



AGENDA

RETIREMENT BOARD MEETING

SECOND MONTHLY MEETING
May 24, 2017
9:00 a.m.

Retirement Board Conference Room
The Willows Office Park
1355 Willow Way, Suite 221
Concord, California

THE RETIREMENT BOARD MAY DISCUSS AND TAKE ACTION ON THE FOLLOWING:

1. Pledge of Allegiance.
2. Accept comments from the public.
3. Approve minutes from the April 12, 2017.

CLOSED SESSION

4. The Board will go into closed session under Gov. Code Section 54957 to evaluate the performance of the following public employee:

Title: Chief Executive Officer

5. CONFERENCE WITH LABOR NEGOTIATOR
(Government Code Section 54957.6)

Agency designated representative:
Joe Wiley, CCCERA's Chief Negotiator

Unrepresented Employee: Chief Executive Officer

6. CONFERENCE WITH LABOR NEGOTIATOR
(Government Code Section 54957.6)

Agency designated representative:
Gail Strohl, Chief Executive Officer

Unrepresented Employees: All CCCERA unrepresented positions

7. The Board will meet in closed session pursuant to Govt. Code Section 54956.9(d)(1) to confer with legal counsel regarding pending litigation:

Jon Wilmot v. CCCERA Board of Retirement, et al., Contra Costa County Superior Court, Case No. N16-1730.

The Retirement Board will provide reasonable accommodations for persons with disabilities planning to attend Board meetings who contact the Retirement Office at least 24 hours before a meeting.

OPEN SESSION

8. Consider and take possible action to adopt updated Asset Allocation targets.
9. Consider and take possible action to authorize search for Risk Parity mandate.
10. Review of total portfolio performance for period ending March 31, 2017.
11. Review of Report on Liquidity Sub-portfolio.
12. Presentation of the CCCERA 2017 Compliance Activity Plan.
13. Consider authorizing the attendance of Board and/or staff:
 - a. DLJ Annual Meeting, June 21, 2017, New York, NY. (Note conflict with Board meeting).
 - b. Modern Investment Theory & Practice for Retirement Systems, SACRS, July 24-26, 2017, Berkeley, CA. (Note conflict with July 26, 2017 Board meeting).
14. Miscellaneous
 - a. Staff Report
 - b. Outside Professionals' Report
 - c. Trustees' comments

The Retirement Board will provide reasonable accommodations for persons with disabilities planning to attend Board meetings who contact the Retirement Office at least 24 hours before a meeting.



Meeting Date
05/24/17
Agenda Item
#3

MINUTES

RETIREMENT BOARD MEETING MINUTES

REGULAR MEETING
April 12, 2017
9:00 a.m.

Retirement Board Conference Room
The Willows Office Park
1355 Willow Way, Suite 221
Concord, California

Present: Debora Allen, Candace Andersen, Scott Gordon, Jerry Holcombe, Louie Kroll, David MacDonald, John Phillips, Gabe Rodrigues, Todd Smithey, Jerry Telles and Rusty Watts

Absent: William Pigeon

Staff: Gail Strohl, Chief Executive Officer; Timothy Price, Chief Investment Officer; Karen Levy, General Counsel; Wrally Dutkiewicz, Compliance Officer; Christina Dunn, Administrative/HR Manager; Henry Gudino, Accounting Manager; and Alexis Cox, Member Services Manager

Outside Professional Support:
Susan Hastings
Joe Wiley

Representing:
Laughlin, Falbo, Levy & Moresi
Wiley Price & Radulovich LLP

1. **Pledge of Allegiance**

Telles led all in the *Pledge of Allegiance*.

2. **Recognition of Anne Sommers for 30 years of service**

Phillips recognized and congratulated Anne Sommers for her 30 years of service.

Gordon and Smithey were present for subsequent discussion and voting.

3. **Accept comments from the public**

Michael Pineschi, Unite Here, spoke on Ares Energy Investment Fund IV and Fund V and their concerns with the investments in these funds.

4. **Routine Items**

It was M/S/C to approve the routine items of the April 12, 2017 meeting. (Yes: Allen, Andersen, Gordon, MacDonald, Phillips, Rodrigues, Smithey, Telles and Watts)

CLOSED SESSION

The Board moved into closed session pursuant to Govt. Code Section 54957.6 and 54956.9(d)(1).

The Board moved into open session.

5. There was no reportable action related to Govt. Code Section 54957.6.
6.
 - a. There was no reportable action related to Govt. Code Section 54956.9(d)(1).
 - b. There was no reportable action related to Govt. Code Section 54956.9(d)(1).
 - c. There was no reportable action related to Govt. Code Section 54956.9(d)(1).
 - d. The Board voted unanimously to engage Laughlin, Falbo, Levy & Moresi to represent CCCERA and its' Board members in the case Debra Fernandez v. CCCERA, et al., Contra Costa County Superior Court Case No.: N17-0366. (Yes: Allen, Anderson, Gordon, MacDonald, Phillips, Rodrigues, Smithey, Telles and Watts)

7. **Consider and take possible action to adopt the Memorandum of Understanding between CCCERA and United Clerical, Technical & Specialized Employees (AFSCME) Local 2700, January 1, 2017 through December 31, 2018 and authorize CEO to execute said MOU**

Dunn presented the tentative agreement with AFSCME and reviewed the changes to salaries, vacation accrual rates, monthly medical plan premiums, and family member eligibility criteria for the dental plan noting the agreement expires on December 31, 2018.

It was M/S/C to adopt the Memorandum of Understanding (MOU) between Contra Costa County Employees' Retirement Association (CCCERA) and United Clerical, Technical & Specialized Employees (AFSCME), Local 2700, for the period of January 1, 2017 through December 31, 2018 and authorize the CEO to execute said MOU. (Yes: Allen, Andersen, Gordon, MacDonald, Phillips, Rodrigues, Smithey, Telles and Watts)

8. **Consider and take possible action to adopt the CCCERA pay schedules for all CCCERA classifications effective April 16, 2017**

Dunn reported this is an administrative item to update the publicly available pay schedule which reflects the agreed upon base pay increase to all bargaining unit employees.

It was M/S/C to adopt the CCCERA pay schedule for all CCCERA classifications effective April 16, 2017. (Yes: Allen, Andersen, Gordon, MacDonald, Phillips, Rodrigues, Smithey, Telles and Watts)

9. **Presentation on travel reimbursement and educational tracking process**

Dunn presented the travel reimbursement and educational tracking process as well as the Travel Expense Reimbursement policy noting the Board approves Board travel and the CEO approves staff travel. She reviewed how many Board members can attend a conference noting no more than 4 Board members can attend a conference that is not open to the public and all Board members can attend those that are open to the public. She also reviewed a sample travel demand.

There was discussion on reasonable costs when changing flights while at the airport due to different circumstances.

Dunn reviewed the continuing education submission form and how Board member education hours are logged.

Andersen was no longer present for subsequent discussion and voting.

10. **Consider authorizing the attendance of Board and/or staff:**

- a. It was M/S/C to authorize the attendance of 3 Board members at the 28th Annual Pension and Financial Services Conference, National Association of Securities Professionals, June 26-28, 2017, Los Angeles, CA. (Yes: Allen, Gordon, Holcombe, MacDonald, Phillips, Rodrigues, Smithey, Telles and Watts)

11. Miscellaneous

(a) Staff Report –

Strohl reported there was a phone outage last week and that CCCERA's back up system was utilized noting it was a smooth process. She also reported we are in the process of updating our disaster recovery plan.

Price reported that at the next Board meeting staff will have a recommendation for a private markets advisor and Verus will have an educational presentation on alternative risk diversifying strategies.

Cox reported staff is currently working with the Courts as they have not been properly calculating contributions for PEPRA members for dual language and lump sum differentials.

(b) Outside Professionals' Report -

None

(c) Trustees' comments –

Gordon reported he attended the National Association of Securities Professionals Los Angeles Chapter event stating they were a very interesting group that promotes minority opportunities in investing. He felt it was worthwhile and a pleasant surprise.

Rodrigues reported Willie Brown, a Navy Seal, and a former CIA agent will be speakers at the upcoming SACRS Conference.

It was M/S/C to adjourn the meeting. (Yes: Allen, Gordon, Holcombe, MacDonald, Phillips, Rodrigues, Smithey, Telles and Watts)

John Phillips, Chairman

Scott Gordon, Secretary



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



MAY 2017

Asset Allocation Review

Contra Costa County Employees' Retirement Association

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SEATTLE 206-622-3700

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Executive summary

Executive summary

- When the FFP 4-Yr asset allocation was initially adopted in December 2015, it was agreed that the Plan’s asset allocation would be reviewed annually.
- The objective of the annual review process is not to make large changes to the asset allocation, but rather to:
 1. Adjust the size of the Liquidity portfolio based on projected benefit payments; and
 2. Make small adjustments to the components of the Growth & Risk Diversifying portfolios based on updated CMAs.
- At the March 2017 Board meeting, an updated asset allocation using 2017 CMAs was presented & discussed.
 - This presentation formalizes the recommendation to adopt the “Alternative Mix” as CCCERA’s new long-term targets.
- Based on this year’s review, the following changes are being recommended:
 1. Increase the Liquidity program to 27% from 24% based on Staff’s projection of benefit payments;
 2. Decrease Private Credit’s target from 16% to 12%;
 3. Increase International Developed Equity to 12% from 10%; and
 4. Eliminate the Plan’s strategic cash target through the use of the Plan’s overlay provider
 - Under this approach, sufficient cash will remain in the portfolio to pay obligations, but will be equitized
- If approved, these allocations will become the Plan’s new long-term targets and will result in a revised implementation plan being presented to the Board at a future meeting.

Asset allocation analysis

Asset allocation analysis

	Current Portfolio (Dec. 31, 2016)	Phase 2a Targets	2016 FFP 4-Yr	Alternative Mix	CMA's (10 Yr)		
					Return	Standard Deviation	Sharpe Ratio
US Large	17.4	10.0	6.0	6.0	4.7	15.8	0.16
US Small	6.5	6.6	0.0	0.0	4.8	21.8	0.12
International Developed	8.6	8.6	10.0	12.0	9.7	18.9	0.40
Emerging Markets	2.1	10.6	10.0	10.0	8.6	27.2	0.35
Global Equity	10.6	8.6	0.0	0.0	7.0	17.9	0.27
High Yield Corp. Credit	5.2	5.0	0.0	0.0	4.5	11.8	0.20
Private Equity	9.0	8.7	12.0	12.0	7.8	26.2	0.33
Private Credit	1.8	1.9	16.0	12.0	6.5	11.8	0.37
Commodities	0.6	0.8	0.0	0.0	4.3	16.1	0.13
US TIPS	0.6	0.8	0.0	0.0	2.6	5.7	0.08
Core Real Estate	1.6	1.6	0.0	0.0	4.6	9.9	0.25
Value Add Real Estate	3.3	3.3	4.0	4.0	6.6	17.9	0.25
Opportunistic Real Estate	3.3	3.3	4.0	4.0	8.6	26.0	0.25
REITs	0.9	1.0	1.0	1.0	4.6	19.7	0.10
Total Growth Portfolio	71.5	70.6	63.0	61.0			
Cash	0.9	1.4	1.0	0.0	2.2	1.2	--
Short-Term Gov't/Credit	21.9	22.0	24.0	27.0	2.6	3.7	0.13
Total Liquidity Portfolio	22.8	23.4	25.0	27.0			
US TIPS	1.3	1.3	0.0	0.0	2.6	5.7	0.08
Commodities	1.3	1.3	0.0	0.0	4.3	16.1	0.13
Hedge Funds	0.0	0.0	4.0	4.0	6.0	13.2	0.29
Risk Parity	0.0	0.0	5.0	5.0	7.2	10.0	0.50
US Treasury	3.2	3.5	3.0	3.0	2.4	6.9	0.04
Total Risk Diversifying	5.7	6.0	12.0	12.0			
Total Allocation	100.0	100.0	100.0	100.0			

Asset allocation characteristics

Risk & return characteristics

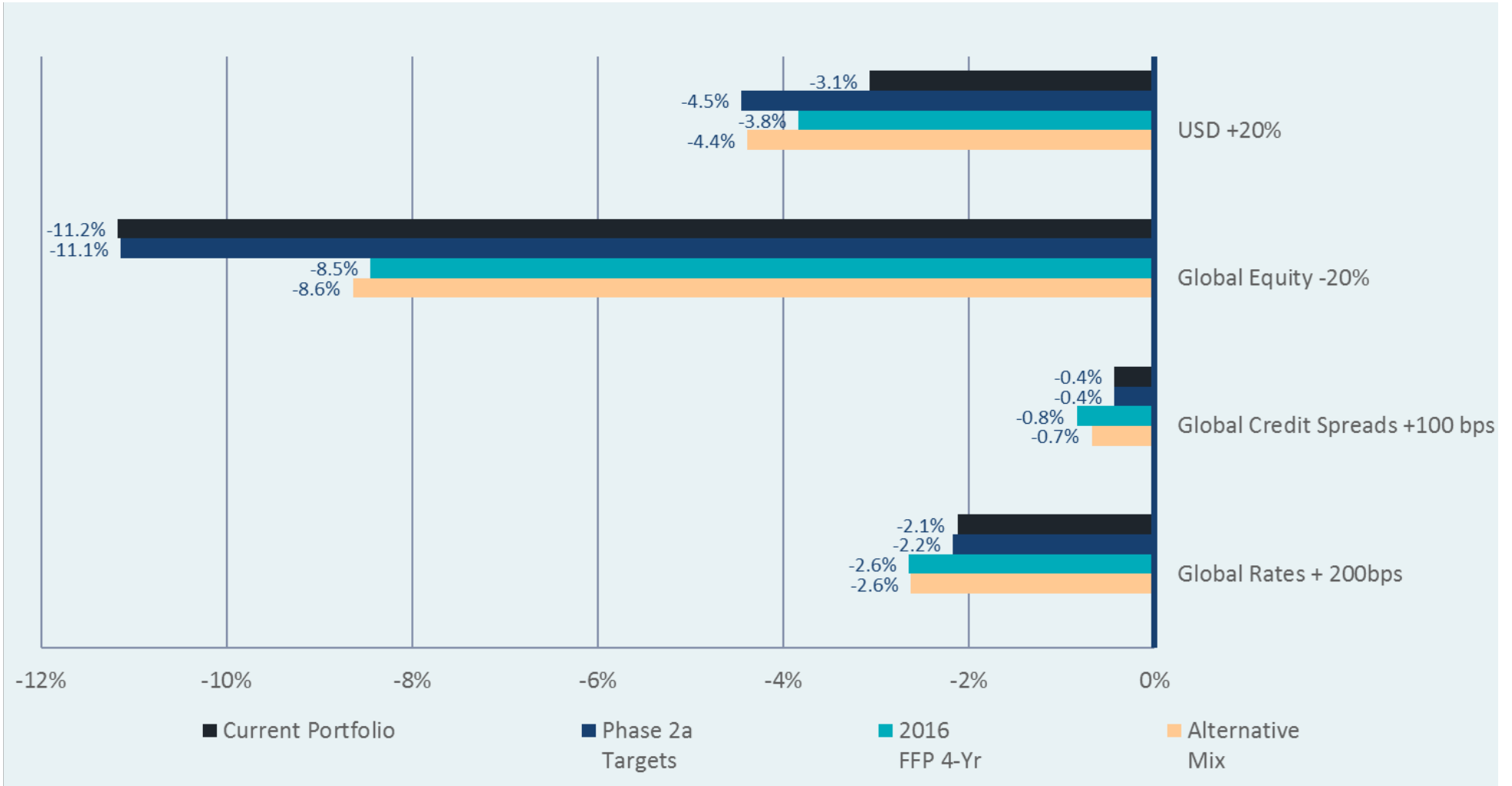
	Current Portfolio (Dec. 31, 2016)	Phase 2a Targets	2016 FFP 4-Yr	Alternative Mix
Mean Variance Analysis				
Forecast 10 Year Return	6.01	6.36	6.78	6.83
Standard Deviation	11.15	11.68	10.80	10.54
<i>Return/Std. Deviation</i>	<i>0.54</i>	<i>0.54</i>	<i>0.63</i>	<i>0.65</i>
<i>1st percentile ret. 1 year</i>	<i>-23.62</i>	<i>-23.18</i>	<i>-22.41</i>	<i>-21.94</i>
Sharpe Ratio	0.39	0.41	0.47	0.48
Real Return	3.91	4.26	4.68	4.73

— Compared to the FFP 4-Yr asset allocation approved in 2016, the “Alternative Mix” being recommended increases the size of the Liquidity program by 3% while:

- Increasing the portfolio’s expected return;
- Decreasing the expected standard deviation; and
- Increasing the portfolio’s efficiency (i.e., Sharpe Ratio).

Stress test

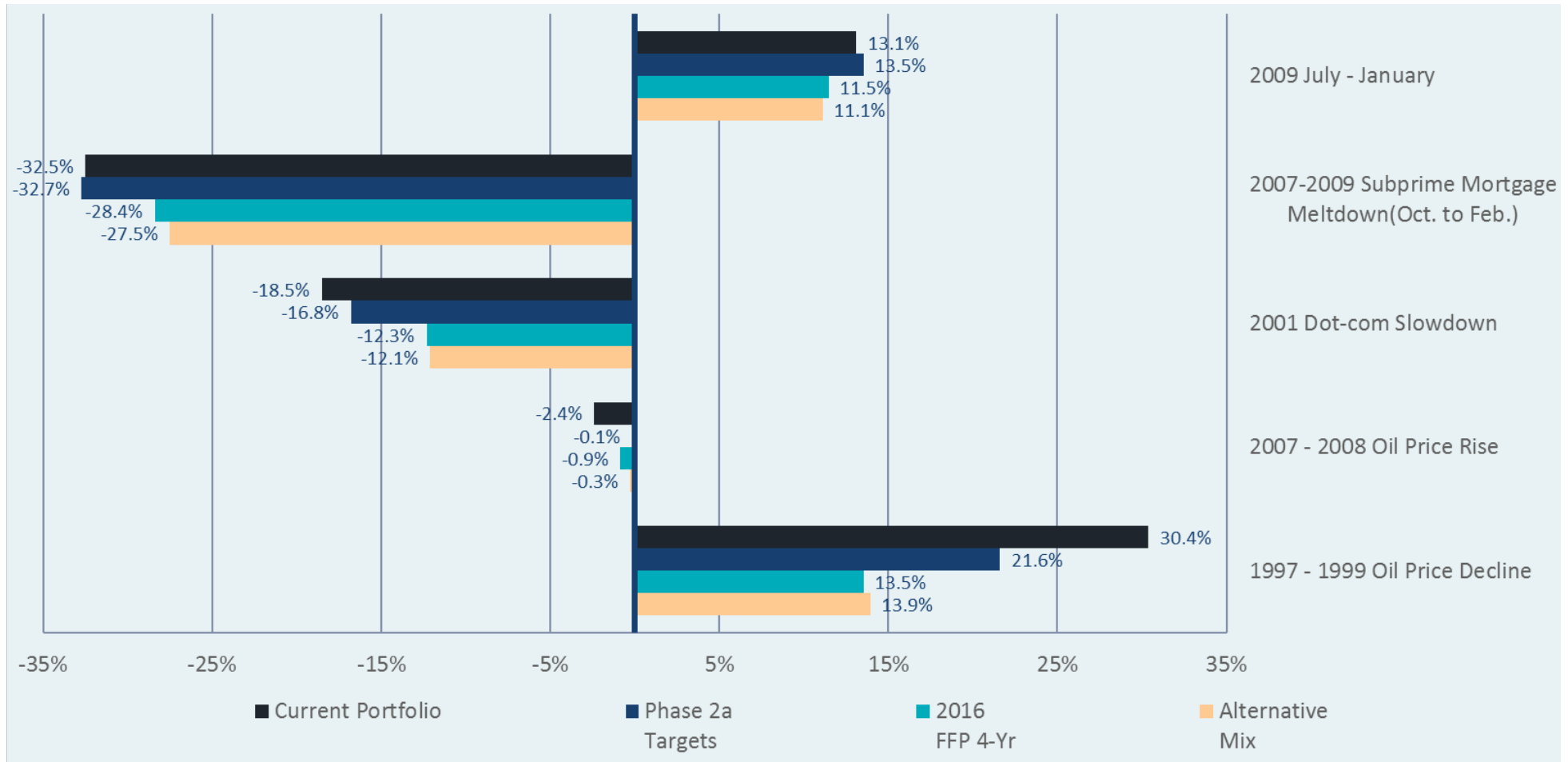
TAIL RISK – STRESS TEST



Scenario analysis based on risk factors in each mix and computed as hypothetical scenarios using MSCI Barra One

Historical scenario analysis

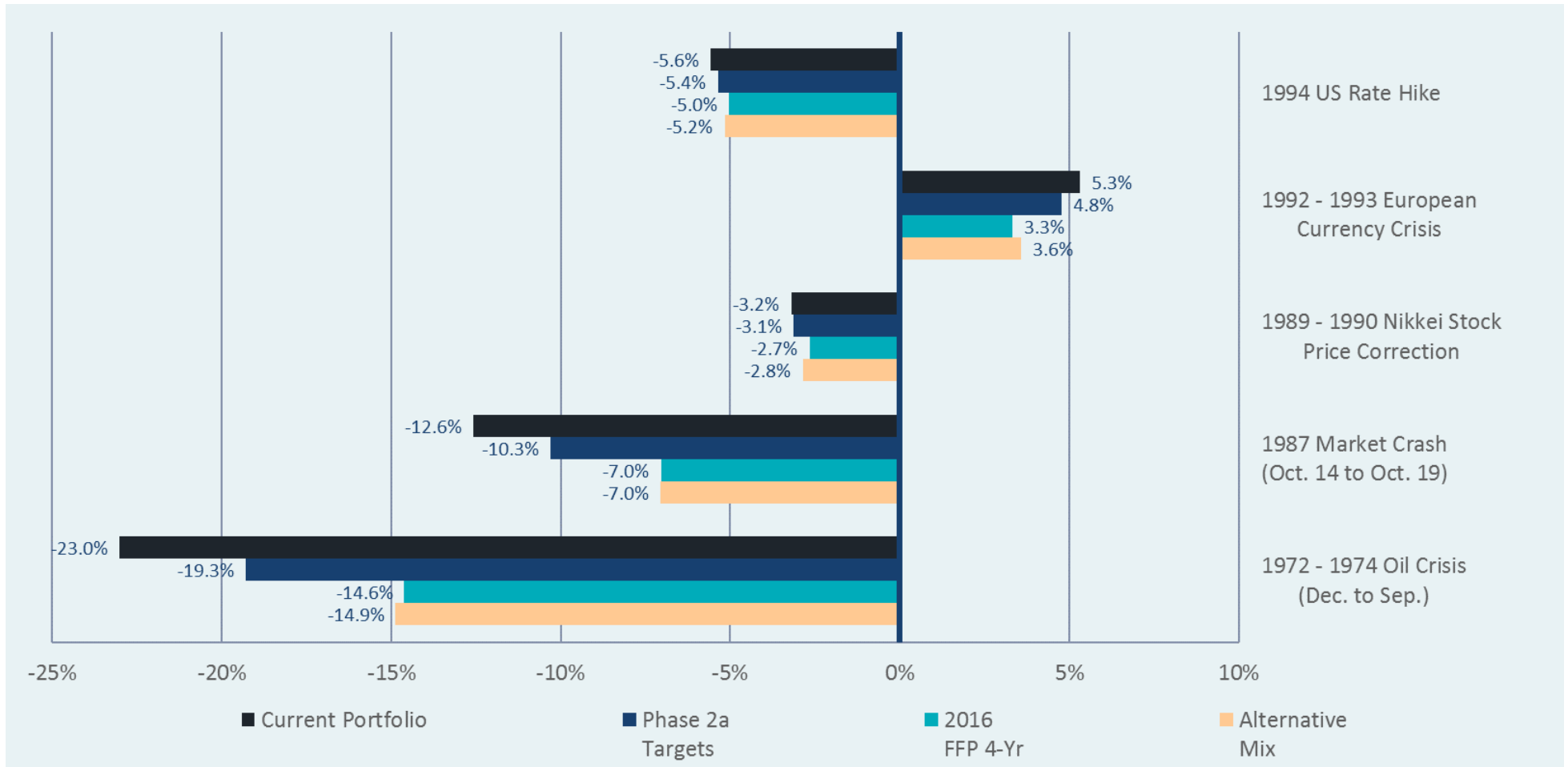
TAIL RISK – SCENARIO ANALYSIS



Scenario analysis based on risk factors in each mix and computed as hypothetical scenarios using MSCI Barra One

Historical scenario analysis

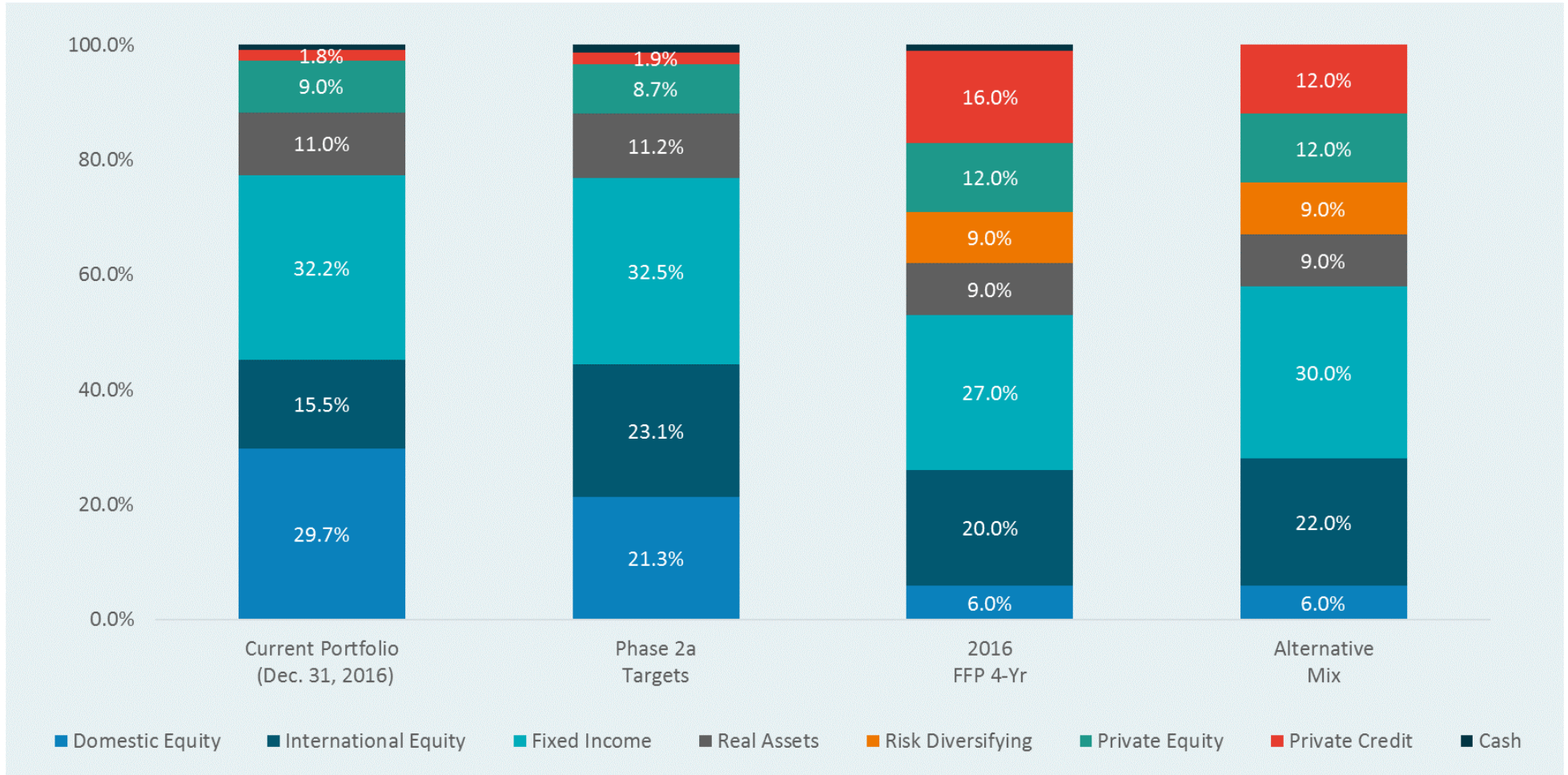
TAIL RISK – SCENARIO ANALYSIS



Scenario analysis based on risk factors in each mix and computed as hypothetical scenarios using MSCI Barra One

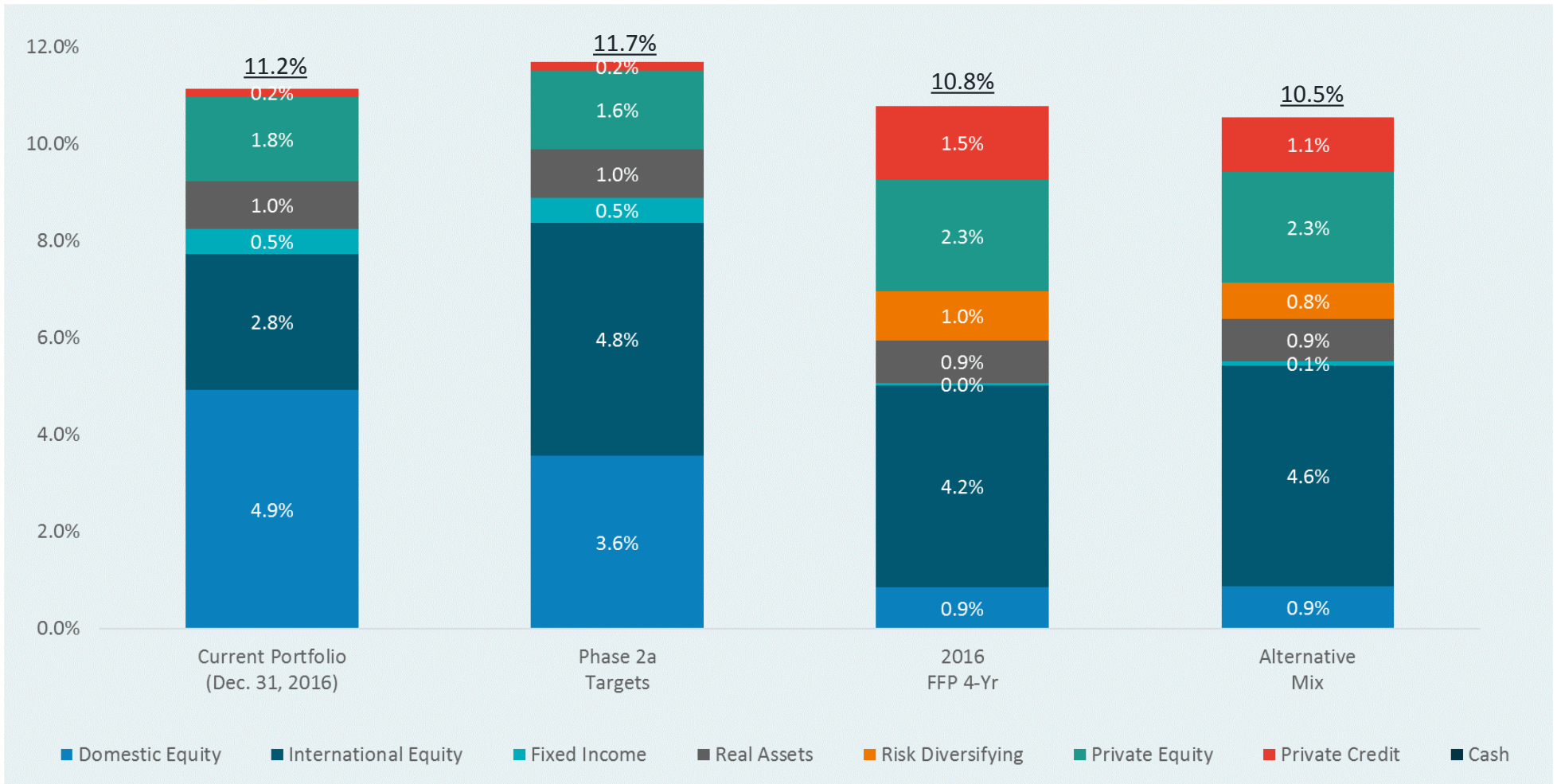
Asset allocation by asset class

ASSET ALLOCATION BY ASSET CLASS



Risk contribution by asset class

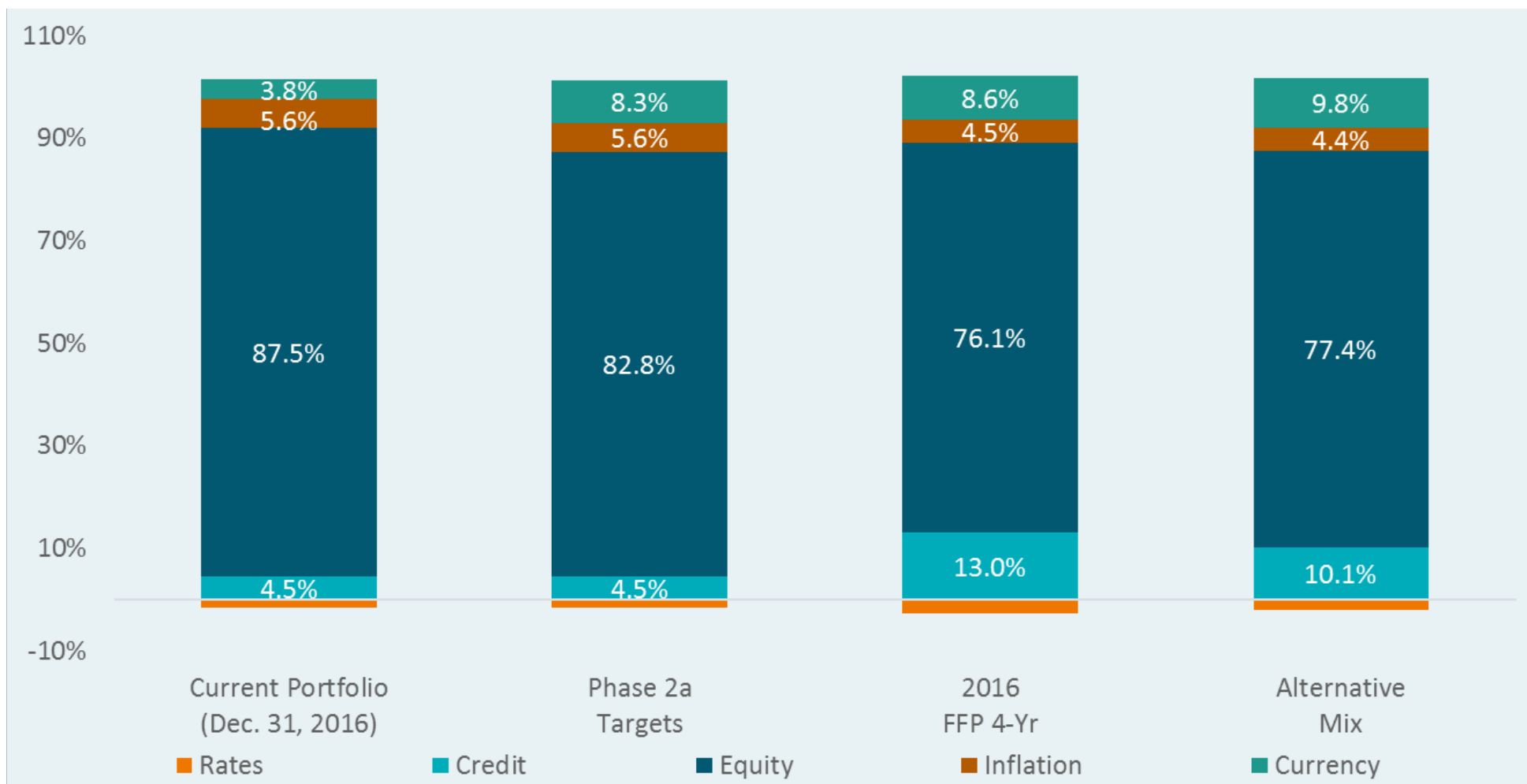
RISK CONTRIBUTION BY ASSET CLASS



Risk contribution based on Verus' Capital Market Assumptions

Risk contribution by risk factor

RISK CONTRIBUTION BY RISK FACTOR



Risk contribution based on MSCI BarraOne's Capital Market Assumptions

Recommendation & Next steps

Recommendation

- Recommendation is to approve the “Alternative Mix”, which includes the following changes to CCCERA’s long-term strategic asset allocation targets:
 1. Increase the Liquidity program to 27% from 24% based on Staff’s projection of benefit payments;
 2. Decrease Private Credit’s target from 16% to 12%;
 3. Increase International Developed Equity to 12% from 10%; and
 4. Eliminate the Plan’s strategic cash target through the use of the Plan’s overlay provider

Next steps

- No immediate changes will be made to the portfolio's actual allocation at this time.
- The “Phase 2a Targets” approved by the Board in March will remain in effect until “Phase 2b” targets are approved by the Board at a future meeting.

