

# Pension Trust

1000 Mill Street  
San Luis Obispo, CA 93408  
(805) 781-5465 Phone  
(805) 781-5697 Fax  
www.SLOPensionTrust.org



## AGENDA

### PENSION TRUST BOARD OF TRUSTEES

**Monday, February 26, 2018 9:30 AM**

Board of Supervisors Chambers  
(and room D361)

County Government Center  
San Luis Obispo, CA 93408

## PUBLIC COMMENT

1. Public Comment: Members of the public wishing to address the Board on matters other than scheduled items may do so when recognized by the Chair. Presentations are limited to three minutes per individual.

## ORGANIZATIONAL

None

## CONSENT

2. Minutes of the Regular Meeting of January 22, 2018 (Approve Without Correction).
3. Report of Deposits and Contributions for the month of January 2018 (Receive and File).
4. Report of Service Retirements, Disability Retirements and DROP Participants for the month of January (Receive, Approve and File).
5. Applications & Elections to participate in the Deferred Retirement Option Program (DROP) received through February 9, 2018 (Receive, Approve and File).

## **APPLICATIONS FOR DISABILITY RETIREMENT**

Application for Industrial Disability Retirement (Case 2017-03) see Closed Session item

## **OLD BUSINESS**

None

## **NEW BUSINESS**

6. Pension Trust Staffing and Approval of Job Specification – Retirement Technician (Recommend Approval).
7. Approval of the Annual Cost-Of-Living Adjustments provided by the San Luis Obispo County Employees Retirement Plan (Recommend Approval).
8. Actuarial Experience Study and Valuation – Planning and Process - Presentation by Paul Wood, Actuary - Gabriel Roeder Smith (Discuss, Direct Actuary and Staff as necessary)

## **INVESTMENTS**

9. Quarterly Investment Report for the 4th Quarter of 2017 – Presentation by Scott Whalen, Verus (Receive and File).
10. Monthly Investment Report for January 2018 (Receive and File).
11. Capital Market Expectations, Asset Allocation Policy – Scott Whalen, Verus (Review, Discuss, Direct Staff as necessary, Approve).
12. Retirement Plan Peer Comparisons – Asset Allocation (Receive and File).
13. Asset Allocation - (Review, Discuss, and Direct Staff as necessary).

## **OPERATIONS**

14. Staff Reports
15. General Counsel Reports

16. Committee Reports:

- |                              |           |
|------------------------------|-----------|
| a. Audit Committee           | No Report |
| b. Personnel Committee       | Report    |
| c. PAS Replacement Committee | No Report |

17. Upcoming Board Topics (subject to change):

- a. March 26, 2018
  - i. Disability case TBD
  - ii. 2017 Actuarial Audit – Final report
  - iii. Employer contribution prefunding
  - iv. Alternative Investments Fee disclosure – Calif. Code 7514.7 / AB2833
  
- b. April 23, 2018
  - i. Pension Trust FY18-19 Budget – preliminary
  - ii. Fiduciary Refresher Training
  - iii. Conflict of Interest Policy biennial review
  
- c. May 21, 2018
  - i. Pension Trust FY18-19 Budget – approval
  - ii. 2017 Actuarial Audit – GRS comments and adjustments
  - iii. 2018 Actuarial Experience Study Report
  - iv. Actuarial Assumptions for 2018 Valuation
  - v. Quarterly Investment Report for 1Q18
  - vi. Investment presentations by Verus, Investment Consultant

18. Trustee Comments

**REFERRED ITEMS**

None

**ADDED ITEMS**

None

- Recess -

**CLOSED SESSION – 1:00 – Reconvene in Room D361**

19. Application for Industrial Disability Retirement (Case 2017-03) - *Disability matters shall be considered in CLOSED HEARING – pursuant to Government Code Section 54957(b)(1). Interested parties may request these matters to be discussed in a session open to the public.* Recommendation: to consider the Proposed Decision of Referee Catherine Harris in Case 2017-03 for an industrial disability retirement and take appropriate action thereon.

**ADJOURNMENT**

# Board of Trustees

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## JANUARY 22, 2018 MINUTES OF THE REGULAR MEETING OF THE PENSION TRUST BOARD OF TRUSTEES

**BOARD MEMBERS PRESENT:** Matt Janssen, President  
Will Clemens, Vice President  
Guy Savage  
Gere Sibbach  
Jim Hamilton  
Jim Erb  
Jeff Hamm

**STAFF:** Carl Nelson  
Andrea Paley  
Amy Burke

**COUNSEL:** Chris Waddell, Esq.

**OTHERS:** Jennifer Alderete, Pension Trust  
Mary Beth Redding, Bartel Assoc.  
Dan Andoetoe, Retiree

The meeting was called to order by President Janssen at 9:37 AM, who presided over same.

### **AGENDA ITEM NO. 1: PUBLIC COMMENT.**

None.

**ORGANIZATIONAL:**

**AGENDA ITEM NO. 2: ELECTION OF OFFICERS.**

Mr. Savage made the motion to nominate Mr. Janssen as President and nominate Mr. Clemens as Vice President. There were no further nominations. Mr. Erb seconded the nominations which were approved by unanimous vote.

**AGENDA ITEM NO. 3: APPOINTMENT OF COMMITTEE MEMBERS  
BY PRESIDENT.**

President Janssen appointed the following trustees to the three standing committees as follows:

**AUDIT COMMITTEE:**

Mr. Erb, Mr. Sibbach and Mr. Clemens.

**PERSONNEL COMMITTEE:**

Mr. Hamm, Mr. Hamilton and Mr. Janssen.

**PENSION ADMINISTRATION SYSTEM REPLACEMENT COMMITTEE:**

Mr. Savage, Mr. Erb and Mr. Sibbach.

**CONSENT:**

**AGENDA ITEM NO. 4 - 9: CONSENT.**

Upon the motion of Mr. Sibbach, seconded by Mr. Erb, and unanimously passed, the following action was taken:

**ITEM 4:** The Minutes of the Regular Meeting of December 18, 2017 were approved without correction.

**ITEM 5:** The Report of Deposits and Contributions for the Month of December 2017, was received and filed.

**ITEM 6:** The Report of Service Retirements, Disability and DROP Retirements for the month of December 2017, was received, approved and filed.

**ITEM 7:** The Report of Applications for participation in the Deferred Retirement Option Program received through January 5, 2018 was received, approved and filed.

**ITEM 8:** The Option 4 SDRO in re marriage of Outram was approved.

**ITEM 9:** The Monthly Investment Report for the period ended November 30, 2017 was received and filed.

**APPLICATIONS FOR DISABILITY RETIREMENT:**

**AGENDA ITEM NO. 10: APPLICATION FOR INDUSTRIAL DISABILITY RETIREMENT CASE NO. 2017-06.**

Upon the motion of Mr. Erb, seconded by Mr. Janssen, and unanimously passed, the following action was taken:

- 1) Mr. Robert Burgeson was found to have become permanently disabled within the meaning of Retirement Plan Section 10.01 on January 17, 2017; and
- 2) Mr. Burgeson was found to be entitled to an Industrial Disability Retirement under Retirement Plan Section 10.04 effective the day following the last day of compensated benefits from his employer.

**OLD BUSINESS:**

None.

**NEW BUSINESS:**

**AGENDA ITEM NO. 11: 2017 ACTUARIAL AUDIT – PRELIMINARY REPORT.**

Mary Beth Redding, Actuary with Bartel Associates was present to report on the actuarial audit of the 2017 Actuarial Valuation performed by Gabriel Roeder Smith & Co., Inc. She reported that the preliminary results were very close, the valuation data was reasonable and reliable and the actuarial assumptions were reasonable and appropriate. Bartel staff are in the final review process and the specific results will be presented to the board with a full audit report and any recommendations.

Upon the motion of Mr. Janssen, seconded by Mr. Erb, and unanimously passed this item was received and filed.

**INVESTMENTS:**

**AGENDA ITEM NO. 12: ANNUAL CASH FLOW ANALYSIS.**

Upon the motion of Mr. Savage, seconded by Mr. Hamm, and unanimously passed, the Annual Cash Flow Analysis was received and filed.

**AGENDA ITEM NO. 13: MONTHLY INVEST REPORT FOR DECEMBER, 2017.**

Upon the motion of Mr. Erb, seconded by Mr. Hamm, and unanimously passed, the Investment Report for the period ended December 31, 2017 was received and filed.

**AGENDA ITEM NO. 14: ASSET ALLOCATION.**

Staff reported that due to strong market returns in December the funds asset mix has been pushed to the upper policy limits for some asset classes. After reviewing the final year end asset mix, staff will proceed with an extensive rebalancing plan to bring the asset mix back in line with the investment policy mix. No action is required by the board at this time.

**OPERATIONS:**

**AGENDA ITEM NO. 15: STAFF ORAL REPORTS.**

- A)** Staff noted that the City of San Diego retirement system has added a new tier to their plan.
- B)** Staff informed the board that the final distribution for the Fidelity real estate asset will close this investment.

**AGENDA ITEM NO. 16: GENERAL COUNSEL ORAL REPORTS.**

General Counsel Waddell continued to update the board of discussion pertaining to the “vested rights” issue with no resolutions or determinations in sight.

**AGENDA ITEM NO. 17: COMMITTEE REPORTS – AS NEEDED.**

- A)** AUDIT COMMITTEE: No report.



- B)** PERSONNEL COMMITTEE: No report.
- C)** PENSION ADMINISTRATION SYSTEM ADMINISTRATION (PASR) COMMITTEE: Reported that the Steering Committee recently met and the general outcome is that the project is about two weeks behind however there is no financial impact. The project has reached the half way mark.

**AGENDA ITEM NO. 18: UPCOMING BOARD TOPICS.**

The planned topics for the next three board meetings were included in the agenda summary. This is an information item, nothing further to report.

**AGENDA ITEM NO. 19: TRUSTEE COMMENTS.**

Mr. Savage commented on a recent article of interest pertaining to current and future contribution rates for public pension funds up and down the state appears to be fairly consistent around the 40% of pay range.

**REFERRED ITEMS:** None.

**ADDED ITEMS:** None.

**CLOSED SESSION:** None.

**ADJOURNMENT.**

There being no further business, the meeting was adjourned at 11:00 AM. The next Regular Meeting was set for February 26, 2018, at 9:30 AM, in the Board of Supervisors Chambers, New County Government Center, San Luis Obispo, California 93408.

**Respectfully submitted,**

**Carl Nelson  
Executive Secretary**

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**REPORT OF DEPOSITS AND CONTRIBUTIONS FOR THE MONTH OF  
JANUARY 2018**

PP 1	1/5/2018	Pensionable Salary	Employer Contributions	Employer Rate	Employee Contributions	Employer for		Combined Rate	Additional Contributions	Buy Backs	TOTAL Contributions
						Employee Contributions	Employee Rate				
	<b>By Employer and Tier:</b>										
	County Tier 1	4,021,546.79	888,870.14	22.10%	410,698.91	343,078.24	18.74%	40.85%	1,537.50	706.22	1,644,891.01
	County Tier 2	938,100.53	212,405.70	22.64%	34,825.31	78,329.13	12.06%	34.70%	819.27	709.70	327,089.11
	County Tier 3	2,164,421.98	454,785.04	21.01%	227,052.77	-	10.49%	31.50%	-	832.64	682,670.45
	Superior Court Tier 1	284,506.59	68,326.97	24.02%	43,351.86	-	15.24%	39.25%	-	-	111,678.83
	Superior Court Tier 3	53,578.54	12,166.79	22.71%	5,356.26	-	10.00%	32.71%	-	114.54	17,637.59
	APCD Tier 1	76,277.67	16,069.41	21.07%	8,817.45	5,286.66	18.49%	39.56%	-	-	30,173.52
	APCD Tier 3	8,525.19	1,768.16	20.74%	948.33	-	11.12%	31.86%	-	-	2,716.49
	Pension Trust Staff Tier 1	7,168.55	1,572.78	21.94%	798.58	665.96	20.43%	42.37%	-	-	3,037.32
	Pension Trust Staff Tier 2	7,936.80	1,741.33	21.94%	127.78	737.33	10.90%	32.84%	-	-	2,606.44
	Pension Trust Staff Tier 3	8,974.89	1,925.12	21.45%	1,058.89	-	11.80%	33.25%	-	-	2,984.01
	LAFCO Tier 1	12,494.29	3,248.51	26.00%	547.25	1,448.97	15.98%	41.98%	-	-	5,244.73
		7,583,531.82	1,662,879.95	21.93%	733,583.39	429,546.29	15.34%	37.27%	2,356.77	2,363.10	\$ 2,830,729.50
PP 2	1/19/2018	Pensionable Salary	Employer Contributions	Employer Rate	Employee Contributions	Employer for		Combined Rate	Additional Contributions	Buy Backs	TOTAL Contributions
	<b>By Employer and Tier:</b>										
	County Tier 1	3,967,921.16	926,222.81	23.34%	453,143.11	338,796.00	19.96%	43.30%	1,537.50	16,966.82	1,736,666.24
	County Tier 2	930,059.75	222,281.81	23.90%	45,959.03	78,364.07	13.37%	37.27%	67.90	709.70	347,382.51
	County Tier 3	2,181,400.99	482,771.06	22.13%	253,059.02	-	11.60%	33.73%	-	832.64	736,662.72
	Superior Court Tier 1	267,250.98	63,982.89	23.94%	43,347.45	-	16.22%	40.16%	-	-	107,330.34
	Superior Court Tier 3	55,885.31	12,770.52	22.85%	6,126.73	-	10.96%	33.81%	-	114.54	19,011.79
	APCD Tier 1	69,253.37	14,528.27	20.98%	8,122.05	4,634.10	18.42%	39.40%	-	-	27,284.42
	APCD Tier 3	10,580.80	2,182.16	20.62%	1,095.10	-	10.35%	30.97%	-	-	3,277.26
	Pension Trust Staff Tier 1	7,168.55	1,647.33	22.98%	873.13	665.96	21.47%	44.45%	-	-	3,186.42
	Pension Trust Staff Tier 2	7,936.80	1,823.87	22.98%	210.33	737.33	11.94%	34.92%	-	-	2,771.53
	Pension Trust Staff Tier 3	8,972.44	2,017.91	22.49%	1,152.40	-	12.84%	35.33%	-	-	3,170.31
	LAFCO Tier 1	12,494.29	3,378.46	27.04%	677.19	1,448.97	17.02%	44.06%	-	-	5,504.62
		7,518,924.44	1,733,607.09	23.06%	813,765.54	424,646.43	16.47%	39.53%	1,605.40	18,623.70	\$ 2,992,248.16
<b>TOTAL FOR THE MONTH</b>		<b>15,102,456.26</b>	<b>3,396,487.04</b>	<b>22.49%</b>	<b>1,547,348.93</b>	<b>854,192.72</b>	<b>15.90%</b>	<b>38.39%</b>	<b>3,962.17</b>	<b>20,986.80</b>	<b>\$ 5,822,977.66</b>
<b>TOTAL YEAR TO DATE</b>		<b>15,102,456.26</b>	<b>3,396,487.04</b>	<b>22.49%</b>	<b>1,547,348.93</b>	<b>854,192.72</b>	<b>15.90%</b>	<b>38.39%</b>	<b>3,962.17</b>	<b>20,986.80</b>	<b>\$ 5,822,977.66</b>

**REPORT OF SERVICE & DISABILITY RETIREMENTS &  
DROP PARTICIPANTS FOR THE MONTH OF:**

**JANUARY 2018**

<b>RETIREE NAME</b>	<b>DEPARTMENT</b>	<b>DATE</b>	<b>MONTHLY ALLOWANCE</b>
BANAGA, FRANCES (DROP)	SOCIAL SERVICES	01-01-2018	2007.61
GINN, LAUNNIE	AGRICULTURE COMM / RECIPROCAL	01-01-2018	Awaiting calcs
HOWARD, STEPHEN	CHILD SUPPORT SERVICES / RECIPROCAL	01-26-2018	Awaiting calcs
HUNTER, MURRAY (DROP)	INFORMATION TECHNOLOGY	01-01-2018	5029.32
LIEBSCHER, EDWARD (DROP)	PROBATION	01-01-2018	9997.13 20.83*
LEIBSCHER, ELLA (DROP)	PROBATION / ALTERNATE PAYEE	01-01-2018	Awaiting forms
MADRID, ARMIDA	PROBATION	01-30-2018	Awaiting calcs
MONROE, RICKY (DROP)	FACILITIES MAINTENANCE	01-01-2017	Option selection
STEPHEN, DEBRA KELLY	LIBRARY	01-23-2018	889.40
<b>ADDENDUM:</b>			
HURLA, BERTA	GENERAL HOSPITAL / RESERVE	08-06-2017	402.94 214.20*
OLSON, DEBBIE	SHERIFF-CORONER / ALTERNATE PAYEE	09-01-2017	Option selection
JORDISON, RITA (DROP)	BEHAVIORAL HEALTH	11-01-2017	3450.30 76.56*
ACKER, STEPHANIE	DISTRICT ATTORNEY / RECIPROCAL	12-30-2017	Awaiting calcs
ALLEN, LARRY	APCD	12-30-2017	8193.33 83.09*
BENFIELD, LINDA	AUDITOR-CONTR-TREAS-TAX-COLL	12-30-2017	2552.58 1295.00** 200.47*
BOWEN, BRENDA	SUPERIOR COURT	12-30-2017	Option selection
CHARLTON, SUNNY	PROBATION	12-16-2017	1887.05
LONG, JULIA MEYERS	PUBLIC WORKS	12-30-2017	2673.87
McCALLISTER, D. DIANE	GENERAL HOSPITAL / RESERVE	12-01-2017	Option selection
MIRANDA, PAUL	SHERIFF-CORONER / RECIPROCAL	12-02-2017	Option selection
TACKET, ARTHUR	MENTAL HEALTH / RECIPROCAL	12-30-2017	Awaiting calcs
UPDEGROVE, CRAIG	MENTAL HEALTH / RESERVE	12-01-2017	1546.70 341.75*

\* Employee Additional Contribution Allowance (per Sections 5.07, 27.12, 28.12, 29.12, 30.12, and 31.12 of the Plan)

\*\* Social Security Coordinated Temporary Annuity (per Section 13.06 of the Plan)

## Board of Trustees

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Date: February 26, 2018  
To: Board of Trustees  
From: Carl Nelson – Executive Secretary

### **Agenda Item 7: Applications & Elections to Participate in the Deferred Retirement Option Program (DROP)**

#### **Recomendation:**

It is recommended that you receive and approve the Application & Election to Participate in DROP for the individuals listed below.

#### **Discussion:**

The San Luis Obispo County Pension Trust has received an Application & Election to Participate in DROP from the following members listed below:

<b>MARCH 1, 2018</b>	<b>Darrell Johnson, Public Works</b>
<b>MARCH 1, 2018</b>	<b>Welch-Cosko, Jennifer, Agriculture Comm</b>
<b>MARCH 1, 2018</b>	<b>Susan Pittaway, Information Technology</b>
<b>MARCH 1, 2018</b>	<b>Ramona Hedges, Planning &amp; Building</b>
<b>MARCH 1, 2018</b>	<b>David Shipman, Assessor</b>

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Date: February 26, 2018

To: Board of Trustees

From: Carl Nelson – Executive Secretary  
Amy Burke – Deputy Executive Secretary

### **Agenda Item 6: Staffing and Approval of Job Specification – Retirement Technician**

#### **Recommendation:**

Approval of the attached job description for the new position of Retirement Technician.

#### **Discussion:**

SLOOPT currently has 10.55 FTEs budgeted. With a Retirement Program Specialist resignation in July of 2017 and the System Coordinator's retirement in November 2017, there are currently 2.00 FTE vacancies. As discussed with the Personnel Committee on February 9, 2018, we have been working with staff over this period to assess workloads and reorganized responsibilities.

The Personnel Committee concurred with staff's recommendation for 2018 to –

- Retain 3 Retirement Program Specialist (RPS) positions (formerly there were 4 budgeted) for primary customer service.
- **Add a new Retirement Technician** position as an administrative paraprofessional to support the RPS staff. The job specification for this new position requires Board approval pursuant to SLOOPT's Employee Policies & Procedures document. This position will be benchmarked to the Accounting Technician-Confidential position used by the County.
- Reclassify the existing Accounting Technician position as a Retirement Technician. As the replacement Pension Administration System (PAS) PensionGold becomes operational

in 2019, the need for a dedicated Accounting Technician will recede and this position will transition to providing further administrative support to the RPS staff.

- Remove the System Coordinator position as the need for that position recedes with: a) the current stability of the existing PAS (RAD); and, b) the transition to the commercial off-the-shelf PAS (PensionGold). The System Coordinator timed her retirement to take place after providing her key input necessary to complete the current phase of the PensionGold conversion (e.g., benefit calculations, past service purchases). The remaining phases of the PAS replacement project are on areas that are not central to the retired System Coordinator's subject matter expert role (e.g., accounting, payroll, website). The System Coordinator position was originally planned as a limited duration position to coincide with the three-year project to implement a new PAS. The present system coordination functions have been taken on by the Deputy Executive Secretary without issue.
- In the future, transition the current Financial Accountant position to include a benefit auditing role that will be facilitated by the PensionGold system. The job specification for such a position and its corresponding benchmark to a County position will be an item for Board approval at some future meeting.

These changes will be incorporated into SLOCPT's proposed FY18-19 administrative budget that will be presented at the April Board of Trustees meeting. The net impact will be a reduction in budgeted FTEs from 10.55 to 9.55 in FY18-19. Employee compensation costs will also be well below what was budgeted for FY17-18.

Attached is a revised organizational chart for the SLOCPT for 2018.

Respectfully submitted.



# Pension Trust

## County of San Luis Obispo

### Job Description

Position: **Retirement Technician**

Adopted: February 26, 2018

Updated: February 26, 2018

Approved: Carl Nelson, Executive Secretary

#### **DEFINITION:**

Under direction, independently performs complex and responsible paraprofessional retirement administrative and accounting work; provides the primary administrative assistance to the senior retirement customer service professionals; may be assigned the overall technical responsibility for the contribution receiving and retiree payroll processes of the Pension Trust; and does other related work as required

#### **DISTINGUISHING CHARACTERISTICS:**

NA – single class job description

#### **REPRESENTATIVE DUTIES:**

**(Not in order of importance)**

Retirement Customer Service – Primarily responsible for providing complex administrative assistance to Retirement Program Specialists or other senior retirement staff. Customer service interface to Plan Members on routine, financial, educational, and administrative issues. Screens and resolves customer needs or escalates more complex matters to senior retirement staff as necessary. Performs complex analysis on Member data and assists in the preparation of data for actuarial valuations. Assists with the preparation and delivery of Member communications and presentations.

Accounting - Primarily responsible for preparing and completing the Pension Trust retirement payment process both on a regular monthly basis and on a non-recurring basis. May perform the accounts payable function for the Pension Trust. Prepares accounting statements and statistics of an analytical nature; maintains journals and ledgers of the Pension Trust; audits expenditure documents and appropriation transfer for compliance with Pension Trust policies and procedures and applicable laws; receives and classifies accounting data; assists in accounting studies and the compilation of cost and budget estimates; audits expenditure elements; answers questions that involve searching for and abstracting technical data and detailed explanations of law, policies or procedures; prepares complex statistical and fiscal reports; keeps and maintains a variety of

records, journals, ledgers, and reports; may assist in accounting for Capital Projects; operates a variety of office equipment including personal computers and other modern office equipment.

**EMPLOYMENT STANDARDS:**

Knowledge of:

The Retirement Plan and its operation; retirement concepts for defined benefit and defined contribution plans; technical financial record-keeping; governmental accounting and budgeting; accounting and auditing principles, practices and procedures; personal computer usage and applications, office methods, practices, procedures, and equipment.

Ability to:

Provide complex paraprofessional administrative support on retirement matters to senior retirement staff. Provide excellent customer service to retirement plan members. Administer a complex retirement benefit payment process. Prepare accurate financial summaries and reports; perform complex accounting paraprofessional work with minimal supervision; make mathematical calculations accurately and quickly; skillfully operate personal computers, and other modern office equipment; learn statutes and regulations governing assigned duties; establish and maintain effective working relationships.

**EDUCATION AND EXPERIENCE:**

Either A: Four years of experience as an Account Clerk, Administrative Assistant or equivalent position is required; Or B: Two years of experience as a Senior Account Clerk or an equivalent position. (Successful completion of six (6) semester units of a professional accounting curriculum from an accredited institution may be substituted for one year of the required experience for either A or B above.); Or C: four years of experience with a comparable retirement system; Or D: An A.A. or higher degree from an accredited college which includes 6 semester units of Accounting.

**WORKING CONDITIONS:**

Environment:

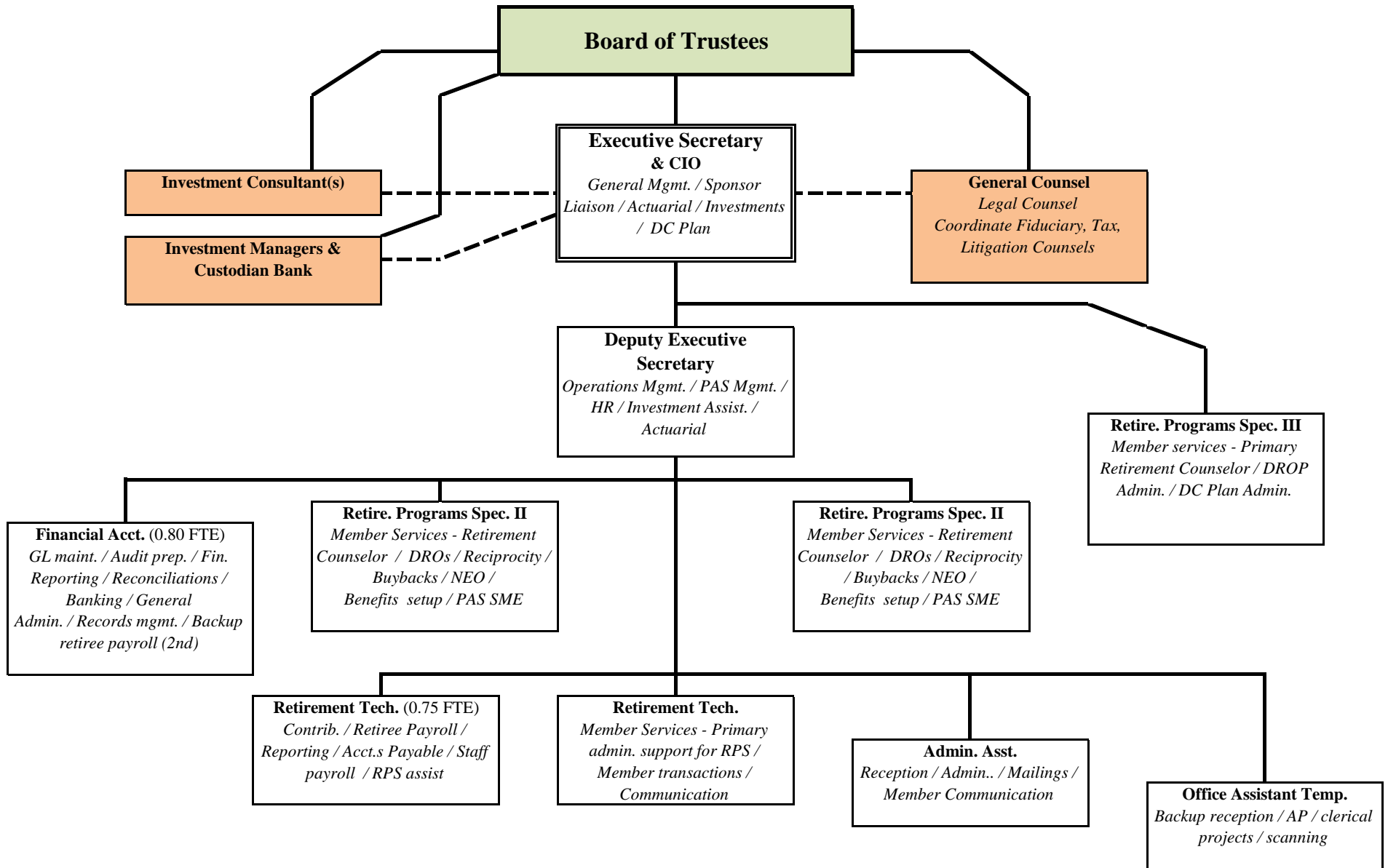
Office environment

Physical Demands:

Hearing and speaking to exchange information  
Dexterity of hands and fingers to operate a computer keyboard  
Seeing to read a variety of materials  
Sitting for extended periods of time

This class specification generally describes the duties and responsibilities characteristic of the position(s) within this class. The duties of a particular position within a multi-position class may vary from the duties of other positions within the class. Accordingly, the essential duties of a particular position (whether it be a multi-position class or a single-position class) will be identified and used by medical examiners and hiring authorities in the selection process. This information will also be made available for review at the time of any recruitment for that position and at such other times as reasonably required.

San Luis Obispo County Pension Trust  
Organization Chart - 2018



2018 planned FTE = 9.550  
FY17-18 budgeted FTE = 10.550

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## Board of Trustees

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Date: February 26, 2018

To: Board of Trustees

From: Carl Nelson – Executive Secretary  
Amy Burke – Deputy Executive Secretary

### **Agenda Item 7: Annual Cost-Of-Living Adjustments provided by the San Luis Obispo County Employees Retirement Plan**

#### **Recommendation:**

It is recommended that the Board approve Cost-Of-Living Adjustments (COLAs) as recommended by the SLOCPT's Actuary (Gabriel Roeder, Smith and Company), and in accordance with the Retirement Plan. For most benefit recipients, this COLA totals **2.80%**.

#### **Discussion:**

The Retirement Plan provides for annual cost-of-living adjustments for retirees in: Section 19.01 and Section 19.02 of Article 19: Cost-Of-Living; Section 27.25 of Article 27: Tier Two – Miscellaneous; Section 28.25 of Article 28: Tier Two – Safety; Section 29.25 of Article 29: Tier Three – AB 340: Miscellaneous; Section 30.25 of Article 30: Tier Three – AB 340: Safety; and Section 31.24 of Article 31: Tier Three – AB 340: Probation.

The COLA percentage, as specified by the Plan, is determined by the average of the All Urban Consumers Consumer Price Index – all items (CPI-U) for the Los Angeles - Riverside - Orange County and the San Francisco - Oakland - San Jose areas. The Plan specifies the use of the annual average of these two metropolitan area's CPI-U data. The SLOCPT's actuary calculates the recommended COLA as a smoothed value using the two most recent annual averages published by the Bureau of Labor Statistics for each specified metropolitan area. While COLAs have historically been calculated as increases to benefits with positive inflation, the Plan also allows for decreases should there be deflation in the CPI-U data.

The recommended COLA based on average of the years 2017 and 2016 has been calculated as **2.8%**. As dictated by the Plan, COLAs may not exceed 3% for Tier 1 retirees or 2% for Tier 2 and Tier 3 retirees. Furthermore, for Tier 1 retirees, if the calculated average percentage increase is

greater than 3%, the amount in excess of 3% will be “banked” and used in subsequent years where the calculated percentage increase is less than 3% (aka: the “Cumulative Carryover”). Tier Two and Tier Three retirees are not eligible for the Cumulative Carryover as stipulated by the Plan.

Upon Board approval, all eligible retirees will receive a COLA on April 1, 2018 as shown in the following table. The Cumulative Carryover (COLA Bank) for each vintage year of retirees will change as shown on the attached letter from the SLOCPT’s Actuary.

<b>Tier:</b>	<b>Retirement Date:</b>	<b>COLA:</b>
1	On or Before January 1, 1981	3.00%
1	On or After January 2, 1981 but Before January 2, 2018	2.80%
2 & 3	On or Before January 1, 2018	2.00%

It is of interest to note that of the 2,747 retirees from Tier 1 receiving monthly payments as of 01/01/18, only 30 are affected by the Tier 1 Cumulative Carryover provision.

Tier 2 (6 at present) and Tier 3 (1 at present) retirees will receive a 2.00% COLA.

This year’s recommended COLA is expected to cumulatively increase the current monthly retiree payroll distribution by approximately \$207,000.

Respectfully Submitted

January 19, 2018

Mr. Carl Nelson  
Executive Secretary  
**San Luis Obispo County Pension Trust**  
1000 Mill Street  
San Luis Obispo, CA 93408

**Subject: COST-OF-LIVING ADJUSTMENT, APRIL 1, 2018**

Dear Carl,

Sections 19.01 and 19.02 of the by-laws of the San Luis Obispo County Pension Trust provides for cost-of-living adjustments to certain Tier 1 members who retire or die as of, or prior to, the previous January 1<sup>st</sup> each year. The following is the determination of the cost-of-living adjustment payable as of April 1, 2018.

The percentage changes of the All Urban Consumers C.P.I. annual average for the Los Angeles - Riverside - Orange County and the San Francisco - Oakland - San Jose areas are as follows:

2017 San Francisco – Oakland – San Jose	3.2%
2017 Los Angeles – Riverside – Orange County	2.8%
2016 San Francisco – Oakland – San Jose	3.1%
2016 Los Angeles – Riverside – Orange County	1.9%

The average of the percentage changes for the years 2017 and 2016 is used to determine the County's cost-of-living adjustment (COLA) factor for April 2018 but the COLA may not exceed 3.0%. However, if the percentage increase is greater than three percent, then the excess may be carried forward and applied in a future year when the increase is less than three percent.

The average percentage increase for the last two years is **2.8%**. However, due to prior excess increases that have been carried forward for some retirees, the COLA increase this year is 2.8% to 3.0%, depending on the year of retirement. The attached schedule details the implementation of this factor to each Tier 1 retiree based on the date they entered the pension roll. Note that all Tier 1 retirees who retired on or before January 1, 1981 will receive a 3.0% increase and have their Cumulative Carryover account decreased by 0.2%. All other Tier 1 retirees have no Cumulative Carryover account and will receive an increase of 2.8%.

Mr. Carl Nelson  
January 19, 2018  
Page 2

While the Cumulative Carryover is consistent with last year, we are making no representation as to whether the historical Cumulative Carryover figures are accurate.

These calculations comply with Sections 19.01 and 19.02 of the by-laws of the San Luis Obispo County Pension Trust. Sections 27.25 and 28.25 specify cost-of-living adjustments for Tier 2 Miscellaneous and Safety retirees respectively. Sections 29.25, 30.25, and 31.25 specify cost-of-living adjustments for Tier 3 AB 340 Miscellaneous, Safety, and Probation retirees respectively.

The initial COLA for Tier 2 and Tier 3 members is also governed by sections 19.01 and 19.02 but the COLA may not exceed 2.0% for these groups and they do not carry forward any accumulation of COLAs beyond the annual 2% maximum. Since the initial COLA this year is 2.8%, any Tier 2 or Tier 3 retirees as of January 1, 2018 would be eligible for a 2.0% COLA.

The actuary submitting this statement is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

If you have any questions about the information requested above or need any additional information, please contact me at 720-274-7271 or [leslie.thompson@grsconsulting.com](mailto:leslie.thompson@grsconsulting.com) or Joe Herm at 720-274-7274 or [joe.herm@grsconsulting.com](mailto:joe.herm@grsconsulting.com).

Sincerely,

**Gabriel, Roeder, Smith & Company**



Leslie L. Thompson, EA, FSA, FCA, MAAA  
Senior Consultant

Enclosure

Circular 230 Notice: Pursuant to regulations issued by the IRS, to the extent this communication (or any attachment) concerns tax matters, it is not intended or written to be used, and cannot be used, for the purpose of (i) avoiding tax-related penalties under the Internal Revenue Code or (ii) marketing or recommending to another party any tax-related matter addressed within. Each taxpayer should seek advice based on the individual's circumstances from an independent tax advisor.

This communication shall not be construed to provide tax advice, legal advice or investment advice.





**San Luis Obispo County  
Suggested Cost-of-Living Increase**

<u>Entered Pension Roll</u>	<u>As of April 1, 2017</u>			<u>As of April 1, 2018</u>		
	<u>CPI Change</u>	<u>Used</u>	<u>Cumulative Carryover</u>	<u>CPI Change</u>	<u>Used</u>	<u>Cumulative Carryover</u>
On or Before 1/1/1979	2.1%	3.0%	16.7%	2.8%	3.0%	16.5%
1/2/1979 to 1/1/1980	2.1%	3.0%	12.4%	2.8%	3.0%	12.2%
1/2/1980 to 1/1/1981	2.1%	3.0%	5.7%	2.8%	3.0%	5.5%
1/2/1981 to 1/1/2017	2.1%	2.1%	0.0%	2.8%	2.8%	0.0%
1/2/2017 to 1/1/2018	-	-	0.0%	2.8%	2.8%	0.0%



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# Pension Trust

1000 Mill Street  
San Luis Obispo, CA 93408  
(805) 781-5465 Phone  
(805) 781-5697 Fax  
www.SLOPensionTrust.org



Date: February 26, 2018

To: Board of Trustees

From: Carl Nelson – Executive Secretary  
Amy Burke – Deputy Executive Secretary

## **Agenda Item 8: Actuarial Experience Study and Valuation – Planning and Process - Presentation by Paul Wood, Actuary - Gabriel Roeder Smith**

*Note: Leslie Thompson is the lead actuary at Gabriel Roeder Smith assigned to the SLOCPT. Paul Wood is also assigned to the SLOCPT case and is temporarily filling in for Ms. Thompson due to scheduling conflicts for this presentation.*

### **Recommendation:**

SLOCPT staff and Leslie Thompson, EA, FSA of Gabriel Roeder Smith as the Plan's Actuary recommend –

- The Board of Trustees receive and discuss Mr. Wood's presentation on planning for the 2018 Experience Study and Actuarial Valuation.
- Changes to actuarial assumptions should be considered as part of the 2018 Actuarial Valuation based on data from the 2018 Experience Study. The 2018 Experience Study will be presented at the May 21, 2018 Board of Trustees meeting. At that meeting any changes to actuarial assumptions will be recommended to the Board for approval. The 2018 Actuarial Valuation using the approved assumptions will be presented at the June 25, 2018 Board of Trustees meeting.

### **Discussion:**

It is the policy of the SLOCPT to have an annual Actuarial Valuation to set the total level of contributions necessary to fund the retirement system – the Total Annually Required Contribution (TARC). SLOCPT also has requested biennial Actuarial Experience Studies. In these Experience Studies the actuary analyzes the trailing five years of Plan demographic

and financial experience to assist the actuary in determining what actuarial assumptions to recommend to the Board of Trustees to use in the annual Actuarial Valuations.

It has been the practice of the SLOCPT to change major actuarial assumptions (if change is warranted) on a biennial basis in conjunction with the Actuarial Experience Study and in a coordinated manner. For example, changes in expected inflation have an impact on multiple assumptions – Earnings, Payroll Growth, Salary Growth, Retiree COLAs – so logically those changes should be made at the same time.

**Actuarial Planning:**

The presentation (attached) from Gabriel Roeder Smith will address key actuarial assumptions and methods to be considered with the 2018 Experience Study and Valuation. They center around the recommended practices of the California Actuarial Advisory Panel (CAAP) and include –

- Asset Smoothing
- UAL amortization in 2019 and beyond
- Asset corridor (Actuarial Value of Assets vs. Market Value of Assets) – a separate issue from the funding corridor used prior to 2007
- Mortality assumptions
- Actuarial Assumptions history
- Outlook for the 2018 Experience Study

**Recap – 2016 Actuarial Valuation Assumption Changes:**

For the 2016 Actuarial Valuation a number of significant actuarial assumptions changes were made based on information from the 2016 Actuarial Experience Study. The same assumptions were used for the 2017 Actuarial Valuation. Those 2016 actuarial assumption changes are summarized below.

	2015 Valuation	2016 & 2017 Valuations
<b>Inflation</b>	2.750%	<b>2.625%</b>
Real Rate of Return	<u>4.500%</u>	<u>4.500%</u>
<b>Earnings Assumption</b>	7.250%	<b>7.125%</b>
<b>Retiree COLAs</b>		
Tier 1	2.750%	<b>2.625%</b>
Tiers 2 & 3	2.000%	2.000%
<b>Salary Growth</b>	3.250% + merit	<b>2.875% + merit</b>
<b>Payroll Growth</b>	3.750%	<b>3.375%</b>

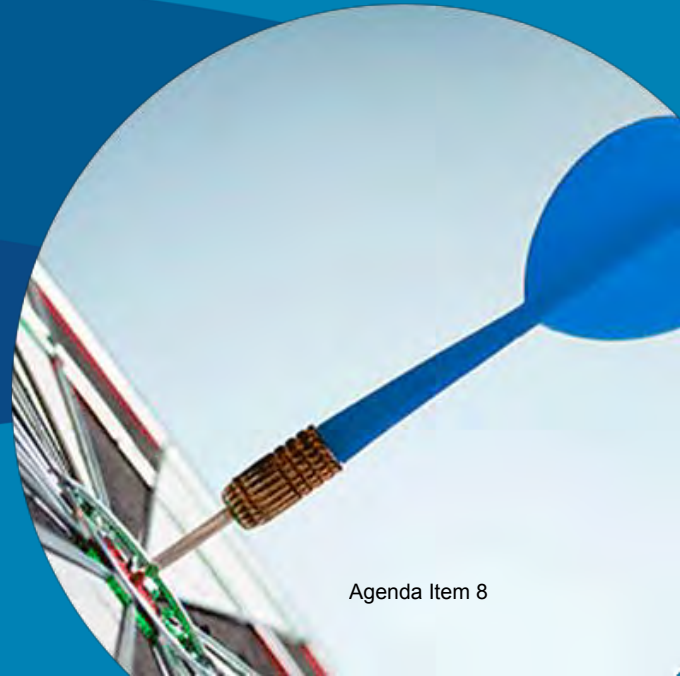
	2015 Valuation	2016 & 2017 Valuations
<b>Mortality – Post Retirement</b>	RP2000 with Scale AA Generational (the most up to date mortality schedules as of the 2014 Experience Study – used since 2011)	RP 2014 & MP2015 Generational  <i>* Adjusted by actuary to transition to full update to current mortality tables by the 2018 Experience Study</i>
Mortality – Disability	RP2000 with Scale AA Generational	RP 2014 (disabled) & MP2015 Generational Calibrated to actual experience
Mortality – Active Service	RP2000 with Scale AA Generational	RP 2014 & MP2015 Generational Calibrated to actual experience
Rates of Retirement	Misc. Tier 1 = 3% ages 51, 52, 53 Safety Tier 1 = 12% age 50	Misc. Tier 1 = 4% ages 51, 52, 53 Safety Tier 1 = 20% age 50  All other rates - no change
Rates of Termination		Set Probation rates to match Safety
Married at retirement	70% males 50% females	80% males 60% females
All other assumptions		No change

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# San Luis Obispo County Pension Trust

**Planning Session for the Experience  
Study, Assumption and Methods review  
and the Actuarial Valuation for 2018**

**Paul Wood, ASA, FCA, MAAA  
February 26, 2018**



# Today's Agenda

---

- 2018 Presentation Schedule
  - February 26, 2018 Meeting - Planning
  - May 21, 2018 Meeting- Experience Study presentation; Assumption and Methods review
  - June 25, 2018 Meeting – Valuation presentation and contribution rate recommendations
- Highlight special considerations around the annual valuation process
  - The asset smoothing method for 2008 loss
    - The loss of 2008 has been fully recognized with the 1/1/2018 valuation
  - California Actuarial Advisory Panel
  - The amortization method-a consideration as of 1/1/2019
  - Asset corridor change
  - Mortality assumption, will the “other shoe drop”?
  - A reminder of the assumption changes made in 2016
  - The outlook for the experience study





# Recognition of the 2008 Asset Loss

## Schedule of Recognition of 2008 Asset Loss

Plan Year	Original Schedule			Updated Schedule		
	Remaining Loss at Beginning of Plan Year	Amount Recognized	Remaining Loss at End of Plan Year	Remaining Loss at Beginning of Plan Year	Amount Recognized	Remaining Loss at End of Plan Year
2009	\$ 299,363,960	\$ 29,936,396	\$ 269,427,564	\$ 299,363,960	\$ 29,936,396	\$ 269,427,564
2010	269,427,564	29,936,396	239,491,168	269,427,564	29,936,396	239,491,168
2011	239,491,168	29,936,396	209,554,772	239,491,168	29,936,396	199,554,772
2012	209,554,772	29,936,396	179,618,376	199,554,772	29,936,396	169,618,376
2013	179,618,376	29,936,396	149,681,980	169,618,376	29,936,396	139,681,980
2014	149,681,980	29,936,396	119,745,584	139,681,980	29,936,396	99,745,584
2015	119,745,584	29,936,396	89,809,188	99,745,584	29,936,396	69,809,188
2016	89,809,188	29,936,396	59,872,792	69,809,188	29,936,396	39,872,792
2017	59,872,792	29,936,396	29,936,396	39,872,792	29,936,396	9,936,396
2018	29,936,396	29,936,396	-	9,936,396	9,936,396	-

# The 2008 Asset Loss - Fully Recognized

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- The original amount of \$299 million was scheduled to be recognized over 10 years
  - This means a recognition of \$29.9 per year
- The Board instituted a policy of accelerating the recognition if conditions warranted
- There were two such accelerated recognitions; each at \$10 million
  - Therefore, this year's recognition is \$9.9 million

# CAAP categories

*A review of actuarial practices*

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Description	"Grade"
Model Practice	A
Acceptable Practice	B
Acceptable Practice with Conditions	C
Non-Recommended Practice	D
Unacceptable Practice	F

# CAAP Comparison

Policy Issue	SLOOPT Related Policy	CAAP Grade
<b>Actuarial Cost Method</b>		
Funding Method	Entry Age Normal Cost with Normal Cost as a level percent of pay	A
Multiple Tiers	Normal Cost based on each member's benefit	A
Types and incidence of benefits	All funded over a single measure of expected future service	A
Normal Cost	Sum of individual members for that tier	A
<b>Asset Smoothing Method</b>		
Fixed smoothing period	Five years; 10 years for 2008 loss	A
Maximum corridor for 5 years	50%/150%	B
<b>Amortization Policy</b>		
Period	23 years remaining	B
Payment Pattern	Level Percent of Pay	A
Open or closed	Closed	A
Number of layers	One	B

With regards to the corridor, SLOOPT receives a grade of B because the Plan does not have a corridor as part of their asset smoothing. This is still acceptable because the smoothing period is sufficiently short.

With regards to the amortization policy, SLOOPT receives a grade of B because the current amortization period is slightly longer than the "model" approach and there is no layering of new gains and losses as they arise.

**GRS recommends moving to this layered amortization approach after the full recognition of the 2008 asset loss base.**

# CAAP Policy Objectives - Amortization

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- The California Actuarial Advisory Panel
  - Amortization policy to balance demographic matching and volatility management
  - Costs should emerge as a level percent of pay
  - Different sources of the change in UAAL should be shown
    - Experience gains and losses
    - Changes in methods and assumptions
    - Benefit changes
  - Explicitly consider level and duration of negative amortization (if any)
  - Illustrate accountability and transparency
    - Reflect the history, sources and treatment of the UAAL
    - Show the date for full amortization of the UAAL

# CAAP Policy Objectives - Amortization

Model Practice	Period	Comments
Active Plan Changes	Demographic, or up to 15	Found that less than 15 years gives too little volatility control
Inactive Plan Changes	Demographic, or up to 15	Longer than 20 years started to run counter to intergenerational equity (and can have negative amortization)
Experience Gain/loss	15 to 20	
Assumption or Method Changes	15 to 25	
Early Retirement Incentives	5 or less	Use a period corresponding to economic benefit to plan sponsor
Surplus	Longer period than UAAL amortization	Note: California law may require a minimum contribution of normal cost

# Amortization Methods-Periods

*Effective January 1, 2019*

	Option #1	Option #2	Option #3	Option #4
Legacy base	21 years	15 years	21 years	15 years
Experience gains/losses	15 years	15 years	15 years	15 years
Assumption/Method changes	15 years	15 years	20 years	20 years
Plan Changes	Demographic matching (up to 15 years)	Demographic matching (up to 15 years)	Demographic matching (up to 15 years)	Demographic matching (up to 15 years)
All bases are closed				

# Asset Corridor

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- **CAAP recommends a corridor around the market value of assets**
  - SLO does not have a corridor
  - The experience study will have a recommendation for a corridor
  - Five year history shows 85% as largest difference from market value (12/31/2012)
  - CAAP model practice has a maximum 50%/150% corridor



# Summary of 2016 Assumption Changes

Assumption	Assumption pre 2016	2016 Assumption
Inflation	2.750%	2.625%
Real return	4.500%	4.500%
Total return	7.250%	7.125%
Tier 1 COLA	2.750%	2.625%
Payroll growth	3.750%	3.375%
Salary increases	2.75% inflation plus .5% productivity plus merit for recent hires	2.625% inflation plus .25% productivity plus merit for recent hires
Mortality rates	RP 2000 projected to 2020	RP 2014 with modified projection scale
Retirement rates	Age-based to match experience	A few changes to match experience
Termination rates	Set to match experience	A few changes to match experience

# Generational Mortality Table

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- The updated table was the RP-2014 Healthy Annuitant Table. The generational improvements are based on the “MP 2015” scale;
- In 2016 we were concerned that the projection scale (then “MP 2015”) was too optimistic about improvements in longevity for SLO;
- We modified the MP 2015 to be less aggressive about improvements in longevity;
- Since the changes were adopted from the experience study, the Society of Actuaries has somewhat reduced future mortality improvement expectations;
  - This supports some of the calibration;
  - MP 2017 will not be as aggressive as the original MP 2015.

# Contacts

Leslie Thompson, FSA, FCA, EA, MAAA	Paul Wood, ASA, FCA, MAAA	Joe Herm, Senior Analyst
Gabriel, Roeder, Smith and Company	Gabriel, Roeder, Smith and Company	Gabriel, Roeder, Smith and Company
Leslie.thompson@grsconsulting.com	Paul.wood@grsconsulting.com	Joe.herm@grsconsulting.com
(720) 274-7271	(720) 274-7275	(720) 274-7274
(720) 560-8988	(248) 470-4877	(720) 352-8139

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# Board of Trustees

1000 Mill Street  
San Luis Obispo, CA 93408  
Phone: (805) 781-5465  
Fax: (805) 781-5697  
www.SLOPensionTrust.org



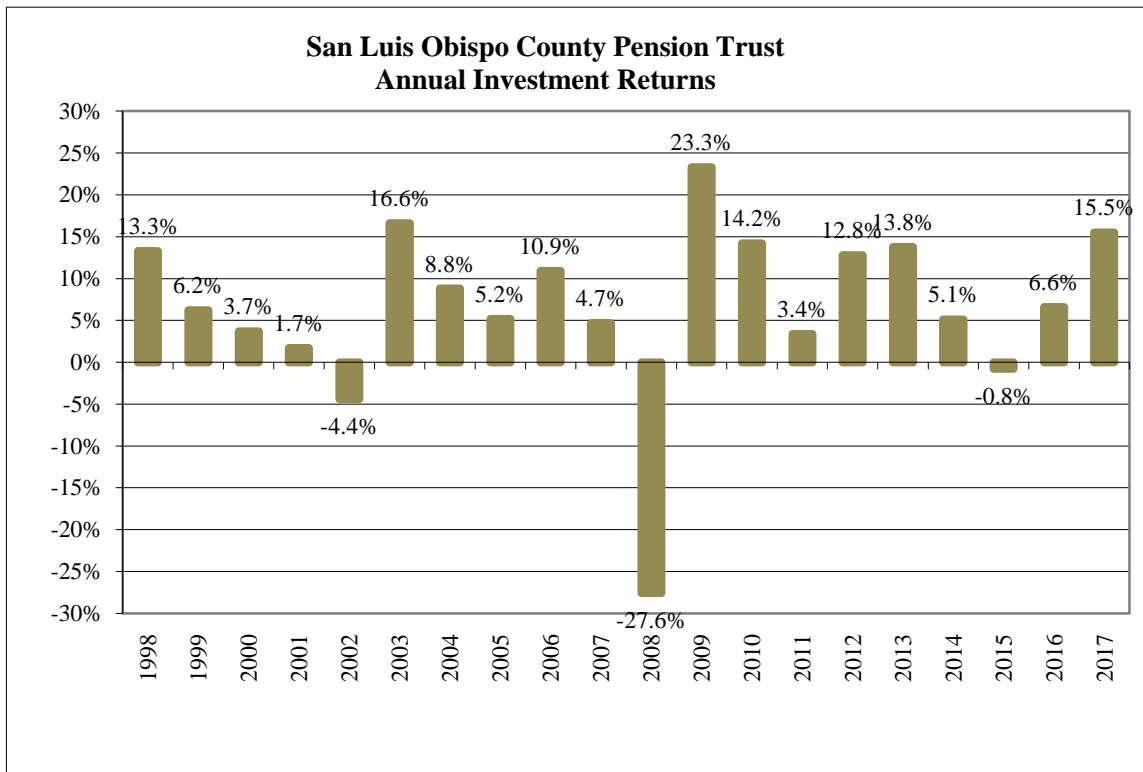
Date: February 26, 2018

To: Board of Trustees

From: Carl Nelson – Executive Secretary  
Amy Burke – Deputy Executive Secretary

### Agenda Item 9: Quarterly Investment Report for the 4th Quarter of 2017

Attached to this memo is the 4Q17 quarterly investment report prepared by the Trust’s investment consultant Verus. Scott Whalen of Verus will make a detailed presentation and discuss the quarterly report. The long-term history of the rates of return gross of fees of the Pension Trust are shown below as an extension of the data in the Verus report.



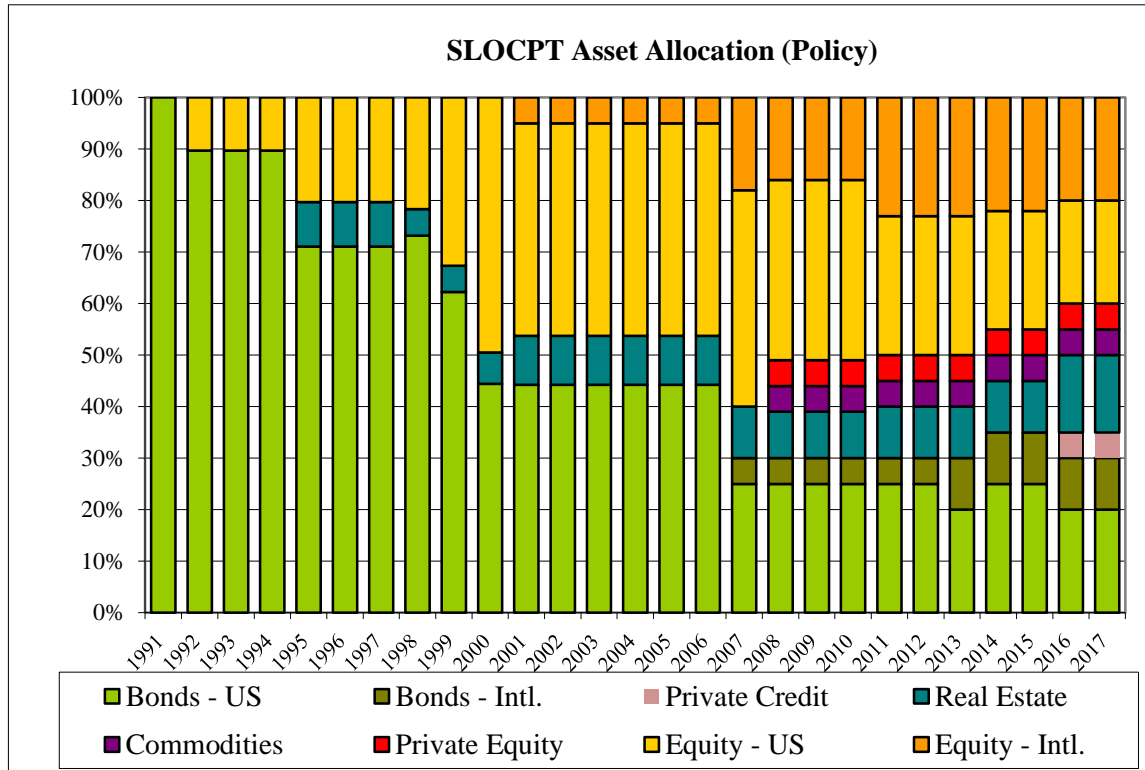
Cumulative rates of return for years ending December 31, 2017 are shown below on an annualized basis (gross of fees).

1 year	3 years	5 years	10 years	15 years	20 years
15.5%	6.9%	7.9%	5.7%	6.8%	6.1%

The rates of return for the Pension Trust are heavily influenced by the 2008 Global Financial Crisis (GFC) and market crash. To illustrate this, annualized rates of return for years ending December 31<sup>st</sup> for periods before, during and after the 2008 market crash are shown below.

Pre GFC 8 years 2000-2007	GFC 2008	“Bounceback” 2009	Post GFC 8 years 2010-2017
+5.7%	-27.6%	+23.3%	+8.7%

The Asset Allocation policy of the Pension Trust is a key determinant of investment returns and the following graph shows the history of asset allocation mix policy.





**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: DECEMBER 31, 2017**

Investment Performance Review for

**San Luis Obispo County Pension Trust**

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[VERUSINVESTMENTS.COM](https://www.verusinvestments.com)

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

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Investment Landscape

TAB I

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Investment Performance  
Review

TAB II





**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

1<sup>ST</sup> QUARTER 2018  
Investment Landscape



# Table of Contents



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Fixed income rates & credit 18

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Equity 24

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Other assets 35

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Appendix 38

# 4<sup>th</sup> quarter summary

## THE ECONOMIC CLIMATE

- Global growth forecasts for 2018 have been revised higher, most notably in the Eurozone. U.S. expected 2018 GDP growth is 2.6%, above the expansion average. [p. 15](#)
- The Eurozone has experienced an impressive economic recovery. In the third quarter, real GDP accelerated to 2.6%, the fastest pace of growth since 2011. [p. 16](#)
- The House and Senate agreed to a final tax bill that was signed into law by President Trump on December 22<sup>nd</sup>. The bill, formally known as the Tax Cuts & Jobs Act, represents a major overhaul of the U.S. tax system. [p. 27](#)

## PORTFOLIO IMPACTS

- A synchronized pickup in global economic growth, low inflation, strong employment, and accommodative central banks should support global equities moving forward. We recommend maintaining an overweight equity position. [p. 14](#)
- Markets remain expensive by most measures. However, it is important to note the merits and flaws of various valuation metrics. [p. 32](#)

## THE INVESTMENT CLIMATE

- Global equities produced strong returns over the quarter and finished the year on a positive note. Emerging market equities led the way, driven by high earnings growth and expansion of valuation multiples off of low levels. [p. 25](#)
- The outlook for U.S. equity earnings has improved further, following the signing of the Tax Cuts and Jobs Act. S&P 500 earnings expectations for 2018 were revised upwards from 11.1% to 13.1%. [p. 27](#)
- U.S. high yield spreads became increasingly tight. Credit premiums are near all time lows, which may warrant an underweight to U.S. credit. [p. 22](#)

## ASSET ALLOCATION ISSUES

- Risk assets continue to deliver strong performance, fueled by improving fundamentals and accelerating growth. The current environment appears accommodative for further gains. [p. 4](#)
- Equity volatility is very low, helped by stable economic conditions and inflation. Historically, low volatility has indicated less risk of an equity downside event. [p. 33](#)

We believe a moderate overweight to risk is warranted

# What drove the market in Q4?

## “Tax plan optimism propels Wall Street to record highs”

### S&P 500 HIGH TAX RATE BASKET MONTHLY RETURN

Jul	Aug	Sep	Oct	Nov	Dec
0.9%	-1.9%	4.1%	0.5%	6.1%	5.8%

Article Source: Reuters, December 18<sup>th</sup>, 2017

## “GDP swings up to 3.2% for best gain in three years”

### U.S. REAL GDP (QUARTERLY ANNUALIZED RATE)

Q2 16	Q3 16	Q4 16	Q1 17	Q2 17	Q3 17
2.2%	2.8%	1.8%	1.2%	3.1%	3.2%

Article Source: U.S. News & World Report, November 29<sup>th</sup>, 2017

## “U.S. yield curve hits its flattest point since November 2007”

### 10-YEAR MINUS 2-YEAR TREASURY YIELD SPREAD (BPS)

Jul	Aug	Sep	Oct	Nov	Dec
94	78	84	78	62	52

Article Source: Financial Times, November 21st, 2017

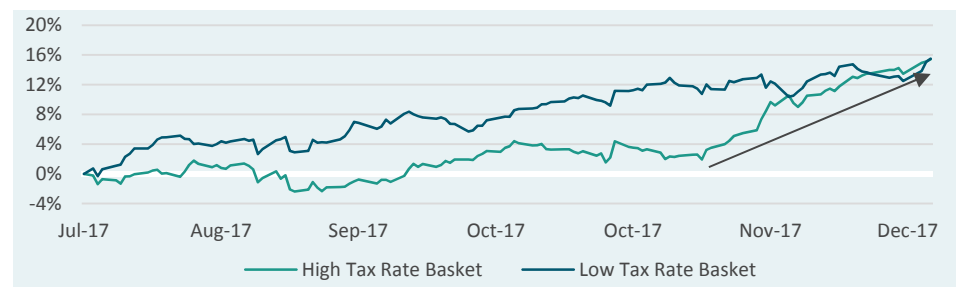
## “Global manufacturers strain to keep up with faster economy”

### GLOBAL PURCHASING MANAGERS INDEX (PMI)

Jul	Aug	Sep	Oct	Nov	Dec
53	53	53	54	54	55

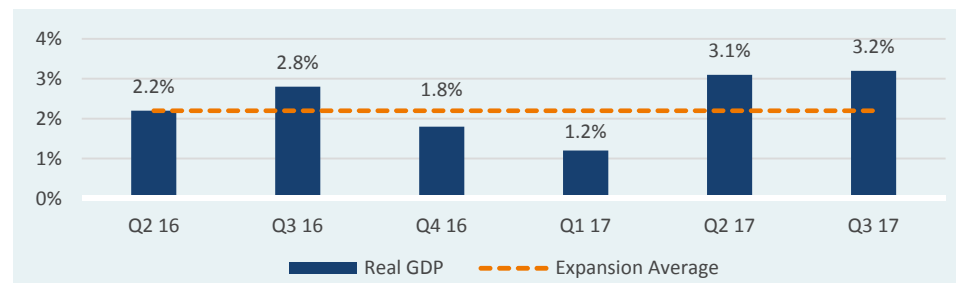
Article Source: Bloomberg, January 2<sup>nd</sup>, 2018

## S&P 500 HIGH TAX RATE VS. LOW TAX RATE BASKET



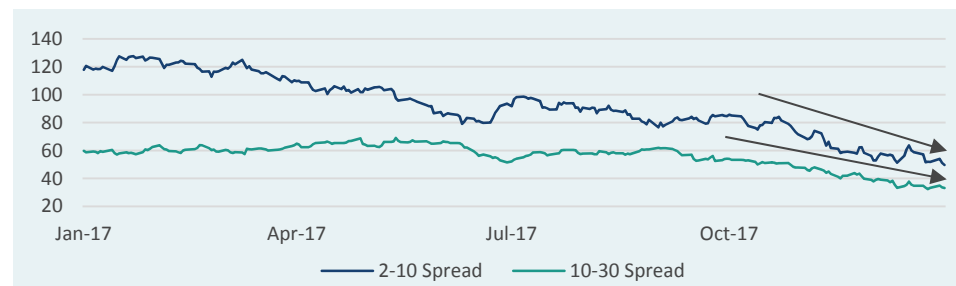
Source: Verus, Bloomberg, as of 1/4/18

## REAL GDP VS. EXPANSION AVERAGE



Source: FRED, as of 9/30/17, quarterly annualized rate

## U.S. YIELD CURVE SPREADS (BPS)



Source: Bloomberg, as of 1/4/18

# Economic environment

# U.S. economics summary

- U.S. real GDP grew 2.3% from the previous year in Q3, the fastest pace in more than two years. Growth was driven by consumer spending, private inventory accumulation, and business investment.
- Growth in business investment has provided a material support to the economy over recent periods for the first time in the recovery. Rising domestic and external demand has influenced companies to ramp up production. Survey based measures indicate firms are planning to increase capex over the next six months.
- Core inflation rose slightly from 1.7% to 1.8% over the quarter, driven by higher shelter prices. Strong demand, higher raw material prices, and a weaker dollar may provide modest pressures on inflation, but overall levels remain low. Any material rise in inflation would likely be met by more aggressive monetary tightening than what is priced into markets.
- The U3 unemployment rate fell further from 4.2% to 4.1%, its lowest level in 17 years.
- Net job creation averaged 204,000 per month in Q3 - above the expansion average of 196,000. Despite robust job gains and low unemployment, wage growth remained modest at 2.5% YoY.
- The Fed raised interest rates for the third time this year to a target rate of 1.25-1.50%. Fed dot plots indicate three more interest rate hikes in 2018, while the market is only forecasting two. Officials noted that strong economic growth is expected to continue, and raised the 2018 GDP forecast from 2.1% to 2.5%.

