI + 4%~~
- ~~Total Fund~~
  ~~Weighted Benchmark based on asset allocation~~

VI. INVESTMENT MANAGER~~MENT~~ POLICY

M~~The m~~anagers will have full discretion and authority for determining investment strategy, security selection and timing subject to investment~~the Policy~~ guidelines.~~ and any other guidelines specific to their portfolio.~~ Performance of investment portfolios~~the portfolio~~ will be monitored and evaluated on a regular basis relative to ~~each portfolio component's~~ benchmark returns, and relative to a peer group of managers with a~~following~~ similar investment style~~s~~.

Investment actions are expected to comply with "prudent person" standards. Each investment manager will be expected to know~~ the~~ VCERA's policies (as outlined in this document) and to comply with those policies. It is each manager's responsibility to identify policies that may have an adverse impact on performance and notify VCERA and consultant of any significant issues.~~, and to initiate discussion with the Board toward possible improvement of said policies.~~

VCERA will also review each investment manager's adherence to its investment policy, and any material changes in the manager's organization (e.g., personnel changes, new business developments, etc.) and~~or~~ its investment process. The investment managers retained by ~~the Association~~VCERA will be responsible for informing VCERA and the consultant~~the Board~~ of any~~such~~ material changes.~~ as detailed in the investment manager's guidelines.~~

Investment managers under contract to VCERA shall have discretion to establish and execute transactions through accounts with one or more securities broker/dealer(s) that a manager may select. The investment managers are expected to ~~will attempt to~~ obtain~~ the~~ best execution ~~available price and most favorable execution~~ with respect to portfolio transactions.

Selection Criteria for Investment Managers

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

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- The firm must be experienced in managing money for institutional clients in the asset class/product category specified.
- The firm must display a record of stability in retaining and attracting qualified investment professionals, as well as a record of managing asset growth effectively, both in gaining and retaining clients.
- The firm must demonstrate adherence to the investment style sought, and adherence to the firm's stated investment discipline.
- The firm's fees must be competitive with industry standards or the product category.
- The firm must be willing and able to comply with the "Duties of the Investment Managers" outlined herein.

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Criteria for Investment Manager Termination

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

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

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

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VCERA reserves the right to place its investment managers on a formal Watch List.

A manager may be placed on "Watch" status for:

- ~~1)~~ ~~F~~failure to meet one or more of the standards, objectives, goals, or risk controls as set forth in this policy statement.
- ~~2)~~ ~~V~~violation of ethical, legal, or regulatory standards.
- ~~3)~~ ~~M~~material adverse change in the ownership of the firm or personnel changes.
- ~~4)~~ ~~F~~failure to meet reporting or disclosure requirements.
- ~~5)~~ ~~F~~failure to meet performance objectives or goals.
- ~~6)~~ ~~A~~any actual or potentially adverse information, trends, or developments that the Board feels might impair the investment manager's ability to deliver successful outcomes for the participants of the plan.

~~The Board may take action to place a manager on Watch status.~~ Managers placed on Watch status shall be notified in writing, and be made aware of the reason for the action and the required remediation. Watch status is an optional interim step that may be used to formally communicate dissatisfaction to the investment manager and the potential for termination. Watch status is not a required step in terminating a manager. The Watch List will normally be for a period of six months, but the Board retains the right to terminate the manager, extend the period of the Watch status, or remove the manager from Watch status at any time. The staff and or the consultant shall report to the Board the progress of any manager remediation activities.~~Watch status will normally be for a period of six months, but the time frame may be determined by action of the Board.The staff and or the consultant shall report to the Board the progress of manager remediation activities. The Board retains the right to terminate the manager at any time, extend the period of the Watch status, or remove the manager from Watch status at any time.~~

~~Watch status indicates that the manager shall be subject to increased focus on the remediation of the factors that caused the manager to be placed on Watch status. Discussion of the manager on Watch status shall become a regular quarterlymonthly reporting agenda item for the Board. Staff or retained Consultant shall prepare a written monthly report addressing the progress of the manager in the remediation of the dissatisfaction as significant actions occur.~~.

VII. GENERAL GUIDELINES

Custody of Assets

With the exception of assets invested in commingled funds, the assets of VCERA shall be held in a custody/record keeping account in a master custody bank located in a national money center and in international sub-custodian banks under contract with the custodian bank.

Derivatives

VCERA's investment managers may be permitted through individual investment guidelines to use derivative instruments to control or manage portfolio risk. Derivatives are contracts or securities whose

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returns are derived from the returns of other securities, indices or derivatives. T~~While t~~his definition includes, collateralized mortgage obligations~~, the most common type of derivatives, it is also intended to include (but not be limited to)~~ futures, forwards, options, options on futures, swaps, swap options, etc.

VCERA's managers are not to utilize derivatives for speculative purposes (for example, by taking a position greater than 100% or less than 0% of underlying asset exposure). ~~In no circumstances can derivatives lever any positions in VCERA's portfolio.~~ No derivatives positions can be established that create portfolio characteristics outside of current portfolio guidelines. Examples of appropriate applications of derivative strategies include hedging interest rate and currency risk, and maintaining exposure to a desired asset class while effecting asset allocation changes.

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~~VCERA's Investment Consultant~~Investment Consultant ~~shall be responsible for monitoring the investment managers' derivative usage and for reporting to the Board any deviations from this Investment Policy Statement and the investment managers' specific guidelines.~~

Securities Lending

The Board may authorize the execution of a Securities Lending Program for separate accounts. ~~and will also conduct best efforts due diligence and monitoring of such activities in commingled funds.~~

VCERA may participate in a securities lending program administered by a lending agent approved by the Board for the purpose of increasing income. The Board, or agent~~,~~ as designated by the Board, shall be responsible for overseeing the securities lending program. The securities lending program shall be established pursuant to a written agreement established between the Board and the lending agent~~custodian~~ that stipulates the working of the program.

The terms of VCERA's separate account ~~any~~ securities lending program should incorporate the following provisions at a minimum:

- A description of the allocation queuing system used.
- ~~The number of brokers involved and a list of the brokers used.~~Available list of approved brokers.
- Statement of lendable securities.
- The ~~appropriate~~ percentage of the portfolio available for loan, and amount on loan.~~asset types for loans outstanding.~~
- Provision for indemnification in case of broker default or failure to return sold securities in a timely manner.
- Provisions for the selection/elimination of brokers from the program by the lending agent and/or the Board.
- ~~The securities to be included in the program.~~

Provisions for the elimination of securities from the securities lending program by either the lending agent or the Board.

- ~~The collateral to be used for each security and provisions for~~ Types of collateral acceptable for loaned securities, provisions for marked to market value of collateral.~~the adjustment of collateral when it fails.~~

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- The lending agent/VCERA split on the securities lending income.
- Provisions for termination of a loan.
- Availability of a securities lending report which details the securities loaned, the collateral used, the broker used and the income and fees received. The report should break out reinvestment income when reporting revenues.
- Disclose potential conflicts with existing clients.
- Specify collateralization requirements for VCERA securities out on loan.
- The collateral pool should be invested conservatively in high quality short maturity fixed income instruments. Leverage shall not be allowed in the collateral pool.

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- ~~The lending agent/VCERA split on the securities lending income.~~
- ~~Provisions for termination of a loan.~~
- ~~The requirement for a securities lending report which details the securities loaned, the collateral used, the broker used and the income and fees received. The report should break out intrinsic and reinvestment income when reporting revenues.~~
- ~~Disclose potential conflicts with existing clients.~~
- ~~Collateralization limits (102% for U.S. and 105% for non-U.S. holdings)~~
- ~~The collateral pool should be invested conservatively in high quality short maturity fixed income instruments. Leverage shall not be allowed in the collateral pool.~~

Voting of Proxies

Retained investment managers will vote, or cause to be voted, all proxy proposals on an individual basis. The manager's process in dealing with proxy issues should be both thorough and reasonable, and oriented toward achieving maximum long-term shareholder value. The manager is to discharge its~~expected~~ fiduciary duty by use of proxy voting policies and procedures solely in the interest of the ~~participants and beneficiaries~~Fund. ~~To act prudently in the voting of proxies, the manager should consider those factors that would affect the value of the plan's investment and act solely in the interest of, and for the exclusive purpose of providing benefits to participants and beneficiaries. The manager will not subordinate the interest of participants and beneficiaries in their retirement income to unrelated objectives. Managers will review and vote all proxies that are received.~~ Each investment manager shall notify the custodial bank of their responsibility to forward to the manager all proxy material. An ongoing review should be done to see that all expected proxies have been received, and if not, the bank should be directed to vote any proxy it receives in conformance with the manager's instruction. The manager may outsource this service in order to discharge its proxy voting responsibilities in conformance with these guidelines.

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~~On an annual basis~~Annually, investment managers shall~~ould~~ send VCERA a report of its proxy voting activities including a~~. A~~ brief explanation of the proxy voting issues, how the manager voted on each issue, the ~~following key elements must be included in this report from investment managers:~~

- ~~Stock name, number of shares owned by the fund and meeting date~~
- ~~Number of management and shareholder proposals that came to a vote~~
- ~~Number of votes with management~~
- ~~Number of votes against management and the rationale behind the vote~~number
- of~~Whether any~~ proxies that were not voted, why they were not voted, and what~~ether~~ steps can be ~~have been~~ taken to ~~ensure all proxies will be voted in the future~~decrease the number of missed proxy votes.

VIII. PUBLIC MARKET EQUITY ~~OBJECTIVES AND~~ GUIDELINES

~~Domestic~~ Public Market Equity Investment Manager Guidelines~~ies~~

- No securities shall be purchased on margin or sold short.
- ~~American Depositary Receipts (ADRs) are permissible investments.~~
- Managers shall not purchase stock (or securities convertible into stock) of any issuer if the purchase would cause this portfolio to include more than 5% of the outstanding voting stock, or more than 5% in (market) value of all outstanding securities of a single issuer (assuming all shares are converted).

Prohibited Transactions

Unless otherwise provided for, the following transactions will be prohibited:

- Physical commodities, including gold.~~;~~
- ~~Tax exempt securities, either state or federal;~~
- ~~Options including the purchase, sale or writing of options;~~
- Speculative or leveraged use of derivatives.~~;~~
- Transactions that involve a broker acting as a "principal," where such broker is also the investment manager who is making the transaction. Any exemption from these guidelines requires prior written approval from the Board ~~of Retirement~~.
- Buying ~~w~~Warrants.~~;~~
- Margin buying.~~;~~

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- Short selling.~~;~~
- Reverse repurchase agreements.~~; and~~

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~~**International Equities**~~

- ~~Portfolios shall be comprised of cash equivalents, debt instruments convertible into equity securities, forward foreign exchange contracts, and equity securities of companies domiciled outside the U.S. including established and emerging countries.~~

- ~~No securities shall be purchased on margin or sold short.~~

~~**Global Equity**~~

- ~~No securities shall be purchased on margin or sold short.~~

- ~~Managers shall not purchase stock (or securities convertible into stock) of any issuer if the purchase would cause this portfolio to include more than 5% of the outstanding voting stock, or more than 5% in (market) value of all outstanding securities of a single issuer (assuming all shares are converted).~~

- ~~Appropriate investments include stocks domiciled in the United States, on foreign exchanges, and emerging market securities.~~

~~VIII.~~IX. PUBLIC MARKET FIXED INCOME ~~OBJECTIVES AND~~ GUIDELINES

U.S. Fixed Income

- The total portfolio's minimum rating in aggregate will be A~~a2~~A or better by Moody's, AA by Standard & Poor's, or AA by Fitch, ~~. a~~Although any individual manager may be less.

- No more than 5% of the market value of any single portfolio will be invested in any one issuer, with the exception of U.S. Treasury or Federal Agency issues.

- U.S. dollar-denominated issues of foreign governments, international organizations and U.S. subsidiaries of foreign corporations are permitted up to 10% of the market value of any single portfolio.

- No securities shall be purchased on margin or sold short.

- ~~Limited investments in mortgage interest only (IO) or principal only (PO) securities or derivatives based on them that have uncertain or volatile duration or price movements.~~

- Publicly traded fixed income~~Bonds~~ instruments rated investment grade by either Moody's or Standard and Poor's must comprise at least 90% of the total portfolio.

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- ~~The total portfolio is limited to 5% in bonds issued by entities not domiciled in the J.P. Morgan Government Bond Index. This restriction is meant to limit the portfolio's emerging market exposure to no more than 5%.~~

~~**Global Fixed Income**~~

- ~~At least 80% of the Fund's Market Value must be invested in investment-grade securities~~
- ~~Below investment grade rated securities cannot exceed 20% of the portfolio when combining High Yield securities and below investment grade rated Emerging Market Securities.~~
- ~~No more than 5% of the market value of any single portfolio will be invested in any one issuer, with the exception of the United States, Canada, United Kingdom, Germany, France, Australia, New Zealand and Japan or securities issued or guaranteed by A- or better rated supranational entities.~~
- ~~Limited investments in mortgage interest only (IO) or principal only (PO) securities or derivatives based on them that have uncertain or volatile duration or price movements.~~

X. ~~Real Estate, Private Equity, Liquid Alternatives~~PRIVATE MARKET GUIDELINES

Due to the varying nature of these strategies, and the primary use of commingled vehicles, each investment will be subject to the investment guidelines for each respective commingled fund~~customized guidelines created for that strategy~~.

~~IX.~~XI. MANAGEMENT CONTROL PROCEDURES – RESPONSIBLE PARTIES

Duties of the Board

Procedures concerning the oversight of VCERA include the following:

- The Board shall have discretion to develop and execute VCERA's investment program. Only the Board in its sole discretion can delegate its decision-making authority regarding the investment program. Staff will be responsible for the timely implementation and administration of these decisions.

- A ~~formal~~ review of VCERA's investment structure, asset allocation and financial performance will be conducted annually or more frequently as the need arises. A formal asset liability review will be conducted every 3-5 years. The review will include recommended adjustments to the long-term, strategic asset allocation plan to reflect any changes in pension fund regulations, long-term capital market assumptions and~~or~~ VCERA's financial condition.

~~The Board or its designate(s) will adhere to the following procedures in the management of VCERA's assets:~~

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- Employ e~~E~~xternal investment managers ~~will manage VCERA's investment assets. In accordance with the asset allocation guidelines, external investment managers will be hired~~ who have demonstrated experience, expertise and investment styles ~~that are~~ consistent with the need for return and diversification. Investment guidelines will be developed for each manager, and investment performance will be monitored against these guidelines. Each investment manager will manage its portfolio according to a formal contract.

The Board, with the assistance of Staff and consultants, shall be responsible for taking appropriate action if investment objectives are not being met or if policies and guidelines are not being followed. Reviews for separate portfolios managed by external managers will focus on:

- Manager adherence to the Policy guidelines.
- Material changes in the managers' organizations, such as investment philosophy, personnel changes, acquisitions or losses of major accounts, etc. The managers will be responsible for keeping VCERA advised of any material changes in personnel, investment strategy, or other pertinent information potentially affecting performance.
- The Board shall be responsible for selecting a qualified custodian.
- The Board shall administer VCERA's investments in a cost-effective manner. These costs include, but are not limited to, investment management, consulting, custodial fees, and other administrative costs chargeable to VCERA.

Duties of the Chief Investment Officer ("CIO")
The CIO or his designate(s) will adhere to the following procedures in the management of VCERA's assets:

- The CIO support the Board in the development and approval of the Investment Plan, implement and monitor the Plan, and report at least monthly on investment activity and matters of significance.
- Provides advice to the Board on current and recommended investment strategies and tactics within asset classes, analyzing suitability for VCERA, and making recommendations for Board consideration in coordination with the ~~investment consultant~~Investment Consultant.
- Evaluates a wide variety of specific investment products, including real estate and alternative investments such as private equity, infrastructure, MLPs, etc., analyzing suitability for VCERA, and makes recommendations for Board consideration in coordination with the consultant.
- Meets with financial organizations, industry peers, trade groups, and investment managers; reviews and researches market and academic literature to evaluate and remain up to date on markets, trends, and risks of various investment strategies, managers, and products across asset classes that may be of interest and applicability to the Board.

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- Ensure that Investment Managers conform to the terms of their contracts and that their performance monitoring systems are sufficient to provide the Board with timely, accurate and useful information.

Duties of the Custodian

The Board recognizes that accurate and timely completion of custodial functions is necessary to effectively monitor investment management activity. The custodian's responsibilities for VCERA's investible assets are to:

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- ~~The Board, with the assistance of Staff and consultants, shall be responsible for taking appropriate action if investment objectives are not being met or if policies and guidelines are not being followed. Reviews for separate portfolios managed by external managers will focus on:~~

- ~~Manager adherence to the Policy guidelines.~~

- ~~Material changes in the managers' organizations, such as investment philosophy, personnel changes, acquisitions or losses of major accounts, etc. The managers will be responsible for keeping VCERA advised of any material changes in personnel, investment strategy, or other pertinent information potentially affecting performance.~~

- ~~The Board shall be responsible for selecting a qualified custodian.~~

- ~~The Board shall administer VCERA's investments in a cost effective manner. These costs include, but are not limited to, management, trustee, consulting and custodial fees, transaction costs and other administrative costs chargeable to VCERA.~~

~~Duties of the Retirement Administrator~~

~~The Retirement Administrator or his designate(s) will adhere to the following procedures in the management of VCERA's assets:~~

- ~~The Retirement Administrator shall support the Board in the development and approval of the Investment Plan, implement and monitor the Plan, and report at least monthly on investment activity and matters of significance.~~

- ~~The Retirement Administrator shall provide for the collection and investment of contributions and investment income, the disbursement of benefits and refunds, the payment of budgeted expenditures, the maintenance of accounting and internal control systems, the estimating and monitoring of cash flows, and shall report on matters of significance.~~

- ~~Ensure that Investment Managers conform to the terms of their contracts and that their performance monitoring systems are sufficient to provide the Board with timely, accurate and useful information.~~

- Provide complete global custody and depository services for the designated accounts.

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- Provide a Short Term Investment Fund (STIF) for investment of any cash not invested by managers, and to ensure that all available cash is invested.
- Provide for timely settlement of securities transactions.
- Collect all income and principal realizable and properly report it on the periodic statements.
- Provide monthly and fiscal year-end accounting statements for the portfolio, including all transactions; these should be based on accurate security values for both cost and market. These reports should be provided within 15 days from the end of the month.
- Report to VCERA situations where accurate security pricing, valuation and accrued income is either not possible or subject to considerable uncertainty.
- Provide assistance to ~~the Association~~VCERA to complete such activities as the annual audit, transaction verification or unique issues as required by VCERA~~the Board~~.

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- Manage a securities lending program to enhance income as directed by the Board.
- Provide other services, as required, that assist with the monitoring of managers and investments.
- Act and report in a timely fashion on corporate actions, securities litigations, furnish manager proxies for voting, etc.

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Duties of the Investment Managers

The Investment Managers shall:

- Provide ~~the Association~~VCERA with a written agreement to invest within the guidelines established in the Investment Plan.
- Provide ~~the Association~~VCERA with proof of liability and fiduciary insurance coverage.
- Be a SEC-Registered Investment Advisor~~s~~, a bank, or insurance company recognized as providing demonstrated expertise over a number of years in the management of institutional, tax-exempt assets and a defined investment specialty.
- Adhere to the investment management style, concepts and principles for which they were retained, including, but not limited to, developing portfolio strategy, performing research, ~~developing buy, hold and sell lists,~~ purchasing and selling securities and voting proxies.
- Execute all transactions for the benefit of ~~the Association~~VCERA with brokers and dealers qualified to execute institutional orders on a best execution basis for ~~an ongoing basis at the best net cost to~~

~~the Association~~VCERA, and, where appropriate, facilitate the recapture of commissions on behalf of ~~the Association~~VCERA.

- Reconcile every quarter accounting, transaction and asset summary data with custodian valuations, and communicate and resolve any significant discrepancies with the custodian.

- Maintain frequent and open communication with the Board through the CIO and ~~Investment Consultant~~Investment Consultant on all significant matters pertaining to the Investment Plan, including, but not limited to, the following:

  – Major changes in the Investment Manager's investment outlook, investment strategy and portfolio structure.~~;~~

  – Significant changes in ownership, organizational structure, financial condition or senior personnel.~~;~~

  – Any changes in the Portfolio Manager or other personnel assigned to ~~the~~ VCERA.~~;~~

  – Each significant client which terminates its relationship with the Investment Manager, within 45 days of such termination.~~;~~

  – All pertinent issues which the Investment Manager deems to be of significant interest or material importance.

Manager Reporting Requirements
In addition to the aforementioned duties, the managers are required to provide the ~~Staff,~~CIO and Consultant with the following reports:

- Monthly – ~~Transaction statement,~~ ~~a~~Asset (portfolio) statement, and performance on the portfolio and benchmark for the month, quarter, year-to-date, fiscal year-to-date, 1-year, 3-year, 5-year, 10-year, and since inception annualized returns gross and net of fees. In addition, a discussion of the portfolio's recent strategy and expected future strategy and a demonstration of compliance with guidelines.

Duties of the ~~Investment Consultant~~Investment Consultant(s)
The ~~Investment Consultant~~Investment Consultant(s) shall:

- Make recommendations to the Board and the CIO~~Staff~~ regarding investment policy and strategic asset allocation.

- Assist ~~the Association~~VCERA in the selection of qualified investment managers, and assist in the oversight of existing managers, including monitoring changes in personnel and the investment process.

- Assist in the selection of a qualified custodian.

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- ~~Assist in the selection of a qualified custodian, if necessary.~~

- Prepare ~~a quarterly~~ performance reports at the~~on~~ total fund, asset class, and manager levels. Report significant activity for the portfolio at the total fund, asset class, and manager levels.~~the Association's managers, including a check on guideline compliance and adherence to investment style and discipline.~~

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

- ~~Deliver a monthly performance update.~~

APPENDIX A

Asset Allocation Policy

~~**Approved by the Board in April 1998 (Revised through July 2013)**~~

The Ventura County Employees' Retirement Association's
Asset Allocation Targets, ~~and~~ Ranges, and Benchmarks

~~Asset Class~~	~~Target Percent~~	~~Allowable Range~~
~~U.S. Equity~~	~~30%~~	~~26-34 %~~
~~International Equities~~	~~14%~~	~~11-17%~~
~~Global Equities~~	~~10%~~	~~7-13 %~~
~~US Fixed Income~~	~~19%~~	~~15-23%~~
~~Global Fixed Income~~	~~5%~~	~~3-7%~~
~~Real Estate~~	~~7%~~	~~4-10%~~
~~Private Equity~~	~~5%~~	~~3-7%~~
~~Liquid Alternatives~~	~~10%~~	~~7-13%~~
~~Total Equity~~	~~54%~~	~~50-58%~~
~~Total Fixed Income~~	~~24%~~	~~20-28%~~
~~Total Real Estate~~	~~7%~~	~~4-10%~~
~~Total Private Equity~~	~~5%~~	~~3-7%~~
~~Total Liquid Alternatives~~	~~10%~~	~~7-13%~~

	Targets	Ranges	Benchmark
U.S. Equity	28.0%	24.0% - 32.0%	Russell 3000 Index
Non-US Equity	15.0%	12.0% - 18.0%	MSCI ACWI ex U.S. Index Net
Global Equity	10.0%	7.0% - 13.0%	MSCI ACWI Index Net
Private Equity	10.0%	0.0% - 12.0%	Russell 3000 Index + 3%
U.S. Fixed Income	20.0%	16.0% - 24.0%	Barclays Capital U.S. Aggregate Bond Index
Real Estate	7.0%	4.0% - 10.0%	NCREIF ODCE Index
Liquid Alternatives	10.0%	5.0% - 15.0%	CPI + 3%
Cash	0.0%	0.0% - 3.0%	90 day T-bills

- **Asset Classes Targets and Ranges approved by the Board in December 2015**
- **Benchmarks revised February 2017**

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Ventura County Employees' Retirement Association

~~Approved and Confirmed Changes to the Guidelines~~

~~Date~~	~~Guidelines / Change~~	~~Verified by~~
~~06/02/2008~~	~~Portfolio targets and Unallocated Cash targets have been updated.~~	~~Email sent on 6/2/2008 by Tim Thonis to Megan Zhou, titled "RE: Ventura PIOS® Guidelines updated with new targets"~~
~~07/28/2008~~	~~Addendum B has been updated.~~	
~~12/03/2008~~	~~Addendum B has been updated~~	
~~01/05/2009~~	~~Addendum B has been updated~~	
~~01/20/2009~~	~~Addendum A target allocations revised and Maintain Target Allocation Component added~~	
~~10/02/2009~~	~~Addendum B has been updated.~~	
~~11/20/2009~~	~~Addendum B has been updated.~~	
~~05/26/2010~~	~~Addendum B has been updated.~~	
~~01/31/2011~~	~~Addendum B has been updated, Tim Thonis replaced by Henry Solis.~~	
~~06/13/2011~~	~~Addendum A has been updated~~	~~Email sent on 05/25/2011 to Alex Gomelsky/TCG from Henry Solis titled, "RE: VCERA Cash – Week of May 25th"~~
~~08/22/2011~~	~~Addendum A: asset class allocation targets and associatied benchmark indexes have been updated~~	~~Conference call on August 19, 2011 between Ben and Team PIOS and representatives from Hewitt EnnisKnupp and Client.~~
~~06/18/2012~~	~~Addendum A: Asset classes revised as well as targets, adjustments and allocations. Revised body of Guidelines regarding Invest Manager Cash.~~	~~Conference calls with Client.~~

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Investment Policy

Ventura County Employees' Retirement Association
February 2017

INVESTMENT POLICY
VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

I. INTRODUCTION

This document sets forth the framework for the management and oversight of the investment assets of the Ventura County Employees' Retirement Association ("VCERA"). The purpose of the Investment Policy is to assist the Board of Retirement (the "Board") in effectively supervising and monitoring the investments of VCERA. Specifically, it will address the following issues:

- The general goals of the investment program.
- The policies and procedures for the management of the investments.
- Investment guidelines for asset classes, specific asset allocations, and portfolio rebalancing.
- Performance objectives and risk tolerance.
- Responsibilities of VCERA's Board and staff, Investment Consultant, custodian, and investment managers.