Appendix

10 year return & risk assumptions

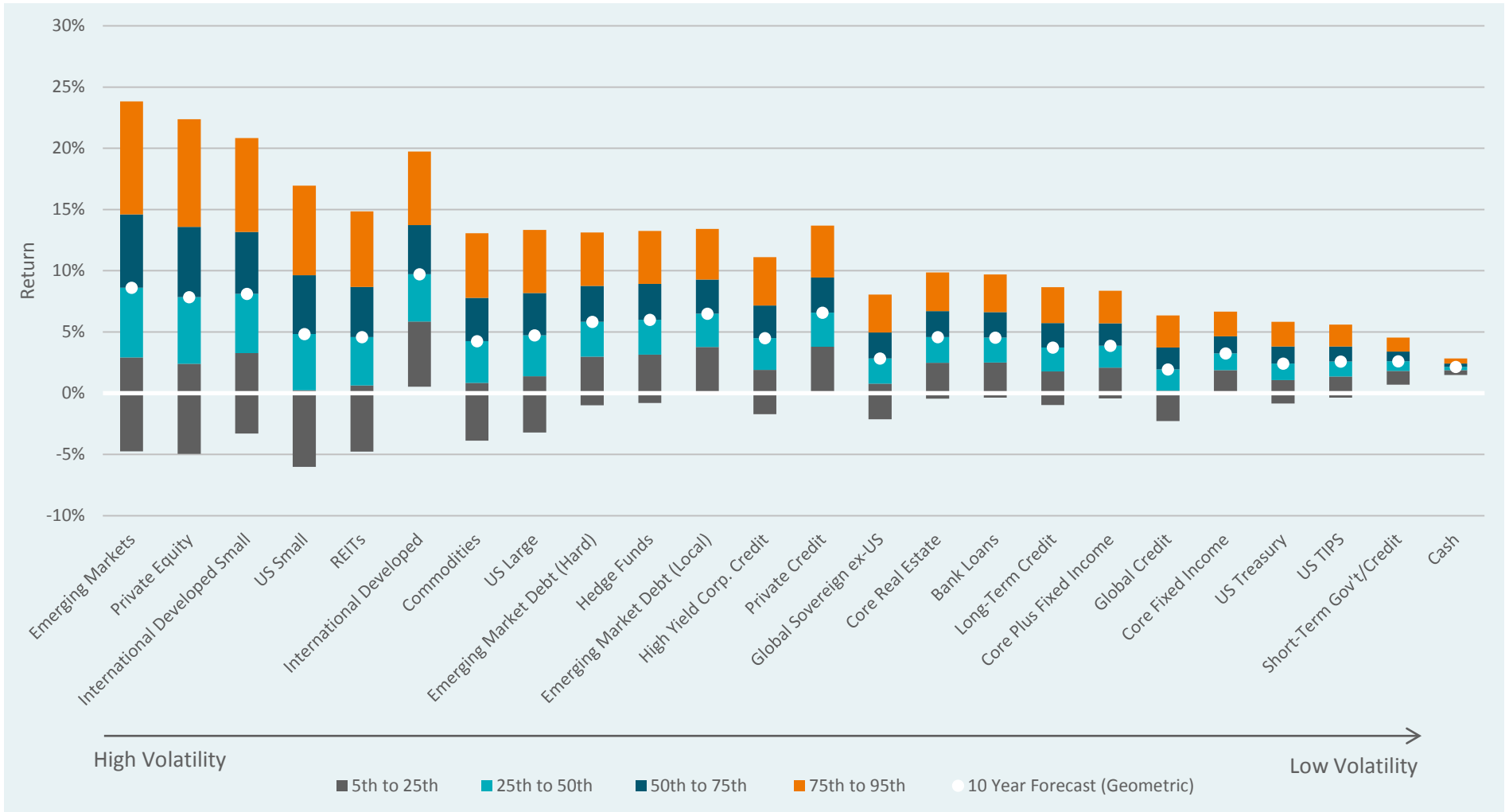
Asset Class	Index Proxy	Ten Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio (g) Forecast	Sharpe Ratio (a) Forecast	Ten Year Historical Sharpe Ratio (g)	Ten Year Historical Sharpe Ratio (a)
		Geometric	Arithmetic					
Equities								
US Large	S&P 500	4.7%	5.9%	15.8%	0.16	0.24	0.39	0.45
US Small	Russell 2000	4.8%	7.0%	21.8%	0.12	0.22	0.30	0.39
International Developed	MSCI EAFE	9.7%	11.3%	18.9%	0.40	0.48	-0.02	0.07
International Small	MSCI EAFE Small Cap	8.1%	10.5%	23.3%	0.26	0.36	0.09	0.19
Emerging Markets	MSCI EM	8.6%	11.8%	27.2%	0.24	0.35	0.04	0.16
Global Equity	MSCI ACWI	7.0%	8.4%	17.9%	0.27	0.35	0.15	0.23
Private Equity	Cambridge Private Equity	7.8%	10.8%	26.2%	0.22	0.33	0.88	0.89
Fixed Income								
Cash	30 Day T-Bills	2.2%	2.2%	1.2%	-	-	-	-
US TIPS	Barclays US TIPS 5 - 10	2.6%	2.7%	5.7%	0.08	0.10	0.57	0.59
US Treasury	Barclays Treasury 7 - 10 year	2.4%	2.7%	6.9%	0.04	0.08	0.70	0.72
Global Sovereign ex US	Barclays Global Treasury ex US	2.8%	3.3%	10.0%	0.07	0.12	0.23	0.27
Core Fixed Income	Barclays US Aggregate Bond	3.3%	3.5%	6.5%	0.17	0.20	1.07	1.06
Core Plus Fixed Income	Barclays US Corporate IG	3.9%	4.2%	8.5%	0.20	0.24	0.75	0.76
Short-Term Gov't/Credit	Barclays US Gov't/Credit 1 - 3 year	2.6%	2.7%	3.7%	0.13	0.14	1.45	1.44
Short-Term Credit	Barclays Credit 1 - 3 year	2.8%	2.9%	3.5%	0.17	0.20	1.08	1.07
Long-Term Credit	Barclays Long US Corporate	3.7%	4.2%	9.6%	0.17	0.21	0.56	0.59
High Yield Corp. Credit	Barclays High Yield	4.5%	5.2%	11.8%	0.20	0.26	0.60	0.63
Bank Loans	S&P/LSTA	4.5%	5.1%	10.8%	0.22	0.27	0.45	0.48
Global Credit	Barclays Global Credit	2.0%	2.3%	7.8%	-0.03	0.01	0.50	0.53
Emerging Markets Debt (Hard)	JPM EMBI Global Diversified	5.8%	6.6%	13.0%	0.28	0.34	0.66	0.69
Emerging Markets Debt (Local)	JPM GBI EM Global Diversified	6.5%	7.2%	13.4%	0.35	0.41	0.22	0.28
Private Credit	High Yield + 200 bps	6.5%	7.2%	11.8%	0.37	0.43	-	-
Other								
Commodities	Bloomberg Commodity	4.3%	5.5%	16.1%	0.13	0.21	-0.37	-0.35
Hedge Funds	HFRI Fund of Funds	6.0%	6.8%	13.2%	0.29	0.35	0.08	0.10
Hedge Funds (Fund of Funds)	HFRI Fund of Funds	5.0%	5.8%	13.2%	0.22	0.28	-	-
Core Real Estate	NCREIF Property	4.6%	5.1%	9.9%	0.25	0.29	1.03	1.03
Value-Add Real Estate	NCREIF Property + 200bps	6.6%	8.1%	17.9%	0.25	0.33	-	-
Opportunistic Real Estate	NCREIF Property + 400bps	8.6%	11.5%	26.0%	0.25	0.46	-	-
REITs	Wilshire REIT	4.6%	6.4%	19.7%	0.1	0.21	0.15	0.28
Risk Parity		7.2%	7.7%	10.0%	0.50	0.55	-	-
Inflation		2.1%	-	1.4%*	-	-	-	-

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.

*Historical volatility of inflation. This is not a forecast.

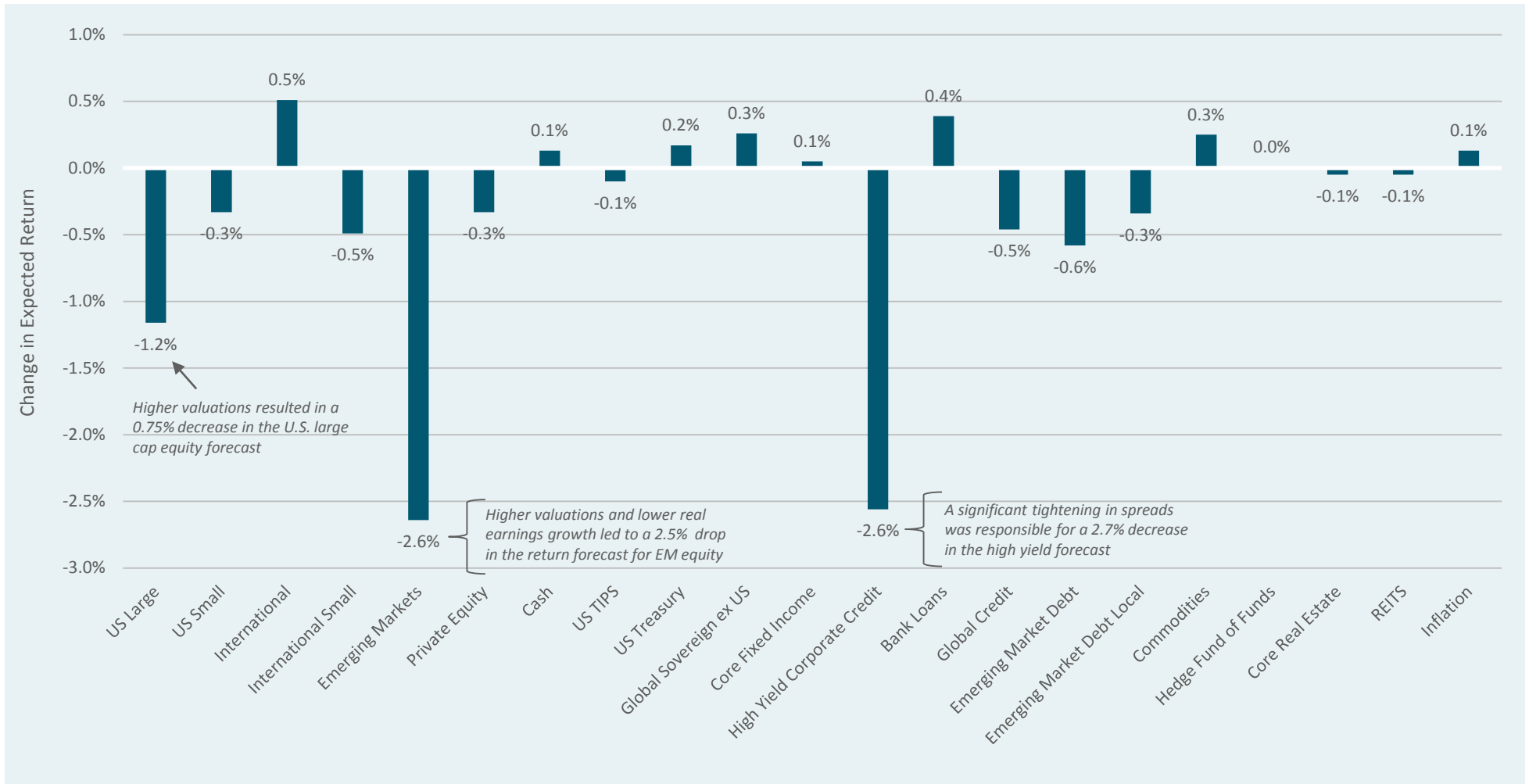
Range of likely 10 year outcomes

10 YEAR RETURN 90% CONFIDENCE INTERVAL



2017 vs. 2016 return forecast

2017 VS. 2016 RETURN FORECAST



Correlation assumptions

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

Relevant forecast changes

- Valuations for U.S. large cap equities continued to move higher during the year as increases in prices outpaced modest gains in earnings. At year-end, the Shiller P/E ratio was 28.0 and the trailing 12-month P/E ratio was 20.9. The rise in these valuation metrics resulted in a repricing assumption of -1.25% per year, compared to only -0.50% in last year's forecast. Additionally, we changed our methodology for calculating an average real earnings growth rate to only include data from 1972 to allow for better comparisons between asset classes. This change resulted in a 0.5% lower forecast than last year.
- Our forecast for international developed large cap equities rose 0.5%, mainly driven by a higher currency effect forecast. Our methodology includes an adjustment based on implied currency movements, as indicated by the forward curve. A steeper forward curve resulted in a 0.7% higher forecast than then previous year. Please see the next page for more detail on our currency adjustment methodology.
- For international developed small cap equities, the higher currency effect was more than offset by rising valuations. The trailing 12-month P/E ratio rose to 34.8 from 23.5, and resulted in a 1.0% decrease in the return forecast.
- Emerging markets equities performed well over the year, and valuation metrics rose off of historic lows. The Shiller P/E ratio rose to 8.7 from 8.1 and the trailing 12-month P/E ratio rose to 15.4 from 12.2. The upward move in valuations resulted in a change in the repricing assumption from 2.0% per year to only 0.5% per year. Falling average 10-year real earnings growth detracted an additional 1.0% from the return forecast.
- Modest rises in Treasury yields and inflation premiums helped move U.S. fixed income nominal return forecasts slightly higher than the previous year.
- Tightening spreads in high yield corporate fixed income led to significantly lower return forecasts. High yield spreads to Treasuries fell 274 bps over the course of the year.
- Spreads also compressed in global credit relative to global sovereign bonds, which resulted in a 0.5% decrease in return forecast.
- The return forecast for emerging market U.S. dollar denominated debt fell 0.6%, mainly driven by a 75 bps compression in spreads.
- Yields in emerging market local debt fell from 7.1% to 6.8%, leading to a 0.3% decline in expected return from the prior year.

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MEMORANDUM

Date: May 24, 2017

To: CCCERA Board of Retirement

From: Timothy Price, Chief Investment Officer

Subject: Consider and take possible action to authorize search for risk parity mandate

Overview and Recommendation

CCCERA is currently engaged in the process of crafting a diversifying sub-portfolio. This will be the third leg of the CCCERA asset allocation, complementing the liquidity sub-portfolio which has already been built and the growth sub-portfolio which is in the midst of being implemented.

A component of the diversifying sub-portfolio is risk parity strategies, as outlined in the preceding agenda item by Verus. Pending formal adoption of the asset allocation in the preceding agenda item, CCCERA will have a 4% target allocation to risk parity strategies. At this time, I am asking the Board to authorize staff and Verus to initiate a search for one or more risk parity managers.

Risk Parity Characteristics and Search Guidelines

Risk parity strategies rely upon volatility forecasting and implicit leverage to create aggregate portfolios that have a more equal contribution to volatility than what is seen in most institutional asset allocations or a simple 60% equity, 40% debt portfolio. By virtue of this risk balancing strategy, risk parity strategies are expected to have more of a stable return profile.

In this search, there will be special emphasis placed on the following factors:

1. Risk parity philosophy
2. Portfolio construction methodology
3. Risk mitigation strategy
4. Investment vehicle
5. Liquidity
6. Fees

Conclusion

CCCERA and Verus will seek to find strategies that fulfill the stated goals for diversifying strategies: having a low correlation to the overall equity market, having a positive expected rate of return in most market environments and having strong liquidity in periods of equity market stress.



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: MARCH 31, 2017

Investment Performance Review for

Contra Costa County Employees' Retirement Association

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Investment Performance
Review **TAB II**

Risk Dashboard **TAB III**



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

2ND QUARTER 2017
Investment Landscape

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1st quarter summary

THE ECONOMIC CLIMATE

- Developed economies continued to experience steady, moderate expansion with fourth quarter real GDP growth in the U.S., the Eurozone, and Japan all between 1.5-2.0%. The base effect of lower oil prices led to higher year-over-year headline inflation in many countries. **p. 16**
- During the first quarter, the global economy exhibited a coordinated pick up in economic activity. Data generally exceeded expectations, especially in the U.S. and the Eurozone. **p. 18**

MARKET PORTFOLIO IMPACTS

- The U.S. Treasury curve flattened in the first quarter. Short-term rates were driven higher by the Fed, while the long end of the curve remained unchanged. Even with Fed tightening, the U.S. may not be in a typical rising rate environment. **p. 22**
- A better outlook for commodity performance, as well as a flattening of the futures curve in some markets increases the attractiveness of commodities as an inflation hedge. **p. 38**

THE INVESTMENT CLIMATE

- While central banks are still accommodative outside of the U.S., most appear to be in later stages of the easing cycle. Developed central banks appear to be broadly entering a period of policy normalization. **p. 22**
- The market is expecting better earnings growth in U.S. equities. According to FactSet, the estimated Q1 earnings growth for the S&P 500 is 9.2% from the previous year. Higher earnings growth may help justify above average valuations. **p. 29**

ASSET ALLOCATION ISSUES

- Stabilizing currencies and commodity prices, as well as higher growth outlooks, may benefit emerging market equities. **p. 33**
- With U.S. Treasury yields still at historic lows and the expectation of additional tightening from the Fed, investors may not be adequately compensated for taking duration risk in the current environment. **p.23**

We continue to be neutral towards risk

What drove the market in Q1?

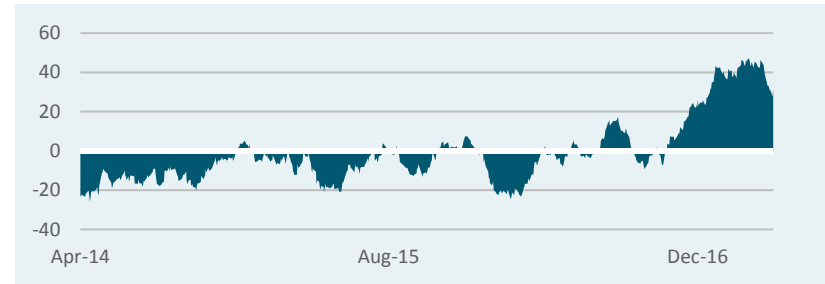
“The Global Economy Enjoys a Synchronized Upswing”

CITI GLOBAL ECONOMIC SURPRISE INDEX

Oct 31 st	Nov 30 th	Dec 31 st	Jan 31 st	Feb 28 th	Mar 31 st
3.1	17.1	27.0	37.0	43.8	38.8

Source: The Economist, March 16th 2017

CITI GLOBAL ECONOMIC SURPRISE INDEX



Source: Bloomberg, 4/13/17

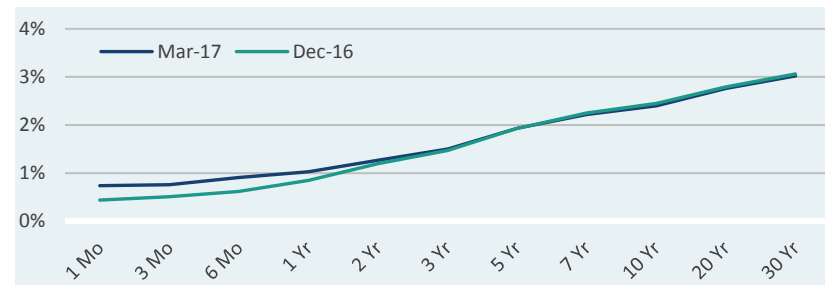
“Rates Rise, But Yield Curve Keeps Flattening”

U.S. TREASURY 10-YR MINUS 2-YEAR YIELD SPREAD

Oct 31 st	Nov 30 th	Dec 31 st	Jan 31 st	Feb 28 th	Mar 31 st
0.98%	1.26%	1.25%	1.26%	1.14%	1.13%

Source: Barron's, March 28th 2017

U.S. TREASURY CURVE



Source: Bloomberg, as of 3/31/17

“French Political Turmoil Hits Bond Spreads”

GERMAN-FRENCH 10-YR YIELD SPREAD

Oct 31 st	Nov 30 th	Dec 31 st	Jan 31 st	Feb 28 th	Mar 31 st
0.30%	0.48%	0.48%	0.60%	0.68%	0.64%

Source: Financial Times, February 6th 2017

GERMAN-FRENCH 10-YR YIELD SPREAD



Source: Bloomberg, as of 4/12/17 – German 10yr yield minus French 10yr yield

“The Market Conundrum of (Low) Volatility and Uncertainty”

CBOE VIX (10-YEAR AVERAGE, 20.7)

Oct 31 st	Nov 30 th	Dec 31 st	Jan 31 st	Feb 28 th	Mar 31 st
17.1	13.3	14.0	12.0	12.9	12.4

Source: Bloomberg, January 30th 2017

Economic environment

U.S. economics summary

— U.S. real GDP grew 2.0% YoY in Q4, up from 1.7% in Q3. Moderate increases in consumer spending continued to be the main driver of the economy.

— Inflation moved higher as headline CPI increased 2.8% YoY in February. Core inflation, however, increased only modestly to 2.2%. Most of the rise was caused by the low base effect from falling oil prices last year.

— The Fed continued tighter monetary policy by raising the target federal funds rate 25 bps to 0.75-1.00% at its March meeting. The FOMC dot plot indicates two more rate hikes in 2017, while the market has only priced in one more increase.

— The March Fed meeting minutes revealed that the central bank

may begin shrinking its balance sheet as early as December, representing a form of monetary tightening. It remains unclear whether the Fed will stop rolling over maturing securities or actively sell in the open market.

— On average, 178,000 jobs were added each month during Q1, and unemployment fell 0.2% to 4.5%. Data continued to indicate a tighter labor market, though wage growth is lackluster. Real hourly earnings fell 0.1% in February from the prior year.

— Soft data (consumer & business sentiment) improved markedly following the U.S. presidential election. We are continuing to monitor the degree to which soft data flows through to actual spending and investment patterns. At this point evidence still is lacking.

	Most Recent	12 Months Prior
GDP (<i>annual YoY</i>)	2.0% <i>12/31/16</i>	1.9% <i>12/31/15</i>
Inflation (<i>CPI YoY, Headline</i>)	2.8% <i>2/28/17</i>	1.0% <i>2/29/16</i>
Expected Inflation (<i>5yr-5yr forward</i>)	2.2% <i>3/31/17</i>	1.8% <i>3/31/16</i>
Fed Funds Rate	0.75% <i>3/31/17</i>	0.25% <i>3/31/16</i>
10 Year Rate	2.4% <i>3/31/17</i>	1.8% <i>3/31/16</i>
U-3 Unemployment	4.5% <i>3/31/17</i>	5.0% <i>3/31/16</i>
U-6 Unemployment	8.9% <i>3/31/17</i>	9.8% <i>3/31/16</i>

U.S. economics – GDP growth

Real GDP grew 2.0% YoY in Q4 (2.1% quarterly annualized rate) as slow but positive economic growth continued.

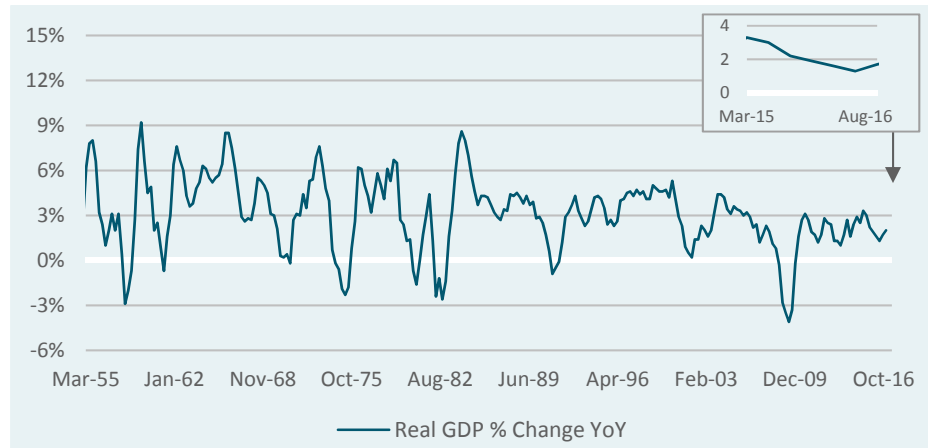
Personal consumption contributed 2.4% to quarterly GDP growth, and was once again the main driver of improvement in the economy. Rising post-election consumer confidence did not immediately flow through to the real economy, but may support increased spending in coming quarters.

Private domestic investment also contributed to growth. A widening trade deficit from both an increase in imports and a decrease in exports was the largest detractor from GDP growth.

The Atlanta Fed GDP Now forecast for Q1 was 0.5% as of April 14th. The forecast was revised downward throughout the quarter mainly due to softer personal spending data. Part of this weakness can be attributed to a temporary decline in utilities spending from milder winter weather.

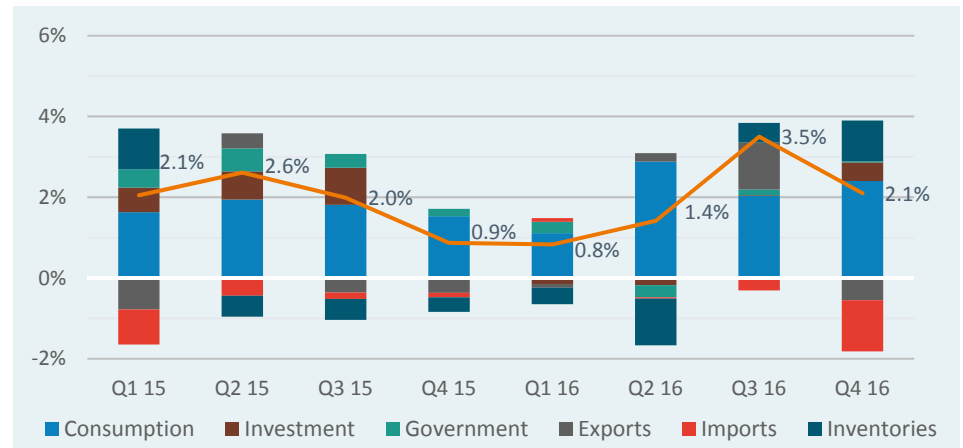
The U.S. economy continued to grow at a moderate pace

U.S. REAL GDP GROWTH



Source: FRED, as of 12/31/16

U.S. GDP COMPONENTS



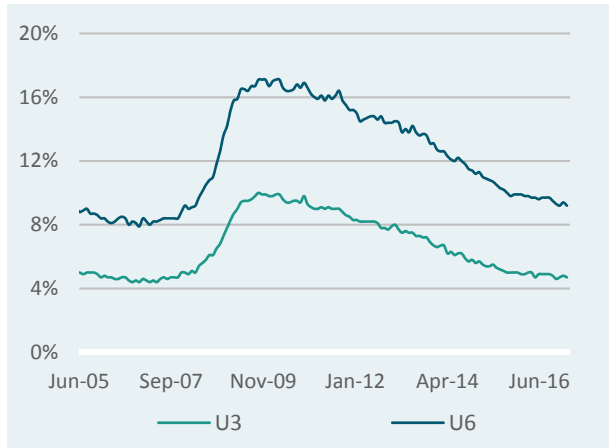
Source: BEA, annualized quarterly rate, as of 12/31/16

U.S. economics – Labor market

Moderate additions to payrolls and higher employment indicate a tighter labor market. Job gains averaged 178,000 per month in the first quarter, slightly below the expansion average of 199,000. The headline unemployment rate fell to a nearly decade low of 4.5%. The broader U-6 unemployment rate, which includes discouraged workers who want a job but have given up looking, and part-time workers who would like to be full-time, fell to a cyclical low of 8.9%. The participation rate rose to 63.0%, an increase of 0.3%.

The number of job openings in the economy is relatively high, likely due to a lack of supply. Companies are having a difficult time finding qualified workers to fill open positions. While most employment data suggests a tight labor market, wage growth has been unusually muted throughout this cycle. As the U.S. economic expansion ages, we would expect companies to raise wages in order to attract and retain workers. However, real average hourly earnings fell 0.1% in February YoY.