	Most Recent	12 Months Prior
GDP (YoY)	2.3% 9/30/17	1.5% 9/30/16
Inflation (CPI YoY, Core)	1.8% 12/31/17	2.2% 12/31/16
Expected Inflation (5yr-5yr forward)	2.1% 12/31/17	2.1% 12/31/16
Fed Funds Target Range	1.25 – 1.50% 12/31/17	0.50 – 0.75% 12/31/16
10 Year Rate	2.4% 12/31/17	2.4% 12/31/16
U-3 Unemployment	4.1% 12/31/17	4.7% 12/31/16
U-6 Unemployment	8.1% 12/31/17	9.1% 12/31/16

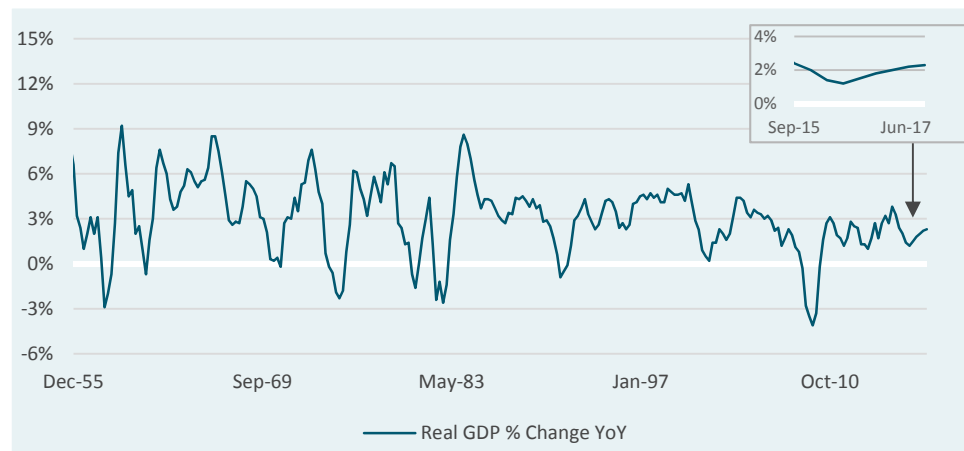
# GDP growth

Real GDP rose by 2.3% from the previous year (3.2% quarterly annualized rate) in Q3, the fastest pace of growth in two years. Economic growth picked up meaningfully in 2017 and consumer and business surveys indicate further strength. Support to the economy includes strong consumer demand both domestically and abroad, low unemployment, and stable core inflation. Despite Fed moves toward normalizing monetary policy, financial conditions have yet to slow down the expansion, likely due to a slower pace of interest rate hikes than expected by the market.

All major components of the economy were positive contributors to growth in Q3, which has only happened in 6% of quarters since 1947. The main source of growth was consumer spending, which rose 2.5% from the previous quarter and contributed 1.4% to the overall growth rate. A faster pace of inventory accumulation was the second largest contributor to GDP, followed by non-residential business investment. According to the Atlanta Fed GDPNow forecast, real GDP growth is expected to be 3.3% in Q4. Looking ahead to 2018, we believe the economic backdrop is positive, and will remain supportive of the recent pickup in growth.

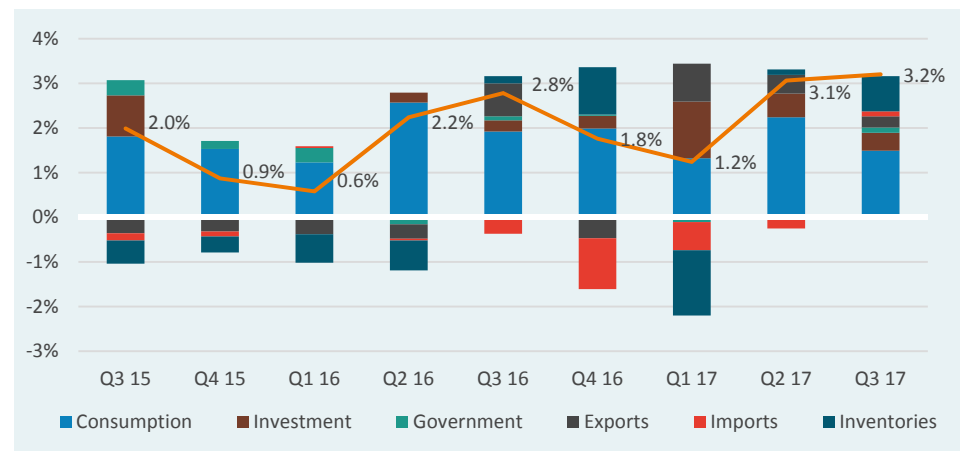
Economic growth has accelerated over the past two quarters

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 9/30/17

U.S. GDP COMPONENTS



Source: BEA, annualized quarterly rate, as of 9/30/17

# Business investment

During most of the current expansion, corporate investment has been minimal. Many companies have held higher than normal cash balances or used the abundant liquidity created by easy monetary policy to buy back stock. Over the past year, however, there has been a meaningful increase in business capital expenditure (capex) as firms have needed to ramp up production to meet rising global demand. With the labor market close to full employment and jobs more difficult to fill, businesses may rely on investment to meet rising demand. Moving

forward, business capex will likely be an important factor if economic growth is set to continue.

Survey based measures indicate that businesses are making plans to increase investment over the next six months. In addition to rising demand, the changes to the U.S. tax code should provide incentives for businesses to invest. Most notably, the mandatory repatriation of foreign profits at a special tax rate will give firms an ample source of cash that can be used for investment.

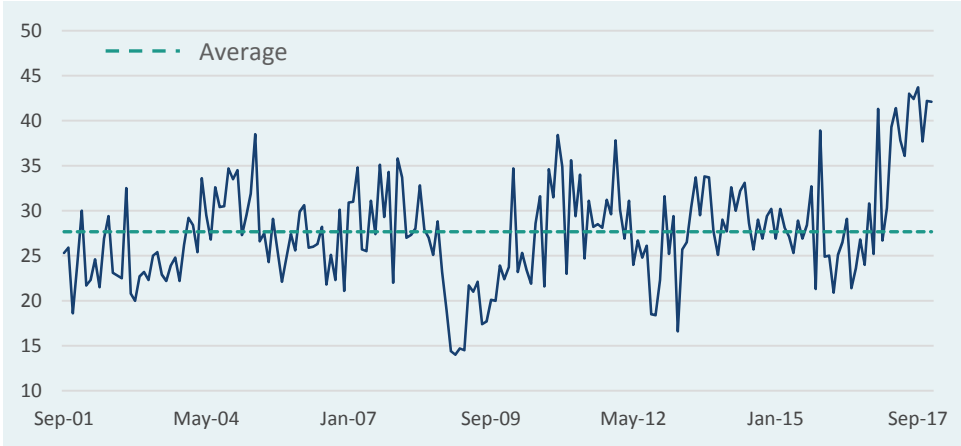
Business investment has been a material contributor to the recent pickup in growth

**NON-FINANCIAL CORPORATE CAPEX GROWTH (YOY)**



Source: Bloomberg, as of 9/30/17

**SIX MONTH FORECAST OF CAPEX INCREASES**



Source: Philadelphia FRB Business Outlook Survey, the x-axis represents the % of firms expecting to increase capex minus the % of firms expecting to decrease capex over the next six months



# Inflation

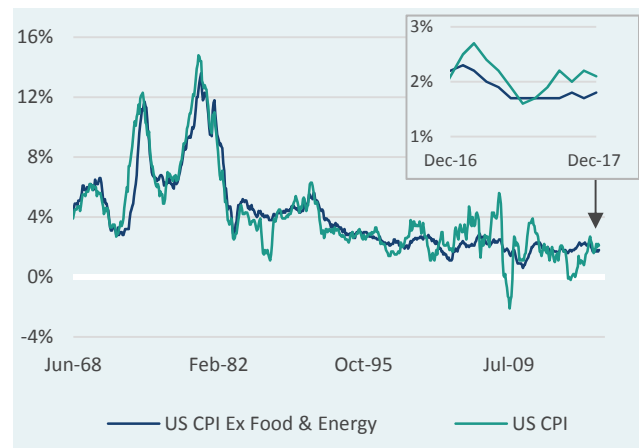
Core U.S. inflation picked up slightly to 1.8% YoY in December, a rise from 1.7% in September. Increases in housing and healthcare costs contributed to the move. Headline inflation fell from 2.2% to 2.1% over the quarter.

Market based inflation expectations increased slightly as the 10-year TIPS breakeven inflation rate moved from 1.8% to 2.0%. Investors expect inflation to stay low for the long-run based on market pricing.

Low inflation remains a roadblock for central banks hoping to normalize interest rates. However, lower inflation may benefit markets overall by dampening the need for central bank market intervention, which contributes to lower borrowing costs and lower market volatility through greater price stability. The current inflation level may provide markets with a happy medium.

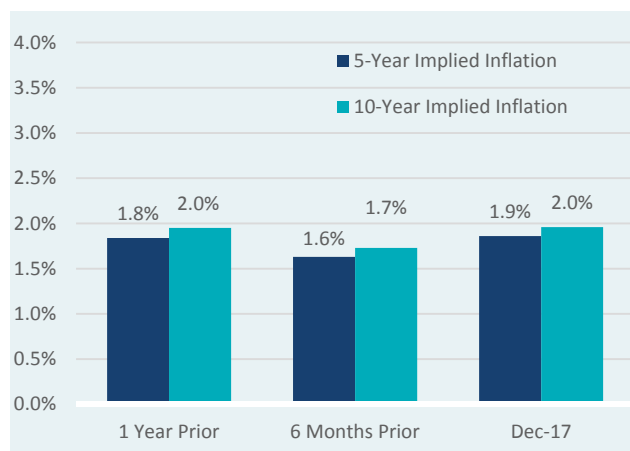
Low inflation may be supportive of further economic expansion

**U.S. CPI (YOY)**



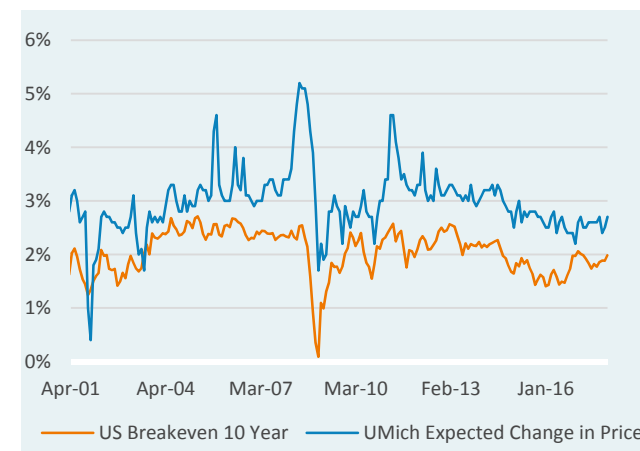
Source: FRED, as of 12/31/17

**U.S. TIPS BREAKEVEN RATES**



Source: Federal Reserve, as of 12/31/17

**INFLATION EXPECTATIONS**



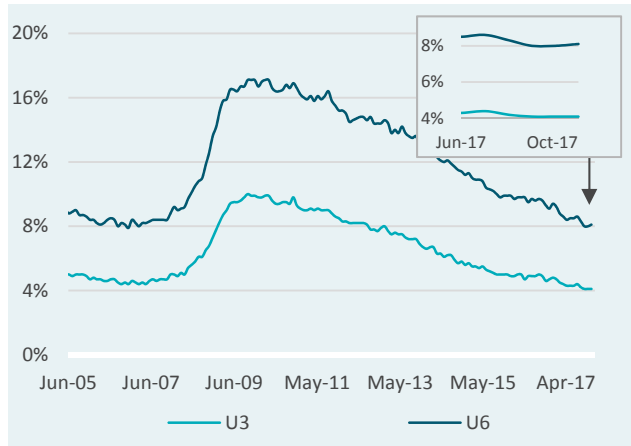
Source: Bloomberg, as of 12/31/17

# Labor market

The U.S. labor market tightened further as unemployment fell from 4.2% to 4.1% over the quarter. Net job creation was robust, averaging 204,000 per month in the third quarter, higher than the expansion average of 196,000. A falling unemployment rate and above average job creation points toward some remaining slack in the labor market despite the longer length of the recovery relative to history. Wage growth improved modestly at 2.5% YoY, but remains below average relative to past economic expansions.

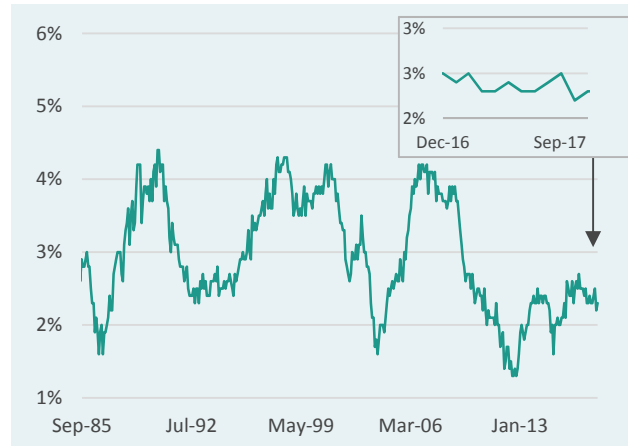
In previous quarters, we noted that the headline unemployment rate may be overstating tight labor market conditions due to discouraged or longer-term unemployed workers not included in traditional measures. It appears these individuals are slowly making their way back into the labor force, especially during the past two years. The core age (25-54) participation rate was 81.9% in December, up from a low of 80.6% in September of 2015. This figure was 83.3% prior to the global financial crisis, suggesting there may still be room for additional workers to reenter the labor force.

**UNEMPLOYMENT RATE**



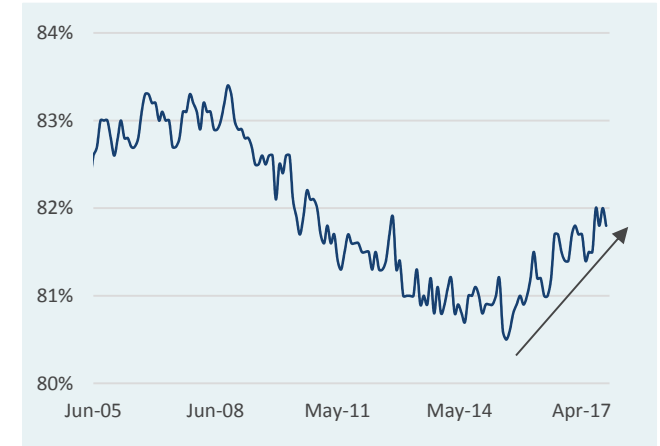
Source: FRED, as of 12/31/17

**AVERAGE HOURLY EARNINGS (YOY)**



Source: Bloomberg, as of 11/30/17

**CORE AGE PARTICIPATION RATE**



Source: FRED, as of 12/31/17

# The consumer

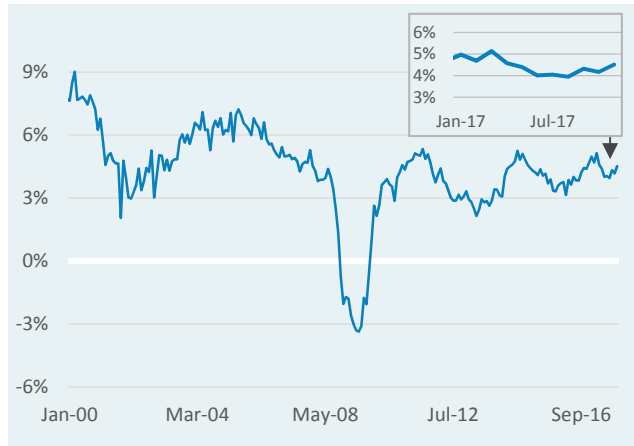
Positive economic conditions are providing continued support to strong consumer demand, although this has not led to signs of late-cycle overheating. Consumer spending was 4.5% YoY in November, up from 4.0% three months prior.

Low unemployment, low inflation, and modest wage gains have helped create consistent growth in consumer spending. Monetary tightening has yet to have a material negative impact on consumers through higher borrowing costs and increasing interest payments on existing debt. Furthermore,

a portion of individual costs are determined by the long end of the curve, which has remained fairly stable.

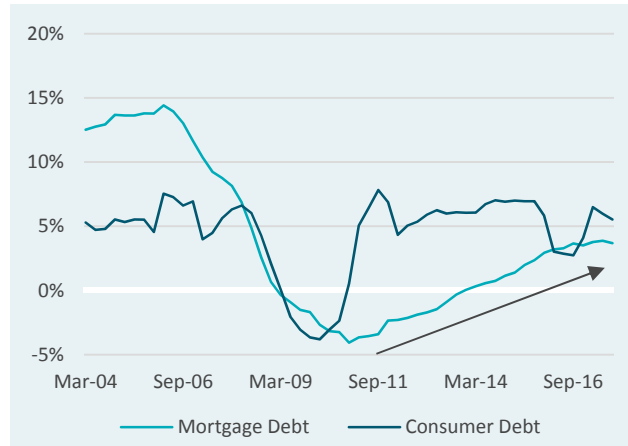
Low interest rates have not led individuals to take on large debt loads as both borrowers and lenders remain cautious. Consumer debt has seen modest growth, while mortgage debt is still recovering from a sharp decline following the 2008-2009 financial crisis. Growth in consumer debt has been mostly fueled by increases in student and auto loans, which would likely be impacted by further interest rate rises.

**CONSUMER SPENDING (YOY GROWTH)**



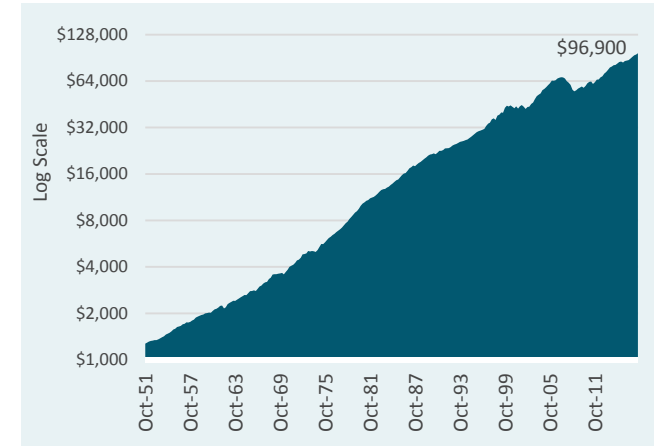
Source: Bloomberg, as of 11/30/17

**DEBT GROWTH (YOY)**



Source: FRED, as of 9/30/17

**HOUSEHOLD NET WORTH**



Source: Bloomberg, as of 7/31/17

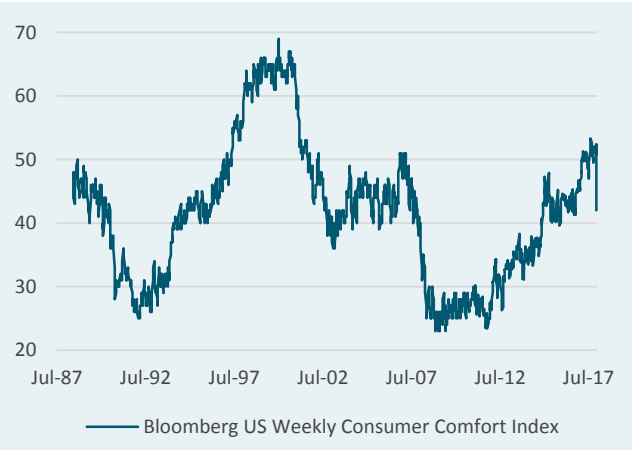
# Sentiment

Measures of consumer and business sentiment remained above average in the fourth quarter. The University of Michigan Consumer Sentiment Index was 95.9 in December, which placed it in the 85<sup>th</sup> percentile relative to its own history, since 1978. The average value of the index in 2017 was the highest since 2000, driven by consumers' positive attitudes toward current economic conditions. U.S. tax reform did not result in an increase in sentiment and was only mentioned by 29% of respondents, who demonstrated mixed reactions.

The NFIB Small Business Optimism Index increased to 107.5 in November – near a record high. This indicator jumped following the election in 2016 and has stayed high, reflecting positive attitudes towards policy changes, deregulation, and economic conditions. A net 37% of small businesses expect the economy to improve and a net 27% are planning on increasing capital outlays. Companies also reported that finding qualified workers to hire is getting increasingly difficult. Higher labor costs would be a headwind to small businesses.

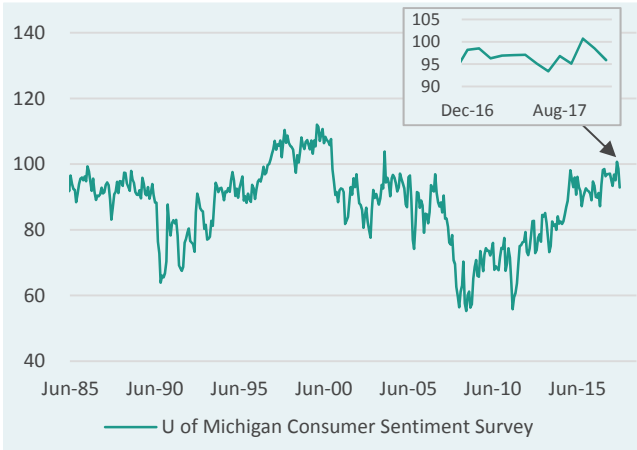
Consumers and small businesses have a positive outlook on the economy

**CONSUMER COMFORT INDEX**



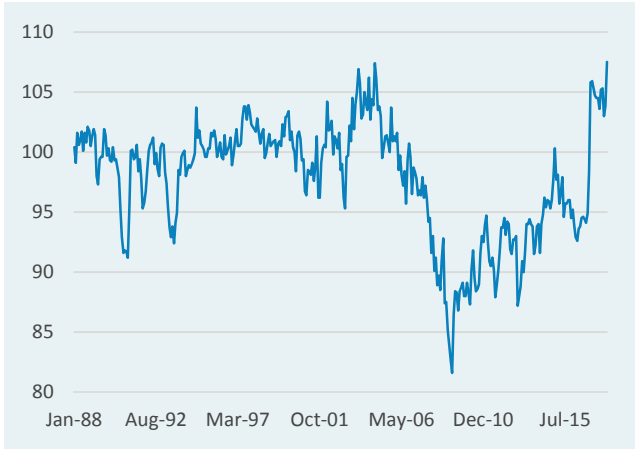
Source: Bloomberg, as of 12/31/17 (see Appendix)

**CONSUMER SENTIMENT**



Source: University of Michigan, as of 12/31/17 (see Appendix)

**NFIB SMALL BUSINESS OPTIMISM INDEX**



Source: NFIB, as of 11/30/17 (see Appendix for details)

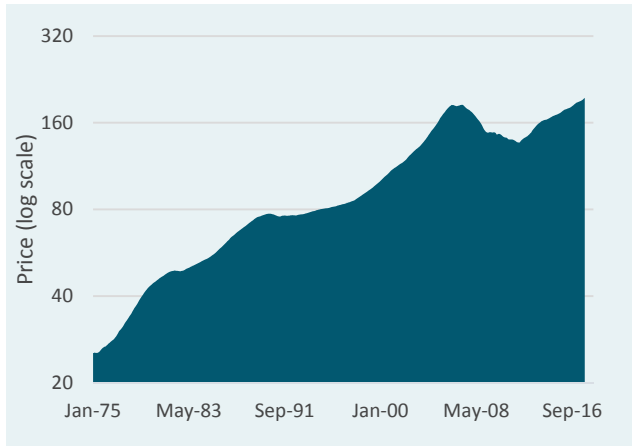
# Housing

Growth in U.S. home prices has steadily accelerated over the past three years. National home prices increased 6.2% YoY in October, according to the S&P/Case-Shiller Index, up from a growth rate of 5.2% one year prior. Sales growth continued to be constrained by a lack of supply, which has helped lead to higher prices due to demand outpacing supply. At the current sales rate, it would take only 4.7 months to completely exhaust the supply in the market, below the long-term historical average of 6.1.

Thus far, tightening from the Fed has not led to a material rise in mortgage rates. Home ownership has remained affordable as lower interest costs have somewhat offset rising home prices.

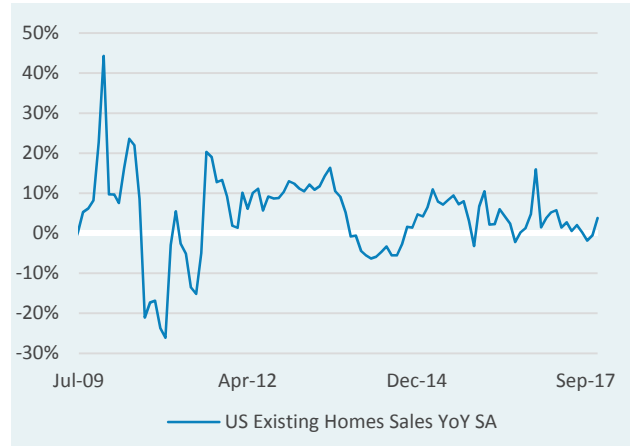
Total mortgage debt outstanding has just recently recovered from the global financial crisis. Mortgage lending standards are still tight, which has led to a higher quality pool of mortgage borrowers relative to past cycles.

**CASE-SHILLER HOME PRICE INDEX**



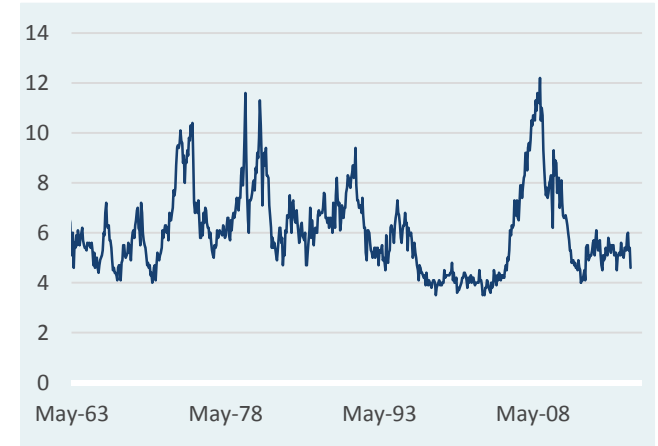
Source: FRED, as of 10/31/17

**HOUSING SALES**



Source: Bloomberg, as of 11/30/17

**MONTHLY SUPPLY OF HOMES**



Source: FRED, as of 11/30/17

# International economics summary

- Economic growth advanced in the third quarter across developed and emerging markets. The United States grew at 2.3% YoY, the Eurozone improved to 2.6%, and overall growth in the BRICS nations accelerated to 5.6%. Central bank policy is still broadly accommodative, which is supportive of continued progress.
- Expectations for global GDP growth for the next two years has been revised upward in the past six months, according to the consensus estimate from Bloomberg. The upward revision to global growth forecasts were driven by the Eurozone and emerging markets.
- A pickup in lending and investment, strong external demand, and accommodative monetary policy has helped fuel an impressive economic recovery in the Eurozone. GDP grew 2.6% in Q3 from the

previous year and the unemployment rate fell to 8.8%, the lowest level in nine years.

- PMIs across major markets were all above 50, indicating further expansion in the manufacturing sector.
- There are still concerns of a hard landing in China because the central bank has been tightening financial conditions on the short-end of the yield curve to reign in excessive leverage. Thus far, this process has been successful with economic growth slowing only moderately.
- Low inflation in developed economies has persisted, contributing to slower monetary tightening as central banks have been reluctant to raise rates too quickly.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.3% <i>9/30/17</i>	2.1% <i>12/31/17</i>	4.1% <i>12/31/17</i>
Western Europe	2.5% <i>9/30/17</i>	1.6% <i>12/31/17</i>	7.4% <i>12/31/17</i>
Japan	2.1% <i>9/30/17</i>	0.6% <i>11/30/17</i>	2.7% <i>11/30/17</i>
BRICS Nations	5.6% <i>9/30/17</i>	2.0% <i>12/31/17</i>	5.7% <i>9/30/17</i>
Brazil	1.4% <i>9/30/17</i>	3.0% <i>12/31/17</i>	12.1% <i>12/31/17</i>
Russia	1.8% <i>9/30/17</i>	2.5% <i>12/31/17</i>	5.1% <i>11/30/17</i>
India	5.3% <i>9/30/17</i>	4.9% <i>11/30/17</i>	8.0% <i>12/31/16</i>
China	6.8% <i>9/30/17</i>	1.8% <i>12/31/17</i>	4.0% <i>9/30/17</i>

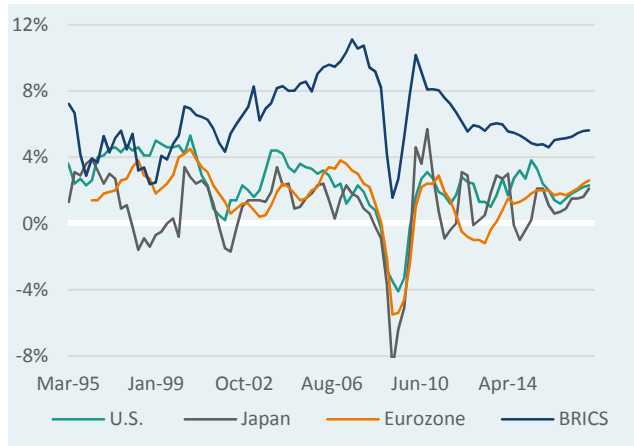
# International economics

Economic growth accelerated broadly over the quarter, while inflation remained moderate in the developed world and fell in many emerging markets. Emerging economies appear to be very early in their cycle. Brazil and Russia recently pulled out of recession, with economic slack and room for expansion. Improving economic conditions and rising global demand have led to a material pickup in growth expectations for future years. The consensus forecast for 2018 Eurozone real GDP growth was revised upwards by 50 bps over the past six months.

Central bank policies in developed markets remained accommodative, but the intent to move towards tighter financial conditions has been clearly communicated. Stimulus from central banks, notably the ECB and BOJ, is likely still necessary to support the recent improvement in economic growth. A lack of pressure in inflation, however, should allow central banks to take a careful approach to future policy changes.

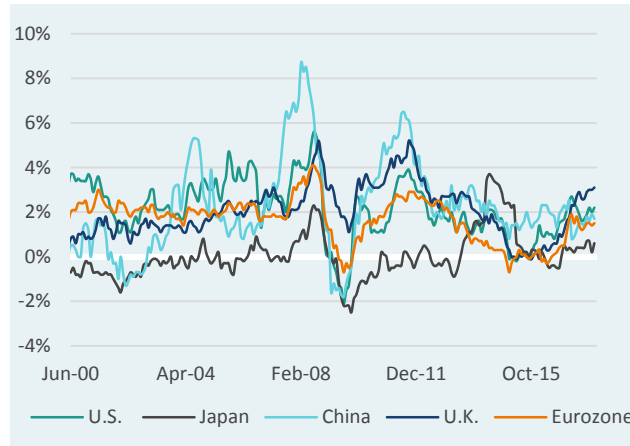
**Growth accelerated, while inflation remained moderate**

**REAL GDP GROWTH (YOY)**



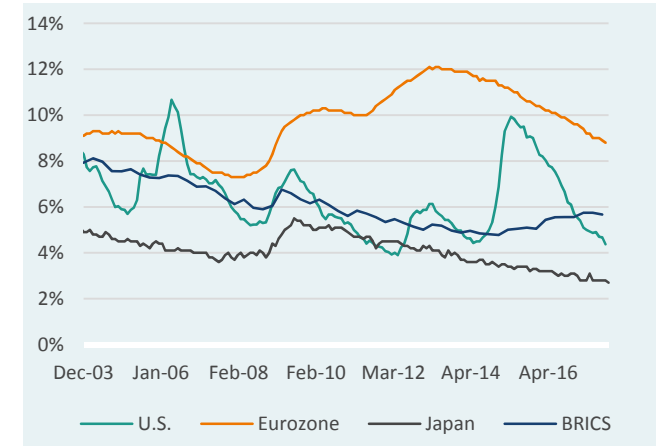
Source: Bloomberg, as of 9/30/17

**INFLATION (CPI)**



Source: Bloomberg, as of 11/30/17

**UNEMPLOYMENT**



Source: Bloomberg, as of 11/30/17 or most recent release

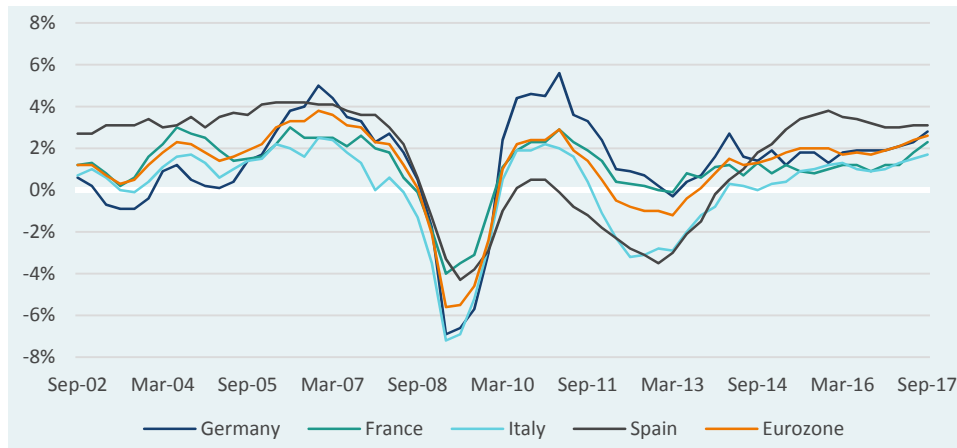
# Eurozone economic recovery

A pickup in lending and investment, strong external demand, and accommodative monetary policy has helped fuel an impressive economic recovery in the Eurozone. In Q3, real GDP was 2.6% YoY - its highest rate of growth since 2011. Economic data has come in better than expected for most of the past year and economic forecasts have been revised upwards significantly. Additionally, labor markets have also improved markedly with the overall Eurozone unemployment rate falling from 9.6% to 8.8% over the past year, with further room for improvement.

The continuing recovery is not without risks. Most notably, economies are still heavily reliant on monetary stimulus. The ECB has already started to taper asset purchases, although any additional tightening will likely be considered with caution. The recovery in economic conditions has been led by Germany, while periphery countries such as Italy and Spain have lagged behind and are still experiencing high unemployment rates. Finally, political risk in Europe, such as the Italian election this year, is still lurking in the background.

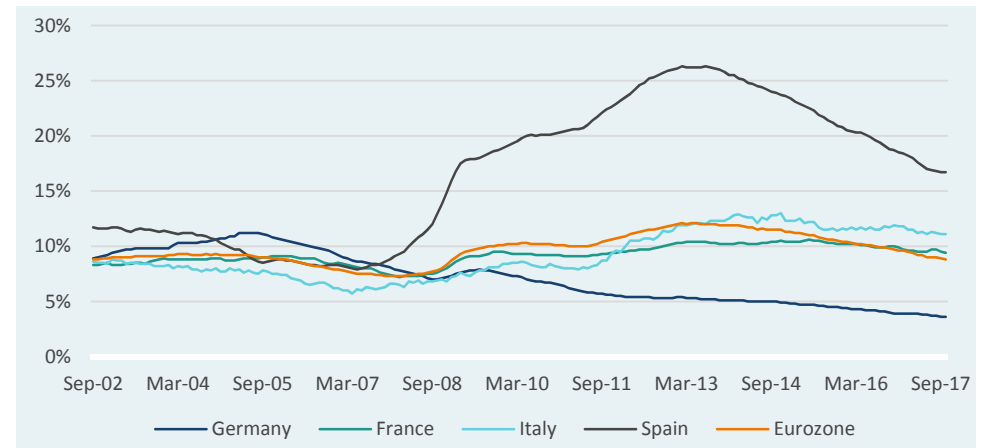
The Eurozone is experiencing an impressive economic recovery

REAL GDP GROWTH



Source: Bloomberg, as of 9/30/17

UNEMPLOYMENT RATE



Source: Bloomberg, as of 10/31/17



# Global PMIs

## PMI 1 YEAR (CROSS SECTION) – BLUE HIGH / ORANGE LOW

	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
<b>Manufacturing</b>												
Global	53	53	53	53	53	53	53	53	53	54	54	55
Developed	54	54	54	54	54	54	54	54	55	55	56	56
US	56	58	57	55	55	58	56	59	61	59	58	60
UK	55	55	54	57	56	54	55	57	56	56	58	56
Eurozone	55	55	56	57	57	57	57	57	58	59	60	61
Germany	56	57	58	58	60	60	58	59	61	61	63	63
Japan	53	53	52	53	53	52	52	52	53	53	54	54
EM	51	51	52	51	51	51	51	52	51	51	52	52
<b>Services</b>												
Global	54	53	54	54	54	54	54	54	54	54	54	54
Developed	55	54	54	54	54	55	55	55	55	55	54	54
US	57	58	55	58	57	57	54	55	60	60	57	56
UK	55	53	55	56	54	53	54	53	54	56	54	54
Eurozone	54	56	56	56	56	55	55	55	56	55	56	57
Germany	53	54	56	55	55	54	53	54	56	55	54	56
Japan	52	51	53	52	53	53	52	52	51	53	51	51
EM	54	56	56	56	56	55	55	55	56	55	56	57

Source: Bloomberg, as of 12/31/17 – PMIs are based on survey data compiled from purchasing and supply managers. Survey questions are asked about several different components of each sector, such as new orders, employment, prices, etc. The final PMI reading is based on the percentage of respondents with a positive view on the sector. A reading above 50 indicates expansion in the sector while a reading below 50 indicates contraction. Historically, PMIs have had a relatively strong positive relationship with actual economic activity.

# Fixed income rates & credit

# Interest rate environment

- On December 13th, the Federal Reserve raised the benchmark interest rate by 25 bps to a target range of 1.25%-1.50%. The Fed has communicated three rate hikes in 2018, while the market is pricing in only two.
- U.S. Treasury yields experienced significant increases on the short end of the curve, while longer term rates were modestly higher. The 2- and 10-year yields rose 40 bps and 8 bps, respectively. The increase in short-term rates was likely caused by the Fed raising overnight borrowing rates.
- The Fed began to reduce its balance sheet slowly. Approximately \$30 billion in Treasuries and mortgage-backed securities were trimmed from the balance sheet over the quarter, which did not have a material impact on the market.
- Minutes from the ECB meeting in December showed that officials discussed additional tapering of asset purchases in early 2018 due to stronger than expected economic growth.
- Markets generally expect minimal yield rises across developed markets – between 0% and 0.3% movement over the next year in U.S., U.K., German, and Japanese sovereign bonds. However, we remain watchful of bond market reactions to balance sheet unwinding, given the unprecedented size of central bank assets.
- We remain underweight to U.S. and developed sovereign bonds (currency hedged) primarily due to low yields. It is important to keep in mind the diversification benefits that fixed income provides to the portfolio, despite near record prices.

Area	Short Term (3M)	10 Year
United States	1.38%	2.41%
Germany	(0.80%)	0.42%
France	(0.78%)	0.78%
Spain	(0.58%)	1.56%
Italy	(0.63%)	2.00%
Greece	1.40%	4.10%
U.K.	0.36%	1.19%
Japan	(0.15%)	0.04%
Australia	1.74%	2.63%
China	3.95%	3.90%
Brazil	6.77%	10.25%
Russia	6.55%	7.42%

Source: Bloomberg, as of 12/31/17

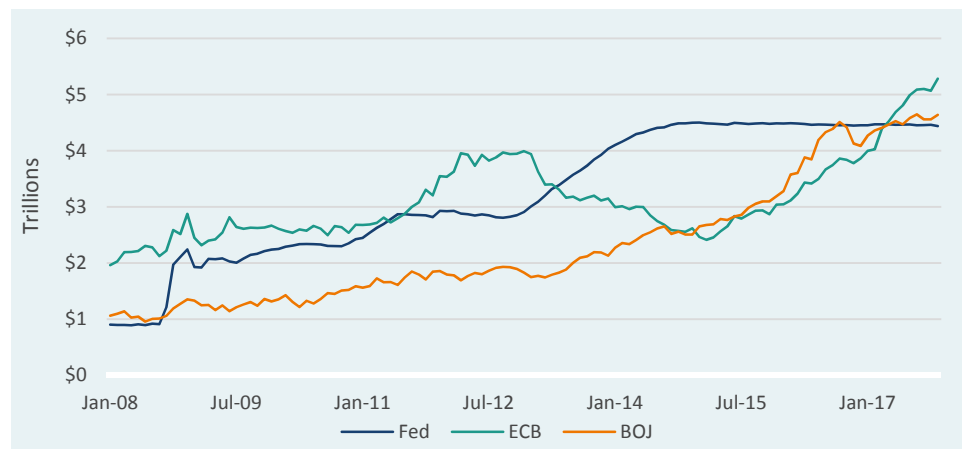
# Monetary policy

The global shift towards tighter monetary policy will be an important theme in financial markets moving forward, and the possibility of a policy mistake represents a major risk. Thus far, the Fed is the only major central bank to take steps to tighten policy by raising interest rates and trimming its balance sheet. Moderate inflation has allowed the Fed to take a cautious approach to tightening, which at this point does not appear to have had a material impact on markets. While other central banks remain accommodative, several have begun tightening, including a rate hike from the BOE, and asset purchase tapering from the ECB.

Looking ahead at the next two years, there is not much monetary tightening priced into markets, which creates greater chance of a negative surprise. In the current cycle, central banks have been cautious and worked hard to clearly communicate changes in policy to avoid market surprises. We think this behavior is likely to continue, but with so little priced into markets even a slightly faster pace of tightening than expected might have a significant impact. A policy mistake is especially a concern for the Eurozone and Japan because improving economic conditions are probably still dependent on support from monetary stimulus.

Very little monetary tightening is priced into markets

## MAJOR CENTRAL BANK BALANCE SHEET SIZE



Source: Bloomberg, as of 11/30/17

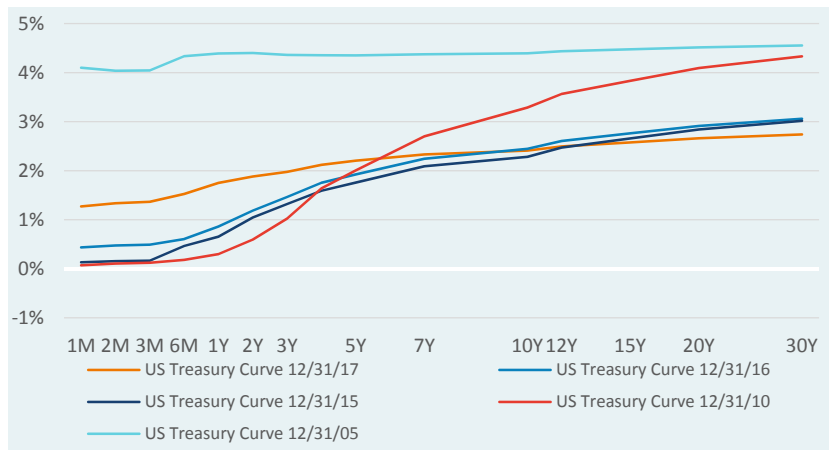
## MAJOR CENTRAL BANK POLICY RATES AND EXPECTATIONS

	Policy Rate	Rate Hikes in 2017	Market Pricing YE 2018	Market Pricing YE 2019
<b>Fed</b>	1.4%	3	1.9%	2.1%
<b>ECB</b>	-0.4%	0	-0.3%	-0.1%
<b>BOJ</b>	-0.1%	0	-0.1%	0.0%
<b>BOE</b>	0.5%	1	0.7%	0.9%

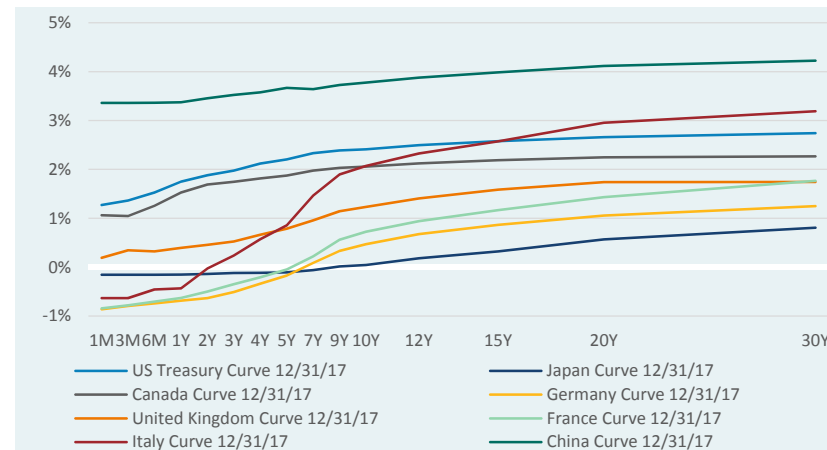
Source: Bloomberg, as of 1/4/18

# Yield environment

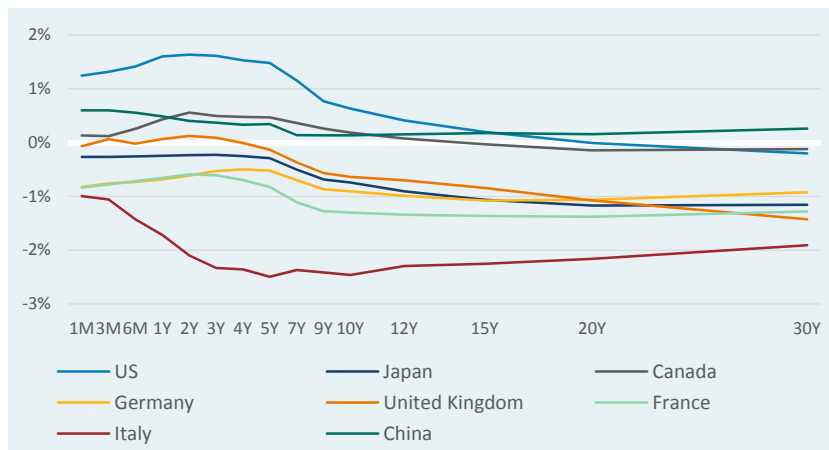
## U.S. YIELD CURVE



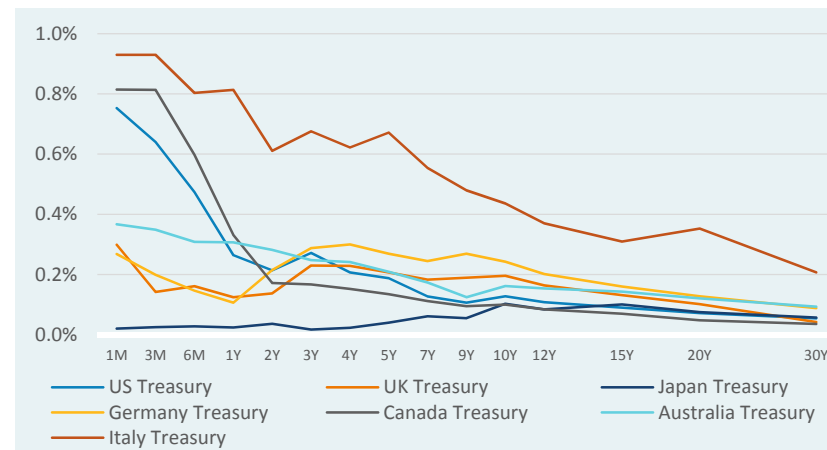
## GLOBAL GOVERNMENT YIELD CURVES



## YIELD CURVE CHANGES OVER LAST FIVE YEARS



## IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 12/31/17

# Credit environment

Credit spreads fell throughout 2017 to all-time tight levels. U.S. high yield option-adjusted spreads compressed in the fourth quarter to 3.4%, and the asset class generated a 0.5% total return for the quarter and 7.5% for 2017 (BBgBarc U.S. Corp. High Yield Index). High yield spreads are tighter than those of bank loans on a duration-neutral basis.

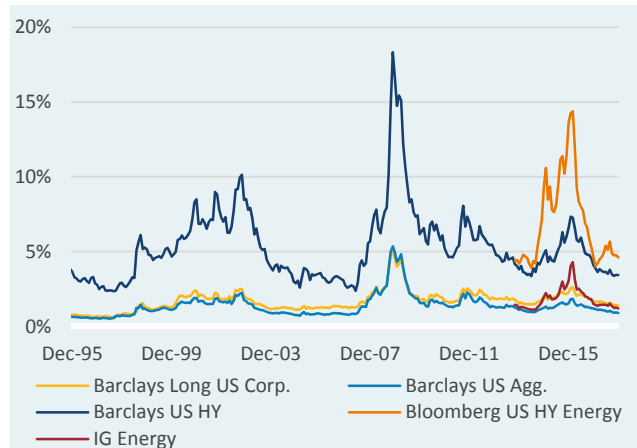
Credit spreads in both high yield and loans have continued to tighten close to multi-year lows, driven by strong corporate fundamentals and general macroeconomic improvement.

The combination of tighter credit spreads and higher yields over Treasuries led credit to broadly outperform U.S. Treasuries in Q4. High yield spreads began the year at 4.1% and tightened by 66 bps in 2017. Credit spreads have historically been a good indicator of future performance relative to Treasuries.

Based on low interest rates and tight spreads, we recommend an underweight to U.S. investment and high yield credit.

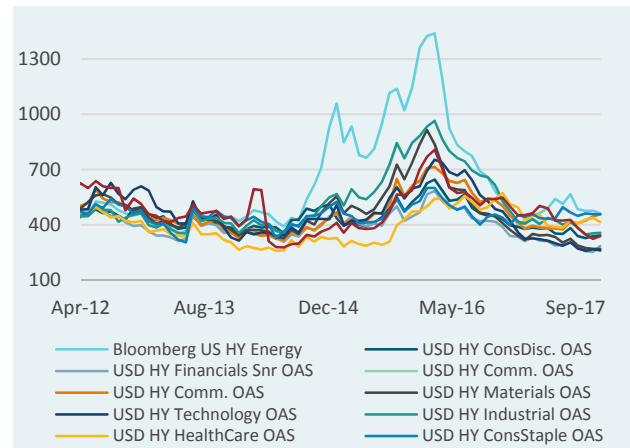
Credit spreads are tight across the capital structure

## SPREADS



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

## HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 12/31/17

Market	Credit Spread (12/31/17)	Credit Spread (1 Year Ago)
Long US Corporate	1.4%	1.6%
US Aggregate	0.9%	1.2%
US High Yield	3.4%	4.1%
US High Yield Energy	4.6%	4.6%
US Bank Loans	3.6%	3.9%

Source: Barclays, Credit Suisse, Bloomberg, as of 12/31/17

# Issuance and default

Default activity remains low and stable in U.S. and international credit markets. The par-weighted U.S. default rate remains below its long-term average of 3.0-3.5%. Four U.S. companies defaulted in December totaling \$1.6 Billion in bonds and \$582 Million in loans. Total default activity during 2017 was at levels not seen since 2013.

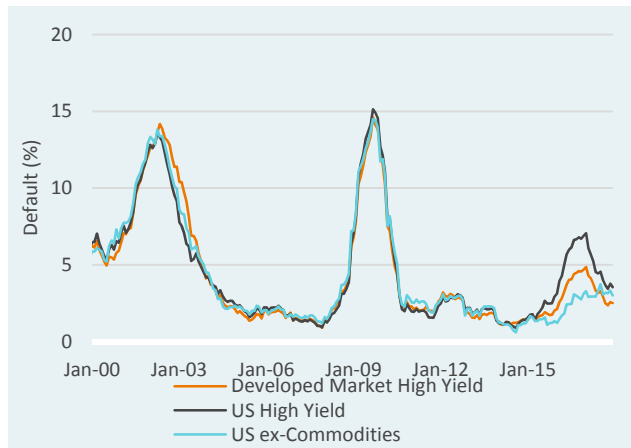
Senior loan and high yield markets normalized in 2017, compared to 2016 when a majority of defaults were generated from energy and metals/mining sectors.

Issuance in bonds and loans both increased in 2017. The majority of proceeds were used for refinancing activity as the market continues to be borrower-friendly, allowing issuers to refinance at lower rates.

Active management may offer value to investors in the high yield space.

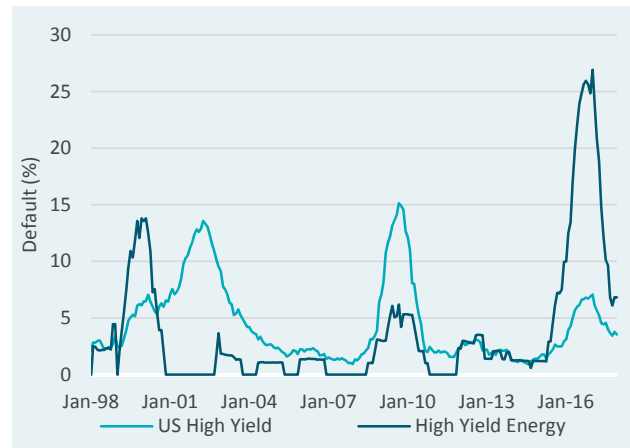
The effects of commodity related defaults are subsiding

HY DEFAULT TRENDS (ROLLING 1 YEAR)



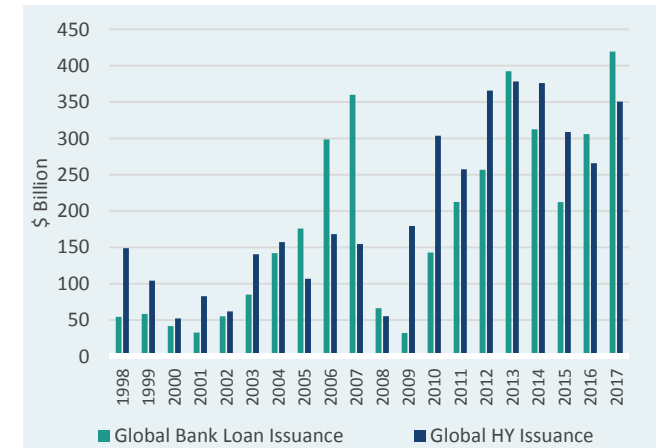
Source: BofA Merrill Lynch, as of 12/31/17

ENERGY DEFAULT TRENDS



Source: BofA Merrill Lynch, as of 12/31/17

GLOBAL ISSUANCE



Source: Bloomberg, BofA Merrill Lynch, as of 12/31/17

# Equity



# Equity environment

- We maintain an overweight position to equities with a preference for emerging markets. Equity markets delivered strong returns over the quarter and were supported by robust earnings growth. Emerging markets provided outsized gains as is often the case in periods of strong economic growth.
- U.S. corporate earnings are expected to increase by 13.1% YoY in 2018 according to Factset. Expectations improved by a net 2% following the Tax Cuts & Jobs Act, which lowered the corporate tax rate from 35% to 21%, effective January 1<sup>st</sup>, 2018. Energy and Financial sectors are expected to lead in earnings with growth of 47% and 25%, respectively.
- The way businesses spend tax savings may have significant positive effects on wages, capital investment, and equity returns.

We will be monitoring this activity throughout the year.

- Equity volatility has stayed extraordinarily low. U.S. market volatility over the past year was 3.9% (S&P 500), followed by International at 4.2% (MSCI EAFE) and emerging markets at 6.5% (MSCI Emerging Markets). Low equity volatility has historically indicated less risk of an equity downside event.
- Currency movement contributed to volatility and uncertainty in international assets for investors with unhedged exposure. Recently, the U.S. dollar has weakened, creating a tailwind for unhedged performance.

	QTD TOTAL RETURN		YTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	6.6%		21.7%		21.7%	
US Small Cap (Russell 2000)	3.3%		14.6%		14.6%	
US Large Value (Russell 1000 Value)	5.3%		13.7%		13.7%	
US Large Growth (Russell 1000 Growth)	7.9%		30.2%		30.2%	
International Large (MSCI EAFE)	4.3%	4.0%	25.7%	16.8%	25.7%	16.8%
Eurozone (Euro Stoxx 50)	(0.4%)	(1.8%)	25.3%	11.1%	25.3%	11.1%
U.K. (FTSE 100)	6.0%	5.3%	22.6%	12.9%	22.6%	12.9%
Japan (NIKKEI 225)	12.0%	12.3%	25.7%	21.9%	25.7%	21.9%
Emerging Markets (MSCI Emerging Markets)	7.3%	5.3%	37.3%	28.6%	37.3%	28.6%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 12/31/17

# Domestic equity

U.S. equities produced gains over the quarter (S&P 500 +6.6%), adding to record highs. Over the past year, U.S. equity performance (S&P 500 +21.8%) has lagged international developed equities (MSCI EAFE +25.0%) and emerging markets (MSCI Emerging Markets +37.3%). Performance of each equity market is in line with the degree of earnings growth – emerging markets have produced the strongest year-over-year growth and the U.S. has produced the weakest earnings growth. However, earnings growth in the U.S. has still been strong relative to history.

U.S. corporate earnings are expected to increase by 13.1% YoY in 2018, according to Factset. Forecasts were revised upwards by a net 2% following the passing of tax cuts. Energy and Financial sectors are expected to lead in earnings with growth of 47% and 25%, respectively. The way businesses spend additional tax savings may have significant positive effects on wages, capital investment, and equity returns. We will be monitoring the situation throughout the year.

We maintain a neutral weight to U.S. equities

## U.S. EQUITIES



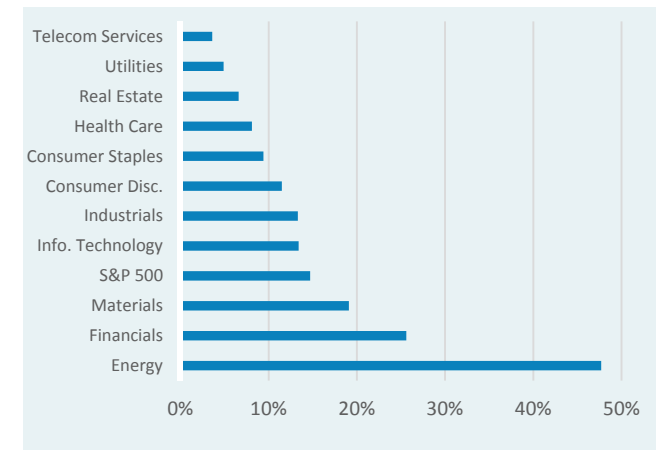
Source: Russell Investments, as of 12/31/17

## EARNINGS GROWTH



Source: MSCI, as of 12/31/17, YoY growth in forward earnings

## 2018 S&P 500 EARNINGS EXPECTATIONS



Source: FactSet, as of 1/12/18

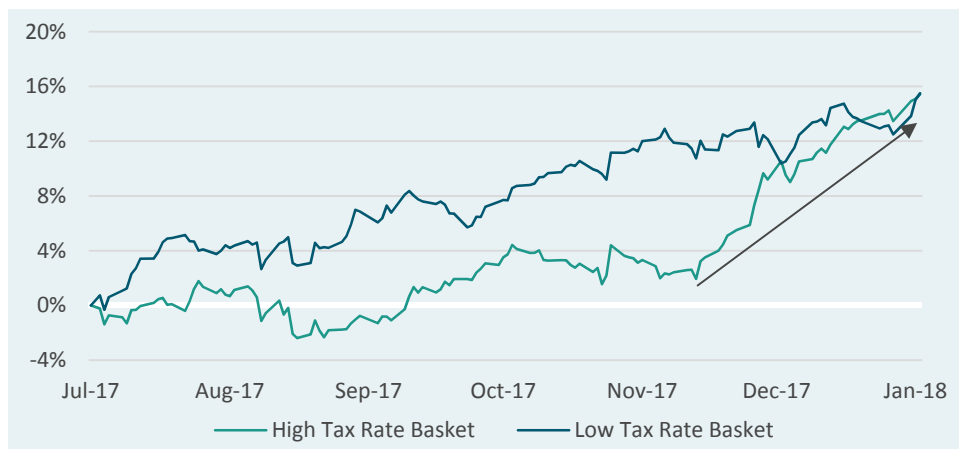
# U.S. tax reform

The House and Senate passed a final tax bill, which was then signed into law by President Trump on December 22, 2017. The most widely publicized component of the bill is a corporate tax cut that lowers the statutory tax rate from 35% to 21%. The tax cut should result in a material boost to corporate earnings, which was priced into markets as the proposal was negotiated. Equities with relatively high effective tax rates significantly outperformed those with low effective tax rates since November. We believe that higher earnings growth resulting from the one-time tax cut is likely fully priced into equities.