The Board establishes this investment policy in accordance with the provisions of the County Employees' Retirement Law of 1937 (Government code Sections 31450 et. seq.). VCERA is considered a separate entity and is administered by a Board consisting of nine members, plus three alternates. VCERA's Board and its officers and employees shall discharge their duties as provided for in Government Code Section 31595:

- Solely in the interest of, and for the exclusive purpose of providing benefits to, participants and their beneficiaries, minimizing employer and employee contributions thereto, and defraying reasonable expenses of administering the system.
- With the care, skill, prudence and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character with like aims.
- Shall diversify the investments of the system so as to In addition to the statutory requirements, the Board shall seek to minimize employee contributions and maximize risk-adjusted returns.

- This policy statement is designed to allow for sufficient flexibility in the management oversight process to capture investment opportunities as they may occur, while setting forth reasonable parameters to ensure prudence and care are exercised in the execution of the investment program.

With respect to investments, asset allocation target and ranges, the role of the Board is to ensure VCERA's fiduciary responsibilities are fulfilled, that the investment structure, operation and results of the individual portfolios are consistent with investment objectives established for them, and to ensure competence, integrity and continuity in the management of the assets.

II. INVESTMENT POLICIES

The following policies, consistent with the above described purpose and state government citations, are adopted:

- The overall goal of VCERA's investment program is to provide plan participants with retirement, disability, and death and survivor benefits as provided for under the County Employees' Retirement Law of 1937.

- VCERA's assets will be managed on a total return basis. While VCERA recognizes the importance of the preservation of capital, it also adheres to the principle that varying degrees of investment risk are expected to be rewarded with compensating returns.

- VCERA's Investment Policy has been designed to earn the highest possible long-term rate of return consistent with a level of risk that the Board believes is appropriate given the plan's assets and liabilities, funded status and capital markets outlook, and to generate a real rate of return exceeding 4%. Consequently, prudent risk-taking is warranted within the context of overall portfolio diversification to meet this goal. Investment strategies are considered primarily in light of their impact on total plan assets subject to any restrictions set forth in the County Employees' Retirement Law of 1937, and shall at all times comply with applicable state and federal regulations.

- All transactions undertaken will be for the sole benefit of VCERA's participants and their beneficiaries and for the exclusive purpose of providing benefits to them; and, minimizing employer and employee contributions to the System, and defraying reasonable administrative expenses of the System.

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- VCERA has a long-term investment horizon generally described as a time period greater than 10 years, and utilizes an asset allocation that encompasses a strategic, long-term perspective of capital markets. It is recognized that a strategic long-term asset allocation plan implemented in a consistent and disciplined manner will be the major determinant of VCERA's investment performance.

- Investment actions are expected to comply with "prudent person" standards which recognize the importance of diversification of investment risks and opportunities.

- Invest funds in accordance with asset allocation targets established by the Board.

III. INVESTMENT OBJECTIVES OF THE TOTAL FUND

- Earn the highest possible long-term rate of return consistent with a level of risk that the Board believes is appropriate given the plan's assets and liabilities, funded status and capital markets outlook, and to generate a real rate of return exceeding 4%.

- Exceed an asset allocation policy weighted index return.

IV. ASSET ALLOCATION

This policy is adopted to provide for diversification of assets in an effort to maximize the investment return of VCERA consistent with market conditions and the Board's risk tolerance. Asset allocation modeling identifies asset classes VCERA will utilize and the percentage each class represents in the total fund. Due to the fluctuation of market values, positioning within a specified range is acceptable and constitutes compliance with the policy. It is anticipated that an extended period of time may be required to fully implement the asset allocation policy, and that periodic revisions will occur. VCERA staff and Investment Consultant will monitor and assess the actual asset allocation versus policy, and will report any variation considered significant.

The portfolio is continually rebalanced using incoming cash flows to add exposure to under weighted asset classes, and taking outgoing cash from over weighted asset classes by VCERA's overlay investment manager. If Board adopted asset class limits are breached, an asset class threshold range rebalancing is evaluated and executed by the CIO in consultation with the overlay manager and the Investment Consultant.

Cash balances will be equitized by VCERA's overlay manager. Sufficient liquidity will be ensured for payment of VCERA's obligations such as the retirement roll, capital calls, investment manager fees, etc., and excess cash will be deployed to VCERA's investment managers.

The policies and procedures of VCERA's investment program are designed to maximize the probability that the investment goals will be fulfilled. Investment policies will evolve as fund conditions change and as investment conditions warrant.

VCERA adopts and implements an asset allocation policy that is predicated on a number of factors, including:

- The actuarially projected liabilities and benefit payments and the cost to both covered employees and employers.

- Historical and expected long-term capital market risk and return behavior.

- The perception of future economic conditions, including inflation and interest rate levels.

- The risk tolerance of the Board.

- The relationship between current and projected assets of the Plan and its actuarial requirements.

VCERA's asset class target allocation (including ranges and benchmarks) is attached as Appendix A.

The Board will implement the asset allocation policy through the use of specialized investment managers, who will be given full discretion to invest the assets of their portfolios subject to investment guidelines. When appropriate, passively managed index funds, and exchange traded funds (ETFs) will be utilized.

The Board, in recognition of the benefits of commingled funds as investment vehicles (e.g., the potential to diversify more extensively than in a direct investment account and achieve lower costs) may from time to time elect to invest in such funds. The Board recognizes that the practices of such funds will be in accordance with the funds' offering documents. Any significant changes in the offering documents of a fund in which the Board has placed an investment will be promptly delivered to the Board.

V. ROLE OF ASSET CLASSES

VCERA will utilize the following portfolio components to fulfill the asset allocation targets and total fund performance goals established elsewhere in this document.

Equities – VCERA anticipates that total returns to equities will be higher than total returns to fixed income securities over the long-run, but may be subject to greater volatility as well. There are several components of VCERA's equity holdings:

U.S. Equities –

- **Large Cap Equities** – This component will provide broadly diversified, core exposure to the U.S. equity market, primarily through holdings in large capitalization companies.

- **SMid (Small and Mid) Cap Equities** – SMid Cap Stocks are generally those of companies with a market capitalization up to $10 billion. Although more volatile than larger capitalization stocks, SMid cap stocks are generally characterized by faster growth and (historically) higher long-term returns.

- **International Equities** – This component provides access to major equity markets outside the U.S. and consequently plays a significant role in diversifying VCERA's equity portfolio. This segment may provide exposure to developed non-U.S. markets, emerging markets, and frontier markets whose growth and returns are not necessarily synchronized with those of the U.S. This core international segment will concentrate on larger companies in established non-U.S. equity markets. Limited discretion will be provided to active managers deemed to have an appropriate level of expertise to invest opportunistically in emerging and frontier markets.

- **Global Equities** – A further diversifying feature that allows for securities domiciled both in the domestic and international stock markets. Managers invest in U.S. stocks and non-U.S. stocks.

Fixed Income – The primary role of the fixed income portfolio is to provide a more stable investment return and to generate income while diversifying VCERA's investment assets to hedge against significant drawdowns in the equity markets. The fixed income holdings are comprised of the following:

- **Core Fixed Income** – This portfolio will provide core exposure to the U.S. and non-U.S. fixed income markets (maturities from 0 to 30 years) such as US Treasury and government agency bonds, corporate debt, mortgages and asset-backed securities. The portfolio will be largely composed of investment grade issues with limited investment in non-dollar and high yield bonds.

- **Absolute Return Fixed Income Portfolios -** Due to the historic low interest rates, the Board has a concern that maintaining a duration exposure similar to the Barclays Aggregate index creates the real possibility of significant losses over a long-term rising rate environment. Therefore some of the US and non-US fixed income exposure will be with managers with a more flexible mandate to earn an absolute return with lower down-side risk.

Real Estate – The role of real estate, in general, is to provide a competitive risk adjusted rate of return compared to other asset classes and to provide prudent portfolio diversification consistent with risk and return objectives. This portfolio diversification is due to real estate's low correlation with returns of equity and fixed income. Real Estate also generates income in addition to capital appreciation. Real Estate investments may include direct investment in properties, REITs and commingled funds.

Private Equity – The role of private equity, in general, is to provide a superior risk adjusted rate of return compared to other asset classes and to provide prudent portfolio diversification consistent with risk and return objectives. Private Equity investments are generally long term and illiquid and shall consist of a broad range of investment opportunities and may include investments such as leveraged buyouts, venture capital, growth capital, distressed, and mezzanine debt.

Liquid Alternatives – The role of liquid alternatives, in general, is to provide a superior risk adjusted rate of return across different economic regimes and to provide prudent portfolio diversification consistent with risk and return objectives. This portfolio diversification is due to liquid alternatives low correlation with returns of traditional equity and fixed income. Liquid alternatives include Master Limited Partnerships ("MLP's") and risk parity strategies.

VI. INVESTMENT MANAGER POLICY

Managers will have full discretion and authority for determining investment strategy, security selection and timing subject to investment guidelines. Performance of investment portfolios will be monitored and evaluated on a regular basis relative to benchmark returns, and relative to a peer group of managers with a similar investment style.

Investment actions are expected to comply with "prudent person" standards. Each investment manager will be expected to know VCERA's policies (as outlined in this document) and to comply with those policies. It is each manager's responsibility to identify policies that may have an adverse impact on performance and notify VCERA and consultant of any significant issues.

VCERA will also review each investment manager's adherence to its investment policy, and any material changes in the manager's organization (e.g., personnel changes, new business developments, etc.) and its investment process. The investment managers retained by VCERA will be responsible for informing VCERA and the consultant of any material changes.

Investment managers under contract to VCERA shall have discretion to establish and execute transactions through accounts with one or more securities broker/dealer(s) that a manager may select. The investment managers are expected to obtain best execution with respect to portfolio transactions.

Selection Criteria for Investment Managers

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

- The firm must be experienced in managing money for institutional clients in the asset class/product category specified.
- The firm must display a record of stability in retaining and attracting qualified investment professionals, as well as a record of managing asset growth effectively, both in gaining and retaining clients.
- The firm must demonstrate adherence to the investment style sought, and adherence to the firm's stated investment discipline.
- The firm's fees must be competitive with industry standards or the product category.
- The firm must be willing and able to comply with the "Duties of the Investment Managers" outlined herein.

Criteria for Investment Manager Termination

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

- Failure to comply with the guidelines agreed upon for management of the portfolio.
- Failure to achieve performance objectives.
- Significant deviation from manager's stated investment philosophy and/or process.
- Loss of key personnel.
- Evidence of illegal or unethical behavior by the investment management firm.

- Lack of willingness to cooperate with reasonable requests by VCERA for information, meetings or other material related to its portfolios.

- Loss of confidence by the Board in the investment manager.

- A change in the asset allocation program that necessitates a shift of assets to a different investment style.

The presence of any one of these factors will be carefully reviewed by the Board, but will not necessarily result in an automatic termination. VCERA reserves the right to place its investment managers on a formal Watch List.

A manager may be placed on "Watch" status for:

- Failure to meet one or more of the standards, objectives, goals, or risk controls as set forth in this policy statement.
- Violation of ethical, legal, or regulatory standards.
- Material adverse change in the ownership of the firm or personnel changes.
- Failure to meet reporting or disclosure requirements.
- Failure to meet performance objectives or goals.
- Any actual or potentially adverse information, trends, or developments that the Board feels might impair the investment manager's ability to deliver successful outcomes for the participants of the plan.

Managers placed on Watch status shall be notified in writing, and be made aware of the reason for the action and the required remediation. Watch status is an optional interim step that may be used to formally communicate dissatisfaction to the investment manager and the potential for termination. Watch status is not a required step in terminating a manager. The Watch List will normally be for a period of six months, but the Board retains the right to terminate the manager, extend the period of the Watch status, or remove the manager from Watch status at any time. The staff and or the consultant shall report to the Board the progress of any manager remediation activities.

VII. GENERAL GUIDELINES

Custody of Assets
With the exception of assets invested in commingled funds, the assets of VCERA shall be held in a custody/record keeping account in a master custody bank located in a national money center and in international sub-custodian banks under contract with the custodian bank.

Derivatives
VCERA's investment managers may be permitted through individual investment guidelines to use derivative instruments to control or manage portfolio risk. Derivatives are contracts or securities whose returns are derived from the returns of other securities, indices or derivatives. This definition includes,

collateralized mortgage obligations futures, forwards, options, options on futures, swaps, swap options, etc.

VCERA's managers are not to utilize derivatives for speculative purposes (for example, by taking a position greater than 100% or less than 0% of underlying asset exposure). No derivatives positions can be established that create portfolio characteristics outside of current portfolio guidelines. Examples of appropriate applications of derivative strategies include hedging interest rate and currency risk, and maintaining exposure to a desired asset class while effecting asset allocation changes.

Securities Lending

The Board may authorize the execution of a Securities Lending Program for separate accounts.

VCERA may participate in a securities lending program administered by a lending agent approved by the Board for the purpose of increasing income. The Board, or agent as designated by the Board, shall be responsible for overseeing the securities lending program. The securities lending program shall be established pursuant to a written agreement established between the Board and the lending agent that stipulates the working of the program.

The terms of VCERA's separate account securities lending program should incorporate the following provisions at a minimum:

- A description of the allocation queuing system used.
- Available list of approved brokers.
- Statement of lendable securities.
- The percentage of the portfolio available for loan, and amount on loan.
- Provision for indemnification in case of broker default or failure to return sold securities in a timely manner.
- Provisions for the selection/elimination of brokers from the program by the lending agent and/or the Board.
- Provisions for the elimination of securities from the securities lending program by either the lending agent or the Board.
- Types of collateral acceptable for loaned securities, provisions for marked to market value of collateral.
- The lending agent/VCERA split on the securities lending income.
- Provisions for termination of a loan.

- Availability of a securities lending report which details the securities loaned, the collateral used, the broker used and the income and fees received. The report should break out reinvestment income when reporting revenues.

- Disclose potential conflicts with existing clients.

- Specify collateralization requirements for VCERA securities out on loan.

- The collateral pool should be invested conservatively in high quality short maturity fixed income instruments. Leverage shall not be allowed in the collateral pool.

Voting of Proxies
Retained investment managers will vote, or cause to be voted, all proxy proposals on an individual basis. The manager’s process in dealing with proxy issues should be both thorough and reasonable, and oriented toward achieving maximum long-term shareholder value. The manager is to discharge its fiduciary duty by use of proxy voting policies and procedures solely in the interest of the Fund. Each investment manager shall notify the custodial bank of their responsibility to forward to the manager all proxy material. An ongoing review should be done to see that all expected proxies have been received, and if not, the bank should be directed to vote any proxy it receives in conformance with the manager’s instruction. The manager may outsource this service in order to discharge its proxy voting responsibilities in conformance with these guidelines.

Annually, investment managers shall send VCERA a report of its proxy voting activities including a brief explanation of the proxy voting issues, how the manager voted on each issue, the number of proxies that were not voted, why they were not voted, and what steps can be taken to decrease the number of missed proxy votes.

VIII. PUBLIC MARKET EQUITY GUIDELINES

Public Market Equity Investment Manager Guidelines

- No securities shall be purchased on margin or sold short.

- Managers shall not purchase stock (or securities convertible into stock) of any issuer if the purchase would cause this portfolio to include more than 5% of the outstanding voting stock, or more than 5% in (market) value of all outstanding securities of a single issuer (assuming all shares are converted).

Prohibited Transactions
Unless otherwise provided for, the following transactions will be prohibited:

- Physical commodities, including gold.

- Speculative or leveraged use of derivatives.

- Transactions that involve a broker acting as a "principal," where such broker is also the investment manager who is making the transaction. Any exemption from these guidelines requires prior written approval from the Board.

- Buying warrants.

- Margin buying.

- Short selling.

- Reverse repurchase agreements.

IX. PUBLIC MARKET FIXED INCOME GUIDELINES

U.S. Fixed Income

- The total portfolio's minimum rating in aggregate will be Aa2 or better by Moody's, AA by Standard & Poor's, or AA by Fitch, although any individual manager may be less.

- No more than 5% of the market value of any single portfolio will be invested in any one issuer, with the exception of U.S. Treasury or Federal Agency issues.

- U.S. dollar-denominated issues of foreign governments, international organizations and U.S. subsidiaries of foreign corporations are permitted up to 10% of the market value of any single portfolio.

- No securities shall be purchased on margin or sold short.

- Publicly traded fixed income instruments rated investment grade by either Moody's or Standard and Poor's must comprise at least 90% of the total portfolio.

X. PRIVATE MARKET GUIDELINES

- Due to the varying nature of these strategies, and the primary use of commingled vehicles, each investment will be subject to the investment guidelines for each respective commingled fund.

XI. MANAGEMENT CONTROL PROCEDURES – RESPONSIBLE PARTIES

Duties of the Board

Procedures concerning the oversight of VCERA include the following:

- The Board shall have discretion to develop and execute VCERA's investment program. Only the Board in its sole discretion can delegate its decision-making authority regarding the investment program. Staff will be responsible for the timely implementation and administration of these decisions.

- A review of VCERA's investment structure, asset allocation and financial performance will be conducted annually or more frequently as the need arises. A formal asset liability review will be conducted every 3-5 years. The review will include recommended adjustments to the long-term, strategic asset allocation plan to reflect any changes in pension fund regulations, long-term capital market assumptions and VCERA's financial condition.

- Employ external investment managers who have demonstrated experience, expertise and investment styles consistent with the need for return and diversification. Investment guidelines will be developed for each manager, and investment performance will be monitored against these guidelines. Each investment manager will manage its portfolio according to a formal contract.

The Board, with the assistance of Staff and consultants, shall be responsible for taking appropriate action if investment objectives are not being met or if policies and guidelines are not being followed. Reviews for separate portfolios managed by external managers will focus on:

- Manager adherence to the Policy guidelines.

- Material changes in the managers' organizations, such as investment philosophy, personnel changes, acquisitions or losses of major accounts, etc. The managers will be responsible for keeping VCERA advised of any material changes in personnel, investment strategy, or other pertinent information potentially affecting performance.

- The Board shall be responsible for selecting a qualified custodian.

- The Board shall administer VCERA's investments in a cost-effective manner. These costs include, but are not limited to, investment management, consulting, custodial fees, and other administrative costs chargeable to VCERA.

Duties of the Chief Investment Officer ("CIO")

The CIO or his designate(s) will adhere to the following procedures in the management of VCERA's assets:

- The CIO support the Board in the development and approval of the Investment Plan, implement and monitor the Plan, and report at least monthly on investment activity and matters of significance.

- Provides advice to the Board on current and recommended investment strategies and tactics within asset classes, analyzing suitability for VCERA, and making recommendations for Board consideration in coordination with the Investment Consultant.

- Evaluates a wide variety of specific investment products, including real estate and alternative investments such as private equity, infrastructure, MLPs, etc., analyzing suitability for VCERA, and makes recommendations for Board consideration in coordination with the consultant.

- Meets with financial organizations, industry peers, trade groups, and investment managers; reviews and researches market and academic literature to evaluate and remain up to date on markets, trends, and risks of various investment strategies, managers, and products across asset classes that may be of interest and applicability to the Board.

- Ensure that Investment Managers conform to the terms of their contracts and that their performance monitoring systems are sufficient to provide the Board with timely, accurate and useful information.

Duties of the Custodian
The Board recognizes that accurate and timely completion of custodial functions is necessary to effectively monitor investment management activity. The custodian's responsibilities for VCERA's investible assets are to:

- Provide complete global custody and depository services for the designated accounts. Provide a Short Term Investment Fund (STIF) for investment of any cash not invested by managers, and to ensure that all available cash is invested.

- Provide for timely settlement of securities transactions.

- Collect all income and principal realizable and properly report it on the periodic statements.

- Provide monthly and fiscal year-end accounting statements for the portfolio, including all transactions; these should be based on accurate security values for both cost and market. These reports should be provided within 15 days from the end of the month.

- Report to VCERA situations where accurate security pricing, valuation and accrued income is either not possible or subject to considerable uncertainty.

- Provide assistance to VCERA to complete such activities as the annual audit, transaction verification or unique issues as required by VCERA.

- Manage a securities lending program to enhance income as directed by the Board.

- Provide other services, as required, that assist with the monitoring of managers and investments.

- Act and report in a timely fashion on corporate actions, securities litigations, furnish manager proxies for voting, etc.

Duties of the Investment Managers
The Investment Managers shall:

- Provide VCERA with a written agreement to invest within the guidelines established in the Investment Plan.

- Provide VCERA with proof of liability and fiduciary insurance coverage.

- Be a SEC-Registered Investment Advisor, a bank, or insurance company recognized as providing demonstrated expertise over a number of years in the management of institutional, tax-exempt assets and a defined investment specialty.

- Adhere to the investment management style, concepts and principles for which they were retained, including, but not limited to, developing portfolio strategy, performing research, purchasing and selling securities and voting proxies.

- Execute all transactions for the benefit of VCERA with brokers and dealers qualified to execute institutional orders on a best execution basis for VCERA, and, where appropriate, facilitate the recapture of commissions on behalf of VCERA.

- Reconcile every quarter accounting, transaction and asset summary data with custodian valuations, and communicate and resolve any significant discrepancies with the custodian.

- Maintain frequent and open communication with the Board through the CIO and Investment Consultant on all significant matters pertaining to the Investment Plan, including, but not limited to, the following:

  - Major changes in the Investment Manager's investment outlook, investment strategy and portfolio structure.

  - Significant changes in ownership, organizational structure, financial condition or senior personnel.

  - Any changes in the Portfolio Manager or other personnel assigned to VCERA.

  - Each significant client which terminates its relationship with the Investment Manager, within 45 days of such termination.

  - All pertinent issues which the Investment Manager deems to be of significant interest or material importance.