U.S. UNEMPLOYMENT



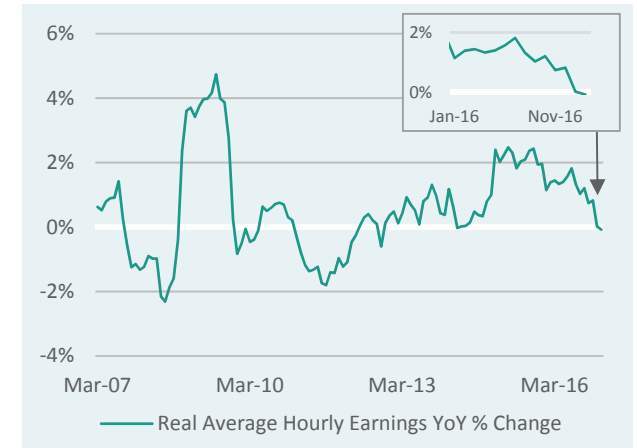
Source: FRED, as of 2/28/17

JOB OPENINGS



Source: FRED, as of 2/28/17

REAL AVERAGE HOURLY EARNINGS



Source: FRED, as of 2/28/17

A closer look at participation

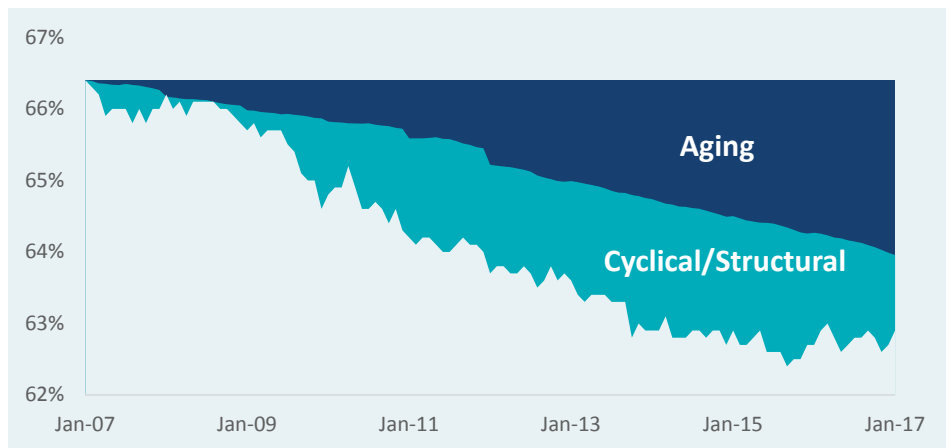
The labor force participation rate has fallen significantly following the financial crisis. While most of the drop can be attributed to an aging population, one-third is a result of structural issues, and possibly some remaining cyclical factors. Stripping out the aging effect by looking at the core working age group shows a drop of 1.9% in participation over the past 10 years.

Unlike cyclical factors that move with the economic cycle, structural issues in the labor market may be more or less permanent. This is important because fewer workers participating in the economy will result in slower growth,

all else equal. Workers reentering the economy, however, could provide some protection against rapid wage price inflation, and therefore mitigate the risk that rapid wage inflation disrupts economic growth.

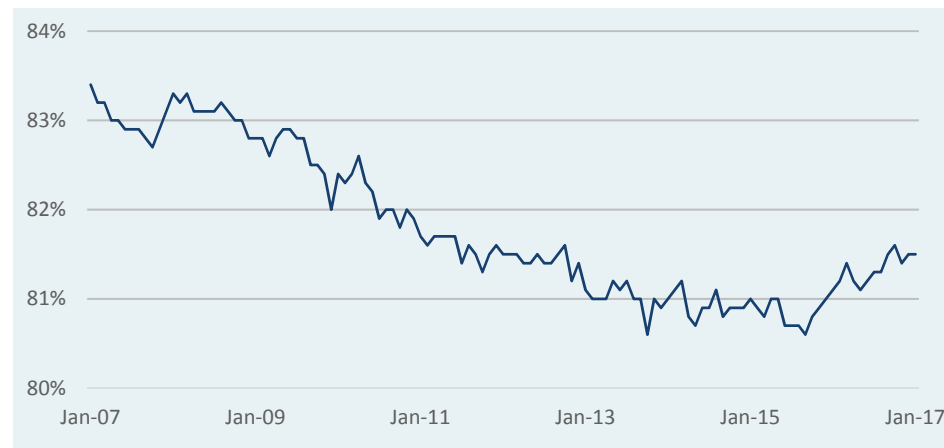
Structural issues that may explain lower participation include an increased number of unqualified workers due to a lack of requisite skills and education and those with criminal felony convictions. There may also be fewer incentives for people outside of the workforce to return because of slow wage growth and a greater reliance on permanent federal disability.

U.S. LABOR FORCE PARTICIPATION



Source: BLS, Verus, as of 1/31/17

CORE AGE GROUP (25-54) PARTICIPATION



Source: BLS, as of 1/31/17

U.S. economics – The consumer

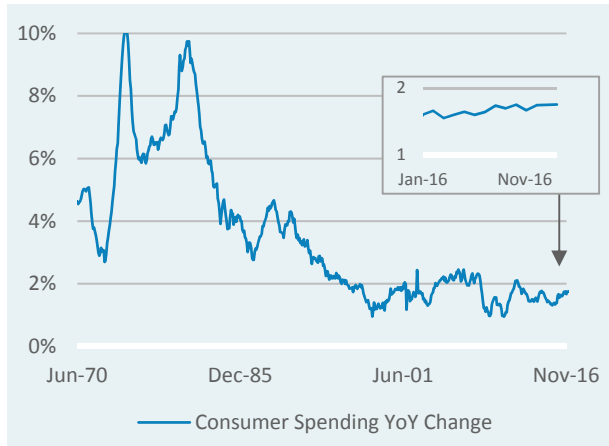
Higher interest rates are expected to be a headwind for U.S. consumers, but other fundamentals reflect a positive overall environment. Much of the economic growth in the current cycle has been attributed to moderate, steady increases in consumer spending. In February, consumer spending grew 1.7% from the previous year. While positive spending growth has been consistent, there has yet to be a material flow through effect from the jump in confidence following the U.S. election in November.

An increase in financial assets during the current recovery has led to large gains in household net worth. The wealth effect, in which consumers increase spending habits based on a higher level of perceived wealth could have a positive impact on economic growth.

Although the consumer has led the economic expansion, credit has not been used as much as in previous cycles. Consumer credit growth has been moderate and household balance sheets remain relatively healthy.

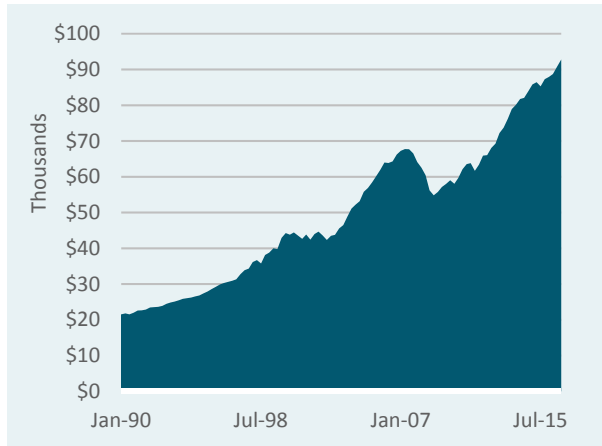
Steady increases in consumer spending has driven recent growth

CONSUMER SPENDING



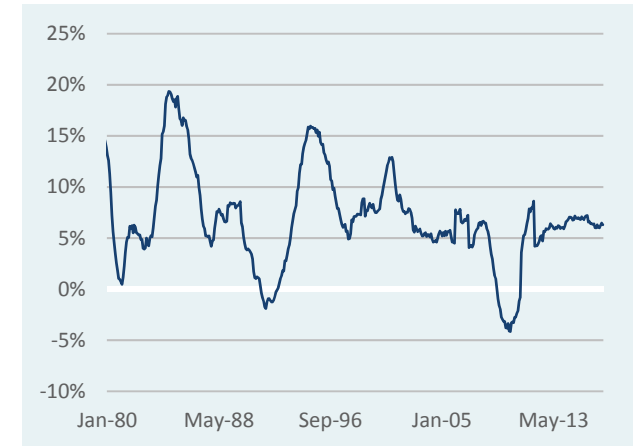
Source: Bloomberg, as of 2/28/17

HOUSEHOLD NET WORTH



Source: FRED, as of 1/31/17

CONSUMER CREDIT GROWTH



Source: FRED, as of 1/31/17

U.S. economics – Sentiment

Consumer sentiment fell slightly over the quarter, but the overall level remains high. The University of Michigan Consumer Sentiment Index was 96.9 at the end of March, compared to the long-term average of 85.6. Consumers cited three key components for the greater optimism: higher incomes, favorable job prospects, and low inflation expectations. Consumer sentiment and hard data do not always align as sentiment builds and falls more slowly through time.

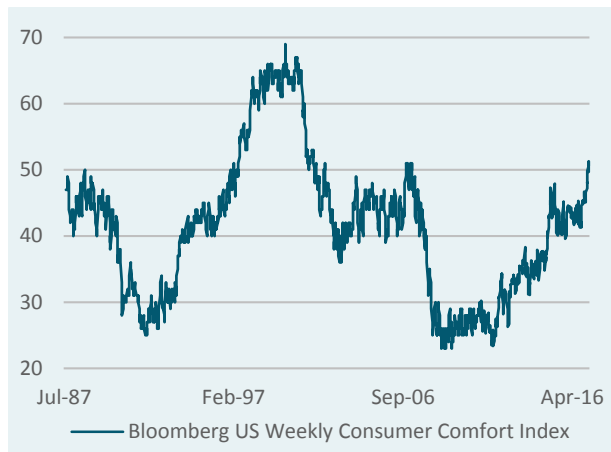
The University of Michigan survey also identified a disconnect in consumer sentiment across political party

affiliations. Democrats expect an immediate recession, while Republicans expect robust economic growth. The index of consumer expectations was 50.5 points higher for Republicans than Democrats. Continued political uncertainty could weigh on sentiment in the coming months.

U.S. economic data has exceeded expectations - a trend that started prior to the election. The Citi Economic Surprise Index was 48 at quarter-end, its highest level in more than three years. However, much of the uptick in this indicator has been driven by “soft” data that has yet to flow through to the real economy.

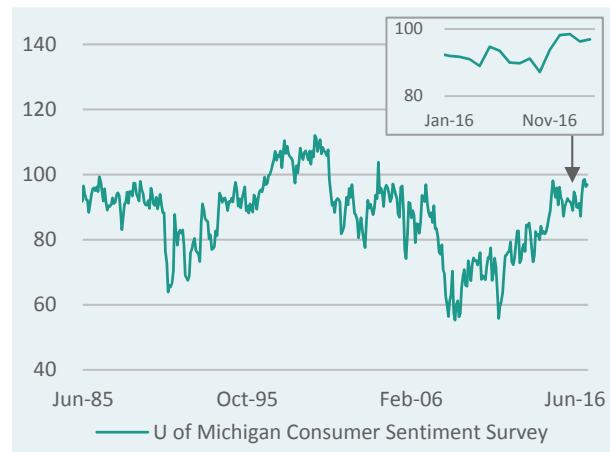
Overall, consumers remain optimistic about the economy

CONSUMER COMFORT INDEX



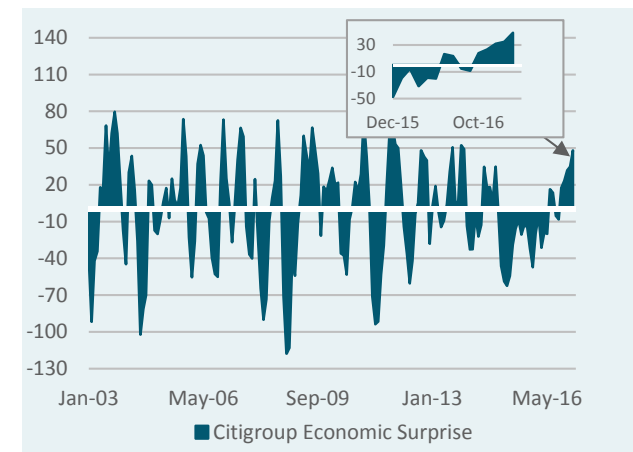
Source: Bloomberg, as of 3/19/17 (see Appendix)

CONSUMER SENTIMENT



Source: University of Michigan, as of 3/31/17 (see Appendix)

U.S. ECONOMIC SURPRISE



Source: Bloomberg, as of 3/31/17 (see Appendix)

U.S. economics – Housing

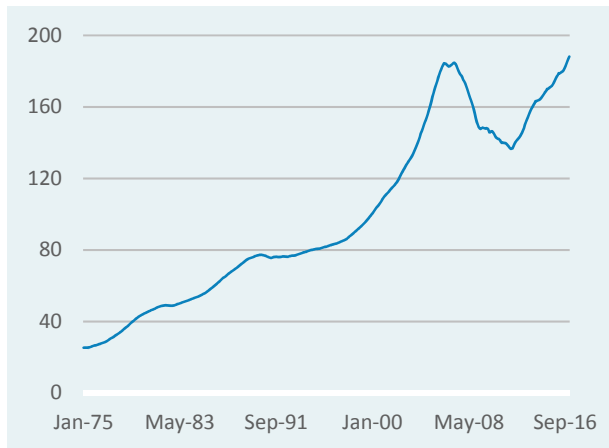
Despite higher mortgage rates since November, home prices in the U.S. have moved upward. Over the 12 months ending in January, the Case-Shiller National Home Price Index rose 5.8%. This price gauge has rallied 37.7% since bottoming in January of 2012 and is now slightly higher than the previous peak.

While increases in interest rates may act as a headwind, the housing market is supported by strong demand for single-family homes and historically low supply,

in addition to an overall financially healthy consumer base. At the current rate of sales it would take only 5.4 months to completely sell the entire supply of homes.

Housing starts and building permits have been steadily trending upwards with homebuilders ramping up construction to meet outsized market demand. New homes coming on line may put downward pressure on prices.

CASE-SHILLER HOME PRICE INDEX



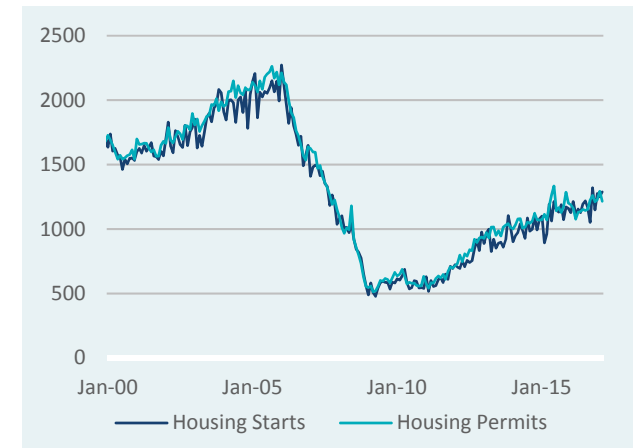
Source: FRED, as of 1/31/17

MONTHLY SUPPLY OF HOMES



Source: FRED, as of 2/28/17

HOUSING STARTS AND PERMITS



Source: FRED, as of 2/28/17

U.S. economics – Inflation

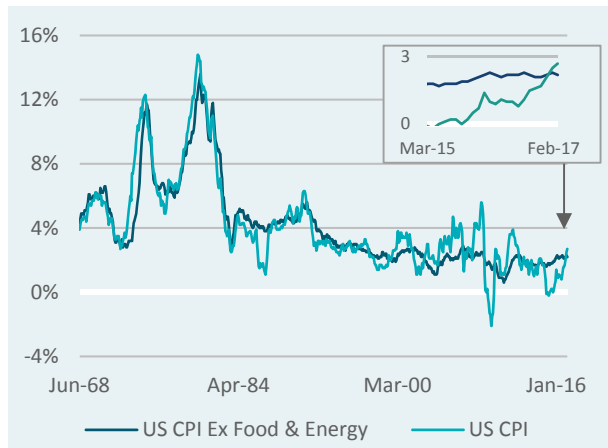
Headline CPI rose 2.8% in February from the previous year, its highest rate in five years. Much of this jump in inflation can be attributed to the base effect of low oil prices one year ago. The energy component of the CPI basket increased 15.6%. Core inflation remained unchanged at 2.2%.

After rising considerably following the presidential election, market inflation expectations were mostly unchanged during the first quarter. The 10-year TIPS

breakeven inflation rate finished the period at 2.0%. The market continues to discount low levels of future inflation relative to history. In comparison, consumers are expecting 2.5% annualized inflation over the next 5-10 years, according to the University of Michigan survey.

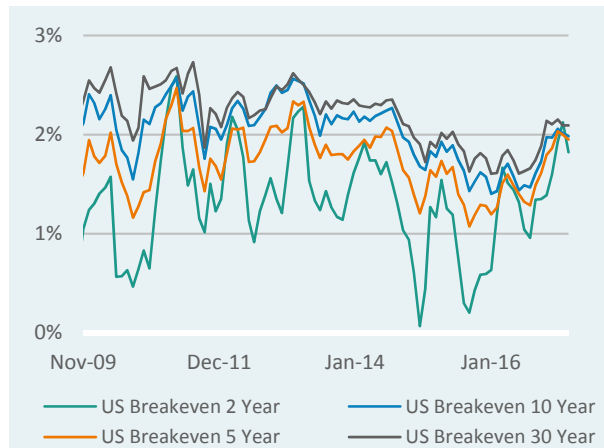
Our view remains that the market may be underpricing expected inflation at a time when inflation risks are skewed to the upside.

U.S. CPI (YOY)



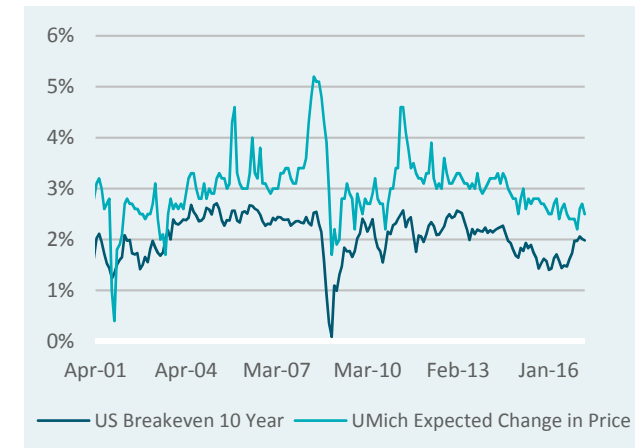
Source: FRED, as of 2/28/17

U.S. TIPS BREAKEVEN RATES



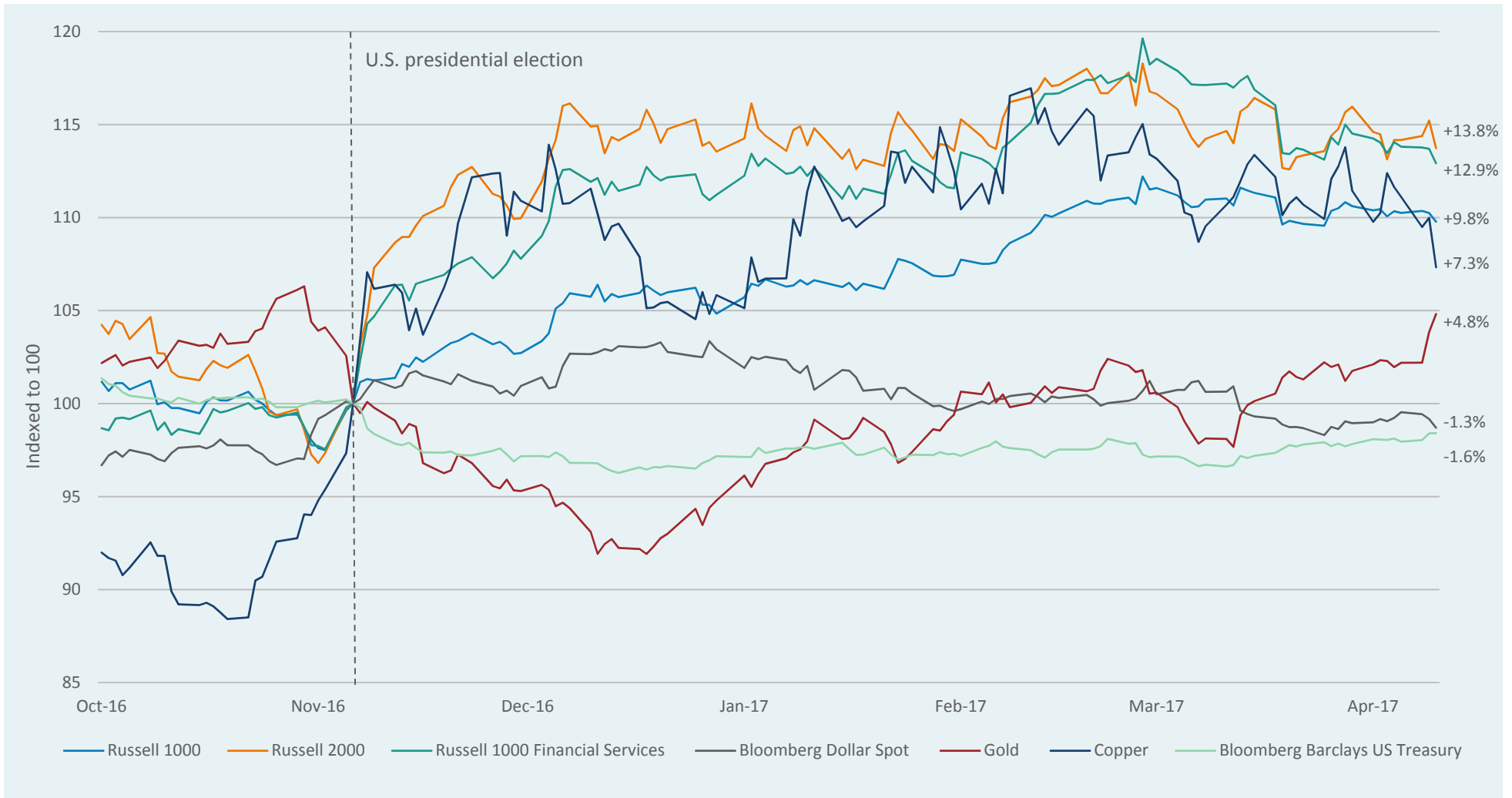
Source: FRED, as of 3/31/17

INFLATION EXPECTATIONS



Source: Bloomberg, as of 3/31/17

Post-election price movements



Source: Bloomberg, 10/3/16-4/10/17

An update on political policies

POLICY AREA	
Taxes	<ul style="list-style-type: none">— Much of the optimism surrounding Trump’s victory in November was based on his promise to cut taxes for individuals and businesses.— President Trump has stated that he wants to find a solution to repealing and replacing the Affordable Healthcare Act (ACA) prior to working on tax reforms. No further details have been released.— The tentative deadline for the tax plan was originally set for August by Treasury Secretary Mnuchin, but it appears this may be pushed back further, and the actual timing remains unknown.
Trade	<ul style="list-style-type: none">— In one of his first acts as president, Donald Trump delivered on a campaign promise and removed the U.S. from the Trans Pacific Partnership (TPP) in an effort to move away from multilateral trade agreements.— After making many other “America first” trade policy promises, including withdrawing from NAFTA and implementing a border adjustment tax (BAT), the new administration appears to have softened its stance.— Rather than a complete overhaul of U.S. trade policy, it may be more likely that President Trump makes smaller tweaks, such as renegotiating and stepping up enforcement of existing trade deals.
Deregulation	<ul style="list-style-type: none">— President Trump signed an executive order to reduce the regulatory burden on businesses by requiring federal regulators to kill two existing regulations for every new rule introduced.— In perhaps the biggest blow to the administration thus far, House Republican leaders pulled legislation to repeal parts of the ACA before a single vote was cast, exposing a divided Republican Congress.— House Republicans announced a plan to introduce legislation that would overhaul Dodd Frank, although opposition from Senate Democrats is expected to be strong.
Infrastructure	<ul style="list-style-type: none">— Infrastructure is another area in which President Trump has not provided much in terms of additional details after promising a \$1 trillion dollar spending initiative through private tax breaks during his campaign.— With the current focus on healthcare, and the lack of progress on tax reform, it is possible that the new administration may push back the timeline for introducing its infrastructure plan.

International economics summary

- Developed countries once again experienced moderate positive growth in the fourth quarter, in line with the trend of recent years. Real GDP in the U.S., Europe, and Japan grew between 1.5-2.0%.
- The low base effect of the drop in energy prices that occurred in Q1 2016 helped boost inflation across the globe. With energy prices stabilizing over recent months, it is possible the jump in inflation is only transitory.
- Developed world unemployment rates declined over the quarter. In the Euro Area, the unemployment rate fell to a nearly eight year low of 9.5%, although this is still well above its pre-crisis level of 7.3%.
- The economic recovery in Europe has also picked up in terms of higher growth and inflation. Much of this recovery can be attributed to the core countries, rather than

the periphery. However, significant tail risks remain including the French election, ECB tapering, and Brexit negotiations.

- On March 29th, the British Prime Minister, Theresa May, filed the official papers to withdraw the U.K. from the European Union. Article 50 of the Treaty of Lisbon outlines a two year timeframe for negotiations to take place.
- As many expected, Emmanuel Macron and Marine Le Pen were the top two vote getters in the first round of the French election. Macron and Le Pen will have a runoff vote on May 7th, where Macron is heavily favored, according to the most recent polls. Equity markets reacted positively to the results and the euro strengthened.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.0% <i>12/31/16</i>	2.7% <i>2/28/17</i>	4.5% <i>3/31/17</i>
Western Europe	1.8% <i>12/31/16</i>	1.5% <i>3/31/17</i>	8.6% <i>12/31/16</i>
Japan	1.6% <i>12/31/16</i>	0.3% <i>2/28/17</i>	2.8% <i>2/28/17</i>
BRIC Nations	5.2% <i>12/31/16</i>	3.1% <i>12/31/16</i>	5.5% <i>12/31/16</i>
Brazil	(2.5%) <i>12/31/16</i>	4.6% <i>3/31/17</i>	12.9% <i>3/31/17</i>
Russia	0.3% <i>12/31/16</i>	4.3% <i>3/31/17</i>	5.4% <i>12/31/16</i>
India	7.0% <i>12/31/16</i>	3.7% <i>2/28/17</i>	7.1% <i>12/31/15</i>
China	6.8% <i>12/31/16</i>	0.8% <i>2/28/17</i>	4.0% <i>12/30/16</i>

International economics

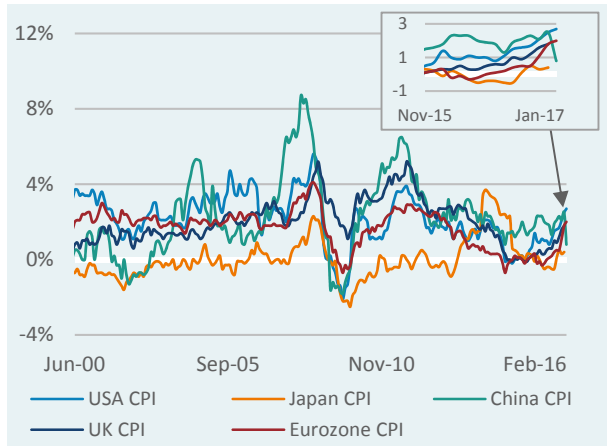
A coordinated uptick in global economic sentiment occurred in recent quarters, and data continued to exceed expectations in Q1. Outside of the U.S., central banks remain relatively accommodative, and developed economies have experienced moderate growth and higher inflation. Real year-over-year GDP growth in the Euro Area and Japan came in at 1.8% and 1.6%, respectively.

In the Eurozone, headline CPI in February reached 2.0% YoY for the first time in the recovery. However, core

inflation, which excludes food and energy prices, only rose 0.7%, well below the ECB's target of 2.0%. A weaker British pound helped boost U.K. headline inflation to 2.3% in February, the highest rate in more than three years.

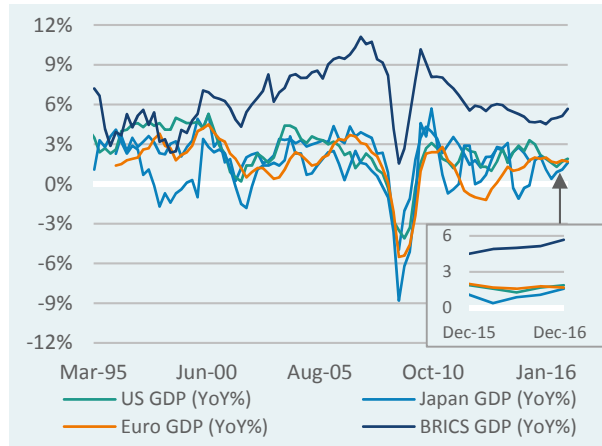
Real GDP growth in the BRICS countries, the five major emerging economies, was 5.2% in the fourth quarter. Once again, India and China were the main drivers of growth. Russia experienced positive growth for the first time in seven quarters, while Brazil remained in a recession.

INTERNATIONAL INFLATION



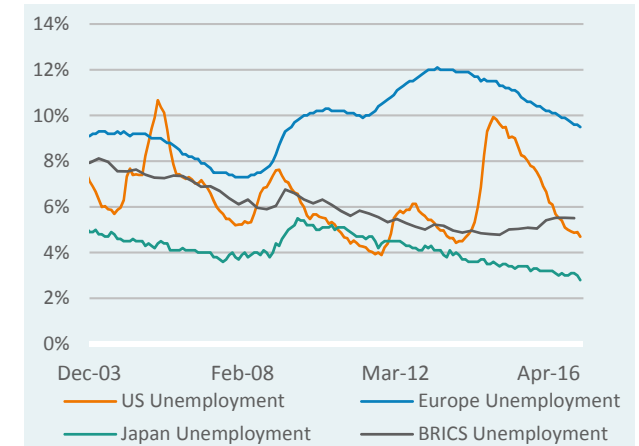
Source: Bloomberg, as of 2/28/17

REAL GDP GROWTH



Source: Bloomberg, as of 12/31/16

GLOBAL UNEMPLOYMENT



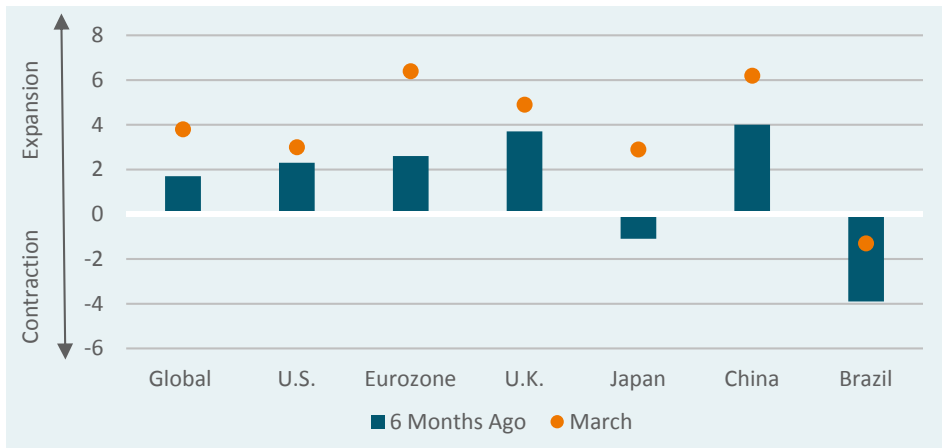
Source: Bloomberg, as of 2/28/17 or most recent release

Global economic pickup

There has been a general pick up in global economic conditions over the past six months, a trend that started prior to the U.S. presidential election. Purchasing managers' indexes (PMI), which are derived from monthly surveys of private companies, have increased across nearly all major economies. The global composite PMI increased from 51.7 in September to 53.8 in March. Readings above 50 indicate economic expansion and have historically held some explanatory power of future economic growth.

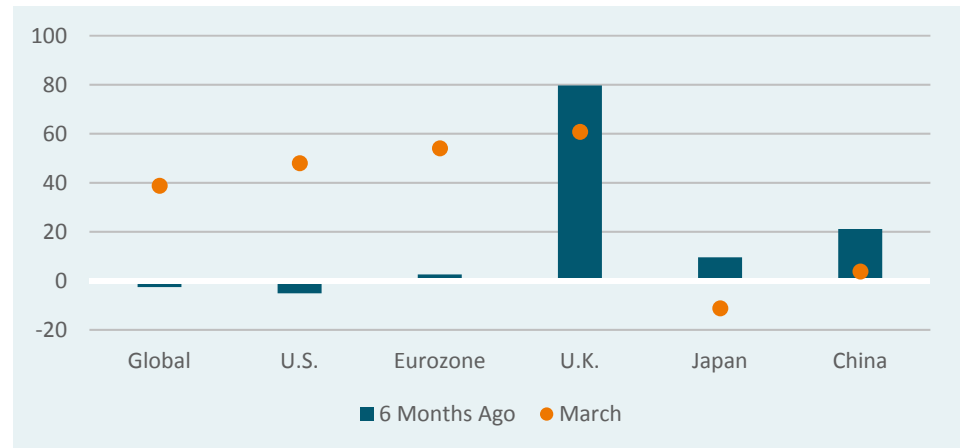
Global economic data has also been coming in above expectations, as indicated by the Citi Economic Surprise Index (CESI). The Global CESI increased to 38.8 in March from -2.6 six months earlier. However, much of this move has been driven by "soft" data, such as sentiment and confidence indicators, which have not always flowed through to the real economy. If higher sentiment and confidence does lead to increased spending and production, it will be a boost to economic growth.