The second component to the tax cut relates to the way corporations choose to use the savings. Its impact is more difficult to determine. In the past, firms have used tax savings to return capital to shareholders, which will likely play an important role once again. We believe that in the current economic and deregulatory environment, a material gain in business investment and wages is possible. A rise in investment could lead to further earnings growth and would have a more lasting impact on the economy than if firms simply return the savings to shareholders.

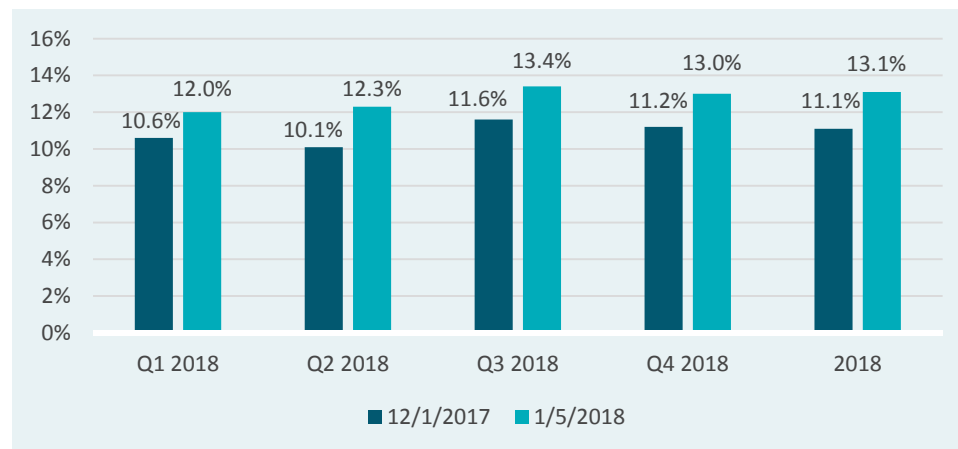
Corporate tax cuts will be a boost to earnings

**S&P 500 HIGH TAX RATE VS. LOW TAX RATE BASKET**



Source: Bloomberg, Verus, as of 1/4/18

**S&P 500 2018 EARNINGS EXPECTATIONS**



Source: FactSet, as of 1/5/18

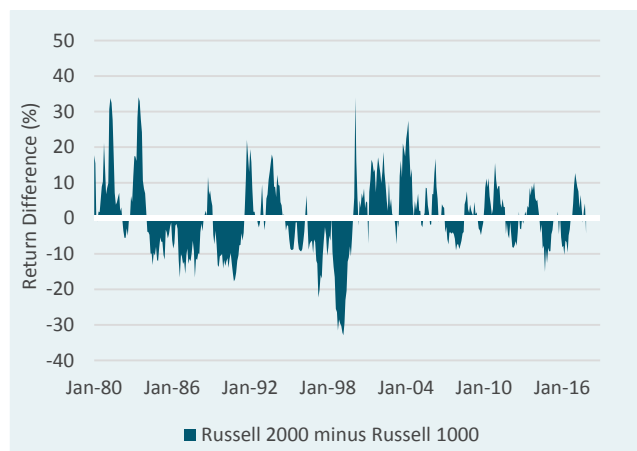
# Domestic equity size and style

Large cap equities (Russell 1000 +6.6%) continued to outperform small cap equities (Russell 2000 +3.3%) during the quarter. Small cap stocks are very expensive relative to history based on traditional measures. It appears that a greater number of companies in the small cap universe with low or negative earnings has contributed to rising price-to-earnings multiples of the index.

Value equities underperformed growth equities over the quarter and the past year – caused by extremely positive

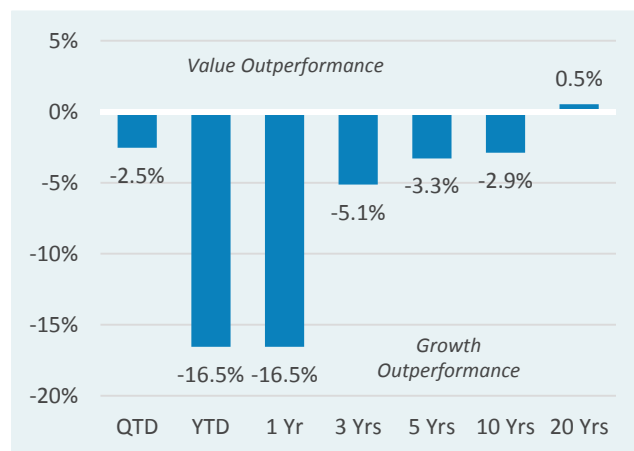
technology sector performance (growth stocks are highly concentrated in the tech sector). Value has now underperformed on a 1-, 3-, 5-, and 10-year basis. Value stocks have underperformed over a 10-year period only twice in the past 100 years – during the great depression (1937) and during the dotcom bubble (1999). Both of these occasions were followed by an impressive bounce back in value performance.

**SMALL CAP VS LARGE CAP (YOY)**



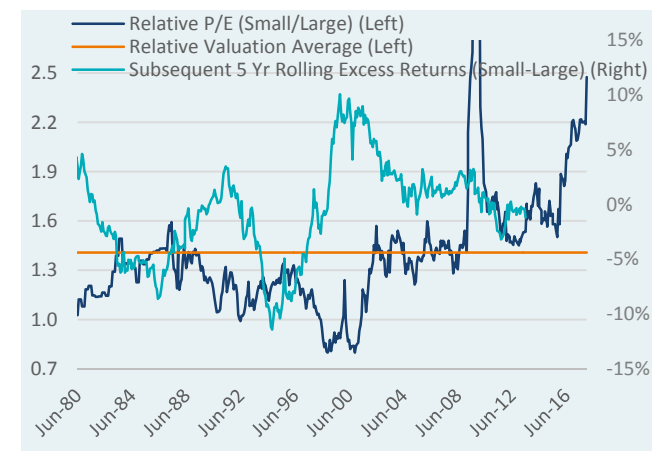
Source: Russell Investments, as of 12/31/17

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



Source: Morningstar, as of 12/31/17

**U.S. LARGE VS. SMALL RELATIVE VALUATIONS**



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

# International developed equity

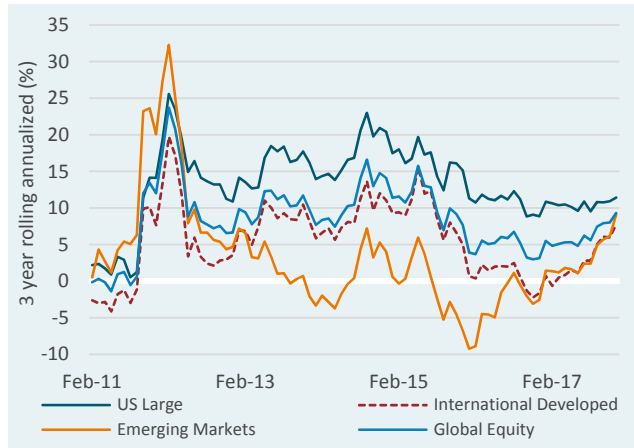
International equities lagged U.S. equities during the fourth quarter as U.S. tax reform contributed to a strong domestic rally. The MSCI EAFE Index returned 4.3% (+4.0% hedged) while the S&P 500 returned 6.6%. Emerging markets continued to outperform (MSCI EM +7.4% unhedged).

Japan outperformed among developed markets, which is particularly notable when considering the pessimism baked into Japan's equity valuations. Japan generated a

12.0% return in the fourth quarter and a 25.7% return in 2017 (Nikkei 225 unhedged). Recent equity gains were fundamentally supported by earnings growth.

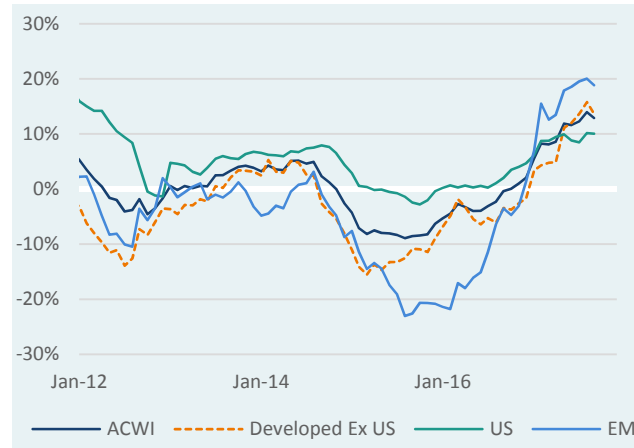
Currency effects added a positive 0.3% to the unhedged MSCI EAFE in Q4 (+8.9% year-to-date), as the U.S. dollar weakened slightly against a trade weighted basket of currencies.

**EQUITY PERFORMANCE (3YR ROLLING)**



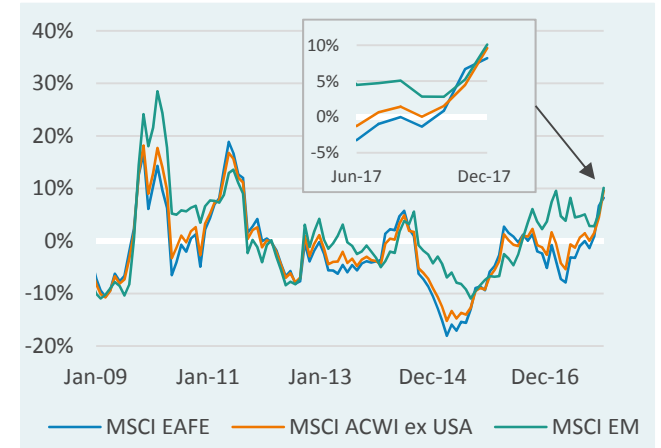
Source: Bloomberg, as of 12/31/17

**EARNINGS GROWTH**



Source: MSCI, as of 12/31/17 – YoY growth in forward earnings

**EFFECT OF CURRENCY (1 YEAR ROLLING)**



Source: MSCI, as of 12/31/17

# Emerging market equity

We maintain an overweight to emerging market equities. These markets have led the way in economic growth, earnings, and equity performance. Emerging market equities delivered exceptional returns in 2017 (MSCI Emerging Markets +37.3%) relative to developed markets (MSCI ACWI +24.2%) and during the fourth quarter (7.4% vs. 4.2%).

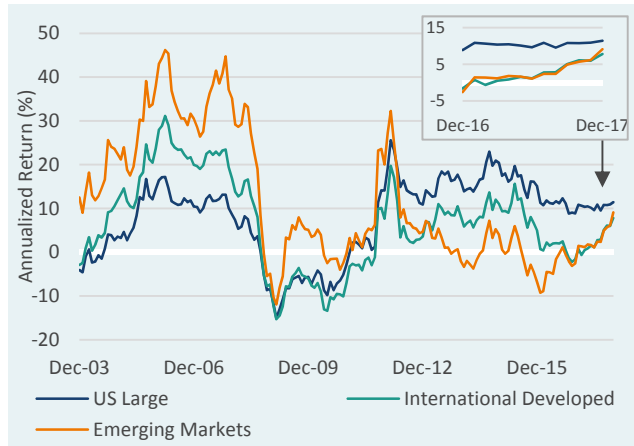
Emerging markets have lagged the U.S. significantly since the global financial crisis, prior to the recent rotation. Emerging market currencies remain depressed relative to

history, and a reversal could provide additional tailwinds to recent outperformance.

Equity multiples have risen modestly, supported by a brighter earnings outlook. As these economies evolve, it has become more difficult to refer to emerging markets as a distinct category. Different levels of economic progress, capital market development, and valuations can be witnessed across emerging market indices. Active management is typically preferred in this asset class.

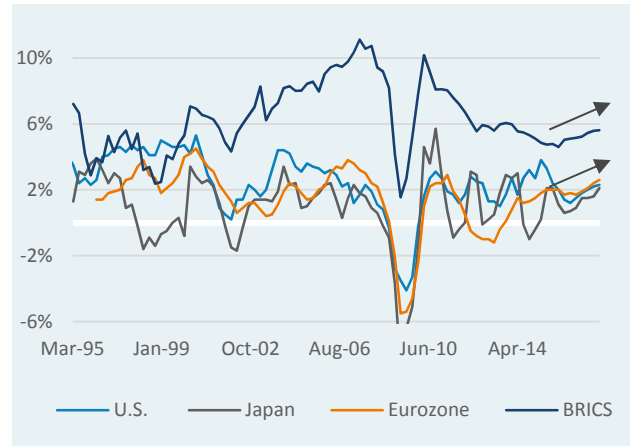
Coordinated global growth has helped propel emerging market equities

## EQUITY PERFORMANCE (3YR ROLLING)



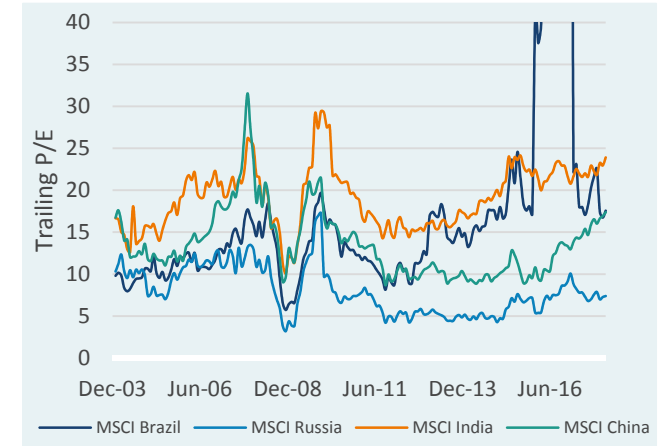
Source: Standard & Poor's, MSCI, as of 12/31/17

## ECONOMIC MOMENTUM



Source: Bloomberg, as of 9/30/17

## BRIC VALUATIONS



Source: MSCI, as of 12/31/17

# Equity valuations

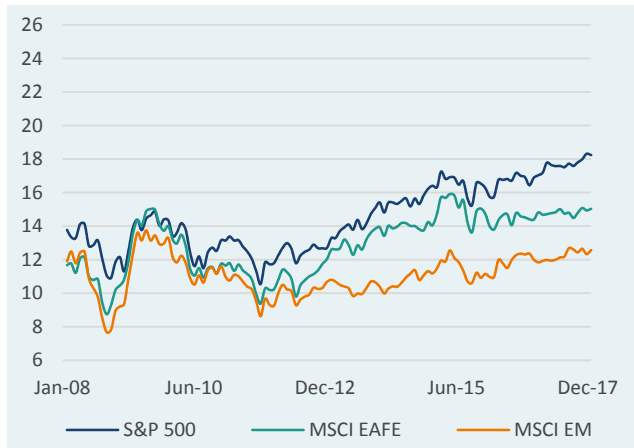
Equity valuations grew slightly richer over the quarter and remain high. However, strong underlying earnings growth has sustained above-average performance. Global economic acceleration, robust earnings growth, and accommodative monetary policies contribute to our view that a risk overweight position is warranted.

Comparing valuation increases to earnings growth demonstrates that the recent pickup in equity performance is fundamentally driven (fueled by earnings rather than higher equity prices). In this environment the forward P/E measure tends to provide a more accurate representation of

valuations. Equity price is a product of expectations for future earnings and cash flows. The forward P/E measure takes into account future earnings while the trailing P/E focuses on past earnings, which leads the trailing P/E measure to incorrectly rise during times when prices and earnings may in fact be rising at the same pace (implying no true valuation movement).

Higher valuations imply lower future equity returns over the longer-term. However, over shorter periods of time equities may produce strong returns despite high valuations, as seen recently.

## FORWARD P/E RATIOS



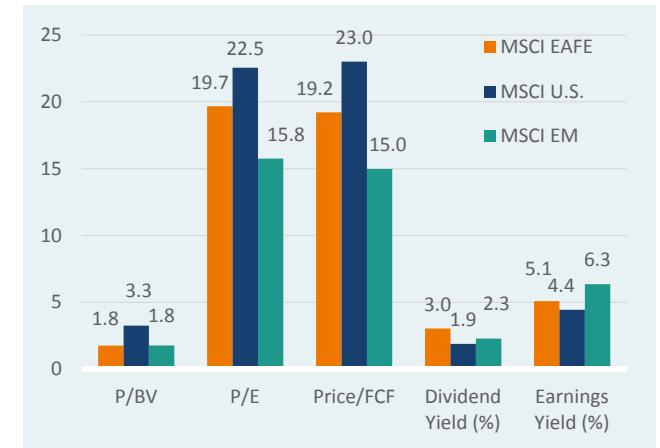
Source: MSCI, as of 12/31/17

## TRAILING P/E RATIOS



Source: Bloomberg, as of 12/31/17

## VALUATION METRICS



Source: Bloomberg, as of 12/31/17 - trailing P/E

# Shiller P/E



Source: Robert Shiller, *Verus* – The light blue line is Robert Shiller’s CAPE ratio over the past 30 years. Each line illustrates how the CAPE ratio will move assuming various after-inflation earnings growth rates, and assuming equity prices increase at the rate of inflation.

- The Shiller P/E, or CAPE ratio (cyclically adjusted price-to-earnings), uses current market price divided by average real (inflation-adjusted) corporate earnings of the past 10 years to arrive at a valuation multiple.
- The CAPE ratio is currently very high relative to history, though this can be partly explained by the fact that the past 10 years of earnings includes the global financial crisis – one of worst earnings depressions in history (which has pushed the CAPE ratio upward).
- The chart on the left illustrates that the CAPE ratio will come down significantly in the near future, all other things being equal, as the global financial crisis falls out of the CAPE’s 10 year earnings window.



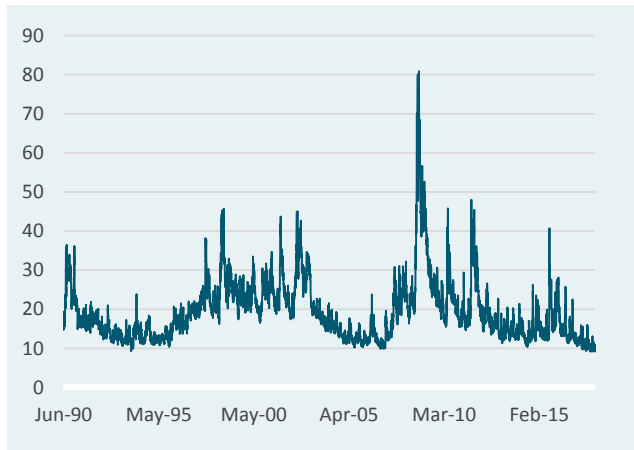
# Equity volatility

Equity volatility has stayed extraordinarily low. U.S. market volatility over the past year was 3.9% (S&P 500), compared to its historical average annualized volatility of 14.2%. International equity volatility has also been low with developed markets at 4.2% (MSCI EAFE) and emerging markets at 6.5% (MSCI Emerging Markets). Implied volatility as indicated by the VIX has also remained suppressed. Muted volatility environments have historically resulted in a lower probability of a significant market drawdown.

The current low volatility environment has been influenced by very few significant economic surprises. Steady increases in GDP growth and consistent inflation, which is likely a byproduct of central bank intervention, has helped lead to stable asset price movements. Volatility may begin to return to more normal levels if central banks stay on course with monetary tightening. However, central banks will likely remain very sensitive to contributing to market volatility.

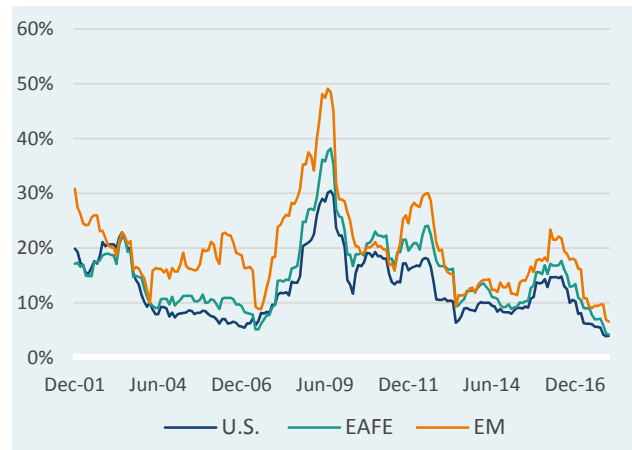
Equity volatility has trended downwards

U.S. IMPLIED VOLATILITY (VIX)



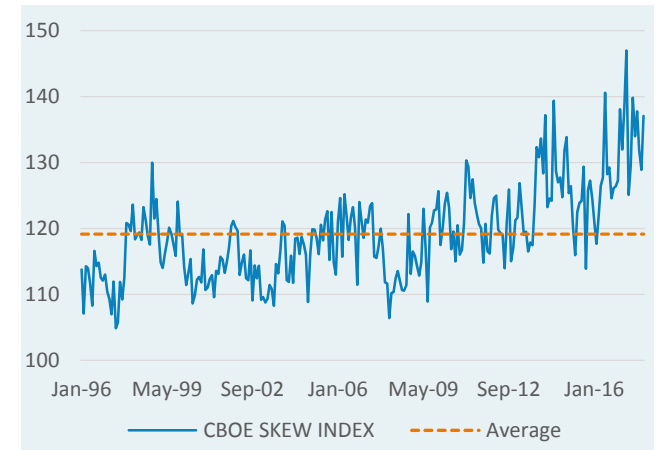
Source: CBOE, as of 12/31/17

REALIZED 1-YEAR ROLLING VOLATILITY



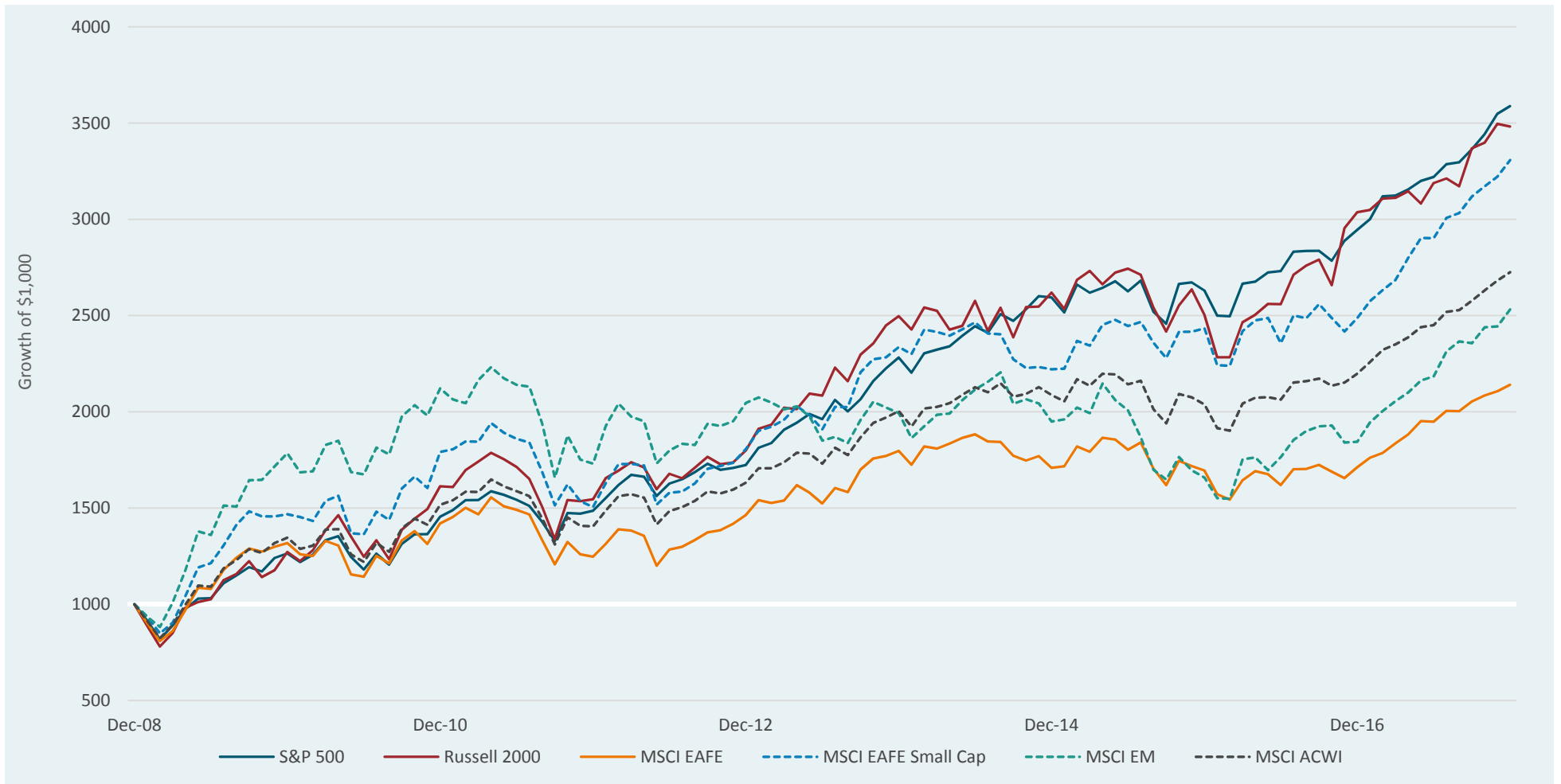
Source: Bloomberg, as of 12/31/17

U.S. VOLATILITY SKEW



Source: CBOE, as of 12/31/17

# Long-term equity performance



Source: MPI, as of 12/31/17

# Other assets

# Real estate

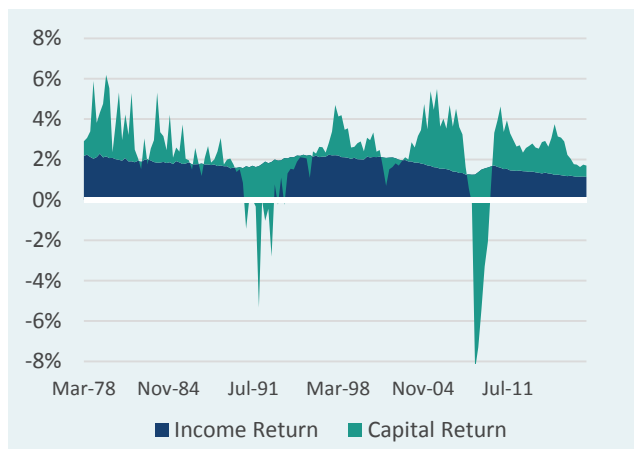
The core real estate market experienced lower returns in recent quarters than earlier in the cycle as price appreciation has slowed. In the third quarter, the NCREIF Property Index returned 1.7%, of which a net 1.1% came from income. With cap rates at 4.4% as of September 30<sup>th</sup>, further real estate price appreciation may be difficult. Income will likely continue to play a central role in overall returns.

Although valuations are high, fundamentals remain positive. Growth in net operating income (NOI) has leveled out, but is still healthy at 5.2% and transaction volumes are

above average. NOI growth has been driven by industrial properties, which have benefitted from the expansion of e-commerce. On the other side of the e-commerce trend, retail properties have experienced weak NOI growth. The downtrend in vacancy rates has flattened out, but vacancies are still low relative to history at 6.7%.

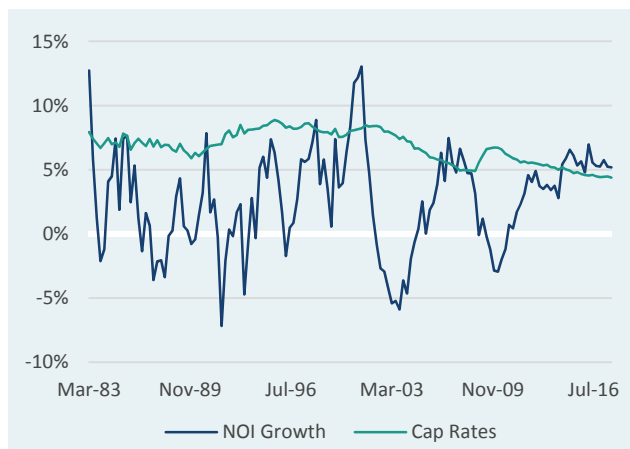
Given where real estate stands in the cycle, we recommend a conservative approach to leverage, liquidity, and quality. We are more constructive on core real estate, as opposed to value add or opportunistic.

**NCREIF PROPERTY INDEX RETURNS**



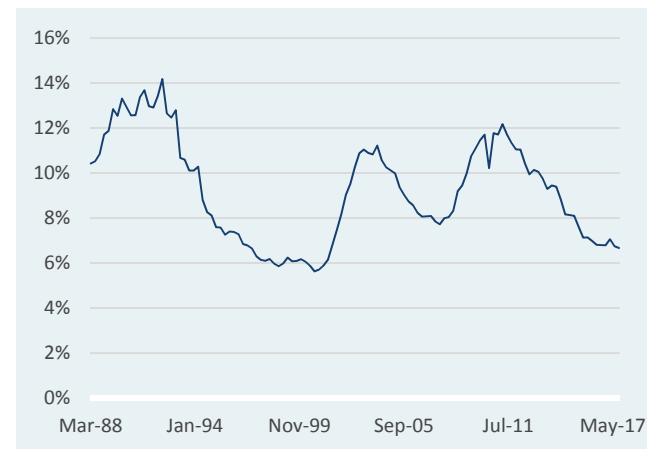
Source: NCREIF, as of 9/30/17

**NOI GROWTH & CAP RATES**



Source: NCREIF, as of 9/30/17

**VACANCY RATES**



Source: NCREIF, as of 9/30/17

# Currency

The U.S. dollar was little changed in the fourth quarter, but finished the year down 7%. Investors with unhedged international asset exposure have seen large disparities in performance as currency movement continued to contribute to volatility and uncertainty.

Recent strengthening of developed and developing economies relative to the U.S. has likely contributed to U.S. dollar weakness. The U.S. Federal Reserve is engaged in monetary tightening, which implies a stronger dollar on a standalone basis. However, U.S. growth expectations

have shifted relative to international economies which has influenced exchange rates and contributed to recent U.S. dollar movement. Fluctuations in relative growth expectations implies changes in expected inflation and interest rate levels, which directly impacts the foreign exchange market.

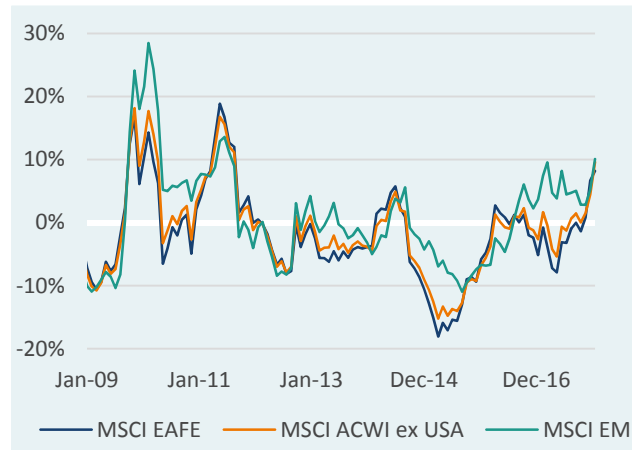
Forecasting currency movement over short periods of time can be extremely difficult. Hedging currency risk is an appropriate method for mitigating currency volatility and uncertainty.

**U.S. DOLLAR TRADE WEIGHTED INDEX**



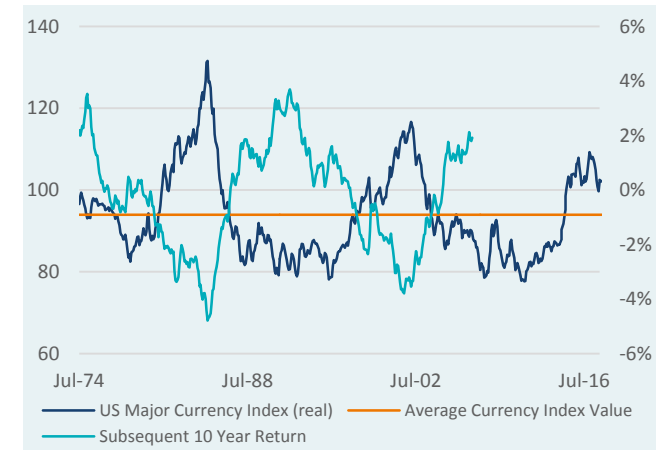
Source: Federal Reserve, as of 12/27/17

**EFFECT OF CURRENCY (1-YEAR ROLLING)**



Source: MPI, as of 12/31/17

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



Source: Federal Reserve, as of 12/31/17

# Appendix

# Periodic table of returns

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	YTD	5-Year	10-Year
Emerging Markets Equity	16.6	38.4	23.2	35.2	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	17.3	10.0
Large Cap Growth	8.1	37.8	23.1	32.9	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	15.2	9.2
International Equity	6.4	37.2	22.4	31.8	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	15.7	8.7
Small Cap Growth	4.4	31.0	21.6	30.5	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	14.1	8.6
Large Cap Equity	3.2	28.5	21.4	22.4	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	14.0	8.2
60/40 Global Portfolio	2.6	25.7	16.5	16.2	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	13.0	7.1
Small Cap Equity	0.4	19.6	14.4	13.9	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	10.3	6.2
Large Cap Value	-1.5	18.5	11.3	12.9	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	7.9	4.3
Small Cap Value	-1.8	15.2	10.3	10.6	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	6.8	4.0
Hedge Funds of Funds	-2.0	11.6	9.9	9.7	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	4.3	1.9
Real Estate	-2.4	11.1	6.4	5.2	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	5.1	4.0	1.7
US Bonds	-2.9	7.5	6.0	2.1	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	2.1	1.1
Commodities	-3.5	5.7	5.1	-3.4	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	0.3	0.3
Cash	-7.3	-5.2	3.6	-11.6	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-8.5	-6.8

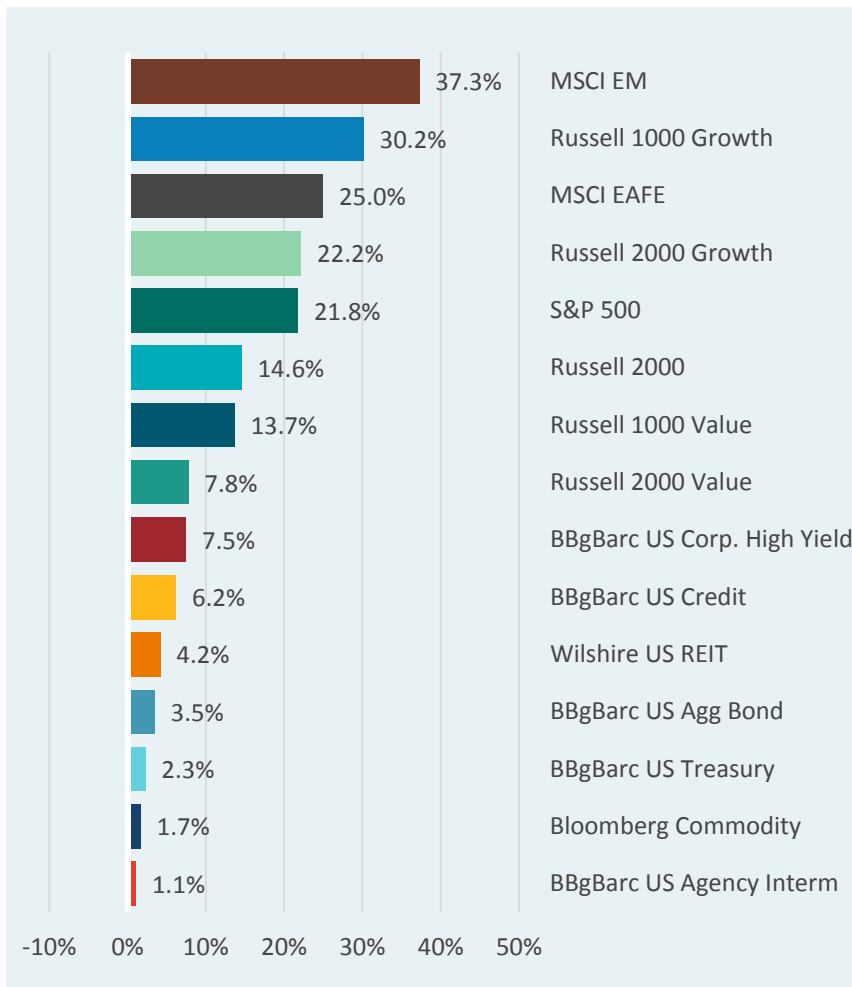
WORST

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

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 9/30/17.

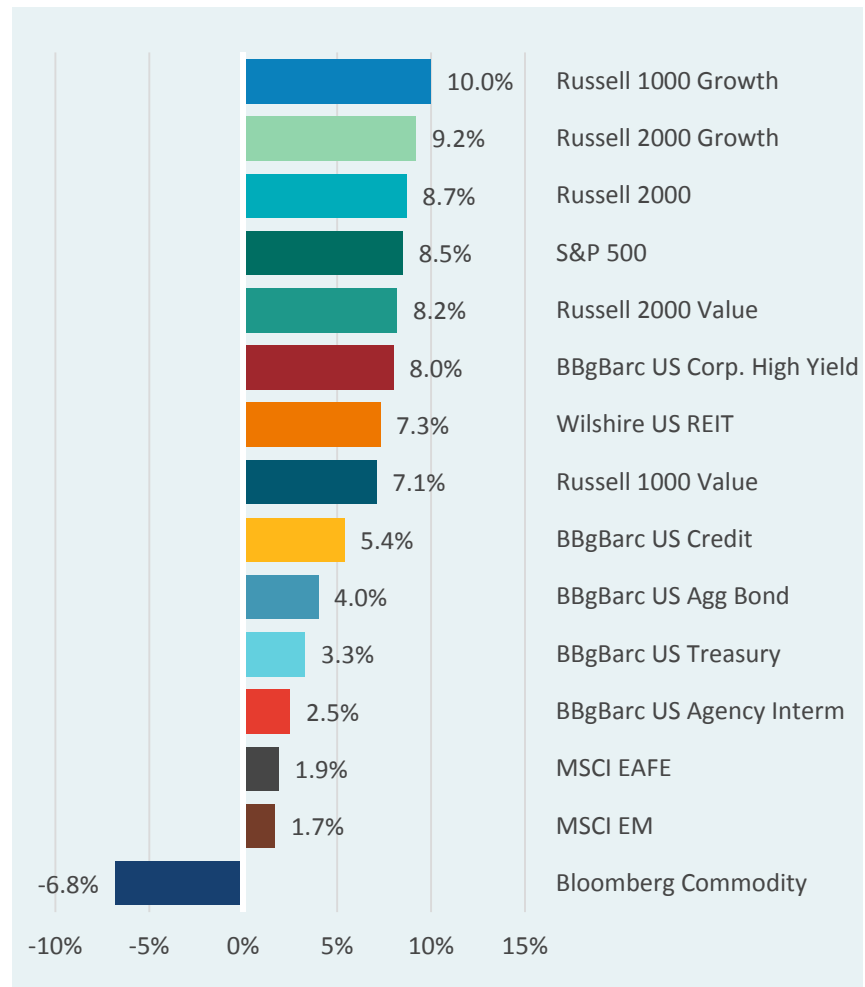
# Major asset class returns

ONE YEAR ENDING DECEMBER



Source: Morningstar, as of 12/31/17

TEN YEARS ENDING DECEMBER

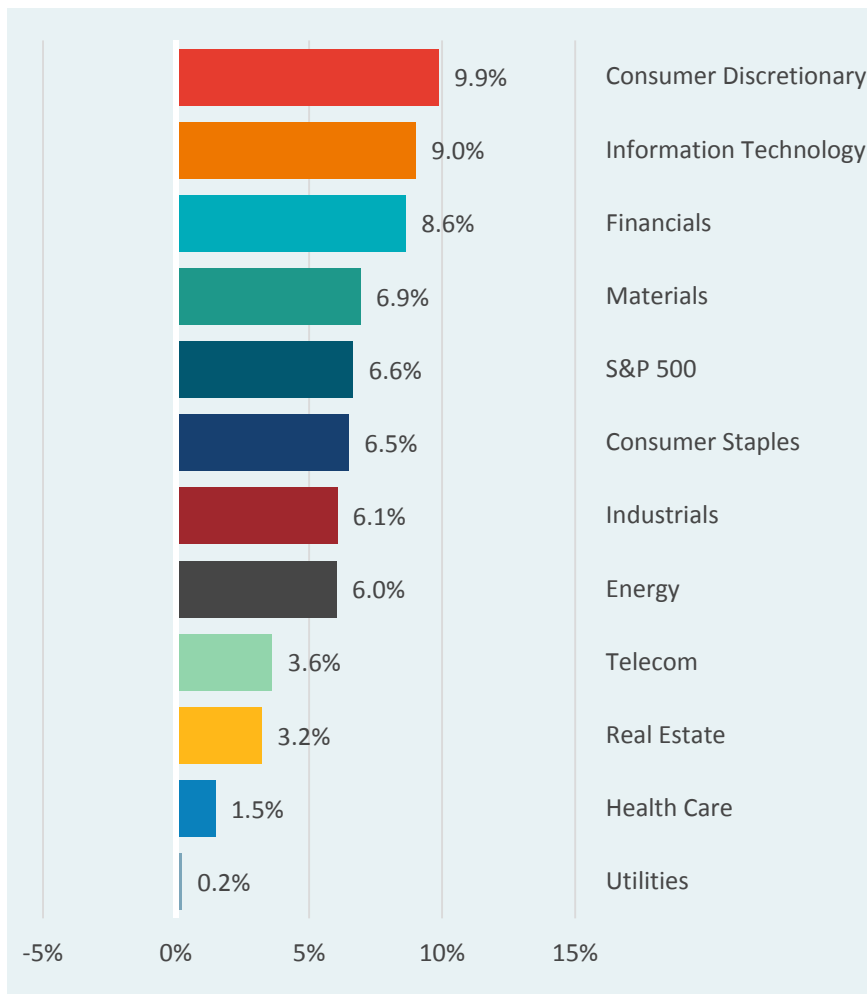


Source: Morningstar, as of 12/31/17



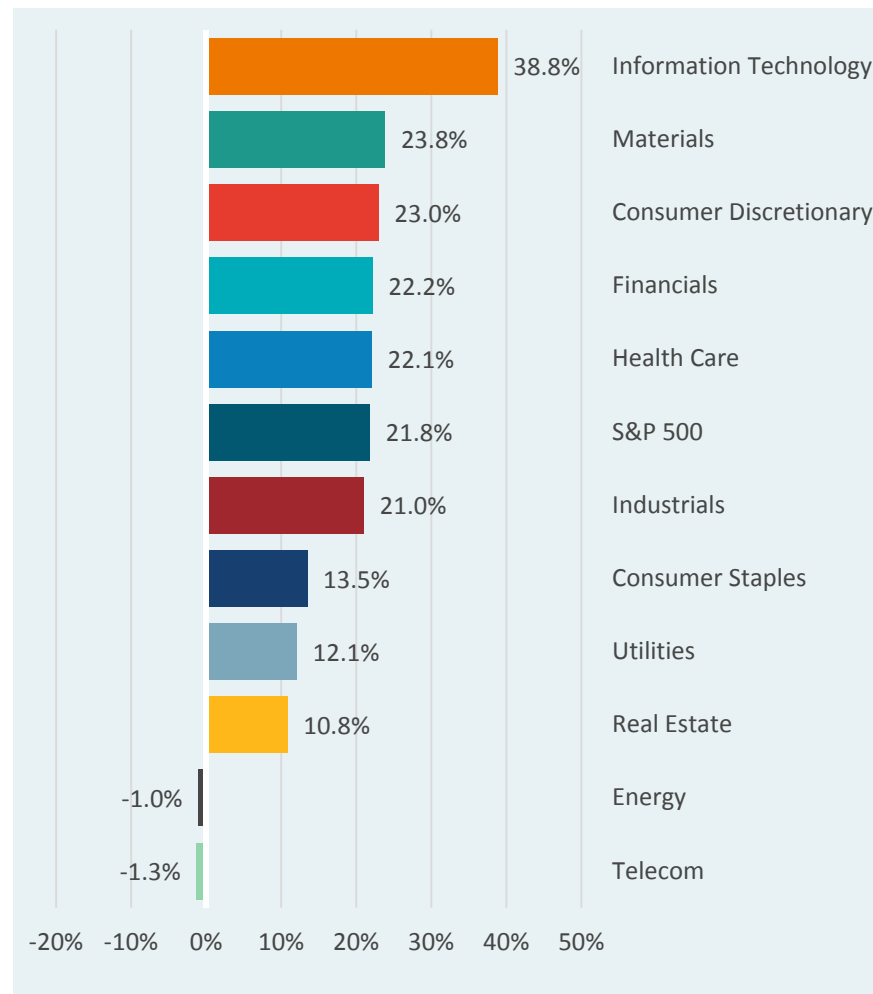
# S&P 500 sector returns

4<sup>TH</sup> QUARTER



Source: Morningstar, as of 12/31/17

ONE YEAR ENDING DECEMBER



Source: Morningstar, as of 12/31/17

# Detailed index returns

## DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Core Index</b>							
S&P 500	1.1	6.6	21.8	21.8	11.4	15.8	8.5
S&P 500 Equal Weighted	1.2	6.2	18.9	18.9	10.1	15.8	10.2
DJ Industrial Average	1.9	11.0	28.1	28.1	14.4	16.4	9.3
Russell Top 200	1.2	6.8	23.0	23.0	11.9	16.0	8.4
Russell 1000	1.1	6.6	21.7	21.7	11.2	15.7	8.6
Russell 2000	(0.4)	3.3	14.6	14.6	10.0	14.1	8.7
Russell 3000	1.0	6.3	21.1	21.1	11.1	15.6	8.6
Russell Mid Cap	0.9	6.1	18.5	18.5	9.6	15.0	9.1
<b>Style Index</b>							
Russell 1000 Growth	0.8	7.9	30.2	30.2	13.8	17.3	10.0
Russell 1000 Value	1.5	5.3	13.7	13.7	8.7	14.0	7.1
Russell 2000 Growth	0.1	4.6	22.2	22.2	10.3	15.2	9.2
Russell 2000 Value	(1.0)	2.0	7.8	7.8	9.5	13.0	8.2

## INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
MSCI ACWI	1.6	5.7	24.0	24.0	9.3	10.8	4.7
MSCI ACWI ex US	2.2	5.0	27.2	27.2	7.8	6.8	1.8
MSCI EAFE	1.6	4.2	25.0	25.0	7.8	7.9	1.9
MSCI EM	3.6	7.4	37.3	37.3	9.1	4.3	1.7
MSCI EAFE Small Cap	2.7	6.1	33.0	33.0	14.2	12.9	5.8
<b>Style Index</b>							
MSCI EAFE Growth	1.7	5.2	28.9	28.9	9.2	8.8	2.7
MSCI EAFE Value	1.5	3.2	21.4	21.4	6.4	6.9	1.1
<b>Regional Index</b>							
MSCI UK	5.0	5.7	22.3	22.3	4.1	5.2	1.5
MSCI Japan	0.7	8.5	24.0	24.0	11.6	11.2	3.2
MSCI Euro	(0.5)	0.4	26.5	26.5	7.6	7.9	(0.3)
MSCI EM Asia	2.8	8.4	42.8	42.8	11.0	7.9	3.6
MSCI EM Latin American	4.4	(2.3)	23.7	23.7	3.8	(3.2)	(1.7)

Source: Morningstar, as of 12/31/17

## FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
BBgBarc US Treasury US TIPS	0.9	1.3	3.0	3.0	2.1	0.1	3.5
BBgBarc US Treasury Bills	0.1	0.2	0.8	0.8	0.4	0.3	0.5
BBgBarc US Agg Bond	0.5	0.4	3.5	3.5	2.2	2.1	4.0
<b>Duration</b>							
BBgBarc US Treasury 1-3 Yr	0.0	(0.3)	0.4	0.4	0.6	0.6	1.5
BBgBarc US Treasury Long	1.7	2.4	8.5	8.5	2.8	3.5	6.6
BBgBarc US Treasury	0.3	0.1	2.3	2.3	1.4	1.3	3.3
<b>Issuer</b>							
BBgBarc US MBS	0.3	0.2	2.5	2.5	1.9	2.0	3.8
BBgBarc US Corp. High Yield	0.3	0.5	7.5	7.5	6.4	5.8	8.0
BBgBarc US Agency Interm	0.0	(0.3)	1.1	1.1	1.1	1.0	2.5
BBgBarc US Credit	0.8	1.0	6.2	6.2	3.6	3.2	5.4

## OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Index</b>							
Bloomberg Commodity	3.0	4.7	1.7	1.7	(5.0)	(8.5)	(6.8)
Wilshire US REIT	(0.1)	1.7	4.2	4.2	5.2	9.3	7.3
CS Leveraged Loans	0.4	1.2	4.2	4.2	4.5	4.3	4.6
<b>Regional Index</b>							
JPM EMBI Global Div	0.7	1.2	10.3	10.3	7.1	4.6	7.3
JPM GBI-EM Global Div	2.0	0.8	15.2	15.2	2.5	(1.5)	3.6
<b>Hedge Funds</b>							
HFRI Composite	0.9	2.5	8.5	8.5	4.2	4.9	3.2
HFRI FOF Composite	0.9	2.0	7.7	7.7	2.6	4.0	1.1
<b>Currency (Spot)</b>							
Euro	0.7	1.6	13.8	13.8	(0.3)	(1.9)	(1.9)
Pound	(0.1)	0.8	9.5	9.5	(4.6)	(3.6)	(3.8)
Yen	(0.7)	(0.1)	3.5	3.5	2.1	(5.2)	(0.1)

# Definitions

**Bloomberg US Weekly Consumer Comfort Index** - tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. ([www.lanqerresearch.com](http://www.lanqerresearch.com))

**University of Michigan Consumer Sentiment Index** - A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic conditions conducted by the University of Michigan. For the preliminary release approximately three hundred consumers are surveyed while five hundred are interviewed for the final figure. The level of consumer sentiment is related to the strength of consumer spending. ([www.Bloombera.com](http://www.Bloombera.com))

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

**NFIB Small Business Outlook** - Small Business Economic Trends (SBET) is a monthly assessment of the U.S. small-business economy and its near-term prospects. Its data are collected through mail surveys to random samples of the National Federal of Independent Business (NFIB) membership. The survey contains three broad question types: recent performance, near-term forecasts, and demographics. The topics addressed include: outlook, sales, earnings, employment, employee compensation, investment, inventories, credit conditions, and single most important problem. (<http://www.nfib-sbet.org/about/>)

# Notices & disclosures

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# San Luis Obispo County Pension Trust

Investment Performance Review

Period Ending: December 31, 2017



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

SEATTLE 206-622-3700

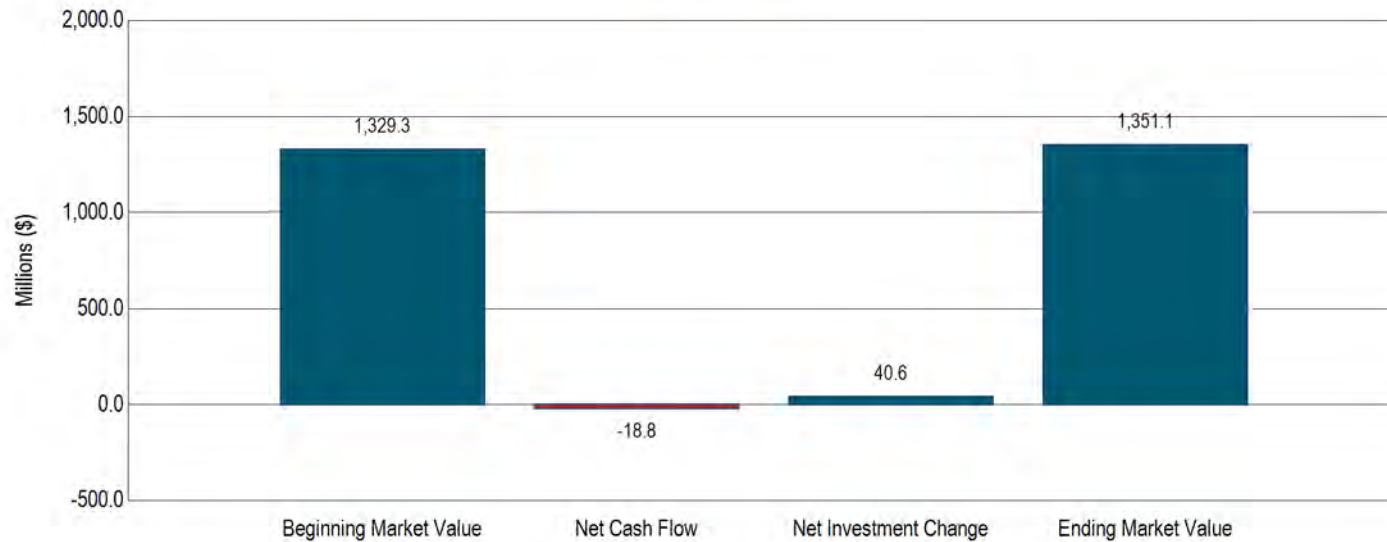
LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

Portfolio Reconciliation

	Last Three Months	Year-To-Date	One Year
Beginning Market Value	\$1,329,260,323	\$1,196,774,651	\$1,196,774,651
Net Cash Flow	-\$18,755,055	-\$24,823,504	-\$24,823,504
Net Investment Change	\$40,588,302	\$179,142,422	\$179,142,422
Ending Market Value	\$1,351,093,570	\$1,351,093,570	\$1,351,093,570

Change in Market Value  
Last Three Months



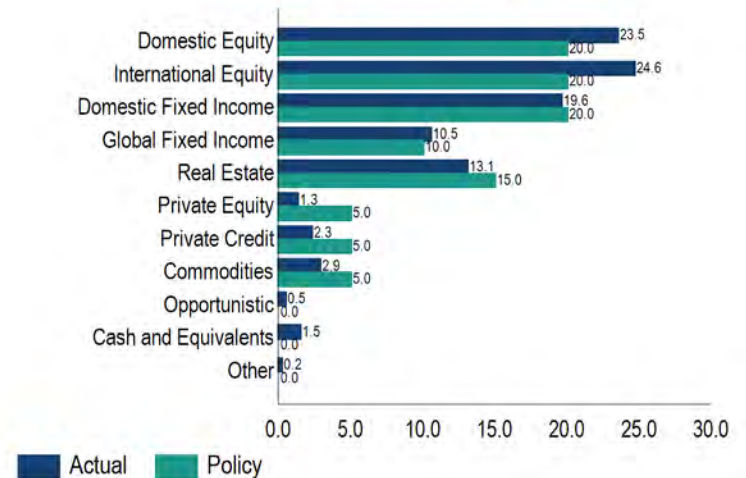
Contributions and withdrawals may include intra-account transfers between managers/funds. Beginning Market Value reflects downward revision in Pathway Private Equity in September.

# Total Fund Executive Summary (Gross of Fees)

Period Ending: December 31, 2017

	QTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
<b>Total Fund</b>	<b>3.1</b>	<b>82</b>	<b>15.5</b>	<b>47</b>	<b>6.9</b>	<b>75</b>	<b>7.9</b>	<b>78</b>
<i>Policy Index</i>	3.4	69	13.4	86	6.7	77	7.7	81
<b>Total Fund ex Overlay</b>	<b>3.2</b>	<b>82</b>	<b>15.4</b>	<b>50</b>	<b>6.8</b>	<b>76</b>	<b>7.9</b>	<b>78</b>
<i>Policy Index</i>	3.4	69	13.4	86	6.7	77	7.7	81
<b>Total Domestic Equity</b>	<b>7.4</b>	<b>3</b>	<b>25.1</b>	<b>4</b>	<b>12.7</b>	<b>2</b>	<b>16.0</b>	<b>12</b>
<i>Russell 3000</i>	6.3	38	21.1	37	11.1	36	15.6	34
<b>Total International Equity</b>	<b>3.3</b>	<b>94</b>	<b>26.6</b>	<b>81</b>	<b>7.4</b>	<b>90</b>	<b>8.3</b>	<b>45</b>
<i>MSCI ACWI ex USA Gross</i>	5.1	43	27.8	67	8.3	69	7.3	73
<b>Total Domestic Fixed Income</b>	<b>0.8</b>	<b>22</b>	<b>4.3</b>	<b>50</b>	<b>3.3</b>	<b>34</b>	<b>2.3</b>	<b>60</b>
<i>BBgBarc US Aggregate TR</i>	0.4	59	3.5	62	2.2	63	2.1	63
<b>Total Global Fixed</b>	<b>0.1</b>	<b>71</b>	<b>14.4</b>	<b>29</b>	<b>2.2</b>	<b>93</b>	<b>0.1</b>	<b>90</b>
<i>Citi World Govt Bond Index</i>	1.0	35	7.5	86	1.7	96	0.1	90
<b>Total Real Estate</b>	<b>1.9</b>	<b>--</b>	<b>7.8</b>	<b>--</b>	<b>11.1</b>	<b>--</b>	<b>11.3</b>	<b>--</b>
<i>NCREIF Property Index</i>	1.8	--	7.0	--	9.4	--	10.2	--
<b>Total Commodities</b>	<b>6.6</b>	<b>--</b>	<b>6.2</b>	<b>--</b>	<b>-3.7</b>	<b>--</b>	<b>-7.3</b>	<b>--</b>
<i>Bloomberg Commodity Index TR USD</i>	4.7	--	1.7	--	-5.0	--	-8.5	--
<b>Total Private Equity</b>	<b>3.5</b>	<b>--</b>	<b>19.9</b>	<b>--</b>	<b>18.3</b>	<b>--</b>	<b>18.8</b>	<b>--</b>
<i>Russell 3000 + 3%</i>	7.1	--	24.7	--	14.4	--	19.0	--
<b>Total Private Credit</b>	<b>1.5</b>	<b>--</b>	<b>0.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>BBgBarc High Yield +2% (Lagged)</i>	2.5	--	11.0	--	--	--	--	--
<b>Total Cash</b>	<b>0.4</b>	<b>--</b>	<b>1.0</b>	<b>--</b>	<b>0.6</b>	<b>--</b>	<b>0.5</b>	<b>--</b>
<i>91 Day T-Bills</i>	0.3	--	0.9	--	0.4	--	0.3	--
<b>Total Opportunistic</b>	<b>-0.7</b>	<b>--</b>	<b>6.5</b>	<b>--</b>	<b>5.1</b>	<b>--</b>	<b>9.6</b>	<b>--</b>
<i>Russell 3000 + 3%</i>	7.1	--	24.7	--	14.4	--	19.0	--

Actual vs Target Allocation (%)



Rolling Annualized Excess Performance and Tracking Error  
Total Fund vs. Policy Index



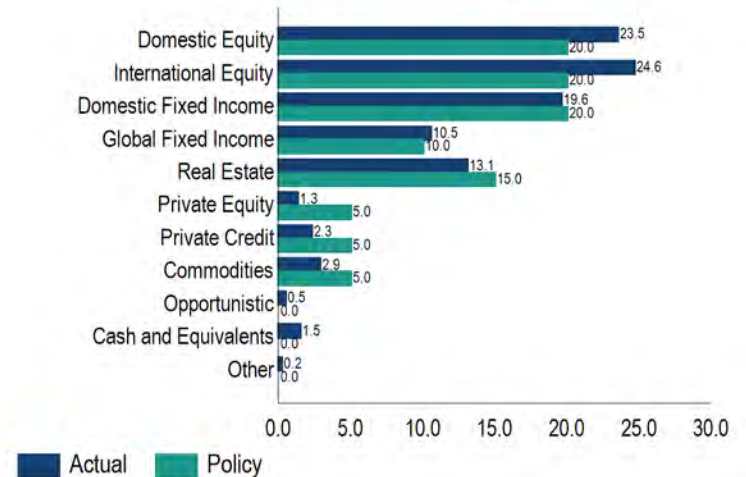
New Policy Index as of 10/1/2016: 20% Russell 3000, 20% MSCI ACWI ex. US, 30% BBgBarc Aggregate, 15% NCREIF Property, 5% Bloomberg Commodity Index, 5% Russell 3000 +3%, 5% BBgBarc High Yield +2% (Lagged). Private Equity, Private Credit and Opportunistic composite returns are lagged by one quarter. Stone Harbor funded 7/9/13. Gresham TAP funded 8/30/13. Pacific Asset Corporate Loan funded 9/1/2014. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. All returns are (G) Gross of fees. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

# Total Fund Executive Summary (Net of Fees)

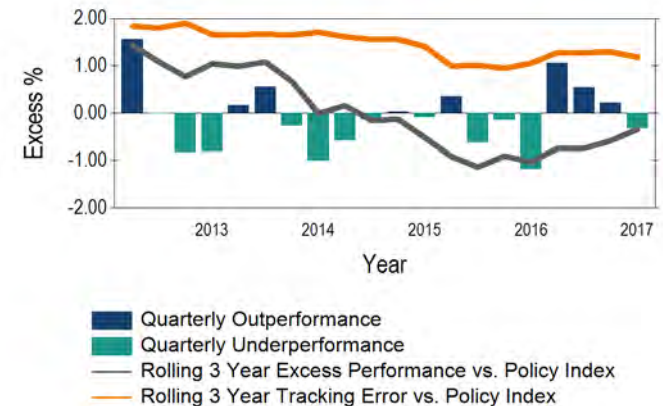
Period Ending: December 31, 2017

	QTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
<b>Total Fund</b>	<b>3.0</b>	<b>86</b>	<b>15.0</b>	<b>55</b>	<b>6.4</b>	<b>88</b>	<b>7.4</b>	<b>88</b>
<i>Policy Index</i>	3.4	69	13.4	86	6.7	77	7.7	81
<b>Total Fund ex Overlay</b>	<b>3.1</b>	<b>86</b>	<b>14.9</b>	<b>58</b>	<b>6.3</b>	<b>89</b>	<b>7.3</b>	<b>88</b>
<i>Policy Index</i>	3.4	69	13.4	86	6.7	77	7.7	81
<b>Total Domestic Equity</b>	<b>7.3</b>	<b>4</b>	<b>24.5</b>	<b>4</b>	<b>12.3</b>	<b>4</b>	<b>15.5</b>	<b>39</b>
<i>Russell 3000</i>	6.3	38	21.1	37	11.1	36	15.6	34
<b>Total International Equity</b>	<b>3.2</b>	<b>97</b>	<b>25.8</b>	<b>88</b>	<b>6.7</b>	<b>96</b>	<b>7.6</b>	<b>64</b>
<i>MSCI ACWI ex USA Gross</i>	5.1	43	27.8	67	8.3	69	7.3	73
<b>Total Domestic Fixed Income</b>	<b>0.7</b>	<b>31</b>	<b>3.9</b>	<b>57</b>	<b>3.0</b>	<b>41</b>	<b>2.1</b>	<b>63</b>
<i>BBgBarc US Aggregate TR</i>	0.4	59	3.5	62	2.2	63	2.1	63
<b>Total Global Fixed</b>	<b>0.0</b>	<b>77</b>	<b>13.7</b>	<b>37</b>	<b>1.6</b>	<b>97</b>	<b>-0.5</b>	<b>96</b>
<i>Citi World Govt Bond Index</i>	1.0	35	7.5	86	1.7	96	0.1	90
<b>Total Real Estate</b>	<b>1.9</b>	<b>--</b>	<b>7.8</b>	<b>--</b>	<b>10.4</b>	<b>--</b>	<b>10.6</b>	<b>--</b>
<i>NCREIF Property Index</i>	1.8	--	7.0	--	9.4	--	10.2	--
<b>Total Commodities</b>	<b>6.6</b>	<b>--</b>	<b>6.2</b>	<b>--</b>	<b>-4.1</b>	<b>--</b>	<b>-7.8</b>	<b>--</b>
<i>Bloomberg Commodity Index TR USD</i>	4.7	--	1.7	--	-5.0	--	-8.5	--
<b>Total Private Equity</b>	<b>3.5</b>	<b>--</b>	<b>19.9</b>	<b>--</b>	<b>17.0</b>	<b>--</b>	<b>16.0</b>	<b>--</b>
<i>Russell 3000 + 3%</i>	7.1	--	24.7	--	14.4	--	19.0	--
<b>Total Private Credit</b>	<b>1.5</b>	<b>--</b>	<b>0.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>BBgBarc High Yield +2% (Lagged)</i>	2.5	--	11.0	--	--	--	--	--
<b>Total Cash</b>	<b>0.4</b>	<b>--</b>	<b>1.0</b>	<b>--</b>	<b>0.6</b>	<b>--</b>	<b>0.5</b>	<b>--</b>
<i>91 Day T-Bills</i>	0.3	--	0.9	--	0.4	--	0.3	--
<b>Total Opportunistic</b>	<b>-0.7</b>	<b>--</b>	<b>6.5</b>	<b>--</b>	<b>4.6</b>	<b>--</b>	<b>9.3</b>	<b>--</b>
<i>Russell 3000 + 3%</i>	7.1	--	24.7	--	14.4	--	19.0	--

Actual vs Target Allocation (%)



Rolling Annualized Excess Performance and Tracking Error  
Total Fund vs. Policy Index

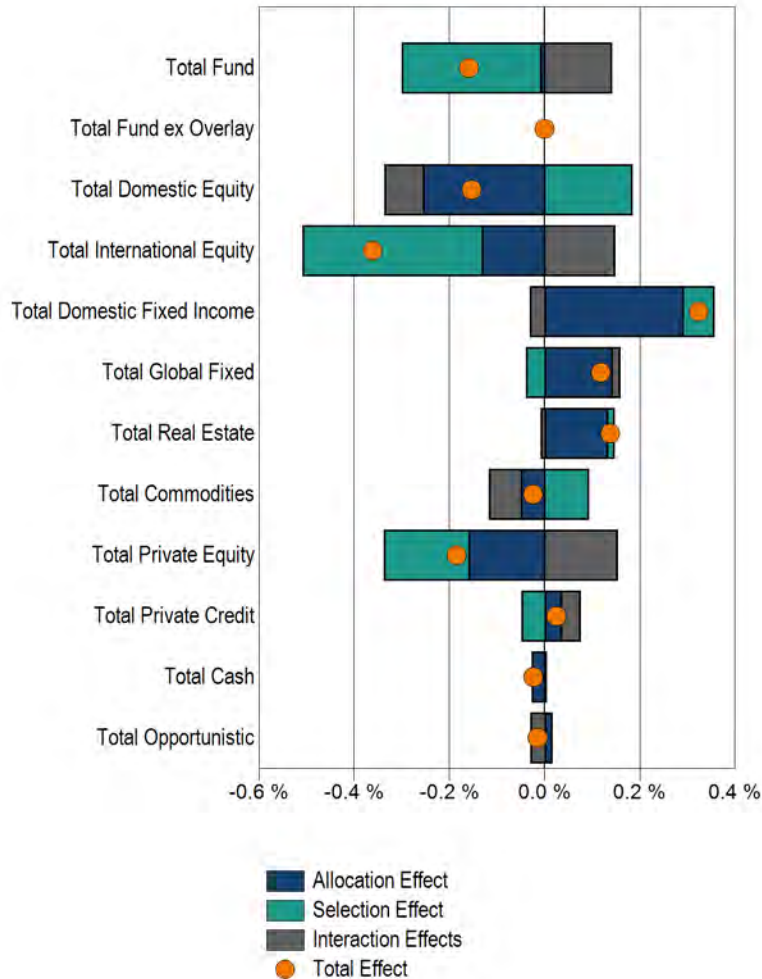


New Policy Index as of 10/1/2016: 20% Russell 3000, 20% MSCI ACWI ex. US, 30% BBgBarc Aggregate, 15% NCREIF Property, 5% Bloomberg Commodity Index, 5% Russell 3000 +3%, 5% BBgBarc High Yield +2% (Lagged). Private Equity, Private Credit and Opportunistic composite returns are lagged by one quarter. Stone Harbor funded 7/9/13. Gresham TAP funded 8/30/13. Pacific Asset Corporate Loan funded 9/1/2014. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. All returns are (N) Net of fees. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.