Manager Reporting Requirements

In addition to the aforementioned duties, the managers are required to provide the CIO and Consultant with the following reports:

- Monthly – Asset (portfolio) statement, and performance on the portfolio and benchmark for the month, quarter, year-to-date, fiscal year-to-date, 1-year, 3-year, 5-year, 10-year, and since inception annualized returns gross and net of fees. In addition, a discussion of the portfolio's recent strategy and expected future strategy and a demonstration of compliance with guidelines.

Duties of the Investment Consultant(s)

The Investment Consultant(s) shall:

- Make recommendations to the Board and the CIO regarding investment policy and strategic asset allocation.
- Assist VCERA in the selection of qualified investment managers, and assist in the oversight of existing managers, including monitoring changes in personnel and the investment process.
- Assist in the selection of a qualified custodian.
- Prepare performance reports at the total fund, asset class, and manager levels. Report significant activity for the portfolio at the total fund, asset class, and manager levels.
- Provide topical research and education on investment subjects that are relevant to VCERA.

APPENDIX A

Asset Allocation Policy

The Ventura County Employees' Retirement Association's
Asset Allocation Targets, Ranges, and Benchmarks

	Targets	Ranges	Benchmark
U.S. Equity	28.0%	24.0% - 32.0%	Russell 3000 Index
Non-US Equity	15.0%	12.0% - 18.0%	MSCI ACWI ex U.S. Index Net
Global Equity	10.0%	7.0% - 13.0%	MSCI ACWI Index Net
Private Equity	10.0%	0.0% - 12.0%	Russell 3000 Index + 3%
U.S. Fixed Income	20.0%	16.0% - 24.0%	Barclays Capital U.S. Aggregate Bond Index
Real Estate	7.0%	4.0% - 10.0%	NCREIF ODCE Index
Liquid Alternatives	10.0%	5.0% - 15.0%	CPI + 3%
Cash	0.0%	0.0% - 3.0%	90 day T-bills

- **Asset Classes Targets and Ranges approved by the Board in December 2015**
- **Benchmarks revised February 2017**

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February 27, 2017

Board of Retirement
Ventura County Employees' Retirement Association
1190 South Victoria Avenue, Suite 200
Ventura, CA 93003

SUBJECT: FOLLOW-UP ON VCERA APPOINTMENT AND ELECTION OF TRUSTEES POLICY TABLE REFERENCES

Dear Board Members:

At the February 6, 2017 disability meeting, the Board approved an update to the Appointment and Election of Trustees Policy. At that time, staff was to follow up on whether the "sample years" column in the term information table within the policy referred to the *year of election* or *year of term beginning* and bring back an update to the Board.

The "sample years" column should reflect the year *in which a term begins*. Before the February 6th update, the policy document's table contained errors in the column. An updated table is provided, reflecting the original proposed changes from February 6th (red), as well as the corrections to the columns (blue).

<u>RECOMMENDED ACTION</u>: APPROVE PROPOSED CHANGES AND CORRECTIONS TO THE TERM DESCRIPTION TABLE WITHIN VCERA'S APPOINTMENT AND ELECTION OF TRUSTEES POLICY

Staff will be happy to answer any questions at the February 27, 2017 disability meeting.

Sincerely,

Linda Webb
Retirement Administrator

Office	Position	Term	Start of Term	Year Term Begins	Ref.
Treasurer (Ex Officio)	1st	4 years	1st Mon. in Jan. at noon Following election	~~2010~~, ~~2014~~, ~~2018~~, ~~2022~~ **2015, 2019, 2023**	GC 24200
General Member 1	2nd	3 years	January 1	~~2012~~, 2015, 2018, 2021	GC 31520.1 Ord. 401
General Member 2	3rd	3 years	January 1	~~2013~~, 2016, 2019, 2022	GC 31520.1 Ord. 401
Appointed Member 1	4th	3 years	January 1	~~2013~~, 2016, 2019, 2022	GC 31520.1 Ord. 401
Appointed Member 2	5th	3 years	January 1	~~2013~~, 2016, 2019, 2022	GC 31520.1 Ord. 401
Appointed Member 3	6th	3 years	January 1	~~2011~~, 2014, 2017, 2020	GC 31520.1 Res. 208.210
Safety Member	7th	3 years	January 1	~~2011~~, ~~2014~~, ~~2017~~, ~~2020~~ **2015, 2018, 2021**	GC 31520.1 Res. 208.210
Retiree Member	8th	3 years	January 1	~~2012~~, 2015, 2018, 2021	GC 31520.1 Ord. 401
Appointed Member 4	9th	3 years	January 1	~~2011~~, 2014, 2017, 2020	GC 31520.1 Ord. 401
Alternate Safety	7th Alt.	3 years	January 1	~~2011~~, ~~2014~~, ~~2017~~, ~~2020~~ **2015, 2018, 2021**	GC 31520.1 Res. 208.210
Alternate Retiree	8th Alt.	3 years	January 1	~~2012~~, 2015, 2018, 2021	GC 31520.5
Alternate Appointed	4th, 5th, 6th, 9th Alt	3 years*	January 1*	2016, 2017, 2020*	GC 31520.13

*consistent with 9th member

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February 27, 2017

Board of Retirement
Ventura County Employees' Retirement Association
1190 South Victoria Avenue, Suite 200
Ventura, CA 93003

SUBJECT: P&I ARTICLE ON ADAMS STREET

At the Board meeting of January 23, 2017, Trustee Goulet noted that an article in the November 2016 issue of Pensions and Investments magazine (see attached) reported that State of North Dakota Investment Board put Adams Street on watch, citing a lack of transparency. Trustee Goulet asked if I would see if Adams Street is being transparent, because of the new law regarding transparency.

Under the new law which went into effect January 1, 2017, VCERA must disclose at least annually at a public meeting, specified fund level information (see attached). Adams Street, as well as our other private equity and real estate managers, has provided VCERA with the information legally required to date, and I believe will continue to be forthcoming in enabling us to comply with the law.

RECOMMENDED: THAT THE BOARD RECEIVE AND FILE THIS MEMO.

Sincerely,

Daniel P. Gallagher

Dan Gallagher
Chief Investment Officer

Pensions&Investments

North Dakota puts Adams Street on watch

By: Meaghan Kilroy
Published: November 1, 2016

North Dakota State Investment Board, Bismarck, put private equity fund-of-funds manager Adams Street Partners on watch over transparency concerns, said David Hunter, executive director and chief investment officer of the North Dakota Retirement and Investment Office, in an e-mail.

"Over the past several months, staff has spent considerable time and resources working to optimize SIB's projected private equity portfolio," said a memo from investment staff prepared for the Oct. 28 board meeting. "As a consequence of these efforts, staff became aware that Adams Street provides different levels of transparency to different types of clients. Clients 'subject to FOIA or similar laws' (like the SIB) are provided a redacted reporting package. Adams Street Partners withholds key metrics on the underlying general partners — these metrics include internal rate of return, % drawn, % distributed, money multiples, and Adams Street's internal manager ratings."

The memo goes on to state the "reduced transparency" puts the state investment board at a disadvantage to investors who are not subject to open records laws. "Staff is concerned that there exists a class of investors that has privileged information" and can "make "better informed investment decisions," according to the memo.

The state investment board has invested with Adams Street, or its legacy firm, for more than 20 years. Its commitments over that period total more than $200 million, including a $30 million commitment to Adams Street's 2016 Global Fund earlier this year. Adams Street is the board's top-performing private equity manager, Mr. Hunter wrote in his e-mail.

The staff memo notes these transparency concerns have previously been discussed with Adams Street's legal counsel.

The retirement and investment office oversees the $10.8 billion investment board, which includes pension fund and insurance assets.

"Adams Street Partners has long been a proponent of providing our investors with the highest possible level of reporting transparency," said T. Bondurant French, executive chairman, at Adams Street Partners, in an e-mailed statement. "At the same time, in order to deliver strong investment performance and provide investors with access to top-tier managers, we sometimes must honor confidentiality agreements with certain general partners. We believe that striking a balance between transparency and access to high-performing managers is the right way to serve our clients."

Original Story Link: http://www.pionline.com/article/20161101/ONLINE/161109996/north-dakota-puts-adams-street-on-watch

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Private Equity Disclosure Requirements

As a California public pension plan, VCERA is subject to (i) the California Public Records Act (California Government Code §6250, et seq.) (the "Public Records Act"), which provides generally that all records relating to a public agency's business are open to public inspection and copying unless otherwise exempted under the Public Records Act, (ii) the Ralph M. Brown Act (California Government Code §54950, et seq.) (the "Brown Act"), which provides generally for open meetings for local legislative bodies, and (iii) the California Government Code Section 7514.7 ("Cal. Govt. Code § 7514.7"), which provides generally that public pension plans in California obtain and publicly disclose certain information regarding fees, expenses and returns from the alternative investment funds in which they invest. As a result, VCERA may be required to disclose certain information about its private equity investments to the public. Specifically, under the Public Records Act and Cal. Govt. Code § 7514.7, VCERA is required to disclose the following fund-level information:

a. The fact that VCERA is an investor in the alternative investment fund;

b. The name, address and vintage year of the alternative investment fund;

c. The dollar amount since inception of the VCERA's commitment and contributions to the fund;

d. The fiscal year-end dollar amount of the alternative investment fund's distributions received by VCERA and the remaining value of alternative investment fund's assets attributable to the investment by VCERA in the alternative investment fund;

e. The net internal rate of return ("IRR") of the alternative investment fund since inception;

f. The investment multiple of the alternative investment fund since inception;

g. The dollar amount of total management fees, and expenses paid by VCERA on an annual fiscal year-end basis; and

h. The annual fiscal year-end dollar amount of cash profit VCERA has received from the alternative investment fund.

i.

In addition, pursuant to Cal. Govt. Code § 7514.7, VCERA must disclose at least annually at a public meeting the following information:

(1) the fees and expenses that VCERA pays directly to the alternative investment fund, the fund manager or related parties;

(2) VCERA’s pro rata share of fees and expenses not included in subparagraph (1) that are paid from the alternative investment fund to the fund investment manager or related parties;

(3) VCERA’s pro rata share of carried interest distributed by the alternative investment fund to the fund investment manager or related parties;

(4) VCERA’s pro rata share of aggregate fees and expenses paid by all of the portfolio companies held by the alternative investment fund to the investment manager or related parties; and

(5) the gross and net IRR of the alternative investment fund since inception.

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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February 27, 2017

Board of Retirement
Ventura County Employees' Retirement Association
1190 Victoria Avenue, Suite 200
Ventura, CA 93003

SUBJECT: PROPOSED BUDGET ADJUSTMENTS FOR BOARD APPROVED REQUESTS

Dear Board Members:

During the current fiscal year, your Board took action to approve several staff requests listed in the attached schedule (Attachment A), based on events that transpired after the budget was adopted. While those items were approved by your Board, budgetary adjustments were not included or authorized. Therefore, staff is recommending the following budgetary adjustments to establish appropriations for those items previously approved:

Recommendation:

1. Authorize Staff to process the following Budgetary Adjustments:

INCREASE - Service & Supplies	$ 96,100
INCREASE - Information Technology	$354,100
DECREASE – Contingency	$450,200

I would be happy to respond to any questions you may have on this matter.

Sincerely,

Henry C. Solis, CPA
Chief Financial Officer

Attachment

Ventura County Employees' Retirement Association
Schedule of Budget Adjustments for Requests Approved By The Board of Retirement
Fiscal Year 2016-17

Board Letter Description	Date	Agenda Item	Account	Amount	FY 2016-17
Request for Statement of Work for Linea Soutions	7/11/2016	VII.B.1	Information Technology	$ 175,300	$ 175,300
Request for Statement of Work for Linea Soutions	7/11/2016	VII.B.1	Contingency		(175,300)
Request to Increase Not to Exceed Amount for Nossaman, LLP for AB 1291	7/11/2016	VII.C.1	Service & Supplies	$ 25,000	$ 25,000
Request to Increase Not to Exceed Amount for Nossaman, LLP for AB 1291	7/11/2016	VII.C.1	Contingency		(25,000)
Request for Reimbrusement by County of Ventura for Expenses Incurred for Legal Services in Preparation of Agreemetnts Related to Implementation of AB 1291	7/21/2016	III.B.1&2	Service & Supplies	$ 41,545	41,545
Request for Reimbrusement by County of Ventura for Expenses Incurred for Legal Services in Preparation of Agreemetnts Related to Implementation of AB 1291	7/21/2016	III.B.1&2	Contingency		(41,545)
Request to Increase Not -to-Exceed Amount for Nossaman, LLP for AB 1291	10/17/2016	VII.A	Service & Supplies	$ 29,500	$ 29,500
Request to Increase Not -to-Exceed Amount for Nossaman, LLP for AB 1291	10/17/2016	VII.A	Contingency		(29,500)
Request for Additional Statement of Work for Linea Solutions	11/21/2016	VII.B.1	Information Technology	$ 178,825	$ 178,825
Request for Additional Statement of Work for Linea Solutions	11/21/2016	VII.B.1	Contingency		(178,825)
Total Adjustments			**Salaries & Employee Benefits**		**$ -**
			Service and Supplies		**96,045**
			Information Technology		**354,125**
			Contingency		**(450,170)**

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February 27, 2017

Board of Retirement
Ventura County Employees' Retirement Association
1190 Victoria Avenue, Suite 200
Ventura, CA 93003

SUBJECT: MID-YEAR BUDGET UPDATE FOR FISCAL YEAR 2016-17

Dear Board Members:

With respect to the adopted budget, more than fifty percent of the fiscal year ending June 30, 2017, is complete; consequently, we have a reasonable estimate of the financial status for the year. The attached Budget Summary (Attachment A) reflects actual expenditures through January 31, 2017, as well as year-end projected expenditures based on staff's estimates. In addition, the Budget Summary reflects the proposed budget adjustments requested in the previous letter for Board approved requests in the current fiscal year.

Salaries & Employee Benefits: Overall Salaries and Employee Benefits are projected to be over budget by approximately $141,300. The majority of the budget overrun is due to staff appointments related to implementation of AB 1291 ($316,000). While the variance is high, the amount includes $193,300 for the General Counsel position that was not included in the adopted budget. In addition, recently approved general salary increases, market based adjustments and benefit changes of $61,000 were not included in the adopted budget. The increase is offset with savings realized due to vacancies and new/promotional hires at lower amounts than were budgeted of $197,500.

Services & Supplies: Overall Services & Supplies is projected to be under budget at fiscal year end by approximately $527,400. The majority of the budget savings is due to Professional Services ($494,500), Conference, Seminar and Travel ($30,100), offset by cost overruns in most remaining object line accounts, the most significant being Equipment ($9,400). While the variance in professional services is significant, the majority of the budget savings within the line item is due to elimination of Legal Services by County of Ventura County Counsel effective October 2016 ($245,500) and appointment of in-house Counsel, outsourced IT Manager pending appropriate position classification review ($114,200), deferral of actuarial audit ($75,000) to FY 17-18 (projected start date in July 2017), reduced Disability Hearing Officer fees ($29,200), legal fees for tax related services ($48,000) and offset by minor variances in all remaining professional service needs. Other service and supplies variances are minor.

Technology: The Information Technology budget is projected to be over budget by approximately $254,100. Computer Hardware is projected to be over budget by $20,200 due to planned expenditures being higher than budgeted. More specifically, only one server was budgeted and it has been determined that two is optimal to create redundancy and reduce downtime should a server fail. Computer Software savings of $13,600 are due to software upgrade needs being less than anticipated. Systems Application and Support is projected to be over budget by approximately $22,000, primarily due to higher than budgeted costs for website development ($7,000) and planned upgrades to the financial management system ($15,000).

The PAS replacement is projected to be approximately $225,400 over budget. This is primarily due to unbudgeted costs for postproduction system maintenance fixes ($221,800). In December 2016, the Board authorized the purchase of a block of hours with Vitech for postproduction system maintenance fixes and enhancements. Under certain payment terms Staff was unsuccessful in securing a block of hours based on the terms requested by the Board, defaulting charges to a time and materials basis. Staff estimates 750 hours (February – June) plus actual cost incurred in December and January for system maintenance fixes. This does not include work on system enhancements, which are currently being evaluated, or costs for remediation of post-warranty defects or issues.

Overall the budget can be balanced by transferring appropriations between major expenditure categories and requests approval of the recommendations that follow.

Recommendation:

1. Receive and file the mid-year projection.
2. Authorize Staff to process the following Budgetary Adjustments:

INCREASE – Salaries & Benefits	$175,000
INCREASE - Information Technology	$275,000
DECREASE – Service & Supplies	$450,000

Staff will return to the Board after year end, and if required, request appropriation adjustments between object levels to close out the year.

I would be happy to respond to any questions you may have on this matter.

Sincerely,

Henry C. Solis, CPA
Chief Financial Officer

Attachment

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
BUDGET SUMMARY FISCAL YEAR 2016-2017
Year to Date Expended through January 2017 - 58.33% of Fiscal Year and Year End Projection

EXPENDITURE DESCRIPTIONS	Adopted 2016/2017 Budget	Adjusted 2016/2017 Budget	Year to Date Expended January 2017	Projected @ June 30, 2017	Available Balance	Percent Expended
Salaries & Benefits:						
Salaries	$ 2,370,800.00	$ 2,397,612.00	$ 1,255,480.27	$ 2,467,380.27	$ (69,768.27)	102.91%
Extra-Help	192,400.00	192,400.00	81,421.72	197,146.72	(4,746.72)	102.47%
Overtime	3,000.00	3,000.00	-	0.00	3,000.00	0.00%
Supplemental Payments	74,400.00	75,322.00	29,191.96	52,691.96	22,630.04	69.96%
Vacation Redemption	131,300.00	131,300.00	158,731.35	192,131.35	(60,831.35)	146.33%
Retirement Contributions	432,100.00	437,235.00	216,327.37	446,727.37	(9,492.37)	102.17%
OASDI Contributions	141,800.00	143,515.00	65,750.77	146,950.77	(3,435.77)	102.39%
FICA-Medicare	37,800.00	38,202.00	20,619.41	39,019.41	(817.41)	102.14%
Retiree Health Benefit	4,000.00	4,000.00	3,970.75	3,970.75	29.25	99.27%
Group Health Insurance	194,300.00	197,212.00	102,420.47	208,320.47	(11,108.47)	105.63%
Life Insurance/Mgmt	1,100.00	1,125.00	582.09	1,082.09	42.91	96.19%
Unemployment Insurance	2,400.00	2,427.00	1,245.82	2,445.82	(18.82)	100.78%
Management Disability Insurance	18,400.00	18,609.00	8,624.83	18,124.83	484.17	97.40%
Worker' Compensation Insurance	19,900.00	20,138.00	10,814.71	20,514.71	(376.71)	101.87%
401K Plan Contribution	48,600.00	49,403.00	29,061.22	55,261.22	(5,858.22)	111.86%
Transfers In	135,500.00	135,500.00	23,668.92	23,668.92	111,831.08	17.47%
Transfers Out	(135,500.00)	(135,500.00)	(23,668.92)	(23,668.92)	(111,831.08)	17.47%
Total Salaries & Benefits	$ 3,672,300.00	$ 3,711,500.00	$ 1,984,242.74	$ 3,851,767.74	$ (140,267.74)	103.78%
Services & Supplies:						
Telecommunication Services - ISF	$ 35,400.00	$ 35,400.00	$ 20,277.41	$ 35,454.41	$ (54.41)	100.15%
General Insurance - ISF	13,100.00	13,100.00	6,539.50	13,079.00	21.00	99.84%
Office Equipment Maintenance	2,000.00	2,000.00	475.04	1,475.04	524.96	73.75%
Membership and Dues	14,700.00	14,700.00	12,095.00	13,795.00	905.00	93.84%
Education Allowance	8,000.00	8,000.00	2,000.00	6,000.00	2,000.00	75.00%
Cost Allocation Charges	89,500.00	89,500.00	-	89,500.00	0.00	100.00%
Printing Services - Not ISF	12,000.00	12,000.00	1,014.61	6,014.61	5,985.39	50.12%
Books & Publications	3,000.00	3,000.00	358.09	2,358.09	641.91	78.60%
Office Supplies	20,000.00	20,000.00	7,451.57	15,451.57	4,548.43	77.26%
Postage & Express	60,000.00	60,000.00	27,389.27	63,689.27	(3,689.27)	106.15%
Printing Charges - ISF	18,000.00	18,000.00	8.50	10,008.50	7,991.50	55.60%
Copy Machine Services - ISF	4,500.00	4,500.00	536.85	4,536.85	(36.85)	100.82%
Board Member Fees	13,300.00	13,300.00	6,100.00	12,700.00	600.00	95.49%
Professional Services	1,292,100.00	1,388,200.00	477,055.38	893,705.38	494,494.62	64.38%
Storage Charges	4,200.00	4,200.00	2,550.29	4,550.29	(350.29)	108.34%
Equipment	6,000.00	6,000.00	-	15,400.00	(9,400.00)	256.67%
Office Lease Payments	205,000.00	205,000.00	118,704.65	203,513.35	1,486.65	99.27%
Private Vehicle Mileage	12,500.00	12,500.00	7,279.90	14,154.90	(1,654.90)	113.24%
Conference, Seminar and Travel	138,400.00	138,400.00	63,267.63	114,967.63	23,432.37	83.07%
Furniture	15,000.00	15,000.00	783.62	14,783.62	216.38	98.56%
Facilities Charges	13,300.00	13,300.00	1,659.00	13,559.00	(259.00)	101.95%
Judgement & Damages	0.00	0.00	-	0.00	0.00	#DIV/0!
Transfers In	20,000.00	20,000.00	2,501.18	2,501.18	17,498.82	12.51%
Transfers Out	(20,000.00)	(20,000.00)	(2,501.18)	(2,501.18)	(17,498.82)	12.51%
Total Services & Supplies	$ 1,980,000.00	$ 2,076,100.00	$ 755,546.31	$ 1,548,696.51	$ 527,403.49	74.60%
Total Sal, Ben, Serv & Supp	$ 5,652,300.00	$ 5,787,600.00	$ 2,739,789.05	$ 5,400,464.25	$ 387,135.75	93.31%
Technology:						
Computer Hardware	$ 45,000.00	$ 45,000.00	$ 3,345.53	$ 65,245.53	$ (20,245.53)	144.99%
Computer Software	216,000.00	216,000.00	44,304.77	202,417.77	13,582.23	93.71%
Systems & Application Support	449,000.00	449,000.00	222,191.85	471,041.82	(22,041.82)	104.91%
Pension Administration System	353,000.00	707,100.00	505,184.01	932,475.57	(225,375.57)	131.87%
Total Technology	$ 1,063,000.00	$ 1,417,100.00	$ 775,026.16	$ 1,671,180.69	$ (254,080.69)	117.93%
Contingency	$ 786,000.00	$ 296,600.00	$ -	$ -	$ 296,600.00	0.00%
Total Current Year	$ 7,501,300.00	$ 7,501,300.00	$ 3,514,815.21	$ 7,071,644.94	$ 429,655.06	94.27%

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Vice President & Actuary
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February 8, 2017

Ms. Linda Webb
Retirement Administrator
Ventura County Employees' Retirement Association
1190 South Victoria Avenue, Suite 200
Ventura, CA 93003

Re: Ventura County Employees' Retirement Association
Cost-of-Living Adjustments (COLA) as of April 1, 2017

Dear Linda:

We have determined the cost-of-living adjustments for the Association in accordance with Section 31870.1, as provided in the enclosed exhibit.

The cost-of-living factor to be used by the Association on April 1, 2017 is determined by comparing the December CPI for the Los Angeles-Riverside-Orange County Area (with 1982-84 as the base period) in each of the past two years. The ratio of the past two December indices, 250.189 in 2016 and 245.357 in 2015, is 1.0197. The County Law section cited above indicates that the resulting percentage change of 1.97% should be rounded to the nearest one-half percent, which is 2.0%. Please note the above cost-of-living adjustment calculated using established procedures for VCERA may result in adjustments different from those calculated using alternative procedures by other systems.