PURCHASING MANAGERS' INDEXES



Source: Bloomberg, as of 3/31/17

CITI ECONOMIC SURPRISE INDEXES



Source: Bloomberg, as of 3/31/17

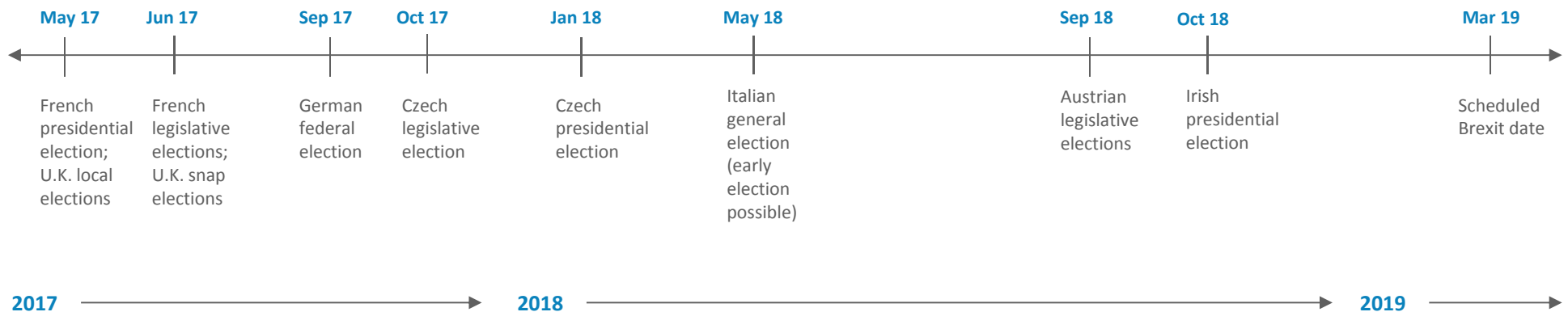
The European election cascade

Following the U.K.'s decision last June to leave the European Union, the rise in populism in Europe and corresponding political risks to the currency bloc have been heavily scrutinized. While the upcoming French presidential election has dominated the headlines, several other important elections coming up will help shape the future of Europe.

The presidential election in France may pose the largest political risk to the region. Far-right, euroskeptic candidate, Marine Le Pen, has gained popularity running on the platform to remove France from the European Union and the use of the euro. Le Pen and centrist

candidate, Emmanuel Macron, were the top two vote getters in the first round of the election and will go head to head on May 7th. Macron is favored in the polls and market fears of a Frexit have subsided.

However, the threat of populism in Europe remains. Other elections, such as the German federal election in September and the Italian general election in early 2018 at the latest, will also be important as populist parties have gained popularity in countries across Europe. Additional risks loom in periphery countries like the Czech Republic, as debates heat up regarding EU membership referendums.



Fixed income rates & credit

Interest rate environment

- U.S. Treasuries have an attractive yield relative to other developed sovereign bonds, but remain historically expensive.
- Despite broad agreement that the U.S. has entered an environment of rising interest rates, the broad yield curve rose very little over the past year. However, the short end of the curve has increased in line with Federal Reserve rate rises. Inflation has historically had a significant impact on the yield curve, which indicates investors should keep an eye on inflation trends.
- In March, the Federal Reserve announced a change to the federal funds target rate from 0.50-0.75% to 0.75-1.00%. The move resulted in the U.S. Treasury curve flattening moderately as short-term interest rates increased and long-term rates remained materially unchanged. The Fed has indicated two additional rate hikes are expected to occur this year.
- Developed sovereign yields are expected to rise only modestly over the next year, with very little movement expected in longer dated bonds. Central banks of most developed economies are nearing the end of the monetary easing cycle or have begun to pull back, as in the case of the U.S. Federal Reserve.
- Many emerging market governments continue with monetary easing, suggesting these economies may be in an earlier stage of the economic cycle.

Area	Short Term (3M)	10 Year
United States	0.75%	2.39%
Germany	(0.92%)	0.33%
France	(0.57%)	0.97%
Spain	(0.39%)	1.65%
Italy	(0.34%)	2.31%
Greece	2.39%	6.90%
U.K.	0.13%	1.14%
Japan	(0.20%)	0.07%
Australia	1.59%	2.70%
China	2.93%	3.28%
Brazil	10.91%	10.06%
Russia	9.50%	7.87%

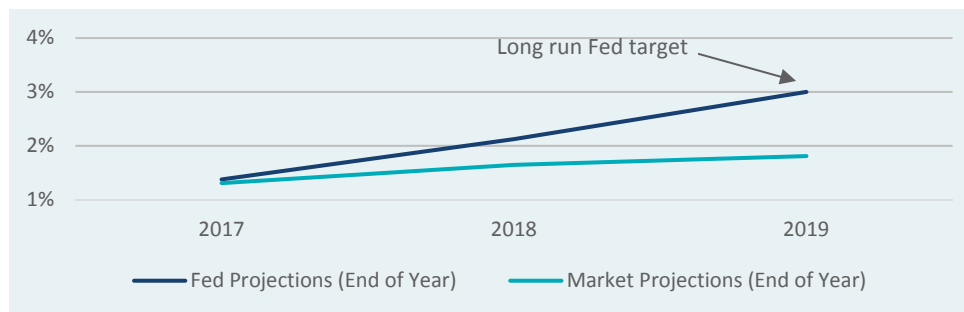
Source: Bloomberg, as of 3/31/17

Monetary tightening

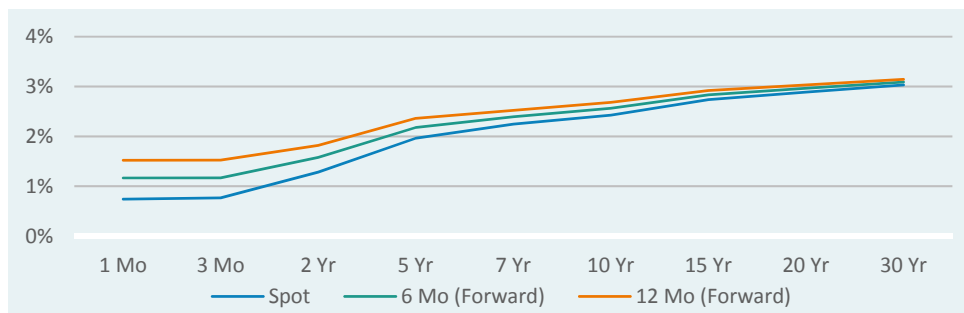
- The Federal Reserve hiked interest rates for the second time in March, raising the federal funds target to 0.75-1.00%. Given the increased pace of tightening and more hawkish tone from the Fed, there has been much discussion regarding the effects of a rising rate environment in the U.S.
- While the Fed expects short-term rates to normalize to 3% by 2019, the market is pricing in movement to only 1.8%. The market also does not expect much change in the long-end of the curve with the 10-year Treasury yield priced to rise only 26 bps over the next year. We believe that the market view of the path of interest rates is reasonable, and that there is a greater likelihood of surprisingly slow, rather than surprisingly fast, rate rises.
- Another unknown aspect of monetary policy relates to the Fed's \$4.5 trillion balance sheet. In the most recent meeting minutes it was noted that an unwinding of the balance sheet may begin at the end of the year. It remains unclear whether the Fed will simply stop reinvesting securities or actively sell in the market. A sale would be the more aggressive option, but either action would equate to monetary tightening, which may slow the expected pace of federal fund rate hikes.

Source: Bloomberg, FRED, as of 3/31/17

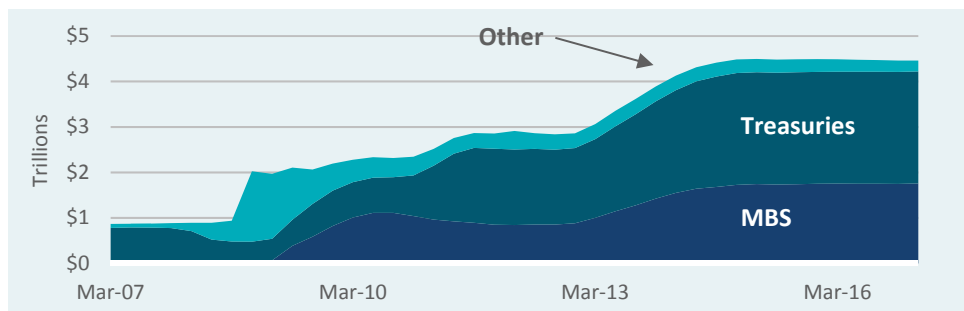
FED FUNDS PROJECTED RATE



U.S. TREASURY FORWARD YIELD CURVE

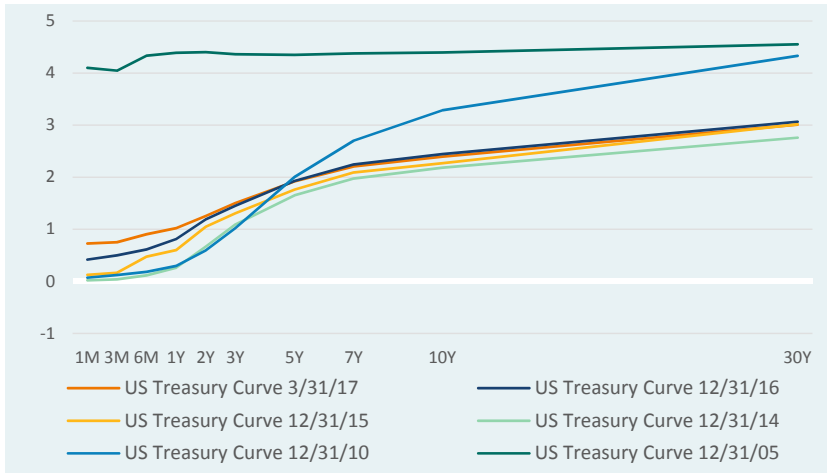


FEDERAL RESERVE BALANCE SHEET

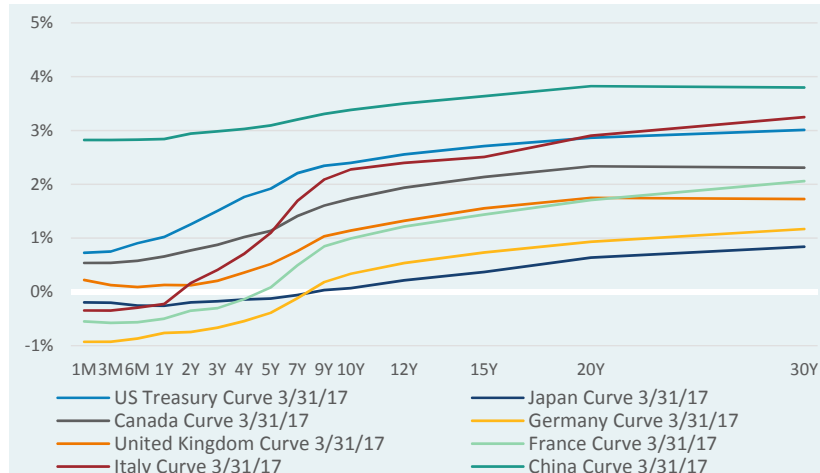


Yield environment

U.S. YIELD CURVE

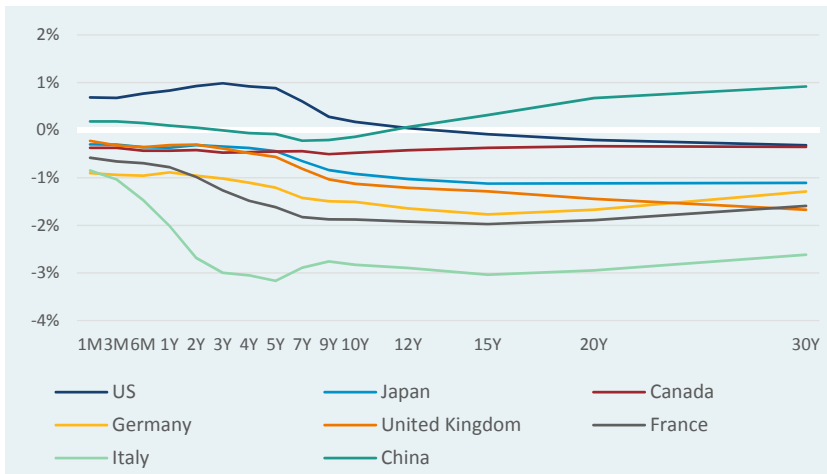


GLOBAL GOVERNMENT YIELD CURVES

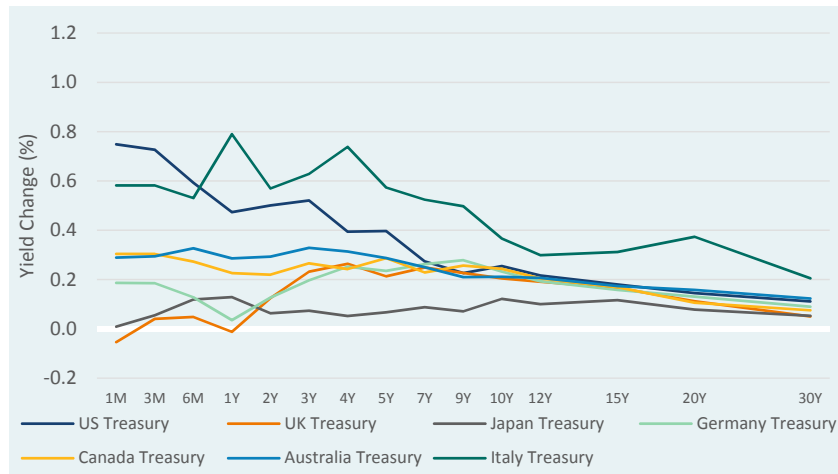


Global investors continue to prefer U.S. Treasuries due to higher relative yields

YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 3/31/17

Credit environment

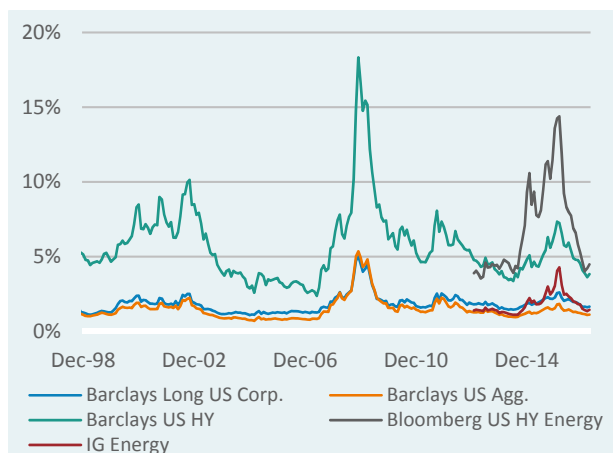
U.S. high yield option-adjusted spreads compressed slightly during the first quarter to 3.9% and the asset class generated a 2.7% return (BBgBarc U.S. Corp. High Yield Index). High yield spreads are now tighter than those of bank loans on a duration neutral basis, despite being of generally lower credit quality and higher in the capital structure. Bank loans may provide a better risk-return tradeoff in the current environment.

Upbeat consumer sentiment, stronger labor markets, and a generally brighter picture for the U.S. economy all bode well for credit markets. Although spreads have tightened

to levels consistent with a mid-to-later stage economic cycle, no overheating or obvious threats to the credit markets seem apparent.

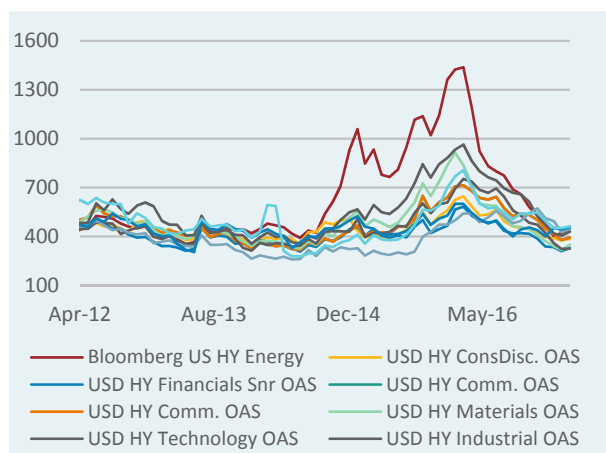
The Federal Reserve voted to increase interest rates by 0.25% in March. The speed of rate rises has underwhelmed the market for some time, and the market is expecting this slow pace to continue. Investors may be well served by limiting duration risk, though the probability of a sharp bond selloff (quickly rising rates) seems low.

CREDIT SPREADS



Source: Barclays Capital Indices, Bloomberg, as of 3/31/17

HIGH YIELD SECTOR SPREADS



Source: Bloomberg, as of 3/31/17

SPREADS

Market	Credit Spread (3/31/17)	Credit Spread (1 Year Ago)
Long US Corporate	1.5%	2.1%
US Aggregate	0.9%	1.1%
US High Yield	4.1%	7.0%
US High Yield Energy	4.5%	11.9%
US Bank Loans	3.8%	3.9%

Source: Barclays, Credit Suisse, Bloomberg, as of 3/31/17

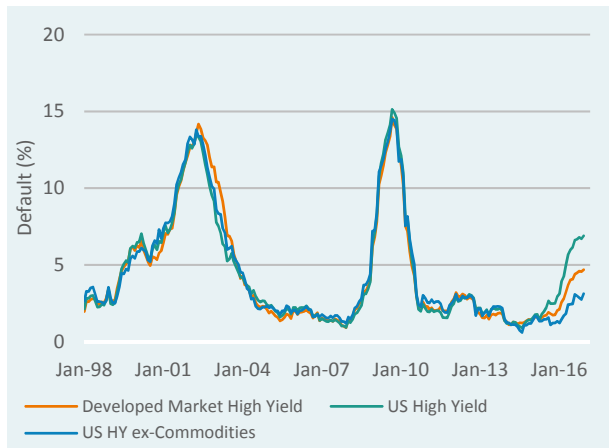
Issuance and default

Both U.S. senior loan and high yield markets continue to stabilize with the majority of par defaults last year coming from energy and metals/mining sectors. Rolling default rates should fall as commodity prices continue to recover and commodity price-induced credit problems have less impact on the credit universe. Active management may offer value to investors in the high yield space.

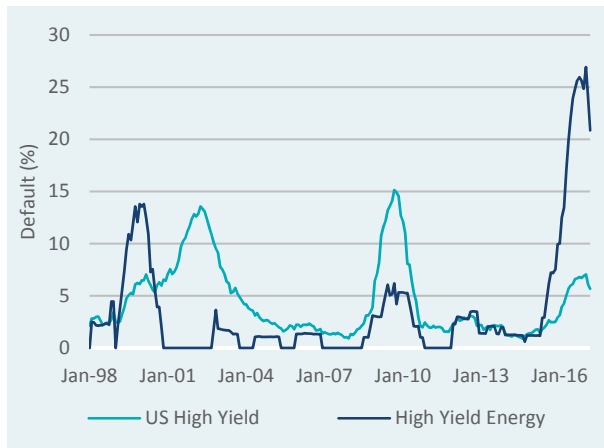
Global high yield and bank loan issuance has continued at a similar pace to what was seen last year. Lower spread levels lessen the borrowing costs for these issuers. The direction of interest rates will likely impact issuance trends in the near future.

The effect of commodity related defaults should subside

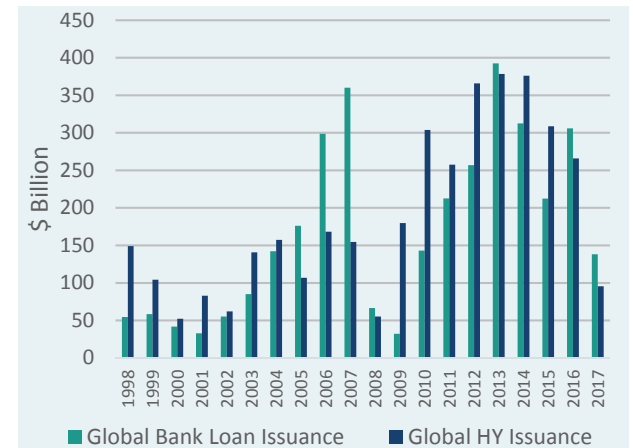
HY DEFAULT TRENDS (ROLLING 1 YEAR)



ENERGY DEFAULT TRENDS



GLOBAL ISSUANCE



Source: BofA Merrill Lynch, as of 3/31/17

Source: BofA Merrill Lynch, as of 3/31/17

Source: Bloomberg, BofA Merrill Lynch, as of 3/31/17

Equity

Equity environment

— The U.S. economic environment has shifted in a materially more positive direction, post-election. This move was reflected in an upward adjustment to equity prices. We are relatively bullish on U.S. earnings growth in the near term, but remain concerned that investors are paying for this excess growth upfront through higher valuations. We maintain a neutral weight to U.S. equities.

— According to FactSet, the estimated Q1 2017 earnings growth rate of the S&P 500 was 9.2% YoY. The estimate was revised downward from 12.5% on December 31st due to negative EPS guidance in the Materials and Consumer Discretionary sectors.

— Growth equities outperformed value equities in Q1. The Russell

1000 Growth Index and Russell 1000 Value Index returned 8.9% and 3.3%, respectively.

— The U.S. dollar fell 3.6% in Q1 on a trade-weighted basis, which has affected the returns of portfolios with unhedged currency exposure.

— As discussed recently in our *Sound Thinking* research piece, investors should be mindful of their biases in portfolio construction. One particularly prevalent bias is the tendency for investors to hold greater exposure to the markets where they reside (home country bias). As with any portfolio tilt, investors should understand why they hold it, have a solid basis for the exposure, and understand the tracking error the position introduces to the portfolio.

	QTD TOTAL RETURN		YTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	6.0%		6.0%		17.4%	
US Small Cap (Russell 2000)	2.5%		2.5%		26.2%	
US Large Value (Russell 1000 Value)	3.3%		3.3%		19.2%	
US Large Growth (Russell 1000 Growth)	8.9%		8.9%		15.8%	
International Large (MSCI EAFE)	7.2%	5.0%	7.2%	5.0%	11.7%	18.9%
Eurozone (Euro Stoxx 50)	8.3%	7.2%	8.3%	7.2%	12.9%	21.7%
U.K. (FTSE 100)	4.9%	3.8%	4.9%	3.8%	7.3%	23.3%
Japan (NIKKEI 225)	4.3%	0.1%	4.3%	0.1%	15.8%	14.7%
Emerging Markets (MSCI Emerging Markets)	11.4%	7.3%	11.4%	7.3%	17.2%	12.5%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 3/31/17

Domestic equity

The U.S. economic environment has shifted in a materially more positive direction, post-election, as reflected by rising in equity prices. We are relatively bullish on U.S. earnings growth in the near term but remain concerned that investors are paying for this excess growth upfront through higher valuations. We maintain a neutral weight to U.S. equities.

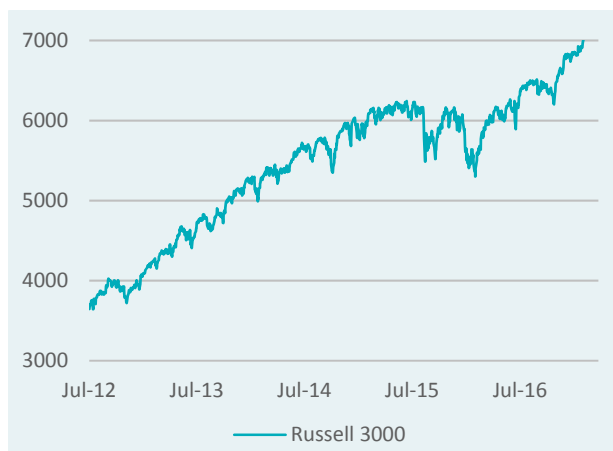
Higher equity prices and earnings expectations have been influenced by corporate tax cuts and deregulation

proposed by the new administration. There have been no further details released on timing of tax cuts, and lofty expectations may leave room for disappointment.

According to FactSet, Q1 2017 S&P 500 earnings are expected to grow 9.2% YoY. The estimate was revised downward from 12.5% on December 31st due to negative EPS guidance in the Materials and Consumer Discretionary sectors.

Investors may be paying for higher earnings growth through elevated valuations

U.S. EQUITIES



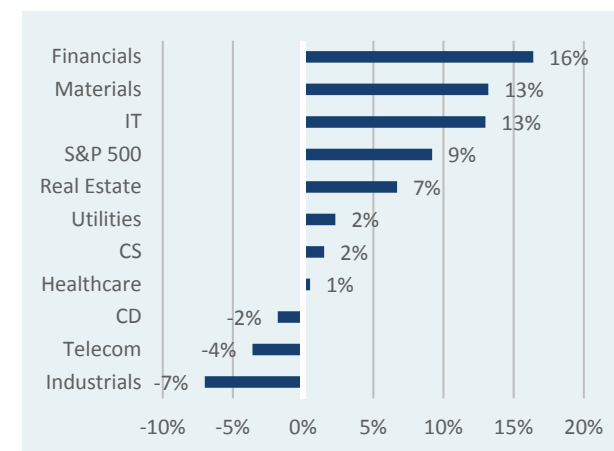
Source: Russell Investments, as of 4/3/17

S&P 500 EPS GROWTH



Source: Bloomberg, as of 12/31/16

Q1 FORECAST EPS GROWTH



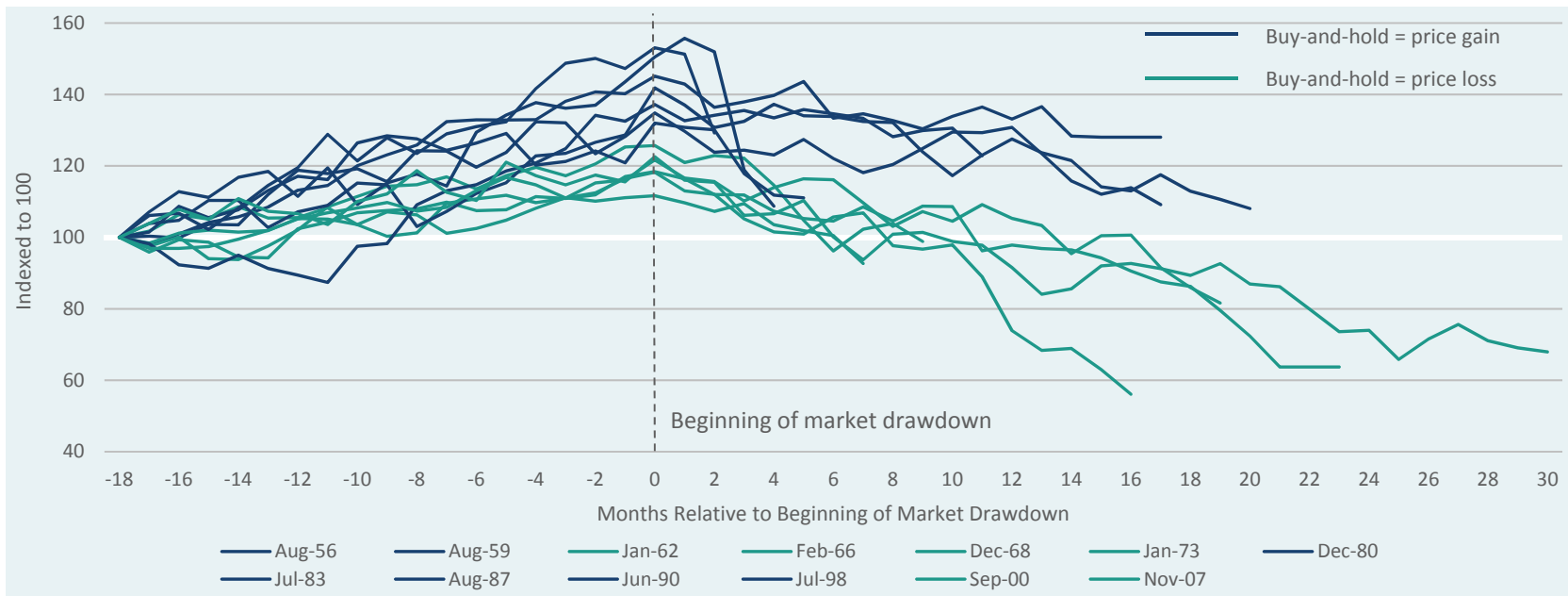
Source: FactSet, as of 4/14/17

Equity market corrections

With above average U.S. equity valuations and a bull market that has lasted nearly nine years, there has been speculation that a market correction is approaching. While we remain concerned about valuations we do not believe that equities are necessarily in the final stages of the cycle, nor that market corrections are predictable. It is important to remember that equity drawdowns are normal, and should be viewed in the proper context.

The chart below shows the cumulative price movement of the S&P 500 during equity market corrections of at least 10%, starting from 18 months prior to the drawdown. In many instances, late cycle equity gains were enough to offset the entire drawdown, outside of major financial collapses. Market timing can be especially dangerous in these instances if an investor gets out of the market too early.

Equity market corrections are normal and should be viewed in the proper context



Source: Bloomberg

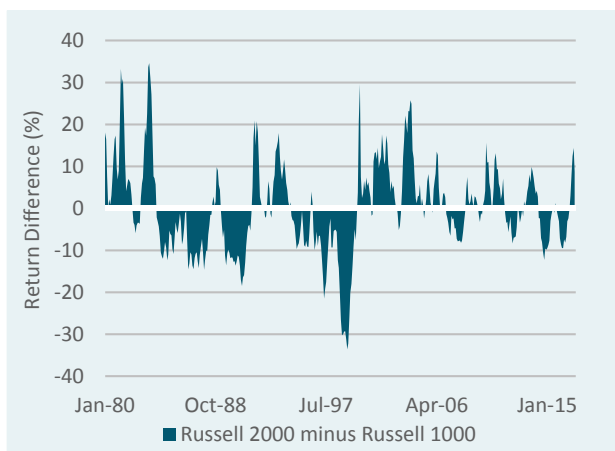
Domestic equity size and style

Growth equities outperformed value equities during the quarter. The Russell 1000 Growth Index and Russell 1000 Value Index returned 8.9% and 3.3%, respectively. Financial sector performance had a significant effect on the value premium, affected by uncertainty around the direction of interest rates and deregulation proposals.

U.S. large cap equities outperformed small cap during the quarter, though small caps have delivered strong

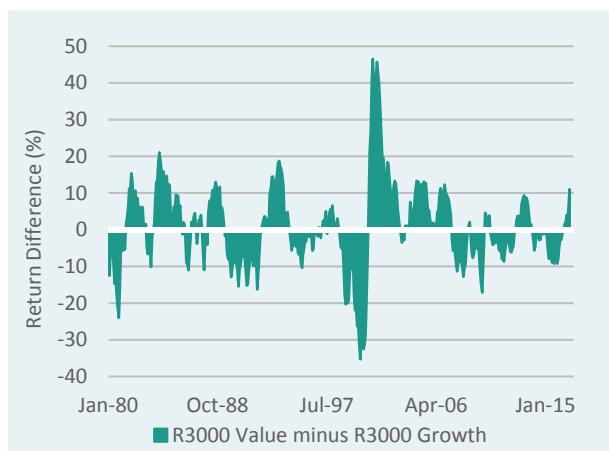
year-over-year outperformance. Small cap equity valuations remain considerably elevated relative to large cap equities which will likely act as a headwind to future performance. However, if President Trump's deregulation proposals are seen through, this should benefit smaller American companies. Further U.S. dollar appreciation would also benefit smaller companies on a relative basis due to less international currency exposure.

SMALL CAP VS LARGE CAP (YOY)



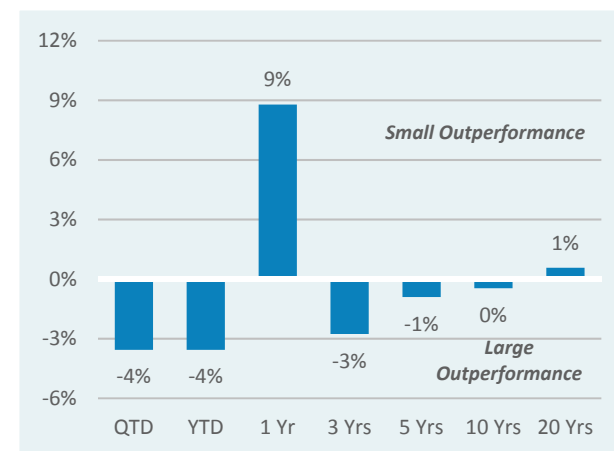
Source: Russell Investments, as of 3/31/17

VALUE VS GROWTH (YOY)



Source: Russell Investments, as of 3/31/17

U.S. LARGE VS. SMALL RELATIVE PERFORMANCE



Source: Morningstar, as of 3/31/17

International equity

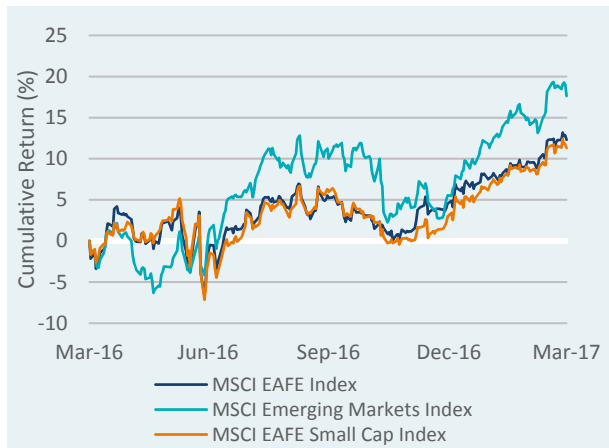
International equity markets outperformed domestic equities over the quarter. The MSCI ACWI ex U.S. returned 7.9% on an unhedged basis while the S&P 500 returned 6.1%.