Performance Attribution

Attribution Effects  
3 Months Ending December 31, 2017



	Last 3 Mo.	YTD
Wtd. Actual Return	3.05%	14.91%
Wtd. Index Return *	3.37%	13.40%
<b>Excess Return</b>	<b>-0.31%</b>	<b>1.50%</b>
Selection Effect	-0.29%	1.04%
Allocation Effect	-0.01%	0.10%
Interaction Effect	0.14%	-0.39%

\*Calculated from policy benchmark returns and policy weightings of each component of the policy benchmark.

Attribution Summary  
3 Months Ending December 31, 2017

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Fund ex Overlay	3.06%	3.37%	-0.31%	--	--	--	--
Total Domestic Equity	7.26%	6.34%	0.92%	0.18%	-0.26%	-0.08%	-0.15%
Total International Equity	3.18%	5.06%	-1.89%	-0.37%	-0.13%	0.15%	-0.36%
Total Domestic Fixed Income	0.70%	0.39%	0.31%	0.06%	0.29%	-0.03%	0.32%
Total Global Fixed	-0.05%	0.39%	-0.44%	-0.04%	0.14%	0.01%	0.12%
Total Real Estate	1.89%	1.80%	0.09%	0.01%	0.13%	-0.01%	0.14%
Total Commodities	6.55%	4.71%	1.85%	0.09%	-0.05%	-0.07%	-0.02%
Total Private Equity	3.51%	7.11%	-3.60%	-0.18%	-0.16%	0.15%	-0.19%
Total Private Credit	1.53%	2.48%	-0.95%	-0.05%	0.04%	0.04%	0.02%
Total Cash	0.37%	0.30%	0.07%	0.00%	-0.03%	0.00%	-0.02%
Total Opportunistic	-0.65%	7.11%	-7.76%	0.00%	0.01%	-0.03%	-0.01%
<b>Total</b>	<b>3.05%</b>	<b>3.37%</b>	<b>-0.31%</b>	<b>-0.29%</b>	<b>-0.01%</b>	<b>0.14%</b>	<b>-0.16%</b>

Weighted returns shown in attribution analysis may differ from actual returns. Wtd. Actual Return is the sum of the products of each group's return and its respective weight at the beginning of the period.

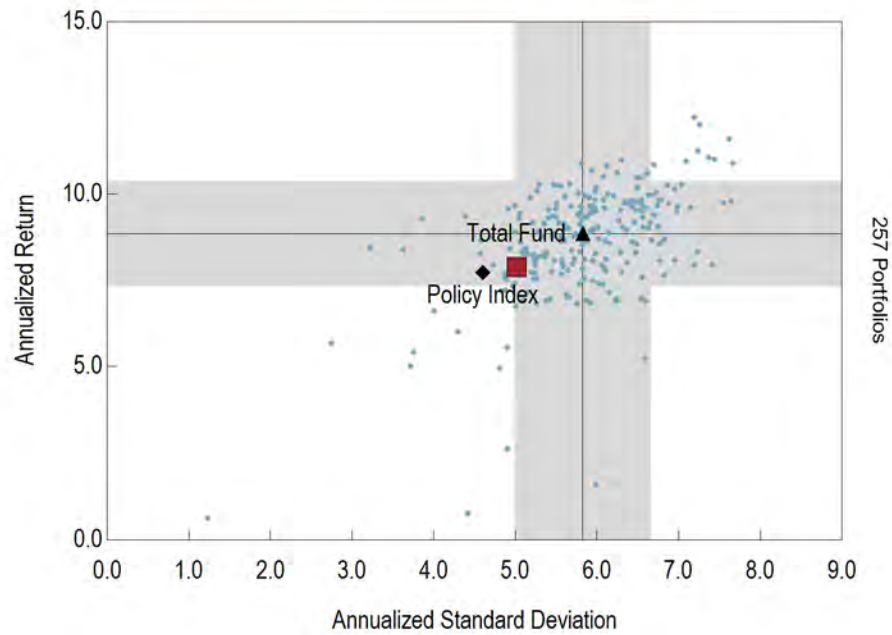


Total Fund  
Risk Analysis - 5 Years (Gross of Fees)

Period Ending: December 31, 2017

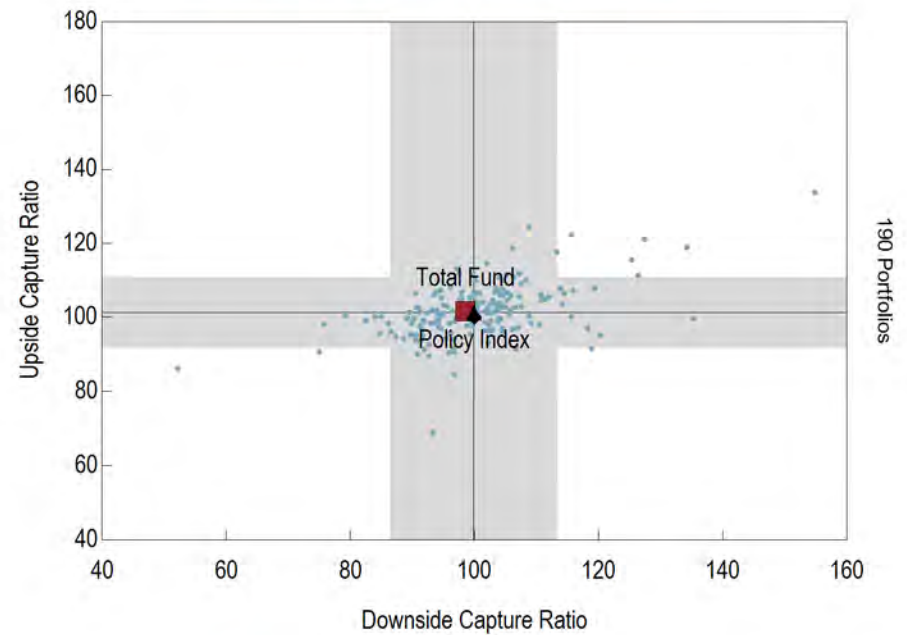
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Total Fund	7.88%	0.15%	5.01%	-0.23%	1.05	1.37%	0.93	1.52	0.11	101.66%	98.56%

Annualized Return vs. Annualized Standard Deviation



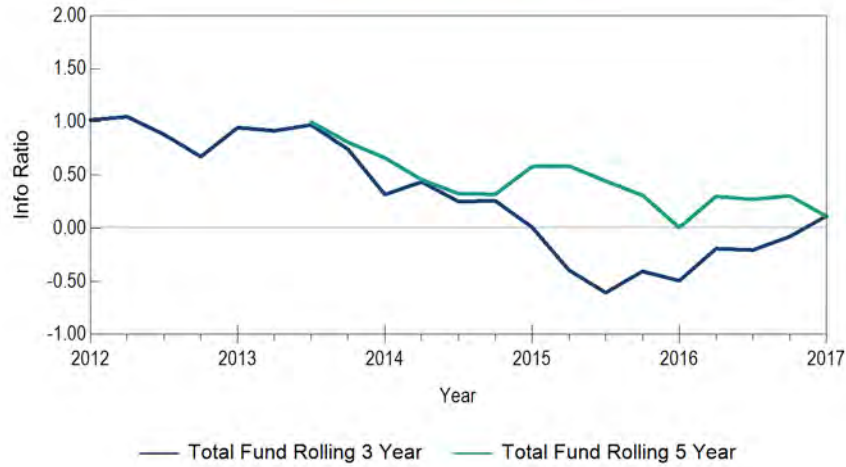
- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB Gross

Upside Capture Ratio vs. Downside Capture Ratio

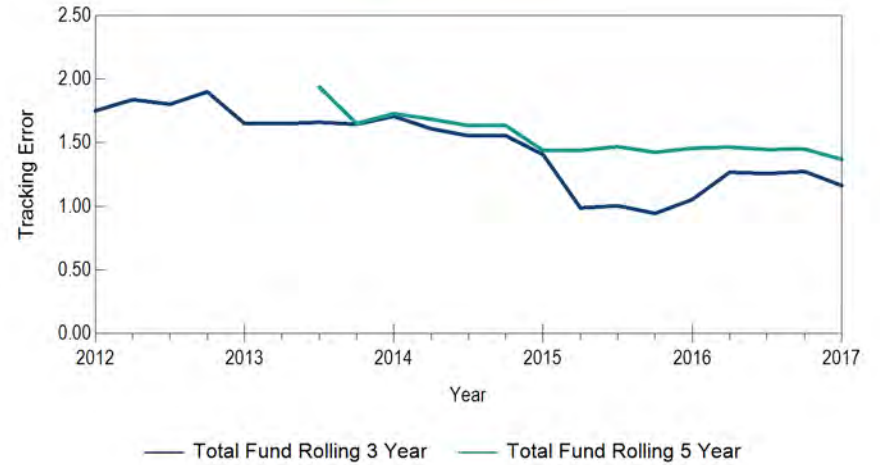


- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB Gross

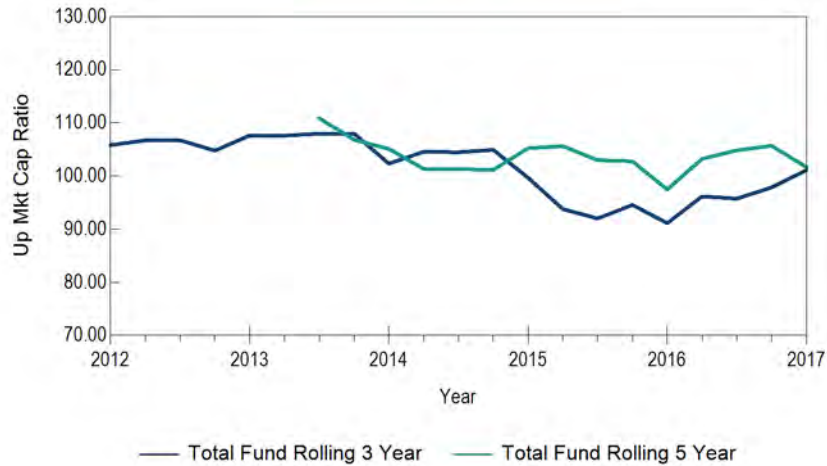
Rolling Information Ratio



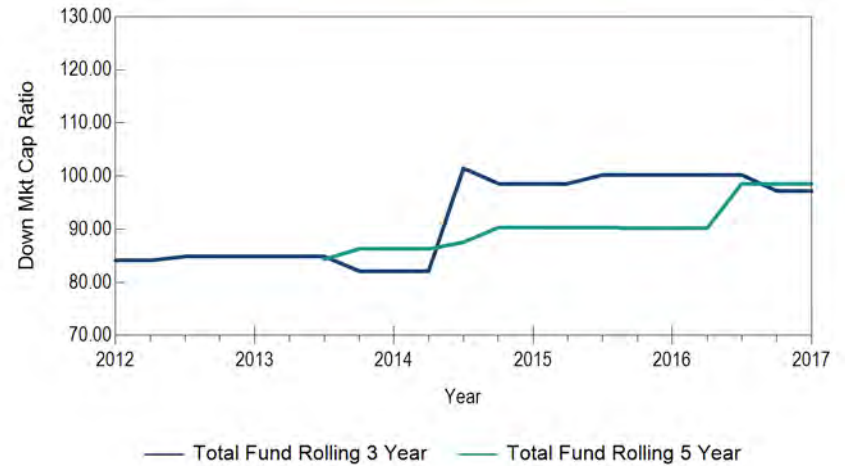
Rolling Tracking Error



Rolling Up Market Capture Ratio (%)



Rolling Down Market Capture Ratio (%)



# Total Fund Performance Summary (Gross of Fees)

Period Ending: December 31, 2017

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013	Return	Since
<b>Total Fund</b>	<b>1,351,093,570</b>	<b>100.0</b>	<b>3.1</b>	<b>15.5</b>	<b>6.9</b>	<b>7.9</b>	<b>--</b>	<b>15.5</b>	<b>6.6</b>	<b>-0.8</b>	<b>5.1</b>	<b>13.8</b>	<b>--</b>	
<i>InvestorForce Public DB Gross Rank</i>			82	47	75	78	--	47	84	74	66	71	--	
Total Fund ex Overlay	1,348,263,839	99.8	3.2	15.4	6.8	7.9	5.6	15.4	6.6	-0.8	5.2	13.8	--	
<i>Policy Index</i>			3.4	13.4	6.7	7.7	5.2	13.4	7.8	-0.5	5.2	13.4	--	
<i>InvestorForce Public DB Gross Rank</i>			82	50	76	78	69	50	83	75	64	72	--	
<b>Total Domestic Equity</b>	<b>317,439,236</b>	<b>23.5</b>	<b>7.4</b>	<b>25.1</b>	<b>12.7</b>	<b>16.0</b>	<b>9.9</b>	<b>25.1</b>	<b>13.0</b>	<b>1.2</b>	<b>11.0</b>	<b>32.2</b>	<b>--</b>	
<i>Russell 3000</i>			6.3	21.1	11.1	15.6	8.6	21.1	12.7	0.5	12.6	33.6	--	
<i>InvestorForce Public DB US Eq Gross Rank</i>			3	4	2	12	2	4	48	18	60	91	--	
SSGA S&P 500 Flag.	12,484,961	0.9	6.7	21.9	11.5	15.9	--	21.9	12.0	1.5	13.7	32.4	13.3	Feb-11
<i>S&amp;P 500</i>			6.6	21.8	11.4	15.8	--	21.8	12.0	1.4	13.7	32.4	13.3	Feb-11
<i>eV US Large Cap Core Equity Gross Rank</i>			57	52	33	43	--	52	31	40	42	58	47	Feb-11
PIMCO RAE Fundamental PLUS Instl	59,414,678	4.4	7.4	17.0	9.7	15.1	8.6	17.0	15.9	-2.7	12.7	36.0	8.4	Nov-07
<i>S&amp;P 500</i>			6.6	21.8	11.4	15.8	8.5	21.8	12.0	1.4	13.7	32.4	8.3	Nov-07
<i>eV US Large Cap Core Equity Gross Rank</i>			37	89	77	62	61	89	6	86	58	22	67	Nov-07
Loomis Sayles Large Cap Growth	96,816,677	7.2	6.5	34.1	--	--	--	34.1	--	--	--	--	34.1	Dec-16
<i>Russell 1000 Growth</i>			7.9	30.2	--	--	--	30.2	--	--	--	--	30.2	Dec-16
<i>eV US Large Cap Growth Equity Gross Rank</i>			63	16	--	--	--	16	--	--	--	--	16	Dec-16
Boston Partners Large Cap Value	86,347,222	6.4	7.0	--	--	--	--	--	--	--	--	--	19.0	Jan-17
<i>Russell 1000 Value</i>			5.3	--	--	--	--	--	--	--	--	--	12.9	Jan-17
<i>eV US Large Cap Value Equity Gross Rank</i>			34	--	--	--	--	--	--	--	--	--	3	Jan-17
Atlanta Capital Mgmt	62,375,698	4.6	9.5	26.6	16.3	18.1	--	26.6	12.6	10.4	5.8	37.8	19.4	Aug-10
<i>Russell 2500</i>			5.2	16.8	10.1	14.3	--	16.8	17.6	-2.9	7.1	36.8	15.5	Aug-10
<i>eV US Small-Mid Cap Equity Gross Rank</i>			3	15	1	4	--	15	62	1	56	52	1	Aug-10
<b>Total International Equity</b>	<b>332,949,417</b>	<b>24.6</b>	<b>3.3</b>	<b>26.6</b>	<b>7.4</b>	<b>8.3</b>	<b>3.9</b>	<b>26.6</b>	<b>2.2</b>	<b>-4.3</b>	<b>2.1</b>	<b>17.9</b>	<b>--</b>	
<i>MSCI ACWI ex USA Gross</i>			5.1	27.8	8.3	7.3	2.3	27.8	5.0	-5.3	-3.4	15.8	--	
<i>InvestorForce Public DB ex-US Eq Gross Rank</i>			94	81	90	45	19	81	82	68	1	50	--	
Dodge & Cox Intl Stock	171,958,176	12.7	1.4	24.7	6.6	9.2	3.7	24.7	9.0	-10.8	0.7	27.1	3.6	Dec-07
<i>MSCI EAFE Gross</i>			4.3	25.6	8.3	8.4	2.4	25.6	1.5	-0.4	-4.5	23.3	2.2	Dec-07
<i>eV All EAFE Equity Gross Rank</i>			99	74	93	57	51	74	3	99	13	32	57	Dec-07
WCM International Growth	160,991,241	11.9	5.5	--	--	--	--	--	--	--	--	--	23.9	Feb-17
<i>MSCI ACWI ex USA Gross</i>			5.1	--	--	--	--	--	--	--	--	--	21.4	Feb-17
<i>eV ACWI ex-US All Cap Growth Eq Gross Rank</i>			49	--	--	--	--	--	--	--	--	--	43	Feb-17

Since Inception ranking is from the beginning of the first complete month of performance. Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Direct Real Estate is lagged one quarter. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017.

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: December 31, 2017

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013	Return	Since
<b>Total Domestic Fixed Income</b>	<b>264,752,519</b>	<b>19.6</b>	<b>0.8</b>	<b>4.3</b>	<b>3.3</b>	<b>2.3</b>	<b>3.7</b>	<b>4.3</b>	<b>4.5</b>	<b>1.1</b>	<b>4.7</b>	<b>-2.7</b>	<b>--</b>	
BBgBarc US Aggregate TR			0.4	3.5	2.2	2.1	4.0	3.5	2.6	0.6	6.0	-2.0	--	
InvestorForce Public DB US Fix Inc Gross Rank			22	50	34	60	65	50	49	17	68	95	--	
BlackRock Core Bond	95,690,196	7.1	0.5	--	--	--	--	--	--	--	--	--	3.0	Jan-17
BBgBarc US Aggregate TR			0.4	--	--	--	--	--	--	--	--	--	3.3	Jan-17
eV US Core Fixed Inc Gross Rank			42	--	--	--	--	--	--	--	--	--	57	Jan-17
Dodge & Cox Income Fund	100,300,932	7.4	0.6	--	--	--	--	--	--	--	--	--	4.4	Jan-17
BBgBarc US Aggregate TR			0.4	--	--	--	--	--	--	--	--	--	3.3	Jan-17
eV US Core Fixed Inc Gross Rank			32	--	--	--	--	--	--	--	--	--	3	Jan-17
Pacific Asset Corporate Loan	68,761,046	5.1	1.4	4.9	5.5	--	--	4.9	9.2	2.5	--	--	4.5	Sep-14
S&P/LSTA Leveraged Loan Index			1.1	4.1	4.4	--	--	4.1	10.2	-0.7	--	--	3.6	Sep-14
eV Float-Rate Bank Loan Gross Rank			18	26	19	--	--	26	51	9	--	--	26	Sep-14
SSGA TIPS	345	0.0	0.7	2.5	1.9	0.0	--	2.5	4.7	-1.5	3.6	-8.6	1.9	Jul-11
BBgBarc US TIPS TR			1.3	3.0	2.1	0.1	--	3.0	4.7	-1.4	3.6	-8.6	2.0	Jul-11
eV US TIPS / Inflation Fixed Inc Gross Rank			78	79	84	91	--	79	51	64	44	77	28	Jul-11
<b>Total Global Fixed</b>	<b>142,353,544</b>	<b>10.5</b>	<b>0.1</b>	<b>14.4</b>	<b>2.2</b>	<b>0.1</b>	<b>3.9</b>	<b>14.4</b>	<b>5.8</b>	<b>-11.8</b>	<b>-2.2</b>	<b>-3.8</b>	<b>--</b>	
Citi World Govt Bond Index			1.0	7.5	1.7	0.1	2.7	7.5	1.6	-3.6	-0.5	-4.0	--	
InvestorForce Public DB Gbl Fix Inc Gross Rank			71	29	93	90	99	29	67	95	93	59	--	
Brandywine Global Fixed Income	71,619,914	5.3	-0.3	12.5	1.4	1.1	4.4	12.5	2.2	-9.3	2.9	-1.6	4.4	Nov-07
Citi WGBI ex US			1.6	10.3	2.0	-0.3	2.4	10.3	1.8	-5.5	-2.7	-4.6	2.4	Nov-07
eV Global Fixed Inc Unhedged Gross Rank			95	9	87	71	38	9	71	96	43	59	38	Nov-07
Stone Harbor Local Markets Ins	70,733,630	5.2	0.5	16.4	3.1	--	--	16.4	9.9	-14.4	-7.7	--	-0.5	Jul-13
JPM GBI-EM Global Diversified TR USD			0.8	15.2	2.5	--	--	15.2	9.9	-14.9	-5.7	--	0.1	Jul-13
eV All Emg Mkts Fixed Inc Gross Rank			83	14	84	--	--	14	67	79	98	--	99	Jul-13
<b>Total Real Estate</b>	<b>176,449,539</b>	<b>13.1</b>	<b>1.9</b>	<b>7.8</b>	<b>11.1</b>	<b>11.3</b>	<b>4.9</b>	<b>7.8</b>	<b>7.8</b>	<b>18.0</b>	<b>10.4</b>	<b>12.9</b>	<b>--</b>	
NCREIF Property Index			1.8	7.0	9.4	10.2	6.1	7.0	8.0	13.3	11.8	11.0	--	
JP Morgan Core Real Estate	151,102,074	11.2	1.5	6.1	9.9	11.3	--	6.1	8.4	15.2	11.2	15.9	5.5	Mar-08
NCREIF-ODCE			2.1	7.6	10.4	11.5	--	7.6	8.8	15.0	12.5	13.9	5.1	Mar-08
NCREIF Property Index			1.8	7.0	9.4	10.2	--	7.0	8.0	13.3	11.8	11.0	6.2	Mar-08
ARA American Strategic Value Realty	11,657,191	0.9	2.1	7.4	--	--	--	7.4	--	--	--	--	8.7	Jun-16
NCREIF-ODCE			2.1	7.6	--	--	--	7.6	--	--	--	--	8.0	Jun-16
NCREIF Property Index			1.8	7.0	--	--	--	7.0	--	--	--	--	7.0	Jun-16

Since Inception ranking is from the beginning of the first complete month of performance. Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Direct Real Estate is lagged one quarter. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017.

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: December 31, 2017

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013	Return	Since
Direct Real Estate	13,690,274	1.0	5.4	20.6	16.1	11.8	6.5	20.6	5.5	22.9	6.1	5.2	--	
<i>NCREIF-ODCE</i>			2.1	7.6	10.4	11.5	5.0	7.6	8.8	15.0	12.5	13.9	--	
<i>NCREIF Property Index</i>			1.8	7.0	9.4	10.2	6.1	7.0	8.0	13.3	11.8	11.0	--	
<b>Total Commodities</b>	<b>38,772,152</b>	<b>2.9</b>	<b>6.6</b>	<b>6.2</b>	<b>-3.7</b>	<b>-7.3</b>	<b>--</b>	<b>6.2</b>	<b>12.6</b>	<b>-25.2</b>	<b>-16.0</b>	<b>-9.1</b>	<b>--</b>	
<i>Bloomberg Commodity Index TR USD</i>			4.7	1.7	-5.0	-8.5	--	1.7	11.8	-24.7	-17.0	-9.5	--	
Gresham MTAP Commodity Builder	38,772,152	2.9	6.6	6.2	-3.7	--	--	6.2	12.6	-25.2	-16.0	--	-7.1	Aug-13
<i>Bloomberg Commodity Index TR USD</i>			4.7	1.7	-5.0	--	--	1.7	11.8	-24.7	-17.0	--	-8.4	Aug-13
<b>Total Cash</b>	<b>20,219,515</b>	<b>1.5</b>	<b>0.4</b>	<b>1.0</b>	<b>0.6</b>	<b>0.5</b>	<b>0.8</b>	<b>1.0</b>	<b>0.5</b>	<b>0.4</b>	<b>0.3</b>	<b>0.3</b>	<b>--</b>	
<i>91 Day T-Bills</i>			0.3	0.9	0.4	0.3	0.3	0.9	0.3	0.0	0.0	0.0	--	
Cash Account	20,219,515	1.5	0.4	1.0	0.6	0.5	0.8	1.0	0.5	0.4	0.3	0.3	--	
<i>91 Day T-Bills</i>			0.3	0.9	0.4	0.3	0.3	0.9	0.3	0.0	0.0	0.0	--	

Since Inception ranking is from the beginning of the first complete month of performance. Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Direct Real Estate is lagged one quarter. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: December 31, 2017

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total Fund</b>	<b>1,351,093,570</b>	<b>100.0</b>	<b>3.0</b>	<b>15.0</b>	<b>6.4</b>	<b>7.4</b>	<b>--</b>	<b>15.0</b>	<b>6.0</b>	<b>-1.3</b>	<b>4.6</b>	<b>13.3</b>
Total Fund ex Overlay	1,348,263,839	99.8	3.1	14.9	6.3	7.3	--	14.9	6.1	-1.3	4.7	13.2
Policy Index			3.4	13.4	6.7	7.7	--	13.4	7.8	-0.5	5.2	13.4
<b>Total Domestic Equity</b>	<b>317,439,236</b>	<b>23.5</b>	<b>7.3</b>	<b>24.5</b>	<b>12.3</b>	<b>15.5</b>	<b>--</b>	<b>24.5</b>	<b>12.7</b>	<b>0.8</b>	<b>10.5</b>	<b>31.6</b>
Russell 3000			6.3	21.1	11.1	15.6	--	21.1	12.7	0.5	12.6	33.6
SSGA S&P 500 Flag.	12,484,961	0.9	6.6	21.8	11.4	15.8	--	21.8	12.0	1.4	13.7	32.4
S&P 500			6.6	21.8	11.4	15.8	--	21.8	12.0	1.4	13.7	32.4
PIMCO RAE Fundamental PLUS Instl	59,414,678	4.4	7.2	16.5	9.2	14.7	8.3	16.5	15.4	-3.2	12.3	35.6
S&P 500			6.6	21.8	11.4	15.8	8.5	21.8	12.0	1.4	13.7	32.4
Loomis Sayles Large Cap Growth	96,816,677	7.2	6.4	33.5	--	--	--	33.5	--	--	--	--
Russell 1000 Growth			7.9	30.2	--	--	--	30.2	--	--	--	--
Boston Partners Large Cap Value	86,347,222	6.4	6.9	--	--	--	--	--	--	--	--	--
Russell 1000 Value			5.3	--	--	--	--	--	--	--	--	--
Atlanta Capital Mgmt	62,375,698	4.6	9.3	25.6	15.4	17.2	--	25.6	11.7	9.6	5.0	37.0
Russell 2500			5.2	16.8	10.1	14.3	--	16.8	17.6	-2.9	7.1	36.8
<b>Total International Equity</b>	<b>332,949,417</b>	<b>24.6</b>	<b>3.2</b>	<b>25.8</b>	<b>6.7</b>	<b>7.6</b>	<b>--</b>	<b>25.8</b>	<b>1.6</b>	<b>-4.9</b>	<b>1.4</b>	<b>17.0</b>
MSCI ACWI ex USA Gross			5.1	27.8	8.3	7.3	--	27.8	5.0	-5.3	-3.4	15.8
Dodge & Cox Intl Stock	171,958,176	12.7	1.2	23.9	6.0	8.5	3.2	23.9	8.3	-11.4	0.1	26.3
MSCI EAFE Gross			4.3	25.6	8.3	8.4	2.4	25.6	1.5	-0.4	-4.5	23.3
WCM International Growth	160,991,241	11.9	5.4	--	--	--	--	--	--	--	--	--
MSCI ACWI ex USA Gross			5.1	--	--	--	--	--	--	--	--	--
<b>Total Domestic Fixed Income</b>	<b>264,752,519</b>	<b>19.6</b>	<b>0.7</b>	<b>3.9</b>	<b>3.0</b>	<b>2.1</b>	<b>--</b>	<b>3.9</b>	<b>4.2</b>	<b>0.9</b>	<b>4.4</b>	<b>-3.0</b>
BBgBarc US Aggregate TR			0.4	3.5	2.2	2.1	--	3.5	2.6	0.6	6.0	-2.0
BlackRock Core Bond	95,690,196	7.1	0.5	--	--	--	--	--	--	--	--	--
BBgBarc US Aggregate TR			0.4	--	--	--	--	--	--	--	--	--
Dodge & Cox Income Fund	100,300,932	7.4	0.5	--	--	--	--	--	--	--	--	--
BBgBarc US Aggregate TR			0.4	--	--	--	--	--	--	--	--	--
Pacific Asset Corporate Loan	68,761,046	5.1	1.3	4.6	5.1	--	--	4.6	8.8	2.1	--	--
S&P/LSTA Leveraged Loan Index			1.1	4.1	4.4	--	--	4.1	10.2	-0.7	--	--
SSGA TIPS	345	0.0	0.7	2.4	1.8	0.0	--	2.4	4.6	-1.5	3.6	-8.7
BBgBarc US TIPS TR			1.3	3.0	2.1	0.1	--	3.0	4.7	-1.4	3.6	-8.6

Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Direct Real Estate is lagged one quarter. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017.



Total Fund  
Performance Summary (Net of Fees)

Period Ending: December 31, 2017

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total Global Fixed</b>	<b>142,353,544</b>	<b>10.5</b>	<b>0.0</b>	<b>13.7</b>	<b>1.6</b>	<b>-0.5</b>	<b>--</b>	<b>13.7</b>	<b>5.1</b>	<b>-12.4</b>	<b>-2.8</b>	<b>-4.4</b>
<i>Citi World Govt Bond Index</i>			1.0	7.5	1.7	0.1	--	7.5	1.6	-3.6	-0.5	-4.0
Brandywine Global Fixed Income	71,619,914	5.3	-0.4	12.0	1.0	0.6	--	12.0	1.7	-9.7	2.4	-2.3
<i>Citi WGBI ex US</i>			1.6	10.3	2.0	-0.3	--	10.3	1.8	-5.5	-2.7	-4.6
Stone Harbor Local Markets Ins	70,733,630	5.2	0.3	15.4	2.2	--	--	15.4	9.0	-15.1	-8.6	--
<i>JPM GBI-EM Global Diversified TR USD</i>			0.8	15.2	2.5	--	--	15.2	9.9	-14.9	-5.7	--
<b>Total Real Estate</b>	<b>176,449,539</b>	<b>13.1</b>	<b>1.9</b>	<b>7.8</b>	<b>10.4</b>	<b>10.6</b>	<b>--</b>	<b>7.8</b>	<b>6.8</b>	<b>16.9</b>	<b>9.6</b>	<b>12.1</b>
<i>NCREIF Property Index</i>			1.8	7.0	9.4	10.2	--	7.0	8.0	13.3	11.8	11.0
JP Morgan Core Real Estate	151,102,074	11.2	1.5	6.1	9.1	10.4	--	6.1	7.3	14.1	10.0	14.8
<i>NCREIF-ODCE</i>			2.1	7.6	10.4	11.5	--	7.6	8.8	15.0	12.5	13.9
<i>NCREIF Property Index</i>			1.8	7.0	9.4	10.2	--	7.0	8.0	13.3	11.8	11.0
ARA American Strategic Value Realty	11,657,191	0.9	2.1	7.4	--	--	--	7.4	--	--	--	--
<i>NCREIF-ODCE</i>			2.1	7.6	--	--	--	7.6	--	--	--	--
<i>NCREIF Property Index</i>			1.8	7.0	--	--	--	7.0	--	--	--	--
Direct Real Estate	13,690,274	1.0	5.4	20.6	15.7	11.5	6.4	20.6	4.9	22.2	6.1	5.2
<i>NCREIF-ODCE</i>			2.1	7.6	10.4	11.5	5.0	7.6	8.8	15.0	12.5	13.9
<i>NCREIF Property Index</i>			1.8	7.0	9.4	10.2	6.1	7.0	8.0	13.3	11.8	11.0
<b>Total Commodities</b>	<b>38,772,152</b>	<b>2.9</b>	<b>6.6</b>	<b>6.2</b>	<b>-4.1</b>	<b>-7.8</b>	<b>--</b>	<b>6.2</b>	<b>11.8</b>	<b>-25.8</b>	<b>-16.6</b>	<b>-9.5</b>
<i>Bloomberg Commodity Index TR USD</i>			4.7	1.7	-5.0	-8.5	--	1.7	11.8	-24.7	-17.0	-9.5
Gresham MTAP Commodity Builder	38,772,152	2.9	6.6	6.2	-4.1	--	--	6.2	11.8	-25.8	-16.6	--
<i>Bloomberg Commodity Index TR USD</i>			4.7	1.7	-5.0	--	--	1.7	11.8	-24.7	-17.0	--
<b>Total Cash</b>	<b>20,219,515</b>	<b>1.5</b>	<b>0.4</b>	<b>1.0</b>	<b>0.6</b>	<b>0.5</b>	<b>0.8</b>	<b>1.0</b>	<b>0.5</b>	<b>0.4</b>	<b>0.3</b>	<b>0.3</b>
<i>91 Day T-Bills</i>			0.3	0.9	0.4	0.3	0.3	0.9	0.3	0.0	0.0	0.0
Cash Account	20,219,515	1.5	0.4	1.0	0.6	0.5	0.8	1.0	0.5	0.4	0.3	0.3
<i>91 Day T-Bills</i>			0.3	0.9	0.4	0.3	0.3	0.9	0.3	0.0	0.0	0.0

Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Direct Real Estate is lagged one quarter. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017.

Investment Manager  
Performance Analysis - 3 & 5 Years (Net of Fees)

Period Ending: December 31, 2017

3 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
SSGA S&P 500 Flag.	11.43%	0.02%	7.27%	0.04%	1.00	0.04%	1.00	1.52	0.49	100.00%	99.22%
PIMCO RAE Fundamental PLUS Instl	9.18%	-2.23%	7.48%	-1.64%	0.95	2.91%	0.85	1.18	-0.77	84.23%	111.96%
Atlanta Capital Mgmt	15.41%	5.33%	7.71%	9.04%	0.63	6.13%	0.56	1.95	0.87	121.15%	34.80%
Dodge & Cox Intl Stock	5.96%	-2.34%	13.62%	-4.15%	1.22	5.72%	0.85	0.41	-0.41	88.94%	116.91%
Pacific Asset Corporate Loan	5.13%	0.69%	1.91%	2.54%	0.58	1.43%	0.89	2.46	0.49	94.94%	20.85%
SSGA TIPS	1.81%	-0.24%	3.55%	-0.22%	0.99	0.30%	0.99	0.40	-0.79	94.56%	101.53%
Brandywine Global Fixed Income	0.96%	-1.03%	8.59%	-0.48%	0.72	5.52%	0.69	0.06	-0.19	63.43%	73.65%
Stone Harbor Local Markets Ins	2.18%	-0.34%	11.89%	-0.42%	1.03	1.36%	0.99	0.15	-0.25	98.24%	102.18%
JP Morgan Core Real Estate	9.13%	-1.29%	1.74%	-1.84%	1.05	0.48%	0.93	5.02	-2.71	86.50%	--
Direct Real Estate	15.65%	5.23%	8.35%	2.86%	1.23	8.13%	0.05	1.83	0.64	157.93%	--
Gresham MTAP Commodity Builder	-4.14%	0.89%	14.88%	0.91%	1.00	2.07%	0.98	-0.30	0.43	107.99%	98.19%

5 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
SSGA S&P 500 Flag.	15.80%	0.01%	7.48%	0.03%	1.00	0.03%	1.00	2.08	0.35	100.00%	99.22%
PIMCO RAE Fundamental PLUS Instl	14.67%	-1.12%	8.33%	-1.96%	1.05	2.70%	0.90	1.73	-0.41	92.85%	111.96%
Atlanta Capital Mgmt	17.19%	2.86%	9.22%	6.01%	0.78	5.36%	0.72	1.84	0.53	105.15%	45.31%
Dodge & Cox Intl Stock	8.50%	0.11%	12.20%	-0.46%	1.07	5.04%	0.83	0.68	0.02	97.77%	94.51%
SSGA TIPS	-0.03%	-0.17%	4.90%	-0.16%	0.99	0.23%	1.00	-0.06	-0.72	95.90%	100.75%
Brandywine Global Fixed Income	0.59%	0.89%	7.20%	0.79%	0.68	4.92%	0.69	0.05	0.18	66.74%	63.61%
Direct Real Estate	11.54%	0.01%	6.81%	9.70%	0.16	6.92%	0.00	1.66	0.00	100.15%	--
JP Morgan Core Real Estate	10.41%	-1.11%	1.73%	-1.68%	1.05	0.78%	0.80	5.88	-1.43	88.36%	--



Private Markets  
Non Marketable Securities Overview

Period Ending: December 31, 2017

Vintage	Manager & Fund Name	Estimated 12/31 Market Value <sup>3</sup>	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) <sup>1</sup>	Tot. Value/ Paid-In (TVPI) <sup>2</sup>	Net IRR Since Inception <sup>5</sup>	IRR Date
2011	HarbourVest Partners IX-Buyout Fund L.P.	\$12,464,670	\$20,000,000	\$12,650,000	63%	\$7,350,000	\$5,569,600	\$12,947,988	44.0%	142.6%	16.8%	9/30/17
2010	KKR Mezzanine Partners I L.P. <sup>6</sup>	\$5,228,751	\$20,000,000	\$20,000,000	100%	\$0	\$24,650,233	\$8,460,682	123.3%	149.4%	8.0%	9/30/17
2010	PIMCO Distressed Credit Fund <sup>4</sup>	\$1,248,698	\$20,000,000	\$20,000,000	100%	\$0	\$26,747,593	\$1,248,698	133.7%	140.0%	12.6%	9/30/17
2016	TPG Diversified Credit Program	\$30,978,587	\$75,000,000	\$30,623,000	41%	\$44,377,000	\$459,765	\$22,592,364	1.5%	102.7%	6.1%	9/30/17
2017	Pathway Private Equity Fund Investors 9 L.P.	\$5,407,212	\$65,000,000	\$5,480,301	8%	\$59,519,699	-	-	-	-	-	-
<b>Total Alternative Illiquids</b>		<b>\$55,327,918</b>	\$200,000,000	\$88,753,301	44%	\$111,246,699	\$57,427,191	\$45,249,732	51.0%	115.7%		
<b>% of Portfolio (Market Value)</b>		<b>4.1%</b>										

	Management Fee	Admin Fee	Interest Expense	Other Expense	Total Expense <sup>7</sup>
HarbourVest Partners IX-Buyout Fund L.P.	\$49,727	\$0	\$0	\$13,281	\$63,008
KKR Mezzanine Partners I L.P.	\$30,586	\$0	\$0	\$0	\$30,586
PIMCO Distressed Credit Fund <sup>4</sup>	\$401	\$80	\$0	\$4,562	\$5,043
TPG Diversified Credit Program	\$27,210	\$0	\$0	\$0	\$27,210
Pathway Private Equity Fund Investors 9 L.P.	-	-	-	-	-
	\$107,924	\$80	\$0	\$17,843	<b>\$125,847</b>

<sup>1</sup>(DPI) is equal to (capital returned / capital called)

<sup>2</sup>(TVPI) is equal to (market value + capital returned) / capital called

<sup>3</sup>Last known market value + capital calls - distributions (market values as of 9/30/2017)

<sup>4</sup>Investment period ended, no further capital to be called.

<sup>5</sup>Net IRR is calculated on the cash flows of the underlying investments of the fund and is net of the underlying fund fees and carried interest

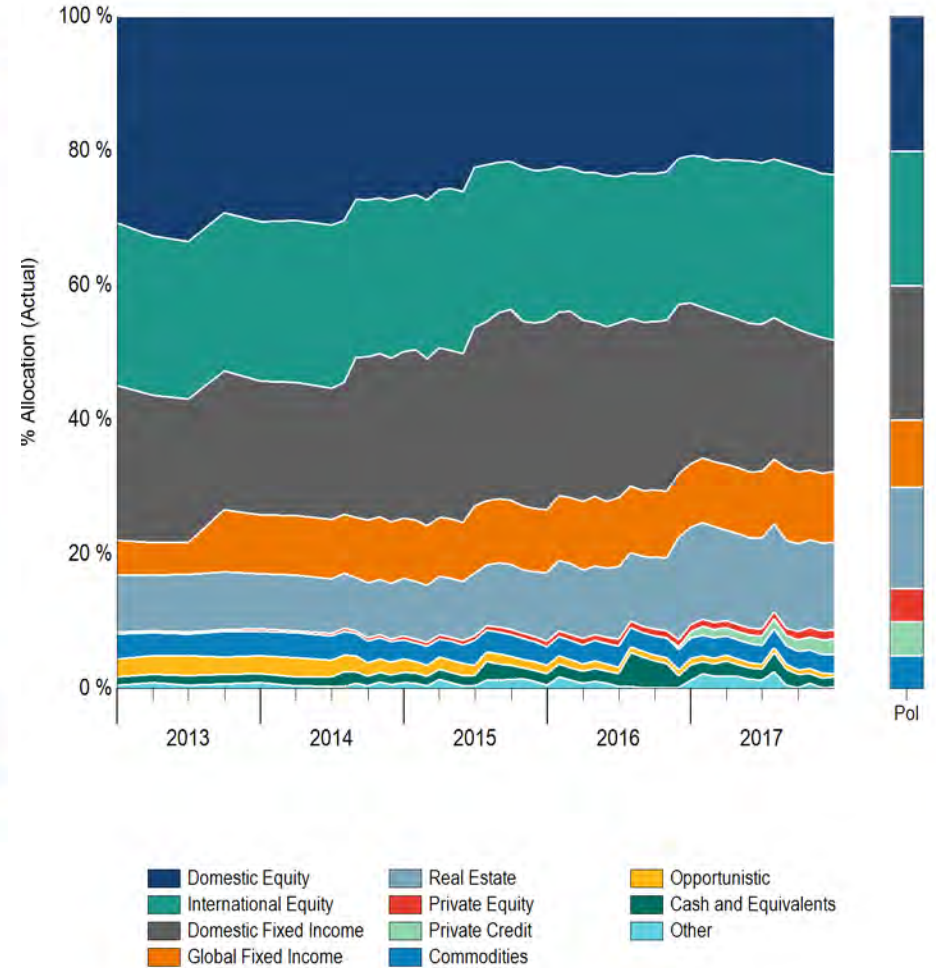
<sup>6</sup>KKR: As of 3Q2017, total capital called is \$23,593,570, which includes recycled distributions. Unused capital commitment is \$1,953,003 after including distribution proceeds available for reinvestment

<sup>7</sup>All fees and expenses are for 3Q 2017

Market Value History



Asset Allocation History



\*Other balance represents Clifton Group

Total Fund  
Asset Allocation vs. Policy

Period Ending: December 31, 2017



# Total Fund Investment Fund Fee Analysis

Period Ending: December 31, 2017

Account	Fee Schedule	Market Value As of 12/31/2017	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
ARA American Strategic Value Realty	1.25% of First \$10.0 Mil, 1.20% of Next \$15.0 Mil, 1.10% of Next \$25.0 Mil, 1.00% Thereafter	\$11,657,191	0.9%	\$144,886	1.24%
Atlanta Capital Mgmt	0.80% of First \$50.0 Mil, 0.70% of Next \$100.0 Mil, 0.60% Thereafter	\$62,375,698	4.6%	\$486,630	0.78%
BlackRock Core Bond	0.28% of First \$100.0 Mil, 0.26% Thereafter	\$95,690,196	7.1%	\$267,933	0.28%
Boston Partners Large Cap Value	0.40% of Assets	\$86,347,222	6.4%	\$345,389	0.40%
Brandywine Global Fixed Income	0.45% of First \$50.0 Mil, 0.40% of Next \$50.0 Mil, 0.35% Thereafter	\$71,619,914	5.3%	\$311,480	0.43%
Cash Account	No Fee	\$20,219,515	1.5%	--	--
Direct Real Estate	No Fee	\$13,690,274	1.0%	--	--
Dodge & Cox Income Fund	0.43% of Assets	\$100,300,932	7.4%	\$431,294	0.43%
Dodge & Cox Intl Stock	0.64% of Assets	\$171,958,176	12.7%	\$1,100,532	0.64%
Gresham MTAP Commodity Builder	0.75% of First \$50.0 Mil, 0.50% Thereafter	\$38,772,152	2.9%	\$290,791	0.75%
Harbourvest Partners IX Buyout Fund L.P.	\$200,000 Annually	\$12,464,670	0.9%	\$200,000	1.60%
JP Morgan Core Real Estate	1.00% of Assets	\$151,102,074	11.2%	\$1,511,021	1.00%
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	\$300,000 Annually	\$5,228,751	0.4%	\$300,000	5.74%
Loomis Sayles Large Cap Growth	0.45% of First \$100.0 Mil, 0.40% Thereafter	\$96,816,677	7.2%	\$435,675	0.45%
Pacific Asset Corporate Loan	0.37% of Assets	\$68,761,046	5.1%	\$254,416	0.37%
Pathway Private Equity Fund Investors 9 L.P.	Please see footnote	\$5,407,212	0.4%	--	--
PIMCO Distressed Credit Fund	\$150,000 Annually	\$1,248,698	0.1%	\$150,000	12.01%
PIMCO RAE Fundamental PLUS Instl	0.40% of Assets	\$59,414,678	4.4%	\$237,659	0.40%
SSGA S&P 500 Flag.	0.04% of First \$100.0 Mil, 0.03% Thereafter	\$12,484,961	0.9%	\$4,994	0.04%
SSGA TIPS	0.05% of First \$100.0 Mil, 0.04% Thereafter	\$345	0.0%	\$0	0.05%
Stone Harbor Local Markets Ins	0.88% of Assets	\$70,733,630	5.2%	\$622,456	0.88%
The Clifton Group	\$50,000 Annually	\$2,829,730	0.2%	\$50,000	1.77%
TPG Diversified Credit Program	Please see footnote	\$30,978,587	2.3%	--	--
WCM International Growth	0.70% of Assets	\$160,991,241	11.9%	\$1,126,939	0.70%
<b>Investment Management Fee</b>		<b>\$1,351,093,570</b>	<b>100.0%</b>	<b>\$8,272,094</b>	<b>0.61%</b>

\*HarbourVest, KKR and PIMCO Distressed Credit fees are estimated gross management fees only and do not include incentive allocations or offsetting cash flows received by the fund. Pathway fee steps up and down over time, with an effective average of 0.71% up to \$25m, 0.67% up to \$50m, 0.63% up to \$75m, and 0.40% above \$75m.

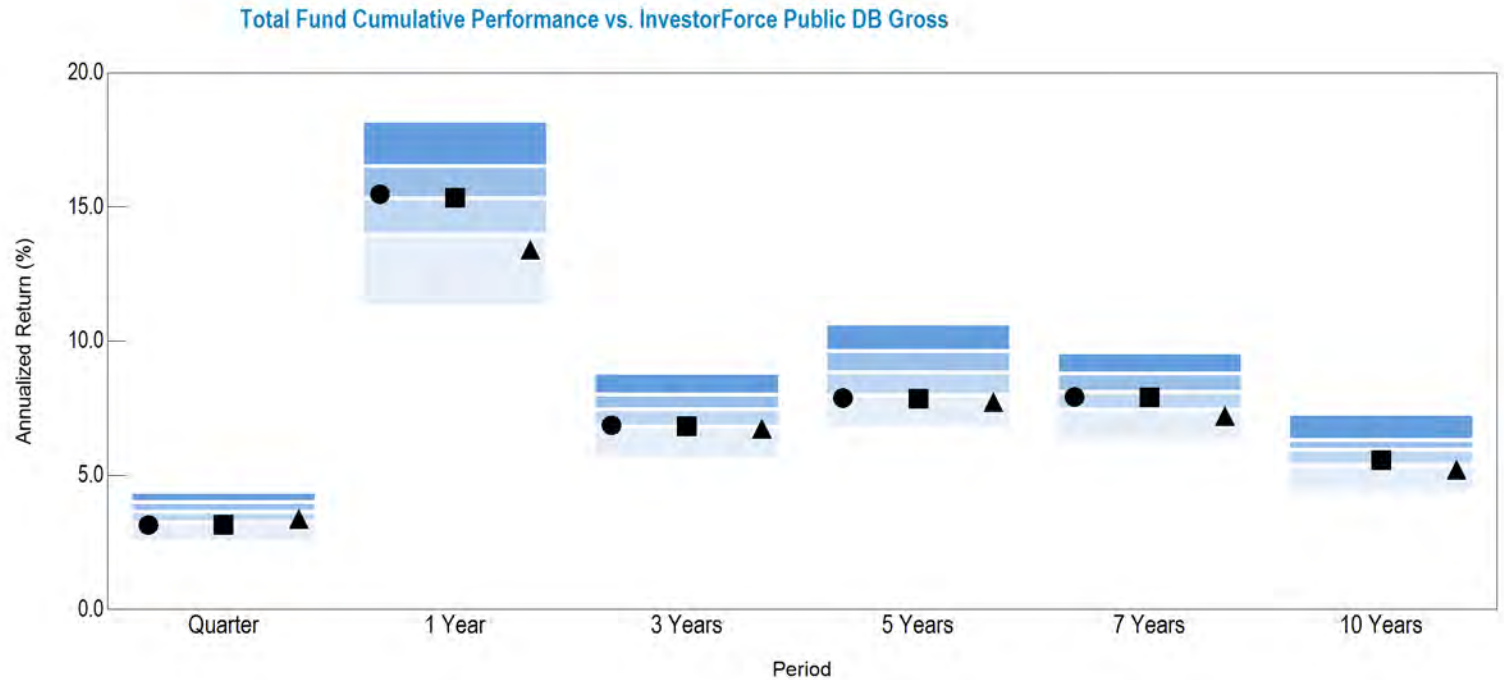
\*Clifton Group fee schedule represents contractual minimum fee. Actual fee charged is \$1,500 per month through at least 6/30/2015.

\*TPG: No management fee at SMA level. Subject to the annual fees of each of the underlying TSSP funds. (1) TAO 65bps on unfunded commitments and 1.35% on remaining capital contributions (long-term designation) (2) TSLE 1.5% on commitments, 1.25% on remaining capital contributions post commitment period (3) TICP 30bps on remaining capital contributions.