The actual cost-of-living adjustment is dependent on tier and date of retirement. The CPI adjustment to be applied on April 1, 2017 is provided in Column (4) of the enclosed exhibit. The COLA bank on April 1, 2017 is provided in Column (5).

Please give us a call if you have any questions.

Sincerely,

John Monroe

John Monroe

TJH/bqb
Enclosure

Ventura County Employees' Retirement Association
Cost-Of-Living Adjustment
As of April 1, 2017

			(1)	(2)	(3)	(4)	(5)
Retirement Date			April 1, 2016 Accumulated Carry-over	CPI Change*	CPI Rounded**	CPI Used***	April 1, 2017 Accumulated Carry-over****
All Tier 1 and Safety Section 31870.1 Maximum Annual COLA			3.0%				
On or Before 4/1/1975			51.0%	1.97%	2.0%	3.0%	50.0%
04/02/1975	to	04/01/1976	43.5%	1.97%	2.0%	3.0%	42.5%
04/02/1976	to	04/01/1977	36.0%	1.97%	2.0%	3.0%	35.0%
04/02/1977	to	04/01/1978	32.5%	1.97%	2.0%	3.0%	31.5%
04/02/1978	to	04/01/1979	28.5%	1.97%	2.0%	3.0%	27.5%
04/02/1979	to	04/01/1980	24.0%	1.97%	2.0%	3.0%	23.0%
04/02/1980	to	04/01/1981	16.0%	1.97%	2.0%	3.0%	15.0%
04/02/1981	to	04/01/1982	3.5%	1.97%	2.0%	3.0%	2.5%
04/02/1982	to	04/01/1983	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1983	to	04/01/1984	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1984	to	04/01/1985	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1985	to	04/01/1986	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1986	to	04/01/1987	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1987	to	04/01/1988	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1988	to	04/01/1989	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1989	to	04/01/1990	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1990	to	04/01/1991	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1991	to	04/01/1992	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1992	to	04/01/1993	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1993	to	04/01/1994	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1994	to	04/01/1995	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1995	to	04/01/1996	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1996	to	04/01/1997	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1997	to	04/01/1998	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1998	to	04/01/1999	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/1999	to	04/01/2000	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2000	to	04/01/2001	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2001	to	04/01/2002	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2002	to	04/01/2003	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2003	to	04/01/2004	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2004	to	04/01/2005	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2005	to	04/01/2006	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2006	to	04/01/2007	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2007	to	04/01/2008	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2008	to	04/01/2009	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2009	to	04/01/2010	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2010	to	04/01/2011	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2011	to	04/01/2012	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2012	to	04/01/2013	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2013	to	04/01/2014	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2014	to	04/01/2015	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2015	to	04/01/2016	0.0%	1.97%	2.0%	2.0%	0.0%
04/02/2016	to	04/01/2017		1.97%	2.0%	2.0%	0.0%

* Based on ratio of December 2016 CPI to December 2015 CPI for the Los Angeles - Riverside - Orange County Area.

** Based on CPI change rounded to nearest one-half percent.

*** These are the cost-of-living adjustment factors to be applied on April 1, 2017.

**** These are the carry-over of the cost-of-living adjustments that have not been used on April 1, 2017.

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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February 27, 2017

Board of Retirement
Ventura County Employees' Retirement Association
1190 South Victoria Avenue, Suite 200
Ventura, CA 93003

SUBJECT: AUTHORIZATION FOR TRUSTEE JOHNSTON TO ATTEND THE 2017 NCPERS ANNUAL CONFERENCE & EXHIBITION, AND PRE-CONFERENCE ACCREDITED FIDUCIARY PROGRAM MODULES 1 & 2, MAY 20TH – 24TH IN HOLLYWOOD, FLORIDA

Dear Board Members:

Trustee Johnston has requested authorization to attend the National Conference on Public Employee Retirement Systems (NCPERS) 2017 Annual Conference & Exhibition, and to also take part in the pre-conference Accredited Fiduciary Program for Modules 1 and 2. The training and conference are May 20th - 24th and the estimated cost to attend is approximately $3600, including registration for the pre-conference & conference, airfare, hotel, meals and other related expenses.

Staff & Trustee Johnston will be pleased to respond to any questions you may have on this matter at February 27, 2017 business meeting.

Sincerely,

Linda Webb

Linda Webb
Retirement Administrator

NATIONAL CONFERENCE ON PUBLIC EMPLOYEE RETIREMENT SYSTEMS

2017 ANNUAL CONFERENCE & EXHIBITION (ACE)

ADVOCACY

RESEARCH

EDUCATION

MAY 20–24
DIPLOMAT HOTEL
HOLLYWOOD, FL

FUND MEMBER REGISTRATION FORM

Follow Us on Twitter #NCPERSACE17

PRE-CONFERENCE PROGRAMS

TRUSTEE EDUCATIONAL SEMINAR (TEDS)

MAY 20 – 21

Cost: $450 (early-bird rate through April 25) // $650 (after April 25 or onsite)

ABOUT

The Trustee Educational Seminar (TEDS) is intended for new and novice trustees who are seeking a better understanding of their roles and responsibilities as truastees of their pension funds. It also serves as a refresher for experienced trustees interested in staying up-to-date.

This two-day program provides an introduction to fiduciary responsibilities, creating a solid foundation of knowledge for those who have limited experience in pension plan trusteeship. Program content is designed to address the critical elements of trust fund management, including important topics such as investing, legal requirements, and trustee ethics.

Attendance at TEDS provides trustees with eight (8) hours of continuing education (CE) credit.

WHO SHOULD ATTEND?

- **New trustees** – get started with a solid foundation of knowledge so you'll be prepared to fulfill your obligations to your retirees.
- **Experienced trustees** – get updated on the most recent trends and developments in the public pension fund industry to ensure your continued success.
- **Administrators and pension staff** – be better prepared to do your job as a key implementer of policies and critical fund initiatives.

PRELIMINARY AGENDA

SATURDAY, MAY 20

6:30 am – 8:00 am	Breakfast
6:30 am – 1:00 pm	Registration
8:00 am – 8:15 am	Opening Remarks
8:15 am – 1:00 pm	GENERAL SESSION I ▪ History and Mechanics of the Defined Benefit Plan ▪ Fund Structure: Investment Policy Statement, Asset Allocation & Benchmarking ▪ Investments 101: Fixed Income & Public Equities ▪ Investments 201: Alternatives
5:00 pm – 6:00 pm	President's Reception

SUNDAY, MAY 21

6:30 am – 8:00 am	Breakfast
6:30 am – 1:00 pm	Registration
8:00 am – 1:00 pm	GENERAL SESSION II ▪ Asset Allocation Challenge ▪ Model Policies & Procedures ▪ Best Practices Panel
1:00 pm	Presentation of Certificates

For updates or to register online visit www.NCPERS.org. Fax registration forms to 202-624-1439.Question? Call 1-877-202-5706 or e-mail registration@ncpers.org.

NCPERS ACCREDITED FIDUCIARY (NAF) PROGRAM

MODULES 1/2 & 3/4 | MAY 20 – 21 | 8:00 AM to 3:00 PM

COST: $800 (early-bird rate through April 25) // $1,000 (after April 25 or onsite)

Class Size Limited to 45 People

STRONG BOARDS, SOLID GOVERNANCE, STABLE RETURNS

The NCPERS Accredited Fiduciary (NAF) Program is an accreditation trustee program specifically designed and tailored for public pension governance. NAF divides plan governance, oversight and administration into four modules (see below). Each module delves into the fundamental components and strategies necessary for governing a public pension fund, allowing trustees and plan staff to walk away with the key competencies critical to their fiduciary responsibilities.

Module 1 – Governance and the Board's Role

Module 2– Investment & Finance

Module 3 – Legal, Risk Management and Communication

Module 4 – Human Capital

ELLIGIBILITY

Elected or appointed pension trustees and staff interested in the next level of professional development.

CERTIFCATION REQUIREMENTS

- Recommended that participants complete the NCPERS Trustee Educational Seminar first.
- Completion of all four NAF Modules, earning a total of twelve (12) hours of continuing education credits.
- Demonstrate mastery of content through an online exam.

Upon successful completion of all requirements and receipt of a passing grade on examination, NAF participants will receive an official NCPERS accreditation to showcase their achievement.

MODULE 1: Governance and the Board's Role

Learning Objectives

- Understanding the roles, responsibilities and accountabilities of your public pension Board as well as the differing governance models and principles that exist.
- How to become a "high functioning Board".

Answers the Questions

- How active should your Board be?
- How does your Board culture impact your effectiveness to govern?
- What is your Board's role in setting strategy and direction?
- How do you attract and retain top talent to your Board?

MODULE 2: Investment & Finance

Learning Objectives

- Understanding what you as a director need to know and how you access the required information to make informed financial decisions.
- Proper administration of your fund's investments, ensuring compliance with investment policies, performance management, and adequate reporting.

Answers the Questions

- What is the role of external advisors and how do you leverage them?
- What is the Board's role in ensuring compliance with investment policies?
- What are the roles and responsibilities of the Investment Committee?

MODULE 3: Legal, Risk Management and Communication

Learning Objectives

- Understanding the legal and risk oversight duties of your Board and you as an individual trustee.
- What are the roles and responsibilities of the Audit Committee?
- Responding to media and the importance of your corporate reputation.
- Effective stakeholder communication.

Answers the Questions

- What are you and your Board's fiduciary duties related to legal and risk oversight?
- How does your Board spot and guard against fraudulent behavior?
- How should your Board manage relationships with external parties?
- How can your Board effectively communicate with stakeholders (Management, Pensioners, Employees)?

MODULE 4: Human Capital

Learning Objectives

- The fundamentals of the total executive compensation design.
- The use of compensation strategies and performance management plans to guide behavior and maximize fund performance.
- Ensure employment contracts and service agreements avoid pitfalls and facilitate positive growth transitions.
- The importance of ongoing development and active succession planning for key roles within your fund.

Answers the Questions

- How does your Board establish a defensible compensation program?
- What is your Board's role in establishing a pay-for-performance culture?
- What are the key elements within executive employment contracts and personal service agreements?
- How can your Board develop and maintain a skilled executive pipeline for the future?

For updates or to register online visit www.NCPERS.org. Fax registration forms to 202-624-1439.Question? Call 1-877-202-5706 or e-mail registration@ncpers.org.

ANNUAL CONFERENCE & EXHIBITION

NCPERS' focus on trustee education makes the NCPERS Annual Conference the premier public pension education conference in the U.S. — and the best place to connect with pension trustees, administrators, staff members, union officials and investment professionals. The Annual Conference provides an unparalleled opportunity to keep up-to-date on pension trends, best practices and the latest news and information pertinent to your fiduciary obligations. Hear from noted expert speakers in the pension industry — and network with colleagues from across the U.S. and Canada.

FUND MEMBER FEE: $800 (early-bird rate through April 25) // $1,000 (after April 25 or onsite)

SCHEDULE OF EVENTS

SUNDAY, MAY 21

2:00 pm – 6:00 pm	Registration
4:00 pm – 6:00 pm	Exhibition
4:00 pm – 6:00 pm	CorPERS Lounge
4:00 pm – 6:00 pm	Welcome Reception

MONDAY, MAY 22

6:30 am – 7:45 am	Breakfast
6:30 am – 2:00 pm	Registration
8:00 am – 10:30 am	First General Session
8:00 am – 1:30 pm	Exhibition
8:00 am – 1:30 pm	CorPERS Lounge
10:30 am – 11:00 am	Exhibit Break
11:00 am – 12:00 pm	Three (3) Concurrent Breakout Sessions
12:15 pm – 1:15 pm	Three (3) Concurrent Breakout Sessions
12:15 pm – 1:15 pm	CIO & Investment Staff Forum
1:30 pm – 2:30 pm	Lunch & Lecture Series (not open to guests)
2:45 pm – 3:45 pm	Social Media 101
2:45 pm – 3:45 pm	National Committee Election

TUESDAY, MAY 23

6:30 am – 7:45 am	Breakfast
7:00 am – 2:00 pm	Registration
8:00 am – 10:30 am	Second General Session
8:00 am – 1:30 pm	Exhibition
8:00 am – 1:30 pm	CorPERS Lounge
10:30 am – 11:00 am	Exhibit Break

TUESDAY, MAY 23 (cont'd)

11:00 am – 12:00 pm	Three (3) Concurrent Breakout Sessions
12:15 pm – 1:15 pm	Three (3) Concurrent Breakout Sessions
12:15 pm – 1:15 pm	Administrator's Forum
1:30 pm – 2:30 pm	Lunch & Lecture Series (not open to guests)
2:45 pm – 3:45 pm	Social Media 201
2:45 pm – 3:30 pm	National Committee Executive Board Elections

WEDNESDAY, MAY 24

6:30 am – 7:45 am	Breakfast
7:30 am – 12:00 pm	Registration
8:00 am – 10:30 am	Third General Session
10:30 am – 11:00 am	Refreshment Break
11:00 am – 12:00 pm	Three (3) Concurrent Breakout Sessions
12:15 pm – 1:15 pm	Three (3) Concurrent Breakout Sessions
1:30 pm – 2:30 pm	Lunch & Lecture Series (not open to guests)
2:45 pm – 3:45 pm	Annual Business Meeting
6:00 pm – 7:00 pm	Closing Reception
7:00 pm – 9:00 pm	Closing Dinner & Entertainment

For updates or to register online visit www.NCPERS.org. Fax registration forms to 202-624-1439.Question? Call 1-877-202-5706 or e-mail registration@ncpers.org.

CONFERENCE HIGHLIGHTS

EDUCATION

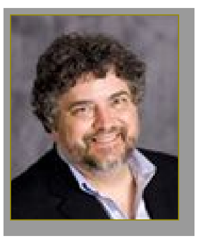
The NCPERS Annual Conference provides a multitude of educational offerings for its members at all levels of experience. These opportunities will help you develop the knowledge, skills, and ideas you need to better serve your fund or union, move forward in your professional development, and engage effectively with colleagues across the country and Canada.

NCPERS is recognized as a learning provider and is an accredited sponsor of continuing education in several states. By attending the Annual Conference, trustees can earn up to 16.5 hours of continuing education.

Educational sessions will include:

- Economic Update
- Corporate Governance
- Shareholder Activism
- Trustee Ethics
- Pension Law Update
- Emerging Markets
- Pension Actuarial Science
- State Pension Battle Update
- Reform & Regulations
- Portfolio Risk and Performance
- Investment Strategies
- Healthcare Reform
- GASB Update
- Social Media

FEATURED SESSIONS



Social Media Track

Have a Facebook account? Twitter? Whether you're already fully immersed in the waters of social media or are still standing on the shore wondering what to make of it all, learning how to interact on various social media platforms and getting the most of your online investments is crucial to survive and thrive in this age of digital communication. NCPERS has enlisted James Spellos of Meetings U to help you demystify the use of social media and give you the fundamental information you need to be part of the social revolution.

Sessions include:

- Social Media 101
- Social Media 201
- It's App-tastic

CIOs & Investment Staff Forum

Monday, May 22 12:15 pm – 1:15 pm

The complexities and challenges that public plan investment professionals face are numerous and daunting and you shouldn't have to face them alone! Structured as a participant-driven session, this Forum provides a comfortable and open setting for CIOs and investment personnel, from all plan sizes, to discuss, learn, and network with peers. Topics will include timely strategies, pitfalls to avoid, governance issues, and common professional challenges. This forum is open to public plan investment professionals only.

Administrator's Forum

Tuesday, May 23 12:15 pm – 1:15 pm
Hosted by David Clark, Arkansas Local Police & Fire Retirement System

Recognizing the need for small plan administrators to meet and discuss issues with peers who have similar challenges, NCPERS will host an educational session devoted to the needs of municipal and county public plan administrators and staff. This session will be moderated by a city pension administrator and will allow attendees to ask questions, discuss issues related to their funds, and learn how others are addressing mutual concerns.

HOTEL INFORMATION

The Diplomat Hotel
Curio Collection by Hilton

RESERVATION DEADLINE APRIL 25

NCPERS GROUP RATE
$259 single/double occupancy

Book your hotel room at the Hilton and receive the discounted conference rate. **The group rate is available until Friday, April 25,** or until the group block is sold out, whichever comes first. After April 25, rates will be based on the hotel's prevailing room rates.

CALL 1-800-HILTONS OR 1-800-445-8667
USE CODE: NCPERS
BOOK ONLINE WWW.NCPERS.ORG

Diplomat Hotel Hollywood, Curio Collection by Hilton
13555 South Ocean Drive, Hollywood, Florida, 33019, USA
TEL: 954-602-6000

For updates or to register online visit www.NCPERS.org. Fax registration forms to 202-624-1439.Question? Call 1-877-202-5706 or e-mail registration@ncpers.org.

GENERAL INFORMATION

MEMBERSHIP REQUIRED

NCPERS Annual Conference & Exhibition is a members-only conference. Your organization must be a current member of NCPERS in order for your registration to be processed.

To verify your organization's membership status, please e-mail your inquiry to membership@ncpers.org.

WHO ATTENDS?

Professionals from all venues of the pension industry, including trustees, administrators and staff, state and local officials, investment and financial consultants, individuals who provide products and services to pension plans, union officers and regulators from across the United States and Canada.

CONTINUING EDUCATION (CE) CREDITS

NCPERS is recognized as a learning provider in the public pension industry and is an accredited sponsor of continuing education in several States.

Attending TEDS = up to 8 hours of CE
Attending NAF = 6 hours of CE
Attending Annual Conference = up to 16.5 hours

REGISTRATION FEES

There are no per-day registration rates for TEDS or the Annual Conference. If you register onsite, the full conference rate will apply, regardless of the day you register on.

Registration fees include (unless otherwise noted) the following:

- Meeting materials, including the conference bag, lanyard and pen
- Breakfast
- Refreshment breaks
- Receptions
- Lunch & Lecture Series (*Not applicable to guests*)
- Closing dinner and show

Registration fees do not include hotel accommodations, airfare, or transportation to and from the hotel.

GUEST REGISTRATION

A guest refers to a spouse or personal friend, **not a business associate, staff member or colleague.** All guests must be registered to attend NCPERS events. No admittance will be given to guests without a registration name badge.

- The guest fee includes access to the following functions:
- Breakfast (valued at $30 per day)
- Receptions (valued at $60 per event)
- Exhibit hall refreshment breaks (valued at $20 per event)
- Closing dinner with show (valued at $100 per person)

Guests cannot attend the Lunch & Lecture Series as this is an educational event for trustees.

REGISTRATION DEADLINE

Register by Friday, April 25, to receive the early-bird conference rates and be included on the preliminary attendee list. You may still register for the conference after this date, but higher registration fees will apply.

REGISTRATION CHANGES

All registration changes must be received in writing.
Please e-mail all registration changes to registration@ncpers.org or fax to 202-624-1439.

REGISTRATION METHODS

Submit your registration online at www.NCPERS.org. You will need your individual username and password to login.

Fax the registration form with credit card number to 202-624-1439. Or email to registration@ncpers.org

Mail the registration form with check or credit card number to:

NCPERS
444 North Capitol Street, NW
Suite 630
Washington, DC 20001

FUND MEMBER REGISTRATION FORM

ATTENDEE REGISTRATION	Early-Bird Registration Fees (through April 25)	Registration Fees (after April 25 or onsite)
❑ Trustee Educational Seminar (TEDS)*	$450/person	$650/person
❑ NCPERS Accredited Fiduciary (NAF) Program – Modules 1 & 2*	$800/person	$1,000/person
❑ NCPERS Accredited Fiduciary (NAF) Program – Modules 3 & 4*	$800/person	$1,000/person
❑ Annual Conference & Exhibition (ACE)	$800/person	$1,000/person

** The NCPERS pre-conference programs will run concurrently. Attendees should only register for one of the programs.*

(Please Print Clearly)

Organization Name:____

First Name: ____________________ Last Name: ____________________

Title: ____

Preferred Mailing Address: ____________________________________

City: __________________________ State: ______ Zip Code: ____________

Daytime Phone: _________________ E-mail Address*: ________________________

**Please provide your e-mail address for conference updates and registration confirmation.*

GUEST REGISTRATION	Early-Bird Registration Fees (through April 25)	Registration Fees (after April 25 or onsite)
❑ TEDS/NAF Guest Registration	$50/person	$75/person
❑ Annual Conference Guest Registration	$150/person	$200/person
❑ Children 12 and Under	$25/person	$50/person

A guest refers to a spouse or personal friend, not a business associate, staff member or colleague. All guests must be registered to attend NCPERS events. **See general information page for more details.**

First Name: ____________________ Last Name: ____________________

First Name: ____________________ Last Name: ____________________

REGISTRATION/ORDER SUMMARY

TEDS Registration	$ ________
NAF Module 1&2 Registration	$ ________
NAF Module 3&4 Registration	$ ________
Annual Conference Registration	$ ________
Guest Registration	$ ________
GRAND TOTAL (U.S. funds)	**$** ________

CANCELLATION POLICY

All registration cancellations must be received in writing before April 25 to receive a refund and will be subject to a processing fee: $50 for TEDS, $100 for NAF and Annual Conference and $50 for guest registrations. **No refunds will be given to cancellations after April 25 or to no-shows.** Please email your cancellation request to registration@ncpers.org or call 202-624-1456.

PAYMENT METHODS (All payments must be in U.S. funds)

Online at www.ncpers.org.

You will need your username and password to login.

Check

Mail to NCPERS
444 North Capitol Street, NW, Suite 630
Washington, DC 20001

Credit Card: Fax to 202-624-1439 or email to registration@ncpers.org

❑ American Express ❑ Visa ❑ MasterCard

Credit Card #: ____________________________

Expiration Date: ____________ CC Verification Code:__________

Name (on the card):__________________________

Billing Address:____________________________

City:____________________State:______ Zip: ______

Charge: $ ____________________________

Signature:____________________________

By submitting this form, I certify I have read and understand the terms of this registration. If paying by credit card, I authorize NCPERS to charge my card for the total amount indicated.

For updates or to register online visit www.NCPERS.org. Fax registration forms to 202-624-1439.Question? Call 1-877-202-5706 or e-mail registration@ncpers.org.

National Conference on Public Employee Retirement Systems
The Voice for Public Pensions

444 N. Capitol St., NW
Suite 630
Washington, DC 20001
Phone: 1-877-202-5706
Fax: 202-624-1439
info@NCPERS.org
www.NCPERS.org

The National Conference on Public Employee Retirement Systems (NCPERS) is the largest trade association for public-sector pension funds, representing more than 500 funds throughout the United States and Canada. It is a unique nonprofit network of trustees, administrators, public officials, and investment professionals who collectively manage nearly $3.7 trillion in pension assets held in trust for approximately 21 million public employees and retirees — including firefighters, law enforcement officers, teachers, and other public servants.

Founded in 1941, NCPERS is the principal trade association working to promote and protect pensions by focusing on **A**dvocacy, **R**esearch, and **E**ducation for the benefit of public sector pension stakeholders… It's who we **ARE**!

For program updates and to register online go to www.NCPERS.org/annconf

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

1190 South Victoria Avenue, Suite 200
Ventura, CA 93003-6572

(805) 339-4250 · Fax: (805) 339-4269
http://www.ventura.org/vcera

February 27, 2017

Board of Retirement
Ventura County Employees' Retirement Association
1190 South Victoria Avenue, Suite 200
Ventura, CA 93003

SUBJECT: AUTHORIZATION FOR TRUSTEE BIANCHI TO ATTEND THE CALAPRS ADVANCED PRINCIPLES OF PENSION MANAGEMENT FOR TRUSTEES MARCH 29TH – 31ST IN LOS ANGELES, CALIFORNIA

Dear Board Members:

Trustee Bianchi has requested authorization to attend the CALAPRS Advanced Principles of Pension Management for Trustees at the UCLA Luskin Conference Center in Los Angeles. The training and conference are March 29th – 31st and the estimated cost to attend is approximately $3200, including registration, lodging, meals and mileage.