International and emerging markets continue to trade at lower valuation levels than domestic markets, based on a variety of metrics. Despite our positive outlook for earnings growth in the U.S., the upside for domestic equities appears limited due to the optimism already baked into the price. International markets likely possess greater upside potential through either valuation

expansion or earnings growth surprise, simply due to current valuation levels. However, tail risks are also apparent in these markets. We believe a neutral weight is appropriate.

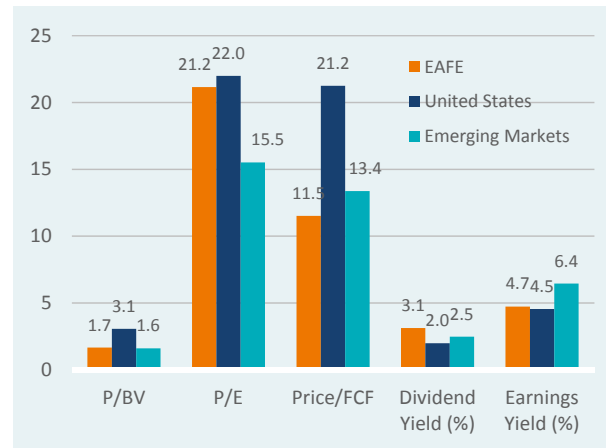
The U.S. dollar fell 3.6% in Q1 on a trade-weighted basis, and continued to contribute volatility to portfolios with unhedged currency exposure. Emerging market currencies exhibited further recovery during the quarter (MSCI EM 11.4% unhedged return vs. 7.3% hedged return) while the yen appreciated (4.3% NIKKEI 225 unhedged return vs. 0.1% hedged).

GLOBAL EQUITY PERFORMANCE



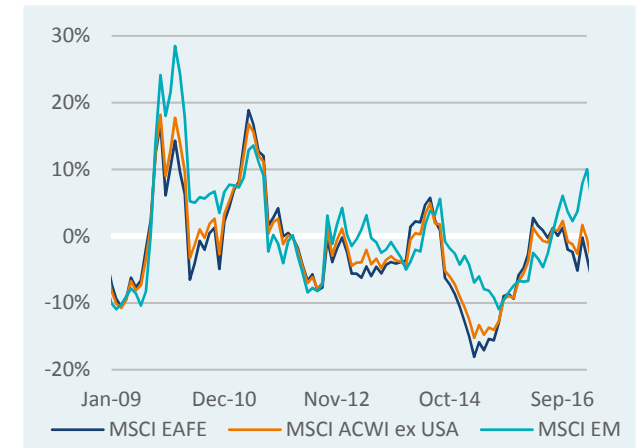
Source: Bloomberg, as of 3/31/17

VALUATIONS



Source: Bloomberg, MSCI, as of 3/31/17 - 3 month average

EFFECT OF CURRENCY (1 YEAR ROLLING)



Source: MSCI, as of 3/31/17

Emerging market equity

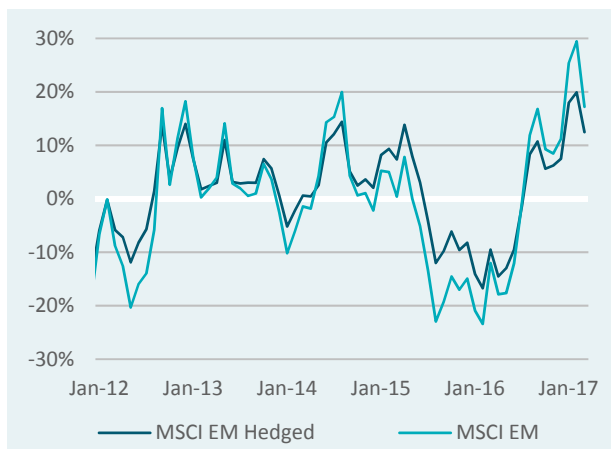
Emerging market equities extended their positive run in the first quarter, as the unhedged MSCI Emerging Markets index returned 11.4% (7.3% hedged). Performance was bolstered by strong global growth and stable commodity prices which have correlated highly with emerging market equities in the past. Steady demand from developed markets encouraged manufacturing in emerging economies as seen by increases in aggregate purchasing managers' indices (PMI).

Valuations increased moderately over the past three years but remain at attractive levels relative to EAFE and U.S. equities. Earnings growth estimates were highest in the Technology and Financial sectors, concentrated mainly in Korea and China.

Positive long-term growth expectations are not without potential disruptions. We remain particularly watchful of U.S. trade policies and upcoming elections in France, Germany, and Turkey.

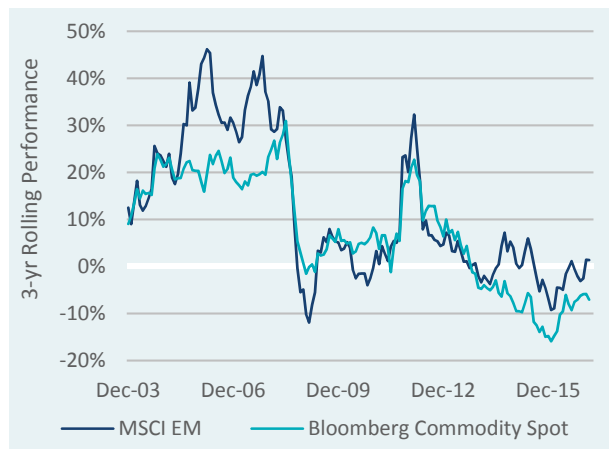
Fundamentals are improving in emerging economies

12-MONTH ROLLING PERFORMANCE



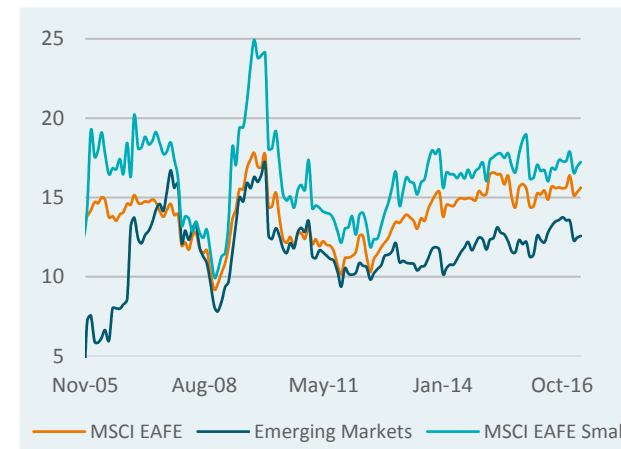
Source: MPI, as of 3/31/17

COMMODITY PRICES & EM PERFORMANCE



Source: Bloomberg, as of 3/31/17

FORWARD P/E RATIOS



Source: Bloomberg as of 3/31/17

Equity valuations

The outlook for corporate earnings growth improved in Q1 which contributed to mildly lower forward P/E multiples. Overall, valuations remain elevated, consistent with mid-to-later stages of the economic cycle and an environment of low interest rates and moderate inflation. As the global economy transitions towards higher rates and inflation, valuations may shift to a lower, more normal level.

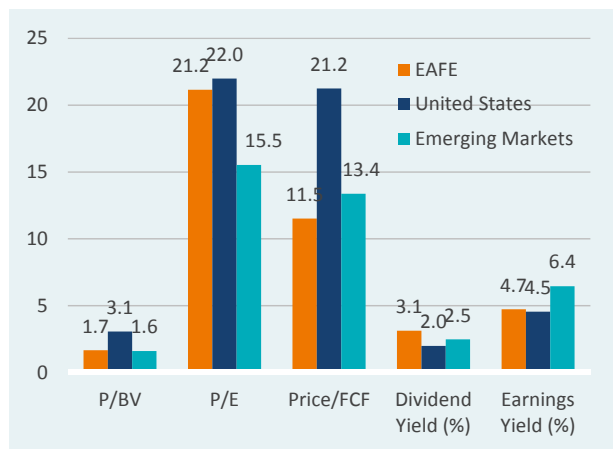
The S&P 500 sits at a forward P/E of 18.3, above the 20-

year average of 16.9, but within a single standard deviation of the average. The valuation of domestic equities is richer than international equities and emerging markets, as measured by trailing P/E and price-to-free cash flow ratios.

Further positive earnings and earnings expectations surprises would of course bode well for valuation levels as investors are properly compensated for above-average equity prices.

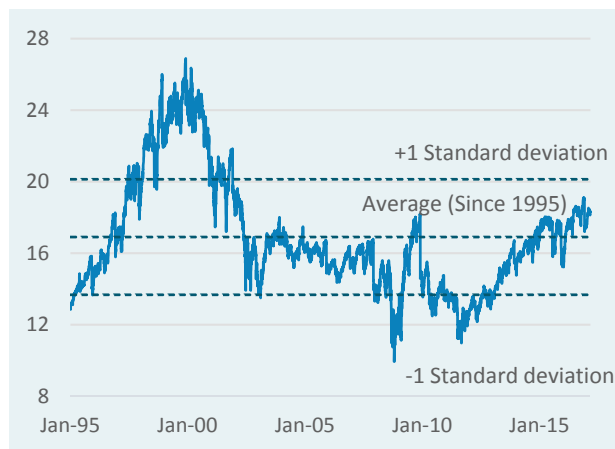
Valuations are above average, but not unusual

MSCI VALUATION METRICS (3 MONTH AVERAGE)



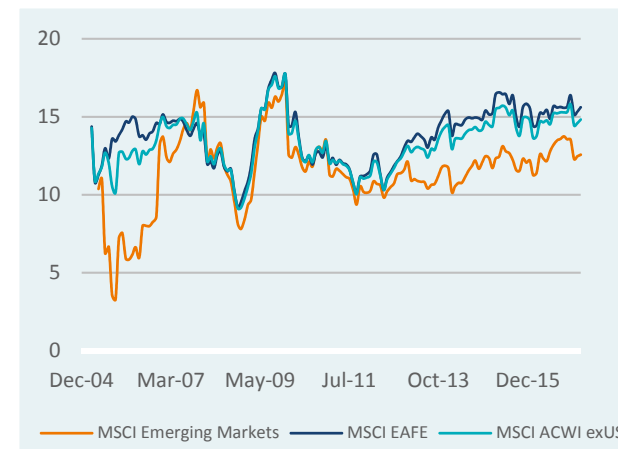
Source: Bloomberg, as of 3/31/17

S&P 500 FORWARD P/E



Source: Bloomberg, as of 3/31/17

INTERNATIONAL FORWARD P/E RATIOS



Source: Bloomberg, as of 3/31/17

Equity volatility

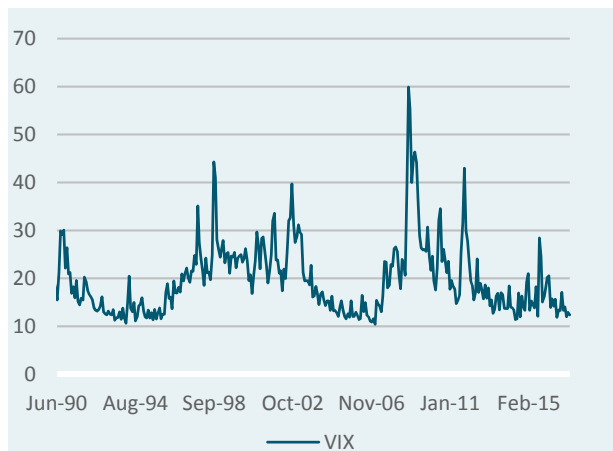
Equity volatility was considerably low in the first quarter. Realized volatility of the S&P 500 was 6.7%, the lowest mark since the beginning of this business cycle. Implied volatility, as indicated by the VIX, is also below average, despite greater political uncertainty. However, it is important to remember that volatility can return quickly. Other measures of equity risk, such as option skews, show that investors are paying a premium for large downside risk protection. Traditional measures of

volatility may be understating equity market risk.

International and emerging equities followed in a similar trend with below average realized volatility. Currency continued to play an important role in unhedged international equity exposure. Over the last ten years, unhedged currency exposure increased the annualized standard deviation of the MSCI EAFE and EM indices by 4% and 6%, respectively.

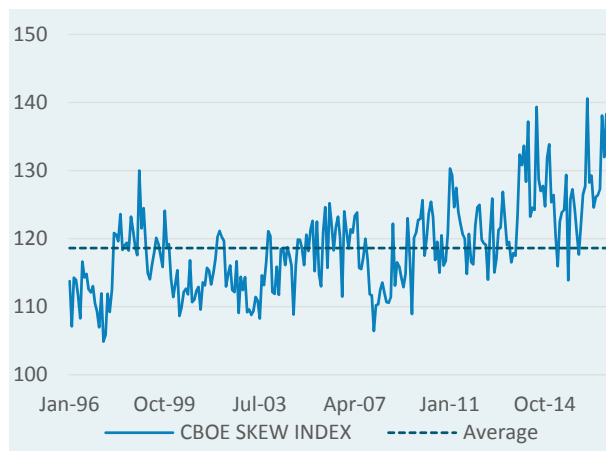
Equity volatility is low, but can return quickly

U.S. IMPLIED VOLATILITY



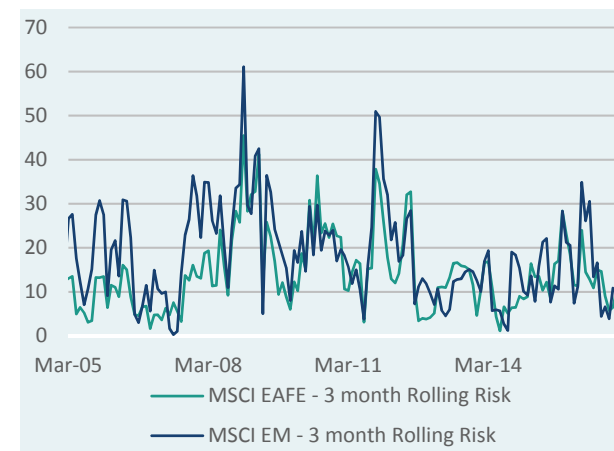
Source: CBOE, as of 3/31/17

U.S. VOLATILITY SKEW



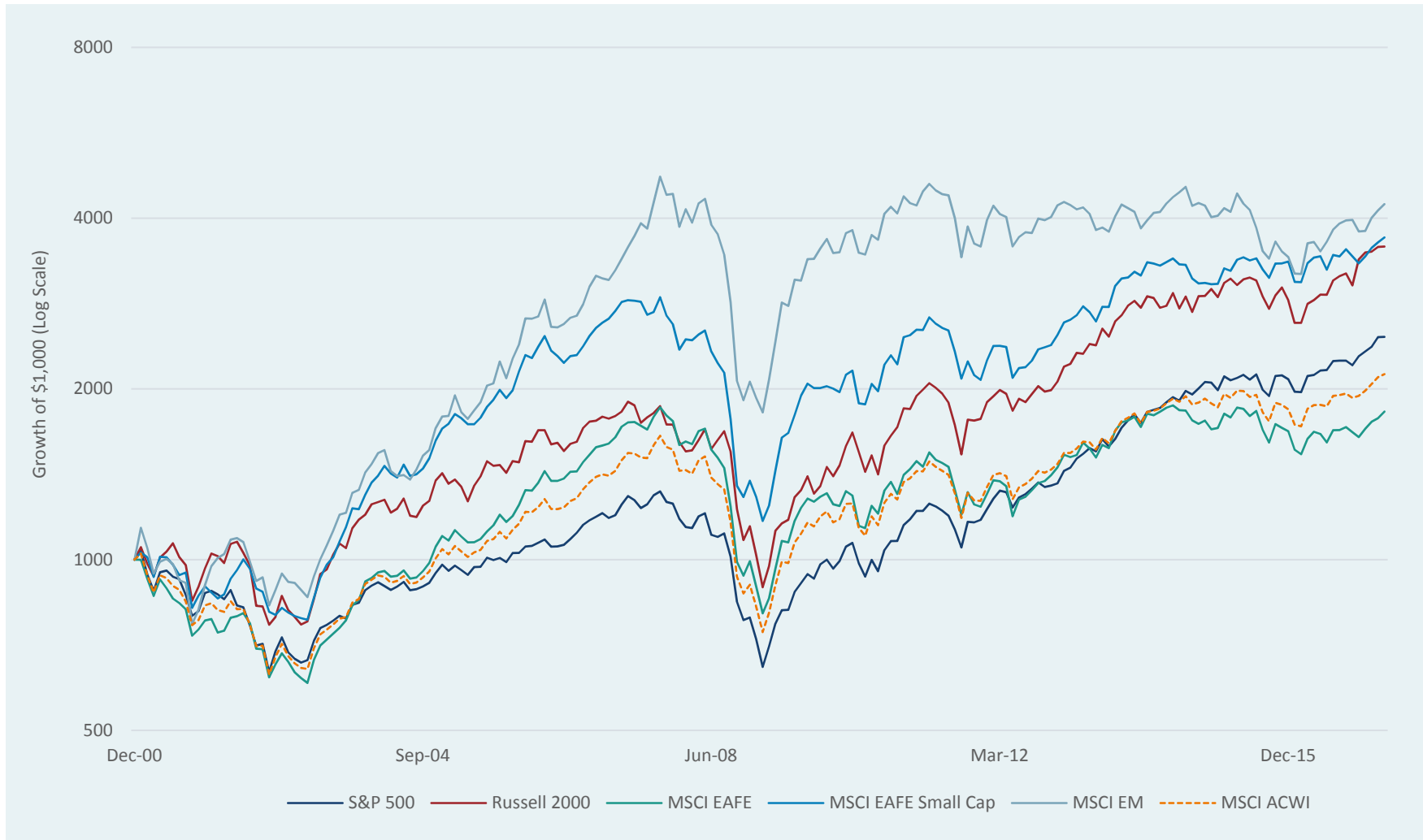
Source: CBOE, as of 3/31/17

INTERNATIONAL EQUITY VOLATILITY



Source: MSCI, as of 3/31/17

Long-term equity performance



Source: MPI, as of 3/31/17

Other assets

Commodities

Commodity performance has been lackluster over the past decade, delivering negative returns through the global financial crisis and the recent oil crisis. Much of this performance has been caused not by price movement, but by the shape of commodity futures curves. An upward sloping curve creates a drag for investors as a higher price is paid to enter each futures contract, and a downward sloping curve creates positive carry for investors as prices paid for futures contracts are lower. This premium/discount is a major determinant of commodity performance, and is known as “roll yield”. Roll yield can be negatively affected by

commodity crises as current contract prices drop further than distant prices and the curve becomes steeper.

As commodity prices moderate, futures curves have flattened and negative roll yield has begun to dissipate. Oil in particular significantly impacts overall roll yield due to its larger weight in commodities indices. Oil has exhibited a flatter curve shape recently. We are continuing to monitor these effects since a neutral or positive roll return would help to materially improve commodity returns.

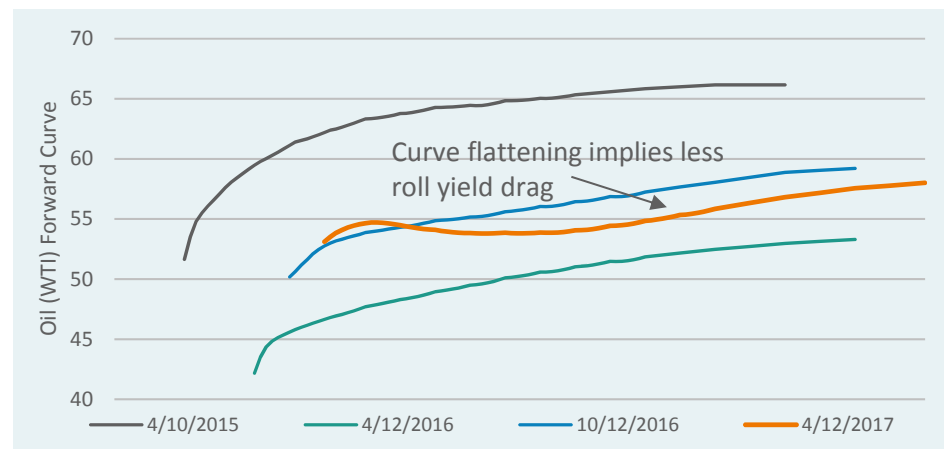
The drag from negative roll yield is abating, improving the outlook for commodities performance

ROLL RETURN



Source: Standard & Poor's, Goldman Sachs, as of 3/31/17

CURVE SHAPE



Source: Bloomberg, as of 4/12/17

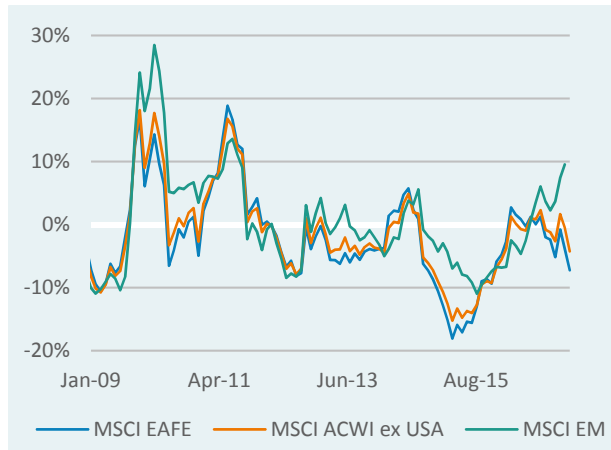
Currency

In the first quarter, the U.S. dollar reversed part of its gains following the presidential election in November. On a trade weighted basis, the dollar was down 3.6% against a basket of major currencies. Currency movement has been an important influence in unhedged foreign asset exposure. Over the past year, U.S. dollar strength has eroded positive equity returns in developed markets, while dollar weakness against emerging markets has added to returns.

Emerging market currencies rallied in the first quarter following a sharp decline to end last year. The JPM Emerging Market Currency Index was up 2.5%.

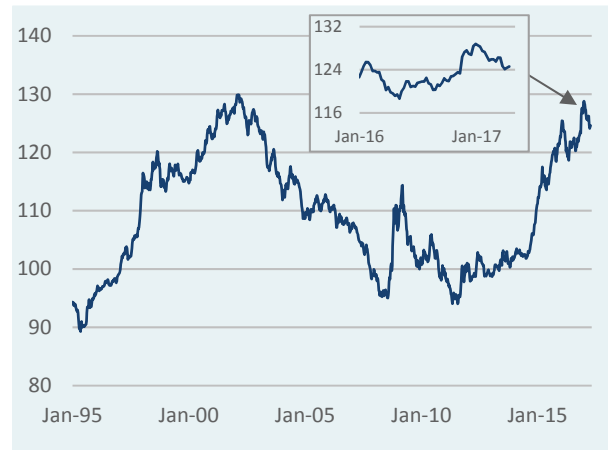
While long-term movements in the U.S. are often driven by broad mean reversion to fair value based on purchasing power parity, shorter term moves are still likely to be heavily influenced by developments in foreign trade policy, where much uncertainty remains.

EFFECT OF CURRENCY (1YR ROLLING)



Source: MPI, as of 3/31/17

LONG-TERM TRADE WEIGHTED DOLLAR



Source: FRED, as of 4/7/17

JPM EM CURRENCY INDEX



Source: Bloomberg, as of 3/31/17

Appendix

Periodic table of returns – March 2017

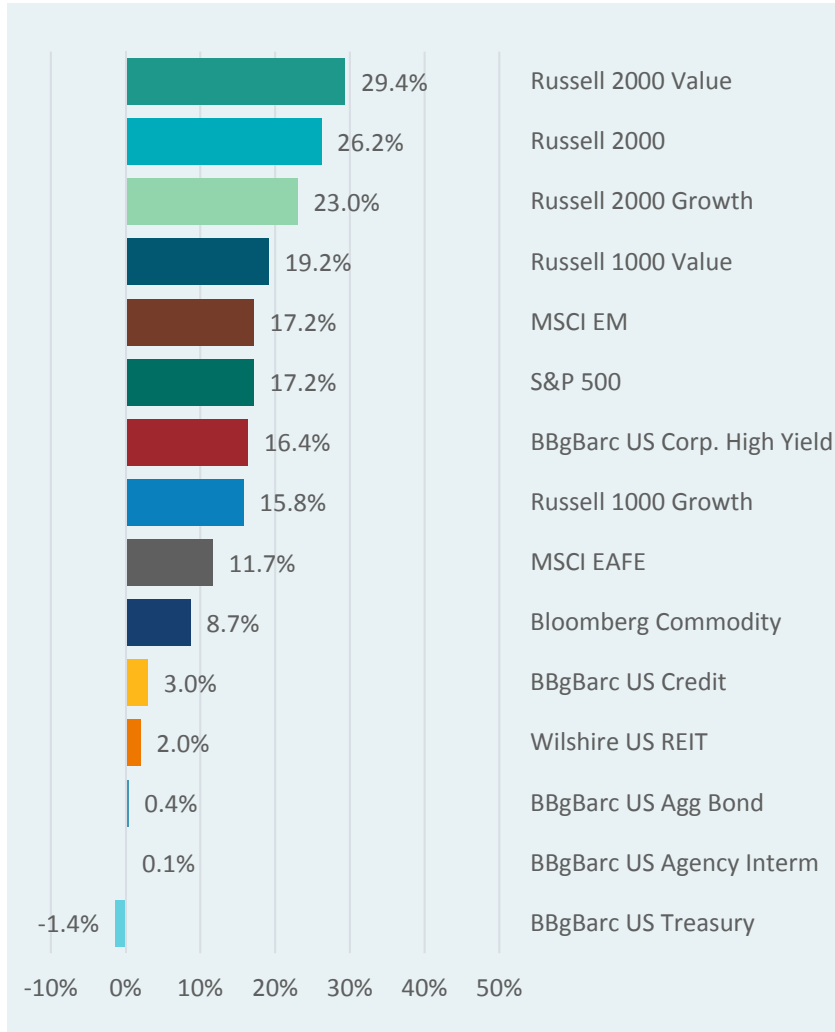
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	YTD	5-Year	10-Year
Emerging Markets Equity	16.6	38.4	23.2	35.2	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	11.4	13.3	9.1
Large Cap Growth	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	8.9	13.3	8.1
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	7.2	13.1	7.6
Large Cap 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	6.0	12.5	7.1
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	5.3	12.4	6.7
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	4.8	12.1	6.1
Large Cap Value	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	3.3	10.7	5.9
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	2.5	5.8	4.3
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	2.0	5.2	4.0
Real Estate	-2.0	11.6	9.9	9.7	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	1.6	3.1	2.7
US Bonds	-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	0.8	2.3	1.2
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	0.1	0.8	1.1
Small Cap Value	-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	-0.1	0.1	0.5
Commodities	-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	-2.3	-9.5	-6.2

 Large Cap Equity	 Small Cap Growth	 Commodities
 Large Cap Value	 International Equity	 Real Estate
 Large Cap Growth	 Emerging Markets Equity	 Hedge Funds of Funds
 Small Cap Equity	 US Bonds	 60% MSCI ACWI/40% BC Global Bond
 Small Cap Value	 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 performance data as of 3/31/17.

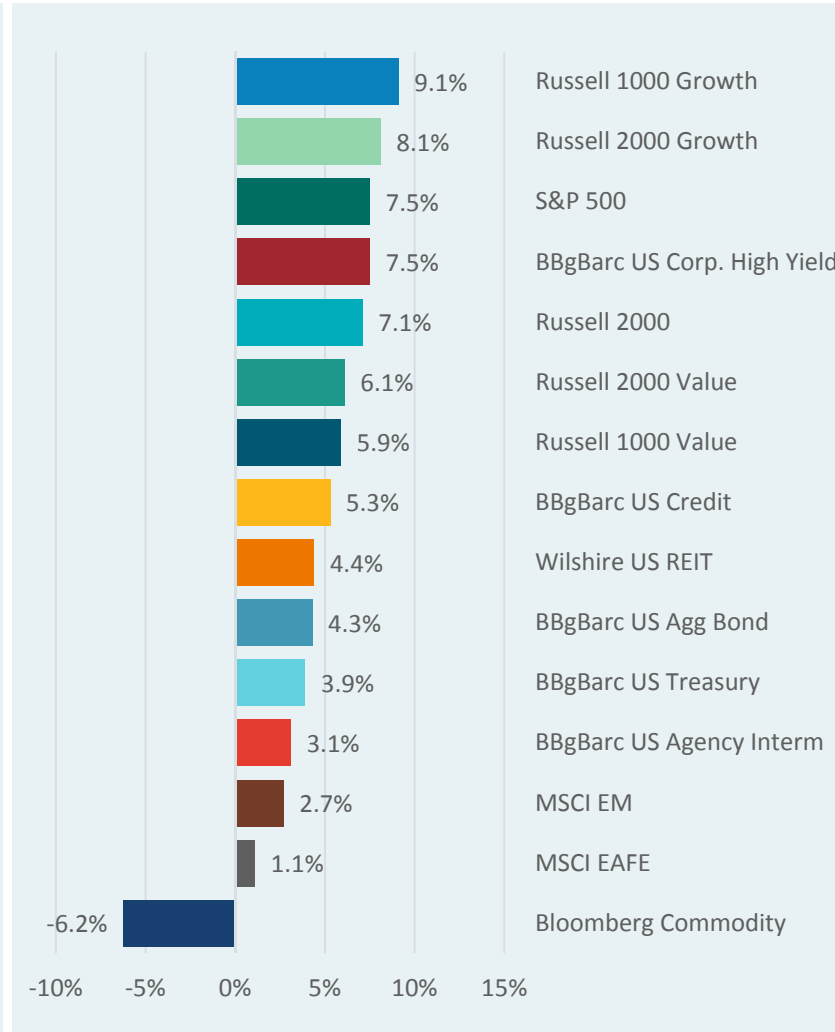
Major asset class returns

ONE YEAR ENDING MARCH



Source: Morningstar, as of 3/31/17

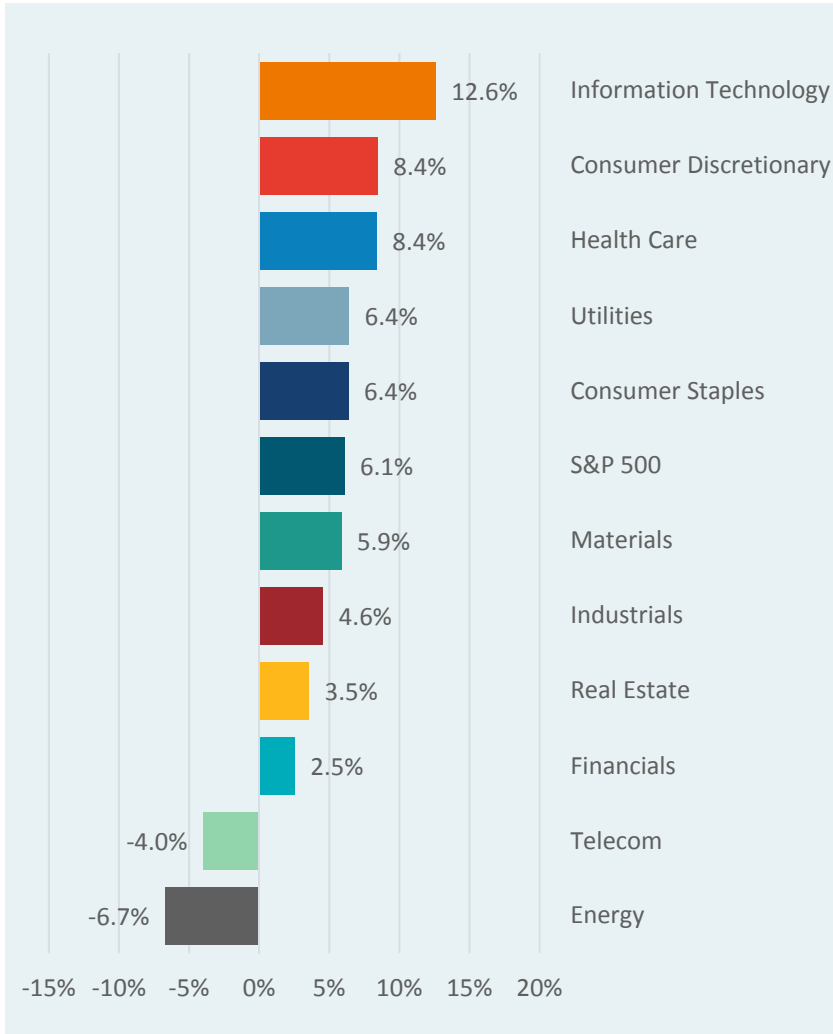
TEN YEARS ENDING MARCH



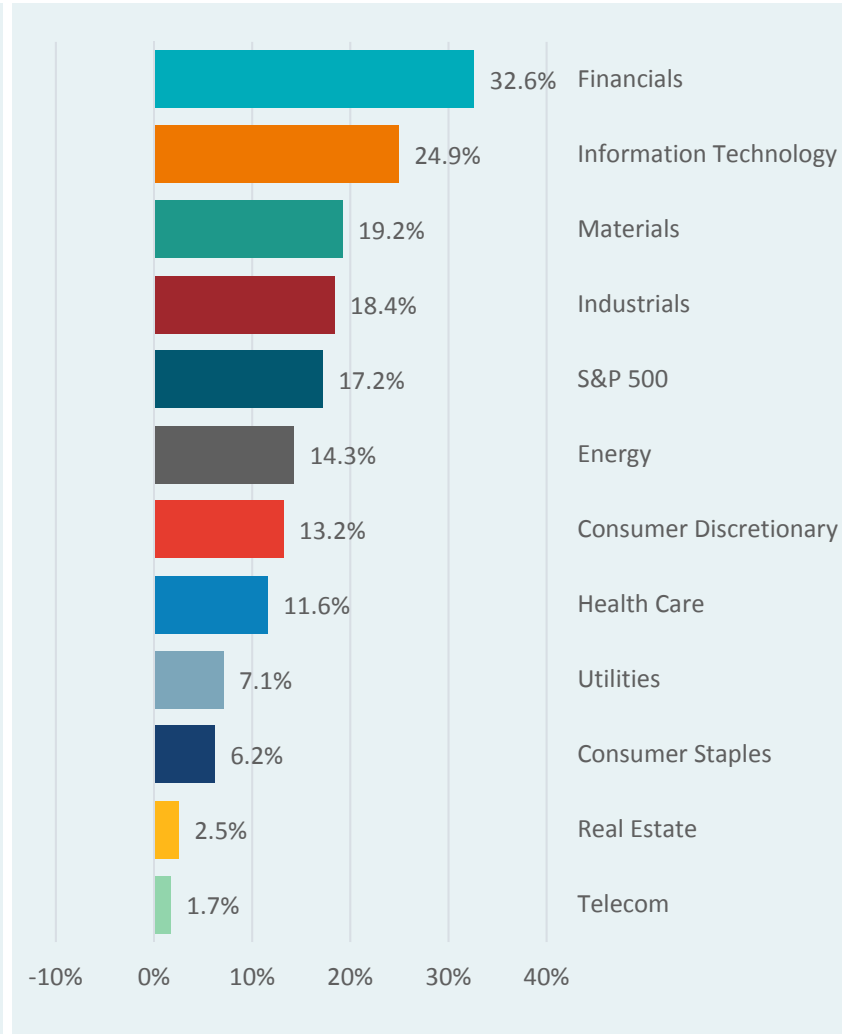
Source: Morningstar, as of 3/31/17

S&P 500 and S&P 500 sector returns

1ST QUARTER



ONE YEAR ENDING MARCH



Source: Morningstar, as of 3/31/17

Source: Morningstar, as of 3/31/17

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	0.1	6.1	6.1	17.2	10.4	13.3	7.5
S&P 500 Equal Weighted	0.0	5.4	5.4	17.4	9.6	14.0	8.7
DJ Industrial Average	(0.6)	5.2	5.2	19.9	10.6	12.2	8.1
Russell Top 200	0.2	6.4	6.4	17.6	10.6	13.3	7.5
Russell 1000	0.1	6.0	6.0	17.4	10.0	13.3	7.6
Russell 2000	0.1	2.5	2.5	26.2	7.2	12.4	7.1
Russell 3000	0.1	5.7	5.7	18.1	9.8	13.2	7.5
Russell Mid Cap	(0.2)	5.1	5.1	17.0	8.5	13.1	7.9
Style Index							
Russell 1000 Growth	1.2	8.9	8.9	15.8	11.3	13.3	9.1
Russell 1000 Value	(1.0)	3.3	3.3	19.2	8.7	13.1	5.9
Russell 2000 Growth	1.2	5.3	5.3	23.0	6.7	12.1	8.1
Russell 2000 Value	(0.8)	(0.1)	(0.1)	29.4	7.6	12.5	6.1