Total Fund

Peer Universe Comparison: Cumulative Performance (Gross of Fees)

Period Ending: December 31, 2017



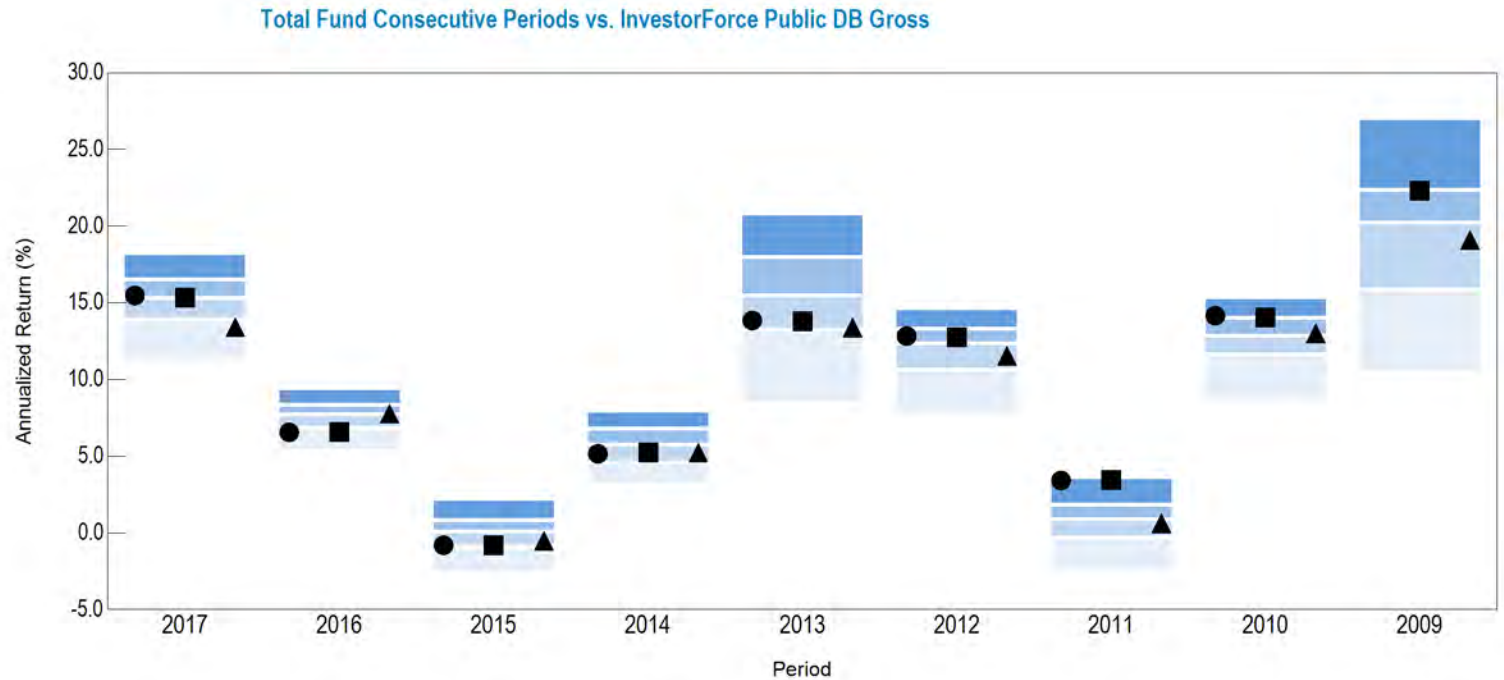
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	4.4		18.2		8.8		10.6		9.6		7.3	
25th Percentile	4.0		16.5		8.0		9.6		8.8		6.3	
Median	3.7		15.3		7.5		8.9		8.1		6.0	
75th Percentile	3.3		14.0		6.8		8.0		7.5		5.4	
95th Percentile	2.5		11.3		5.6		6.8		6.3		4.3	
# of Portfolios	307		304		279		257		226		207	
● Total Fund	3.1	(82)	15.5	(47)	6.9	(75)	7.9	(78)	7.9	(55)	--	(--)
■ Total Fund ex Overlay	3.2	(82)	15.4	(50)	6.8	(76)	7.9	(78)	7.9	(55)	5.6	(69)
▲ Policy Index	3.4	(69)	13.4	(86)	6.7	(77)	7.7	(81)	7.2	(82)	5.2	(82)



Total Fund

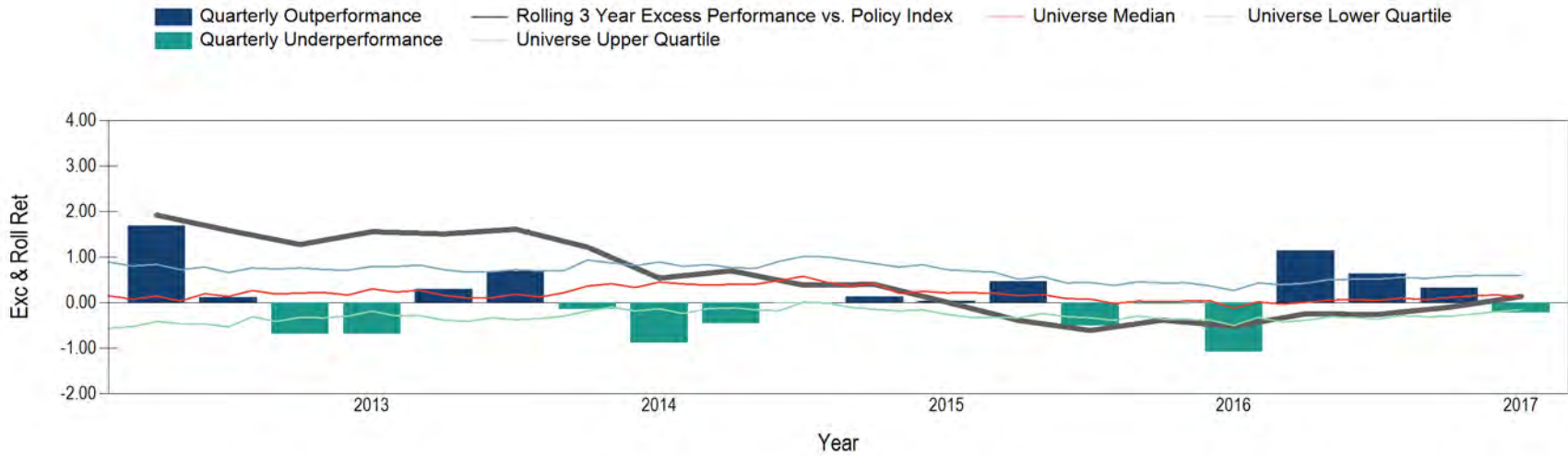
Peer Universe Comparison: Consecutive Periods (Gross of Fees)

Period Ending: December 31, 2017

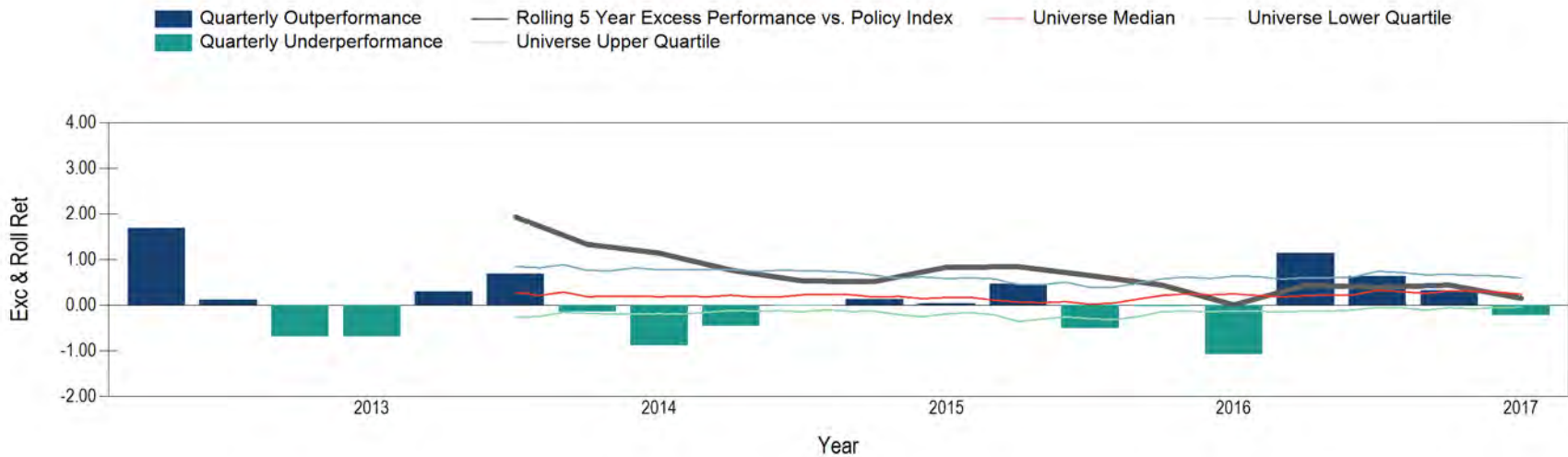


	2017	2016	2015	2014	2013	2012	2011	2010	2009
<b>Return (Rank)</b>									
5th Percentile	18.2	9.4	2.2	8.0	20.8	14.6	3.6	15.4	27.0
25th Percentile	16.5	8.4	0.9	6.8	18.0	13.4	1.9	14.0	22.4
Median	15.3	7.7	0.1	5.8	15.5	12.4	0.9	12.9	20.2
75th Percentile	14.0	6.9	-0.9	4.6	13.3	10.7	-0.3	11.7	15.9
95th Percentile	11.3	5.3	-2.6	3.2	8.5	7.8	-2.5	8.6	10.5
# of Portfolios	304	305	316	248	231	236	206	188	184
● Total Fund	15.5 (47)	6.6 (84)	-0.8 (74)	5.1 (66)	13.8 (71)	12.8 (40)	3.4 (6)	14.2 (21)	-- (--)
■ Total Fund ex Overlay	15.4 (50)	6.6 (83)	-0.8 (75)	5.2 (64)	13.8 (72)	12.7 (43)	3.5 (6)	14.1 (24)	22.3 (27)
▲ Policy Index	13.4 (86)	7.8 (49)	-0.5 (67)	5.2 (64)	13.4 (74)	11.6 (69)	0.6 (60)	13.0 (48)	19.1 (57)

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance

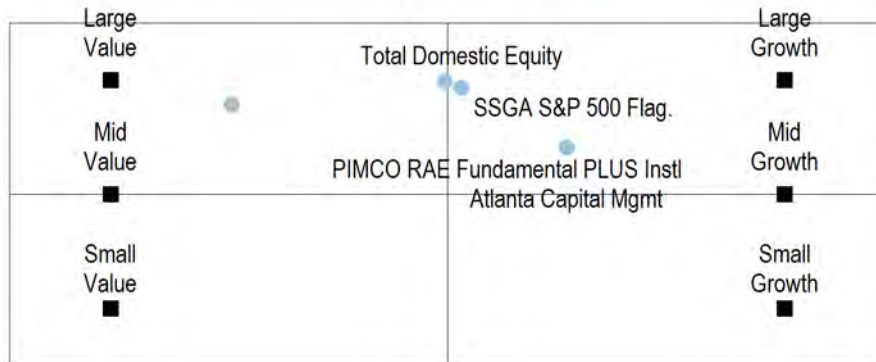


Total Domestic Equity  
Asset Class Overview (Gross of Fees)

Period Ending: December 31, 2017

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total Domestic Equity</b>	<b>317,439,236</b>	<b>7.4</b>	<b>25.1</b>	<b>12.7</b>	<b>16.0</b>	<b>9.9</b>	<b>25.1</b>	<b>13.0</b>	<b>1.2</b>	<b>11.0</b>	<b>32.2</b>
<i>Russell 3000</i>		6.3	21.1	11.1	15.6	8.6	21.1	12.7	0.5	12.6	33.6
<i>InvestorForce Public DB US Eq Gross Rank</i>		3	4	2	12	2	4	48	18	60	91
SSGA S&P 500 Flag.	12,484,961	6.7	21.9	11.5	15.9	--	21.9	12.0	1.5	13.7	32.4
<i>S&amp;P 500</i>		6.6	21.8	11.4	15.8	--	21.8	12.0	1.4	13.7	32.4
<i>eV US Large Cap Core Equity Gross Rank</i>		57	52	33	43	--	52	31	40	42	58
PIMCO RAE Fundamental PLUS Instl	59,414,678	7.4	17.0	9.7	15.1	8.6	17.0	15.9	-2.7	12.7	36.0
<i>S&amp;P 500</i>		6.6	21.8	11.4	15.8	8.5	21.8	12.0	1.4	13.7	32.4
<i>eV US Large Cap Core Equity Gross Rank</i>		37	89	77	62	61	89	6	86	58	22
Loomis Sayles Large Cap Growth	96,816,677	6.5	34.1	--	--	--	34.1	--	--	--	--
<i>Russell 1000 Growth</i>		7.9	30.2	--	--	--	30.2	--	--	--	--
<i>eV US Large Cap Growth Equity Gross Rank</i>		63	16	--	--	--	16	--	--	--	--
Boston Partners Large Cap Value	86,347,222	7.0	--	--	--	--	--	--	--	--	--
<i>Russell 1000 Value</i>		5.3	--	--	--	--	--	--	--	--	--
<i>eV US Large Cap Value Equity Gross Rank</i>		34	--	--	--	--	--	--	--	--	--
Atlanta Capital Mgmt	62,375,698	9.5	26.6	16.3	18.1	--	26.6	12.6	10.4	5.8	37.8
<i>Russell 2500</i>		5.2	16.8	10.1	14.3	--	16.8	17.6	-2.9	7.1	36.8
<i>eV US Small-Mid Cap Equity Gross Rank</i>		3	15	1	4	--	15	62	1	56	52

U.S. Effective Style Map  
3 Years Ending December 31, 2017



U.S. Effective Style Map  
5 Years Ending December 31, 2017





Total Domestic Equity  
Asset Class Overview (Net of Fees)

Period Ending: December 31, 2017

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total Domestic Equity</b>	<b>317,439,236</b>	<b>7.3</b>	<b>24.5</b>	<b>12.3</b>	<b>15.5</b>	<b>--</b>	<b>24.5</b>	<b>12.7</b>	<b>0.8</b>	<b>10.5</b>	<b>31.6</b>
<i>Russell 3000</i>		6.3	21.1	11.1	15.6	--	21.1	12.7	0.5	12.6	33.6
SSGA S&P 500 Flag.	12,484,961	6.6	21.8	11.4	15.8	--	21.8	12.0	1.4	13.7	32.4
<i>S&amp;P 500</i>		6.6	21.8	11.4	15.8	--	21.8	12.0	1.4	13.7	32.4
PIMCO RAE Fundamental PLUS Instl	59,414,678	7.2	16.5	9.2	14.7	8.3	16.5	15.4	-3.2	12.3	35.6
<i>S&amp;P 500</i>		6.6	21.8	11.4	15.8	8.5	21.8	12.0	1.4	13.7	32.4
Loomis Sayles Large Cap Growth	96,816,677	6.4	33.5	--	--	--	33.5	--	--	--	--
<i>Russell 1000 Growth</i>		7.9	30.2	--	--	--	30.2	--	--	--	--
Boston Partners Large Cap Value	86,347,222	6.9	--	--	--	--	--	--	--	--	--
<i>Russell 1000 Value</i>		5.3	--	--	--	--	--	--	--	--	--
Atlanta Capital Mgmt	62,375,698	9.3	25.6	15.4	17.2	--	25.6	11.7	9.6	5.0	37.0
<i>Russell 2500</i>		5.2	16.8	10.1	14.3	--	16.8	17.6	-2.9	7.1	36.8

Total Domestic Equity  
 Asset Class Overview (Net of Fees)

Period Ending: December 31, 2017

Common Holdings Matrix  
 As of December 31, 2017

	SSGA S&P 500 Flag.		Atlanta Capital Mgmt	
	#	%	#	%
SSGA S&P 500 Flag.	--	--	10	21.15
Atlanta Capital Mgmt	10	0.47	--	--

Correlation Matrix  
 Last 5 Years

	Total Domestic Equity	SSGA S&P 500 Flag.	PIMCO RAE Fundamental PLUS Instl	Loomis Sayles Large Cap Growth	Boston Partners Large Cap Value	Atlanta Capital Mgmt	Russell 3000
Total Domestic Equity	1.00	--	--	--	--	--	--
SSGA S&P 500 Flag.	0.95	1.00	--	--	--	--	--
PIMCO RAE Fundamental PLUS Instl	0.93	0.95	1.00	--	--	--	--
Loomis Sayles Large Cap Growth	--	--	--	--	--	--	--
Boston Partners Large Cap Value	--	--	--	--	--	--	--
Atlanta Capital Mgmt	0.88	0.84	0.81	--	--	1.00	--
Russell 3000	0.96	0.99	0.95	--	--	0.87	1.00

SSGA S&P 500 Flag.  
 Manager Portfolio Overview

Period Ending: December 31, 2017

Characteristics

	Portfolio	S&P 500
Number of Holdings	504	505
Weighted Avg. Market Cap. (\$B)	180.38	180.13
Median Market Cap. (\$B)	21.48	21.55
Price To Earnings	27.47	24.81
Price To Book	6.06	4.93
Price To Sales	3.80	3.50
Return on Equity (%)	24.52	20.41
Yield (%)	1.88	1.87
Beta	1.00	1.00

Sector Allocation (%) vs S&P 500



\*Unclassified includes Cash

Top Holdings  
 Ending Period Weight

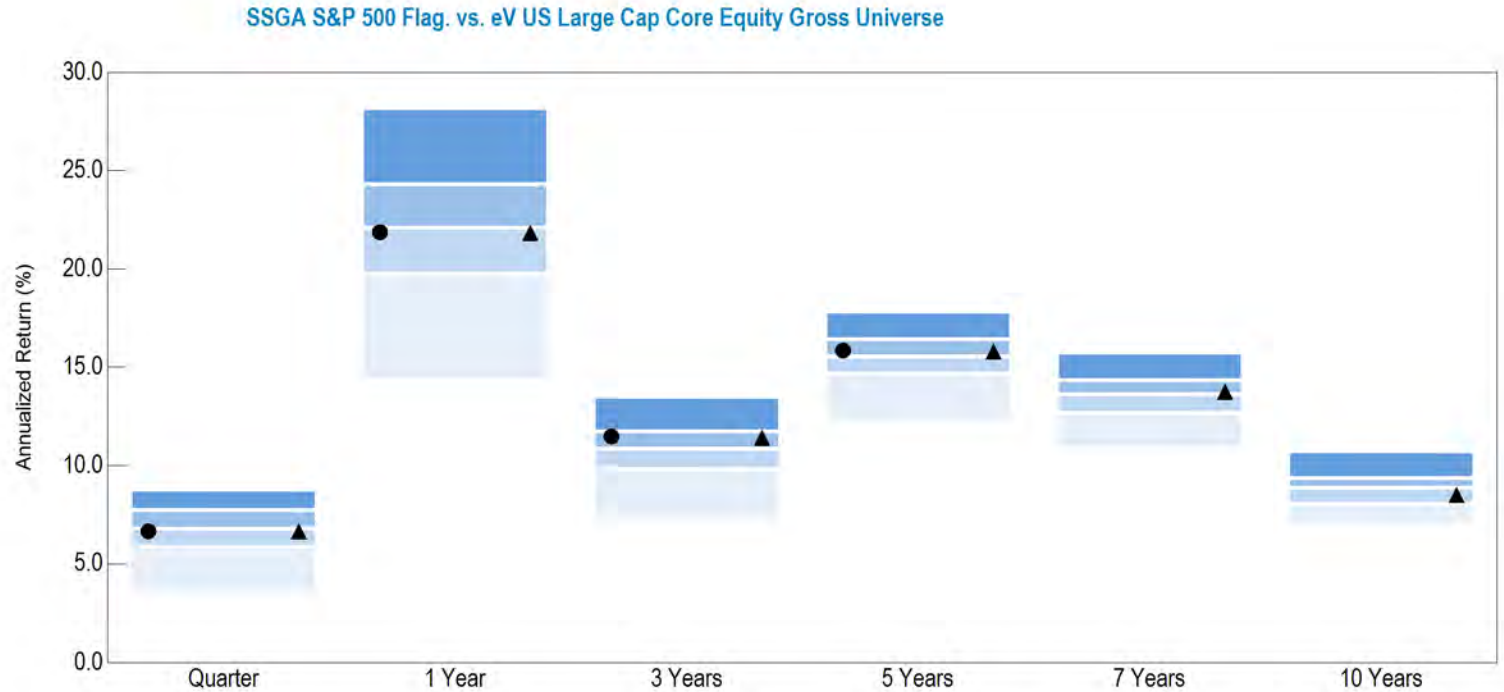
APPLE	3.81%
MICROSOFT	2.90%
AMAZON.COM	2.05%
FACEBOOK CLASS A	1.84%
BERKSHIRE HATHAWAY 'B'	1.67%
JOHNSON & JOHNSON	1.65%
JP MORGAN CHASE & CO.	1.63%
EXXON MOBIL	1.56%
ALPHABET 'C'	1.39%
ALPHABET A	1.38%
<b>Total</b>	<b>19.88%</b>

Top Contributors

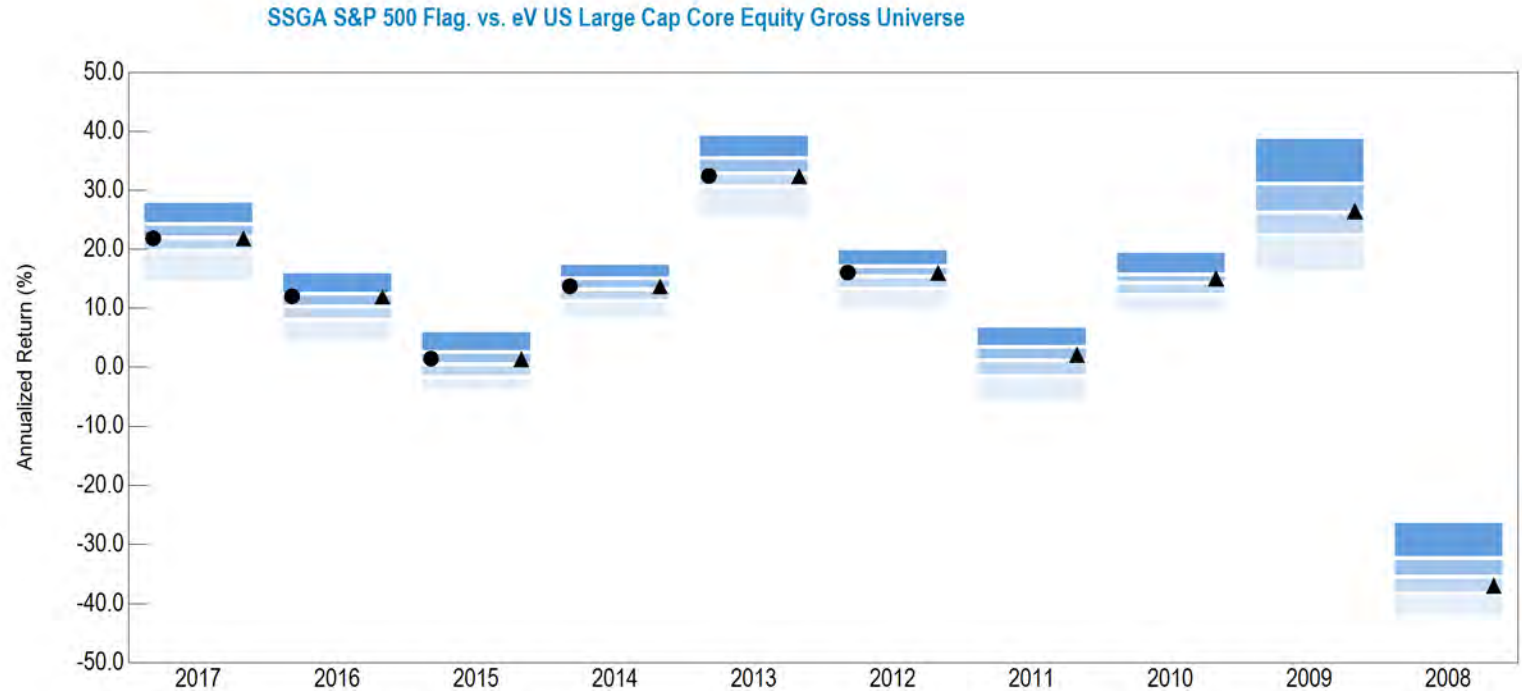
	Avg Wgt	Return	Contribution
MICROSOFT	2.67	15.42	0.41
AMAZON.COM	1.78	21.65	0.39
APPLE	3.70	10.20	0.38
JP MORGAN CHASE & CO.	1.56	12.61	0.20
BANK OF AMERICA	1.16	16.99	0.20
INTEL	0.83	21.93	0.18
HOME DEPOT	0.90	16.46	0.15
WALMART	0.53	27.04	0.14
BERKSHIRE HATHAWAY 'B'	1.64	8.13	0.13
JOHNSON & JOHNSON	1.62	8.12	0.13

Bottom Contributors

	Avg Wgt	Return	Contribution
GENERAL ELECTRIC	0.97	-27.34	-0.27
CELGENE	0.53	-28.43	-0.15
MERCK & COMPANY	0.81	-11.37	-0.09
ALLERGAN	0.32	-19.87	-0.06
PG&E	0.16	-34.16	-0.05
GILEAD SCIENCES	0.49	-10.96	-0.05
CVS HEALTH	0.39	-10.26	-0.04
AMGEN	0.63	-6.10	-0.04
TIME WARNER	0.37	-10.37	-0.04
PHILIP MORRIS INTL.	0.80	-3.85	-0.03

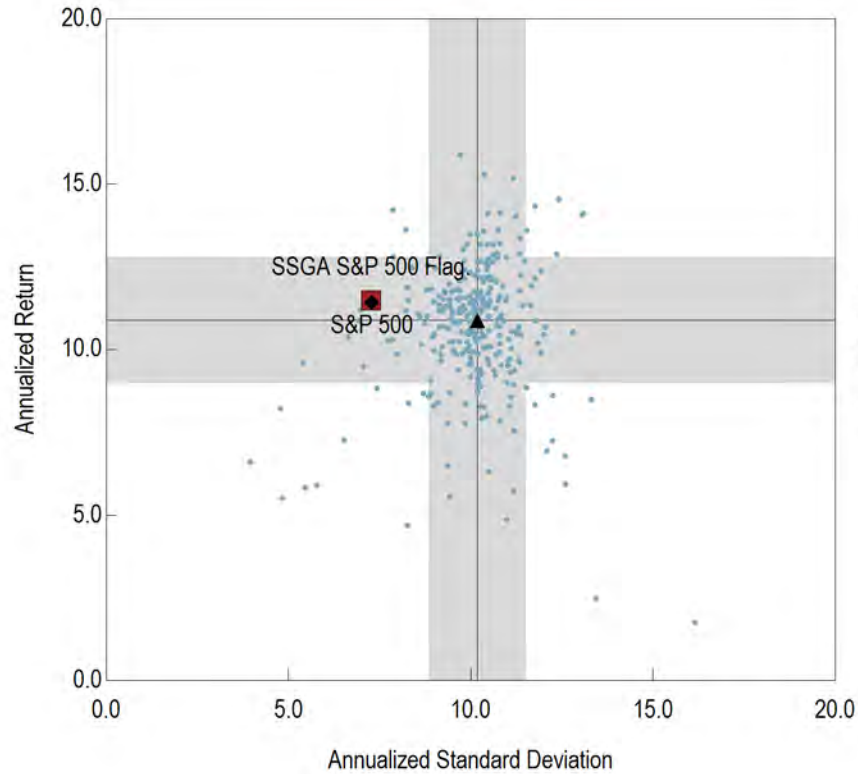


	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	8.8		28.2		13.5		17.8		15.7		10.7	
25th Percentile	7.8		24.3		11.7		16.4		14.4		9.4	
Median	6.8		22.1		10.9		15.6		13.6		8.9	
75th Percentile	5.9		19.8		9.8		14.7		12.7		8.1	
95th Percentile	3.6		14.4		7.2		12.2		10.9		7.0	
# of Portfolios	318		318		308		289		263		232	
● SSGA S&P 500 Flag.	6.7	(57)	21.9	(52)	11.5	(33)	15.9	(43)	--	(--)	--	(--)
▲ S&P 500	6.6	(57)	21.8	(53)	11.4	(36)	15.8	(45)	13.8	(47)	8.5	(66)



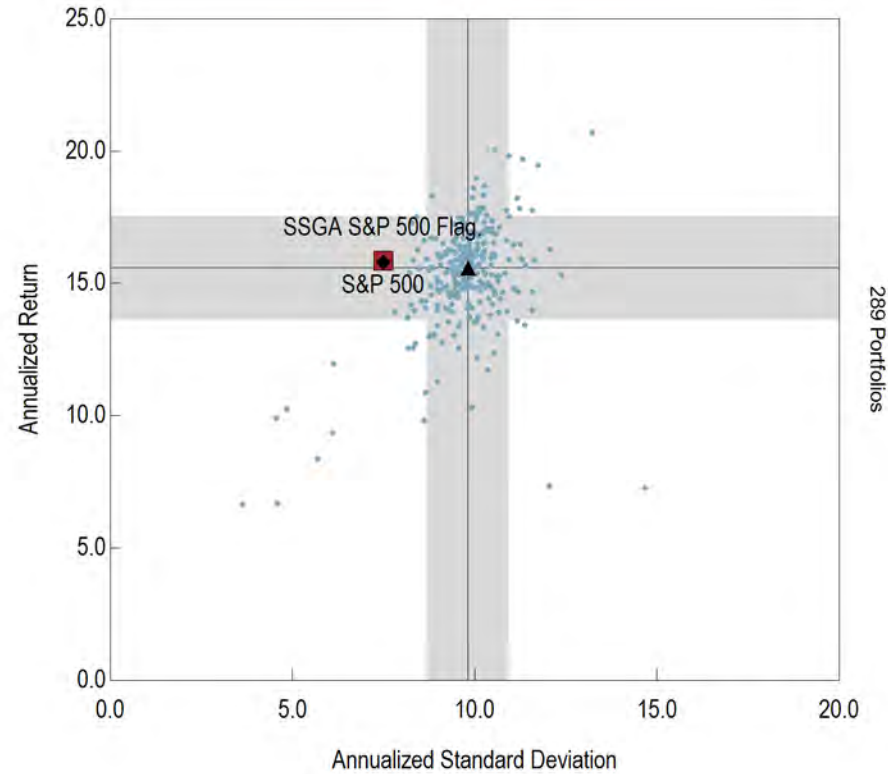
	Return (Rank)									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
5th Percentile	28.2	16.3	6.3	17.7	39.6	20.1	7.0	19.7	39.1	-26.1
25th Percentile	24.3	12.5	2.7	15.1	35.5	17.2	3.6	15.8	31.2	-32.3
Median	22.1	10.4	0.6	13.3	32.9	15.4	1.3	14.4	26.3	-35.4
75th Percentile	19.8	8.2	-1.6	11.4	30.8	13.4	-1.5	12.3	22.6	-38.1
95th Percentile	14.4	4.3	-4.1	8.2	25.4	9.8	-5.9	9.1	16.1	-42.3
# of Portfolios	318	308	267	267	261	254	259	254	280	312
● SSGA S&P 500 Flag.	21.9 (52)	12.0 (31)	1.5 (40)	13.7 (42)	32.4 (58)	16.1 (39)	-- (--)	-- (--)	-- (--)	-- (--)
▲ S&P 500	21.8 (53)	12.0 (31)	1.4 (42)	13.7 (42)	32.4 (58)	16.0 (41)	2.1 (40)	15.1 (37)	26.5 (48)	-37.0 (62)

Annualized Return vs. Annualized Standard Deviation  
 3 Years Ending December 31, 2017



- SSGA S&P 500 Flag.
- ◆ S&P 500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross

Annualized Return vs. Annualized Standard Deviation  
 5 Years Ending December 31, 2017

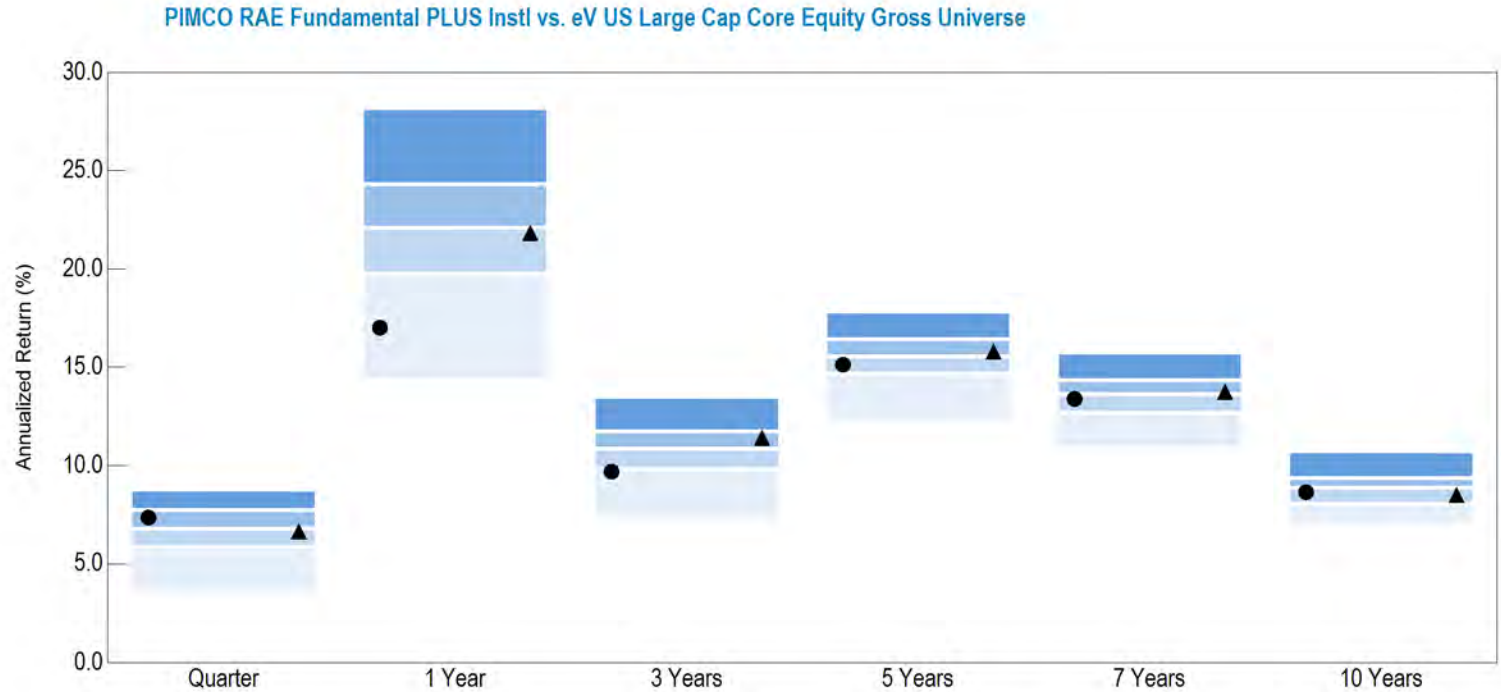


- SSGA S&P 500 Flag.
- ◆ S&P 500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross



PIMCO RAE Fundamental PLUS Instl  
 Cumulative Performance Comparison (Gross of Fees)

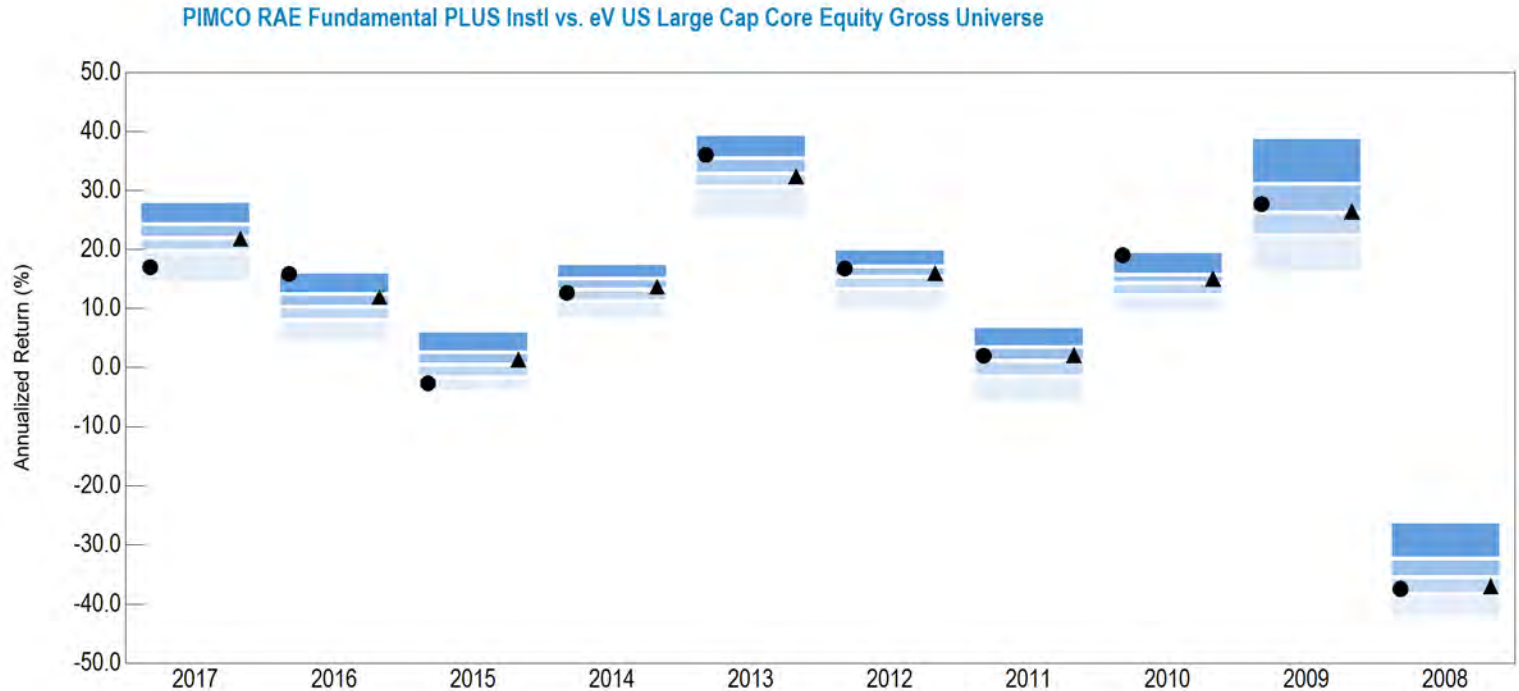
Period Ending: December 31, 2017



	Return (Rank)					
	Quarter	1 Year	3 Years	5 Years	7 Years	10 Years
5th Percentile	8.8	28.2	13.5	17.8	15.7	10.7
25th Percentile	7.8	24.3	11.7	16.4	14.4	9.4
Median	6.8	22.1	10.9	15.6	13.6	8.9
75th Percentile	5.9	19.8	9.8	14.7	12.7	8.1
95th Percentile	3.6	14.4	7.2	12.2	10.9	7.0
# of Portfolios	318	318	308	289	263	232
● PIMCO RAE Fundamental PLUS Instl	7.4 (37)	17.0 (89)	9.7 (77)	15.1 (62)	13.4 (58)	8.6 (61)
▲ S&P 500	6.6 (57)	21.8 (53)	11.4 (36)	15.8 (45)	13.8 (47)	8.5 (66)

PIMCO RAE Fundamental PLUS Instl  
 Consecutive Performance Comparison (Gross of Fees)

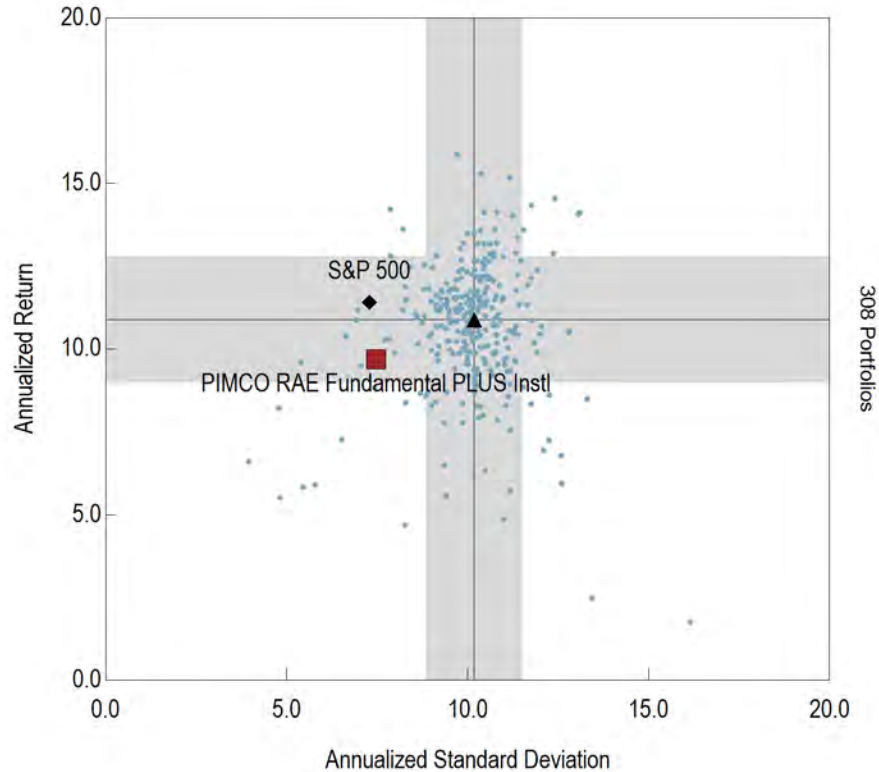
Period Ending: December 31, 2017



	Return (Rank)									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
5th Percentile	28.2	16.3	6.3	17.7	39.6	20.1	7.0	19.7	39.1	-26.1
25th Percentile	24.3	12.5	2.7	15.1	35.5	17.2	3.6	15.8	31.2	-32.3
Median	22.1	10.4	0.6	13.3	32.9	15.4	1.3	14.4	26.3	-35.4
75th Percentile	19.8	8.2	-1.6	11.4	30.8	13.4	-1.5	12.3	22.6	-38.1
95th Percentile	14.4	4.3	-4.1	8.2	25.4	9.8	-5.9	9.1	16.1	-42.3
# of Portfolios	318	308	267	267	261	254	259	254	280	312
● PIMCO RAE Fundamental PLUS Instl	17.0 (89)	15.9 (6)	-2.7 (86)	12.7 (58)	36.0 (22)	16.8 (29)	2.0 (41)	19.0 (7)	27.7 (42)	-37.4 (68)
▲ S&P 500	21.8 (53)	12.0 (31)	1.4 (42)	13.7 (42)	32.4 (58)	16.0 (41)	2.1 (40)	15.1 (37)	26.5 (48)	-37.0 (62)

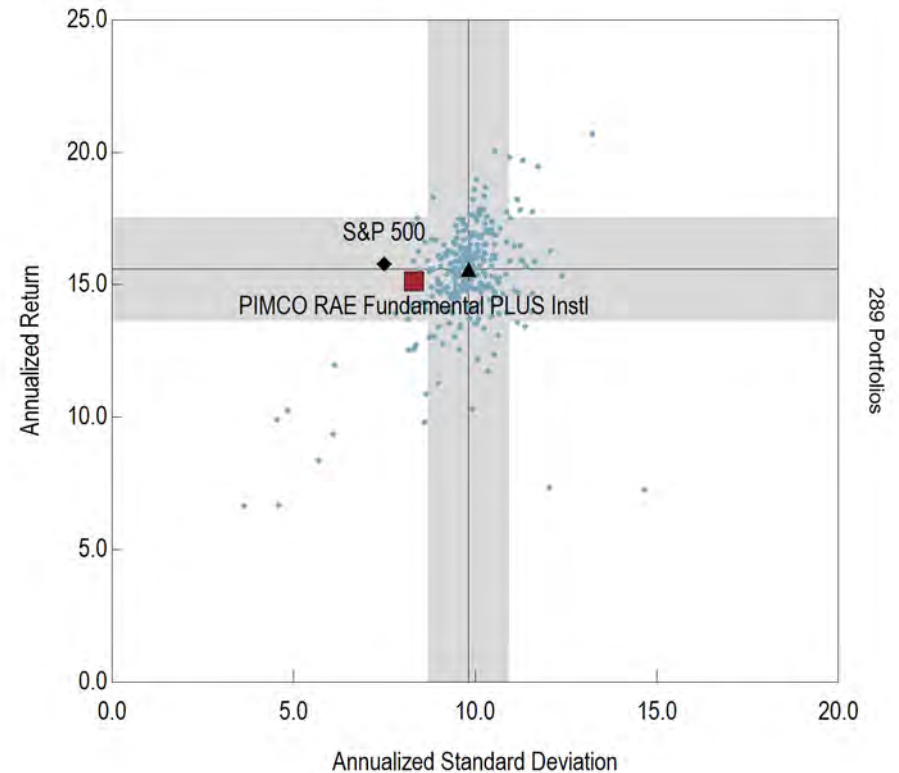


Annualized Return vs. Annualized Standard Deviation  
 3 Years Ending December 31, 2017

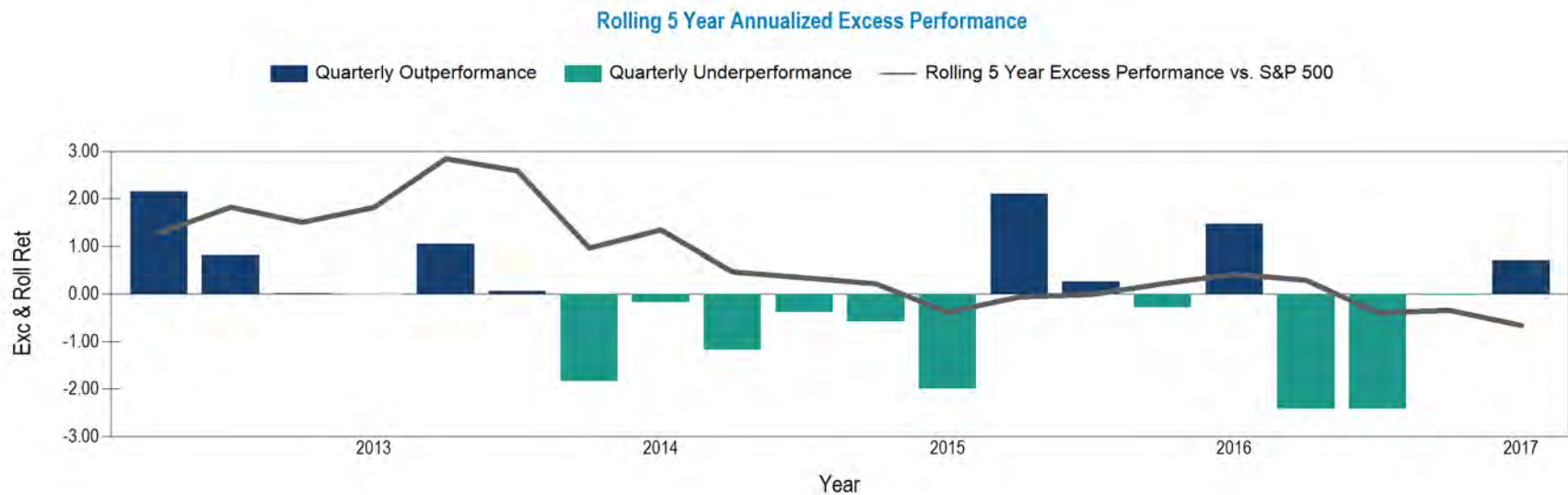
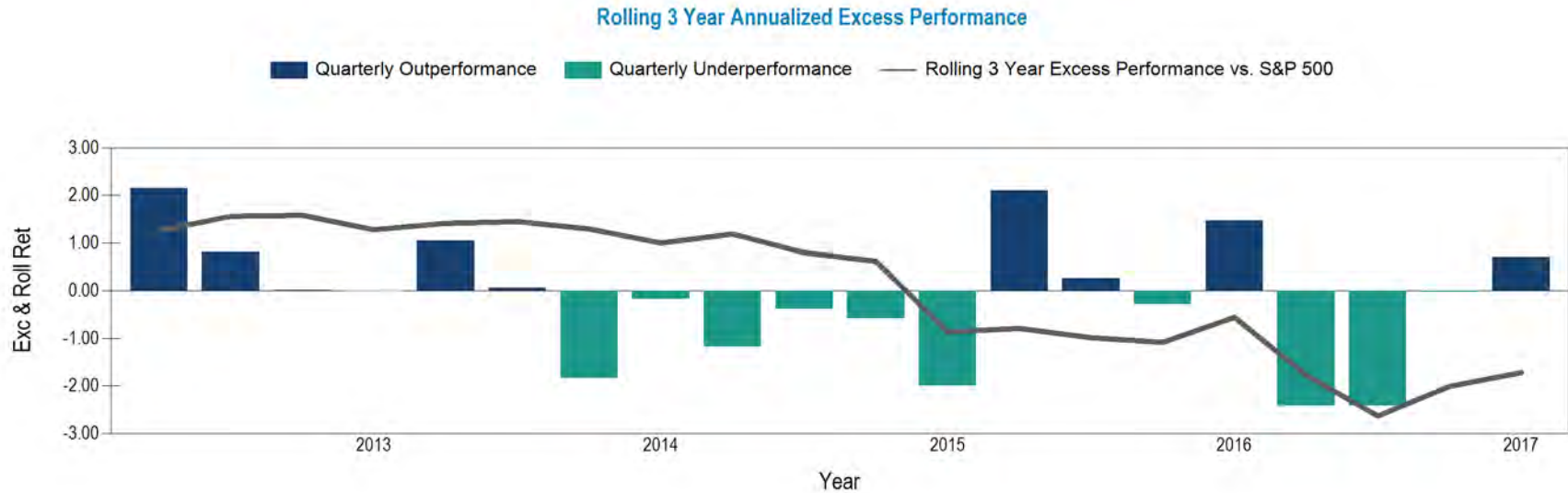


- PIMCO RAE Fundamental PLUS Instl
- ◆ S&P 500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross

Annualized Return vs. Annualized Standard Deviation  
 5 Years Ending December 31, 2017



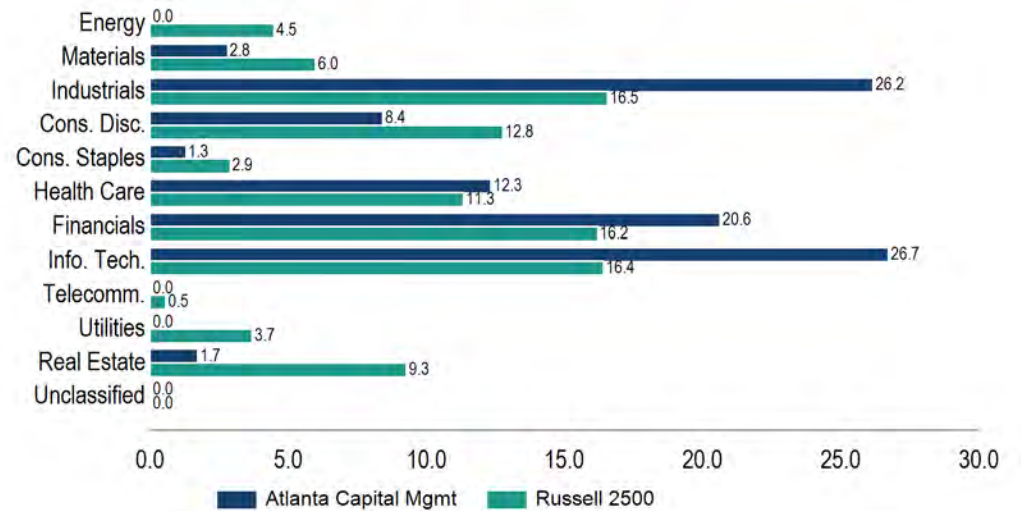
- PIMCO RAE Fundamental PLUS Instl
- ◆ S&P 500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross



Characteristics

	Portfolio	Russell 2500
Number of Holdings	46	2,472
Weighted Avg. Market Cap. (\$B)	8.63	5.12
Median Market Cap. (\$B)	7.58	1.20
Price To Earnings	43.31	22.36
Price To Book	6.49	3.73
Price To Sales	3.48	3.24
Return on Equity (%)	20.22	10.62
Yield (%)	0.68	1.22
Beta	0.63	1.00

Sector Allocation (%) vs Russell 2500



\*Unclassified includes Cash

Top Holdings  
 Ending Period Weight

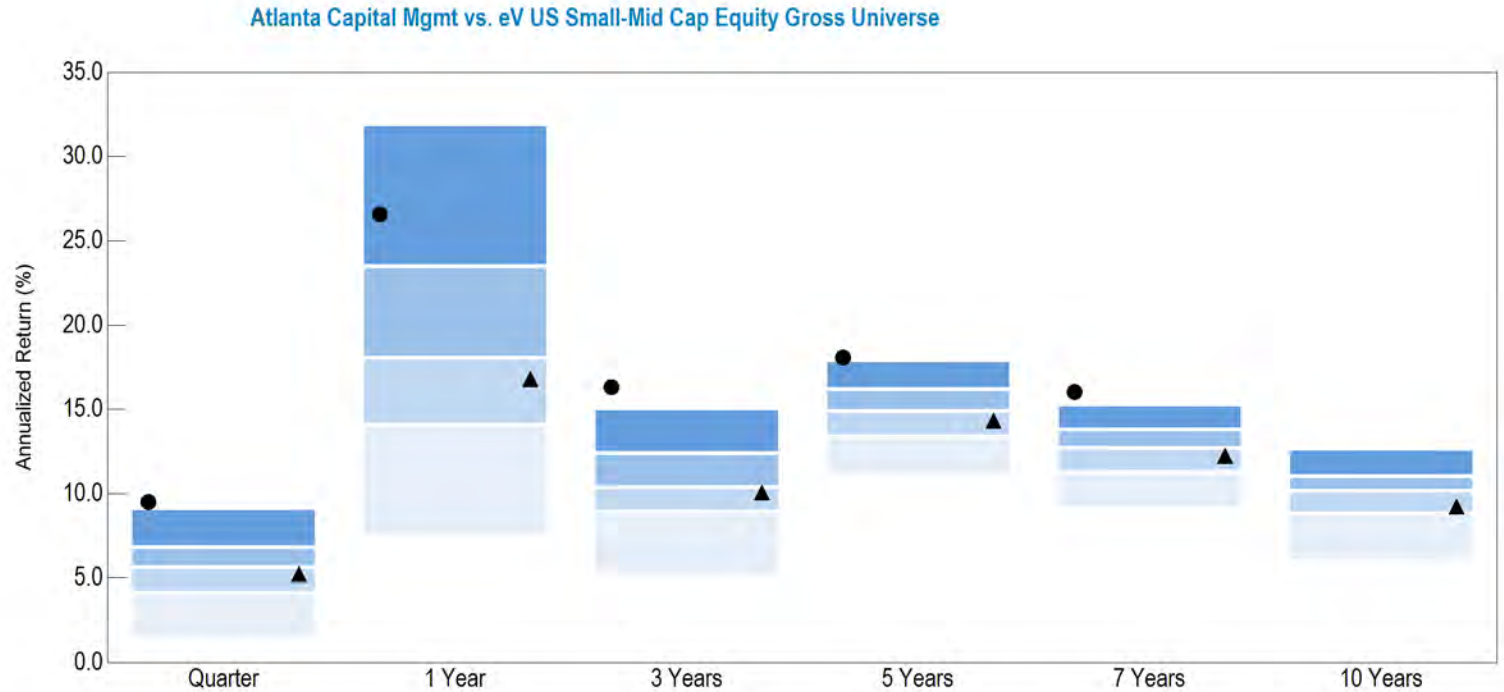
MARKEL	4.12%
ANSYS	4.11%
TELEFLEX	4.02%
SEI INVESTMENTS	4.00%
TRANSUNION	3.54%
HUNT JB TRANSPORT SVS.	3.17%
ARAMARK	2.89%
BIO-RAD LABORATORIES 'A'	2.89%
BLACKBAUD	2.83%
CDW	2.81%
<b>Total</b>	<b>34.38%</b>

Top Contributors

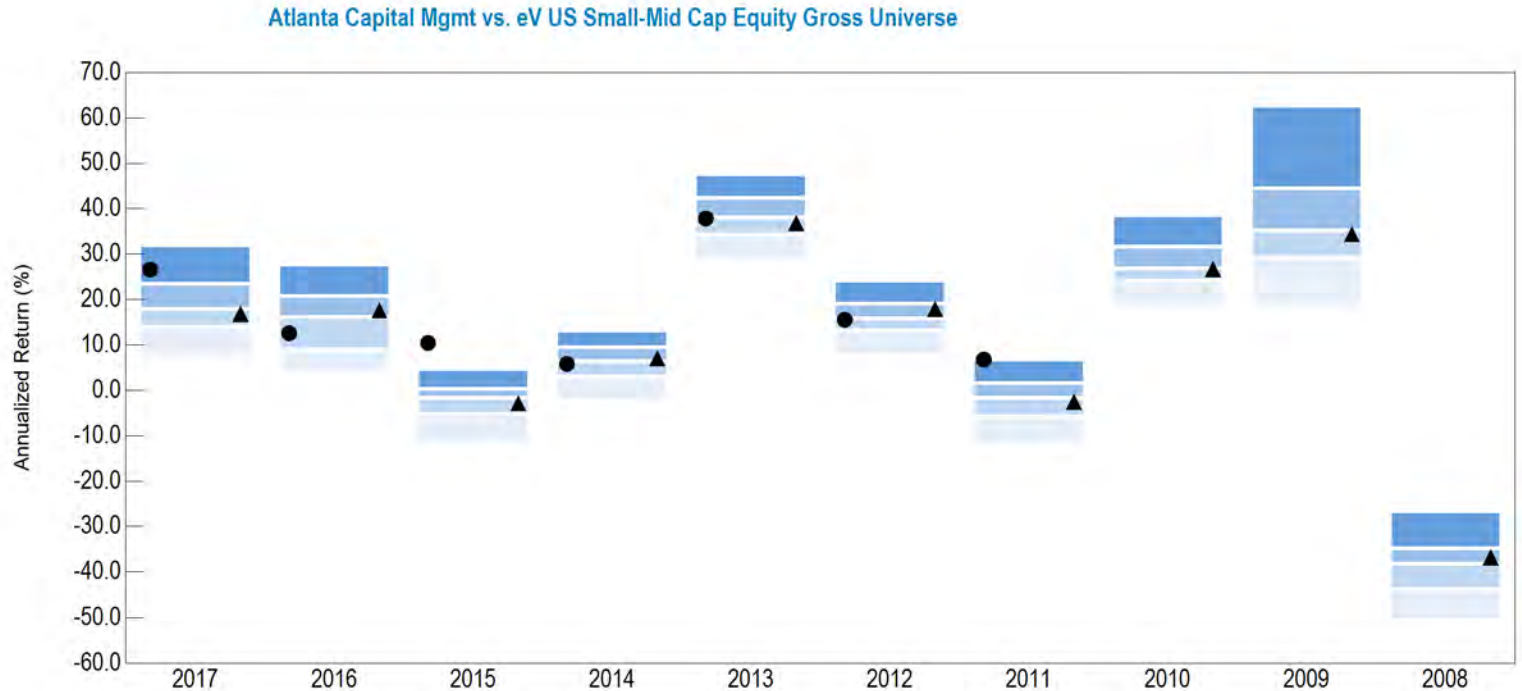
	Avg Wgt	Return	Contribution
ANSYS	4.21	20.26	0.85
SEI INVESTMENTS	3.70	18.18	0.67
WEX	2.42	25.85	0.63
TRANSUNION	3.31	16.29	0.54
NORDSON	1.76	23.81	0.42
MANHATTAN ASSOCS.	1.96	19.17	0.38
LENNOX INTL.	2.18	16.65	0.36
COPART	1.35	25.66	0.35
CARLISLE COS.	2.46	13.71	0.34
JACK HENRY & ASSOCS.	2.37	14.10	0.33

Bottom Contributors

	Avg Wgt	Return	Contribution
HENRY SCHEIN	1.09	-14.77	-0.16
SALLY BEAUTY HOLDINGS	2.06	-4.19	-0.09
GARTNER 'A'	2.12	-1.01	-0.02
APTARGROUP	1.87	0.33	0.01
WESTAMERICA BANCORP.	1.01	0.72	0.01
KIRBY	1.96	1.29	0.03
RPM INTERNATIONAL	1.14	2.73	0.03
CHURCH & DWIGHT CO.	1.34	3.98	0.05
ACUITY BRANDS	2.05	2.84	0.06
TRIMBLE	1.74	3.54	0.06



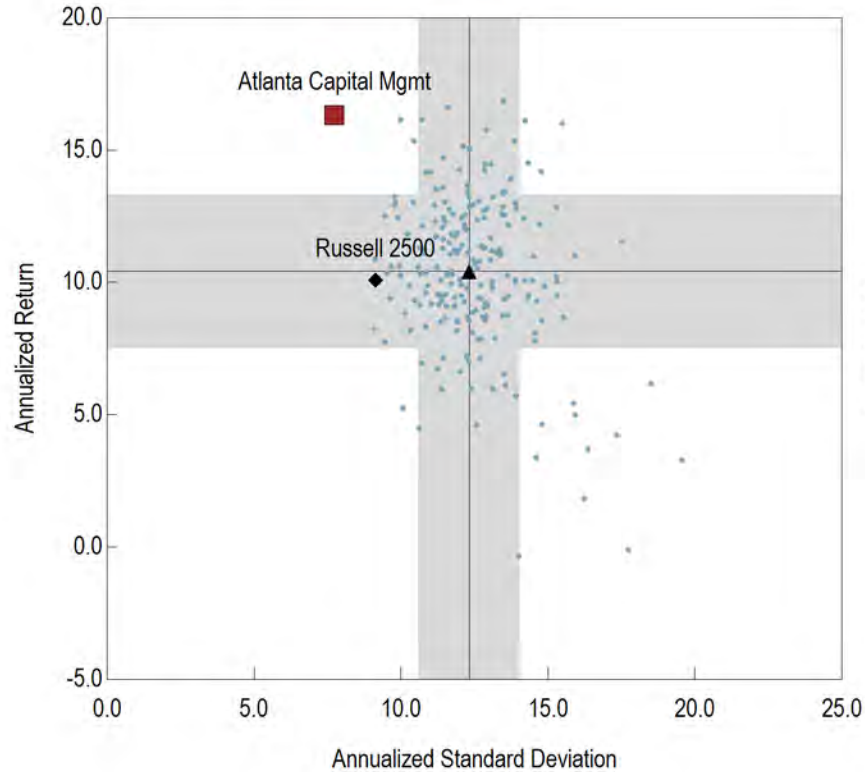
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	9.1		31.9		15.0		17.9		15.3		12.6	
25th Percentile	6.8		23.5		12.4		16.2		13.8		11.1	
Median	5.7		18.1		10.4		14.9		12.7		10.2	
75th Percentile	4.2		14.1		9.0		13.4		11.3		8.9	
95th Percentile	1.4		7.5		5.2		11.0		9.1		6.0	
# of Portfolios	234		233		215		199		179		150	
● Atlanta Capital Mgmt	9.5	(3)	26.6	(15)	16.3	(1)	18.1	(4)	16.0	(3)	--	(--)
▲ Russell 2500	5.2	(61)	16.8	(61)	10.1	(57)	14.3	(62)	12.2	(63)	9.2	(71)



	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<b>Return (Rank)</b>										
5th Percentile	31.9	27.6	4.6	13.0	47.6	24.1	6.8	38.5	62.6	-26.7
25th Percentile	23.5	20.8	0.4	9.6	42.5	19.2	1.7	31.7	44.6	-34.7
Median	18.1	16.1	-1.5	6.5	38.2	16.0	-1.5	26.9	35.2	-38.1
75th Percentile	14.1	9.2	-5.0	3.1	34.4	13.3	-5.6	24.3	29.4	-43.6
95th Percentile	7.5	3.8	-11.6	-2.3	28.7	7.8	-11.6	18.7	18.7	-50.3
# of Portfolios	233	238	215	210	210	216	211	210	226	243
● Atlanta Capital Mgmt	26.6 (15)	12.6 (62)	10.4 (1)	5.8 (56)	37.8 (52)	15.5 (55)	6.8 (5)	-- (--)	-- (--)	-- (--)
▲ Russell 2500	16.8 (61)	17.6 (38)	-2.9 (64)	7.1 (46)	36.8 (58)	17.9 (36)	-2.5 (56)	26.7 (52)	34.4 (55)	-36.8 (37)

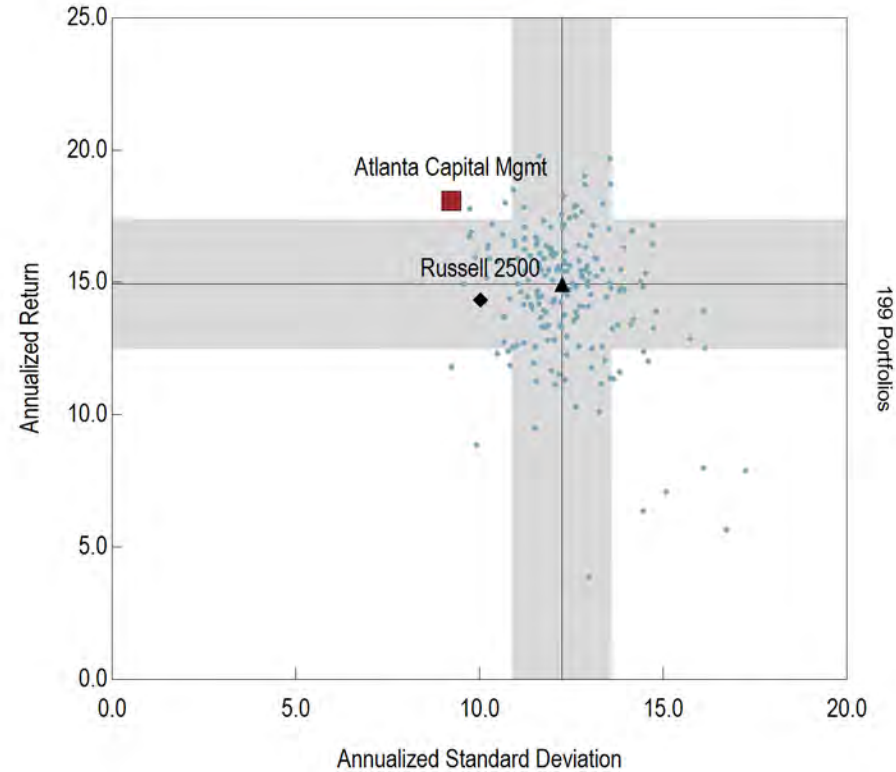


Annualized Return vs. Annualized Standard Deviation  
 3 Years Ending December 31, 2017