Staff & Trustee Bianchi will be pleased to respond to any questions you may have on this matter at February 27, 2017 business meeting.

Sincerely,

Linda Webb
Retirement Administrator

CALAPRS
EDUCATION · COMMUNICATION · NETWORKING
California Association of Public Retirement Systems

MARCH 29-31, 2017

UCLA LUSKIN CONFERENCE CENTER
LOS ANGELES, CA

Advanced Principles of Pension Management *for Trustees*

FOR THE CALIFORNIA ASSOCIATION OF PUBLIC RETIREMENT SYSTEMS

Advanced Principles of Pension Management

for Trustees

ADVANCED PRINCIPLES OF PENSION MANAGEMENT

Public pension system trustees are challenged over system funding, actuarial assumptions, benefit administration, executive leadership, and transparency. Training has been provided for new trustees, but CALAPRS has recognized the value of exposing veteran trustees to some of the best pension management thinking to enhance their service to their retirement systems.

The **CALAPRS Principles of Pension Management** programs help public pension trustees ask and answer the tough questions. The Advanced course is about building trustee skills and strengthening board governance.

THE PROGRAM

As a public pension trustee, you are faced with increased challenges, unprecedented scrutiny, and evolving issues. Moreover, areas such as actuarial assumptions, accounting requirements, and risk management are rapidly changing. To help trustees build and enhance their skills in addressing such issues, the course attendees will hear from and discuss issues with top-level presenters in the areas of board governance, investments, actuarial science, pension law and economics.

PARTICIPANTS | WHO IS RIGHT FOR THE PROGRAM?

The Advanced Principles Program is designed for an experienced group of trustees. In evaluating readiness for this program, trustees should have already acquired a basic understanding of board governance practices, actuarial and investment principles, and fiduciary responsibility. Newer trustees may first want to attend the initial trustee training course at Pepperdine University entitled: “Principles of Pension Management for Trustees” that is specifically designed for new trustees. The course was previously held at Stanford University.

CURRICULUM | YOUR COURSE OF STUDY

Over the course of two days, you will be immersed in a powerful learning process—acquiring the skills you need to lead your organizations effectively. The program's proven, multifaceted educational approach fosters the professional, intellectual, and personal development required to govern at the board level.

The 2017 Program will cover:

- **Policy-Based Boards: From Theory to Implementation**
- **Economics Update and Forecast**
- **Investments and Board/CIO Relationships**
- **The Legal Side of Governance**
- **Advanced Actuarial Principles**

CALAPRS | 575 MARKET ST., STE. 2125, SAN FRANCISCO, CA 94105 | P: 415.764.4860 | INFO@CALAPRS.ORG | WWW.CALAPRS.ORG

EXPERIENCE UCLA'S TRADITION OF EXCELLENCE AT THE LUSKIN CONFERENCE CENTER

In the heart of UCLA's vibrant campus, the new UCLA Meyer and Renee Luskin Conference Center is set amid iconic campus buildings and the exhilarating backdrop of daily student life. The Luskin Conference Center is a place where the best academic minds, innovators, researchers, political leaders, and societal visionaries meet to exchange ideas that help shape the world.

The UCLA Luskin Conference Center is an ideal central meeting place where California's public pension trustees can gather for a transformational academic experience that transcends the acquisition of knowledge, skills, and tools—and fosters professional, intellectual, and personal development.

Case Method

The case method is one of the most effective tools for learning governance and leadership principles—especially for practicing trustees. Case studies offer multiple levels of learning, compelling participants to identify relevant issues and to apply practical governance lessons to their own organizations. Cases provide an opportunity to study and discuss issues and challenges faced by public pension trustees in the real world.

Participants will receive a Certificate of Completion for this program.

PROGRAM DATES

March 29-31, 2017

Interaction

Every facet of this program —from participant selection, to classroom seating, to learning group design, to social activities—is carefully crafted to promote dynamic interchange and shared learning among accomplished peers from our diverse membership. The intellectual stimulation of learning in the company of peers is one of the most rewarding aspects of the program experience, and most participants establish a network of friendships and business contacts that last a lifetime.

Learning Commitment

Active involvement in all classroom sessions, case discussions, and other program activities is expected. Participants devote considerable time and intellect to the learning experience, putting in long days and evenings. Therefore, they must be free of outside responsibilities during the two days of the program.

THE FACULTY

The Advanced Principles Program is taught by a faculty of highly regarded experts and experienced professionals in the field of public pension management.

TUITION

Program tuition is $3,100 for CALAPRS members and $3,400 for non-members and includes all lodging, meals, and materials. Tuition must be paid in full by March 10, 2017.

ACCOMMODATIONS

Program tuition includes all meals and lodging on the nights of March 29 and 30, 2017 at the UCLA Luskin Conference Center, located at 425 Westwood Plaza, Los Angeles, CA. To ensure full participation, all participants are required to stay on-site in the provided private, comfortable hotel rooms.

REGISTRATION

Applications must be received by February 15, 2017. Since space is limited, CALAPRS reserves the right to limit the number of trustees accepted from each retirement system, if need be.

Advanced Principles of Pension Management for Trustees

March 29-31, 2017 Los Angeles, CA

APPLICATION FOR ENROLLMENT

Due by February 15, 2017

Applications must be received by February 15, 2017. Since space is limited, CALAPRS reserves the right to limit the number of trustees accepted from each retirement system, if need be. Accepted applicants will be notified via email on February 16, 2017.

Applicant Qualifications: *The Advanced Principles Program is designed for an experienced group of trustees. In evaluating readiness for this program, trustees should have already acquired a basic understanding of board governance practices, actuarial and investment principles, and fiduciary responsibility. Newer trustees may first want to attend the initial trustee training course at Pepperdine University entitled: "Principles of Pension Management for Trustees" that is specifically designed for new trustees. The course was previously held at Stanford University.*

Applicant Information

Trustee's Name (*for certificate/name badge*):______________________________

Retirement System:______________________________

Trustee Type: ❒ Elected ❒ Appointed ❒ Ex-Officio Date Became a Trustee:_________ Date Current Term Expires:________

Trustee's Mailing Address:______________________________

Trustee's Phone :______________________ Trustee's Email:______________________

Emergency Contact (*name, phone):*______________________________

Dietary Restrictions (*if any):*______________________________

Administrative Contact (*name, email*):______________________________

❒ I have **e-mailed** this applicant's biography (≤150 words) to register@calaprs.org for printing in the attendee materials.

Applicant Signature

If admitted, I agree to attend the Advanced Principles program in full and acknowledge that missing one or more sessions may result in forfeiture of my Certificate of Completion, as determined by the Faculty.

Trustee Signature *(required)* ______________________________ Date:_______________

Administrator Approval

Administrator Name:______________________Email:______________________

Administrator Signature *(required):* ______________________________

Tuition Payment

❒ $3,100 CALAPRS Member ❒ $3,400 Non-member

Program tuition must be paid in full by March 10, 2017. Tuition includes all meals, materials, and mandatory lodging for all participants for the nights of March 29 and 30 in the UCLA Luskin Conference Center. Payable by check only made out and mailed to "CALAPRS". A separate invoice will not be sent.

If, due to a disability, you have any special needs, call 415-764-4860 to let us know. We will do our best to accommodate your needs.

CALAPRS
EDUCATION - COMMUNICATION - NETWORKING
California Association of Public Retirement Systems

Mail, email or fax form and payment to
CALAPRS
575 Market Street, Suite 2125
San Francisco, CA 94105
Phone: 415-764-4860 Fax: 415-764-4915
register@calaprs.org www.calaprs.org

VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
1190 South Victoria Avenue, Suite 200
Ventura, CA 93003-6572
(805) 339-4250 · Fax: (805) 339-4269
http://www.ventura.org/vcera

February 27, 2017

Board of Retirement
Ventura County Employees' Retirement Association
1190 South Victoria Avenue, Suite 200
Ventura, CA 93003

SUBJECT: AUTHORIZATION FOR TRUSTEES WILSON AND GOULET TO ATTEND THE 2017 PENSION BRIDGE CONFERENCE, APRIL 18TH & 19TH IN SAN FRANCISCO

Dear Board Members:

Trustees Wilson and Goulet have requested authorization to attend the 2017 Pension Bridge Conference in San Francisco, which is scheduled for April 18th and 19th. The estimated cost to attend is approximately $1,200 per trustee, including transportation, registration, lodging, meals and other expenses.

The full agenda for the conference is provided.

Staff and Trustees Wilson and Goulet will be pleased to respond to any questions you may have on this matter at February 27, 2017 business meeting.

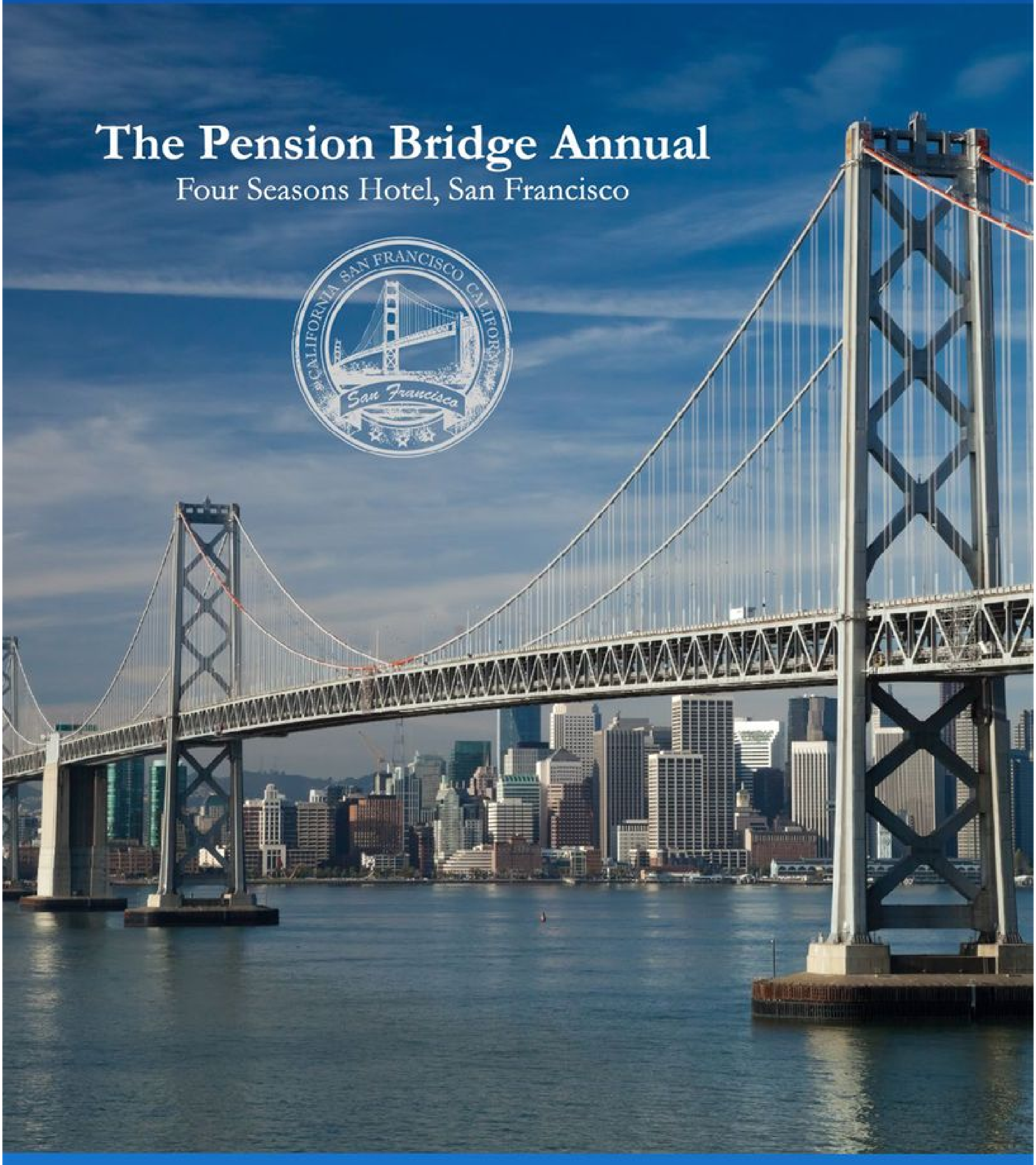
Sincerely,

Linda Webb

Linda Webb
Retirement Administrator

The Pension Bridge Annual

Four Seasons Hotel, San Francisco



April 18th & 19th, 2017

www.pensionbridge.com

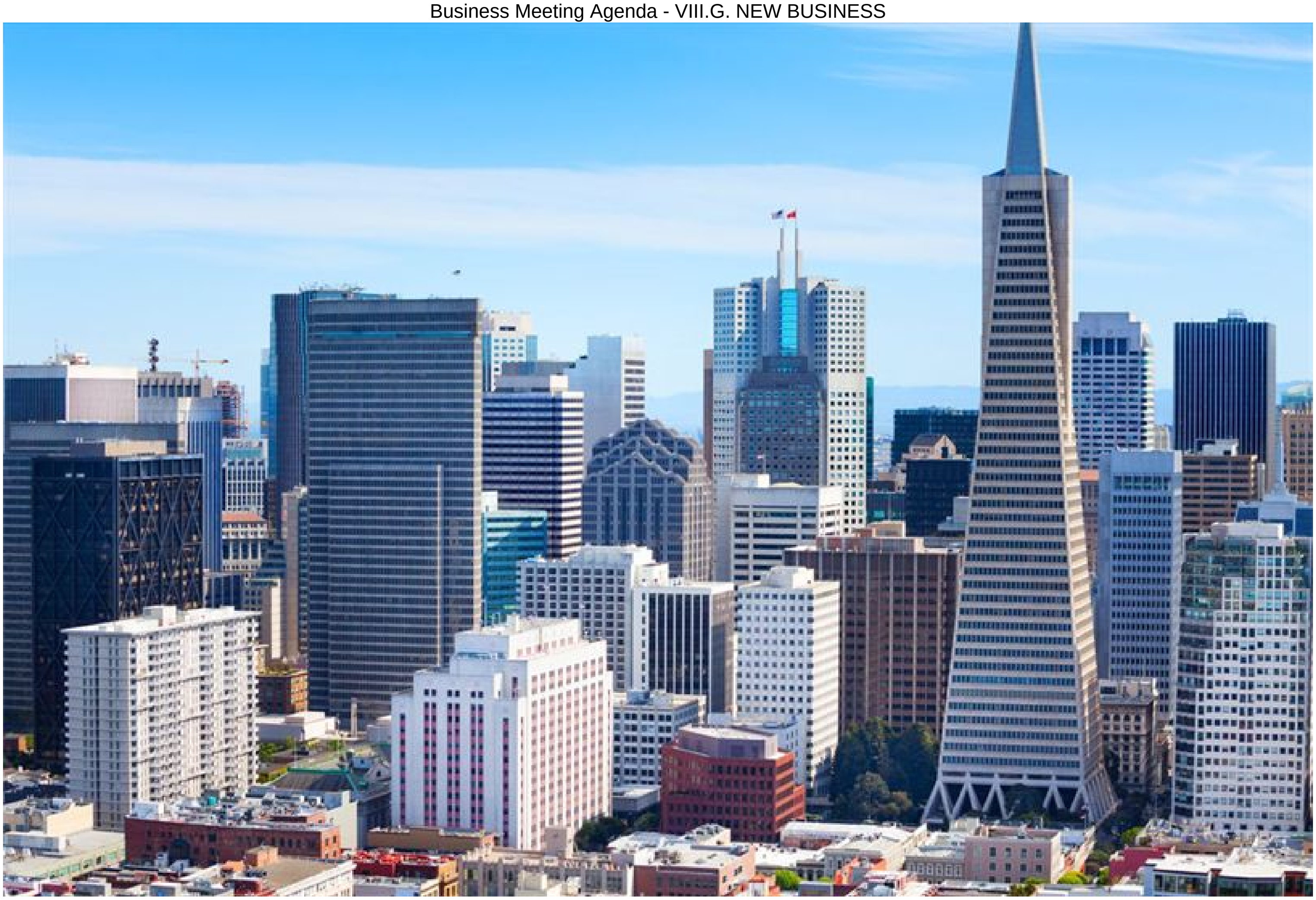
The Pension Bridge Annual Conference provides the highest level of education and networking to the institutional investment community. A mix of Public Funds, Corporate Funds, Foundations, Endowments, Union Funds, Taft-Hartleys, Family Offices, Sovereign Wealth Funds, Consultants and Investment Managers will come together for this exclusive event.

The Pension Bridge Annual provides the industry's only controlled attendance structured event. This helps The Pension Bridge to maintain the best conference ratio in the industry. **There will be over 200 Pension Fund Representatives and Non-Discretionary Consultants in attendance. We have allowed for only 100 Manager Firms.** This better than 2:1 ratio, combined with participation from the most influential industry figures, creates a more enjoyable environment for all.

Learn from the experts about the most important issues, challenges, trends, opportunities and strategies that will shape our industry for today and the future:

- The Canadian Model – What U.S. Structural Changes are Necessary for Long-Term Fiscal Sustainability?
- Macroeconomic View of the Economy
- How to Increase Returns in a Low Return Environment
- Understanding Risk Parity and LDI Asset Allocation Models – which one will be Most Effective?
- Best Practices for Constructing a Liability Hedging Portfolio
- What should Boards Consider when Adopting a Risk Culture?
- What are the Top Pension Risks to be Most Wary of?
- Key Considerations for a Risk Allocation Framework Approach
- Executive Director's/CEO's View on the Current and Future State of the Industry
- Smart Beta Strategies – Proceed with Caution
- The Benefits and Criticisms of Multi-Asset Strategies
- The Changing Landscape of Fixed Income and the Shift into Next Generation Strategies
- In-Depth Analysis of Emerging Markets
- As a Plan Sponsor, Should You Consider Implementing a Currency Hedging Program?
- Recent Developments and Approaches to ESG
- Most Attractive Sectors, Strategies and Geographies within Opportunistic/Special Situations
- A Close-Up Look at the Hedge Fund Industry – Current and Future Trends
- How should a Credit Portfolio Should be Structured?
- Best Approach to Commodities with the Current Deflationary Cycle
- Best Opportunities in Energy and Infrastructure
- Is a Real Estate Correction on the Horizon? Strategies with the Biggest Risk/Reward
- How to Protect your Private Equity Portfolio and Avoid Getting Involved in Expensive Deals
- Perspectives from Influential Pension Plan CIOs
- Finding the Best Non-Correlated Investments to Prevent Portfolio Drawdowns
- A Glimpse of what our Industry will look like in the Future
- Strategies that will Outperform in the Next Few Years

The Pension Bridge Annual, April 18 & 19, 2017 San Francisco



We remain in a low growth, low return environment with unfavorable demographics. The Pension Bridge Annual will uncover various structural transformations and investment ideas that will be beneficial for long-term fiscal sustainability.

In addition to the listed themes above, we will be covering many more challenging issues that are crucial to the investment decision making process during these uncertain economic times. We will learn from the best about how to adapt in our industry which is always evolving and transforming.

The Pension Bridge Annual has two goals in mind. First is to provide the **highest level of education** with the top speaker faculty. This highly regarded group will bring forth influential insights and concepts. The second goal is to help **build relationships** between the pension plans, consultants and investment managers. We have provided the best possible environment for this event which is designed to be conducive for networking. We will cap off the event with a fun and enjoyable networking outing necessary for maintaining relationships and connecting with your peers and prospective business contacts.

We look forward to a strong event and a very productive one from both an educational and relationship perspective. We have structured this conference in a manner that will be most productive and beneficial for you. We hope that you will join us to be amongst your industry peers to learn about the most up-to-date insights, investment strategies and trends.

Tuesday, April 18th

7:00 AM – Breakfast

Sponsored By:

FTSE Russell

8:05 AM – Opening Remarks

8:15 AM – Keynote Speaker - Best Practices in Pension Fund Management: The Canadian Model
The industry is dealing with a low return environment along with rising longevity and unfavorable demographics. With many asset classes fully priced in this low growth environment, investors have entered into a world of complacency. Adaptation and structural transformation are required for pension fiscal sustainability and the long-term fund management process.

- Statistical Success of the Canadian Model with Assets Managed Internally
- Key Components – Keep Fees to a Minimum, Hunt for Cash Flow, Innovative Private and Co-Investment Deals, Reluctance to Overpay
- Difficulty for U.S. Plans Shifting to Canadian Model – Independence Requirement and the Restrictions from Political Appointees and ERISA
- Budget and Resources as a Concern – Salary Structure, Investing in Talent Pool
- Are there Ways to Overcome the Skepticism that the Canadian Model can be Imported to the U.S? Which of the Barricades need to Come Down for Implementation?
- Which Program or Asset Class might be Best to Start with for the Transition to In-House Investment Management? Which Allocations are Best Served by an Outsourced Specialist Fund Manager?
- Understanding the Necessary Industry Changes Required for Fiscal Sustainability, regardless of model – Compensation Linked to Performance, Transparency and a Long-Term Strategic Vision

Speaker:
Jim Keohane, CFA, President & Chief Executive Officer, **Healthcare of Ontario Pension Plan, (HOOPP)**

8:45 AM – Macroeconomic View – State of the Markets
- Current Macro Environment
- Recent Public Equity and Fixed Income Returns
- Bull Market Length and Returns
- High Valuations
- Reasons for Remaining in a Long-Term Low Return Environment
- Global Working Age Population and Challenging Demographics
- China Credit Explosion as a Concern
- Taking Risk More Efficiently
- Asset Class Risk and Returns – Areas of Caution?
- Investment Ideas on how to Increase Returns
- How to Better Protect Capital in a Down Market

Speaker:
William J. Coaker Jr., CFA, MBA, Chief Investment Officer, **San Francisco Employees' Retirement System**

9:15 AM – Executive Director/CEO Roundtable

(A) Pension Health/Governance
- How are Demographics Affecting Retirement Systems?
- How do you approach Increases in Longevity and Costs for Healthcare Drugs for Retirees? Any possible Solutions?
- What does the Future hold for Raising the Retirement Age, Reducing Benefits and Increasing Employee Contributions?
- What can a Fund do to adequately Protect for Liquidity and Cash Flow Requirements?
- Does your Funded Status alter your Long Term Decisions with regards to Liquid or Illiquid Investments?
- Best Governance Practices to Keep Plans Optimally Invested, Managed, Funded, and in Regulatory Compliance
- Do you believe Plans in general will be able to Meet or Beat the Assumed Rate of Return over the next 10 Years?
- Should we be Spending Political Capital to Lower Assumed Rate of Return Targets?
- Dealing with Legislature – what is your Biggest Concern? Is Trust a Factor?
- Do you see the Benefits of Adopting a Hybrid DB/DC Plan? What are the Drawbacks?
- Explain the Argument as to why States should not offer a 401(k) DC Plan as a Solution
- Truth or Myth: Defined Benefit Plans are Expensive and Defined Contribution Plans are Cheap
- Thoughts on Outsourcing the CIO Function?
- How do you ensure your Board Members receive Continual Education of their Fiduciary Roles/Duties and keep them Updated on Risk Factors?
- Have you Educated Internally on the Risks or Steps for Cybersecurity Protection? Do you have Cybersecurity Questions or Guidelines in your Due Diligence of your Managers?
- What is your Biggest Threat to your DB Plan? What keeps you up at night?