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	1.2	6.9	6.9	15.0	5.1	8.4	4.0
MSCI ACWI ex US	2.5	7.9	7.9	13.1	0.6	4.4	1.4
MSCI EAFE	2.8	7.2	7.2	11.7	0.5	5.8	1.1
MSCI EM	2.5	11.4	11.4	17.2	1.2	0.8	2.7
MSCI EAFE Small Cap	2.0	8.0	8.0	11.0	3.6	9.2	3.0
Style Index							
MSCI EAFE Growth	2.7	8.5	8.5	7.4	1.5	6.0	2.0
MSCI EAFE Value	2.8	6.0	6.0	16.0	(0.6)	5.6	0.0
Regional Index							
MSCI UK	1.7	5.0	5.0	7.4	(2.6)	3.5	0.5
MSCI Japan	(0.4)	4.5	4.5	14.4	6.0	6.8	0.6
MSCI Euro	6.2	8.5	8.5	12.8	(1.3)	6.4	(0.2)
MSCI EM Asia	3.3	13.4	13.4	18.0	4.5	4.4	4.7
MSCI EM Latin American	0.6	12.1	12.1	23.3	(4.0)	(6.1)	0.8

Source: Morningstar, as of 3/31/17

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US Treasury USTIPS	(0.1)	1.3	1.3	1.5	2.0	1.0	4.2
BBgBarc US Treasury Bills	0.0	0.1	0.1	0.4	0.2	0.2	0.8
BBgBarc US Agg Bond	(0.1)	0.8	0.8	0.4	2.7	2.3	4.3
Duration							
BBgBarc US Treasury 1-3 Yr	0.0	0.3	0.3	0.2	0.7	0.6	2.0
BBgBarc US Treasury Long	(0.6)	1.4	1.4	(5.0)	5.8	4.0	6.7
BBgBarc US Treasury	(0.0)	0.7	0.7	(1.4)	2.1	1.6	3.9
Issuer							
BBgBarc US MBS	0.0	0.5	0.5	0.2	2.7	2.0	4.2
BBgBarc US Corp. High Yield	(0.2)	2.7	2.7	16.4	4.6	6.8	7.5
BBgBarc US Agency Interim	0.0	0.5	0.5	0.1	1.4	1.2	3.1
BBgBarc US Credit	(0.2)	1.3	1.3	3.0	3.5	3.7	5.3

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	(2.7)	(2.3)	(2.3)	8.7	(13.9)	(9.5)	(6.2)
Wilshire US REIT	(2.7)	0.0	0.0	2.0	10.2	9.8	4.4
CS Leveraged Loans	0.1	1.2	1.2	9.7	3.7	4.9	4.2
Regional Index							
JPM EMBI Global Div	0.4	3.9	3.9	8.9	6.2	5.8	7.0
JPM GBI-EM Global Div	2.3	6.5	6.5	5.5	(2.7)	(1.6)	4.1
Hedge Funds							
HFRI Composite	0.2	2.3	2.3	8.6	2.8	4.0	3.3
HFRI FOF Composite	0.1	2.0	2.0	5.9	1.7	3.1	1.2
Currency (Spot)							
Euro	0.7	1.4	1.4	(6.1)	(8.1)	(4.3)	(2.2)
Pound	0.5	1.2	1.2	(13.0)	(9.1)	(4.8)	(4.4)
Yen	0.4	4.7	4.7	0.9	(2.6)	(5.9)	0.6

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)

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.Bloomberg.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)

Merrill Lynch Option Volatility Estimate (MOVE) Index - a yield curve weighted index comprised of a weighted set of 1-month Treasury options, including 2.5.10 and 30 year tenor contracts. This index is an indicator of the expected (implied) future volatility in the rate markets. (www.Bloomberg.com)

OECD Consumer Confidence Index - based on households' plans for major purchases and their economic situation, both currently and their expectations for the immediate future. Opinions compared to a "normal" state are collected and the difference between positive and negative answers provides a qualitative index on economic conditions. (<https://data.oecd.org/>)

OECD Business Confidence Index - based on enterprises' assessment of production, orders and stocks, as well as its current position and expectations for the immediate future. Opinions compared to a "normal" state are collected and the difference between positive and negative answers provides a qualitative index on economic conditions. (<https://data.oecd.org/>)

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/>)

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Contra Costa County Employees' Retirement Association

Investment Performance Review

Period Ending: March 31, 2017



VERUSINVESTMENTS.COM

SEATTLE 206-622-3700

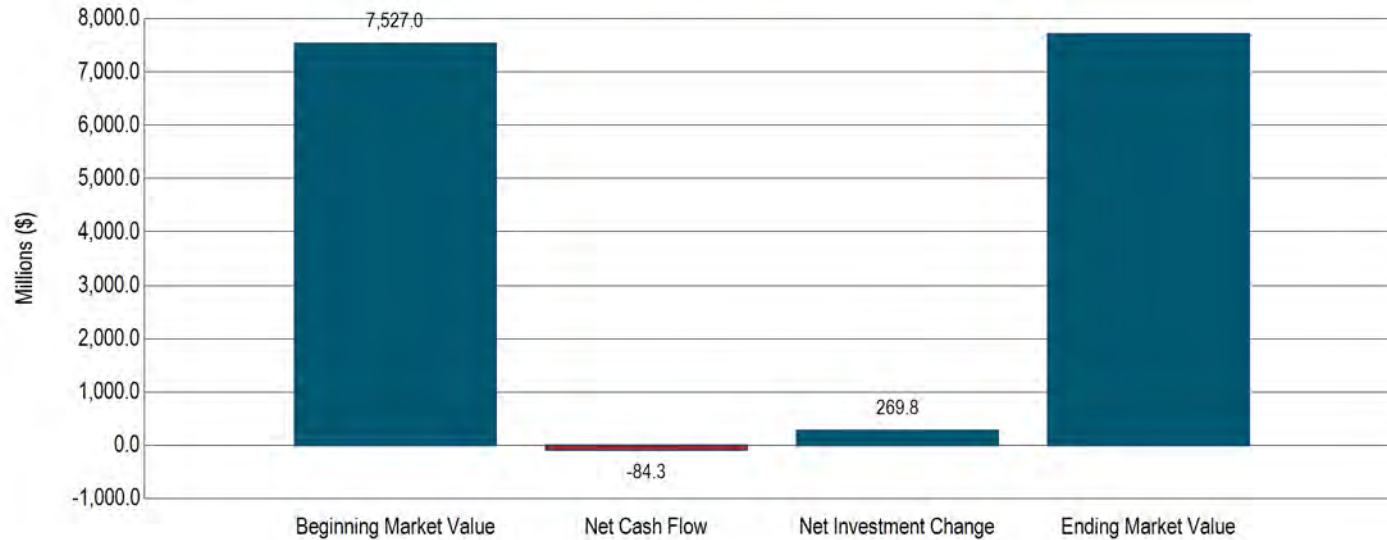
LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

Portfolio Reconciliation

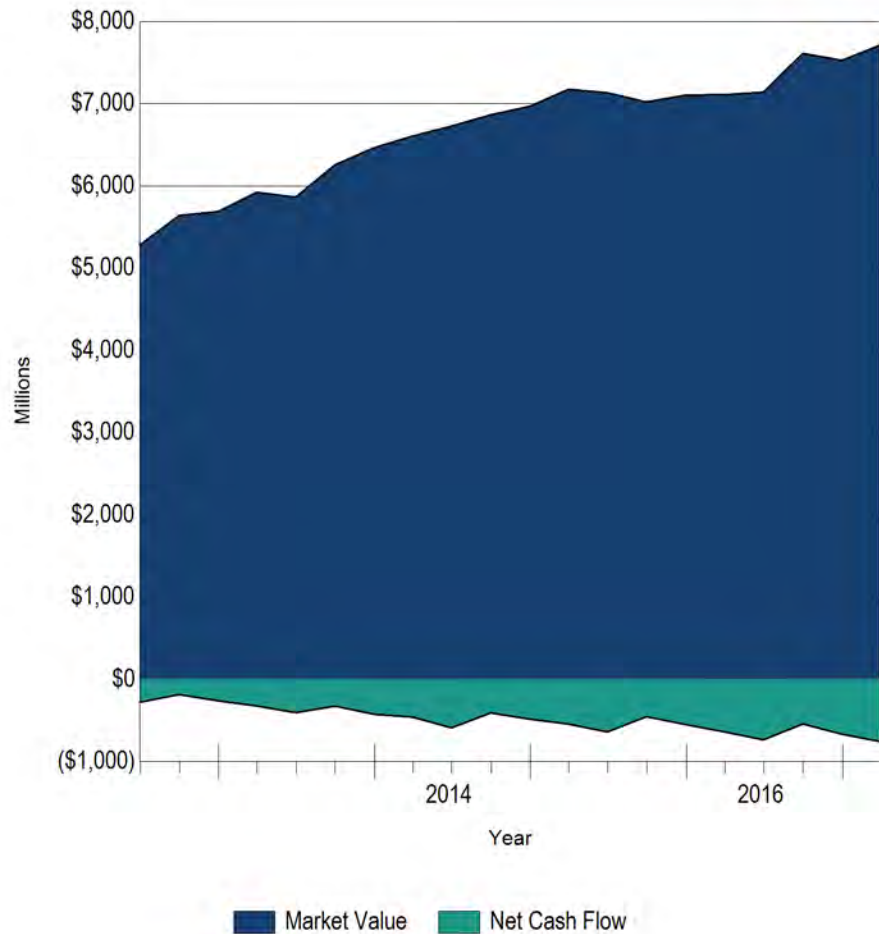
	Last Three Months	Year-To-Date
Beginning Market Value	\$7,526,951,623	\$7,526,951,623
Net Cash Flow	-\$84,265,113	-\$84,265,113
Net Investment Change	\$269,808,923	\$269,808,923
Ending Market Value	\$7,712,495,433	\$7,712,495,433

Change in Market Value
Last Three Months

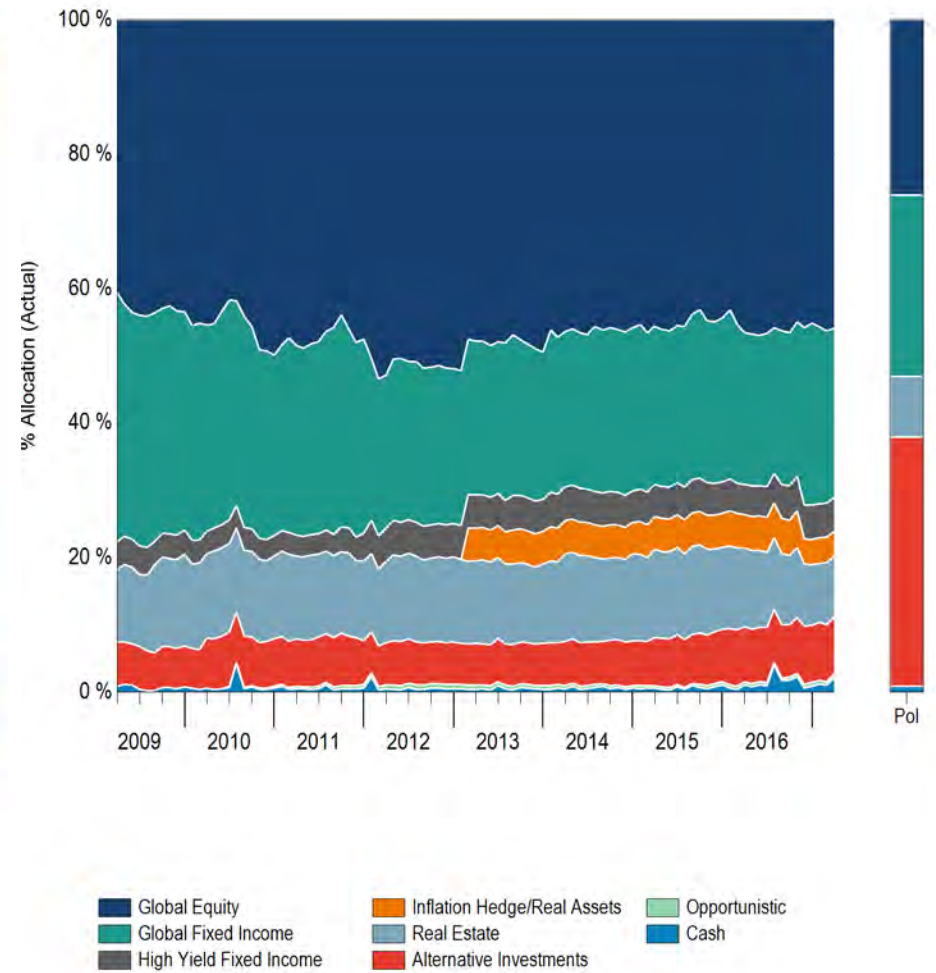


Contributions and withdrawals may include intra-account transfers between managers/funds.

Market Value History
Cumulative Cash Flows



Asset Allocation History

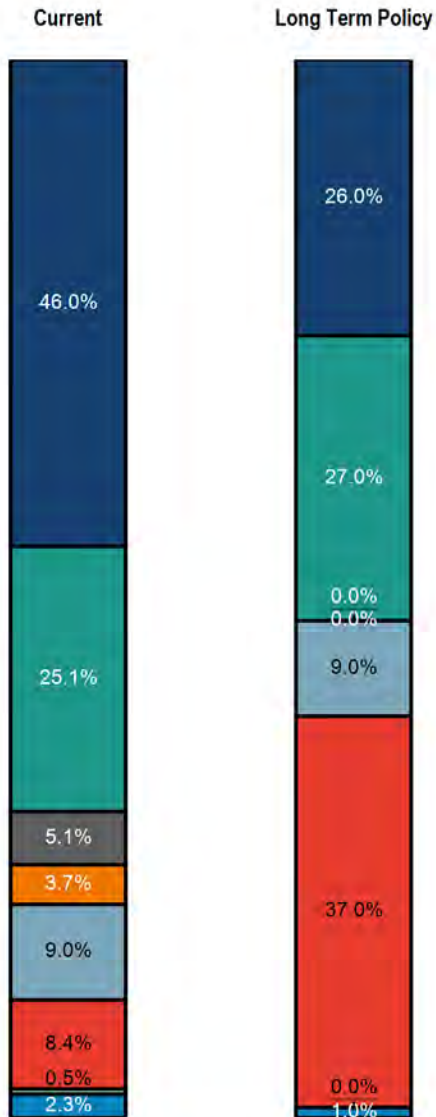


Policy reflects FFP 4-Yr allocations approved in April 2016.

Total Fund

Asset Allocation vs. Long Term Target Policy

Period Ending: March 31, 2017



Allocation vs. Long Term Target

	Current Balance	Current Allocation	Long Term Target	Difference
Global Equity	\$3,544,510,444	46.0%	26.0%	\$1,539,261,631
Global Fixed Income	\$1,932,755,571	25.1%	27.0%	-\$149,618,196
High Yield Fixed Income	\$391,145,867	5.1%	0.0%	\$391,145,867
Inflation Hedge/Real Assets	\$286,506,297	3.7%	0.0%	\$286,506,297
Real Estate	\$697,639,011	9.0%	9.0%	\$3,514,422
Alternative Investments	\$650,528,963	8.4%	37.0%	-\$2,203,094,347
Opportunistic	\$35,741,280	0.5%	0.0%	\$35,741,280
Cash	\$173,668,000	2.3%	1.0%	\$96,543,046
Total	\$7,712,495,433	100.0%	100.0%	

Allocation vs. Current Targets

	Current Balance	Current Allocation	Current Target	Difference
Global Equity	\$3,544,510,444	46.0%	44.4%	\$120,162,472
Global Fixed Income	\$1,932,755,571	25.1%	27.4%	-\$180,468,178
High Yield Fixed Income	\$391,145,867	5.1%	5.0%	\$5,521,096
Inflation Hedge/Real Assets	\$286,506,297	3.7%	3.9%	-\$14,281,025
Real Estate	\$697,639,011	9.0%	9.2%	-\$11,910,569
Alternative Investments	\$650,528,963	8.4%	8.2%	\$18,104,338
Opportunistic	\$35,741,280	0.5%	0.5%	-\$2,821,197
Cash	\$173,668,000	2.3%	1.4%	\$65,693,064
Total	\$7,712,495,433	100.0%	100.0%	

Long Term Targets reflect FFP 4-Yr allocations approved in April 2016.

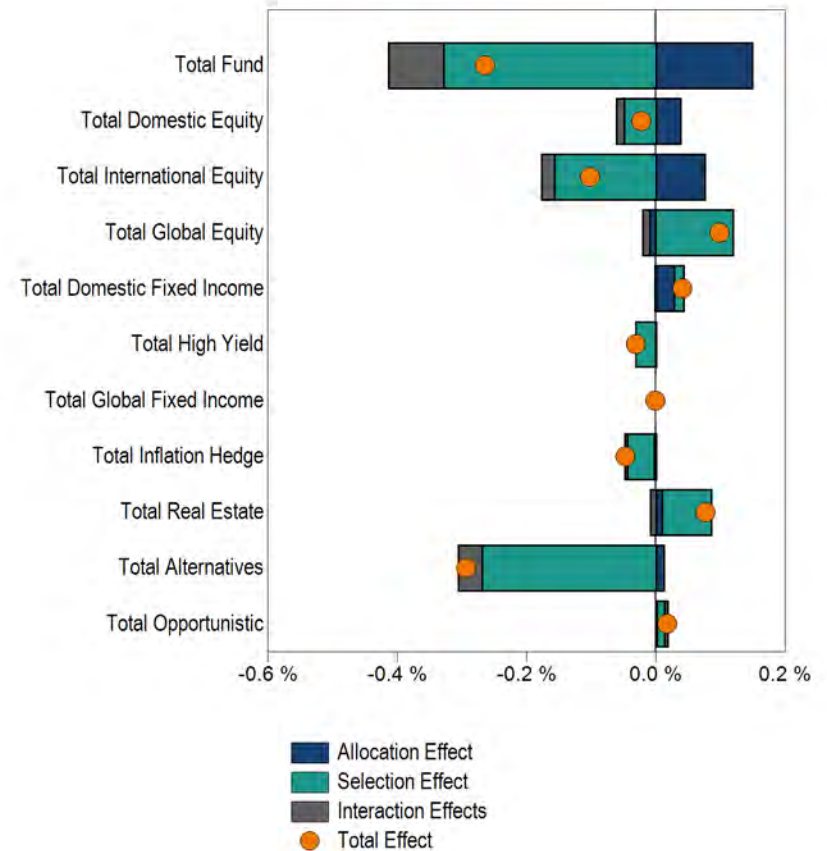
Current Targets reflect Phase 2a Targets approved in March 2017.

Total Fund Executive Summary (Gross of Fees)

Period Ending: March 31, 2017

	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Fund	3.6	3.6	9.9	6.5	8.8	6.1
Policy Index	3.9	3.9	10.3	6.4	8.7	--
InvestorForce Public DB > \$1B Gross Rank	88	88	92	13	15	15
Total Fund ex Overlay	3.6	3.6	9.9	6.5	8.8	6.1
Policy Index	3.9	3.9	10.3	6.4	8.7	--
InvestorForce Public DB > \$1B Gross Rank	88	88	92	13	15	15
Total Domestic Equity	5.5	5.5	18.2	9.1	13.2	8.1
Russell 3000	5.7	5.7	18.1	9.8	13.2	7.5
eA US All Cap Equity Gross Rank	51	51	43	34	36	47
Total International Equity	6.5	6.5	7.8	2.2	6.1	0.7
MSCI ACWI ex USA Gross	8.0	8.0	13.7	1.0	4.8	1.8
MSCI EAFE Gross	7.4	7.4	12.2	1.0	6.3	1.5
eA All ACWI ex-US Equity Gross Rank	90	90	83	46	59	96
International Equity	7.1	7.1	8.3	2.4	6.2	0.8
MSCI ACWI ex USA Gross	8.0	8.0	13.7	1.0	4.8	1.8
eA All ACWI ex-US Equity Gross Rank	84	84	78	44	57	96
Emerging Markets Equity	--	--	--	--	--	--
MSCI Emerging Markets	--	--	--	--	--	--
eA Emg Mkts Equity Gross Rank	--	--	--	--	--	--
Total Global Equity	8.0	8.0	15.9	7.4	9.6	--
MSCI ACWI	6.9	6.9	15.0	5.1	8.4	--
eA All Global Equity Gross Rank	25	25	32	23	52	--

Attribution Effects
3 Months Ending March 31, 2017



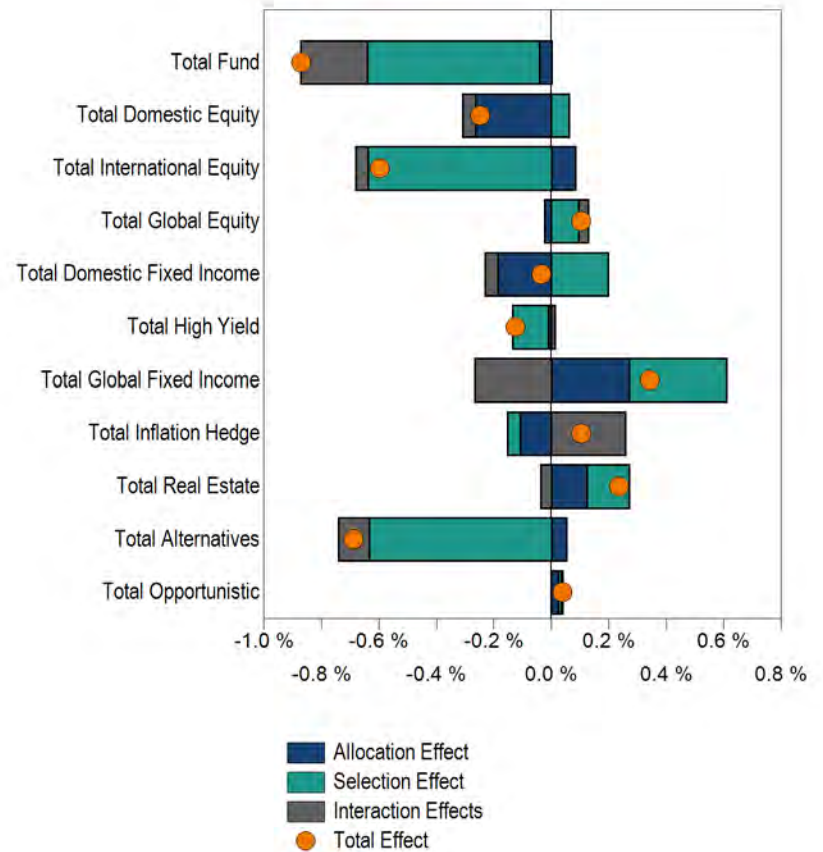
Policy Index (12/1/2016 -present): 22.9% Russell 3000, 11% MSCI ACWI ex-US (Gross), 10.9% MSCI ACWI (Net), 22.4% BBgBarc 1-3 Yr Gov/Credit, 3.2% BBgBarc US Aggregate, 1.7% BofA High Yield Master II +2%, 5.1% BofA High Yield Master II, 1% Wilshire REIT, 1.7% NCREIF Property Index, 6.8% NCREIF ODCE Index, 3.6% CPI +4%, 8.1% S&P 500 +4%, 1.6% 90-day T-Bills.
 Policy Index (4/1/2012-11/30/16): 27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% BBgBarc U.S. Aggregate, 5% BofA High Yield Master II, 4% BBgBarc Global Aggregate, 5.4% Wilshire REIT, 6.75% NCREIF Property Index, 1.35% FTSE/EPRA NAREIT Developed exUS, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
 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 (Gross of Fees)

Period Ending: March 31, 2017

	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Domestic Fixed Income	0.7	0.7	2.6	4.1	4.5	5.5
BBgBarc US Govt/Credit 1-3 Yr. TR	0.4	0.4	0.7	1.0	0.9	2.3
eA US Short Duration Fixed Inc Gross Rank	24	24	10	1	1	1
Liquidity Program	0.5	0.5	--	--	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR	0.4	0.4	--	--	--	--
eA US Short Duration Fixed Inc Gross Rank	57	57	--	--	--	--
Risk Diversifying Fixed Income	0.9	0.9	0.4	3.2	2.7	4.6
BBgBarc US Aggregate TR	0.8	0.8	0.4	2.7	2.3	4.3
eA US Core Fixed Inc Gross Rank	54	54	79	35	61	72
Total High Yield	2.1	2.1	14.4	3.5	6.2	7.5
BofA ML High Yield Master II	2.7	2.7	16.9	4.6	6.8	7.3
eA US High Yield Fixed Inc Gross Rank	70	70	47	77	68	40
Total Inflation Hedge	0.8	0.8	10.1	0.1	--	--
CPI + 4%	2.0	2.0	6.5	5.1	--	--
Total Real Estate	2.3	2.3	5.9	11.2	12.5	4.3
Real Estate Benchmark	1.6	1.6	4.4	9.8	10.1	6.7
NCREIF-ODCE	1.8	1.8	8.3	11.8	12.0	5.6
NCREIF Property Index	1.6	1.6	7.3	10.6	10.7	6.7
Total Alternatives	1.4	1.4	7.8	11.2	12.5	10.5
S&P 500 Index +4% (Lagged)	4.8	4.8	16.4	13.2	19.2	11.2
Total Opportunistic	7.8	7.8	19.4	3.1	7.7	--
CPI + 4%	2.0	2.0	6.5	5.1	5.3	--

Attribution Effects
1 Year Ending March 31, 2017

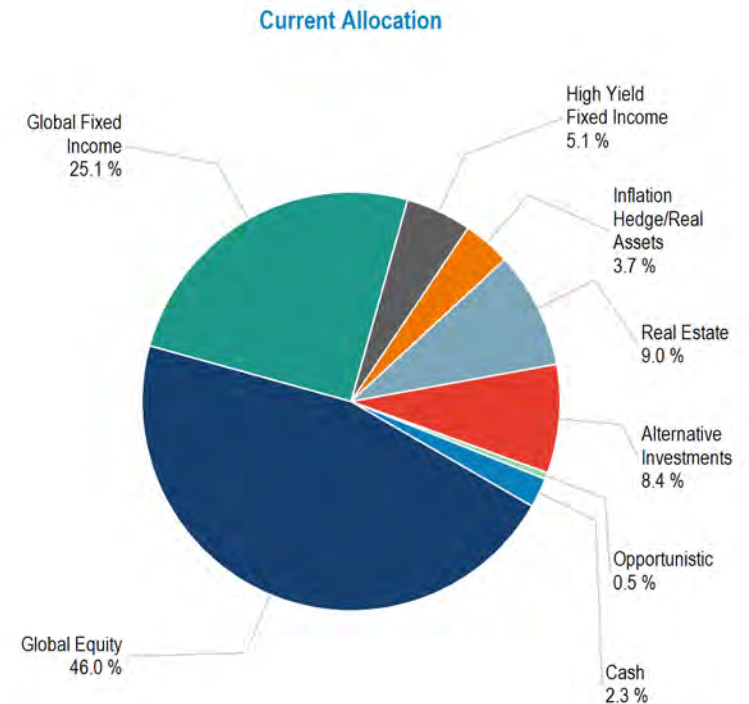


Policy Index (12/1/2016 -present): 22.9% Russell 3000, 11% MSCI ACWI ex-US (Gross), 10.9% MSCI ACWI (Net), 22.4% BBgBarc 1-3 Yr Gov/Credit, 3.2% BBgBarc US Aggregate, 1.7% BofA High Yield Master II +2%, 5.1% BofA High Yield Master II, 1% Wilshire REIT, 1.7% NCREIF Property Index, 6.8% NCREIF ODCE Index, 3.6% CPI +4%, 8.1% S&P 500 +4%, 1.6% 90-day T-Bills.
 Policy Index (4/1/2012-11/30/16): 27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% BBgBarc U.S. Aggregate, 5% BofA High Yield Master II, 4% BBgBarc Global Aggregate, 5.4% Wilshire REIT, 6.75% NCREIF Property Index, 1.35% FTSE/EPRA NAREIT Developed exUS, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
 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: March 31, 2017

	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Fund	3.5	3.5	9.5	5.9	8.2	5.5
<i>Policy Index</i>	3.9	3.9	10.3	6.4	8.7	--
Total Fund ex Overlay	3.5	3.5	9.5	5.9	8.2	5.5
<i>Policy Index</i>	3.9	3.9	10.3	6.4	8.7	--
Total Domestic Equity	5.4	5.4	17.7	8.7	12.7	7.6
<i>Russell 3000</i>	5.7	5.7	18.1	9.8	13.2	7.5
Total International Equity	6.4	6.4	7.3	1.8	5.7	0.2
<i>MSCI ACWI ex USA Gross</i>	8.0	8.0	13.7	1.0	4.8	1.8
<i>MSCI EAFE Gross</i>	7.4	7.4	12.2	1.0	6.3	1.5
International Equity	7.0	7.0	7.9	2.0	5.8	0.4
<i>MSCI ACWI ex USA Gross</i>	8.0	8.0	13.7	1.0	4.8	1.8
Emerging Markets Equity	--	--	--	--	--	--
<i>MSCI Emerging Markets</i>	--	--	--	--	--	--
Total Global Equity	7.8	7.8	15.1	6.7	8.9	--
<i>MSCI ACWI</i>	6.9	6.9	15.0	5.1	8.4	--
Total Domestic Fixed Income	0.6	0.6	2.3	3.7	4.1	5.0
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>	0.4	0.4	0.7	1.0	0.9	2.3
Liquidity Program	0.5	0.5	--	--	--	--
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>	0.4	0.4	--	--	--	--
Risk Diversifying Fixed Income	0.8	0.8	0.0	2.7	2.3	4.2
<i>BBgBarc US Aggregate TR</i>	0.8	0.8	0.4	2.7	2.3	4.3



Policy Index (12/1/2016 -present): 22.9% Russell 3000, 11% MSCI ACWI ex-US (Gross), 10.9% MSCI ACWI (Net), 22.4% BBgBarc 1-3 Yr Gov/Credit, 3.2% BBgBarc US Aggregate, 1.7% BofA High Yield Master II +2%, 5.1% BofA High Yield Master II, 1% Wilshire REIT, 1.7% NCREIF Property Index, 6.8% NCREIF ODCE Index, 3.6% CPI +4%, 8.1% S&P 500 +4%, 1.6% 90-day T-Bills.