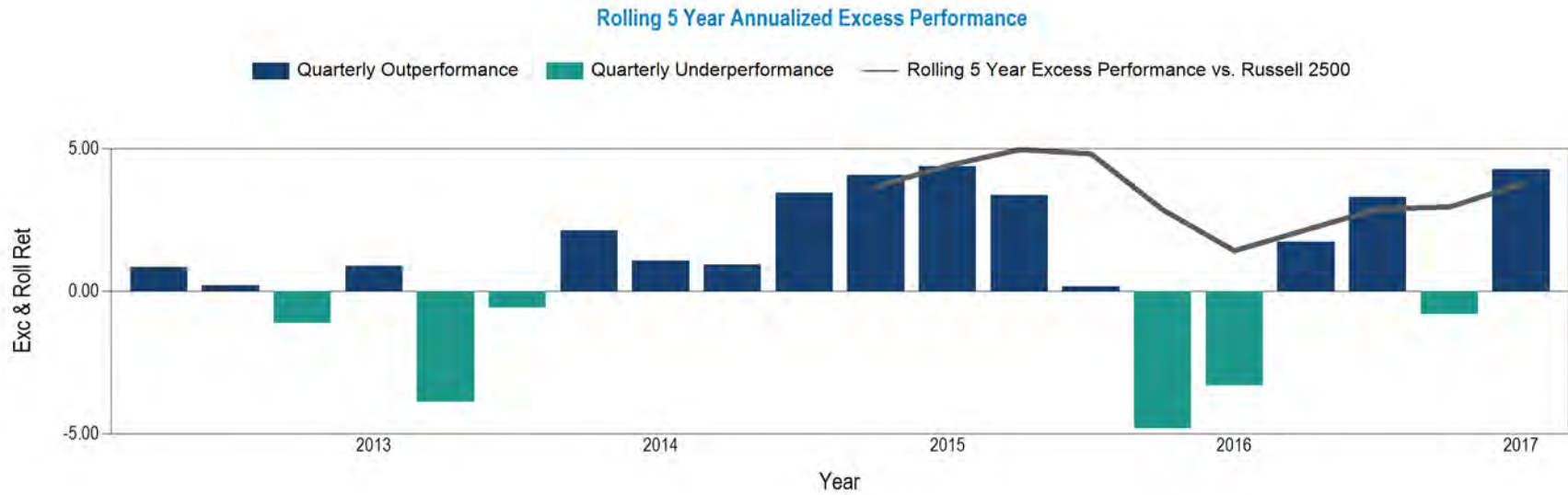
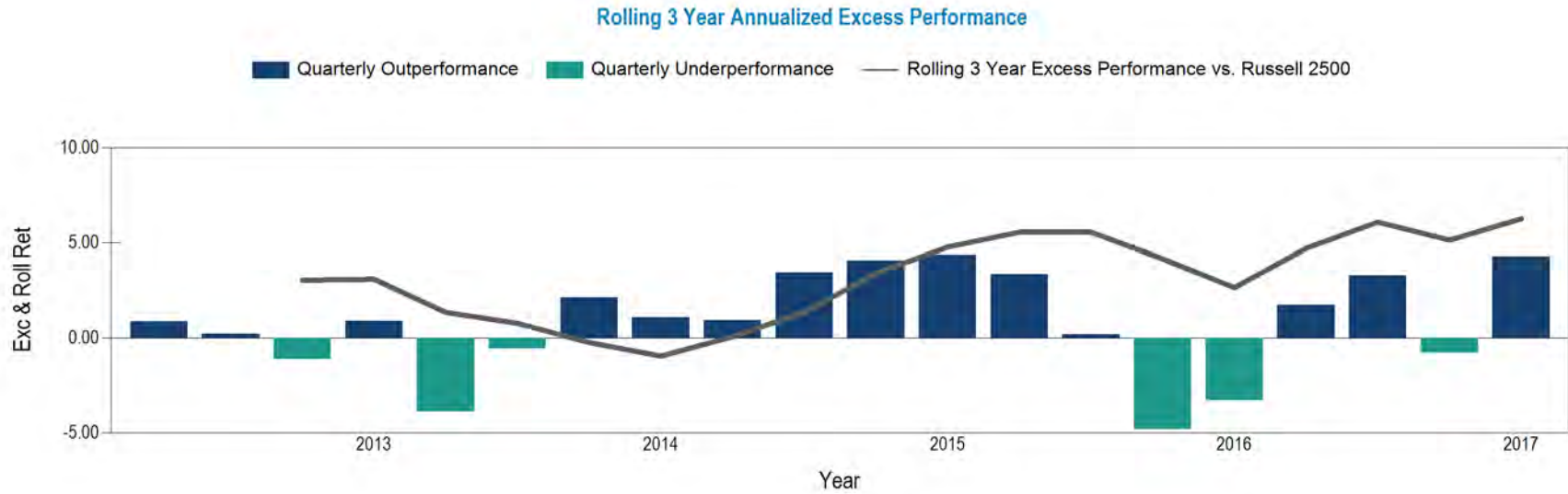


- Atlanta Capital Mgmt
- ◆ Russell 2500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Small-Mid Cap Equity Gross

Annualized Return vs. Annualized Standard Deviation  
 5 Years Ending December 31, 2017



- Atlanta Capital Mgmt
- ◆ Russell 2500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Small-Mid Cap Equity Gross



Total International Equity  
Asset Class Overview (Gross of Fees)

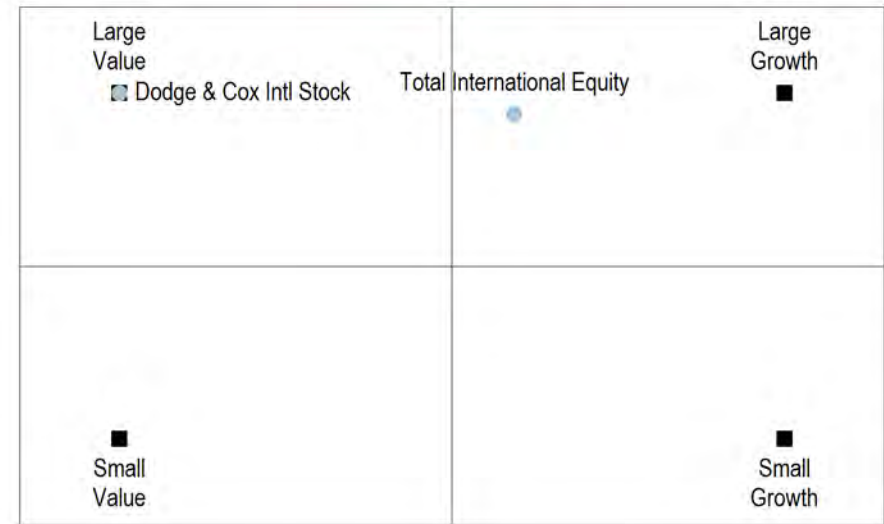
Period Ending: December 31, 2017

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total International Equity</b>	<b>332,949,417</b>	<b>3.3</b>	<b>26.6</b>	<b>7.4</b>	<b>8.3</b>	<b>3.9</b>	<b>26.6</b>	<b>2.2</b>	<b>-4.3</b>	<b>2.1</b>	<b>17.9</b>
MSCI ACWI ex USA Gross		5.1	27.8	8.3	7.3	2.3	27.8	5.0	-5.3	-3.4	15.8
InvestorForce Public DB ex-US Eq Gross Rank		94	81	90	45	19	81	82	68	1	50
Dodge & Cox Intl Stock	171,958,176	1.4	24.7	6.6	9.2	3.7	24.7	9.0	-10.8	0.7	27.1
MSCI EAFE Gross		4.3	25.6	8.3	8.4	2.4	25.6	1.5	-0.4	-4.5	23.3
eV All EAFE Equity Gross Rank		99	74	93	57	51	74	3	99	13	32
WCM International Growth	160,991,241	5.5	--	--	--	--	--	--	--	--	--
MSCI ACWI ex USA Gross		5.1	--	--	--	--	--	--	--	--	--
eV ACWI ex-US All Cap Growth Eq Gross Rank		49	--	--	--	--	--	--	--	--	--

EAFE Effective Style Map  
3 Years Ending December 31, 2017



EAFE Effective Style Map  
5 Years Ending December 31, 2017





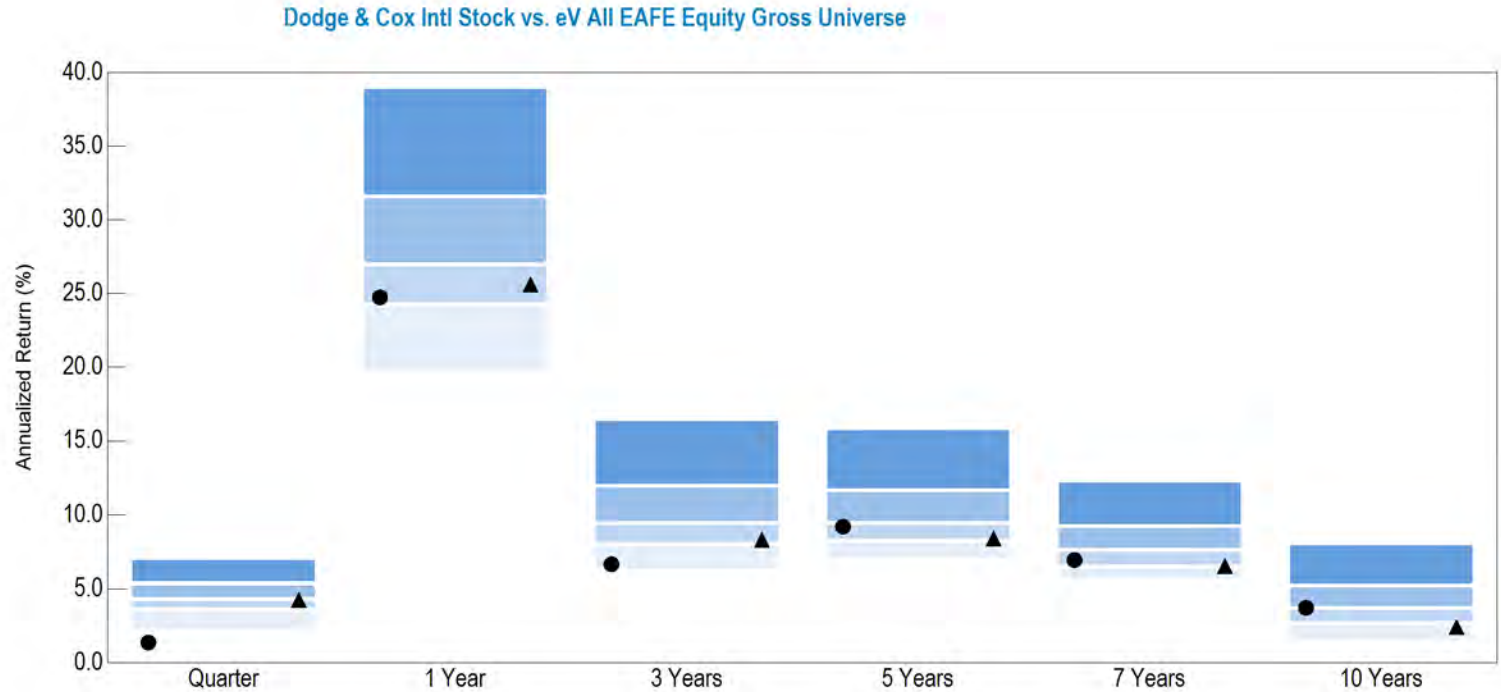
Total International Equity  
 Asset Class Overview (Net of Fees)

Period Ending: December 31, 2017

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total International Equity</b>	<b>332,949,417</b>	<b>3.2</b>	<b>25.8</b>	<b>6.7</b>	<b>7.6</b>	<b>--</b>	<b>25.8</b>	<b>1.6</b>	<b>-4.9</b>	<b>1.4</b>	<b>17.0</b>
<i>MSCI ACWI ex USA Gross</i>		5.1	27.8	8.3	7.3	--	27.8	5.0	-5.3	-3.4	15.8
Dodge & Cox Intl Stock	171,958,176	1.2	23.9	6.0	8.5	3.2	23.9	8.3	-11.4	0.1	26.3
<i>MSCI EAFE Gross</i>		4.3	25.6	8.3	8.4	2.4	25.6	1.5	-0.4	-4.5	23.3
WCM International Growth	160,991,241	5.4	--	--	--	--	--	--	--	--	--
<i>MSCI ACWI ex USA Gross</i>		5.1	--	--	--	--	--	--	--	--	--

Dodge & Cox Intl Stock  
 Cumulative Performance Comparison (Gross of Fees)

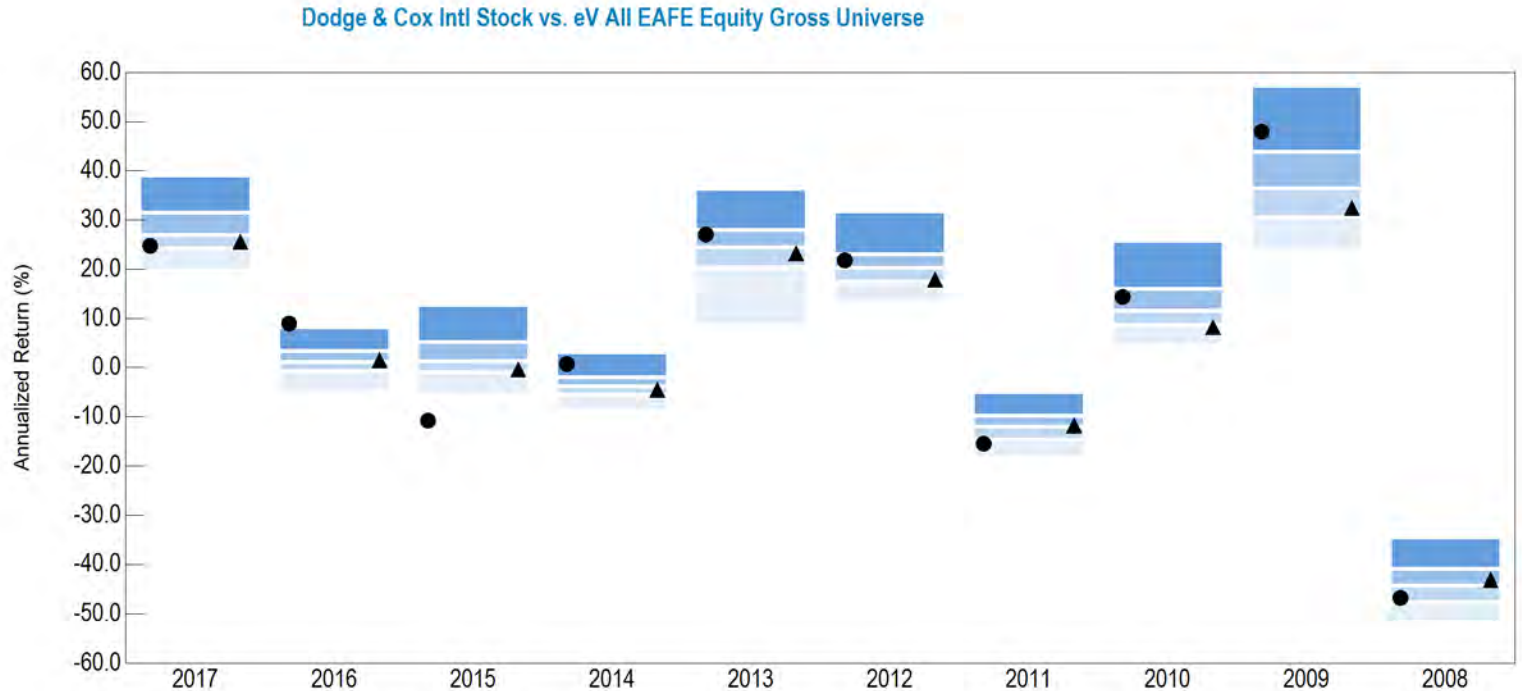
Period Ending: December 31, 2017



	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	7.0		39.0		16.5		15.8		12.3		8.0	
25th Percentile	5.4		31.6		12.0		11.7		9.3		5.2	
Median	4.3		27.0		9.5		9.4		7.7		3.7	
75th Percentile	3.7		24.3		8.0		8.3		6.5		2.7	
95th Percentile	2.2		19.7		6.3		6.9		5.6		1.4	
# of Portfolios	370		370		344		314		288		249	
● Dodge & Cox Intl Stock	1.4	(99)	24.7	(74)	6.6	(93)	9.2	(57)	6.9	(67)	3.7	(51)
▲ MSCI EAFE Gross	4.3	(53)	25.6	(63)	8.3	(70)	8.4	(73)	6.5	(76)	2.4	(80)

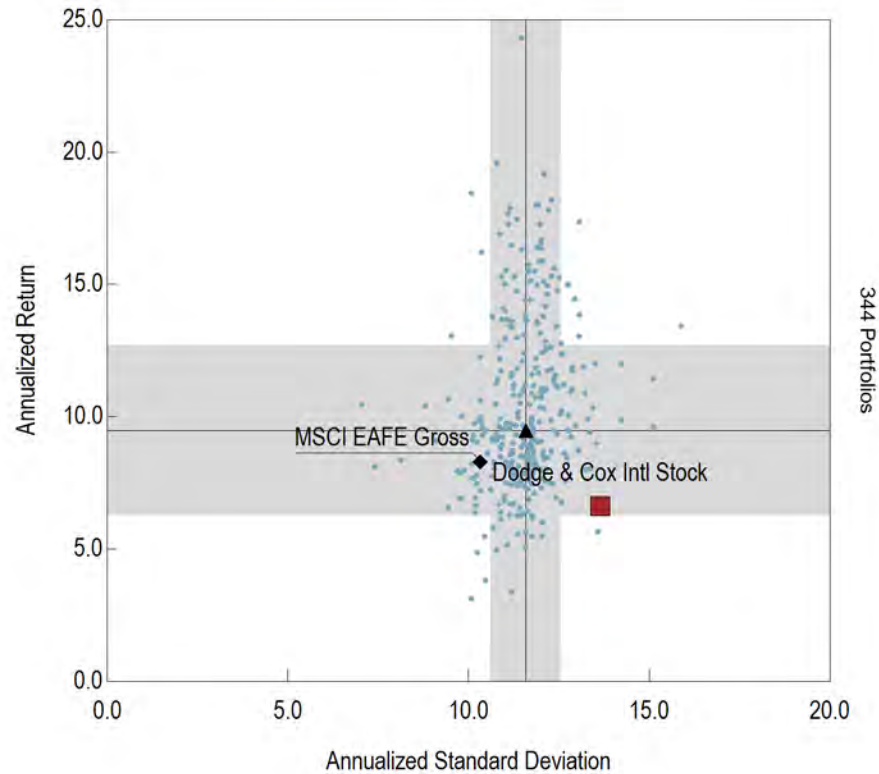
Dodge & Cox Intl Stock  
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2017



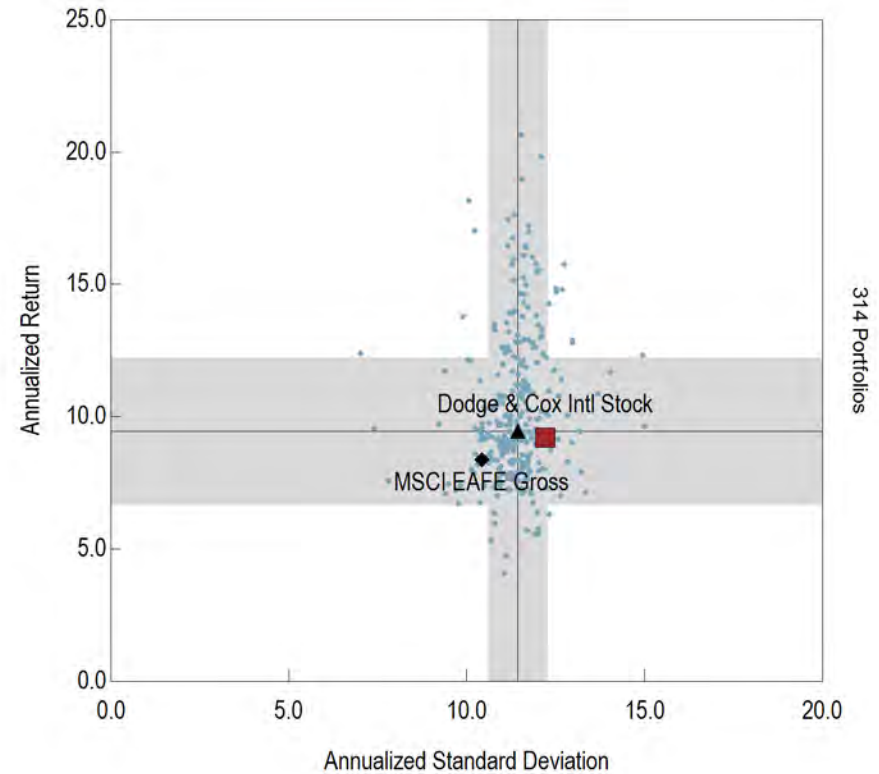
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<b>Return (Rank)</b>										
5th Percentile	39.0	8.1	12.6	3.0	36.3	31.7	-5.1	25.7	57.3	-34.5
25th Percentile	31.6	3.4	5.2	-1.9	28.1	23.1	-9.7	16.1	44.0	-40.8
Median	27.0	1.3	1.4	-3.7	24.6	20.4	-12.0	11.7	36.5	-44.1
75th Percentile	24.3	-0.6	-0.9	-5.4	20.5	17.5	-14.5	8.7	30.7	-47.5
95th Percentile	19.7	-4.9	-5.4	-8.6	8.6	13.3	-18.2	4.6	23.7	-51.5
# of Portfolios	370	350	325	314	284	263	278	352	455	477
● Dodge & Cox Intl Stock	24.7 (74)	9.0 (3)	-10.8 (99)	0.7 (13)	27.1 (32)	21.8 (37)	-15.5 (82)	14.4 (36)	48.0 (17)	-46.7 (69)
▲ MSCI EAFE Gross	25.6 (63)	1.5 (47)	-0.4 (66)	-4.5 (60)	23.3 (60)	17.9 (72)	-11.7 (47)	8.2 (78)	32.5 (67)	-43.1 (41)

Annualized Return vs. Annualized Standard Deviation  
 3 Years Ending December 31, 2017

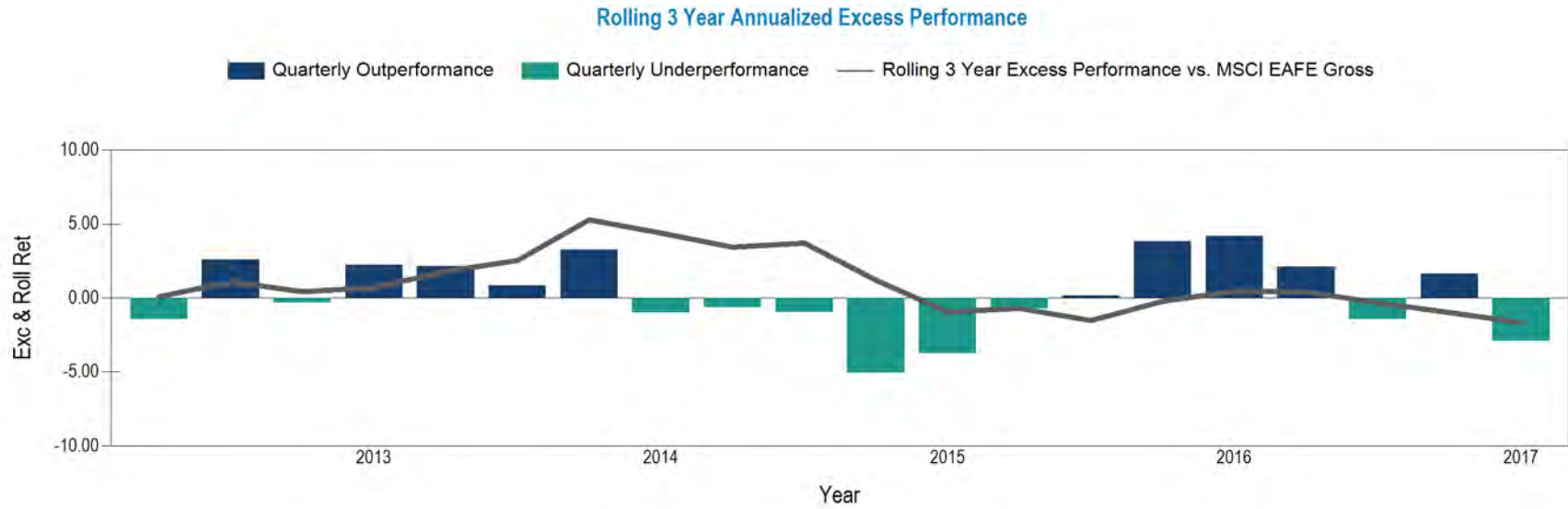


- Dodge & Cox Intl Stock
- ◆ MSCI EAFE Gross
- ▲ Universe Median
- 68% Confidence Interval
- eV All EAFE Equity Gross

Annualized Return vs. Annualized Standard Deviation  
 5 Years Ending December 31, 2017



- Dodge & Cox Intl Stock
- ◆ MSCI EAFE Gross
- ▲ Universe Median
- 68% Confidence Interval
- eV All EAFE Equity Gross

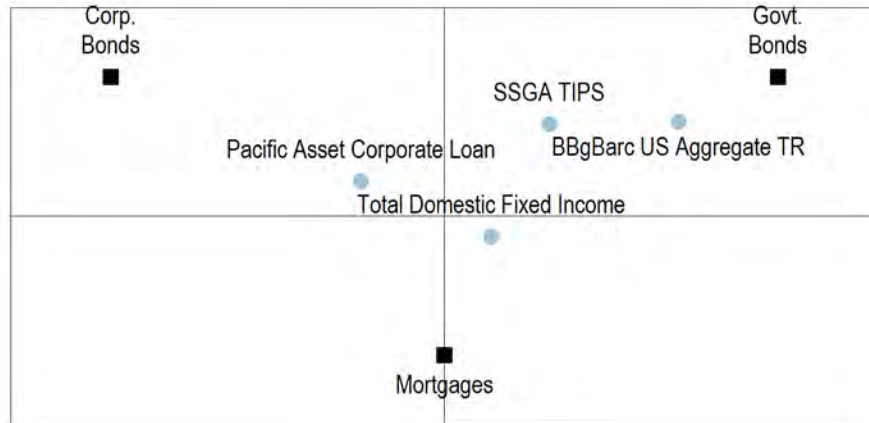


# Total Domestic Fixed Income Asset Class Overview (Gross of Fees)

Period Ending: December 31, 2017

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total Domestic Fixed Income</b>	<b>264,752,519</b>	<b>0.8</b>	<b>4.3</b>	<b>3.3</b>	<b>2.3</b>	<b>3.7</b>	<b>4.3</b>	<b>4.5</b>	<b>1.1</b>	<b>4.7</b>	<b>-2.7</b>
<i>BBgBarc US Aggregate TR</i>		0.4	3.5	2.2	2.1	4.0	3.5	2.6	0.6	6.0	-2.0
<i>InvestorForce Public DB US Fix Inc Gross Rank</i>		22	50	34	60	65	50	49	17	68	95
<b>BlackRock Core Bond</b>	<b>95,690,196</b>	<b>0.5</b>	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Aggregate TR</i>		0.4	--	--	--	--	--	--	--	--	--
<i>eV US Core Fixed Inc Gross Rank</i>		42	--	--	--	--	--	--	--	--	--
<b>Dodge &amp; Cox Income Fund</b>	<b>100,300,932</b>	<b>0.6</b>	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Aggregate TR</i>		0.4	--	--	--	--	--	--	--	--	--
<i>eV US Core Fixed Inc Gross Rank</i>		32	--	--	--	--	--	--	--	--	--
<b>Pacific Asset Corporate Loan</b>	<b>68,761,046</b>	<b>1.4</b>	<b>4.9</b>	<b>5.5</b>	--	--	<b>4.9</b>	<b>9.2</b>	<b>2.5</b>	--	--
<i>S&amp;P/LSTA Leveraged Loan Index</i>		1.1	4.1	4.4	--	--	4.1	10.2	-0.7	--	--
<i>eV Float-Rate Bank Loan Gross Rank</i>		18	26	19	--	--	26	51	9	--	--
<b>SSGA TIPS</b>	<b>345</b>	<b>0.7</b>	<b>2.5</b>	<b>1.9</b>	<b>0.0</b>	--	<b>2.5</b>	<b>4.7</b>	<b>-1.5</b>	<b>3.6</b>	<b>-8.6</b>
<i>BBgBarc US TIPS TR</i>		1.3	3.0	2.1	0.1	--	3.0	4.7	-1.4	3.6	-8.6
<i>eV US TIPS / Inflation Fixed Inc Gross Rank</i>		78	79	84	91	--	79	51	64	44	77

Fixed Income Effective Style Map  
3 Years Ending December 31, 2017



Fixed Income Effective Style Map  
5 Years Ending December 31, 2017





Total Domestic Fixed Income  
Asset Class Overview (Net of Fees)

Period Ending: December 31, 2017

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total Domestic Fixed Income</b>	<b>264,752,519</b>	<b>0.7</b>	<b>3.9</b>	<b>3.0</b>	<b>2.1</b>	<b>--</b>	<b>3.9</b>	<b>4.2</b>	<b>0.9</b>	<b>4.4</b>	<b>-3.0</b>
<i>BBgBarc US Aggregate TR</i>		0.4	3.5	2.2	2.1	--	3.5	2.6	0.6	6.0	-2.0
BlackRock Core Bond	95,690,196	0.5	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Aggregate TR</i>		0.4	--	--	--	--	--	--	--	--	--
Dodge & Cox Income Fund	100,300,932	0.5	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Aggregate TR</i>		0.4	--	--	--	--	--	--	--	--	--
Pacific Asset Corporate Loan	68,761,046	1.3	4.6	5.1	--	--	4.6	8.8	2.1	--	--
<i>S&amp;P/LSTA Leveraged Loan Index</i>		1.1	4.1	4.4	--	--	4.1	10.2	-0.7	--	--
SSGA TIPS	345	0.7	2.4	1.8	0.0	--	2.4	4.6	-1.5	3.6	-8.7
<i>BBgBarc US TIPS TR</i>		1.3	3.0	2.1	0.1	--	3.0	4.7	-1.4	3.6	-8.6

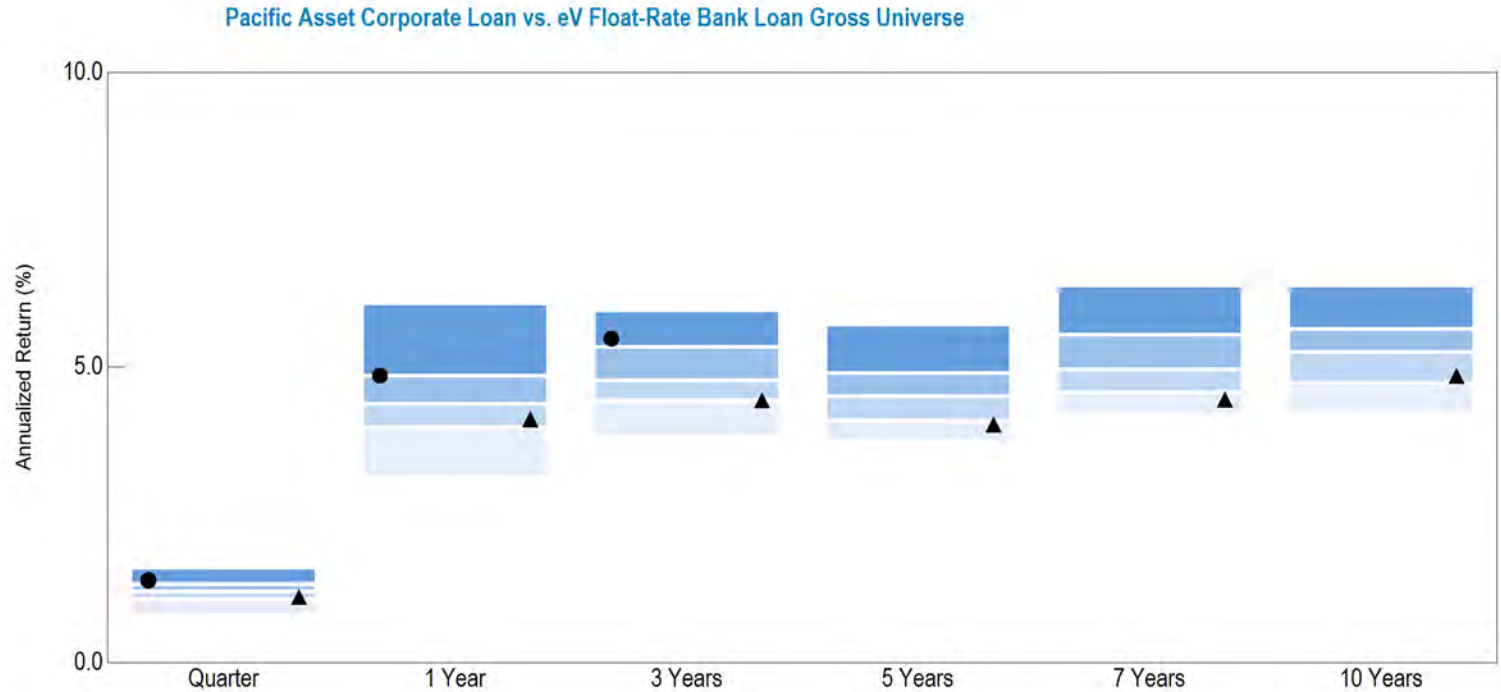
Correlation Matrix  
Last 5 Years

	Total Domestic Fixed Income	BlackRock Core Bond	Dodge & Cox Income Fund	Pacific Asset Corporate Loan	SSGA TIPS	BBgBarc US Aggregate TR
Total Domestic Fixed Income	1.00	--	--	--	--	--
BlackRock Core Bond	--	--	--	--	--	--
Dodge & Cox Income Fund	--	--	--	--	--	--
Pacific Asset Corporate Loan	--	--	--	--	--	--
SSGA TIPS	0.95	--	--	--	1.00	--
BBgBarc US Aggregate TR	0.92	--	--	--	0.80	1.00

SSGA TIPS liquidated on 12/7/2017, a residual balance remains.

Pacific Asset Corporate Loan  
 Cumulative Performance Comparison (Gross of Fees)

Period Ending: December 31, 2017

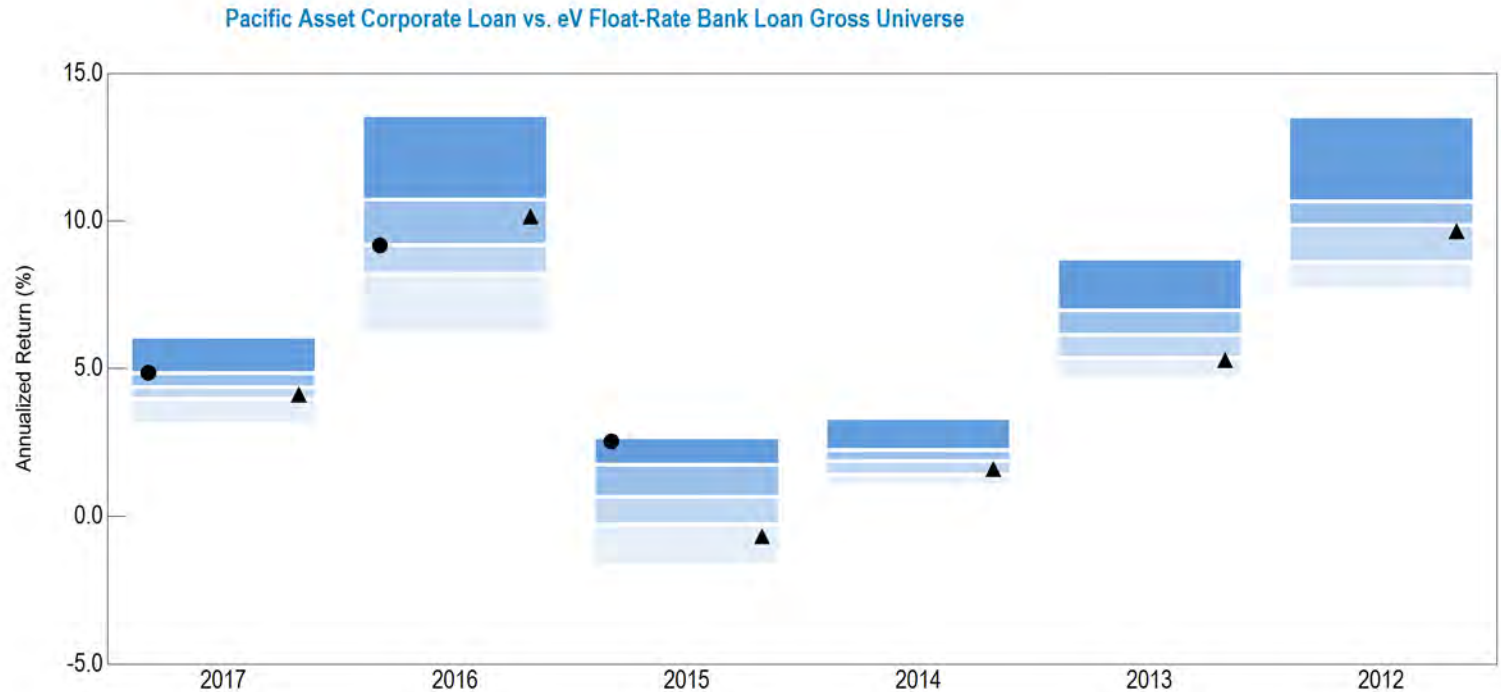


	Return (Rank)											
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	1.6		6.1		6.0		5.7		6.4		6.4	
25th Percentile	1.3		4.9		5.3		4.9		5.6		5.7	
Median	1.2		4.4		4.8		4.5		5.0		5.3	
75th Percentile	1.1		4.0		4.4		4.1		4.6		4.7	
95th Percentile	0.8		3.1		3.8		3.7		4.2		4.2	
# of Portfolios	75		75		75		65		57		43	
● Pacific Asset Corporate Loan	1.4	(18)	4.9	(26)	5.5	(19)	--	(--)	--	(--)	--	(--)
▲ S&P/LSTA Leveraged Loan Index	1.1	(72)	4.1	(71)	4.4	(76)	4.0	(83)	4.5	(87)	4.9	(73)



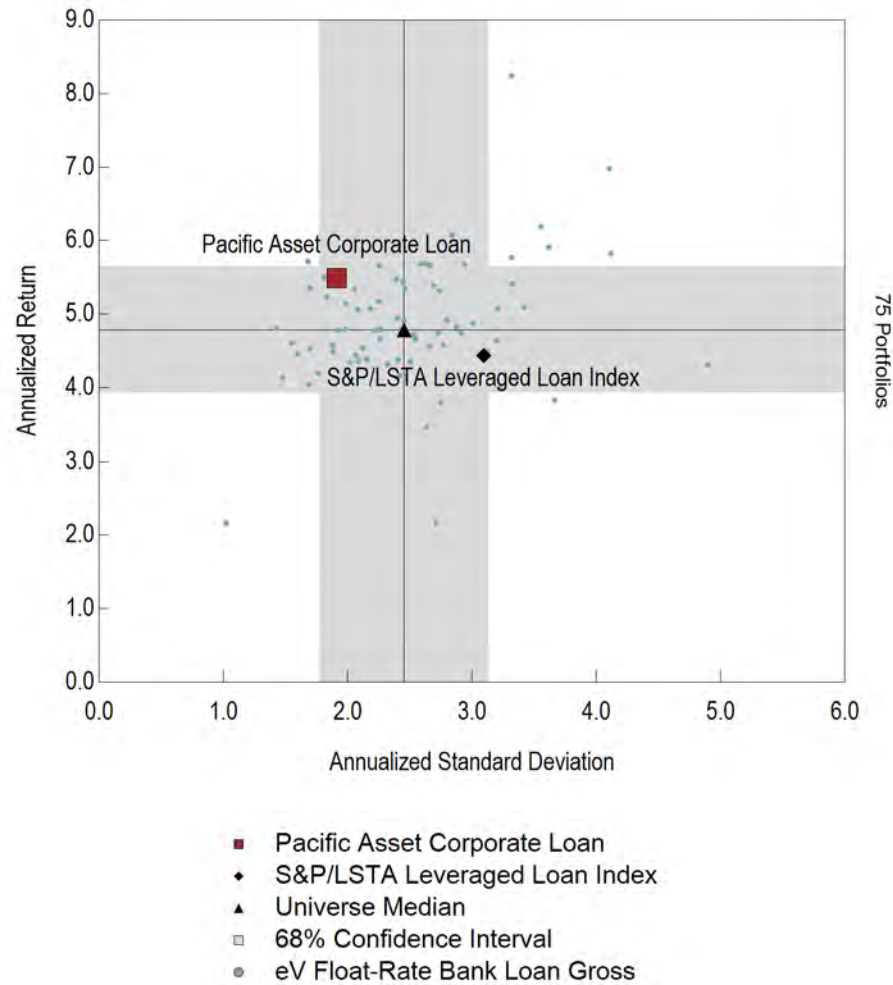
Pacific Asset Corporate Loan  
 Consecutive Performance Comparison (Gross of Fees)

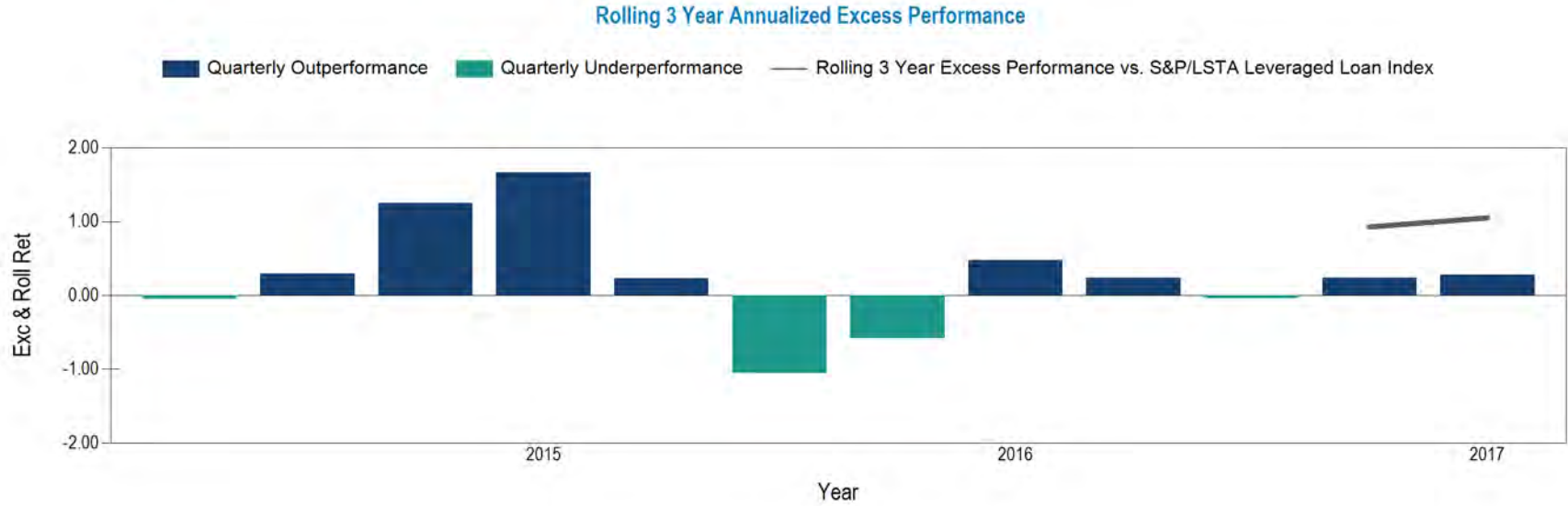
Period Ending: December 31, 2017



	2017		2016		2015		2014		2013		2012	
<b>5th Percentile</b>	6.1		13.6		2.7		3.3		8.7		13.5	
<b>25th Percentile</b>	4.9		10.7		1.8		2.3		7.0		10.7	
<b>Median</b>	4.4		9.2		0.7		1.9		6.2		9.9	
<b>75th Percentile</b>	4.0		8.2		-0.3		1.4		5.4		8.6	
<b>95th Percentile</b>	3.1		6.2		-1.7		1.1		4.7		7.7	
<b># of Portfolios</b>	75		69		54		48		53		41	
<b>● Pacific Asset Corporate Loan</b>	4.9	(26)	9.2	(51)	2.5	(9)	--	(--)	--	(--)	--	(--)
<b>▲ S&amp;P/LSTA Leveraged Loan Index</b>	4.1	(71)	10.2	(35)	-0.7	(82)	1.6	(68)	5.3	(79)	9.7	(58)

Annualized Return vs. Annualized Standard Deviation  
 3 Years Ending December 31, 2017





Total Global Fixed  
Asset Class Overview (Gross of Fees)

Period Ending: December 31, 2017

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total Global Fixed</b>	<b>142,353,544</b>	<b>0.1</b>	<b>14.4</b>	<b>2.2</b>	<b>0.1</b>	<b>3.9</b>	<b>14.4</b>	<b>5.8</b>	<b>-11.8</b>	<b>-2.2</b>	<b>-3.8</b>
<i>Citi World Govt Bond Index</i>		1.0	7.5	1.7	0.1	2.7	7.5	1.6	-3.6	-0.5	-4.0
<i>InvestorForce Public DB Gbl Fix Inc Gross Rank</i>		71	29	93	90	99	29	67	95	93	59
Brandywine Global Fixed Income	71,619,914	-0.3	12.5	1.4	1.1	4.4	12.5	2.2	-9.3	2.9	-1.6
<i>Citi WGBI ex US</i>		1.6	10.3	2.0	-0.3	2.4	10.3	1.8	-5.5	-2.7	-4.6
<i>eV Global Fixed Inc Unhedged Gross Rank</i>		95	9	87	71	38	9	71	96	43	59
Stone Harbor Local Markets Ins	70,733,630	0.5	16.4	3.1	--	--	16.4	9.9	-14.4	-7.7	--
<i>JPM GBI-EM Global Diversified TR USD</i>		0.8	15.2	2.5	--	--	15.2	9.9	-14.9	-5.7	--
<i>eV All Emg Mkts Fixed Inc Gross Rank</i>		83	14	84	--	--	14	67	79	98	--

Total Global Fixed  
Asset Class Overview (Net of Fees)

Period Ending: December 31, 2017

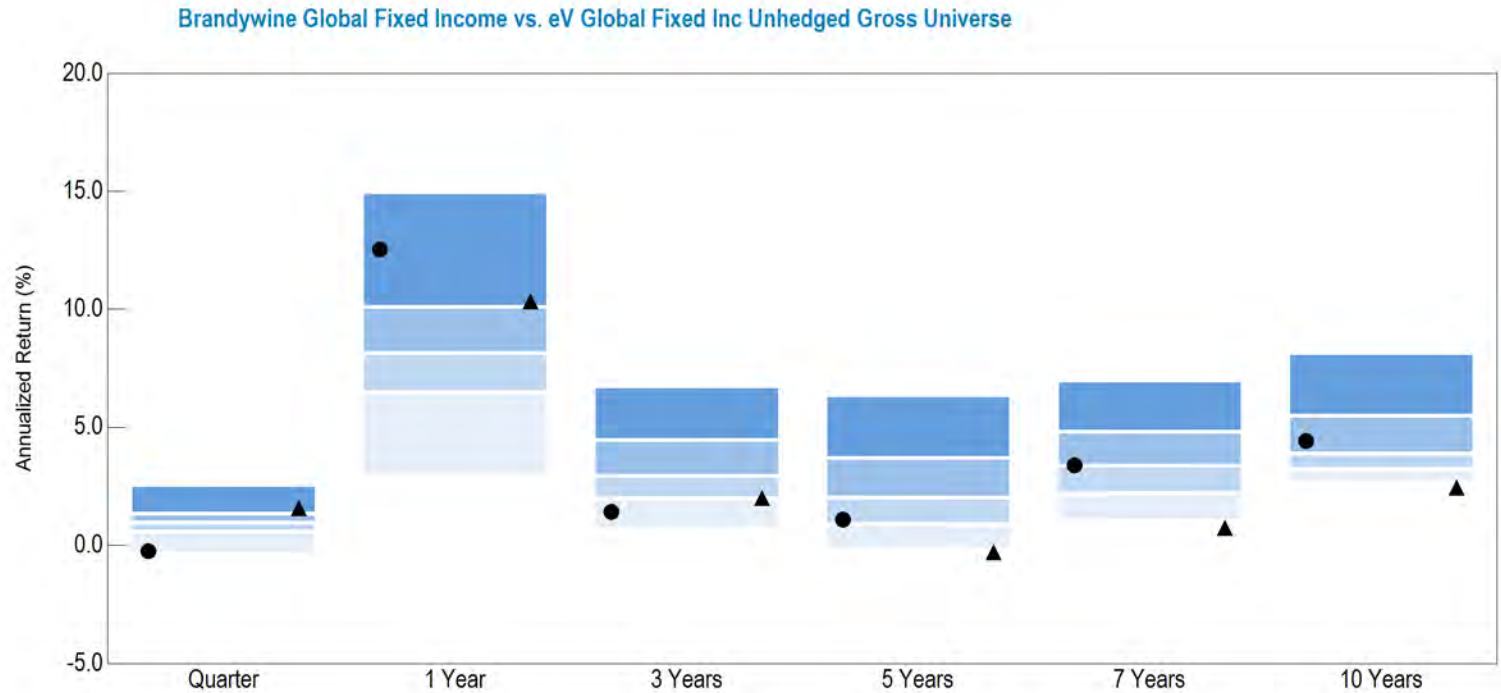
	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total Global Fixed</b>	<b>142,353,544</b>	<b>0.0</b>	<b>13.7</b>	<b>1.6</b>	<b>-0.5</b>	<b>--</b>	<b>13.7</b>	<b>5.1</b>	<b>-12.4</b>	<b>-2.8</b>	<b>-4.4</b>
<i>Citi World Govt Bond Index</i>		1.0	7.5	1.7	0.1	--	7.5	1.6	-3.6	-0.5	-4.0
Brandywine Global Fixed Income	71,619,914	-0.4	12.0	1.0	0.6	--	12.0	1.7	-9.7	2.4	-2.3
<i>Citi WGBI ex US</i>		1.6	10.3	2.0	-0.3	--	10.3	1.8	-5.5	-2.7	-4.6
Stone Harbor Local Markets Ins	70,733,630	0.3	15.4	2.2	--	--	15.4	9.0	-15.1	-8.6	--
<i>JPM GBI-EM Global Diversified TR USD</i>		0.8	15.2	2.5	--	--	15.2	9.9	-14.9	-5.7	--

Correlation Matrix  
Last 5 Years

	Total Global Fixed	Brandywine Global Fixed Income	Stone Harbor Local Markets Ins	Citi World Govt Bond Index
Total Global Fixed	1.00	--	--	--
Brandywine Global Fixed Income	0.95	1.00	--	--
Stone Harbor Local Markets Ins	--	--	--	--
Citi World Govt Bond Index	0.75	0.83	--	1.00

Brandywine Global Fixed Income  
 Cumulative Performance Comparison (Gross of Fees)

Period Ending: December 31, 2017

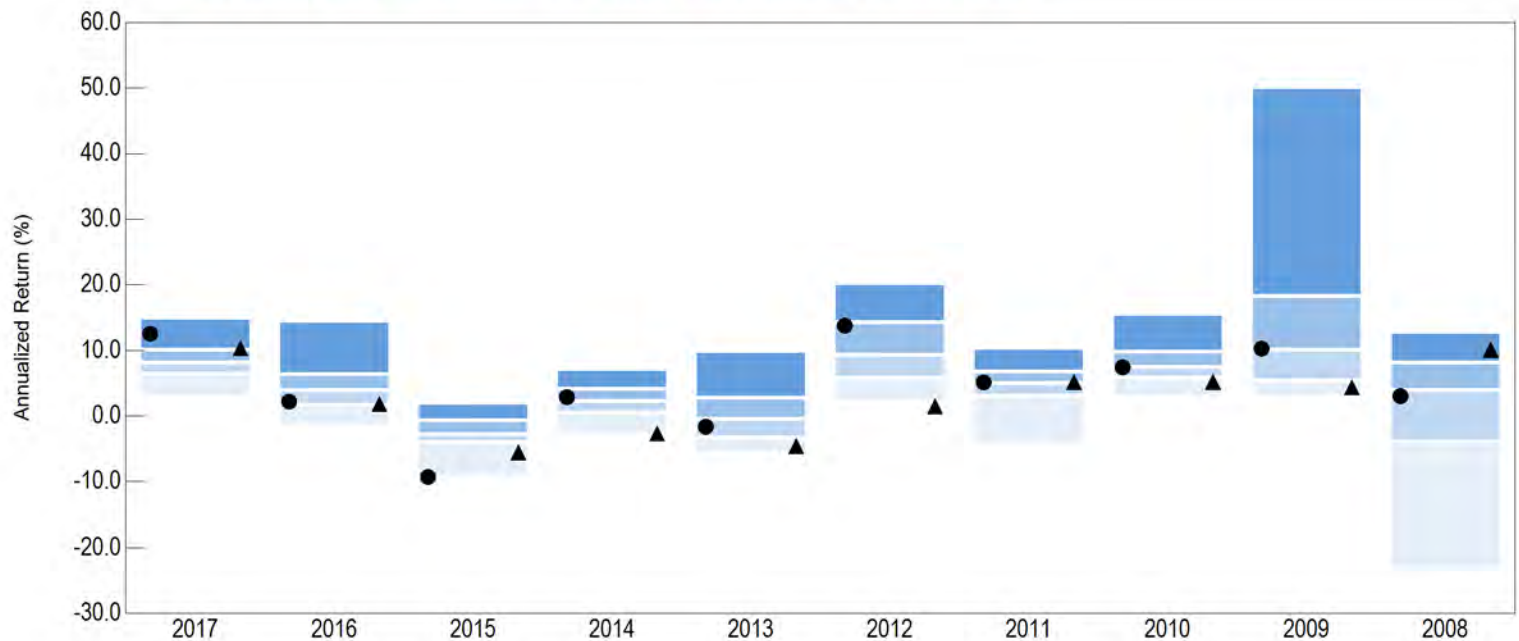


	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	2.5	15.0	6.7	6.4	7.0	8.1						
25th Percentile	1.4	10.1	4.5	3.7	4.8	5.5						
Median	1.0	8.2	3.0	2.0	3.4	3.9						
75th Percentile	0.6	6.5	2.0	0.9	2.2	3.3						
95th Percentile	-0.3	3.0	0.7	-0.1	1.1	2.7						
# of Portfolios	232	231	220	193	159	112						
● Brandywine Global Fixed Income	-0.3	(95)	12.5	(9)	1.4	(87)	1.1	(71)	3.4	(51)	4.4	(38)
▲ Citi WGBI ex US	1.6	(16)	10.3	(21)	2.0	(76)	-0.3	(97)	0.7	(99)	2.4	(97)

Brandywine Global Fixed Income  
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2017

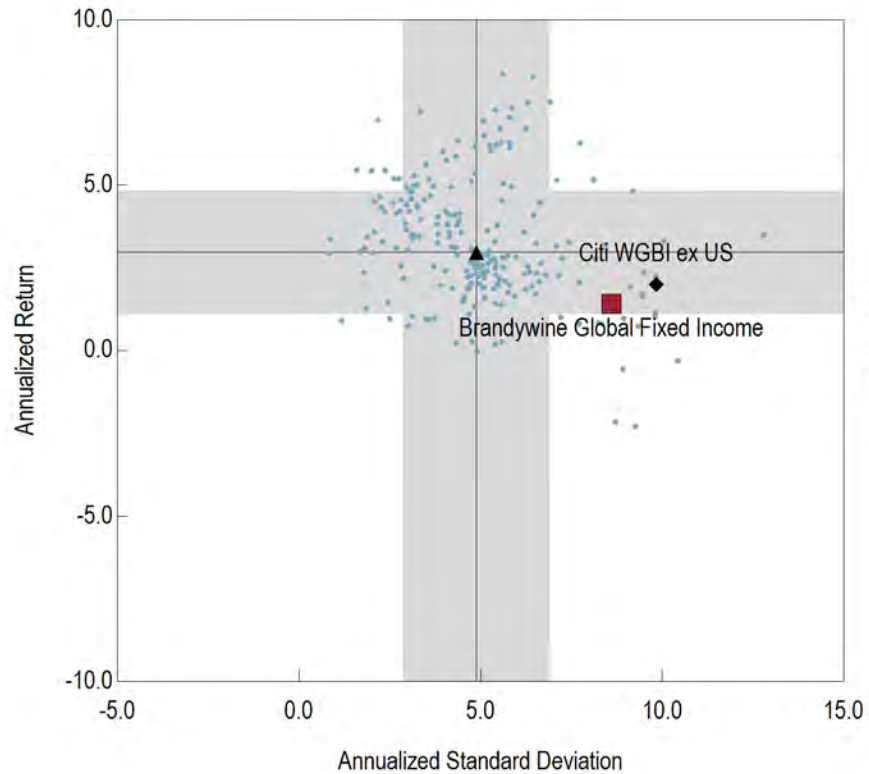
Brandywine Global Fixed Income vs. eV Global Fixed Inc Unhedged Gross Universe



	Return (Rank)									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
5th Percentile	15.0	14.5	2.0	7.1	9.8	20.2	10.4	15.5	50.1	12.8
25th Percentile	10.1	6.5	-0.6	4.2	2.8	14.3	6.9	9.9	18.4	8.2
Median	8.2	4.0	-2.7	2.3	-0.4	9.4	5.0	7.5	10.1	4.0
75th Percentile	6.5	1.8	-4.0	0.6	-3.2	5.9	3.2	6.0	5.4	-3.8
95th Percentile	3.0	-1.5	-9.2	-2.7	-5.6	2.2	-4.2	3.0	3.2	-23.0
# of Portfolios	231	221	189	159	142	118	108	76	72	73
● Brandywine Global Fixed Income	12.5 (9)	2.2 (71)	-9.3 (96)	2.9 (43)	-1.6 (59)	13.8 (30)	5.1 (49)	7.4 (52)	10.3 (49)	3.0 (53)
▲ Citi WGBI ex US	10.3 (21)	1.8 (75)	-5.5 (89)	-2.7 (95)	-4.6 (89)	1.5 (98)	5.2 (48)	5.2 (87)	4.4 (84)	10.1 (14)

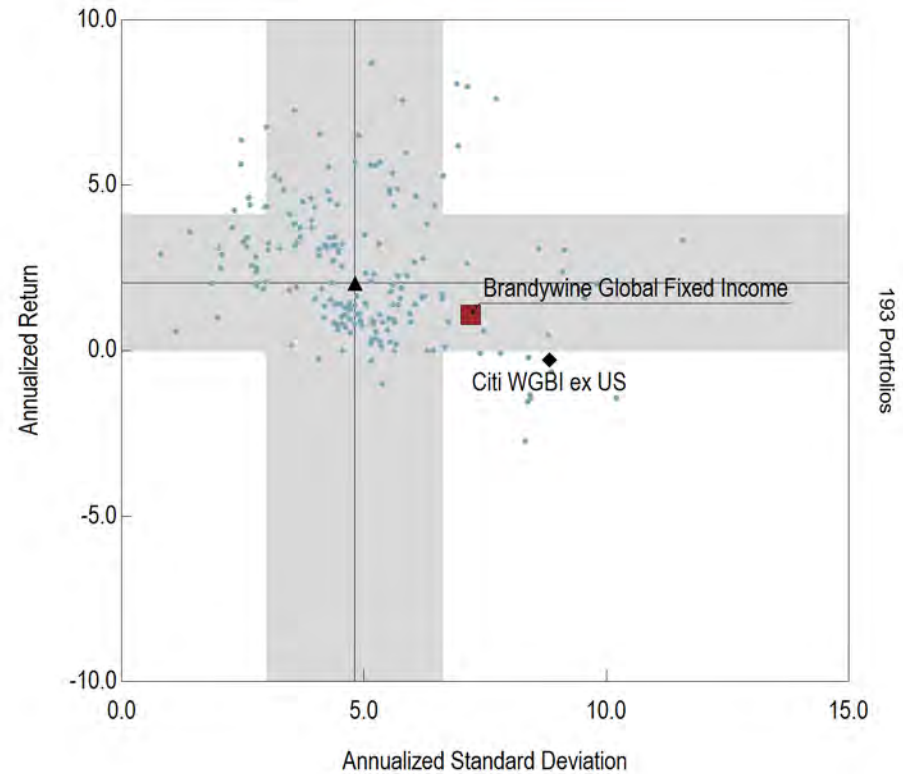


Annualized Return vs. Annualized Standard Deviation  
 3 Years Ending December 31, 2017