(B) Long-Term Structural Changes for Fiscal Sustainability
- Do you see a Shift towards the Canadian Model with more Assets being Managed Internally to Lower Investment Costs? If so, which Mandates should be Outsourced to External Managers?
- Have we made Strides to Solve the Talent and Compensation Struggle? Will we see more Compensation-Based Pay to Attract and Retain Talent to be Competitive with the Private Sector?
- To Cut Costs, will we Shift towards Investing in Passive, Low-Cost Vehicles, Index Funds and ETFs over Actively Managed Funds?
- Will we see a Shift to Hunt for Long-Term Cash Flow Investments through Partnerships and Co-Investment Structures? Greater Competition to Follow?
- Requirement for Better Transparency
- Do you believe we'll see a Consolidation of Public Pension Plans Under One Entity, (such as INPRS or IMCO in Canada)? What are the Benefits?
- Making Governance more Effective – Identifying Key Board Member Roles with Expertise in Particular Areas with an Independent Board

Moderator:
Andrew Junkin, CFA, CAIA, President, **Wilshire Consulting**

Speakers:
Steve Yoakum, Executive Director, **Public School and Education Employee Retirement Systems of Missouri, (PSRS/PEERS)**
David B. Wescoe, Chief Executive Officer, **San Diego County Employees Retirement Association, (SDCERA)**
Brian Guthrie, Executive Director, **Teacher Retirement System of Texas**
Ruth Ryerson, Executive Director, **Wyoming Retirement System**

10:10 AM – Refreshment Break

10:40 AM – Risk Management and Adopting a Risk Culture

(A) Key Considerations for Managing Risks
- Overview of the Shift from an Asset Allocation-Centered Process to a more Comprehensive Risk
- Allocation-Based Process. Explain the Transformation to Risk Allocation Decisions

- What's the Biggest Challenge that has Prevented Wide-Spread Adoption of a Risk Allocation Framework? What are the Characteristics a Plan would need in order to Implement this type of Approach? What's the most Important Change to make?
- What are the Key Challenges as it relates to Measuring Risk?
- How can considering Diversification and Risk Independently help Investors Build more Efficient Portfolios?
- What Developments have we seen for Combining Several Risk Premiums as a part of Portfolio
- Diversification?
- How has taking a Risk Allocation Approach changed the Structure of your Plan's Fixed Income Investments? Understanding Return Seeking Fixed Income and Traditional Risk Reducing Fixed Income
- What Irregularities have we seen in Portfolios as Asset Classes are Redrawn and Renamed via Risk Allocation? Are we still too heavy with the Equities Allocation?

(B) Top Pension Risks we should be Most Wary of

- Understanding Asset Class Correlation and Behavior Risk – Tendency of Interest Rate and Inflation Shocks Driving Both Equities and Bonds in the Same Direction, (Correlations Change)
- Drawdown Risk
- Transparency and Liquidity Risk – Basing it on a Cost/Benefit Evaluation
- What's the best Approach to Liquidity Risk as it applies to Meeting Future Cash Flow Obligations?
- Leverage Risk – what are the Best Approaches to keep these Risks within Acceptable Parameters?
- Monitoring Counterparty Risk being taken by Managers – any New Measures?
- Equity, Credit, Duration, Inflation/Deflation, Currency, Geopolitical Risk Considerations
- How does Stress Testing or Scenario Analysis factor into your Process?

(C) Communication

- How do you Communicate your Risk Tolerances with your Board, Managers and Media?
- How has the Role of Fiduciary Responsibility Changed in this new Era of Risk?
- What should Boards/Organizations Consider when Building a Risk Culture?
- How can Fiduciaries Adapt and Safeguard against today's Challenges?
- Have you Developed a Process for Monitoring Risk being taken by your Money Managers?
- How do you go about Educating a Board on Risk?
- What Metrics Aid in the Decision Making Process?
- How does a Plan's Size affect the Approach to Pension Risk Management?

Speakers:
Eugene L. Podkaminer, CFA, Senior Vice President, Capital Markets Research, **Callan Associates, Inc.**
Freeman Wood, Partner, North American Head, **Mercer**
Bruce H. Cundick, CFA, CPA, Chief Investment Officer, **Utah Retirement Systems**

11:30 PM – Keynote Speaker - Multi-Asset Strategies

(A) Construction and Skills

- Why is Multi-Asset Investing Attractive to Investors?
- What are the Common Sub-Asset Classes Included in Multi-Asset Strategies?
- Do these Strategies Reduce Correlation, Lower Volatility and Limit Downside Risk or Drawdown? If so, by How Much?
- How do Investors utilize Multi-Asset Strategies in their Portfolios?
- With Dynamic and Tactical Asset Allocation Skills yet to be Put to the Test in recent years, how do you see this Space Evolving in a more Treacherous/Volatile Market?
- Aside from Asset Allocation Skills, what other Skills are Required for the Ability to Generate Alpha and be Successful?
- Constructing the Portfolio – Risk Factor Approach
- How do you Measure Performance?

(B) Criticism

- Trailing Returns – Underperformance of Multi-Asset Strategies to the Traditional 60/40 Mix. Is it possible Central

Bank Policy has Limited the Ability of Multi-Asset Managers?
- Do these Strategies Rely Too Heavily on Market Timing?
- Do you Agree or Disagree with the Willis Towers Watson Report saying Multi-Asset Managers have actually Harmed Performance via Tactical Asset Allocation Decisions?
- The Skill of Moving Opportunistically Between Markets, a Function of Asset Allocation Alpha is an All-to-Rare Commodity – any Truth to this?
- Do you believe that many Multi-Asset Funds have Not Sufficiently Incorporated Risk Controls into the Design of their Products as the Willis Towers Watson Report Noted?
- Reliance on Stable Correlation Relationships although there is No Certainty those Relationships will Persist
- Is Excessive Leverage a Concern?
- High Fees
- Is Transparency often Obscure or Hazy?

Speaker:
Myron Scholes, Ph.D., Chief Investment Strategist, **Janus Capital Group**

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12:00 Noon – Tail Risk Hedging
- Understanding Tail Risk Frequency, Severity and Impact – why are the Markets Vulnerable to a Substantial Decline Today?
- Understanding the Risk of Correlated Global Markets for Developed Countries
- Why is this a Good Time to Mitigate Equity Tail Risk?
- If Tail Risk Hedging is a Good Idea, why isn't Everyone Doing It?
- What are the Expected Costs of a Tail Risk Hedge vs. the Expected Benefits?
- Is Raising Cash a Proper Tail-Risk Strategy?
- Limits of Diversification and Beta Hedging
- Importance of Understanding where in the Market your Existential Tail Risks come from and how Big they Could Be – Analysis of your Liquidity and Leverage. What Liquidity Considerations should Investors pay attention to?
- Implicit vs Explicit Hedging – what are the Advantages and Disadvantages of each?
- What Types of Strategies and Approaches are used to Hedge?
- Using Information from the Derivatives Markets to assess Stress Points – where we are seeing Tail Risks building?
- Option Overlay Strategy – Cash Flow Generation in Down Markets but can you Maintain Upside
- Exposure in Rising Markets?
- Does the Growth in the VIX Universe pose a Risk?
- Active Management
- Pension Plans developing a Contingency Plan – What are the Best Practices to Navigate through Stressful Periods?
- Why is there often Difficulty Implementing a Tail Risk Program within the context of a Committee and how can we overcome this? Any other Implementation Challenges?
- Any Real World Experiences you can share among your Clients with Tail Risk Hedging?

Moderator:
Tim Barron, CAIA, Senior Vice President and Chief Investment Officer, **Segal Marco Advisors**

12:30 PM – Lunch

1:40 PM – Liability Driven Investment, (LDI)
- What is LDI and how is it Interpreted in the Market?
- What have Plans done to address the Hurdles of Low Pension Funded Status and Low Interest Rates over the past

few years?
- Does LDI Make Sense Now Considering Current and Future Market Conditions? What is the Risk/Return?
- Reducing Funding Ratio Volatility
- Are Plan Liabilities the only appropriate Benchmark?
- Understanding the Components of Performance Measurement and Evaluation – Risk Budgeting, Scenario Analysis, Liquidity Analysis and Performance Reporting
- What are some Industry Trends that Clients should be should be aware of in the LDI Market?
- Beyond the Ability to Earn Excess Returns, what should Investors look for in Selecting LDI Managers?
- Understanding Implementation Approaches, Strategies and Issues. Are some Approaches More Appropriate in a Less Liquid Fixed Income World?
- Understanding that a Partial LDI Strategy only Partially Reduces the Pension Risk
- How to Implement LDI in a Pubic Fund Context – are the LDI Methods Applicable?
- Pension Risk Transfer – Lump Sum Payments, Buy-Outs, Buy-Ins. What Trends are we seeing?
- Will we see a Strategy More Common in Europe with Plan Sponsors Combining an LDI Strategy with the Purchase of Longevity Insurance to Further Reduce Risk?

Moderator:
Timothy F. McCusker, FSA, CFA, CAIA, Chief Investment Officer, Partner, **NEPC, LLC**

Speakers:
Brian McDonnell, Managing Director, Head of Global Pension Practice, **Cambridge Associates**
Kevin Zhu, Managing Director, Head of Portfolio Construction, **OPTrust, OPSEU Pension Trust**

2:15 PM – Risk Parity
- Risk Parity Explained
- Does Risk Parity Make Sense Now Considering Current and Future Market Conditions?
- Performance in the Past Decade and Longer – How does Risk Parity look over time Compared to Other Asset Mix Models?
- Scenario Analysis for Risk Parity Performance – (a) Gradual Rise in Interest Rates, (b) Sharp Decline in Equity Markets, (c) Global Commodity Deflation Continues, (d) Sharply Rising Inflation
- Is it possible that Bonds will become Less Likely to Protect against Volatility in Equities?
- Should we be Worried about Leverage or Leveraging the Inappropriate Assets? Is there an Over-Reliance on Bonds with Current Valuations?
- Do you Consider it a Drawback that there's Only a Positive Weight to an Asset with No Ability to go Short?
- Leverage and Illiquidity Do Not Mix – any Approaches to Avoid this Combination?
- Do you View it as a Flaw that Portfolio Construction Approaches only consider Volatility Risk, Not Tail Risk or Drawdown Risk?
- Can Tail Risk Parity be the newest Trend? Thoughts on the Concept of Measuring Expected Tail Loss rather than Volatility – Cheaper Hedges for Protection, Reducing Tail Risks while Retaining More Upside than Risk Parity?
- Aside from the Money Concentrated in the Top "Founding Firms," how should we Approach Managers with Short Track Records?

Speaker:
Steven J. Foresti, Chief Investment Officer, **Wilshire Consulting**

2:50 PM – Refreshment Break

3:20 PM – Unconstrained Fixed Income Strategies
- Assessing the Current Environment – Fed and Global Central Bank Policy, Interest Rates, Spreads, U.S. Dollar, Foreign Investment in US Treasuries, Global Fixed Income Landscape and Default Rate Expectations
- What are your Best Ideas for ways to Simplify the Sub-Allocations within the Fixed Income Space? Any preferred Allocation Breakdowns or Weightings?
- With the Proliferation of Products which are Diverse, what is the Return Objective?

- Portfolio Construction – Need for Increased Disaggregation of Alpha Sources
- Understanding Return Sources/Attribution and Correlation that Unconstrained Funds have had with other Fixed Income Sectors and Equity Markets
- Impact of the Non-Linearity of Risk Correlations and Volatility Not Being Stable through time. Is that something you look to Measure in case of Market Dislocations?
- How are you Taking Advantage of Current Market Dislocations?
- What are the Implications of Reduced Liquidity?
- From a Risk Factor Approach, what Asset Class replaces Duration as a Deflation Hedge in a Portfolio?
- Modern Risk Management – what Progress have we seen for Developing a Risk Premium Approach?
- Do you see a Supply/Demand Imbalance in Long-Duration Fixed Income?
- Using Structured Products, Swaps and Derivatives to Create Alpha and Hedge Volatility
- Opportunities in Global and Emerging Market Debt – why is it appealing?
- Emerging Markets Local Fixed Income – what are the Currency Risk Factors?
- What are your Expectations and Outlook for Corporate Debt?
- Bank Loans – Attractive or Not a Good Hedge in Rising Rate Environment?
- Are Taxable Municipals a good Alternative to Corporate Bonds?
- Landscape for MBS Market with GSE Reform Considerations
- Risk/Reward for TIPS, Interest Rate and Inflation Swaps, Inflation Bonds and Overlays
- Where do you see the Greatest Risks in the Debt Markets and what might be the Trigger Points that enhance that potential?
- Understanding how to Select Alternative Managers – Multi-Sector, Multi-Region and Multi-Currency Skill Set

Moderator:
Keith M. Berlin, Director of Global Fixed Income and Credit, **Fund Evaluation Group**

Speaker:
Leighton A. Shantz, CFA, Director of Fixed Income, **Employees Retirement System of Texas**

4:05 PM – Smart Beta – Proceed with Caution
Smart Beta maven Rob Arnott, one of the founders of this strategy, has voiced concern about a “reasonable probability of a smart-beta crash” and that many smart beta strategies are poised to go “horribly wrong.” Bill Sharpe, Nobel Laureate and the “inventor” of beta, stated that “smart beta makes me sick.” Rick Ferri, an index-investing pioneer, has referred to smart beta as “silly talk.” We’ll examine why the growing popularity of smart beta can result in possible unexpected returns.

- Smart Beta Flashy Name Misconception
- Misleading Marketing
- Limits of Diversification – Smart Beta often Promoted as a Good Diversifier but has exhibited a High Correlation with the S&P 500
- Lower Volatility Aspect – does it Reduce Risk if it still shows a High Correlation to S&P?
- The Likelihood of Selecting the Wrong Smart Beta Variation
- Excess Returns mean Extra Risk
- Factor Exposures often Create Undesirable Tilts
- Extended Periods of Underperformance with Hypothetical Back-Testing Prior to the Launch of Smart Beta
- High Fees
- Are High Valuation Levels Reducing the Potential for Future Performance?
- Should Liquidity be a Consideration with Some Products?
- What is your Best Advice when Allocating to Smart Beta?

4:20 PM – Environmental, Social and Governance, (ESG)
- What are the Recent Market Developments in ESG for the U.S. and Abroad?
- How do you Approach ESG from a Fiduciary Standpoint and for the Development of your Plan’s Investment Beliefs?
- How should ESG be best Incorporated into the Investment and Due Diligence Process?

- Climate Change and Investment – what's the Relationship and how do you Integrate Climate Risks into your Process? What are the Alternatives to Divestment?
- What should Pension Funds be asking their Existing Active Managers in terms of whether they are looking at Climate Risk or Opportunity?
- What are the Perceived Obstacles to applying an ESG Framework to the Stock Selection Process?
- Considerations for Investing in a Passive ESG Index – thoughts on Low Carbon Index? Combining ESG with Smart Beta?
- Understanding UNPRI Principals. Will there come a time when Plan Sponsors Only Invest with UNPRI Investment Manager Signatory Firms?
- Do we have Proof that ESG Integration Adds Value?
- ESG Fund Performance vs. Traditional Funds
- What Progress have we seen with Portfolio Decarbonization?
- Will Supply Chain Management be the new Normal? – Looking past the Portfolio Company with a View on its Relationship with Large Enterprise Customers
- What are some ESG Misconceptions?
- Factors Needed to make ESG Mainstream and Integrated into Every Investment Process – Agreement on Weightings, Scoring and Definitions
- Relevant Benchmarks for ESG Risk Measurement and Assessing ESG Factors
- What type of ESG Research or Data is most helpful?

Moderator:
Alex Bernhardt, Principal, Head of Responsible Investment, U.S., **Mercer**

Speaker:
Travis Antoniono, Investment Officer, Corporate Governance, **California State Teachers' Retirement System, (CalSTRS)**

5:00 PM – Cocktail Reception

Wednesday, April 19th

7:00 AM – Breakfast

8:00 AM – Emerging Markets

- Macro Environment and Recent Developments
- Knowing the Historical Correlation of Commodity Prices and Emerging Markets, should we be Hesitant to Increase Allocations? Is there More Remaining in the Deflationary Cycle?
- What Factors do we need to see for us to Believe that Emerging Market Assets have Bottomed?
- How have EM Headwinds Impacted your Deployment?
- How have Emerging Market Economies fared under Global Central Bank Monetary Policy? Inflows?
- What would be the Effects on Emerging Markets if we see Weak or Negative Growth in the U.S or Instability in Eurozone, (including Brexit)?
- Given the Current Environment, will Emerging Markets Outperform Developed Markets?
- What are Realistic Return Expectations? How might that Differ based on Region?
- What is an Appropriate Long-Term Allocation to Emerging Markets?
- What Impact have we seen as a Result of the Strong U.S. Dollar?
- What can be done to Mitigate Currency Risks?
- How do Valuations look Relative to Risk?
- Outlook for China – are you Concerned about their Credit and Real Estate Bubbles?
- India to Benefit from its Fast Rate of Urbanization? Still in Need of Substantial Reform?
- Are you Investing in Higher Growth Markets such as Southeast Asia, Africa or Latin America? Which particular Countries? Do you see Higher Risk, Returns and Diversification Factors here?
- Which Markets in Frontier Countries can you Profit from Strong Growth and Access a Lower Correlation?
- The Case for Emerging Markets Corporate Debt
- What Metrics are you using to Determine Relative Value in Sovereign Bonds?
- Public vs. Private Emerging Markets – Benefits and Drawbacks of each
- Choosing an Emerging Markets Fund or Manager – should you be Investing by Region, Country or Sector?
- Active vs. Passive Debate

Moderator:
Bryan P. Shipley, CFA, CAIA, Co-Chief Investment Officer, Head of Traditional and Real Asset Investments, Principal, **Arnerich Massena, Inc.**

Speaker:
Kamal Suppal, CFA, Senior Research Consultant, **Hedge Funds, NEPC, LLC**

8:40 AM – Currency and Currency Alpha

(A) Currency Market Overview

- Central Bank Intervention and other Factors Driving Currencies. More or Less Volatility and Liquidity?
- What is the Relationship Between Volatility and Currency Returns?
- Can Currencies be Forecasted via Fundamentals, Cycles and Trends? If so, how can this Information be Incorporated into a Currency Hedging Program or into Active Currency Management?
- Benefits of Active Management
- Widely Confused Difference Between Currency Hedging and Currency as an Asset Class – how do they Differ in terms of Implementation Approaches?
- Different Skills Required for Currency Hedging vs. Currency Alpha – should a Different Manager be used for Each Approach or is it Possible to be Skilled in Both?

(B) Currency Overlay Hedging

- Given Plan Sponsors Non-U.S. Exposure, how do you know if you should Consider Implementing a Currency Hedging Program? What Factors should be considered in this Determination?
- How much of a Reduction in Portfolio Volatility and Risk should be Expected?

- Can it be More Beneficial to be Unhedged?
- Hedging Costs – how should this factor into your Decision?
- When Hedging against a Further Dollar Rise, what are the Risks if the Dollar has a Significant Decline?
- Various Implementation Approaches – Passive vs. Dynamic?

(C) Currency Alpha
- Goals of a Currency Program
- Benefits of Non-Correlated Returns to Equities, Fixed Income and Alternative Investments
- How does Investing in Currency Diversify and Reduce Risk? Natural Diversifier for the Duration Risk in Bonds?
- How do you Manage Risk Factors?
- What are the Return Expectations?
- When considering Investing in an Active Currency Strategy, what should you look for in a Manager?

Moderator:
Aoifinn Devitt, Chief Investment Officer, **Policemen's Annuity and Benefit Fund of Chicago**

Speaker:
Ian Toner, CFA, Managing Director, **Verus**

9:15 AM – Distressed Investing – Opportunistic and Special Situations
- Where are we in the Distressed Cycle? When will the Vast Sums of Undeployed Capital come in off the Sidelines?
- How does the Current Economic and Interest Rate Environment affect the Attractiveness of Distressed Strategies?
- What are your Expectations for Default Rates going forward? Has the Fed and Easy Credit Masked Fundamentals?
- Prevalent Covenant-Lite Deals – are we seeing Bubble Conditions setting us up for Problems during the Next Cycle?
- What are your thoughts on the Recent Leverage Trends?
- Has the Regulatory Environment Changed the Opportunity Set? Any Adverse Effects or Liquidity Issues it may cause?
- Scope of the Distressed Market and Segments – Corporate Credit, Structured Credit, Commercial Real Estate, Hard Assets, Liquidations, Segmentation by Deal Size, etc.
- Which Sectors, Strategies and Geographies will create the Best Opportunities? Any Areas that should be Avoided?
- What Distressed Opportunities are we seeing the Energy Sector?
- What's the Potential Impact of the Debt Piled up by Corporations for their Share Buybacks?
- Do you find Europe Attractive? What are the Opportunities and Risks? Any Countries, Sectors or Types of Deals that Stand Out?
- Marketable Distressed Strategies – how Correlated are they to Public Equities?
- How do Investors go about Choosing the Right Distressed Strategy, Investment Style and Approach?
- How will the Different Implementation Approaches affect Expected Returns? Control vs. Non-Control? Private vs. Public?
- Distressed Debt Vehicles in Hedge Fund Format vs. Private Equity Drawdown Structures – what are the Pros and Cons of Each?
- What Skill Sets/Characteristics should Pension Plans look for in a Distressed Manager?
- What are the Return and Risk Expectations?
- What are the Biggest Challenges you face to Delivering Returns?

Moderator:
Scottie D. Bevill, Senior Investment Officer - Global Bonds and Real Return, **Teachers' Retirement System of Illinois**

Speaker:
Mike Krems, CFA, Managing Director, **TorreyCove Capital Partners**

9:50 AM – Refreshment Break

10:20 AM – Credit Strategies

- Current State of the Credit Market
- Where are we in the Credit Cycle and how does it Differ from the Past?
- With Global Central Bank Monetary Policy Heavily Influencing Rates and Credit Markets, how do you see this Developing as far as Risk and Opportunities Across Credit going forward?
- What will be the Catalyst that will cause Credit Spreads to Widen and Defaults to Rise?
- How much should Plan Sponsors be Allocating to Credit? What is the Optimal Structure to a Credit Portfolio?
- What Subsectors of Credit are Most Attractive? What are your Best Ideas for Finding Value? Any Areas you are Avoiding?
- High Yield Market – is it possible to see a High Yield Meltdown with a Lack of Liquidity? Understanding the Risk Factors and the Strong Correlation to Equities
- Bank Loans Overview – High Risk in Covenant-Lite Loans?
- State of Securitized Markets – how Cheap is Securitized Risk vs. Unsecuritized Risk and how do you measure that? Long-Term Prognosis for Spreads?
- Outlook and Considerations for Structured – CDO, CDS, CLO, CMBS, RMBS, ABL, ABS
- Outlook for Emerging Market Debt
- Liquidity and its Implications for Multi-Strat. What might be some of the Pitfalls?
- Do you see Investors being more willing to Trade Liquidity for Yield and should that be of Concern?
- Regulatory Changes and Leverage – what will be the Market Consequences?
- European Market – are there Opportunities Now or More Downside Risk?
- Considerations for Selecting a Manager and Strategy
- How will the Sector you Invest in Perform when Rates Rise? Is that a Concern and how do you Manage that?
- What are the Trade-offs between Mid-Market and Large Market Credit Investing?
- Credit Investment Mandates – are they Too Narrow? Which Bucket or Asset Class does it fit into and should it be Defined as Opportunistic Credit?

Moderator:
Zeke L. Loretto, Director, Head of Global Investments, **eBay**

Speaker:
Pete Keliuotis, CFA, Senior Managing Director, **Cliffwater LLC**

11**:00 AM – Hedge Funds**

(A) Current and Future State of the Hedge Fund Industry

- Why have Hedge Funds Underperformed?
- Will we see More Hedge Funds Shutting Down?
- Is the 2 and 20 Model Broken? Is it Dead for Larger Pension Funds? What Trends have you seen as far as Pressure on Fees?
- How do you assess the Tradeoff between Lower Fees and Longer Lock-ups?
- Inverse Correlation Between Assets Size and Performance on both an Industry Basis and Manager Level – do you Agree or Disagree this could be mean it's More Difficult for Managers to Generate Strong Returns?
- Do you Believe Smaller Hedge Funds will Continue to Outperform?
- What Pension Inflow Trends have you seen?
- What is Driving the Increase in Demand for Strategies Uncorrelated with the Capital Markets? Which Low Correlated Strategies do you think will Continue to see Increased Interest?
- How do you see Succession Planning playing out? What Tends to Work and what Does Not?