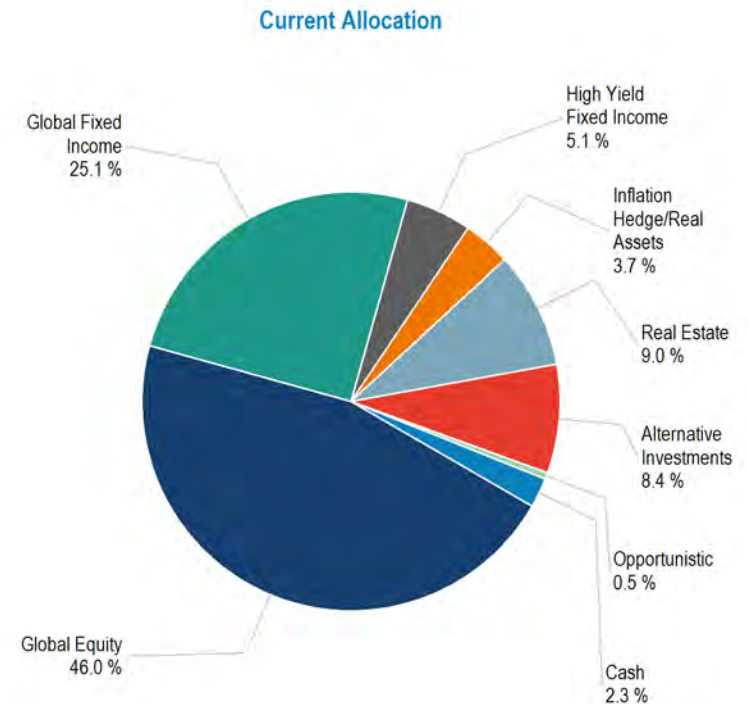
Policy Index (4/1/2012-11/30/16): 27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% BBgBarc U.S. Aggregate, 5% BofA High Yield Master II, 4% BBgBarc Global Aggregate, 5.4% Wilshire REIT, 6.75% NCREIF Property Index, 1.35% FTSE/EPRA NAREIT Developed exUS, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.

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: March 31, 2017

	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total High Yield	2.0	2.0	13.9	3.1	5.7	7.3
<i>BofA ML High Yield Master II</i>	2.7	2.7	16.9	4.6	6.8	7.3
Total Inflation Hedge	0.8	0.8	9.5	-0.7	--	--
<i>CPI + 4%</i>	2.0	2.0	6.5	5.1	--	--
Total Real Estate	2.3	2.3	5.4	10.3	11.3	3.3
<i>Real Estate Benchmark</i>	1.6	1.6	4.4	9.8	10.1	6.7
<i>NCREIF-ODCE</i>	1.8	1.8	8.3	11.8	12.0	5.6
<i>NCREIF Property Index</i>	1.6	1.6	7.3	10.6	10.7	6.7
Total Alternatives	1.4	1.4	7.4	10.0	10.9	8.2
<i>S&P 500 Index +4% (Lagged)</i>	4.8	4.8	16.4	13.2	19.2	11.2
Total Opportunistic	7.8	7.8	18.8	2.8	7.6	--
<i>CPI + 4%</i>	2.0	2.0	6.5	5.1	5.3	--



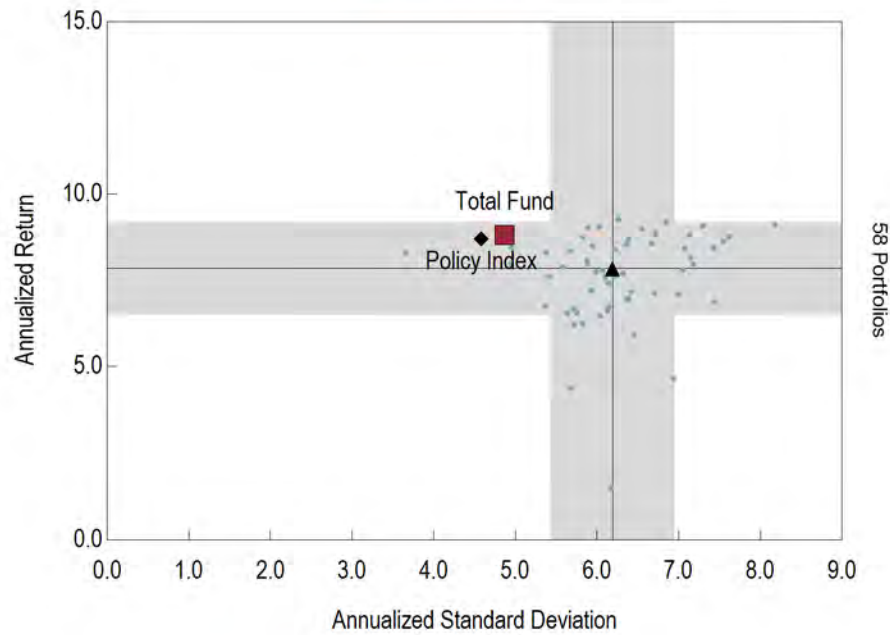
Policy Index (12/1/2016 -present): 22.9% Russell 3000, 11% MSCI ACWI ex-US (Gross), 10.9% MSCI ACWI (Net), 22.4% BBgBarc 1-3 Yr Gov/Credit, 3.2% BBgBarc US Aggregate, 1.7% BofA High Yield Master II +2%, 5.1% BofA High Yield Master II, 1% Wilshire REIT, 1.7% NCREIF Property Index, 6.8% NCREIF ODCE Index, 3.6% CPI +4%, 8.1% S&P 500 +4%, 1.6% 90-day T-Bills.
Policy Index (4/1/2012-11/30/16): 27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% BBgBarc U.S. Aggregate, 5% BofA High Yield Master II, 4% BBgBarc Global Aggregate, 5.4% Wilshire REIT, 6.75% NCREIF Property Index, 1.35% FTSE/EPRA NAREIT Developed exUS, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
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
Risk Analysis - 5 Years (Gross of Fees)

Period Ending: March 31, 2017

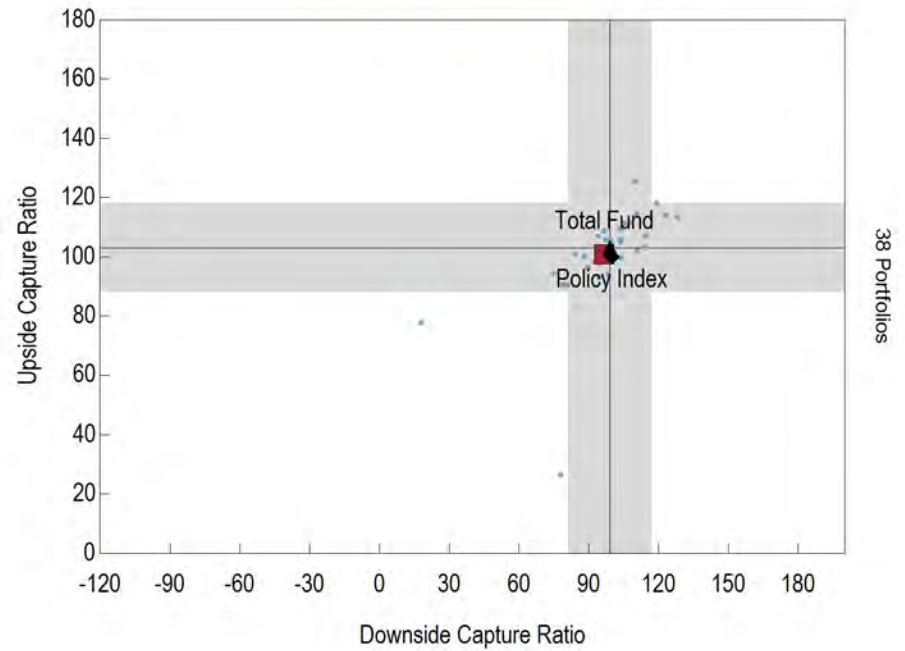
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Total Fund	8.80%	0.10%	4.87%	-0.16%	1.03	1.18%	0.94	1.78	0.09	100.72%	96.59%

Risk vs. Return



- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB > \$1B Gross

Up Markets vs. Down Markets



- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB > \$1B Gross

Total Fund Performance Summary (Gross of Fees)

Period Ending: March 31, 2017

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012
Total Fund	7,712,495,433	100.0	3.6	3.6	9.9	6.5	8.8	6.1	7.4	2.7	8.4	16.4	14.3
Policy Index			3.9	3.9	10.3	6.4	8.7	--	8.8	0.6	9.0	15.6	14.6
InvestorForce Public DB > \$1B Gross Rank			88	88	92	13	15	15	74	5	6	33	13
Total Fund ex Overlay	7,697,494,437	99.8	3.6	3.6	9.9	6.5	8.8	6.1	7.4	2.7	8.4	16.4	14.3
Policy Index			3.9	3.9	10.3	6.4	8.7	--	8.8	0.6	9.0	15.6	14.6
InvestorForce Public DB > \$1B Gross Rank			88	88	92	13	15	15	74	5	6	33	13
Total Domestic Equity	1,657,292,275	21.5	5.5	5.5	18.2	9.1	13.2	8.1	11.5	1.1	11.4	36.2	18.2
Russell 3000			5.7	5.7	18.1	9.8	13.2	7.5	12.7	0.5	12.6	33.6	16.4
eA US All Cap Equity Gross Rank			51	51	43	34	36	47	48	36	36	41	24
Intech Large Cap Core	295,249,123	3.8	6.5	6.5	13.1	10.1	13.6	7.5	7.7	3.8	14.7	32.7	15.3
S&P 500			6.1	6.1	17.2	10.4	13.3	7.5	12.0	1.4	13.7	32.4	16.0
eA US Large Cap Core Equity Gross Rank			30	30	84	34	26	68	79	16	31	54	54
PIMCO Stocks+ Absolute Return	162,127,939	2.1	7.4	7.4	23.6	11.1	14.2	8.1	16.2	-1.2	13.6	31.4	20.6
S&P 500			6.1	6.1	17.2	10.4	13.3	7.5	12.0	1.4	13.7	32.4	16.0
eA US Large Cap Core Equity Gross Rank			10	10	2	13	14	42	6	73	45	68	4
Jackson Square Partners	335,321,965	4.3	7.6	7.6	9.5	7.4	11.1	8.6	-4.4	6.1	13.9	35.4	16.9
Russell 1000 Growth			8.9	8.9	15.8	11.3	13.3	9.1	7.1	5.7	13.0	33.5	15.3
eA US Large Cap Growth Equity Gross Rank			76	76	97	90	85	59	98	37	31	40	37
Robeco Boston Partners	355,612,393	4.6	4.1	4.1	19.9	7.8	13.4	8.1	15.1	-3.9	12.0	37.4	21.6
Russell 1000 Value			3.3	3.3	19.2	8.7	13.1	5.9	17.3	-3.8	13.5	32.5	17.5
eA US Large Cap Value Equity Gross Rank			44	44	29	65	35	20	50	65	55	24	5
Emerald Advisers	263,593,183	3.4	4.9	4.9	23.0	7.7	13.7	9.6	10.1	4.1	7.3	50.3	18.5
Russell 2000 Growth			5.3	5.3	23.0	6.7	12.1	8.1	11.3	-1.4	5.6	43.3	14.6
eA US Small Cap Growth Equity Gross Rank			71	71	52	42	32	33	54	19	21	27	22
Ceredex	245,387,672	3.2	1.6	1.6	22.1	8.9	13.5	--	29.8	-4.4	3.3	36.5	19.0
Russell 2000 Value			-0.1	-0.1	29.4	7.6	12.5	--	31.7	-7.5	4.2	34.5	18.1
eA US Small Cap Value Equity Gross Rank			33	33	75	42	53	--	32	52	74	66	38
Total International Equity	1,166,675,868	15.1	6.5	6.5	7.8	2.2	6.1	0.7	1.2	-1.2	0.3	17.8	18.5
MSCI ACWI ex USA Gross			8.0	8.0	13.7	1.0	4.8	1.8	5.0	-5.3	-3.4	15.8	17.4
MSCI EAFE Gross			7.4	7.4	12.2	1.0	6.3	1.5	1.5	-0.4	-4.5	23.3	17.9
eA All ACWI ex-US Equity Gross Rank			90	90	83	46	59	96	62	61	17	69	63
International Equity	864,872,262	11.2	7.1	7.1	8.3	2.4	6.2	0.8	1.2	-1.2	0.3	17.8	18.5
MSCI ACWI ex USA Gross			8.0	8.0	13.7	1.0	4.8	1.8	5.0	-5.3	-3.4	15.8	17.4
eA All ACWI ex-US Equity Gross Rank			84	84	78	44	57	96	62	61	17	69	63

Individual closed end funds are not shown in performance summary table. PIMCO RAE EM funded 2/28/2017. JPM Global liquidated 2/28/2017. Goldman Sachs has \$53,939 of residual cash. JPM Global has \$207,066 of residual cash. Lazard has \$1,066,615 of residual cash. 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
Performance Summary (Gross of Fees)

Period Ending: March 31, 2017

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012
Pyrford	431,435,595	5.6	6.8	6.8	7.7	--	--	--	3.4	-2.9	--	--	--
<i>MSCI ACWI ex USA Value</i>			6.7	6.7	16.7	--	--	--	8.9	-10.1	--	--	--
<i>eA ACWI ex-US Value Equity Gross Rank</i>			76	76	97	--	--	--	74	59	--	--	--
William Blair	433,436,667	5.6	7.4	7.4	9.0	1.8	6.6	--	-1.4	0.5	-1.2	20.9	24.3
<i>MSCI ACWI ex USA Growth</i>			9.1	9.1	9.6	1.5	4.8	--	0.1	-1.3	-2.6	15.5	16.7
<i>eA ACWI ex-US Growth Equity Gross Rank</i>			90	90	61	66	53	--	55	69	37	44	6
Emerging Markets Equity	301,803,606	3.9	--	--	--	--	--	--	--	--	--	--	--
<i>MSCI Emerging Markets</i>			--	--	--	--	--	--	--	--	--	--	--
<i>eA Emg Mkts Equity Gross Rank</i>			--	--	--	--	--	--	--	--	--	--	--
PIMCO RAE Emerging Markets	301,803,606	3.9	--	--	--	--	--	--	--	--	--	--	--
<i>MSCI Emerging Markets</i>			--	--	--	--	--	--	--	--	--	--	--
<i>eA Emg Mkts Equity Gross Rank</i>			--	--	--	--	--	--	--	--	--	--	--
Total Global Equity	720,542,302	9.3	8.0	8.0	15.9	7.4	9.6	--	7.6	2.2	5.2	23.7	11.1
<i>MSCI ACWI</i>			6.9	6.9	15.0	5.1	8.4	--	7.9	-2.4	4.2	22.8	16.1
<i>eA All Global Equity Gross Rank</i>			25	25	32	23	52	--	45	31	44	64	90
Artisan Partners	354,730,907	4.6	10.6	10.6	17.5	9.8	--	--	5.6	9.2	3.9	26.1	--
<i>MSCI ACWI</i>			6.9	6.9	15.0	5.1	--	--	7.9	-2.4	4.2	22.8	--
<i>eA All Global Equity Gross Rank</i>			6	6	21	6	--	--	61	4	56	51	--
First Eagle	341,363,170	4.4	5.6	5.6	13.9	6.1	8.7	--	11.7	0.2	4.5	17.9	13.9
<i>MSCI ACWI</i>			6.9	6.9	15.0	5.1	8.4	--	7.9	-2.4	4.2	22.8	16.1
<i>eA All Global Equity Gross Rank</i>			70	70	52	44	72	--	19	49	51	80	78
Intech Global Low Vol	24,241,159	0.3	5.2	5.2	5.7	8.1	--	--	6.5	4.1	11.2	24.2	--
<i>MSCI ACWI</i>			6.9	6.9	15.0	5.1	--	--	7.9	-2.4	4.2	22.8	--
<i>eA All Global Equity Gross Rank</i>			77	77	93	16	--	--	53	18	14	62	--
Total Domestic Fixed Income	1,931,688,956	25.0	0.7	0.7	2.6	4.1	4.5	5.5	4.8	1.7	7.3	1.3	9.7
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.4	0.4	0.7	1.0	0.9	2.3	1.3	0.7	0.8	0.6	1.3
<i>eA US Short Duration Fixed Inc Gross Rank</i>			24	24	10	1	1	1	2	3	1	14	1
Liquidity Program	1,552,013,914	20.1	0.5	0.5	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.4	0.4	--	--	--	--	--	--	--	--	--
<i>eA US Short Duration Fixed Inc Gross Rank</i>			57	57	--	--	--	--	--	--	--	--	--
DFA Short Credit	366,385,809	4.8	0.7	0.7	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.4	0.4	--	--	--	--	--	--	--	--	--
<i>eA US Short Duration Fixed Inc Gross Rank</i>			15	15	--	--	--	--	--	--	--	--	--

Individual closed end funds are not shown in performance summary table. PIMCO RAE EM funded 2/28/2017. JPM Global liquidated 2/28/2017. Goldman Sachs has \$53,939 of residual cash. JPM Global has \$207,066 of residual cash. Lazard has \$1,066,615 of residual cash. 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
Performance Summary (Gross of Fees)

Period Ending: March 31, 2017

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012
Insight Short Duration	753,966,122	9.8	0.5	0.5	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.4	0.4	--	--	--	--	--	--	--	--	--
<i>eA US Short Duration Fixed Inc Gross Rank</i>			57	57	--	--	--	--	--	--	--	--	--
Sit Short Duration	431,661,983	5.6	0.3	0.3	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Govt 1-3 Yr TR</i>			0.3	0.3	--	--	--	--	--	--	--	--	--
<i>eA US Short Duration Fixed Inc Gross Rank</i>			94	94	--	--	--	--	--	--	--	--	--
Risk Diversifying Fixed Income	236,812,426	3.1	0.9	0.9	0.4	3.2	2.7	4.6	2.4	1.6	6.6	-1.9	4.6
<i>BBgBarc US Aggregate TR</i>			0.8	0.8	0.4	2.7	2.3	4.3	2.6	0.6	6.0	-2.0	4.2
<i>eA US Core Fixed Inc Gross Rank</i>			54	54	79	35	61	72	87	15	25	78	82
AFL-CIO	236,812,426	3.1	0.9	0.9	0.4	3.2	2.7	4.6	2.4	1.6	6.6	-1.9	4.7
<i>BBgBarc US Aggregate TR</i>			0.8	0.8	0.4	2.7	2.3	4.3	2.6	0.6	6.0	-2.0	4.2
<i>eA US Core Fixed Inc Gross Rank</i>			54	54	79	35	61	66	87	15	25	78	80
Total High Yield	391,145,867	5.1	2.1	2.1	14.4	3.5	6.2	7.5	14.3	-3.5	1.2	8.8	14.1
<i>BofA ML High Yield Master II</i>			2.7	2.7	16.9	4.6	6.8	7.3	17.5	-4.6	2.5	7.4	15.6
<i>eA US High Yield Fixed Inc Gross Rank</i>			70	70	47	77	68	40	47	68	83	28	73
Allianz Global Investors	391,145,867	5.1	2.1	2.1	14.4	3.5	6.2	7.5	14.3	-3.5	1.2	8.8	14.1
<i>BofA ML High Yield Master II</i>			2.7	2.7	16.9	4.6	6.8	7.3	17.5	-4.6	2.5	7.4	15.6
<i>eA US High Yield Fixed Inc Gross Rank</i>			70	70	47	77	68	40	47	68	83	28	73
Total Inflation Hedge	286,506,297	3.7	0.8	0.8	10.1	0.1	--	--	7.4	-4.9	-0.6	1.3	--
<i>CPI + 4%</i>			2.0	2.0	6.5	5.1	--	--	6.2	4.8	4.8	5.6	--
Wellington Real Total Return	188,564,267	2.4	0.6	0.6	8.1	-2.8	--	--	-0.1	-4.9	-2.5	--	--
<i>CPI + 4%</i>			2.0	2.0	6.5	5.1	--	--	6.2	4.8	4.8	--	--
Total Real Estate	697,639,011	9.0	2.3	2.3	5.9	11.2	12.5	4.3	5.5	13.5	20.6	10.5	16.7
<i>Real Estate Benchmark</i>			1.6	1.6	4.4	9.8	10.1	6.7	6.7	8.3	18.8	7.1	13.6
<i>NCREIF-ODCE</i>			1.8	1.8	8.3	11.8	12.0	5.6	8.8	15.0	12.5	13.9	10.9
<i>NCREIF Property Index</i>			1.6	1.6	7.3	10.6	10.7	6.7	8.0	13.3	11.8	11.0	10.5
Adelante	65,013,390	0.8	0.7	0.7	1.1	10.1	10.1	3.9	4.1	5.1	33.4	3.6	17.7
<i>Wilshire REIT</i>			0.0	0.0	2.0	10.2	9.8	4.4	7.2	4.2	31.8	1.9	17.6

Individual closed end funds are not shown in performance summary table. PIMCO RAE EM funded 2/28/2017. JPM Global liquidated 2/28/2017. Goldman Sachs has \$53,939 of residual cash. JPM Global has \$207,066 of residual cash. Lazard has \$1,066,615 of residual cash. 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 Performance Summary (Net of Fees)

Period Ending: March 31, 2017

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012
Total Fund	7,712,495,433	100.0	3.5	3.5	9.5	5.9	8.2	5.5	6.9	2.1	7.7	15.6	13.6
<i>Policy Index</i>			3.9	3.9	10.3	6.4	8.7	--	8.8	0.6	9.0	15.6	14.6
Total Fund ex Overlay	7,697,494,437	99.8	3.5	3.5	9.5	5.9	8.2	5.5	6.9	2.1	7.7	15.6	13.6
<i>Policy Index</i>			3.9	3.9	10.3	6.4	8.7	--	8.8	0.6	9.0	15.6	14.6
Total Domestic Equity	1,657,292,275	21.5	5.4	5.4	17.7	8.7	12.7	7.6	11.1	0.6	11.0	35.7	17.8
<i>Russell 3000</i>			5.7	5.7	18.1	9.8	13.2	7.5	12.7	0.5	12.6	33.6	16.4
Intech Large Cap Core	295,249,123	3.8	6.4	6.4	12.6	9.6	13.2	7.1	7.2	3.3	14.2	32.2	14.8
<i>S&P 500</i>			6.1	6.1	17.2	10.4	13.3	7.5	12.0	1.4	13.7	32.4	16.0
PIMCO Stocks+ Absolute Return	162,127,939	2.1	7.4	7.4	23.4	10.9	14.0	7.8	16.0	-1.4	13.2	31.0	20.3
<i>S&P 500</i>			6.1	6.1	17.2	10.4	13.3	7.5	12.0	1.4	13.7	32.4	16.0
Jackson Square Partners	335,321,965	4.3	7.5	7.5	9.1	6.9	10.6	8.2	-4.8	5.6	13.4	35.0	16.4
<i>Russell 1000 Growth</i>			8.9	8.9	15.8	11.3	13.3	9.1	7.1	5.7	13.0	33.5	15.3
Robeco Boston Partners	355,612,393	4.6	4.0	4.0	19.5	7.4	13.0	7.7	14.7	-4.2	11.6	37.0	21.2
<i>Russell 1000 Value</i>			3.3	3.3	19.2	8.7	13.1	5.9	17.3	-3.8	13.5	32.5	17.5
Emerald Advisers	263,593,183	3.4	4.8	4.8	22.3	7.0	13.0	8.9	9.4	3.5	6.6	49.4	17.8
<i>Russell 2000 Growth</i>			5.3	5.3	23.0	6.7	12.1	8.1	11.3	-1.4	5.6	43.3	14.6
Ceredex	245,387,672	3.2	1.5	1.5	21.4	8.3	12.9	--	29.1	-5.0	2.7	35.8	18.6
<i>Russell 2000 Value</i>			-0.1	-0.1	29.4	7.6	12.5	--	31.7	-7.5	4.2	34.5	18.1
Total International Equity	1,166,675,868	15.1	6.4	6.4	7.3	1.8	5.7	0.2	0.8	-1.6	0.0	17.4	17.9
<i>MSCI ACWI ex USA Gross</i>			8.0	8.0	13.7	1.0	4.8	1.8	5.0	-5.3	-3.4	15.8	17.4
<i>MSCI EAFE Gross</i>			7.4	7.4	12.2	1.0	6.3	1.5	1.5	-0.4	-4.5	23.3	17.9
International Equity	864,872,262	11.2	7.0	7.0	7.9	2.0	5.8	0.4	0.8	-1.6	0.0	17.4	18.0
<i>MSCI ACWI ex USA Gross</i>			8.0	8.0	13.7	1.0	4.8	1.8	5.0	-5.3	-3.4	15.8	17.4
Pyrford	431,435,595	5.6	6.7	6.7	7.3	--	--	--	3.0	-3.3	--	--	--
<i>MSCI ACWI ex USA Value</i>			6.7	6.7	16.7	--	--	--	8.9	-10.1	--	--	--
William Blair	433,436,667	5.6	7.3	7.3	8.6	1.4	6.2	--	-1.8	0.0	-1.7	20.4	23.7
<i>MSCI ACWI ex USA Growth</i>			9.1	9.1	9.6	1.5	4.8	--	0.1	-1.3	-2.6	15.5	16.7
Emerging Markets Equity	301,803,606	3.9	--	--	--	--	--	--	--	--	--	--	--
<i>MSCI Emerging Markets</i>			--	--	--	--	--	--	--	--	--	--	--
PIMCO RAE Emerging Markets	301,803,606	3.9	--	--	--	--	--	--	--	--	--	--	--
<i>MSCI Emerging Markets</i>			--	--	--	--	--	--	--	--	--	--	--
Total Global Equity	720,542,302	9.3	7.8	7.8	15.1	6.7	8.9	--	6.9	1.6	4.5	22.9	10.6
<i>MSCI ACWI</i>			6.9	6.9	15.0	5.1	8.4	--	7.9	-2.4	4.2	22.8	16.1
Artisan Partners	354,730,907	4.6	10.4	10.4	16.6	8.9	--	--	4.8	8.4	3.1	25.2	--
<i>MSCI ACWI</i>			6.9	6.9	15.0	5.1	--	--	7.9	-2.4	4.2	22.8	--

Individual closed end funds are not shown in performance summary table. PIMCO RAE EM funded 2/28/2017. JPM Global liquidated 2/28/2017. Goldman Sachs has \$53,939 of residual cash. JPM Global has \$207,066 of residual cash. Lazard has \$1,066,615 of residual cash. 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
Performance Summary (Net of Fees)

Period Ending: March 31, 2017

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012
First Eagle	341,363,170	4.4	5.4	5.4	13.0	5.3	7.9	--	10.9	-0.6	3.7	17.1	13.1
<i>MSCI ACWI</i>			6.9	6.9	15.0	5.1	8.4	--	7.9	-2.4	4.2	22.8	16.1
Intech Global Low Vol	24,241,159	0.3	5.1	5.1	5.4	7.8	--	--	6.3	3.9	10.8	23.8	--
<i>MSCI ACWI</i>			6.9	6.9	15.0	5.1	--	--	7.9	-2.4	4.2	22.8	--
Total Domestic Fixed Income	1,931,688,956	25.0	0.6	0.6	2.3	3.7	4.1	5.0	4.4	1.4	6.7	0.9	9.2
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.4	0.4	0.7	1.0	0.9	2.3	1.3	0.7	0.8	0.6	1.3
Liquidity Program	1,552,013,914	20.1	0.5	0.5	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.4	0.4	--	--	--	--	--	--	--	--	--
DFA Short Credit	366,385,809	4.8	0.7	0.7	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.4	0.4	--	--	--	--	--	--	--	--	--
Insight Short Duration	753,966,122	9.8	0.5	0.5	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.4	0.4	--	--	--	--	--	--	--	--	--
Sit Short Duration	431,661,983	5.6	0.3	0.3	--	--	--	--	--	--	--	--	--
<i>BBgBarc US Govt 1-3 Yr TR</i>			0.3	0.3	--	--	--	--	--	--	--	--	--
Risk Diversifying Fixed Income	236,812,426	3.1	0.8	0.8	0.0	2.7	2.3	4.2	1.9	1.1	6.1	-2.4	4.3
<i>BBgBarc US Aggregate TR</i>			0.8	0.8	0.4	2.7	2.3	4.3	2.6	0.6	6.0	-2.0	4.2
AFL-CIO	236,812,426	3.1	0.8	0.8	0.0	2.7	2.3	4.2	1.9	1.1	6.1	-2.4	4.3
<i>BBgBarc US Aggregate TR</i>			0.8	0.8	0.4	2.7	2.3	4.3	2.6	0.6	6.0	-2.0	4.2
Total High Yield	391,145,867	5.1	2.0	2.0	13.9	3.1	5.7	7.3	13.9	-3.9	0.8	8.4	13.7
<i>BofA ML High Yield Master II</i>			2.7	2.7	16.9	4.6	6.8	7.3	17.5	-4.6	2.5	7.4	15.6
Allianz Global Investors	391,145,867	5.1	2.0	2.0	13.9	3.1	5.7	7.0	13.9	-3.9	0.8	8.4	13.6
<i>BofA ML High Yield Master II</i>			2.7	2.7	16.9	4.6	6.8	7.3	17.5	-4.6	2.5	7.4	15.6
Total Inflation Hedge	286,506,297	3.7	0.8	0.8	9.5	-0.7	--	--	6.5	-5.8	-1.5	0.3	--
<i>CPI + 4%</i>			2.0	2.0	6.5	5.1	--	--	6.2	4.8	4.8	5.6	--
Wellington Real Total Return	188,564,267	2.4	0.6	0.6	7.7	-3.3	--	--	-0.6	-5.4	-3.1	--	--
<i>CPI + 4%</i>			2.0	2.0	6.5	5.1	--	--	6.2	4.8	4.8	--	--
Total Real Estate	697,639,011	9.0	2.3	2.3	5.4	10.3	11.3	3.3	4.8	12.4	19.1	8.9	15.7
<i>Real Estate Benchmark</i>			1.6	1.6	4.4	9.8	10.1	6.7	6.7	8.3	18.8	7.1	13.6
<i>NCREIF-ODCE</i>			1.8	1.8	8.3	11.8	12.0	5.6	8.8	15.0	12.5	13.9	10.9
<i>NCREIF Property Index</i>			1.6	1.6	7.3	10.6	10.7	6.7	8.0	13.3	11.8	11.0	10.5
Adelante	65,013,390	0.8	0.6	0.6	0.6	9.6	9.6	3.4	3.6	4.6	32.7	3.0	17.2
<i>Wilshire REIT</i>			0.0	0.0	2.0	10.2	9.8	4.4	7.2	4.2	31.8	1.9	17.6