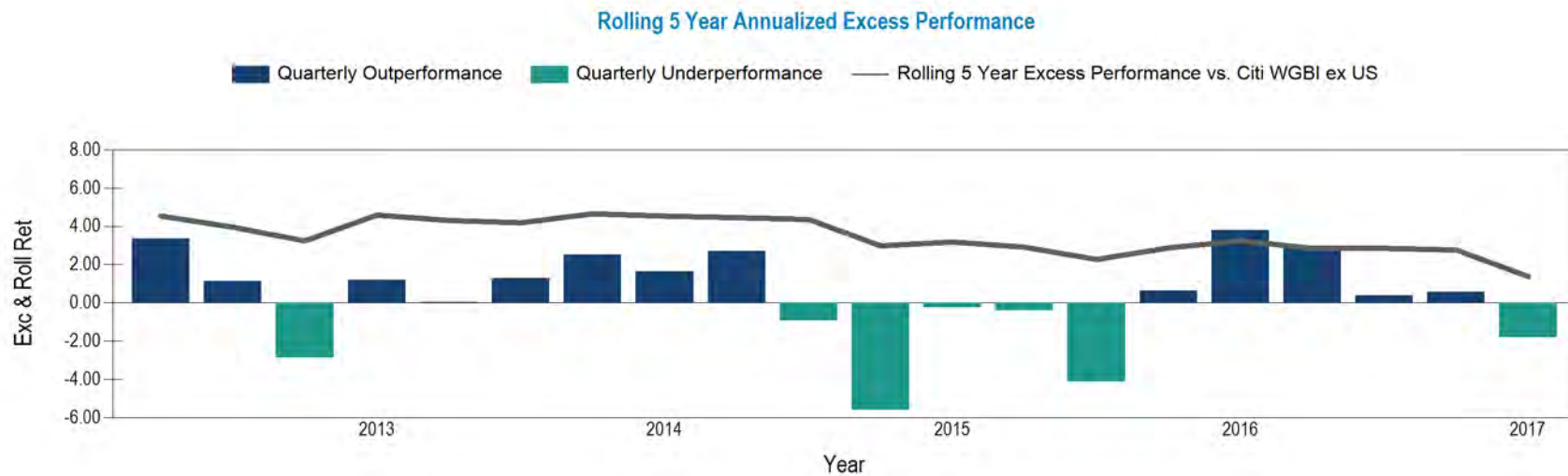
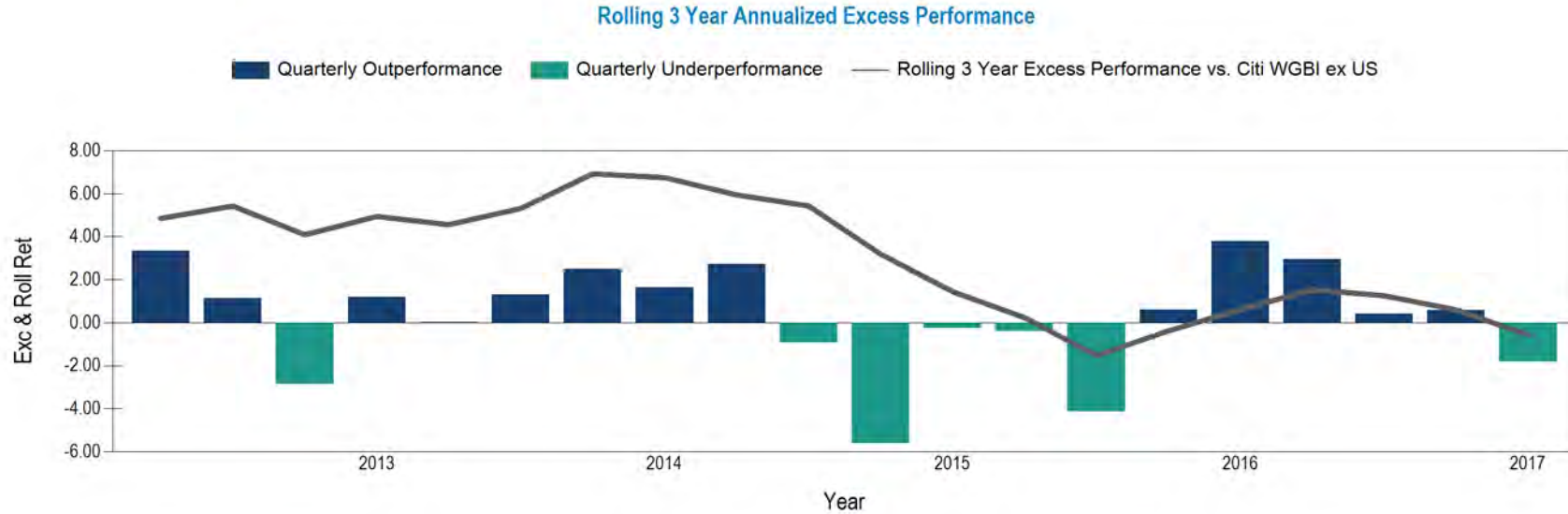
- Brandywine Global Fixed Income
- ◆ Citi WGBI ex US
- ▲ Universe Median
- 68% Confidence Interval
- eV Global Fixed Inc Unhedged Gross

Annualized Return vs. Annualized Standard Deviation  
 5 Years Ending December 31, 2017



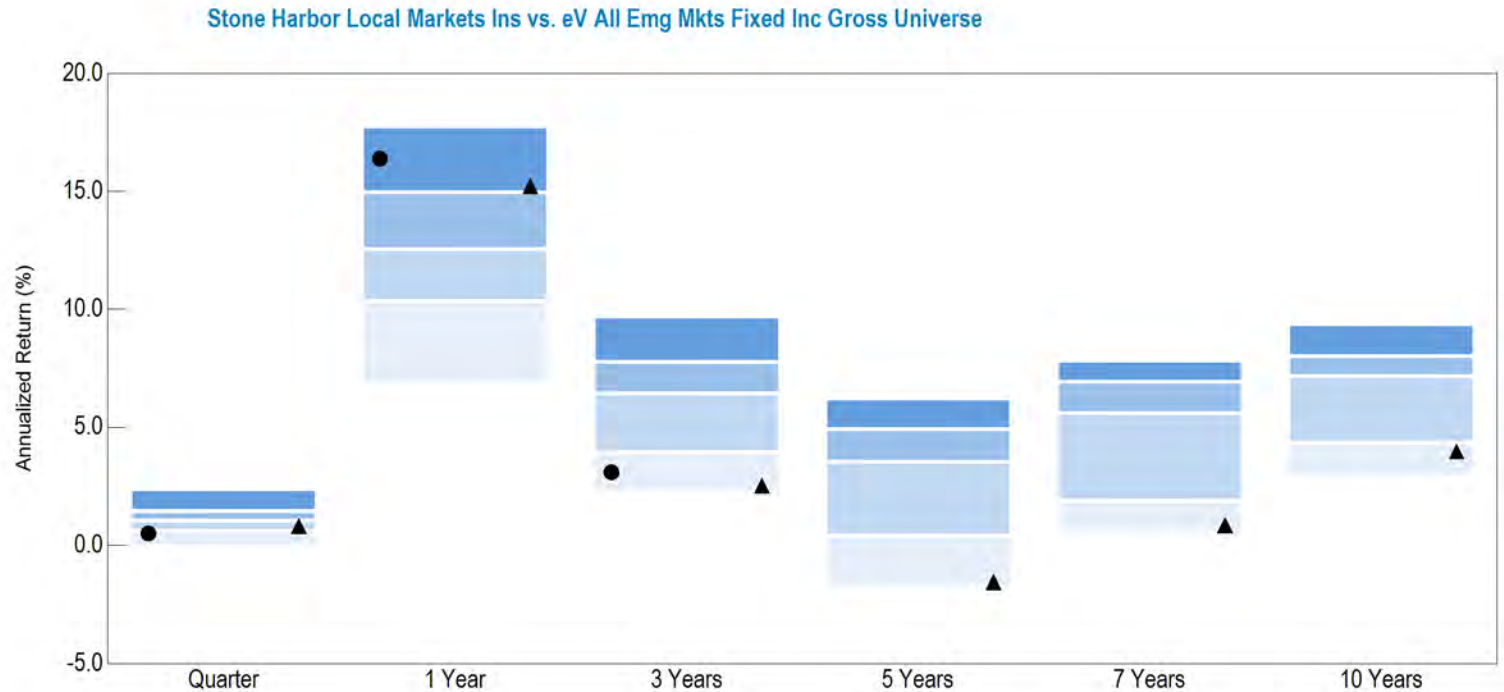
- Brandywine Global Fixed Income
- ◆ Citi WGBI ex US
- ▲ Universe Median
- 68% Confidence Interval
- eV Global Fixed Inc Unhedged Gross





Stone Harbor Local Markets Ins  
 Cumulative Performance Comparison (Gross of Fees)

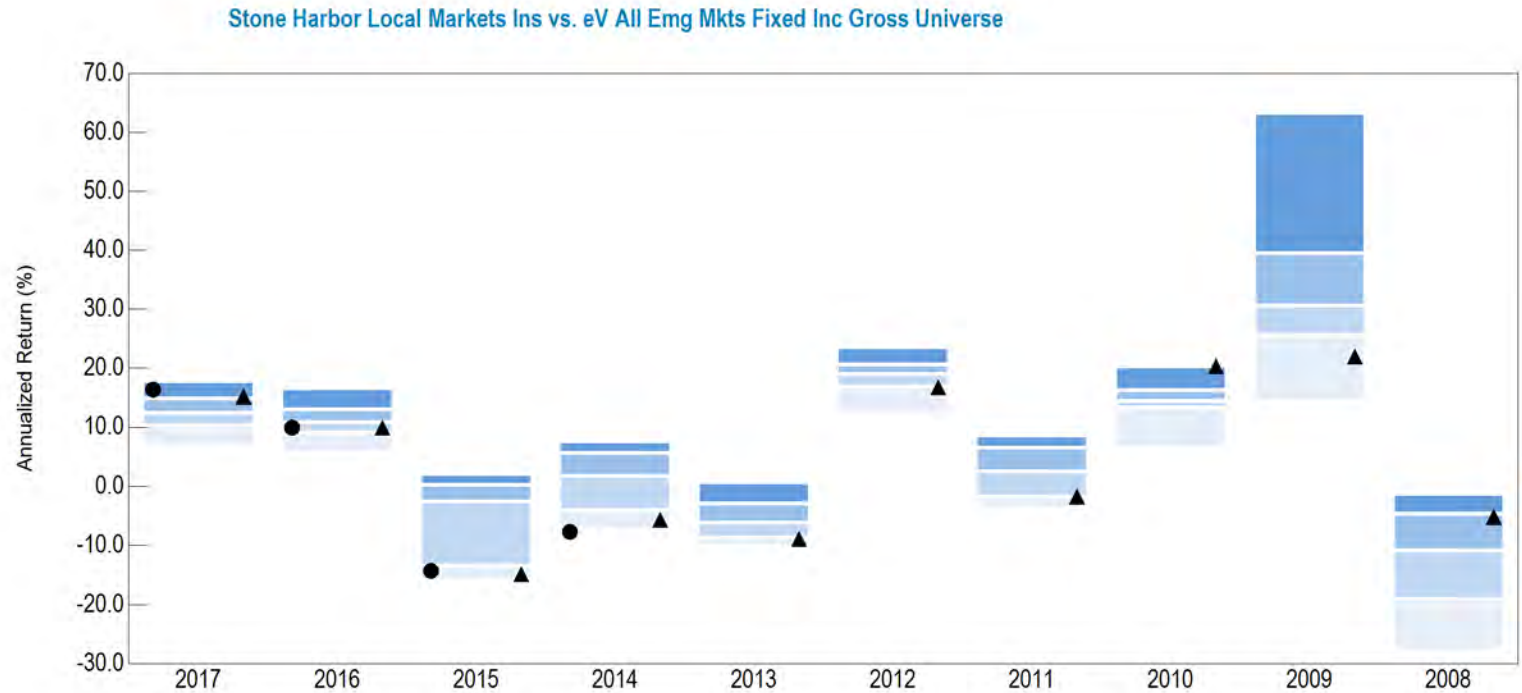
Period Ending: December 31, 2017



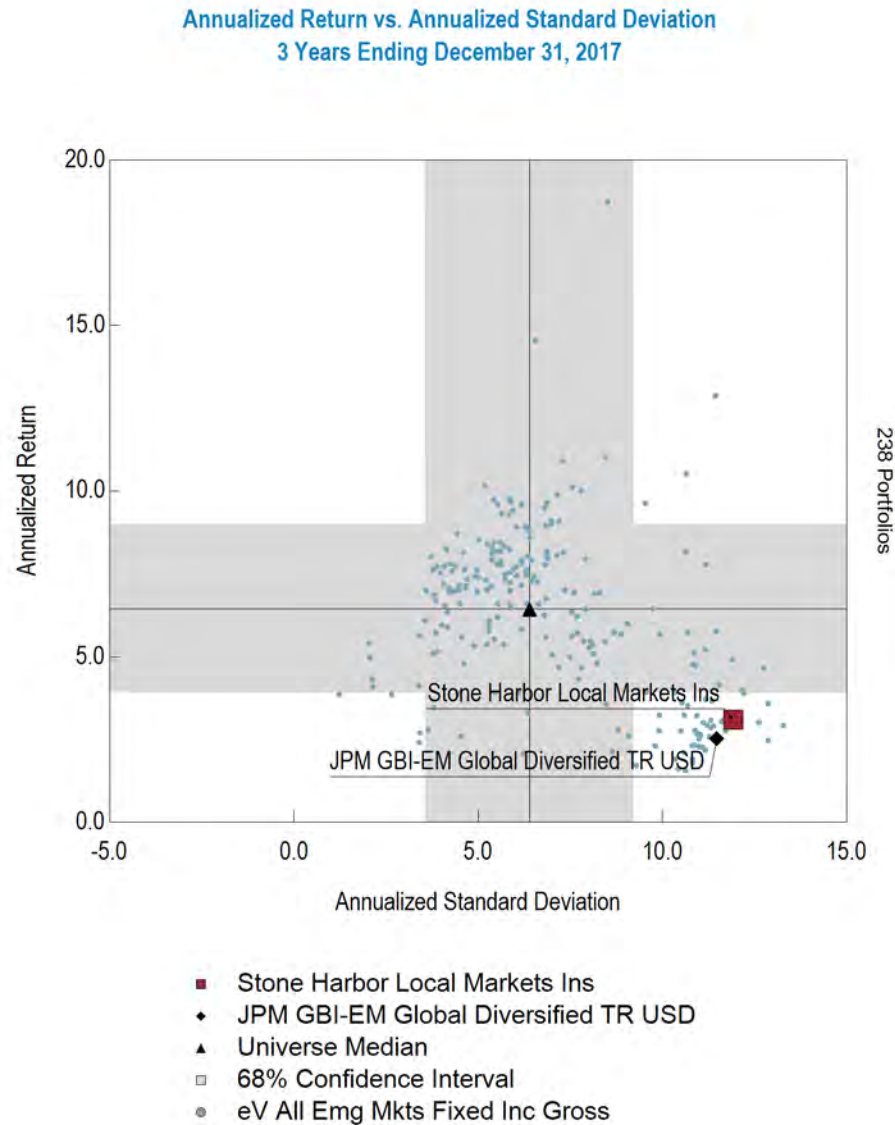
	Return (Rank)											
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	2.4		17.7		9.7		6.2		7.8		9.4	
25th Percentile	1.5		15.0		7.8		4.9		7.0		8.0	
Median	1.1		12.6		6.4		3.6		5.6		7.2	
75th Percentile	0.6		10.4		3.9		0.4		1.9		4.4	
95th Percentile	0.0		6.9		2.3		-1.8		0.6		2.9	
# of Portfolios	257		257		238		192		143		91	
● Stone Harbor Local Markets Ins	0.5	(83)	16.4	(14)	3.1	(84)	--	(--)	--	(--)	--	(--)
▲ JPM GBI-EM Global Diversified TR USD	0.8	(65)	15.2	(24)	2.5	(93)	-1.6	(93)	0.8	(91)	4.0	(82)

Stone Harbor Local Markets Ins  
 Consecutive Performance Comparison (Gross of Fees)

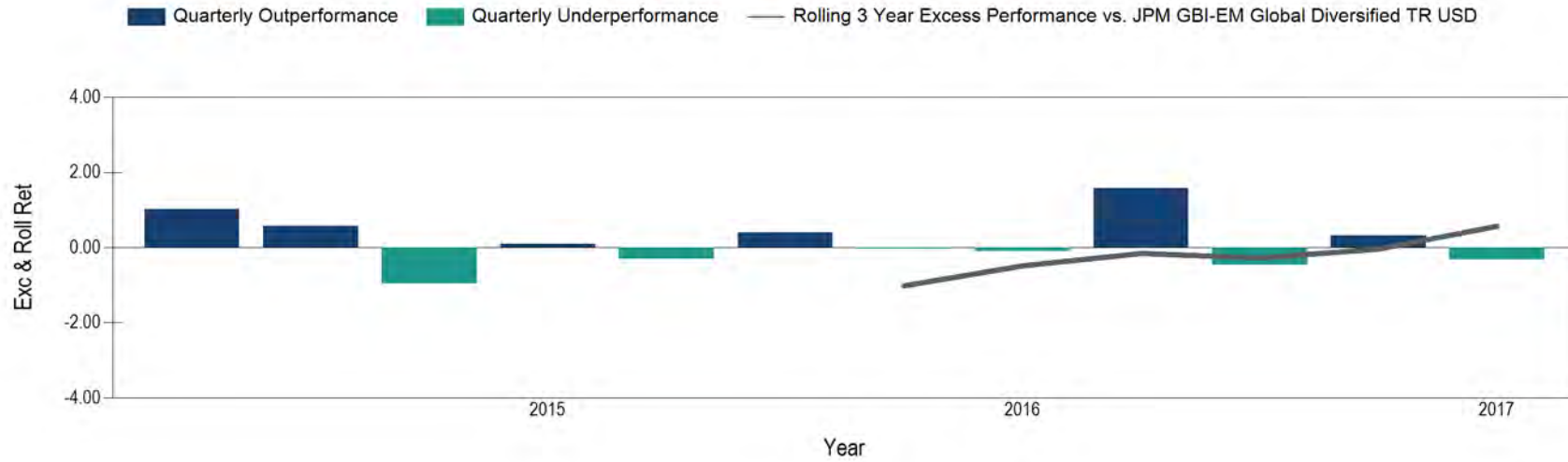
Period Ending: December 31, 2017



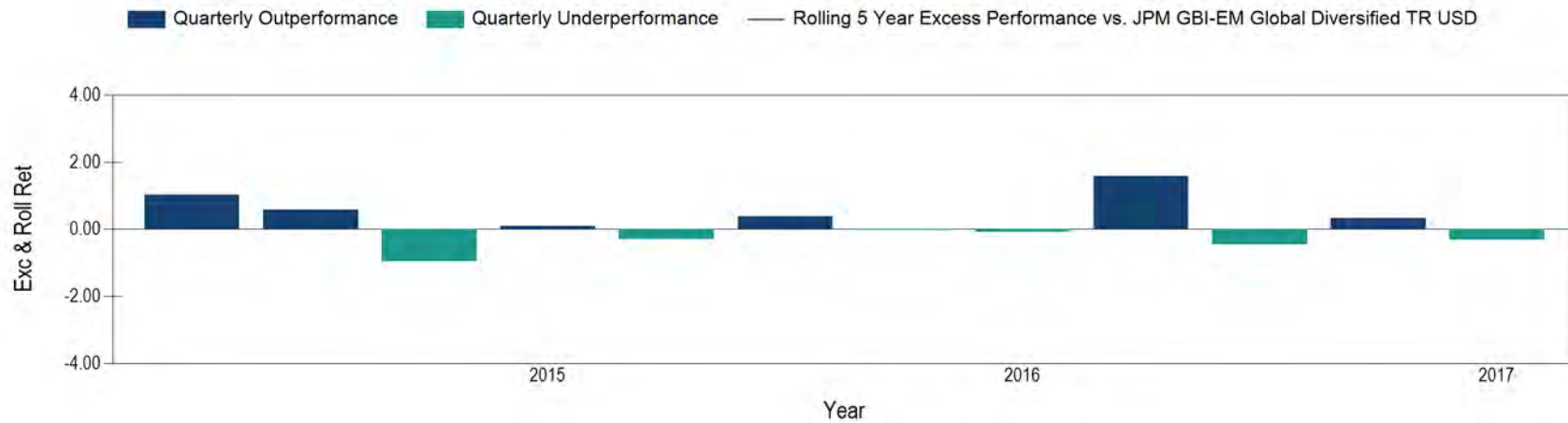
	Return (Rank)															
5th Percentile	17.7	16.6	2.1	7.6	0.7	23.6	8.6	20.3	63.2	-1.3						
25th Percentile	15.0	13.1	0.3	5.7	-2.9	20.7	6.6	16.3	39.6	-4.6						
Median	12.6	10.9	-2.6	1.8	-6.1	19.1	2.6	14.5	30.7	-10.8						
75th Percentile	10.4	9.2	-13.4	-4.0	-8.6	17.0	-1.6	13.4	25.6	-18.9						
95th Percentile	6.9	5.9	-15.9	-7.2	-10.2	12.5	-3.6	6.6	14.4	-27.7						
# of Portfolios	257	247	159	148	129	108	75	55	27	30						
● Stone Harbor Local Markets Ins	16.4 (14)	9.9 (67)	-14.4 (79)	-7.7 (98)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)						
▲ JPM GBI-EM Global Diversified TR USD	15.2 (24)	9.9 (67)	-14.9 (84)	-5.7 (91)	-9.0 (82)	16.8 (80)	-1.8 (77)	20.4 (5)	22.0 (85)	-5.2 (28)						



Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



Total Real Estate  
Asset Class Overview (Gross of Fees)

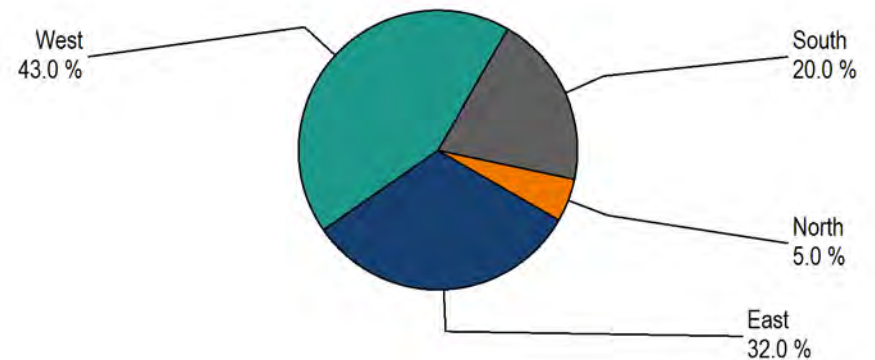
Period Ending: December 31, 2017

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total Real Estate</b>	<b>176,449,539</b>	<b>1.9</b>	<b>7.8</b>	<b>11.1</b>	<b>11.3</b>	<b>4.9</b>	<b>7.8</b>	<b>7.8</b>	<b>18.0</b>	<b>10.4</b>	<b>12.9</b>
<i>NCREIF Property Index</i>		1.8	7.0	9.4	10.2	6.1	7.0	8.0	13.3	11.8	11.0
JP Morgan Core Real Estate	151,102,074	1.5	6.1	9.9	11.3	--	6.1	8.4	15.2	11.2	15.9
<i>NCREIF-ODCE</i>		2.1	7.6	10.4	11.5	--	7.6	8.8	15.0	12.5	13.9
<i>NCREIF Property Index</i>		1.8	7.0	9.4	10.2	--	7.0	8.0	13.3	11.8	11.0
ARA American Strategic Value Realty	11,657,191	2.1	7.4	--	--	--	7.4	--	--	--	--
<i>NCREIF-ODCE</i>		2.1	7.6	--	--	--	7.6	--	--	--	--
<i>NCREIF Property Index</i>		1.8	7.0	--	--	--	7.0	--	--	--	--
Direct Real Estate	13,690,274	5.4	20.6	16.1	11.8	6.5	20.6	5.5	22.9	6.1	5.2
<i>NCREIF-ODCE</i>		2.1	7.6	10.4	11.5	5.0	7.6	8.8	15.0	12.5	13.9
<i>NCREIF Property Index</i>		1.8	7.0	9.4	10.2	6.1	7.0	8.0	13.3	11.8	11.0

Property Type Allocation  
Allocation as of December 31, 2017



Geographic Diversification  
Allocation as of December 31, 2017



Property Allocation and Geographic Diversification analytics exclude Direct Real Estate and ARA American. Direct Real Estate is lagged one quarter. Fidelity Real Estate Growth III liquidated 12/29/2017.



Total Real Estate  
Asset Class Overview (Net of Fees)

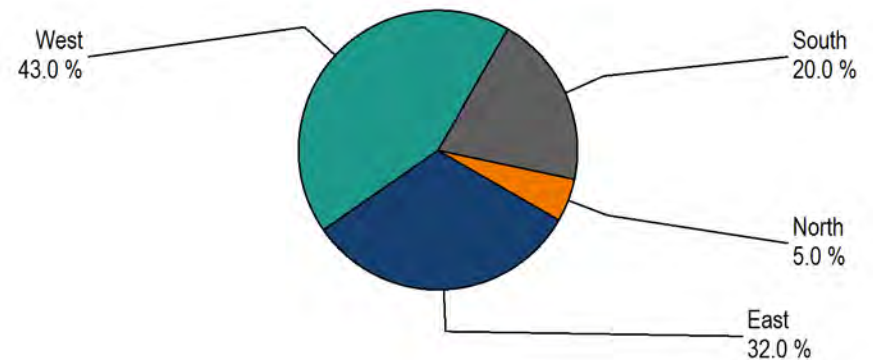
Period Ending: December 31, 2017

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total Real Estate</b>	<b>176,449,539</b>	<b>1.9</b>	<b>7.8</b>	<b>10.4</b>	<b>10.6</b>	<b>--</b>	<b>7.8</b>	<b>6.8</b>	<b>16.9</b>	<b>9.6</b>	<b>12.1</b>
<i>NCREIF Property Index</i>		1.8	7.0	9.4	10.2	--	7.0	8.0	13.3	11.8	11.0
JP Morgan Core Real Estate	151,102,074	1.5	6.1	9.1	10.4	--	6.1	7.3	14.1	10.0	14.8
<i>NCREIF-ODCE</i>		2.1	7.6	10.4	11.5	--	7.6	8.8	15.0	12.5	13.9
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ARA American Strategic Value Realty	11,657,191	2.1	7.4	--	--	--	7.4	--	--	--	--
<i>NCREIF-ODCE</i>		2.1	7.6	--	--	--	7.6	--	--	--	--
<i>NCREIF Property Index</i>		1.8	7.0	--	--	--	7.0	--	--	--	--
Direct Real Estate	13,690,274	5.4	20.6	15.7	11.5	6.4	20.6	4.9	22.2	6.1	5.2
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<i>NCREIF Property Index</i>		1.8	7.0	9.4	10.2	6.1	7.0	8.0	13.3	11.8	11.0

Property Type Allocation  
Allocation as of December 31, 2017



Geographic Diversification  
Allocation as of December 31, 2017



Property Allocation and Geographic Diversification analytics exclude Direct Real Estate and ARA American. Direct Real Estate is lagged one quarter. Fidelity Real Estate Growth III liquidated 12/29/2017.

Total Commodities  
 Asset Class Summary (Gross of Fees)

Period Ending: December 31, 2017

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total Commodities</b>	<b>38,772,152</b>	<b>6.6</b>	<b>6.2</b>	<b>-3.7</b>	<b>-7.3</b>	<b>--</b>	<b>6.2</b>	<b>12.6</b>	<b>-25.2</b>	<b>-16.0</b>	<b>-9.1</b>
<i>Bloomberg Commodity Index TR USD</i>		4.7	1.7	-5.0	-8.5	--	1.7	11.8	-24.7	-17.0	-9.5
Gresham MTAP Commodity Builder	38,772,152	6.6	6.2	-3.7	--	--	6.2	12.6	-25.2	-16.0	--
<i>Bloomberg Commodity Index TR USD</i>		4.7	1.7	-5.0	--	--	1.7	11.8	-24.7	-17.0	--



Total Commodities  
 Asset Class Summary (Net of Fees)

Period Ending: December 31, 2017

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2017	2016	2015	2014	2013
<b>Total Commodities</b>	<b>38,772,152</b>	<b>6.6</b>	<b>6.2</b>	<b>-4.1</b>	<b>-7.8</b>	<b>--</b>	<b>6.2</b>	<b>11.8</b>	<b>-25.8</b>	<b>-16.6</b>	<b>-9.5</b>
<i>Bloomberg Commodity Index TR USD</i>		4.7	1.7	-5.0	-8.5	--	1.7	11.8	-24.7	-17.0	-9.5
Gresham MTAP Commodity Builder	38,772,152	6.6	6.2	-4.1	--	--	6.2	11.8	-25.8	-16.6	--
<i>Bloomberg Commodity Index TR USD</i>		4.7	1.7	-5.0	--	--	1.7	11.8	-24.7	-17.0	--

**Performance Return Calculations**

Performance is calculated using Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

**Data Source**

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

**Illiquid Alternatives**

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

**Manager Line Up**

Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
SSGA S&P 500 Flagship	2/25/2011	State Street	Stone Harbor Local Markets Ins	7/9/2013	Stone Harbor
PIMCO RAE Fundamental PLUS	11/30/2007	J.P. Morgan	Direct Real Estate	-	American Realty Adv.
Loomis Sayles Large Cap Growth	12/31/2016	J.P. Morgan	JP Morgan Core Real Estate	3/6/2008	J.P. Morgan
Boston Partners Large Cap Value	1/31/2017	Boston Partners	Gresham MTAP Commodity	8/31/2013	BNY Mellon
Atlanta Capital Management	8/31/2010	J.P. Morgan	Cash Account	-	SLOCPT
Dodge & Cox Intl Stock	12/6/2007	J.P. Morgan	HarbourVest Partners IX-Buyout	2011 <sup>1</sup>	HarbourVest
WCM International Growth	2/15/2017	WCM	KKR Mezzanine Partners	2010 <sup>1</sup>	KKR
BlackRock Core Bond	1/19/2017	J.P. Morgan	PIMCO Distressed Credit Fund	2010 <sup>1</sup>	Brown Brothers Harriman
Dodge & Cox Income	1/19/2017	Deutsche Bank	ARA American Strategic Value	6/22/2016	American Realty Adv.
Pacific Asset Corporate Loan	9/1/2014	Deutsche Bank	TPG Diversified Credit Progran	2016 <sup>1</sup>	TPG
SSGA TIPS	7/12/2011	State Street	Pathway Private Equity Fund 9	2017 <sup>1</sup>	Pathway
Brandywine Global Fixed	11/30/2007	J.P. Morgan			

<sup>1</sup>Represents fund vintage year.

**Policy & Custom Index Composition**

Policy Index (10/1/2016-Current)	20% Russell 3000, 20% MSCI ACWI ex-US (Gross), 30% BBgBarc U.S. Aggregate, 15% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps, 5% BBgBarc High Yield +2% (lagged).
Policy Index (7/1/2014-9/30/2016)	23% Russell 3000, 22% MSCI ACWI ex-US (Gross), 35% BBgBarc U.S. Aggregate, 10% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps.
Policy Index (7/1/2013-6/30/2014)	27% Russell 3000, 23% MSCI ACWI ex-US (Gross), 30% BBgBarc U.S. Aggregate, 10% NCREIF Property Index, 5% Bloomberg Commodity
Policy Index (4/1/2011-6/30/2013)	27% Russell 3000, 23% MSCI ACWI ex-US (Gross), 20% BBgBarc U.S. Aggregate, 5% Citi World Gov't Bond, 5% Barclays US TIPS, 10%

## Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Verus will make every reasonable effort to obtain and include accurate market values. However, if managers or custodians are unable to provide the reporting period's market values prior to the report issuance, Verus may use the last reported market value or make estimates based on the manager's stated or estimated returns and other information available at the time. These estimates may differ materially from the actual value. Hedge fund market values presented in this report are provided by the fund manager or custodian. Market values presented for private equity investments reflect the last reported NAV by the custodian or manager net of capital calls and distributions as of the end of the reporting period. These values are estimates and may differ materially from the investments actual value. Private equity managers report performance using an internal rate of return (IRR), which differs from the time-weighted rate of return (TWRR) calculation done by Verus. It is inappropriate to compare IRR and TWRR to each other. IRR figures reported in the illiquid alternative pages are provided by the respective managers, and Verus has not made any attempts to verify these returns. Until a partnership is liquidated (typically over 10-12 years), the IRR is only an interim estimated return. The actual IRR performance of any LP is not known until the final liquidation.

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



# Board of Trustees

1000 Mill Street  
San Luis Obispo, CA 93408  
Phone: (805) 781-5465  
Fax: (805) 781-5697  
www.SLOPensionTrust.org



Date: February 26, 2018

To: Board of Trustees

From: Carl Nelson – Executive Secretary  
Amy Burke – Deputy Executive Secretary

## **Agenda Item 10: Investment Report for January 2018**

	January	Year to Date 2018	2017	2016	2015	2014	2013
Total Trust Investments (\$ millions)	\$1,390		\$1,351 year end	\$1,196 year end	\$1,148 year end	\$1,190 year end	\$1,131 year end
<b>Total Fund Return</b>	3.5% Gross	<b>3.5% Gross</b>	15.5 % Gross	6.6 % Gross	-0.8 % Gross	5.1 % Gross	13.8% Gross
Policy Index Return (r)	2.2%	2.2%	13.4 %	7.7 %	-0.5 %	5.2 %	13.4%

(r) Policy index as of Aug. 2016 revision to Strategic Asset Allocation Policy: 20% domestic equity, 20% international equity, 15% core bonds, 5% bank loans, 5% global bonds, 5% emerging market debt, 15% real estate, 5% commodities, 5% private equity, 5% private credit.

### **The Economy and Capital Markets:**

Some significant factors in the economy for January and into mid-February have been –

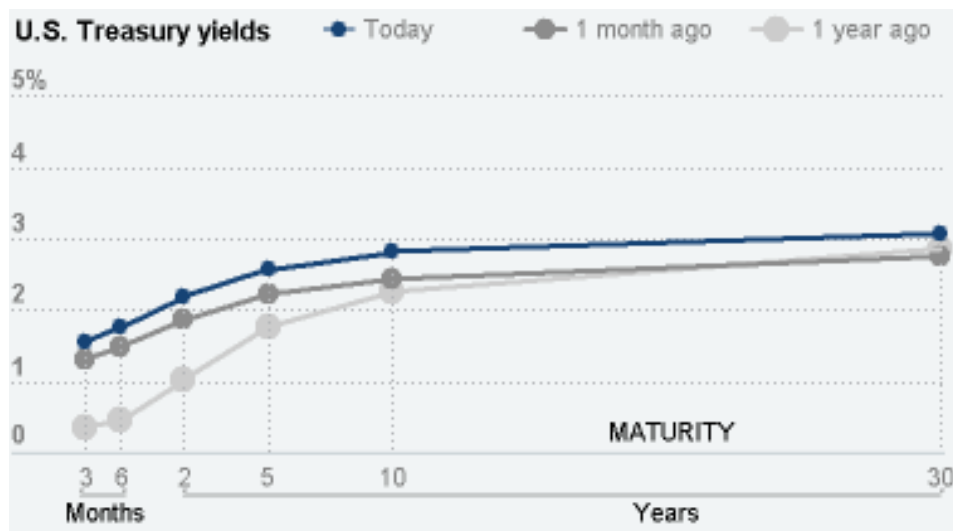
- **Fed Policy** – The Fed has been on a gradualist approach to interest rate increases and the unwinding of the Fed balance sheet. With the confirmation of Jerome Powell to take over the role of Fed Chair after Janet Yellen’s departure on February 3<sup>rd</sup>, the markets were somewhat comforted by the appearance of continuity in Fed policy. After the Fed increased its target range for Fed Funds to the 1.25% - 1.50% range in December, the Fed predicted three more rate hikes in 2018 while the bond markets had been implying two 2018 rate increases. This changed significantly after the February 2<sup>nd</sup> Jobs report that raised the already simmering

market concerns over resurgent inflation. The pronounced elevation of the yield curve (see below) that accompanied this suggests a more active pick up in Fed rate increases. Michael Cembalest of J.P. Morgan in his February 21<sup>st</sup> “Eye on the Market” publication commented on Fed policy and the impact on the markets -

“To be clear, inflation is not sky-rocketing or out of control. The issue is simpler: given the strength of the US economy, the Fed Funds rate should not be below inflation anymore, but it still is. As outlined in our Outlook, we believed that high equity market valuations would take a hit once the impact of rising deficits and wage inflation on the Fed became clearer. That process started with the labor market report on February 2nd. which showed the fastest wage gains in 8 years, and Trump’s budget deal on February 9th which added \$300 billion to the deficit. The Fed will probably hike 4 times in 2018 rather than 2, a risk markets are finally pricing in.

We expect **S&P profits** to grow by 12%-14% in 2018, and US profit margins are at the highest levels in decades. In Q4 2017, S&P companies posted the best earnings and sales results (relative to expectations) in 20 years. Our forecast remains for a volatile but positive single-digit return year for investors in 2018 as profits rise and P/E multiples fall from elevated levels.”

- **Interest Rates** – Interest rates have been relatively quiescent in recent years in the face of extraordinarily accommodative monetary policy and an economy in a protracted recovery and expansion cycle. The last year has seen modest increases in interest rates – partially in the expectation of increased inflationary pressures, Federal deficits and monetary policy tightening. In particular, the short end of the yield curve has risen in recent months reflecting these concerns. The February market anxiety over inflation incited increases in interest rates moved the yield curve up as shown below. The graph below shows the Treasury yield curve as of February 20th.



- **Tax Policy** – Capital markets on the equity side have initially responded positively to the prospect of improved corporate profit growth fueled by tax reductions. American Realty Advisors in their 4Q17 report on Strategic Value Fund (that the SLOCPT invests in) has these comments on the impact of tax reform on wages and earnings –

“The greatest potential economic stimulus resulting from the tax bill can be found in wage growth. If tax cuts translate to expansion and companies increasing demand for employees, wage increases should pull employees off the sidelines and back into the labor market. While Treasury rates have been rising after passage of the tax bill at a pace that surprised equity markets, expectations for a tax-related increase in GDP growth in 2018 and 2019 are modest, with estimates for average increases of 33 bps in 2018 and 25 bps in 2019.”

- **GDP Growth** – With the synchronized global growth across most economies, market optimism on GDP growth remains high.

- **U.S. domestic GDP growth** – The American economy grew at a 2.6% rate in 4Q17. A healthy rate of growth, but below the market expectations of ~3%. For all of 2017 U.S. GDP growth came in at 2.3%. The stock market correction at the start of February has little relevance to the “real” economy of GDP growth. As the famous economist Paul Samuelson observed many years ago – “The stock market has predicted nine of the last five recessions”.

- **Personal Spending & Saving** – The November reports for Personal Savings show a decline to a 2.4% of income rate – near the low end of the historical range. Pre-2008 recession the savings rate was in the 2%-3% range and post-recession has been typically in the 5%-6% range. This decline in saving appears to be related to strong consumer confidence and robust consumer spending. Increased consumer spending and lower personal savings contribute to current economic activity. However, a low personal savings rate also has implications for reduced investment and increased interest rates which repress capital market returns going forward.

- **Employment and Wages** – The January DOL report on nonfarm employment showed a gain of 200k new jobs and the unemployment steady at a 17 year low of 4.1%. With decreasing slack in the labor market – fewer discouraged unemployed or other marginally attached to the labor market workers – increasingly forecasts are for the unemployment rate to continue lower in 2018. This rate of unemployment continues to suggest upward pressure on wages. Wage pressure has been surprisingly muted over the last two years given low unemployment. However, the January jobs report includes a 2.9% year over year increase in average wages. Wage growth has mixed investment implications for consumer demand growth vs. inflation and interest rates. American Realty Advisors in their 4Q17 report on Strategic Value Fund (that the SLOCPT invests in) has these excerpts on employment growth –

“Labor markets continued to add jobs at a two-million plus pace in 2017. While still meaningful, the pace of job growth has slowed by nearly 25% from 2015. Similarly, annual office-using employment growth declined by 86,000. At 200 square feet per employee, this represents more than 17 million square feet of lost office net absorption. The decline in employment growth is a natural reaction to

an ever-shrinking pool of qualified employees. With the unemployment rate falling nearly 100 bps over the past two years, an increasingly shallow pool of qualified workers will continue to weigh on employment growth. Wage growth increased inconsistently in 2017 ending the year on a positive upward trend which continued into 2018. We expect that 2018 will see an increase, albeit manageable in the rate of wage growth in response to even tighter labor markets this year. Rising wage growth should positively affect labor force participation as workers currently not in the labor force are encouraged to re-engage.”

- **Capital Market Strength/Weakness and Volatility** – The synchronized global growth currently in place, the still very accommodative global monetary policy conditions, increasing corporate earnings with an added tailwind from U.S. Tax reform, have contributed to buoyant equity markets. With the S&P 500 index peaking on January 26<sup>th</sup> at 2,872.87 (vs. 2,257.83 at the start of 2017, 27% higher) the “animal spirits” have dominated equity markets through most of 2017 and into January. However, February has seen a short market correction in equities sparked by inflation and interest rate increase fears. The relatively strong jobs report for January raised concerns over resurgent wage-based inflation and the anticipated Fed response of more rapid interest rate increases. With monetary policy liquidity underpinning much of the bull market in equities, the prospect of “the punch bowl being taken away just as the party is really getting going” exerts a sobering influence on market psychology. The S&P Index closed at 2,716 on February 20<sup>th</sup>, down approximately 5% from its peak on January 26<sup>th</sup>. It is perspective-setting to note that the domestic equity markets went over 480 days without a 5% or more correction – a sustained rise that has not happened since 1994. Periodic market corrections are typical and a natural part of the functioning of investment risk vs. investment return.

### **SLOCPT Investment Returns:**

The attached report from Verus covers the investment returns of the SLOCPT portfolio and general market conditions through the end of January. Subsequent market movements in February have been negative and will be reported on in next month’s investment report. SLOCPT’s investment managers have generally performed better than their performance benchmarks in this market cycle. Note that the gross rate of return on the SLOCPT fund as a whole has exceeded its Policy Index which is an investment policy weighted measure of the relevant market benchmark.

Respectfully submitted



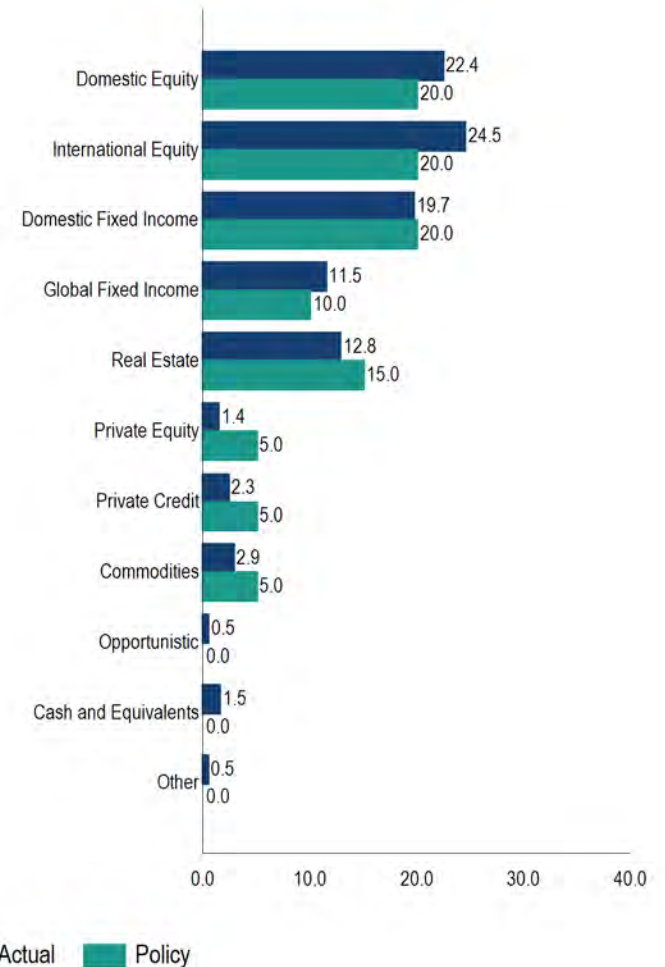
# San Luis Obispo County Pension Trust

## Executive Summary - Preliminary (Gross of Fees)

Period Ending: January 31, 2018

	Market Value	% of Portfolio	1 Mo	YTD
<b>Total Fund</b>	<b>1,389,833,466</b>	<b>100.0</b>	<b>3.5</b>	<b>3.5</b>
Total Fund ex Overlay	1,383,430,845	99.5	3.5	3.5
Policy Index			2.2	2.2
<b>Total Domestic Equity</b>	<b>311,471,401</b>	<b>22.4</b>	<b>6.0</b>	<b>6.0</b>
Russell 3000			5.3	5.3
SSGA S&P 500 Flag.	731	0.0	0.1	0.1
S&P 500			5.7	5.7
PIMCO RAE Fundamental PLUS Instl	62,287,008	4.5	4.9	4.9
S&P 500			5.7	5.7
Loomis Sayles Large Cap Growth	93,074,146	6.7	8.4	8.4
Russell 1000 Growth			7.1	7.1
Boston Partners Large Cap Value	90,990,891	6.5	5.4	5.4
Russell 1000 Value			3.9	3.9
Atlanta Capital Mgmt	65,118,627	4.7	4.4	4.4
Russell 2500			3.0	3.0
<b>Total International Equity</b>	<b>340,308,134</b>	<b>24.5</b>	<b>5.8</b>	<b>5.8</b>
MSCI ACWI ex USA Gross			5.6	5.6
Dodge & Cox Intl Stock	171,143,773	12.3	6.4	6.4
MSCI EAFE Gross			5.0	5.0
WCM International Growth	169,164,361	12.2	5.1	5.1
MSCI ACWI ex USA Gross			5.6	5.6
<b>Total Domestic Fixed Income</b>	<b>273,872,412</b>	<b>19.7</b>	<b>-0.3</b>	<b>-0.3</b>
BBgBarc US Aggregate TR			-1.2	-1.2
BlackRock Core Bond	99,612,443	7.2	-1.1	-1.1
BBgBarc US Aggregate TR			-1.2	-1.2
Dodge & Cox Income Fund	104,936,616	7.6	-0.3	-0.3
BBgBarc US Aggregate TR			-1.2	-1.2
Pacific Asset Corporate Loan	69,323,353	5.0	0.8	0.8
S&P/LSTA Leveraged Loan Index			1.0	1.0

Actual vs Target Allocation (%)



\*Other balance represents Clifton Group.

Policy Index (10/1/2016): 20% Russell 3000, 20% MSCI ACWI ex. US, 30% BBgBarc Aggregate, 15% NCREIF Property, 5% Bloomberg Commodity, 5% Russell 3000 + 300 bp, 5% BBgBarc High Yield + 200 bp lagged. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. ARA American and Direct Real Estate MVs as of 12/31/2017 +/- calls and distributions. TPG funded 11/21/16. Loomis Sayles LC Growth funded 12/31/16. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core Bond funded 1/19/2017. Dodge & Cox Income Fund funded 1/19/2017. Boston Partners funded 2/1/2017. WCM Intl Growth replaced Vontobel on 2/15/2017. Pathway 9 funded 4/7/2017. SSGA TIPS liquidated on 12/7/2017. Fidelity Real Estate Growth III liquidated on 12/29/2017. All data is preliminary.

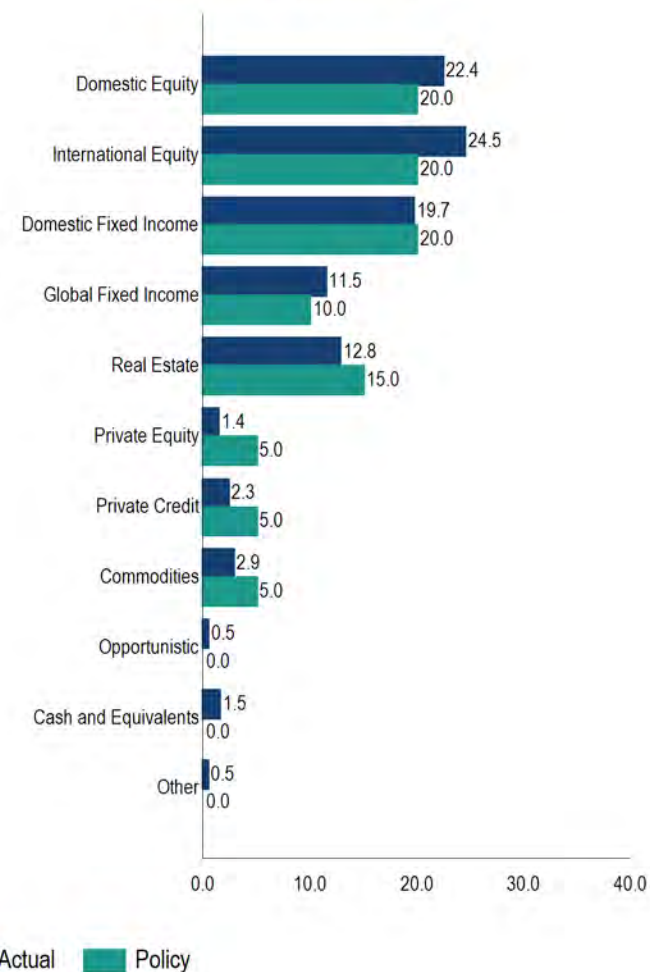
# San Luis Obispo County Pension Trust

## Executive Summary - Preliminary (Gross of Fees)

Period Ending: January 31, 2018

	Market Value	% of Portfolio	1 Mo	YTD
<b>Total Global Fixed</b>	<b>159,347,445</b>	<b>11.5</b>	<b>4.9</b>	<b>4.9</b>
<i>Citi World Govt Bond Index</i>			1.6	1.6
Brandywine Global Fixed Income	80,213,632	5.8	5.0	5.0
<i>Citi WGBI ex US</i>			3.2	3.2
Stone Harbor Local Markets Ins	79,133,813	5.7	4.8	4.8
<i>JPM GBI-EM Global Diversified TR USD</i>			4.5	4.5
<b>Total Real Estate</b>	<b>178,061,259</b>	<b>12.8</b>	<b>0.9</b>	<b>0.9</b>
<i>NCREIF Property Index</i>			0.0	0.0
JP Morgan Core Real Estate	152,207,730	11.0	0.6	0.6
<i>NCREIF-ODCE</i>			0.0	0.0
<i>NCREIF Property Index</i>			0.0	0.0
ARA American Strategic Value Realty	11,888,299	0.9	2.0	2.0
<i>NCREIF-ODCE</i>			0.0	0.0
<i>NCREIF Property Index</i>			0.0	0.0
Direct Real Estate	13,965,230	1.0	2.7	2.7
<i>NCREIF-ODCE</i>			0.0	0.0
<i>NCREIF Property Index</i>			0.0	0.0
<b>Total Commodities</b>	<b>39,705,682</b>	<b>2.9</b>	<b>2.4</b>	<b>2.4</b>
<i>Bloomberg Commodity Index TR USD</i>			2.0	2.0
Gresham MTAP Commodity Builder	39,705,682	2.9	2.4	2.4
<i>Bloomberg Commodity Index TR USD</i>			2.0	2.0
<b>Total Private Equity</b>	<b>19,934,091</b>	<b>1.4</b>		
Harbourvest Partners IX Buyout Fund L.P.	12,897,272	0.9		
Pathway Private Equity Fund Investors 9 L.P.	7,036,819	0.5		
<b>Total Private Credit</b>	<b>32,571,528</b>	<b>2.3</b>		
TPG Diversified Credit Program	32,571,528	2.3		
<b>Total Cash</b>	<b>21,476,227</b>	<b>1.5</b>	<b>0.0</b>	<b>0.0</b>
<i>91 Day T-Bills</i>			0.1	0.1
Cash Account	21,476,227	1.5	0.0	0.0
<i>91 Day T-Bills</i>			0.1	0.1

Actual vs Target Allocation (%)



\*Other balance represents Clifton Group.

Policy Index (10/1/2016): 20% Russell 3000, 20% MSCI ACWI ex. US, 30% BBgBarc Aggregate, 15% NCREIF Property, 5% Bloomberg Commodity, 5% Russell 3000 + 300 bp, 5% BBgBarc High Yield + 200 bp lagged. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. ARA American and Direct Real Estate MVs as of 12/31/2017 +/- calls and distributions. TPG funded 11/21/16. Loomis Sayles LC Growth funded 12/31/16. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core Bond funded 1/19/2017. Dodge & Cox Income Fund funded 1/19/2017. Boston Partners funded 2/1/2017. WCM Intl Growth replaced Vontobel on 2/15/2017. Pathway 9 funded 4/7/2017. SSGA TIPS liquidated on 12/7/2017. Fidelity Real Estate Growth III liquidated on 12/29/2017. All data is preliminary.

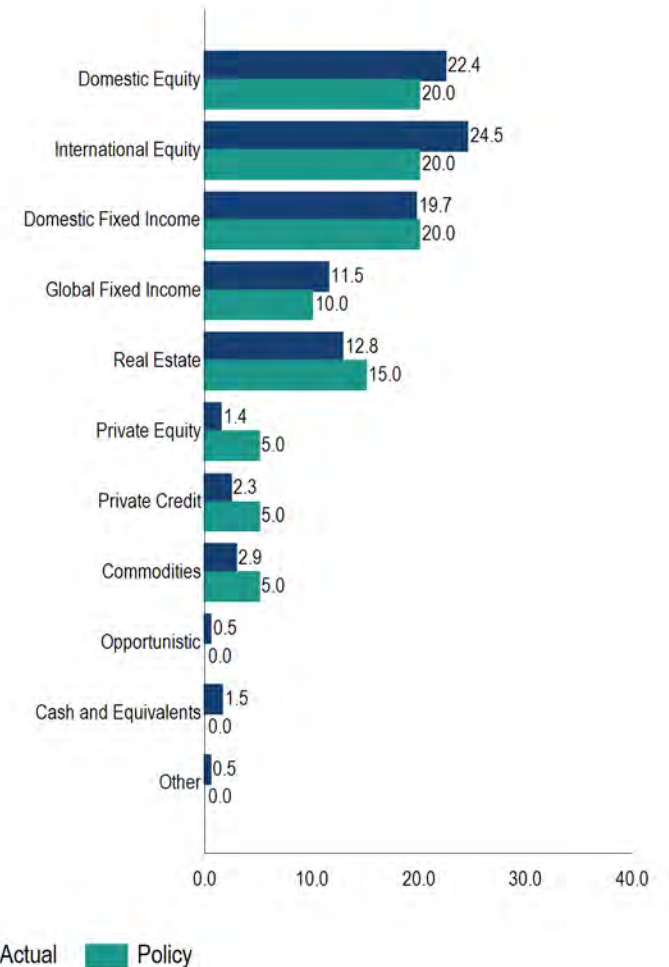
San Luis Obispo County Pension Trust  
 Executive Summary - Preliminary (Gross of Fees)

Period Ending: January 31, 2018

	Market Value	% of Portfolio	1 Mo	YTD
<b>Total Opportunistic</b>	<b>6,682,665</b>	<b>0.5</b>		
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	5,427,145	0.4		
PIMCO Distressed Credit Fund	1,255,520	0.1		

CPI + 5%

Actual vs Target Allocation (%)



\*Other balance represents Clifton Group.

Policy Index (10/1/2016): 20% Russell 3000, 20% MSCI ACWI ex. US, 30% BBgBarc Aggregate, 15% NCREIF Property, 5% Bloomberg Commodity, 5% Russell 3000 + 300 bp, 5% BBgBarc High Yield + 200 bp lagged. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. ARA American and Direct Real Estate MVs as of 12/31/2017 +/- calls and distributions. TPG funded 11/21/16. Loomis Sayles LC Growth funded 12/31/16. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core Bond funded 1/19/2017. Dodge & Cox Income Fund funded 1/19/2017. Boston Partners funded 2/1/2017. WCM Intl Growth replaced Vontobel on 2/15/2017. Pathway 9 funded 4/7/2017. SSGA TIPS liquidated on 12/7/2017. Fidelity Real Estate Growth III liquidated on 12/29/2017. All data is preliminary.

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**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

JANUARY 2018  
Capital Markets Update



# Market commentary

## ECONOMIC CLIMATE

- U.S. real GDP grew at an annualized rate of 2.6% (2.5% YoY) during the fourth quarter. Economic growth was supported by consumer spending and a further acceleration in fixed business investment.
- The U.S. job market continued to show strength, as 200,000 jobs were added during January and the unemployment rate was unchanged at 4.1%.
- Average hourly earnings rose 2.9% from the previous month, the highest pace of wage growth in the current expansion. The pickup in wages was mainly attributable to a drop in total hours worked.
- The ISM Manufacturing PMI fell slightly from 59.7 to 59.1 during the month, above the consensus estimate of 58.7.
- Headline CPI decreased from 2.2% YoY in December to 2.1% in January. Core CPI increased during the same period to 1.8% YoY, up from 1.7% during the previous month.

## DOMESTIC EQUITIES

- Domestic equities experienced positive returns during the month – the S&P 500 rose 5.7%.
- As of February 9th, with 68% of companies reporting, the blended Q4 earnings and revenue growth rates of the S&P 500 were 14.0% and 8.0% YoY, respectively. Energy (+103.7%) and materials (+41.2%) are leading all other sectors in terms of earnings growth.

## DOMESTIC FIXED INCOME

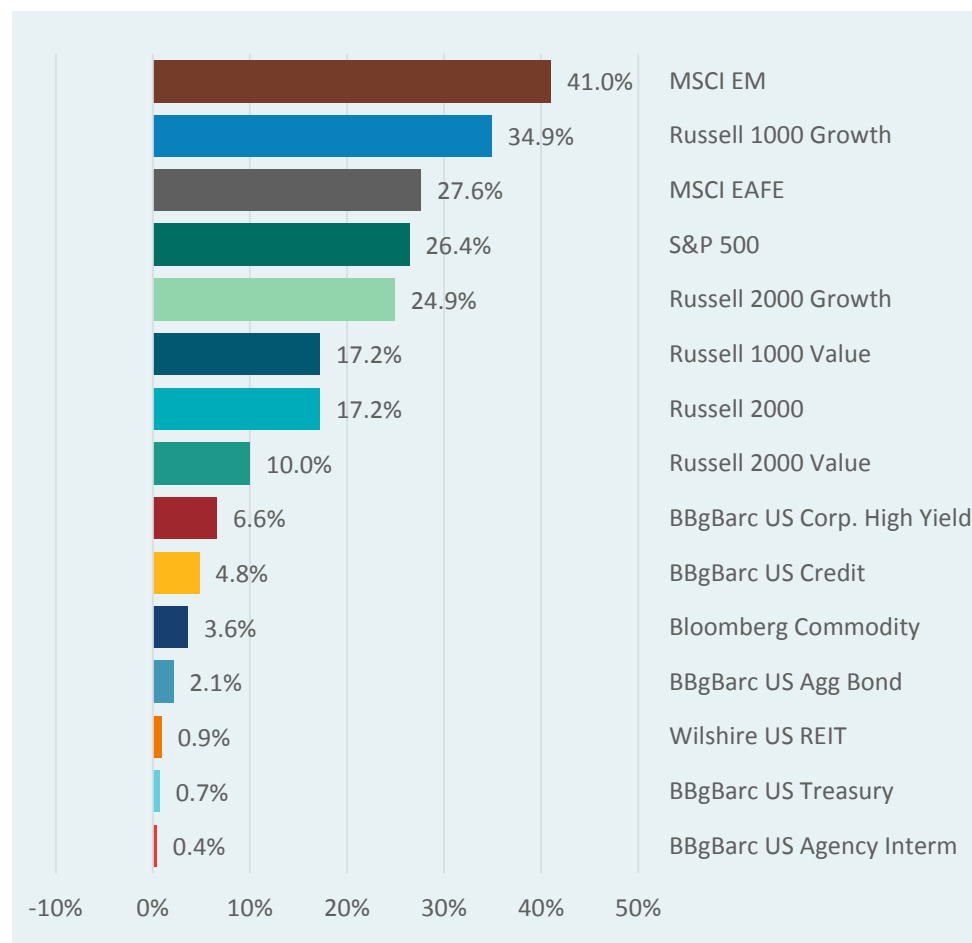
- Domestic fixed income returns were negative in January as the Bloomberg Barclays U.S. Aggregate Index fell -1.2%.
- U.S. high yield spreads fell to 3.3% during the period, down from 3.6% at the end of December, and well below the 20-year average of 5.9%.
- The U.S. Treasury curve steepened slightly over the month, led by higher long-term yields – the 10-year minus 2-year yield spread expanded 7 bps to 0.58%.

## INTERNATIONAL MARKETS

- International equities provided strong returns in January as the MSCI ACWI ex U.S. Index appreciated by 5.6%. The hedged index returned +2.5% in the month, impacted by U.S. dollar weakness.
- Manufacturing PMI in the Eurozone fell slightly from 60.6 to 59.6, below expectations of 60.4. However, the index remains elevated relative to recent history.
- Eurozone real GDP advanced at a 2.4% quarterly annualized rate (2.7% YoY) during the fourth quarter, in line with expectations.
- The European Central Bank left monetary policy unchanged, and will continue to purchase €30 billion in assets per month until September. The market is not pricing in any interest rate hikes this year, but three hikes are price in 2019.

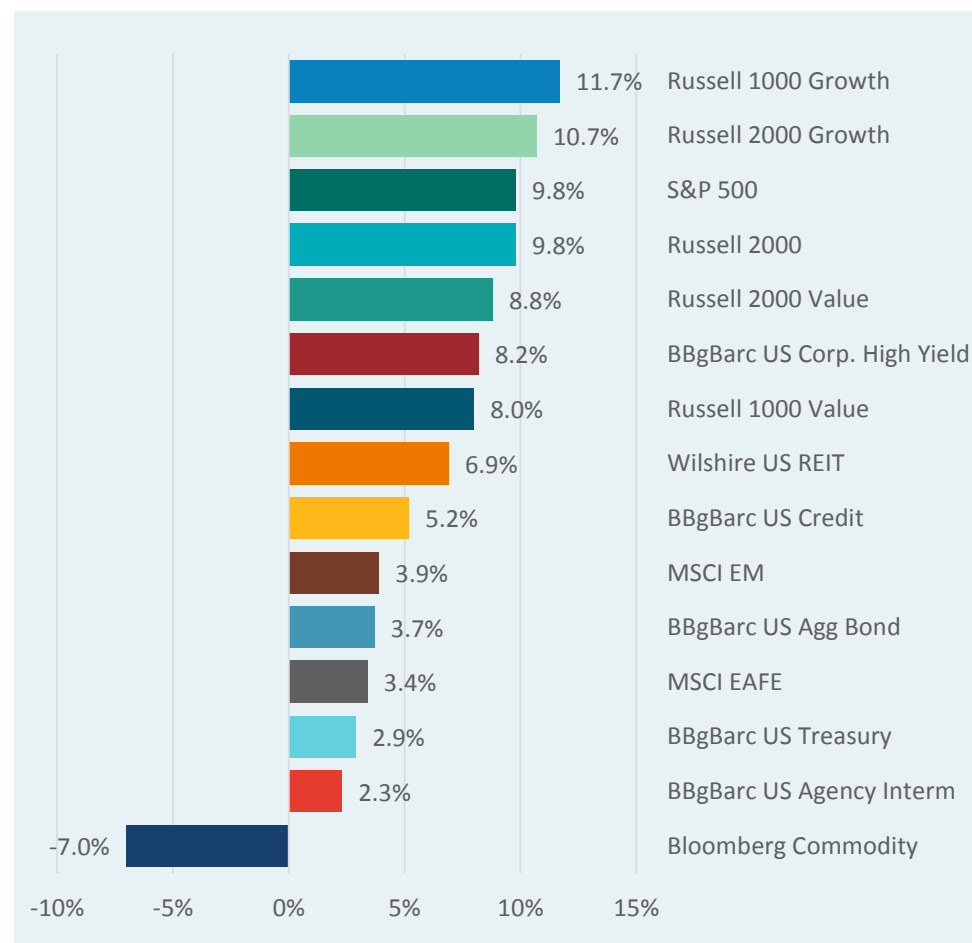
# Major asset class returns

ONE YEAR ENDING JANUARY



Source: Morningstar, as of 1/31/18

TEN YEARS ENDING JANUARY



Source: Morningstar, as of 1/31/18

# U.S. large cap equities

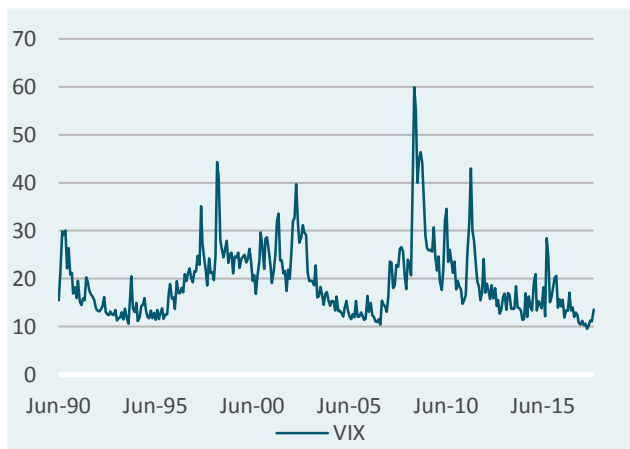
- Domestic large cap equities appreciated in January (S&P 500 +5.7%). 30-day realized volatility increased during the month to 8.1% (annualized), above recently experienced levels, but still below the 5-year annualized average of 11.8%.
- According to FactSet, as of February 9th, the estimated earnings growth rate of the S&P 500 is 18.5% YoY for the 2018 calendar year. This figure was revised upward from the January 5th estimate of 13.1%, which resulted in a lower forward P/E ratio, despite strong equity performance during the month.
- Consumer discretionary and technology shares led gains in the S&P 500 during the month, returning 9.3% and 7.6%, respectively. Utilities were the worst performing sector, falling 3.1% in January.