(B) Implementation Options

- What is the Future of the Fund of Funds Space? How is it Changing? Where will Fees be? What will it take to Stay Competitive?
- Considerations for Selecting the right Hedge Fund or Fund of Funds – Due Diligence and Manager Selection. What are the Key Traits you should be looking for?

- Deciding Between Fund of Funds vs. Direct – what are the Key Considerations?
- Long-Short Equity Hedge Funds – what Differentiates Managers that have been able to Outperform?
- Which Strategies offer more Transparency and Liquidity?
- Do you find Opportunities within the Global Macro Space Attractive and if so, why?
- Liquid Hedge Fund Products such as UCITS, 40 Act and Hedge Fund Replication – are they a Viable Alternative and Under which Circumstances? How has their Performance and the Lower Fees Fared to Hedge Funds?
- If the S&P loses 30%, what Downside Protection, Drawdown or Return Range do you expect we'll see from each of the Different Hedge Fund Strategies?
- If there was a Hedge Fund Strategy you would Invest in over the next Few Years, which one would it be and why?

(C) Portfolio Construction and Risk Management

- Importance of Operations Due Diligence. Any recent Developments? How often should Operations be Reviewed?
- Transparency and Risk Aggregation Data – are they Accurate?
- How many Hedge Fund Strategies do you need? Should you focus on a few better Strategies or is the Size of your Portfolio a Factor?
- Can Hedge Fund Strategies be Tactically Managed?
- How should we View a Long/Short Manager's Performance when a Portion of the Return Comes from Market Beta?
- What Trends do you see Developing in Regards to the way we Evaluate Liquidity Provisions for Hedge Funds? Blurring of the Lines Between Hedge Funds and Private Equity?
- Should you ask for a Separate Account?
- Is the Trend towards Managed Accounts the Future? Understanding the Benefits of Increased
- Transparency and Control, more Liberal Liquidity Terms for Redemption/Termination, Outsourcing Operational Oversight/Support

Moderator:
Jim Vos, Chief Executive Officer, **Aksia LLC**

Speaker:
Neil Messing, Head of Hedge Funds, New York City Office of the Comptroller, **Bureau of Asset Management**
David E. Francl, Managing Director, Absolute Return, **San Francisco Employees' Retirement System, (SFERS)**

11:50 AM – Managed Futures

- Global Macro's place in the Hedge Fund Industry – what are the key Differences from other Hedge Fund Strategies?
- Attributes – Diversification, Uncorrelated, Liquid, Transparent and Regulated
- Historical Performance of Managed Futures
- Performance during Periods of Market Stress or Crisis Events
- How much can it Decrease the Depth of Portfolio Drawdowns and Volatility?
- Volatility is usually Perceived as Risk within Portfolios – is this the same within Managed Futures?
- Increasing your Exposure to Global Markets and Non-Financial Sectors
- How to Implement an Allocation to Managed Futures
- How do you Manage Risk and Volatility?
- What Questions should an Investor ask a Prospective Manager?
- Size of the CTA in terms of Assets Under Management – any considerations to factor in?
- Is the Proliferation of Managed Futures as a Risk Premia going to Change the Landscape?

12:05 PM – Lunch

Real Asset Strategies

1:10 PM – Commodities

- Current Market Environment

- Deflationary Pressures – how should this affect our Allocation and Approach?
- What Factors do we need to see for us to Believe that Commodities have Bottomed? Any Long Term Cycles or Patterns to go by?
- Based on Previous Down Equity Markets, what Performance can we Expect from Commodities if we have Market Turbulence? How Strong is the Correlation?
- What are your Views on particular Sub-Sectors and Where are the Pockets of Value?
- How are Renewables Affecting Specific Commodities?
- What Currency or Weather Related Impacts are you seeing on Specific Commodities?
- Understanding the Different Approaches to Investing in Commodities – Equities, MLPs, Indexes, Futures, Physical Commodities, Private Equity Real Assets
- Investing in Commodities through Private Equity vs. Stocks or Indexes – Benefits and Drawbacks of Each
- True or False – Natural Resource Stocks are Not an Efficient Way to get Commodities Exposure
- Are MLPs more Highly Correlated to Commodity Prices than We Thought?
- Roll Effects and its Impact on Returns
- Investing in Long/Short vs. Long Only
- Active vs. Passive
- Any Recent Developments in Commodities Risk Premia? Smart Beta as applied to Commodities?
- What are the Key Criteria that would lead to Manager Outperformance?
- Risk Factors

1:45 PM – Energy

- How will we know when Oil Prices have Bottomed?
- Dry Powder – what will be the Trigger for Capital to be Deployed? Are you hoping for a Second Washout to Deploy more Capital and Profit in the Long Run?
- How Important are the Credit Markets in the Deployment of Private Capital?
- How do you think about the Risk and Approach to this Space in a Climate Changed Focused World?
- Where are the Best Opportunities to Deploy Capital in this Environment?
- How has the Current Commodity Market Distress Impacted the Balance Sheets of Oil and Gas Companies?
- What are the Advantages of Investing in Private Energy?
- Upstream, Midstream and Downstream Overview
- How has the Oilfield Service Industry Impacted Upstream Oil and Gas Operators?
- Thoughts on Midstream MLPs with their Business of Oil Storage Services and its Cashflow?
- What Type of Investments are there with Returns Independent of Oil and Gas Prices?
- What does the Future Hold for Shale?
- Portfolio Decarbonization – how do you Deal with LP Concerns on this Issue? Has it Impacted your Fund Commitments?
- Access – Public (Stocks and MLPs), Indexes, Futures, Private, (Direct, Funds, Fund of Funds). Which one is most likely to Benefit?
- Big vs. Small Funds, Deal Size

Moderator:
John Nicolini, CFA, Managing Director, **Verus**

Speaker:
Tom Masthay, CFA, CAIA, FRM, Director, Real Assets, **Texas Municipal Retirement System, (TMRS)**

2:15 PM – Infrastructure Market Outlook

- Why should Investors consider Committing Capital to the Infrastructure Space?
- State of Development of the Infrastructure Asset Class – Where are we now in terms of Appetite/Penetration amongst Investors' Allocations? How much Room to Run is there for the Asset Class to Continue to Develop?
- Is there Too Much Money Chasing Too Few Opportunities? What will Cause High Valuations to Ease and Dry Powder to be Deployed?
- What Effects have we seen from Monetary Easing? Brexit? Terror Attacks?

- How has Performance been and what are the Recent Return Expectations?
- How will Returns be Impacted by Low Oil Prices for an Extended Period?
- Which Geographies and Sectors are Most Appealing?
- How have Risk/Return Expectations Changed with Global Sovereign Debt Trading at Zero or at Negative Rates? Have these Views Changed Investment Approaches for Developed vs. Emerging, U.S. vs. Non-U.S., Listed vs. Unlisted or Greenfield vs. Brownfield?
- Infrastructure Debt as a Growing Area – will it deliver for Investors Searching for Yield?
- What are the Biggest Challenges/Risks associated with Infrastructure Investing?
- Any Advantages or Limitations of Particular Implementation Approaches?
- What are the Advantages of Open-Ended Funds over Closed-Ended Funds? Will we see a Surge in Open-Ended Funds in the Coming Years?
- Is the Rise in Public-Private Partnerships Inevitable due to Lack of Gov't Funding and High Debt? What Opportunities will this Create?
- Debt Heavy/Equity Shortage Deals – how and when will Pension Investors Overcome this Highly Leveraged Roadblock?

2:30 PM – Real Estate

- Current State of the Real Estate Market
- Is a Correction on the Horizon and How Significant? If so, what is the Single Biggest Risk Factor?
- What would be the Impact of Rising Rates on your Real Estate Portfolio? What are the Short-Term and Long-Term Implications?
- With Recent FIRPTA Changes, how has Foreign Investment Influenced U.S. Real Estate Investment? Effects on Valuations?
- Is U.S. Core Too Expensive? What are your Return Expectations for the Sector?
- Do you see Capital Moving Out of Core and Into Higher Risk Segments?
- Within Non-Core, which Value-Added and Opportunistic Strategies are Most Appealing?
- Do you believe Commercial is Fully Priced and Not Pricing in Risk or Disruption?
- Is the Bridge Financing Opportunity Attractive from Maturing CMBS?
- Multifamily Conditions – might it become Less Desirable compared to the past few years?
- Which Property Types are At Risk Today?
- Is there still Opportunity in Niche Property Types such as Senior Housing, Student Housing, Storage or Datacenters?
- What's happening with Leverage?
- Analysis of Cap Rates and Vacancy/Occupancy Rates – any Conclusions you can draw?
- Asia and European Real Estate Outlook – Opportunities, Investment Trends and Capital Flows
- Has the Popularity of Closed Ended Funds Declined?
- Will Co-Investments become more Common?
- Current State of the Real Estate Secondary Market
- Programmatic Joint Ventures – why are these Joint Ventures being done? Will more Pension Plans Team up with Commercial REITs?
- Larger vs. Smaller Fund Size – which ones will Outperform going forward?
- Entry Issues with Open-Ended Funds and Concentration into Fewer Funds?
- What Strategies do you see as the Biggest Risks and the Biggest Rewards/Relative Value for the Future?

Moderator:
Jennifer Young Stevens, Principal, **The Townsend Group**

Speaker:
Peter H. Collins, Vice Chair, Investment Advisory Council, **State Board of Administration of Florida**

3:15 PM – Refreshment Break

3:40 PM – Private Equity

- Are High Levels of Dry Powder Here to Stay? Will it take a Sustained Market Correction or Crisis to Bring

Undeployed Capital off the Sidelines?
- Considering the Current High Valuations, Low Interest Rates, Ample Leverage and a Strong Fundraising Environment, what Similarities and Differences do you see Compared to 2006-2007?
- Protecting your Current Portfolio – are you making Investment Decisions or Managing your Portfolios Differently in this Environment? How do you Avoid Possible Pitfalls or Getting Involved in Expensive Deals?
- If we have an Economic Slowdown or a Recession, how would you Approach New Investments?
- What are your Views on GP Restructurings and are you More Accepting of them?
- For Buyouts, what Sectors or Geographies do you Favor? What Sectors do you tend to Avoid in this Environment and why?
- Do you Prefer Buyouts or Growth Equity over the next few years and why?
- Are we Currently in a Venture Capital Bubble?
- What are your thoughts on Co-Investments? Do you Worry about the Outcome if this Cycle Turns?
- Secondaries Deal Volume, Pricing, Pressures and Futures Expectations
- Have you taken steps to Diversify your PE Portfolio and find Investments with a Non-Correlation to the PE Space in General? Which of these Non-Correlation Strategies have you Allocated to or favor?
- As an LP, are you willing to Pay Higher Fees for Managers with the Best/Proven Track Records?
- Do you believe Charging Fees on Invested Capital rather than Committed Capital can Hurt Returns?
- Outlook/Issues for European PE Post-Brexit?
- After a Long and Extended SEC Crackdown and a Trend towards Increased Transparency, what Impacts are you expecting on the industry going forward?

Moderator:
Robert L. Greene, Chairman, **Virginia Retirement System**

Speaker:
Rodney June, Chief Investment Officer, **Los Angeles City Employees' Retirement System, (LACERS)**

4:25 PM – CIO Roundtable

(A) Risks, Allocations and Macro-Based Decisions
- In this Low Growth, Low Return and Fully-Valued Environment, how has it Impacted your Investment Program and your Asset Allocation?
- What's your Opinion on the Sustainability of the Fed-Induced Stock Market Rally? Thoughts on the Fed and Global Central Banks' Monetary Policy?
- Are there any Strategies you like that provide a Low or Non-Correlation to Traditional Investments that can Provide Outsized Returns during Periods of Market Stress?
- With the Collapse of Commodities, Oil, the Slowdown in China, the Troubles of the European Union and more, are you Hedging Against the Risk of Further Deflation?
- What Strategies does your Fund utilize that will Protect against Interest Rate Risk and Duration Risk?
- What sort of De-Risking Strategies or Risk Management Approaches has your Fund Integrated into the Investment Decision Process?
- Does LDI or Risk Parity Make Sense Now Considering Current and Future Market Conditions?
- Do you Incorporate Multi-Asset Investing and do you believe it can Limit Downside Risk?
- Do you believe your Hedge Fund Strategies will provide a Cushion for the next Market Downturn? How do you use them to Reduce Risk?
- Have you Allocated Funds to take Advantage of the Dislocation in Energy/Oil? Which Sectors or Strategies do you favor?
- What do you feel is the proper Emerging Markets Allocation and are there any Regional or Frontier Strategies that interest you?
- Have you made Long-Term Cash Flow Investments through Partnerships and Co-Investment Structures?
- Do you Believe the Impact of Regulation has Created a Reduction in Market Liquidity? Has it Impacted your Fund or Decisions? Will there be Sufficient Liquidity in the System to Cope with Conditions of Market Stress?

(B) Alignment of Interests

- What Changes or Trends have you noticed in Fee Structures/Terms and your Bargaining Power?
- What Tactics work best for you when attempting to Negotiate Private Placement Agreements?
- Given the Low Return Environment, shouldn't there be an Industry-Wide Threshold (perhaps 3% - 4%), before Carried Interest Kicks In? How can we go about Making Progress with this Issue?
- Have you Trended Towards a Passive Equity Allocation with a Lower Cost?
- What Support would help you to do a better job of Addressing and Solving Investment Problems? What Discretion and Authority do you have with those Problems?
- Any Progress in granting you and your Investment Departments more Latitude in Tactically Managing your Portfolios in response to Extreme Economic Conditions?
- Any important Lessons Learned that you can share from your Individual Plan Experiences?

Moderator:
Kristen Doyle, CFA, Partner, Head of Public Pension Funds, **Aon Hewitt Investment Consulting**

Speakers:
Christopher J. Ailman, Chief Investment Officer, **California State Teachers' Retirement System, (CalSTRS)**
Tom Tull, CFA, Chief Investment Officer, **Employees Retirement System of Texas**
John D. Skjervem, CFA, Chief Investment Officer, **Oregon State Treasury; Oregon Investment Council**
Craig Husting, CFA, Chief Investment Officer, **Public School and Education Employee Retirement Systems of Missouri, (PSRS/PEERS)**

5:20 PM – Conference Concludes

5:20 PM – Tickets for Networking Event handed out in Conference Room - attendees must be present to attend event

6:00 PM – Wine Tasting Networking Event & Dinner
Hosted by The Pension Bridge – Join our group for a wine tasting and dinner at the Press Club, located just next door to the Four Seasons. Meet your industry peers in great setting as California Wine Country comes to the heart of the city. Experience the finest winemakers with new and rare vintages. We'll have a fun wine tasting reception, followed by a tasteful dinner with the highest quality organic ingredients. The Pension Bridge will utilize the 9000 square feet of the award winning "Best Restaurant Design" event space for networking for our high quality conference group.

REGISTRATION:

To register or receive more information on The 2017 Pension Bridge Annual:

Florida Office Contact:

Brett Semel
(561) 455-2729
bsemel@pensionbridge.com

New York Office Contact:

Andrew Blake
(516) 818-7989
ablake@pensionbridge.com

Please visit www.pensionbridge.com for additional details. Registration is not available online due to the controlled attendance structure.

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VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

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Ventura, CA 93003-6572
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http://www.ventura.org/vcera

February 27, 2017

Board of Retirement
Ventura County Employees' Retirement Association
1190 South Victoria Avenue, Suite 200
Ventura, CA 93003-6572

Dear Board Members:

I attended the CALAPRS Trustees' Roundtable in San Jose on February 3, 2017. The turnout was probably the largest I have experienced in the many I have attended. The meeting room was filled. There were representatives from ten 1937 Act county systems, one city police and fire system, one utility district system, and two transit district systems. In some cases, there were several representatives from a system.

Paul Angelo was the first presenter, and the advertised subject matter was "Changing Demographics and Their Impact to Our Systems." His prepared remarks pretty much concentrated on the effects of plan maturity, which are generally higher benefit levels, more conservative assumptions, and higher volatility ratios. However, as all of you know of him, once done with that subject, Paul's presentation evolved in to an "Ask the Actuary" session, most of which centered on reduced discount rates and how to phase them in to reduce the impact on employer and employee contributions. He was somewhat critical of the way CalPERS phases in any changes, in particular, the length of their phase-ins.

The second speaker was Steve Marsh, an Investment Officer of the Sonoma County Employees' Retirement Association. (The Sonoma County System, while considerably smaller than ours, has both a Chief Investment Officer, and a subordinate Investment Officer. I also noted they have an Assistant Administrator as well). His topic was "Introduction to Futures and Options," which he happens to like as an investment tool. He explained what futures and options were, how the markets operated, how they were regulated, their risks (as well as rewards), etc. At conclusion, he expressed concern about the likelihood that some rules of the Commodity Futures Trading Commission dictated by the Dodd-Frank Act would be rolled back under the new Administration.

While awaiting the next speaker, who was tied up in the concurrent Attorney's Roundtable, there was a "break-out" session, in which attendees discussed current outstanding issues in their systems.

The next speaker was Ashley Dunning, who reviewed 2016 legislation of interest to retirement systems and their Boards and staffs. Specifically, she discussed the provisions of AB 2376 pertaining to the voting rights of the Alternate Retired Trustee (about which our Board received a report from General Counsel at our last meeting), as well as the provision authorizing CERL systems to collect specified member information electronically, in lieu of member sworn statements. She also discussed AB 2833, which requires that specified financial information pertaining to a system's alternate investments be disclosed to the public at least once annually, and discussions currently taking place as to how it should be implemented. Finally, she briefly discussed AB 2287, SB 1436, and AB 1661, which, respectively, dealt with online posting of local agency agendas, final action on local agency executive salaries, and sexual harassment training and education.

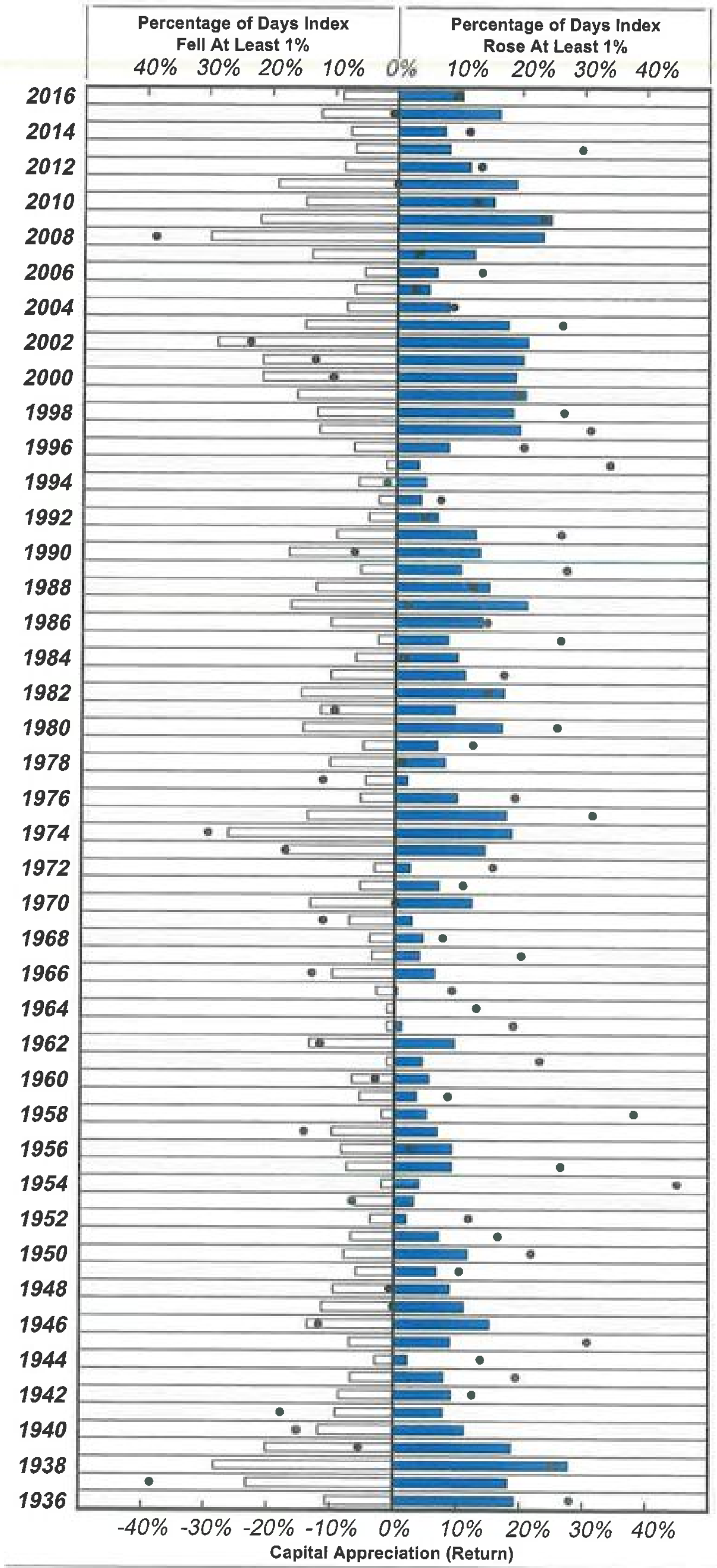
I'd be happy to answer any question the Board might have.

Respectfully,

Arthur E. Goulet
Retiree Trustee

Volatility and Return

Standard & Poor's 500 Stock Index 1936 - 2016



Volatility: Losses[1]	Volatility: Gains[2]	Volatility: Total[3]	Return	Year
8.73%	10.32%	19.05%	9.50%	2016
12.30%	16.27%	28.57%	-0.70%	2015
7.54%	7.54%	15.08%	11.40%	2014
6.75%	8.33%	15.08%	29.60%	2013
8.40%	11.60%	20.00%	13.40%	2012
19.05%	19.05%	38.10%	0.00%	2011
14.68%	15.48%	30.16%	12.80%	2010
21.83%	24.60%	46.43%	23.50%	2009
29.64%	23.32%	52.96%	-38.50%	2008
13.55%	12.35%	25.90%	3.50%	2007
5.18%	6.37%	11.55%	13.60%	2006
6.75%	5.16%	11.90%	3.00%	2005
7.94%	8.33%	16.27%	9.00%	2004
14.68%	17.86%	32.54%	26.40%	2003
28.57%	21.03%	49.60%	-23.40%	2002
21.43%	20.24%	41.67%	-13.00%	2001
21.43%	19.05%	40.48%	-10.10%	2000
15.87%	20.63%	36.51%	19.50%	1999
12.65%	18.58%	31.23%	26.70%	1998
12.25%	19.76%	32.02%	31.00%	1997
6.69%	8.27%	14.96%	20.30%	1996
1.59%	3.57%	5.16%	34.10%	1995
5.95%	4.76%	10.71%	-1.50%	1994
2.77%	3.95%	6.72%	7.10%	1993
4.33%	6.69%	11.02%	4.50%	1992
9.52%	12.70%	22.22%	26.30%	1991
17.00%	13.44%	30.43%	-6.60%	1990
5.56%	10.32%	15.87%	27.30%	1989
12.65%	15.02%	27.67%	12.40%	1988
16.60%	20.95%	37.55%	2.00%	1987
10.28%	13.83%	24.11%	14.60%	1986
2.77%	8.30%	11.07%	26.30%	1985
6.32%	9.88%	16.21%	1.40%	1984
10.28%	11.07%	21.34%	17.30%	1983
15.02%	17.39%	32.41%	14.80%	1982
11.86%	9.49%	21.34%	-9.70%	1981
14.62%	17.00%	31.62%	25.80%	1980
5.14%	6.72%	11.86%	12.30%	1979
10.32%	7.94%	18.25%	1.10%	1978
4.76%	1.98%	6.75%	-11.50%	1977
5.53%	9.88%	15.42%	19.10%	1976
13.83%	17.79%	31.62%	31.50%	1975
26.48%	18.58%	45.06%	-29.70%	1974
17.46%	14.29%	31.75%	-17.40%	1973
3.19%	2.39%	5.58%	15.60%	1972
5.53%	7.11%	12.65%	10.80%	1971
13.39%	12.20%	25.59%	0.10%	1970
7.20%	2.80%	10.00%	-11.40%	1969
3.98%	4.42%	8.41%	7.70%	1968
3.59%	3.98%	7.57%	20.10%	1967
9.92%	6.35%	16.27%	-13.10%	1966
2.78%	0.40%	3.17%	9.10%	1965
1.19%	0.00%	1.19%	13.00%	1964
1.20%	1.20%	2.39%	18.90%	1963
13.49%	9.52%	23.02%	-11.80%	1962
1.20%	4.40%	5.60%	23.10%	1961
6.75%	5.56%	12.30%	-3.00%	1960
5.53%	3.56%	9.09%	8.50%	1959
1.98%	5.16%	7.14%	38.10%	1958
9.92%	6.75%	16.67%	-14.30%	1957
8.37%	9.16%	17.53%	2.60%	1956
7.54%	9.13%	16.67%	26.40%	1955
1.98%	3.97%	5.95%	45.00%	1954
6.37%	3.19%	9.56%	-6.60%	1953
3.79%	1.89%	5.68%	11.80%	1952
6.82%	7.20%	14.02%	16.50%	1951
7.87%	11.61%	19.48%	21.80%	1950
5.97%	6.72%	12.69%	10.30%	1949
9.58%	8.81%	18.39%	-0.70%	1948
11.41%	11.03%	22.43%	0.00%	1947
13.69%	15.21%	28.90%	-11.90%	1946
7.01%	8.86%	15.87%	30.70%	1945
2.93%	2.20%	5.13%	13.80%	1944
6.81%	7.89%	14.70%	19.40%	1943
8.73%	9.09%	17.82%	12.40%	1942
9.25%	7.83%	17.08%	-17.90%	1941
11.83%	11.11%	22.94%	-15.30%	1940
20.14%	18.73%	38.87%	-5.50%	1939
28.36%	27.64%	56.00%	25.20%	1938
23.33%	18.15%	41.48%	-38.60%	1937
10.70%	19.19%	29.89%	27.90%	1936
10.20%	10.70%	20.90%	8.00%	Average
8.70%	9.20%	17.50%	10.80%	Median

Legend
Volatility - Bars, top scale
Return - Bullets, bottom scale

1. Percentage of Days with at least a 1% Loss.
2. Percentage of Days with at least a 1% Gain.
3. Percentage of Days with at least a 1% Change.

Sources: Standard & Poor's Corporation; Copyright © 2017 Crandall, Pierce & Company.

315B

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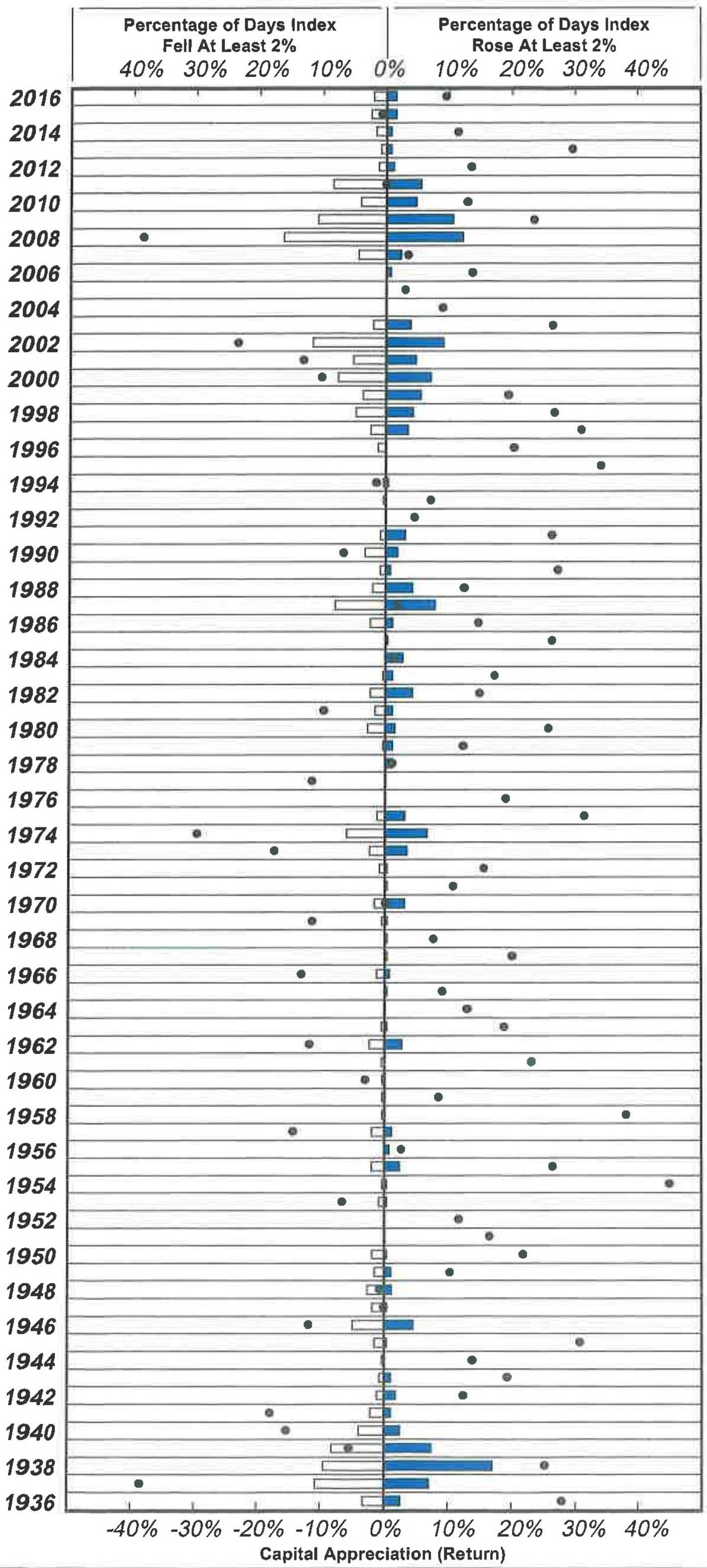
-CCCLXX-

Volatility and Return

Standard & Poor's 500 Stock Index 1936 - 2016



Volatility: Losses[1]	Volatility: Gains[2]	Volatility: Total[3]	Return	Year
2.0%	1.6%	3.6%	9.5%	2016
2.4%	1.6%	4.0%	-0.7%	2015
1.6%	0.8%	2.4%	11.4%	2014
0.8%	0.8%	1.6%	29.6%	2013
1.2%	1.2%	2.4%	13.4%	2012
8.3%	5.6%	13.9%	0.0%	2011
4.0%	4.8%	8.7%	12.8%	2010
10.7%	10.7%	21.4%	23.5%	2009
16.2%	12.3%	28.5%	-38.5%	2008
4.4%	2.4%	6.8%	3.5%	2007
0.0%	0.8%	0.8%	13.6%	2006
0.0%	0.0%	0.0%	3.0%	2005
0.0%	0.0%	0.0%	9.0%	2004
2.0%	4.0%	6.0%	26.4%	2003
11.5%	9.1%	20.6%	-23.4%	2002
5.2%	4.8%	9.9%	-13.0%	2001
7.5%	7.1%	14.7%	-10.1%	2000
3.6%	5.6%	9.1%	19.5%	1999
4.7%	4.4%	9.1%	26.7%	1998
2.4%	3.6%	5.9%	31.0%	1997
1.2%	0.0%	1.2%	20.3%	1996
0.0%	0.0%	0.0%	34.1%	1995
0.4%	0.4%	0.8%	-1.5%	1994
0.4%	0.0%	0.4%	7.1%	1993
0.0%	0.0%	0.0%	4.5%	1992
0.8%	3.2%	4.0%	26.3%	1991
3.2%	2.0%	5.1%	-6.6%	1990
0.8%	0.8%	1.6%	27.3%	1989
2.0%	4.4%	6.3%	12.4%	1988
7.9%	7.9%	15.8%	2.0%	1987
2.4%	1.2%	3.6%	14.6%	1986
0.0%	0.4%	0.4%	26.3%	1985
0.0%	2.8%	2.8%	1.4%	1984
0.4%	1.2%	1.6%	17.3%	1983
2.4%	4.4%	6.7%	14.8%	1982
1.6%	1.2%	2.8%	-9.7%	1981
2.8%	1.6%	4.4%	25.8%	1980
0.4%	1.2%	1.6%	12.3%	1979
0.0%	1.2%	1.2%	1.1%	1978
0.0%	0.0%	0.0%	-11.5%	1977
0.0%	0.0%	0.0%	19.1%	1976
1.2%	3.2%	4.4%	31.5%	1975
5.9%	6.7%	12.7%	-29.7%	1974
2.4%	3.6%	6.0%	-17.4%	1973
0.8%	0.4%	1.2%	15.6%	1972
0.0%	0.4%	0.4%	10.8%	1971
1.6%	3.2%	4.7%	0.1%	1970
0.4%	0.4%	0.8%	-11.4%	1969
0.0%	0.4%	0.4%	7.7%	1968
0.0%	0.4%	0.4%	20.1%	1967
1.2%	0.8%	2.0%	-13.1%	1966
0.0%	0.4%	0.4%	9.1%	1965
0.0%	0.0%	0.0%	13.0%	1964
0.4%	0.4%	0.8%	18.9%	1963
2.4%	2.8%	5.2%	-11.8%	1962
0.4%	0.0%	0.4%	23.1%	1961
0.4%	0.0%	0.4%	-3.0%	1960
0.4%	0.0%	0.4%	8.5%	1959
0.4%	0.0%	0.4%	38.1%	1958
2.0%	1.2%	3.2%	-14.3%	1957
0.0%	0.8%	0.8%	2.6%	1956
2.0%	2.4%	4.4%	26.4%	1955
0.4%	0.4%	0.8%	45.0%	1954
0.8%	0.4%	1.2%	-6.6%	1953
0.0%	0.0%	0.0%	11.8%	1952
0.0%	0.0%	0.0%	16.5%	1951
1.9%	0.4%	2.3%	21.8%	1950
1.5%	1.1%	2.6%	10.3%	1949
2.7%	1.2%	3.8%	-0.7%	1948
1.9%	0.4%	2.3%	0.0%	1947
4.9%	4.6%	9.5%	-11.9%	1946
1.5%	0.4%	1.9%	30.7%	1945
0.4%	0.0%	0.4%	13.8%	1944
0.7%	1.1%	1.8%	19.4%	1943
1.1%	1.8%	2.9%	12.4%	1942
2.1%	1.1%	3.2%	-17.9%	1941
3.9%	2.5%	6.5%	-15.3%	1940
8.1%	7.4%	15.6%	-5.5%	1939
9.5%	17.1%	26.6%	25.2%	1938
10.7%	7.0%	17.8%	-38.6%	1937
3.3%	2.6%	5.9%	27.9%	1936
2.4%	2.4%	4.7%	8.0%	Average
1.2%	1.2%	2.4%	10.8%	Median

Legend
Volatility - Bars, top scale
Return - Bullets, bottom scale

1. Percentage of Days with at least a 2% Loss.
2. Percentage of Days with at least a 2% Gain.
3. Percentage of Days with at least a 2% Change.

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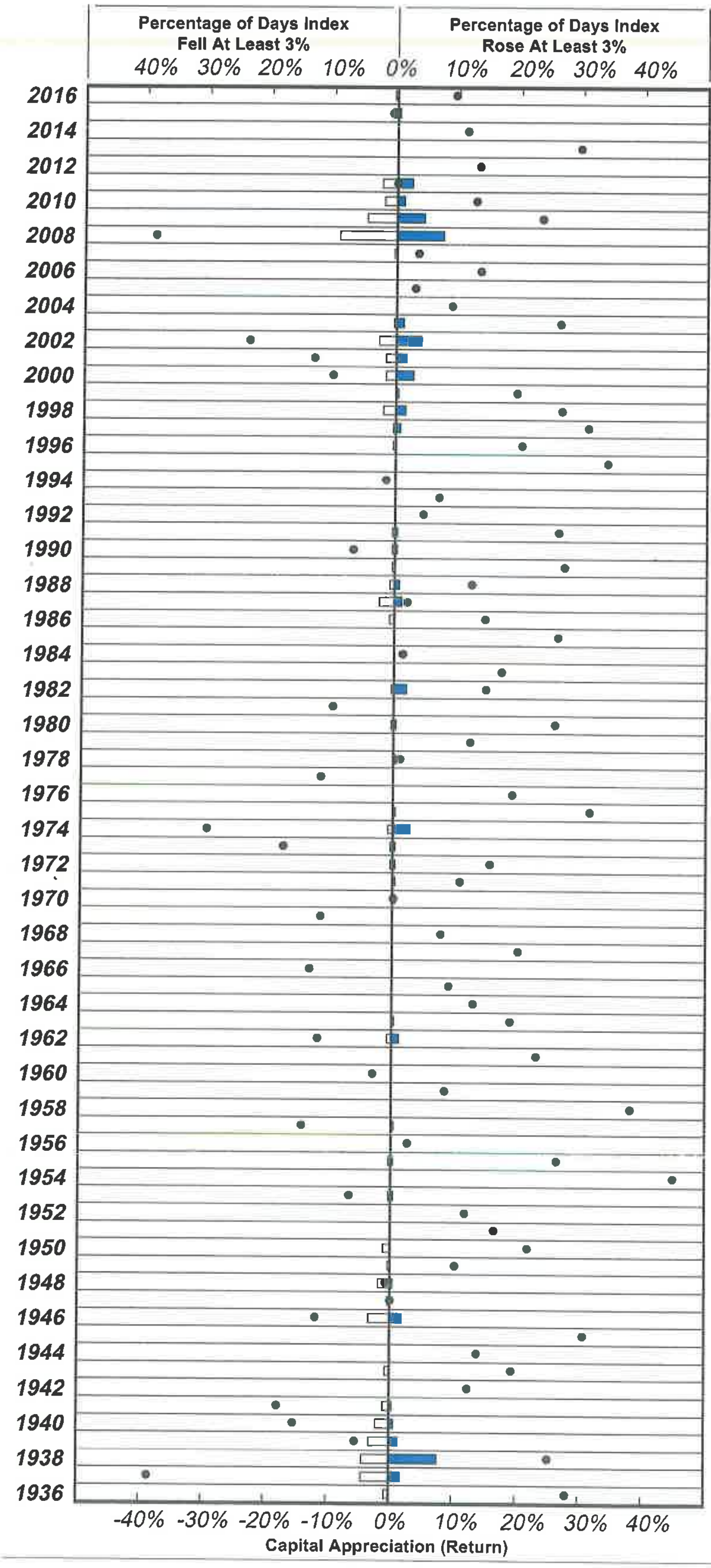
Volatility and Return

Standard & Poor's 500 Stock Index 1936 - 2016



Volatility: Losses[1]	Volatility: Gains[2]	Volatility: Total[3]	Return	Year
0.4%	0.0%	0.4%	9.5%	2016
0.8%	0.4%	1.2%	-0.7%	2015
0.0%	0.0%	0.0%	11.4%	2014
0.0%	0.0%	0.0%	29.6%	2013
0.0%	0.0%	0.0%	13.4%	2012
2.4%	2.4%	4.8%	0.0%	2011
2.0%	1.2%	3.2%	12.8%	2010
4.8%	4.4%	9.1%	23.5%	2009
9.1%	7.5%	16.6%	-38.5%	2008
0.4%	0.0%	0.4%	3.5%	2007
0.0%	0.0%	0.0%	13.6%	2006
0.0%	0.0%	0.0%	3.0%	2005
0.0%	0.0%	0.0%	9.0%	2004
0.4%	1.2%	1.6%	26.4%	2003
2.8%	4.0%	6.8%	-23.4%	2002
1.6%	1.6%	3.2%	-13.0%	2001
1.6%	2.8%	4.4%	-10.1%	2000
0.0%	0.4%	0.4%	19.5%	1999
2.0%	1.6%	3.6%	26.7%	1998
0.4%	0.8%	1.2%	31.0%	1997
0.4%	0.0%	0.4%	20.3%	1996
0.0%	0.0%	0.0%	34.1%	1995
0.0%	0.0%	0.0%	-1.5%	1994
0.0%	0.0%	0.0%	7.1%	1993
0.0%	0.0%	0.0%	4.5%	1992
0.4%	0.4%	0.8%	26.3%	1991
0.4%	0.4%	0.8%	-6.6%	1990
0.4%	0.0%	0.4%	27.3%	1989
0.8%	0.8%	1.6%	12.4%	1988
2.4%	1.2%	3.6%	2.0%	1987
0.8%	0.0%	0.8%	14.6%	1986
0.0%	0.0%	0.0%	26.3%	1985
0.0%	0.0%	0.0%	1.4%	1984
0.0%	0.0%	0.0%	17.3%	1983
0.4%	2.0%	2.4%	14.8%	1982
0.0%	0.0%	0.0%	-9.7%	1981
0.4%	0.4%	0.8%	25.8%	1980
0.0%	0.0%	0.0%	12.3%	1979
0.0%	0.4%	0.4%	1.1%	1978
0.0%	0.0%	0.0%	-11.5%	1977
0.0%	0.0%	0.0%	19.1%	1976
0.0%	0.4%	0.4%	31.5%	1975
0.8%	2.8%	3.6%	-29.7%	1974
0.4%	0.4%	0.8%	-17.4%	1973
0.4%	0.4%	0.8%	15.6%	1972
0.0%	0.4%	0.4%	10.8%	1971
0.0%	0.4%	0.4%	0.1%	1970
0.0%	0.0%	0.0%	-11.4%	1969
0.0%	0.0%	0.0%	7.7%	1968
0.0%	0.0%	0.0%	20.1%	1967
0.0%	0.0%	0.0%	-13.1%	1966
0.0%	0.0%	0.0%	9.1%	1965
0.0%	0.0%	0.0%	13.0%	1964
0.0%	0.4%	0.4%	18.9%	1963
0.8%	1.2%	2.0%	-11.8%	1962
0.0%	0.0%	0.0%	23.1%	1961
0.0%	0.0%	0.0%	-3.0%	1960
0.0%	0.0%	0.0%	8.5%	1959
0.0%	0.0%	0.0%	38.1%	1958
0.0%	0.4%	0.4%	-14.3%	1957
0.0%	0.0%	0.0%	2.6%	1956
0.4%	0.4%	0.8%	26.4%	1955
0.0%	0.0%	0.0%	45.0%	1954
0.4%	0.4%	0.8%	-6.6%	1953
0.0%	0.0%	0.0%	11.8%	1952
0.0%	0.0%	0.0%	16.5%	1951
1.1%	0.0%	1.1%	21.8%	1950
0.4%	0.0%	0.4%	10.3%	1949
1.9%	0.4%	2.3%	-0.7%	1948
0.4%	0.0%	0.4%	0.0%	1947
3.4%	1.9%	5.3%	-11.9%	1946
0.0%	0.0%	0.0%	30.7%	1945
0.0%	0.0%	0.0%	13.8%	1944
0.7%	0.0%	0.7%	19.4%	1943
0.0%	0.0%	0.0%	12.4%	1942
1.1%	0.4%	1.4%	-17.9%	1941
2.2%	0.7%	2.9%	-15.3%	1940
3.2%	1.4%	4.6%	-5.5%	1939
4.4%	7.6%	12.0%	25.2%	1938
4.4%	1.9%	6.3%	-38.6%	1937
0.7%	0.0%	0.7%	27.9%	1936
0.8%	0.7%	1.4%	8.0%	Average
0.0%	0.0%	0.4%	10.8%	Median

Legend
Volatility - Bars, top scale
Return - Bullets, bottom scale

1. Percentage of Days with at least a 3% Loss.
2. Percentage of Days with at least a 3% Gain.
3. Percentage of Days with at least a 3% Change.

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Buttonwood | Time and tide

It is not easy for investors to recognise a bubble

BUBBLES put the fun into financial history. Who can resist stories about Dutch tulips that were worth more than country estates or the floating of an "undertaking of great advantage but no one to know what it is"?

Economists have long debated whether bubbles can be identified, or indeed stopped, before they can cause widespread damage, as the crisis of 2007-08 did. But spotting them is easier said than done: even tulipmania may have been caused by a quirk in the wording of contracts that meant speculators would, at worst, walk away with only a tiny loss.

For many investors, the more important question is whether it is possible to avoid being sucked into a bubble at the top, and suffering declines like the 80% drop experienced by the NASDAQ 100 index of technology stocks between March 2000 and August 2002. Two essays in a new book*, from the CFA Institute Research Foundation and the Cambridge Judge Business School, indicate just how difficult market timing can be.

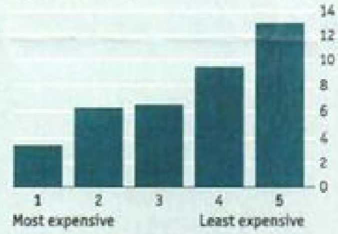
The first, from William Goetzmann of Yale School of Management, looks at the history of 21 stockmarkets since 1900. Mr Goetzmann defines a bubble as a doubling in a market's value, followed by a 50% fall. He found that a doubling in a single year occurred just 2% of the time (in 72 cases). On six occasions, the market also doubled over the next year, whereas a 50% fall in the subsequent year occurred on just three occasions; Argentina in 1976-77, Austria in 1923-24 and Poland in 1993-94. Even after a further five years, markets were more likely to double again than to fall by half.

There were many more occasions when markets doubled over three years; around 14% of the total. After such rises, the markets dropped by half in the following year on fewer than one in 20 occasions. The markets lost half their value over the next five years around one tenth of the time. But in a fifth of such episodes, the market doubled again. On this basis, a sharp rise in a market is more of a buy signal than a sell indicator. That helps explain why investors find it so difficult to get out at the peak.

Buy cheaply

Real annual returns over the next ten years when purchasing US equities at varying market levels*

By quintile, 1900-2014, %



Source: AQR

*Determined by earnings yield calculated using cyclically adjusted price-earnings ratio

You can argue whether Mr Goetzmann's definition of a bubble is the right one. He looks at overall markets, rather than individual industries such as technology. GMO, a fund-management group, uses a different concept—namely, that a bubble occurs when the price of an asset rises by more than two standard deviations above its previous long-term trend.

Another approach is to look at fundamentals. Asset prices are supposed to reflect the current value of future cash flows. In theory, a doubling in a market could reflect a sudden improvement in the outlook for that asset class, and thus be entirely rational. One valuation approach, often referred to in this column, is the cyclically adjusted price-earnings ratio, or CAPE, which averages profits over ten years. Highs in the ratio coincided with market peaks like 1929 and 2000.

In another chapter of the book, Antti Ilmanen of AQR Capital Management looks at the CAPE ratio as a market-timing measure (see chart). At first sight, this seems very promising. Buying the American equity market when it was cheapest brought an annual real return of 13% over the ensuing decade; buying it when it was dearest earned a return of just 3.5%. (He inverted the ratio to get an earnings yield, but that does not affect the results.)

The problem, however, is that the full historical range of valuations is available only with hindsight. Investors in the 1930s did not know that they would be buying at the cheapest level the 20th century would see. And the ratio is of little use in the short term: the market looked overvalued on the CAPE measure for much of the 1990s, not just at the peak.

So Mr Ilmanen devises a simple approach to show whether investors using the range of CAPEs that would have been known at that point could have been used to time the markets since 1900. Over the full period this tactic mildly outperformed a "buy-and-hold" strategy, but all the outperformance occurred in the first half of the sample. It would have underperformed for the past 50 years.

This is not very encouraging. Neither a doubling of the market nor a historically high valuation are reliable sell signals. Of course, that shouldn't be too surprising. If timing the market were easy, big swings in prices would not happen in the first place.

* "Financial Market History: Reflections on the Past for Investors Today", edited by David Chambers and Elroy Dimson.

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