**S&P 500 PRICE INDEX**



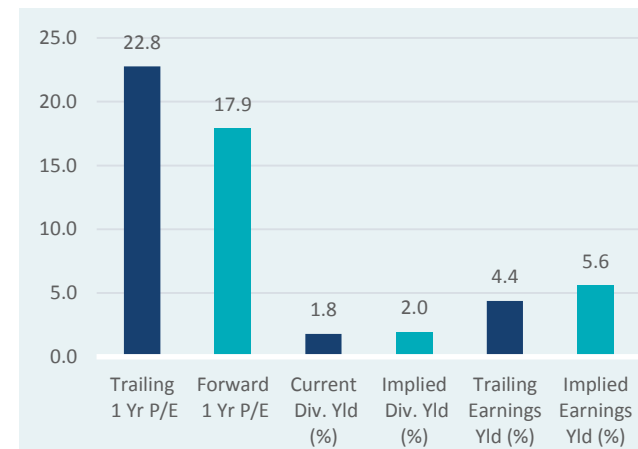
Source: Bloomberg, as of 1/31/18

**IMPLIED VOLATILITY**



Source: CBOE, as of 1/31/18

**S&P 500 VALUATION SNAPSHOT**



Source: Bloomberg, as of 1/31/18



# Fixed income

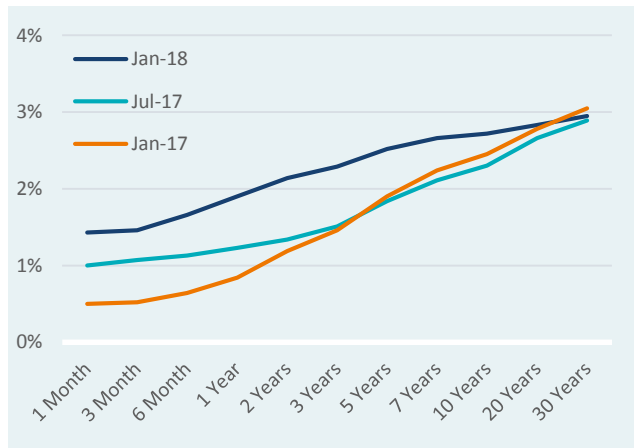
— The U.S. Treasury curve steepened slightly during the period as the 10 minus 2-year yield spread rose 7 bps to 0.58%. The BBgBarc U.S. Treasury Long Index underperformed the BBgBarc 1-3 Year U.S. Treasury Index by 2.9% in January.

— Market inflation expectations increased during the month based on TIPS breakeven rates. The 5 and 10- year implied inflation rates increased to 2.0% and 2.1%, up from 1.9% and 2.0%, respectively, in December.

— As expected, the Fed increased the rate at which it allowed securities to roll off of its balance sheet at maturity in January. The new expected rate is \$12 billion in treasuries, and \$8 billion in mortgage backed securities per month, for the rest of Q1.

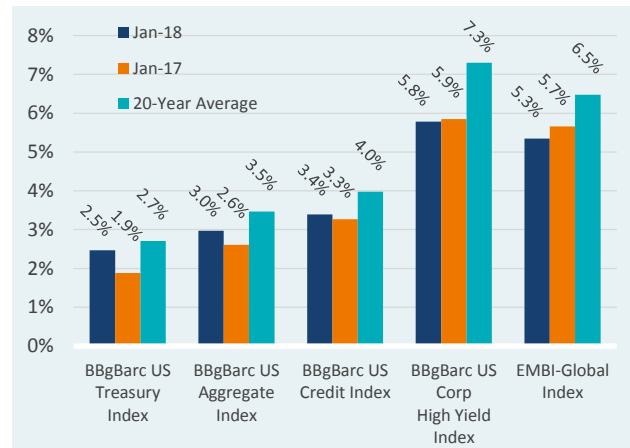
— According to fed funds futures pricing, the market is expecting three interest rate hikes in 2018, in line with what the fed has communicated during their last two meetings.

**U.S. TREASURY YIELD CURVE**



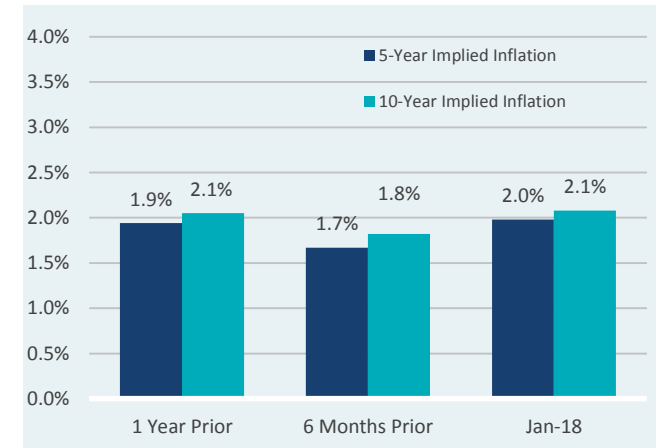
Source: Bloomberg, as of 1/31/18

**NOMINAL FIXED INCOME YIELDS**



Source: Morningstar, as of 1/31/18

**IMPLIED INFLATION (TIPS BREAKEVEN)**

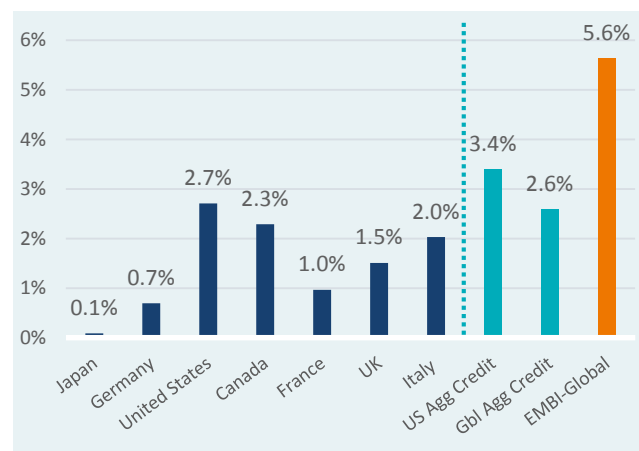


Source: Federal Reserve, as of 1/31/18

# Global markets

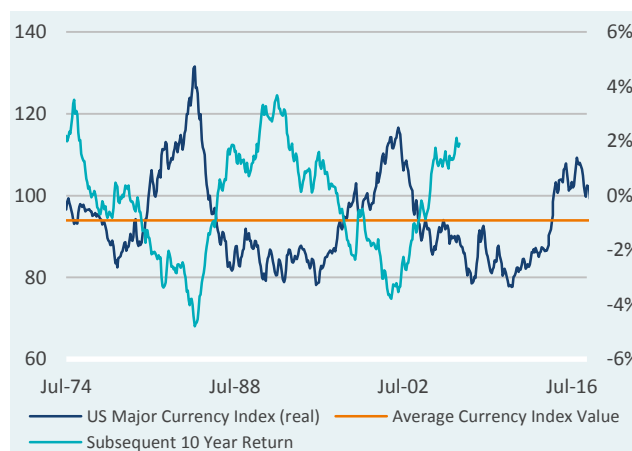
- Emerging market equities continued to rally during the month (MSCI EM Index +8.3%), outperforming international equities by 3.3% (MSCI EAFE Index +5.0%) on an unhedged basis.
- European equities experienced the strongest gains of international developed markets, as the MSCI Euro Index returned 7.2% on an unhedged basis (1.3% hedged). Currency appreciation provided a boost to unhedged returns (Euro +3.7%) during the month.
- Global sovereign yields rose across most of the developed world in January, with the U.K. 10-year yield experiencing the largest gain, rising by 32 bps during the period. The BOE was also more hawkish after its latest meeting, communicating the possibility of more rate hikes over the next year if inflation pressures continue.

## GLOBAL SOVEREIGN 10 YEAR INDEX YIELDS



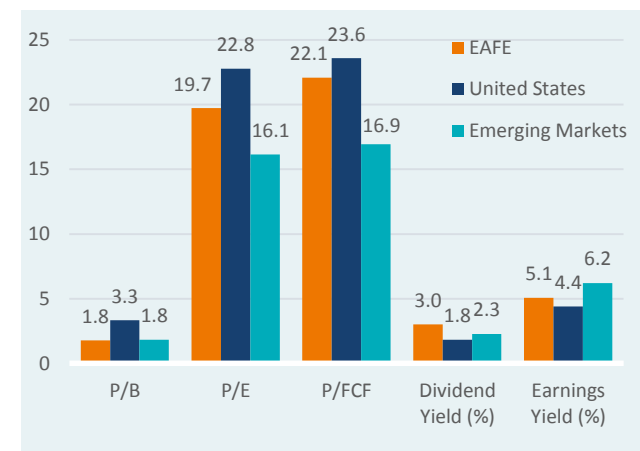
Source: Bloomberg, as of 1/31/18

## U.S. DOLLAR MAJOR CURRENCY INDEX



Source: Federal Reserve, as of 1/31/18

## MSCI VALUATION METRICS (3 MONTH AVERAGE)



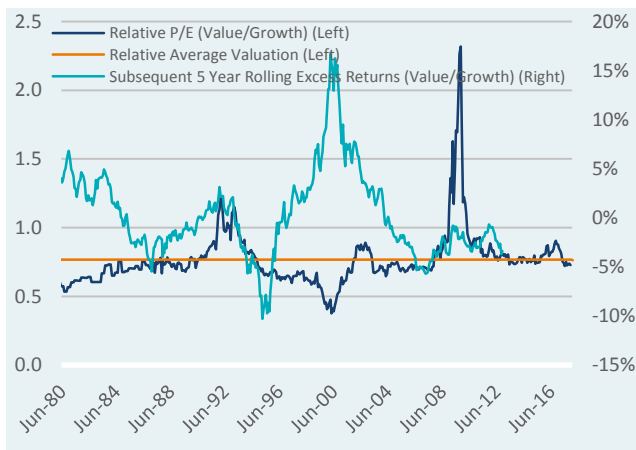
Source: Bloomberg, as of 1/31/18

# Domestic equity size and style

— Large cap equities continued their recent outperformance of small cap equities (Russell 1000 +5.5% and Russell 2000 +2.6%) in January. Consumer discretionary and telecommunications stocks contributed the most to the large cap outperformance, returning 6.5% and 5.3% more than their small cap peers, respectively.

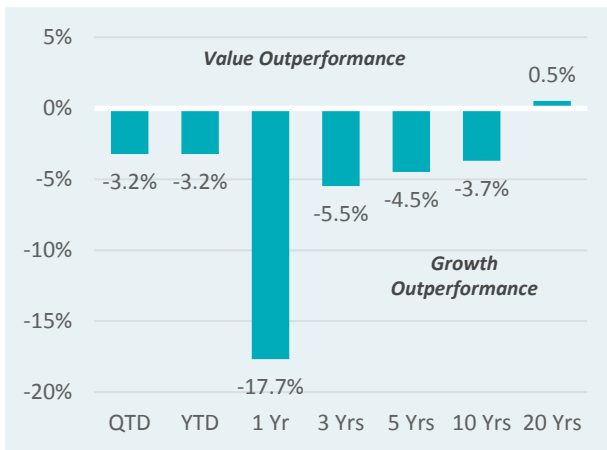
— Growth oriented equities (Russell 1000 Growth +7.1%) outperformed value oriented equities (Russell 1000 Value +3.9%) during the month. The Russell 1000 Growth Index was positively affected by larger allocations to consumer discretionary and technology sectors, which returned 8.6% and 7.3%, respectively.

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



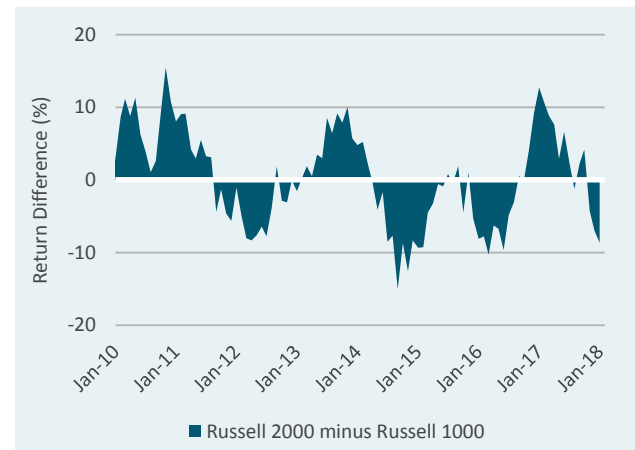
Source: Russell, Bloomberg, as of 1/31/18

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



Source: Morningstar, as of 1/31/18

**U.S. SMALL VS. LARGE RELATIVE PERFORMANCE**



Source: FTSE, as of 1/31/18

# Commodities

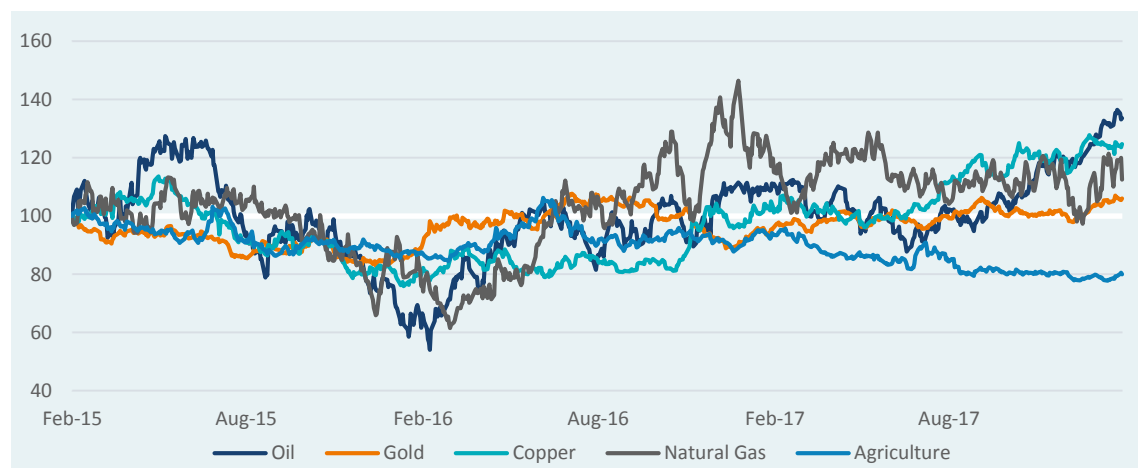
- The broad Bloomberg Commodity Index rose 2.0% in January. Petroleum and energy were the leading sub-sectors, returning 4.6% and 4.5%, respectively.
- The Bloomberg Softs sub-index was the largest detractor from the commodity basket during the period. Sugar was the worst performing asset in the softs sub-index, returning -12.7% in January, and -37.3% over the last year.
- The Bloomberg Petroleum sub-index was positively affected by WTI crude oil prices, which rose 7.1% during the month, closing at a price of \$64.73 per barrel. Oil prices have risen 51.5% since their recent low in June 2017, while crude oil rotary rigs in operation increased to 750 in January, the highest level since September 2017.

## INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	2.0	2.0	2.0	3.6	(3.3)	(8.5)	(7.0)
Bloomberg Agriculture	1.4	1.4	1.4	(12.7)	(6.2)	(10.1)	(5.4)
Bloomberg Energy	4.5	4.5	4.5	8.2	(8.7)	(15.2)	(17.0)
Bloomberg Grains	4.3	4.3	4.3	(9.6)	(8.4)	(12.6)	(7.2)
Bloomberg Industrial Metals	0.2	0.2	0.2	20.6	6.3	(2.2)	(3.6)
Bloomberg Livestock	(1.3)	(1.3)	(1.3)	6.4	(4.2)	(2.6)	(5.7)
Bloomberg Petroleum	4.6	4.6	4.6	20.2	(4.0)	(14.4)	(11.3)
Bloomberg Precious Metals	1.9	1.9	1.9	6.4	0.4	(6.7)	2.3
Bloomberg Softs	(7.0)	(7.0)	(7.0)	(25.6)	(7.1)	(9.8)	(4.5)

Source: Morningstar, as of 1/31/18

## COMMODITY PERFORMANCE



Source: Bloomberg, as of 1/31/18

# Appendix

# Periodic table of returns

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD	5-Year	10-Year
Emerging Markets Equity	16.6	38.4	23.2	35.2	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	8.3	17.9	11.7
Large Cap Growth	8.1	37.8	23.1	32.9	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	7.1	15.7	10.7
Large Cap Equity	6.4	37.2	22.4	31.8	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	5.5	14.6	9.9
International Equity	4.4	31.0	21.6	30.5	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	5.0	13.5	9.8
Small Cap Growth	3.2	28.5	21.4	22.4	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	3.9	13.3	8.8
Large Cap Value	2.6	25.7	16.5	16.2	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	3.9	12.0	8.0
60/40 Global Portfolio	0.4	19.6	14.4	13.9	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	3.9	10.2	6.1
Small Cap Equity	-1.5	18.5	11.3	12.9	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	2.6	7.8	5.1
Hedge Funds of Funds	-1.8	15.2	10.3	10.6	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	2.4	7.1	3.9
Commodities	-2.0	11.6	9.9	9.7	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	2.0	5.7	3.7
Small Cap Value	-2.4	11.1	6.4	5.2	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	1.2	4.0	3.4
Cash	-2.9	7.5	6.0	2.1	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	0.1	2.0	1.6
Real Estate	-3.5	5.7	5.1	-3.4	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	0.0	0.3	0.3
US Bonds	-7.3	-5.2	3.6	-11.6	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-1.2	-8.5	-7.0

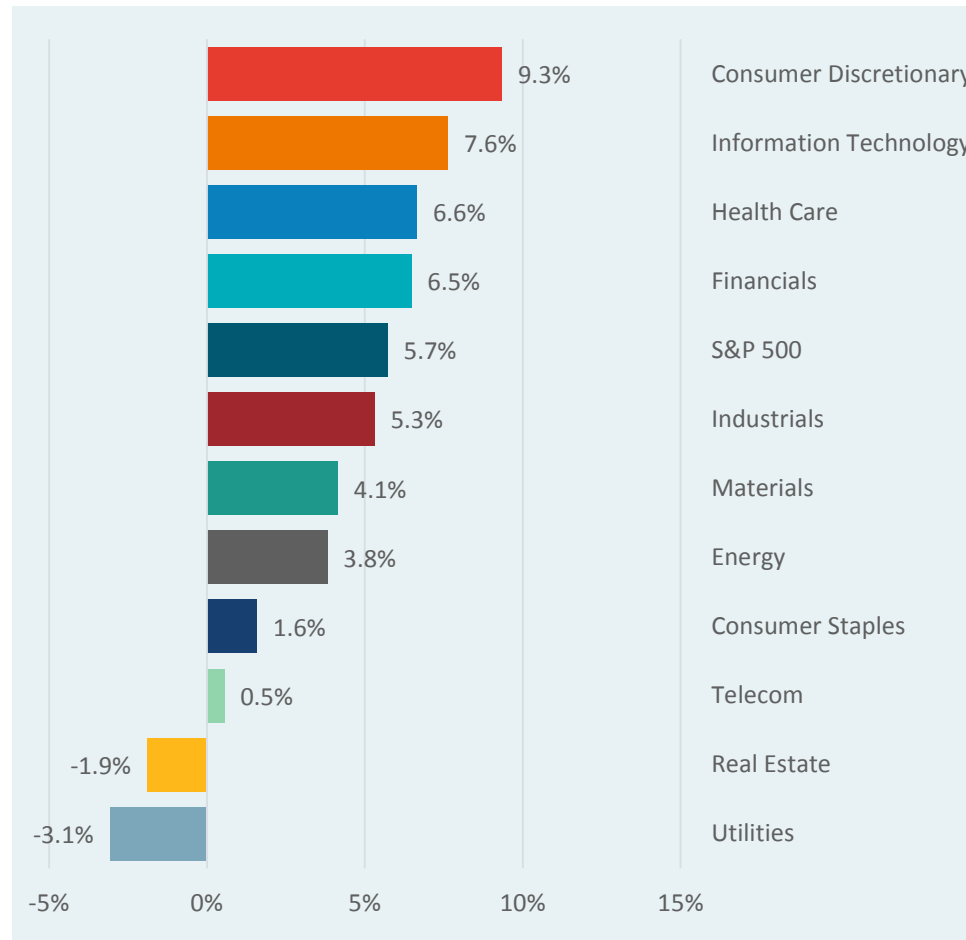
BEST  
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<span style="display:inline-block; width:15px; height:15px; background-color:#ADD8E6; border:1px solid black;"></span> Large Cap Equity	<span style="display:inline-block; width:15px; height:15px; background-color:#006400; border:1px solid black;"></span> Small Cap Growth	<span style="display:inline-block; width:15px; height:15px; background-color:#8B4513; border:1px solid black;"></span> Commodities
<span style="display:inline-block; width:15px; height:15px; background-color:#008080; border:1px solid black;"></span> Large Cap Value	<span style="display:inline-block; width:15px; height:15px; background-color:#FFD700; border:1px solid black;"></span> International Equity	<span style="display:inline-block; width:15px; height:15px; background-color:#4682B4; border:1px solid black;"></span> Real Estate
<span style="display:inline-block; width:15px; height:15px; background-color:#191970; border:1px solid black;"></span> Large Cap Growth	<span style="display:inline-block; width:15px; height:15px; background-color:#FF8C00; border:1px solid black;"></span> Emerging Markets Equity	<span style="display:inline-block; width:15px; height:15px; background-color:#90EE90; border:1px solid black;"></span> Hedge Funds of Funds
<span style="display:inline-block; width:15px; height:15px; background-color:#7FFFD4; border:1px solid black;"></span> Small Cap Equity	<span style="display:inline-block; width:15px; height:15px; background-color:#A9A9A9; border:1px solid black;"></span> US Bonds	<span style="display:inline-block; width:15px; height:15px; background-color:#FF0000; border:1px solid black;"></span> 60% MSCI ACWI/40% BBgBarc Global Bond
<span style="display:inline-block; width:15px; height:15px; background-color:#2E8B57; border:1px solid black;"></span> Small Cap Value	<span style="display:inline-block; width:15px; height:15px; background-color:#D3D3D3; border:1px solid black;"></span> Cash	

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 12/31/17.

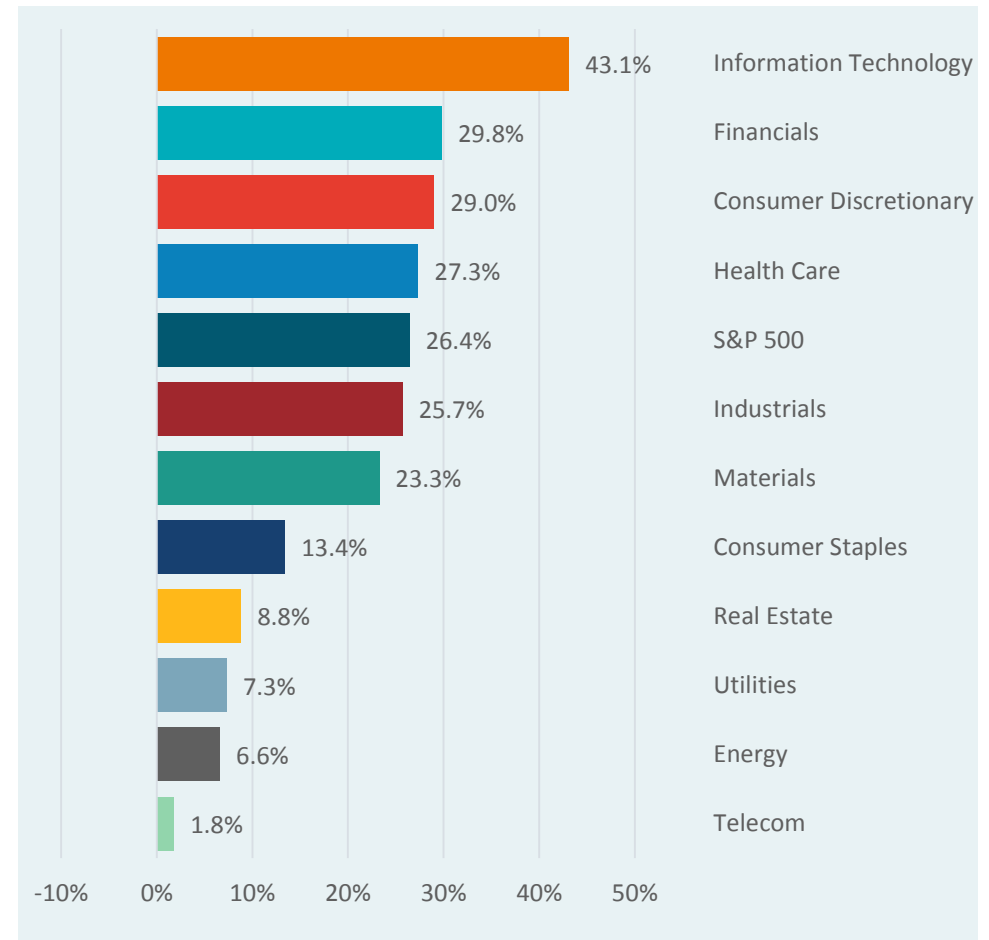
# S&P 500 sector returns

QTD



Source: Morningstar, as of 1/31/18

ONE YEAR ENDING JANUARY



Source: Morningstar, as of 1/31/18



# Detailed index returns

## DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Core Index</b>							
S&P 500	5.7	5.7	5.7	26.4	14.7	15.9	9.8
S&P 500 Equal Weighted	4.5	4.5	4.5	21.7	12.8	15.3	11.1
DJ Industrial Average	5.9	5.9	5.9	34.8	18.0	16.4	10.4
Russell Top 200	6.2	6.2	6.2	28.2	15.4	16.3	9.7
Russell 1000	5.5	5.5	5.5	25.8	14.3	15.7	9.9
Russell 2000	2.6	2.6	2.6	17.2	12.1	13.3	9.8
Russell 3000	5.3	5.3	5.3	25.2	14.1	15.5	9.8
Russell Mid Cap	3.8	3.8	3.8	20.1	11.5	14.3	10.3
<b>Style Index</b>							
Russell 1000 Growth	7.1	7.1	7.1	34.9	17.0	17.9	11.7
Russell 1000 Value	3.9	3.9	3.9	17.2	11.5	13.5	8.0
Russell 2000 Growth	3.9	3.9	3.9	24.9	12.6	14.6	10.7
Russell 2000 Value	1.2	1.2	1.2	10.0	11.6	12.0	8.8

## INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
MSCI ACWI	5.6	5.6	5.6	27.5	11.9	11.0	6.1
MSCI ACWI ex US	5.6	5.6	5.6	29.7	9.9	7.1	3.4
MSCI EAFE	5.0	5.0	5.0	27.6	9.4	7.8	3.4
MSCI EM	8.3	8.3	8.3	41.0	11.8	5.7	3.9
MSCI EAFE Small Cap	5.1	5.1	5.1	35.0	16.1	12.8	7.4
<b>Style Index</b>							
MSCI EAFE Growth	4.6	4.6	4.6	30.4	10.4	8.8	4.1
MSCI EAFE Value	5.4	5.4	5.4	24.9	8.3	6.9	2.7
<b>Regional Index</b>							
MSCI UK	3.0	3.0	3.0	24.4	5.5	5.0	2.8
MSCI Japan	4.6	4.6	4.6	25.0	12.4	11.4	4.1
MSCI Euro	7.2	7.2	7.2	34.0	10.1	8.2	1.7
MSCI EM Asia	8.0	8.0	8.0	45.7	13.0	9.4	6.0
MSCI EM Latin American	13.2	13.2	13.2	30.1	10.5	(1.5)	0.2

## FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
BBgBarc US Treasury USTIPS	(0.9)	(0.9)	(0.9)	1.3	0.7	0.1	3.0
BBgBarc US Treasury Bills	0.1	0.1	0.1	0.9	0.5	0.3	0.4
BBgBarc US Agg Bond	(1.2)	(1.2)	(1.2)	2.1	1.1	2.0	3.7
<b>Duration</b>							
BBgBarc US Treasury 1-3 Yr	(0.3)	(0.3)	(0.3)	(0.0)	0.3	0.5	1.2
BBgBarc US Treasury Long	(3.2)	(3.2)	(3.2)	4.6	(1.1)	3.5	5.9
BBgBarc US Treasury	(1.4)	(1.4)	(1.4)	0.7	0.1	1.2	2.9
<b>Issuer</b>							
BBgBarc US MBS	(1.2)	(1.2)	(1.2)	1.3	1.2	1.9	3.5
BBgBarc US Corp. High Yield	0.6	0.6	0.6	6.6	6.3	5.6	8.2
BBgBarc US Agency Interm	(0.5)	(0.5)	(0.5)	0.4	0.6	0.9	2.3
BBgBarc US Credit	(0.9)	(0.9)	(0.9)	4.8	2.4	3.2	5.2

## OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Index</b>							
Bloomberg Commodity	2.0	2.0	2.0	3.6	(3.3)	(8.5)	(7.0)
Wilshire US REIT	(3.8)	(3.8)	(3.8)	0.9	1.7	7.7	6.9
CS Leveraged Loans	1.1	1.1	1.1	4.8	4.8	4.3	5.0
<b>Regional Index</b>							
JPM EMBI Global Div	(0.0)	(0.0)	(0.0)	8.6	6.8	4.9	7.2
JPM GBI-EM Global Div	4.5	4.5	4.5	17.7	3.9	(0.8)	3.9
<b>Hedge Funds</b>							
HFRI Composite	2.8	2.8	2.8	10.4	5.2	5.0	3.8
HFRI FOF Composite	2.4	2.4	2.4	9.1	3.3	4.0	1.6
<b>Currency (Spot)</b>							
Euro	3.7	3.7	3.7	15.3	3.4	(1.7)	(1.7)
Pound	5.1	5.1	5.1	13.0	(1.8)	(2.2)	(3.3)
Yen	3.2	3.2	3.2	3.1	2.5	(3.5)	(0.3)

Source: Morningstar, as of 1/31/18

# Definitions

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

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

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

# Notices & disclosures

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## Board of Trustees

1000 Mill Street  
San Luis Obispo, CA 93408  
Phone: (805) 781-5465  
Fax: (805) 781-5697  
www.SLOPensionTrust.org



Date: February 26, 2018

To: Board of Trustees

From: Carl Nelson – Executive Secretary  
Amy Burke – Deputy Executive Secretary

### **Agenda Item Number 11: Capital Market Expectations, Asset Allocation Policy – Presentation by Scott Whalen, Verus**

#### **Recommendation:**

Staff recommends that the Board of Trustees review and discuss the presentation to be given by Scott Whalen of Verus, the Pension Trust’s investment consultant.

#### **Capital Market Expectations:**

It is the practice of the Pension Trust to include in the February Board of Trustees meeting an annual review of asset allocation and Capital Market Expectations (CME). With this presentation, Verus is providing an updated look at their 2018 CMEs and the Trust’s current asset allocation. Verus is not recommending any change to the Pension Trust’s Strategic Asset Allocation (SAA) policy at this time.

Verus’ CMEs are for a 10-year period. CMEs are inherently heavily influenced by current market valuation levels and interest rates. It is not surprising that the current market valuation levels have lowered Verus’ CMEs compared to 2017. For the 2017 review of Verus’ CMEs and the Pension Trust’s asset allocation policy Verus estimated a 10 year average rate of return of 6.27%. For 2018, the comparable 10 year estimate from Verus is at 6.00%.

#### **Long Term Rate of Return Implications:**

An appropriate earnings assumption to use for funding the Plan is based on 30+ year time frame so will differ from the 10-year CMEs that investment consultants typically provide. Pension Trust practice has been to consider changes to the long-term actuarial discount

rate, or earnings assumption on a biennial basis in conjunction with actuarial experience studies. This allows for an integrated consideration of not just the discount rate, but the other key actuarial assumptions (e.g., inflation, mortality, etc.) that go into determining the necessary funding for the Plan.

The Board of Trustees will be addressing the long-term actuarial discount rate/earnings assumption at the May 21<sup>st</sup> Board meeting as part of the 2018 Experience Study presented by the Trust’s actuary. This discount rate/earnings assumption to be approved by the Board of Trustees will be used in the 2018 Actuarial Valuation to be finalized at the June 25<sup>th</sup> Board meeting. The current discount rate/earnings assumption used in the 2016 and 2017 Actuarial Valuations is 7.125% which is below the median of other public sector retirement systems.

Forecasts of investment returns are obviously imprecise. Investment consultant forecasts of CMEs for 10 years have some basis in market valuations, interest rates and market theory. However, investment forecasts beyond 10 years are necessarily speculative. Often, pension funds rely on historical rates of returns as a rough estimate of 10+ year rates of return. Such estimates rely on the presumption that the global economy will survive and function somewhat as it has in the past and that investment returns will revert to historical means. Such reversion-to-the-mean logic is reasonable in forecasting inherently complex data in the absence of more specific forecasts.

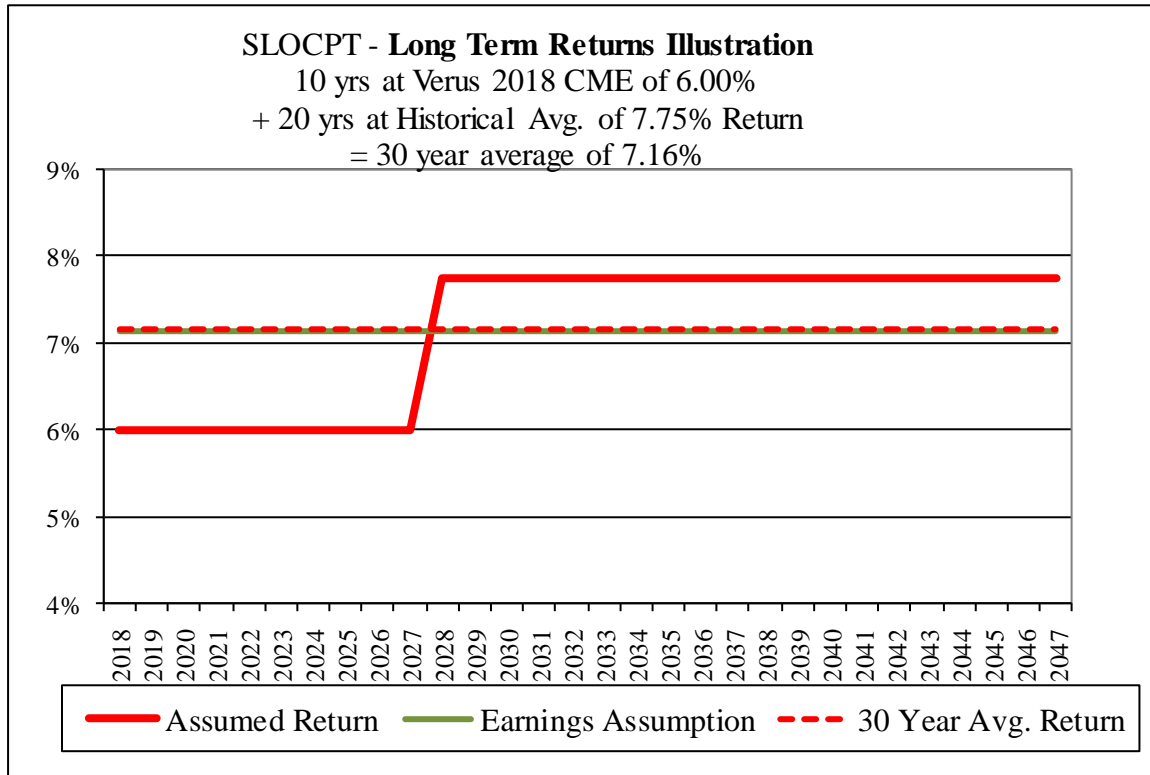
To this end Verus has estimated the long-term rates of return of various asset classes using the best available data. Their history is necessarily of varying periods. For example, domestic equity markets have long histories and are well studied. In contrast, asset classes such as emerging market equity and debt, private equity, and private credit have come of age as institutionally investable asset classes in only the last 20 years or so. Based on Verus’ analysis of historical returns and using the Pension Trust’s current asset allocation policy, Verus estimates that a historically based illustration of a long term rate of return would be approximately 8.1% as shown in the table below. It is compared to Verus’ 2018 CMEs.

	2018 CMEs <u>10 years</u>	Historically based <u>long-term returns</u>
Avg. Annual Return	6.0%	8.1%
Standard Deviation of Return	11.4%	7.9%

As an illustration of 30+ year rates of return we have linked the following assumed rates of return as shown below –

10 year CME based rate of return – 2018-2027	6.00%
20 years Historically based returns – 2028-2047	<u>7.75%</u> (lower than Verus est.)
Combined 30 year return illustration	7.16%

The following graph presents this illustrated series of expected returns.



This illustration is not intended as a predictor of an appropriate long-term discount rate/earnings assumption for the Annual Actuarial Valuation. That key assumption will be addressed at the May 21<sup>st</sup> Board of Trustees meeting. Rather, this illustration is intended to provide a longer-term context for such a discussion.

Respectfully Submitted

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**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**FEBRUARY 2018**

Strategic Asset Allocation Review

**San Luis Obispo County Pension Trust**

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Excerpts from Verus' 2018  
CMAs **SLIDE 4**

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Strategic Asset Allocation  
Review **SLIDE 11**

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# Executive Summary

## Objectives

- Assess SLOCPT’s investment strategy in light of Verus latest 10-year market forecast
- Identify potential improvement opportunities / make appropriate recommendations

## Observations

- Return expectations have fallen across markets in Verus’ latest 10-year outlook
- Value-added real estate (ARA) remains underfunded and awaiting capital calls
- Current policy allocation provides expected return of 6.0% vs. 7.125% actuarial assumed rate

## Recommendations

- Current allocation remains satisfactory given continued challenging risk/return environment
- Continue implementing the current policy allocation

# Excerpts from Verus' 2018 Capital Market Assumptions

# Methodology

## CORE INPUTS

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

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

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

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

# 10-year return & risk assumptions

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

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

# Correlation assumptions

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

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



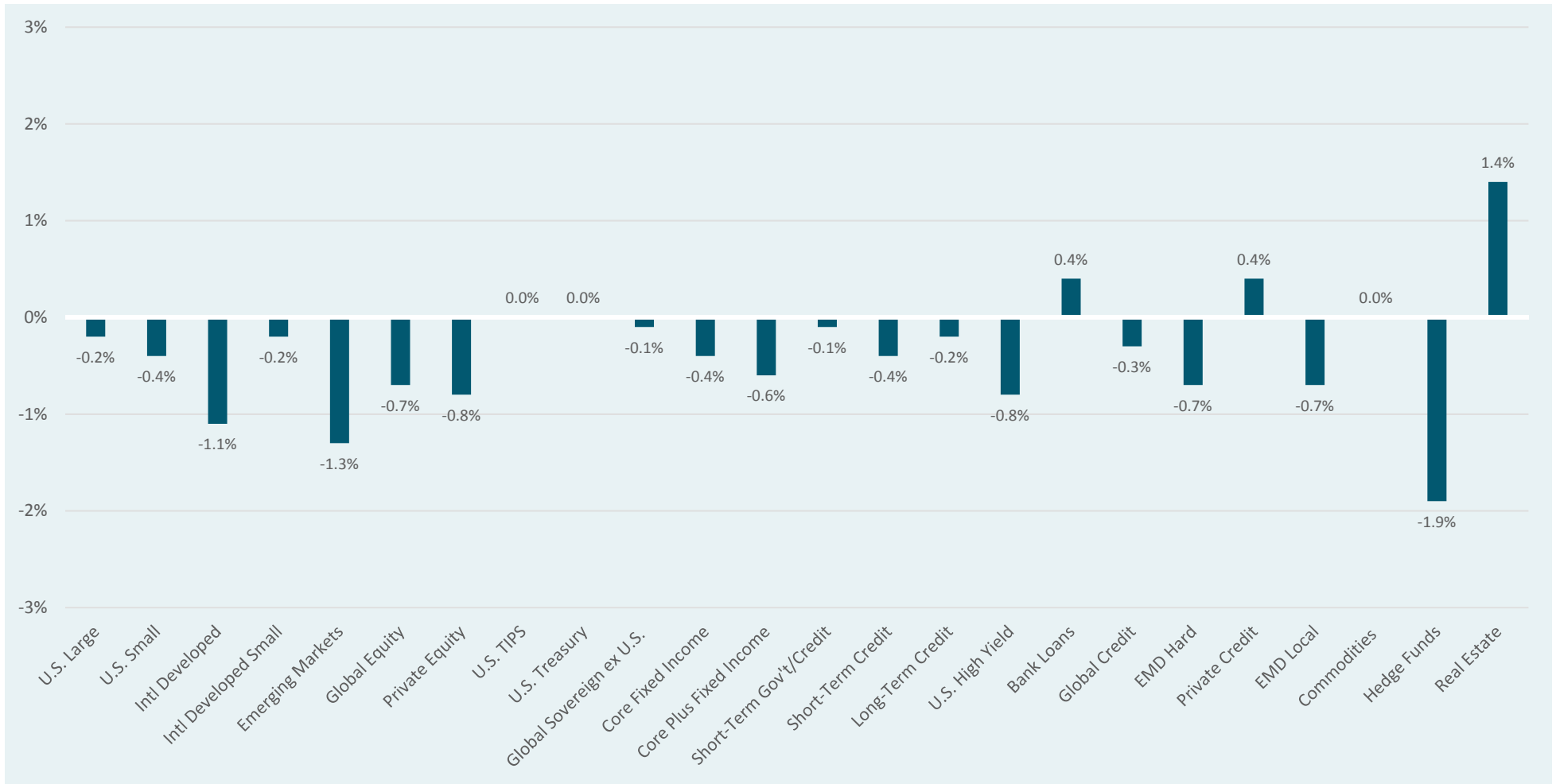
# Range of likely 10 year outcomes

10 YEAR RETURN 90% CONFIDENCE INTERVAL





# 2018 vs. 2017 return forecast



# Relevant forecast changes

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

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

# Strategic Asset Allocation Review

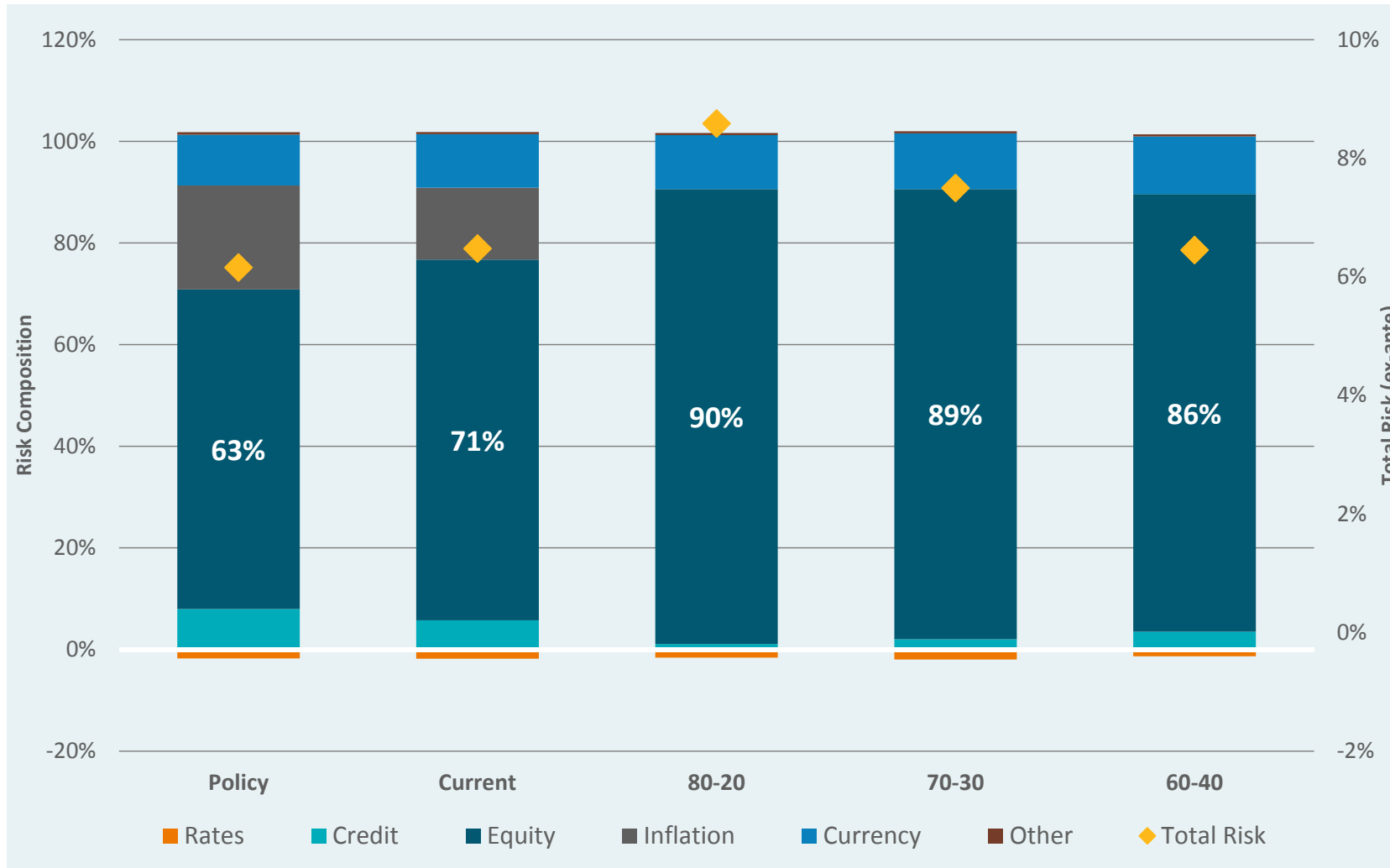
# Mean variance analysis

	Policy	Current	80/20	70/30	60/40	CMA's (10 Yr)	
						Return (g)	Standard Deviation
US Large	16.0	18.9	0.0	0.0	0.0	4.5	15.7
US Small	4.0	4.6	0.0	0.0	0.0	4.4	21.5
<b>Total Domestic Equity</b>	<b>20.0</b>	<b>23.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>		
International Developed	13.0	18.7	0.0	0.0	0.0	8.6	18.1
Emerging Markets	7.0	6.0	0.0	0.0	0.0	7.3	26.6
<b>Total Int'l Equity</b>	<b>20.0</b>	<b>24.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>		
Global Equity	0.0	0.0	80.0	70.0	60.0	6.3	17.5
<b>Total Equity</b>	<b>40.0</b>	<b>48.2</b>	<b>80.0</b>	<b>70.0</b>	<b>60.0</b>		
Core Fixed Income	15.0	14.5	20.0	30.0	40.0	2.9	6.4
Bank Loans	5.0	5.1	0.0	0.0	0.0	4.9	10.5
Global Credit	5.0	5.3	0.0	0.0	0.0	1.7	7.6
Emerging Market Debt (Local)	5.0	5.2	0.0	0.0	0.0	5.8	12.1
<b>Total Fixed Income</b>	<b>30.0</b>	<b>30.1</b>	<b>20.0</b>	<b>30.0</b>	<b>40.0</b>		
Commodities	5.0	2.9	0.0	0.0	0.0	4.3	15.9
Core Real Estate	10.0	12.2	0.0	0.0	0.0	6.0	12.7
Value Add Real Estate	5.0	0.9	0.0	0.0	0.0	8.0	19.5
<b>Total Real Assets</b>	<b>20.0</b>	<b>16.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>		
Private Equity	5.0	1.7	0.0	0.0	0.0	6.4	25.8
Private Credit	5.0	2.4	0.0	0.0	0.0	6.9	10.5
<b>Total Non-Public Investments</b>	<b>10.0</b>	<b>4.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>		
Cash	0.0	1.6	0.0	0.0	0.0	2.2	1.2
<b>Total Allocation</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>		

	Policy	Current	80/20	70/30	60/40
<b>Mean Variance Analysis</b>					
<b>Forecast 10 Year Return</b>	<b>6.0</b>	<b>5.9</b>	<b>5.8</b>	<b>5.6</b>	<b>5.3</b>
Standard Deviation	11.4	11.5	14.5	12.9	11.3
Return/Std. Deviation	0.5	0.5	0.4	0.4	0.5
1st percentile ret. 1 year	-21.2	-21.5	-37.0	-32.2	-27.4
Sharpe Ratio	0.39	0.38	0.32	0.32	0.33

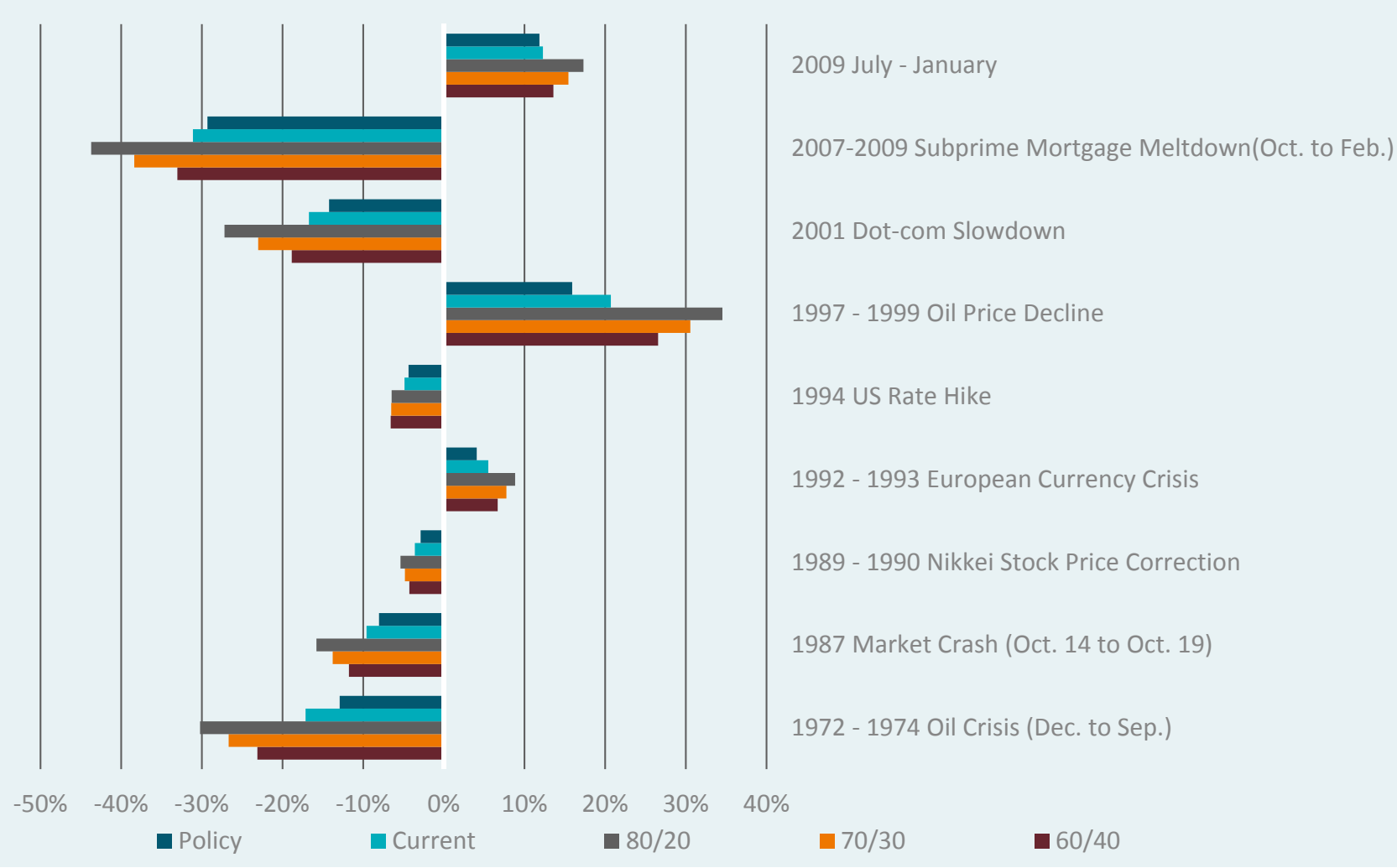
Note: Current mix is as of 12/31/17 update

# Risk decomposition



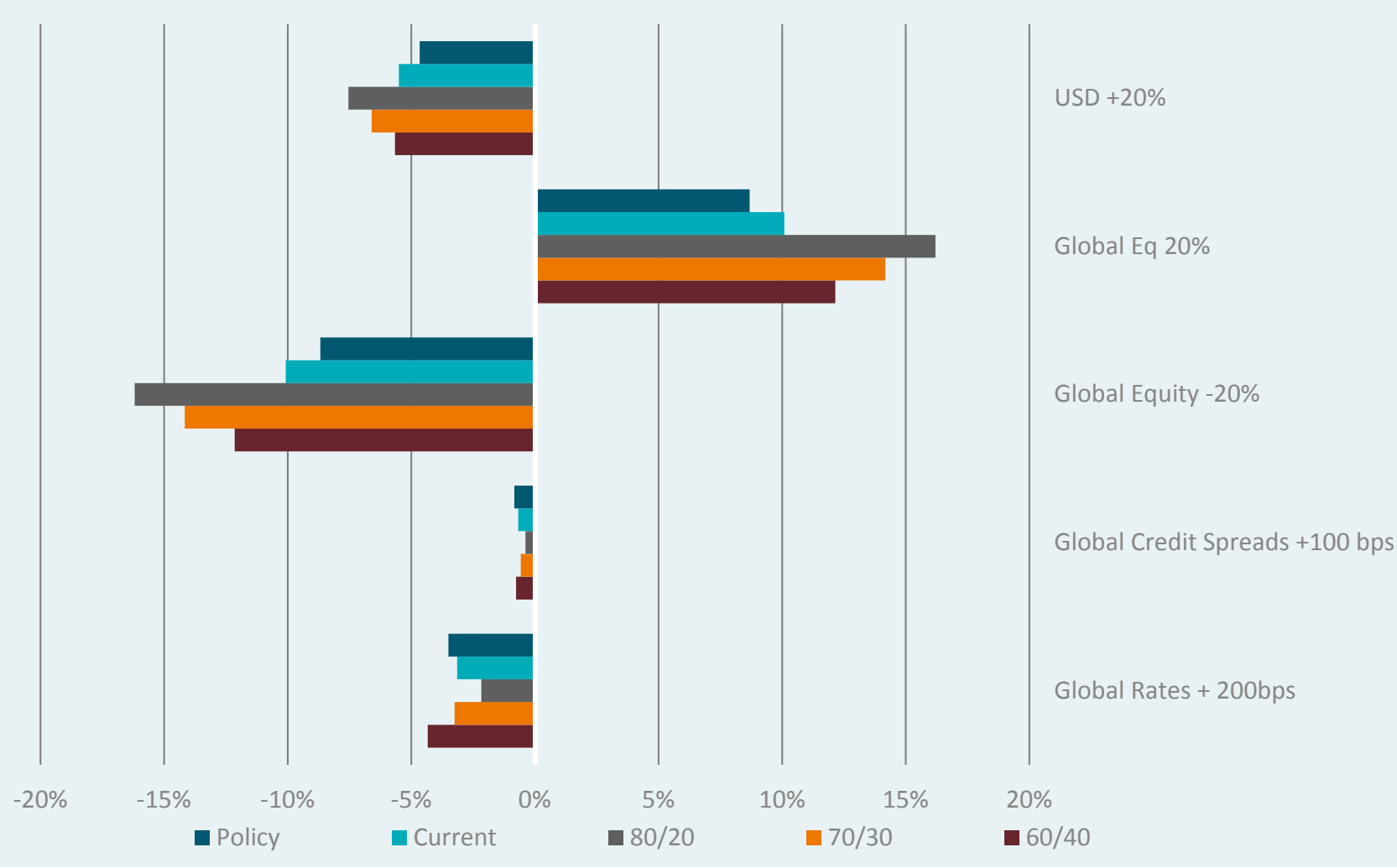
Source: Barra

# Scenario analysis



Source: Barra

# Stress tests



Source: Barra

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## Board of Trustees

1000 Mill Street  
San Luis Obispo, CA 93408  
Phone: (805) 781-5465  
Fax: (805) 781-5697  
www.SLOPensionTrust.org



Date: February 26, 2018

To: Board of Trustees

From: Carl Nelson – Executive Secretary  
Amy Burke – Deputy Executive Secretary

### **Agenda Item 12: Retirement Plan Peer Comparisons – Asset Allocation**

This item is informational for the Board of Trustees and no action is required.

**Asset Allocation Peer Comparisons** – For the 2017 comparison of investment policies to other California peer retirement systems we have simplified the presentation of the data to average fund allocations. The source of the investment policy data for the 20 County Retirement Systems that make up the State Association of County Retirement Systems (SACRS) is an annual survey done by R.V. Kuhns. The SACRS survey by R.V. Kuhns also includes a broader universe of 79 public sector retirement systems. Also presented are asset allocation policies for CalPERS and CalSTRS.

For the most part, the survey data on asset allocation policies are as of June 30, 2017. The asset allocation policies for CalPERS and CalSTRS were updated in December of 2017 and those revisions are what is reported here.

A peer comparison of investment policies is of interest as general information, but does not provide direct guidance on investment policy. Each retirement system creates their own investment policy in conjunction with their investment consultant(s) to suit the needs of that particular retirement plan and the judgement of their own trustees.

It should also be noted that asset allocation policies change over time. The data presented below is as of 2017, for preceding years all the funds included in these surveys have modified their asset allocation policies several times over the last ten years.

**Investment Comparisons** – The general points of comparison from the following table can be summarized as –

- *The SLOCPT follows a somewhat lower risk Strategic Asset Allocation (SAA) policy than the funds surveyed here.*
  - Total Global Equity allocation of 40% vs 49% for the SACRS systems average.
  - Private Equity and Alternatives allocation of 10% (5% Private Equity, 5% Private Credit) vs 14%-18% for the SACRS systems average.
  - Fixed Income allocation of 30% vs 23% for the SACRS systems average.
  - Real Estate allocation of 15% vs 8% for the SACRS systems average.

SLOCPT - Peer Comparison - 2017	San Luis Obispo County Pension Trust	R.V. Kuhns 2017 survey	R.V. Kuhns 2017 survey	CalPERS 2017 Revised	CalSTRS 1/1/18 policy
	SLOCPT	SACRS Systems	Fund Universe		
<b>Asset Allocation Policy</b>					
2017 data					
Equity - Global	40%	49%	50%	50%	54%
Private Equity	5%	0%	0%	8%	8%
Alternative Inv. (e.g., PE)	0%	14%	13%	0%	0%
Fixed Income	30%	23%	24%	28%	13%
Private Credit	5%	0%	0%	0%	0%
Real Estate	15%	8%	8%	11%	12%
Real Assets	5%	0%	0%	2%	2%
Risk Mitigating	0%	0%	0%	0%	9%
Other	0%	4%	3%	0%	0%
Liquidity	0%	1%	2%	1%	2%
	100%	100%	100%	100%	100%
<b>Median Returns</b>					
YE 6/30/17 - 1 yr	10.80%	12.81%	12.78%	11.20%	13.40%
YE 6/30/17 - 5 yrs	8.10%	9.03%	9.27%	8.80%	10.10%
YE 6/30/17 - 10 yrs	4.90%	5.27%	5.43%	4.40%	5.00%

Respectfully Submitted

## Board of Trustees

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Date: February 26, 2018

To: Board of Trustees

From: Carl Nelson – Executive Secretary  
Amy Burke – Deputy Executive Secretary

### **Agenda Item 13: Asset Allocation February 2018**

This item on the agenda provides a properly noticed opportunity for the Board of Trustees to discuss and take action if necessary regarding asset allocation and related investment matters.

At the January 22, 2018 Board of trustees meeting we had communicated plans for an asset mix rebalancing that involved multiple transfers in late January and early February. Those transfers have been completed and are mostly reflected in the monthly investment report for January covered earlier in the agenda. Two final transfers involving a drawdown of \$5 million from the WCM International portfolio and an additional funding of \$5 million into the BlackRock core bonds portfolio settled in February and are complete.

During late February an additional rebalancing to provide for liquidity for benefit payments and capital calls will be implemented. It will depend on actual asset mix in mid-February, but it is anticipated to be a further drawdown of approximately \$15 million from domestic equity.

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