Individual closed end funds are not shown in performance summary table. PIMCO RAE EM funded 2/28/2017. JPM Global liquidated 2/28/2017. Goldman Sachs has \$53,939 of residual cash. JPM Global has \$207,066 of residual cash. Lazard has \$1,066,615 of residual cash. 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
Closed End Funds - Investment Summary

Period Ending: March 31, 2017

Verus Internal Analysis												
Inception Date	Manager Name/Fund Name	Estimated Market Value as of 3/31/17 ³	Total Commitment	% Called	Capital Called	Current Qtr. Capital Called	Current Qtr. Distributions	Total Distributions ⁴	Remaining Commitment	Distrib./Paid-In (DPI) ¹	Tot. Value/Paid-In (TVPI) ²	Latest Valuation
Fixed Income												
07/01/2006	Torchlight II	\$44,245,068	\$128,000,000	100%	\$128,000,000	\$0	\$0	\$158,211,379	\$0	1.24	1.58	03/31/2017
12/12/2008	Torchlight III	\$10,932,825	\$75,000,000	100%	\$75,000,000	\$0	\$0	\$99,100,375	\$0	1.32	1.47	03/31/2017
08/01/2012	Torchlight IV	\$65,144,507	\$60,000,000	100%	\$60,000,000	\$0	\$1,000,049	\$38,092,552	\$0	0.63	1.72	03/31/2017
03/12/2015	Torchlight V	\$20,435,415	\$75,000,000	25%	\$18,749,912	\$0	\$0	\$0	\$56,250,088	0.00	1.09	12/31/2016
Total Fixed Income		\$140,757,815										
% of Portfolio (Market Value)		1.8%										
Inflation Hedge												
11/27/2013	Aether Real Assets III	\$16,621,122	\$25,000,000	62%	\$15,443,873	\$1,305,522	\$118,824	\$439,354	\$9,985,669	0.03	1.10	09/30/2016
11/27/2013	Aether Real Assets III Surplus	\$38,317,888	\$50,000,000	71%	\$35,284,534	\$1,666,388	\$107,953	\$471,878	\$15,138,852	0.01	1.10	09/30/2016
03/16/2016	Aether Real Assets IV	\$5,768,181	\$50,000,000	12%	\$6,101,236	\$139,272	\$70,912	\$70,912	\$43,898,764	0.01	0.96	09/30/2016
06/28/2013	Commonfund	\$37,234,839	\$50,000,000	65%	\$32,500,000	\$2,375,000	\$0	\$0	\$17,500,000	0.00	1.15	12/31/2016
Total Inflation Hedge		\$97,942,030										
% of Portfolio (Market Value)		1.3%										
Opportunistic												
02/18/2010	Oaktree PIF 2009 ³	\$14,469,580	\$40,000,000	87%	\$34,800,000	\$0	\$3,000,000	\$32,238,579	\$6,308,960	0.93	1.34	03/31/2017
09/24/2015	Angelo Gordon Energy Credit Opp.	\$18,529,984	\$75,000,000	25%	\$18,750,000	\$0	\$4,639,566	\$4,639,566	\$56,250,000	0.25	1.24	12/31/2016
12/08/2015	Wastewater Opportunity Fund	\$2,741,716	\$25,000,000	15%	\$3,700,210	\$0	\$0	\$0	\$21,299,790	0.00	0.74	12/31/2016
Total Opportunistic		\$35,741,280										
% of Portfolio (Market Value)		0.5%										

¹(DPI) is equal to (capital returned / capital called)

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

³Latest valuation + capital calls - distributions

⁴Total distributions may contain callable capital

Total Fund
Closed End Funds - Investment Summary

Period Ending: March 31, 2017

Verus Internal Analysis												
Inception Date	Manager Name/Fund Name	Estimated Market Value as of 3/31/17 ³	Total Commitment	Total % Called	Capital Called	Current Qtr. Capital Called	Current Qtr. Distributions	Total Distributions ⁶	Remaining Commitment	Distrib./Paid-In (DPI) ¹	Tot. Value/Paid-In (TVPI) ²	Latest Valuation
Real Estate												
01/23/2012	Angelo Gordon Realty Fund VIII	\$47,978,659	\$80,000,000	94%	\$75,401,855	\$0	\$4,600,000	\$67,752,397	\$12,334,302	0.90	1.53	12/31/2016
12/08/2014	Angelo Gordon Realty Fund IX	\$31,552,221	\$65,000,000	46%	\$29,737,500	\$0	\$0	\$0	\$35,262,500	0.00	1.06	12/31/2016
06/23/2005	DLJ RECP III	\$31,688,158	\$75,000,000	95%	\$70,968,662	\$0	\$0	\$67,876,642	\$4,031,338	0.96	1.40	12/31/2016
02/11/2008	DLJ RECP IV	\$87,114,229	\$100,000,000	91%	\$90,943,569	\$0	\$0	\$56,595,635	\$9,056,431	0.62	1.58	12/31/2016
07/01/2014	DLJ RECP V	\$33,042,702	\$75,000,000	67%	\$50,552,862	\$0	\$0	\$35,722,220	\$43,777,551	0.71	1.36	12/31/2016
06/17/1998	Hearthstone II ⁴	\$2,396	\$25,000,000	80%	\$19,925,048	\$0	\$0	\$19,952,734	\$2,527,686	1.00	1.00	12/31/2016
02/01/2005	Invesco Real Estate I	\$91,295	\$50,000,000	92%	\$46,241,947	\$0	\$0	\$50,000,907	\$3,758,053	1.08	1.08	03/31/2017
11/26/2007	Invesco Real Estate II	\$456,972	\$85,000,000	92%	\$78,202,813	\$0	\$0	\$100,620,489	\$6,797,187	1.29	1.29	03/31/2017
06/30/2013	Invesco Real Estate III	\$22,207,994	\$35,000,000	88%	\$30,685,961	\$0	\$0	\$22,527,850	\$4,314,039	0.73	1.46	03/31/2017
06/30/2014	Invesco Real Estate IV	\$13,351,459	\$35,000,000	46%	\$16,083,610	\$0	\$1,982,492	\$4,729,246	\$23,645,636	0.29	1.12	03/31/2017
07/16/2013	LaSalle Income & Growth VI	\$40,015,988	\$75,000,000	95%	\$71,428,571	\$0	\$21,650,314	\$59,957,237	\$3,571,429	0.84	1.40	12/31/2016
02/28/2017	LaSalle Income & Growth VII	\$39,650,138	\$75,000,000	52%	\$38,895,582	\$38,895,582	\$0	\$0	\$36,104,418	0.00	1.02	03/31/2017
03/30/2007	Long Wharf Fund III	\$4,349,673	\$75,000,000	89%	\$66,940,230	\$0	\$1,627,290	\$85,090,253	\$8,059,770	1.27	1.34	03/31/2017
07/03/2013	Long Wharf Fund IV	\$22,113,856	\$25,000,000	100%	\$25,000,000	\$0	\$887,749	\$10,712,172	\$0	0.43	1.31	03/31/2017
09/30/2016	Long Wharf Fund V	\$12,920,157	\$50,000,000	27%	\$13,681,024	\$0	\$0	\$571,233	\$36,318,976	0.04	0.99	03/31/2017
12/31/2011	Oaktree REOF V	\$18,784,881	\$50,000,000	100%	\$50,000,000	\$0	\$1,500,000	\$63,250,000	\$25,750,000	1.27	1.64	03/31/2017
09/30/2013	Oaktree REOF VI ⁵	\$72,931,079	\$80,000,000	100%	\$80,000,000	\$0	\$1,600,000	\$32,800,000	\$18,400,000	0.41	1.32	03/31/2017
04/01/2015	Oaktree REOF VII	\$5,190,998	\$65,000,000	10%	\$6,500,000	\$0	\$1,789,193	\$1,789,193	\$60,289,193	0.28	1.07	03/31/2017
11/10/2013	Paulson Real Estate Fund II	\$24,800,430	\$20,000,000	85%	\$17,007,123	\$0	\$0	\$0	\$2,992,877	0.00	1.46	12/31/2016
01/25/2012	Siguler Guff DREOF	\$56,100,818	\$75,000,000	93%	\$69,375,000	\$0	\$2,474,500	\$49,231,153	\$5,625,000	0.71	1.52	09/30/2016
08/31/2013	Siguler Guff DREOF II	\$53,482,016	\$70,000,000	73%	\$51,345,000	\$0	\$40,000	\$3,861,436	\$18,655,000	0.08	1.12	09/30/2016
01/27/2016	Siguler Guff DREOF II Co-Inv	\$14,799,501	\$25,000,000	58%	\$14,500,362	\$850,000	\$0	\$0	\$10,499,638	0.00	1.02	09/30/2016
Total Closed End Real Estate		\$632,625,620	\$1,310,000,000	77%	\$1,013,416,719	\$39,745,582	\$38,151,538	\$733,040,798	\$371,771,024	0.37	0.99	
% of Portfolio (Market Value)		8.2%										

¹(DPI) is equal to (capital returned / capital called)

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

³Latest valuation + capital calls - distributions

⁴No further capital to be called

⁵Actual capital called is \$85,600,000 which includes recallable distributions

⁶Total distributions may include recallable distributions

Total Fund
Closed End Funds - Investment Summary

Period Ending: March 31, 2017

Verus Internal Analysis												
Inception Date	Manager Name/Fund Name	Estimated Market Value as of 3/31/17 ³	Total Commitment	Total % Called	Capital Called	Current Qtr. Capital Called	Current Qtr. Distributions	Total Distributions	Remaining Commitment	Distrib./Paid-In (DPI) ¹	Tot. Value/Paid-In (TVPI) ²	Latest Valuation
Private Equity & Venture Capital												
03/18/1996	Adams Street Partners	\$125,652,313	\$210,000,000	75%	\$158,084,125	\$2,505,000	\$3,541,415	\$92,401,995	\$51,915,875	0.58	1.38	12/31/2016
01/16/2009	Adams Street Partners II	\$13,410,721	\$30,000,000	95%	\$28,365,000	\$0	\$899,233	\$32,373,237	\$1,635,000	1.14	1.61	12/31/2016
09/21/2012	Adams Street Partners - Fund 5	\$22,565,194	\$40,000,000	71%	\$28,451,900	\$680,000	\$0	\$7,474,771	\$11,548,100	0.26	1.06	12/31/2016
01/18/1996	Adams Street Partners - BPF	\$4,267,196	\$59,565,614	97%	\$57,517,409	\$0	\$0	\$99,836,142	\$2,048,205	1.74	1.81	12/31/2016
06/14/2004	Bay Area Equity Fund	\$3,150,339	\$10,000,000	100%	\$10,000,000	\$0	\$0	\$36,331,243	\$0	3.63	3.95	12/31/2016
12/07/2009	Bay Area Equity Fund II	\$8,667,308	\$10,000,000	100%	\$10,000,000	\$0	\$0	\$2,026,313	\$0	0.20	1.07	12/31/2016
11/26/2003	EIF US Power Fund I	\$756,033	\$30,000,000	100%	\$30,000,000	\$0	\$0	\$64,404,030	\$0	2.15	2.17	12/31/2016
08/16/2005	EIF US Power Fund II	\$37,777,105	\$50,000,000	100%	\$50,000,000	\$0	\$2,051,362	\$46,968,132	\$0	0.94	1.69	12/31/2016
05/30/2007	EIF US Power Fund III	\$46,690,188	\$65,000,000	100%	\$65,000,000	\$0	\$21,021,558	\$53,530,231	\$0	0.82	1.54	12/31/2016
11/28/2011	EIF US Power Fund IV ⁴	\$51,940,150	\$50,000,000	112%	\$55,770,845	\$8,888,362	\$0	\$17,817,527	\$6,308,439	0.32	1.25	12/31/2016
11/28/2016	EIF US Power Fund V	\$11,072,990	\$50,000,000	23%	\$11,439,268	\$0	\$366,278	-\$366,278	\$38,560,732	-0.03	0.94	12/31/2016
05/24/2011	Pathway 6	\$32,835,747	\$40,000,000	77%	\$30,798,498	\$660,130	\$1,240,766	\$5,878,219	\$9,201,502	0.19	1.26	12/31/2016
02/07/2013	Pathway 7	\$41,950,468	\$70,000,000	61%	\$42,510,214	\$4,162,537	\$488,735	\$3,241,633	\$27,489,786	0.08	1.06	12/31/2016
11/23/2015	Pathway 8	\$13,564,239	\$50,000,000	28%	\$13,753,120	\$551,770	\$69,308	\$493,583	\$36,246,880	0.04	1.02	12/31/2016
11/09/1998	Pathway	\$33,479,246	\$125,000,000	98%	\$121,930,204	\$96,030	\$3,398,920	\$147,242,459	\$3,069,796	1.21	1.48	12/31/2016
12/26/2008	Pathway 2008	\$24,037,201	\$30,000,000	87%	\$26,087,993	\$0	\$621,709	\$11,516,012	\$3,912,007	0.44	1.36	12/31/2016
01/31/2008	Carpenter Bancfund	\$30,788,485	\$30,000,000	97%	\$29,239,890	\$0	\$0	\$17,137,848	\$979,075	0.59	1.64	12/31/2016
02/15/2004	Nogales	\$46,055	\$15,000,000	99%	\$14,805,103	\$0	\$0	\$12,314,799	\$111,251	0.83	0.83	12/31/2016
11/30/2007	Paladin III	\$24,754,964	\$25,000,000	98%	\$24,384,152	\$0	\$0	\$15,604,222	\$1,517,012	0.64	1.66	12/31/2016
06/11/2014	Ocean Avenue Fund II	\$16,758,409	\$30,000,000	60%	\$18,000,000	\$0	\$0	\$1,489,938	\$12,000,000	0.08	1.01	12/31/2016
04/15/2016	Ocean Avenue Fund III	\$7,120,428	\$50,000,000	15%	\$7,500,000	\$0	\$0	\$0	\$42,500,000	0.00	0.95	12/31/2016
06/03/2014	Siguler Guff CCCERA Opportunities	\$94,926,550	\$200,000,000	42%	\$84,502,500	\$14,000,000	\$0	\$5,712,984	\$115,497,500	0.07	1.19	09/30/2016
11/30/2016	Siguler Guff Secondary Opportunities	\$4,317,634	\$50,000,000	17%	\$8,250,000	\$0	\$0	\$4,407,569	\$41,750,000	0.53	1.06	09/30/2016
Total Private Equity and Venture Capital		\$650,528,963	\$1,319,565,614	70%	\$918,140,221	\$31,543,830	\$33,699,283	\$677,836,608	\$406,291,160	0.74	1.45	
% of Portfolio (Market Value)		8.4%										

¹(DPI) is equal to (capital returned / capital called)

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

³Latest valuation + capital calls - distributions

⁴EIF IV has \$12,677,767 of recallable distributions

Total Fund
Closed End Funds - IRR Summary

Period Ending: March 31, 2017

Fixed Income	Inception	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Torchlight II	07/01/2006	-0.3%	-0.1%	-1.7%	-1.4%	12/31/2016
Torchlight III	12/12/2008	17.9%	18.0%	13.7%	13.8%	12/31/2016
Torchlight IV	08/01/2012	12.9%	13.6%	10.0%	10.9%	12/31/2016
Torchlight V	03/12/2015	24.7%	24.1%	9.0%	9.6%	09/30/2016
Inflation Hedge	Inception	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Aether Real Assets III ⁴	11/27/2013	14.9%	14.9%	10.0%	10.0%	09/30/2016
Aether Real Assets III Surplus ⁴	11/27/2013	10.5%	10.5%	7.9%	7.9%	09/30/2016
Aether Real Assets IV ¹	01/01/2016	-	-	-	-	-
CommonFund ²	06/28/2013	11.8%	-	8.1%	8.2%	12/31/2016
Wastewater Opportunity Fund ¹	12/08/2015	-7.7%	-8.2%	-63.5%	-65.3%	09/30/2016
Opportunistic	Inception	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Oaktree PIF	02/18/2010	7.2%	-	7.0%	-	03/31/2017
Angelo Gordon Energy Cred Opp. ¹	09/24/2015	-	-	-	-	-
Real Estate	Inception	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Angelo Gordon VIII	01/23/2012	23.0%	-	16.0%	17.6%	12/31/2016
Angelo Gordon IX ¹	12/08/2014	-	-	-	-	-
DLJ RECP III	06/23/2005	2.0%	-	-	-	12/31/2016
DLJ RECP IV	02/11/2008	6.0%	-	-	3.0%	12/31/2016
DLJ RECP V ¹	07/01/2014	-	-	-	-	-
Hearthstone II	06/17/1998	-	30.1%	-	30.1%	09/30/2016
Invesco Fund I	02/01/2005	3.2%	-	1.6%	-	12/31/2016
Invesco Fund II	11/26/2007	8.2%	-	6.8%	-	12/31/2016
Invesco Fund III	06/30/2013	21.3%	23.3%	-	17.1%	03/31/2016
Invesco Fund IV	06/30/2014	16.0%	21.6%	-	14.8%	03/31/2016
LaSalle Income & Growth VI	07/16/2013	17.2%	-	14.1%	-	12/31/2016
LaSalle Income & Growth VII	02/28/2017	-	-	-	-	-
Long Wharf III	03/30/2007	9.6%	9.5%	7.5%	7.3%	03/31/2017
Long Wharf IV	07/03/2013	19.4%	18.7%	13.6%	12.6%	03/31/2017
Long Wharf V ¹	09/30/2016	9.4%	4.8%	-1.6%	-0.8%	03/31/2017
Oaktree REOF V	12/31/2011	17.5%	-	13.0%	-	03/31/2017
Oaktree REOF VI	09/30/2013	16.2%	-	10.8%	-	03/31/2017
Oaktree REOF VII ¹	04/01/2015	-	-	-	-	-
Paulson ¹	11/10/2013	-	-	-	-	-
Siguler Guff I	01/25/2012	-	-	-	14.1%	12/31/2016
Siguler Guff II	08/31/2013	-	-	-	7.6%	12/31/2016
Siguler Guff DREOF II Co-Inv ¹	01/27/2016	-	-	-	-	-

¹Manager has yet to report IRR figure due to no capital invested or meaningful distributions.

²Fund level data includes CCCERA and all other fund investors.

³Net IRR calculated after deductions of management fees and carried interest to the General Partner.

⁴Manager has reported IRR figures, but does not consider them to be meaningful, due to the age of the fund.

Total Fund
Closed End Funds - IRR Summary

Period Ending: March 31, 2017

Private Equity & Venture Capital	Inception	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Adams Street Partners	03/18/1996	-	11.7%	-	8.7%	03/31/2016
Adams Street Partners II	01/16/2009	-	18.7%	-	16.0%	03/31/2016
Adams Street Partners - Fund 5	09/21/2012	-	2.3%	-	-1.6%	12/31/2015
Adams Street Partners - BPF	01/18/1996	-	14.3%	-	11.6%	03/31/2016
Bay Area Equity Fund I	06/14/2004	31.3%	31.8%	23.4%	23.8%	09/30/2016
Bay Area Equity Fund II	12/07/2009	4.7%	4.5%	-0.2%	-0.2%	09/30/2016
Energy Investor Fund	11/26/2003	33.6%	34.7%	28.6%	28.4%	12/31/2016
Energy Investor Fund II	08/16/2005	8.0%	7.4%	5.3%	4.7%	12/31/2016
Energy Investor Fund III	05/30/2007	7.3%	7.3%	9.8%	9.8%	12/31/2016
Energy Investor Fund IV	11/28/2011	17.6%	18.0%	11.6%	11.3%	12/31/2016
Pathway 6	05/24/2011	13.2%	13.2%	9.0%	9.0%	06/30/2016
Benchmark ⁴		8.3%	-	-	-	06/30/2016
Pathway 7 ¹	02/07/2013	5.9%	5.9%	0.1%	0.1%	06/30/2016
Pathway 8 ¹	11/06/2015	-	-	-	-	-
Pathway Private Equity Fund	11/09/1998	10.1%	10.1%	8.3%	8.3%	06/30/2016
Benchmark ⁵		8.3%	-	-	-	06/30/2016
Pathway Private Equity Fund 2008	12/26/2008	12.6%	12.6%	9.3%	9.3%	06/30/2016
Benchmark ⁶		9.2%	-	-	-	06/30/2016
Carpenter Bancfund	01/31/2008	9.5%	9.4%	8.1%	8.0%	06/30/2016
Nogales	02/15/2004	-	-4.5%	-8.6%	-8.8%	03/31/2015
Paladin III	11/30/2007	15.7%	-	7.7%	7.4%	09/30/2016
Ocean Avenue II	06/11/2014	-	-	1.7%	-	06/30/2016
Ocean Avenue III	04/15/2016	-	-	-	-	-
Siguler Guff CCCERA Opportunities	06/03/2014	-	-	-	24.2%	12/31/2016
Siguler Guff Secondary Opportunities	11/30/2016	-	-	-	-	-

¹ Manager has yet to report IRR figure due to no capital invested or meaningful distributions.

² Fund level data includes CCCERA and all other fund investors.

³ Net IRR calculated after deductions of management fees and carried interest to the General Partner.

⁴ Private iQ global all private equity median pooled return for vintage years 2011-2014, as of March 31, 2015.

⁵ Private iQ global all private equity median pooled return for vintage years 1999-2011, as of March 31, 2015.

⁶ Private iQ global all private equity median pooled return for vintage years 2008-2014, as of March 31, 2015.

Total Fund
Performance Analysis - 3 Years (Net of Fees)

Period Ending: March 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
Intech Large Cap Core	9.65%	-0.72%	6.87%	1.62%	0.77	4.37%	0.65	1.38	-0.16	84.72%	58.84%
PIMCO Stocks+ Absolute Return	10.89%	0.52%	9.58%	-2.74%	1.31	2.90%	0.96	1.12	0.18	118.65%	158.51%
Jackson Square Partners	6.95%	-4.32%	11.14%	-7.64%	1.29	5.74%	0.77	0.61	-0.75	69.99%	136.22%
Robeco Boston Partners	7.45%	-1.22%	8.60%	-1.02%	0.98	3.00%	0.88	0.85	-0.41	86.35%	93.29%
Emerald Advisers	7.00%	0.29%	14.23%	0.54%	0.96	5.96%	0.83	0.48	0.05	94.99%	90.70%
Ceredex	8.28%	0.65%	12.14%	2.63%	0.74	7.25%	0.73	0.67	0.09	90.34%	77.52%
William Blair	1.36%	-0.19%	10.33%	0.00%	0.88	2.62%	0.95	0.12	-0.07	88.29%	91.15%
Artisan Partners	8.94%	3.86%	11.95%	3.02%	1.17	6.50%	0.72	0.73	0.59	136.06%	79.67%
First Eagle	5.34%	0.26%	7.15%	1.44%	0.77	3.26%	0.87	0.72	0.08	94.83%	84.70%
Intech Global Low Vol	7.83%	2.75%	6.84%	5.68%	0.42	7.64%	0.29	1.12	0.36	100.85%	39.79%
AFL-CIO	2.72%	0.03%	3.31%	0.18%	0.94	0.53%	0.98	0.77	0.06	97.93%	93.41%
Allianz Global Investors	3.14%	-1.48%	5.85%	-0.95%	0.88	1.34%	0.96	0.51	-1.11	79.86%	99.25%
Wellington Real Total Return	-3.34%	-8.43%	7.81%	-14.88%	2.27	7.24%	0.20	-0.45	-1.16	-30.44%	1,307.20%
Adelante	9.57%	-0.62%	12.16%	0.07%	0.93	2.07%	0.98	0.77	-0.30	92.09%	93.11%

Performance Analysis excludes closed end funds and those funds without 3 years of performance.

Total Fund
Performance Analysis - 5 Years (Net of Fees)

Period Ending: March 31, 2017

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
Intech Large Cap Core	13.16%	-0.14%	8.11%	1.14%	0.90	3.40%	0.83	1.61	-0.04	91.76%	63.19%
PIMCO Stocks+ Absolute Return	13.95%	0.65%	9.51%	-1.11%	1.13	2.36%	0.95	1.45	0.28	112.06%	129.98%
Jackson Square Partners	10.62%	-2.71%	11.52%	-5.66%	1.22	4.73%	0.86	0.91	-0.57	82.48%	121.74%
Robeco Boston Partners	13.01%	-0.12%	9.52%	-0.42%	1.02	2.91%	0.91	1.35	-0.04	100.70%	107.12%
Emerald Advisers	12.99%	0.89%	14.95%	0.13%	1.06	5.74%	0.86	0.86	0.16	109.39%	103.91%
Ceredex	12.94%	0.40%	11.87%	2.40%	0.84	6.00%	0.77	1.08	0.07	96.19%	85.61%
William Blair	6.20%	1.36%	10.54%	1.76%	0.92	2.62%	0.95	0.58	0.52	101.22%	85.83%
First Eagle	7.94%	-0.43%	6.98%	1.79%	0.73	3.27%	0.90	1.12	-0.13	86.56%	79.03%
AFL-CIO	2.30%	-0.04%	3.12%	0.02%	0.98	0.50%	0.97	0.70	-0.08	96.49%	94.88%
Allianz Global Investors	5.75%	-1.10%	5.06%	-0.37%	0.89	1.19%	0.96	1.11	-0.92	84.25%	94.55%
Adelante	9.56%	-0.20%	10.42%	0.68%	0.91	2.09%	0.97	0.91	-0.10	90.01%	83.13%

Performance Analysis excludes closed end funds and those funds without 5 years of performance.

Total Fund Investment Fund Fee Analysis

Period Ending: March 31, 2017

Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Intech Large Cap Core	Global Equity	0.50% of First \$100.0 Mil, 0.45% of Next \$100.0 Mil, 0.35% of Next \$100.0 Mil, 0.30% of Next \$200.0 Mil, 0.25% Thereafter	\$295,249,123	\$1,278,372	0.43%
PIMCO Stocks+ Absolute Return	Global Equity	0.15% of Assets	\$162,127,939	\$243,192	0.15%
Jackson Square Partners	Global Equity	0.50% of First \$100.0 Mil, 0.40% of Next \$150.0 Mil, 0.35% Thereafter	\$335,321,965	\$1,398,627	0.42%
Robeco Boston Partners	Global Equity	0.50% of First \$25.0 Mil, 0.30% Thereafter	\$355,612,393	\$1,116,837	0.31%
Emerald Advisers	Global Equity	0.75% of First \$10.0 Mil, 0.60% Thereafter	\$263,593,183	\$1,596,559	0.61%
Ceredex	Global Equity	0.85% of First \$10.0 Mil, 0.68% of Next \$40.0 Mil, 0.51% Thereafter	\$245,387,672	\$1,353,477	0.55%
Pyrford	Global Equity	0.70% of First \$50.0 Mil, 0.50% of Next \$50.0 Mil, 0.35% Thereafter	\$431,435,595	\$1,760,025	0.41%
William Blair	Global Equity	0.80% of First \$20.0 Mil, 0.60% of Next \$30.0 Mil, 0.50% of Next \$50.0 Mil, 0.45% of Next \$50.0 Mil, 0.40% of Next \$50.0 Mil, 0.30% Thereafter	\$433,436,667	\$1,715,310	0.40%
PIMCO RAE Emerging Markets	Global Equity	0.75% of First \$50.0 Mil, 0.68% of Next \$50.0 Mil, 0.50% of Next \$100.0 Mil, 0.45% Thereafter	\$301,803,606	\$1,670,616	0.55%
Artisan Partners	Global Equity	0.75% of Assets	\$354,730,907	\$2,660,482	0.75%
First Eagle	Global Equity	0.75% of Assets	\$341,363,170	\$2,560,224	0.75%
Intech Global Low Vol	Global Equity	0.25% of First \$100.0 Mil, 0.21% of Next \$100.0 Mil, 0.18% of Next \$100.0 Mil, 0.16% of Next \$200.0 Mil, 0.14% Thereafter	\$24,241,159	\$59,391	0.25%

Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

Total Fund
Investment Fund Fee Analysis

Period Ending: March 31, 2017

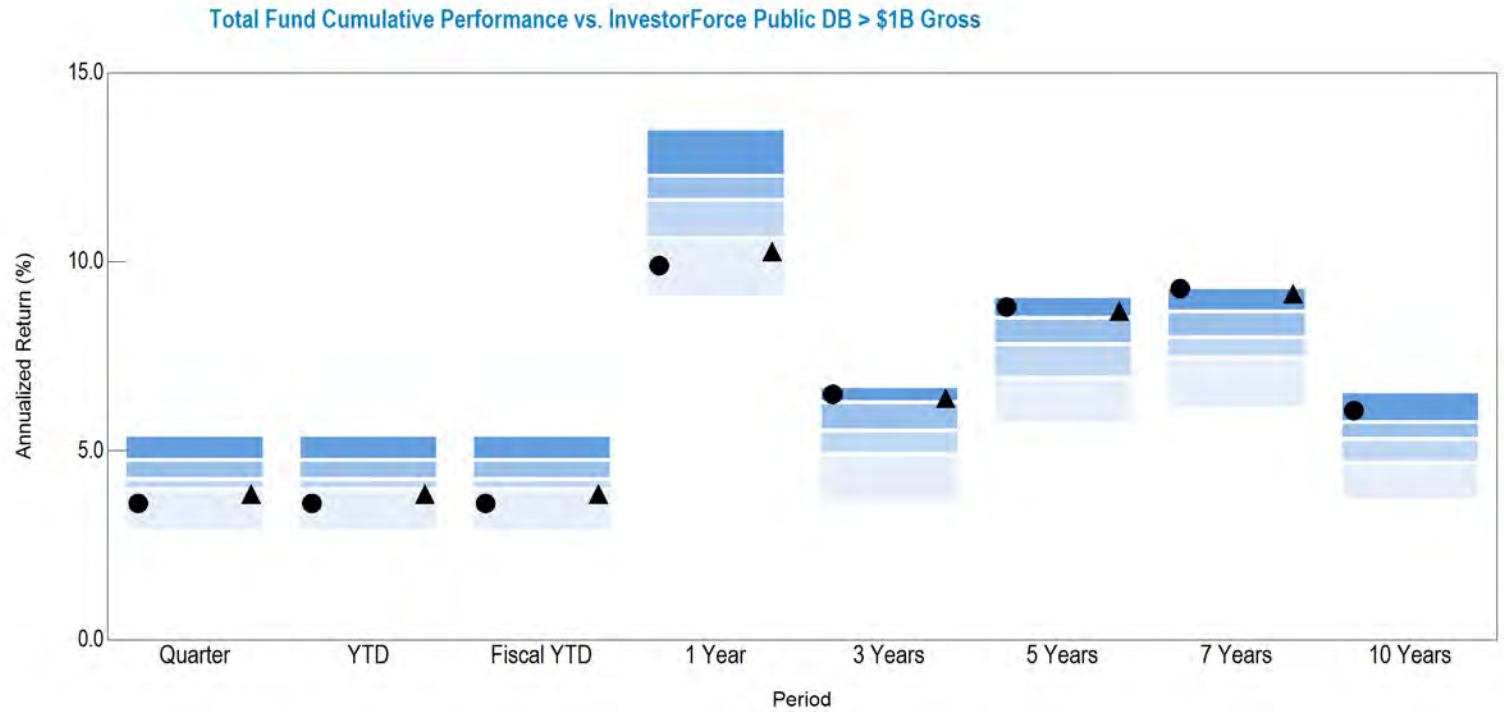
Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
DFA Short Credit	Global Fixed Income	0.20% of First \$25.0 Mil, 0.10% Thereafter	\$366,385,809	\$391,386	0.11%
Insight Short Duration	Global Fixed Income	0.06% of First \$500.0 Mil, 0.05% of Next \$500.0 Mil, 0.04% Thereafter	\$753,966,122	\$426,983	0.06%
Sit Short Duration	Global Fixed Income	0.15% of Assets	\$431,661,983	\$647,493	0.15%
AFL-CIO	Global Fixed Income	0.43% of Assets	\$236,812,426	\$1,018,293	0.43%
Allianz Global Investors	High Yield Fixed Income	0.50% of First \$50.0 Mil, 0.40% of Next \$50.0 Mil, 0.35% Thereafter	\$391,145,867	\$1,469,011	0.38%
Wellington Real Total Return	Inflation Hedge/Real Assets	0.55% of Assets	\$188,564,267	\$1,037,103	0.55%

Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

Total Fund

Peer Universe Comparison: Cumulative Performance (Gross of Fees)

Period Ending: March 31, 2017



	Quarter		YTD		Fiscal YTD		1 Year		3 Years		5 Years		7 Years		10 Years	
Return (Rank)																
5th Percentile	5.4	5.4	5.4	13.5	6.7	9.1	9.3	6.6								
25th Percentile	4.8	4.8	4.8	12.3	6.3	8.5	8.7	5.8								
Median	4.3	4.3	4.3	11.6	5.5	7.8	8.0	5.3								
75th Percentile	4.0	4.0	4.0	10.7	4.9	7.0	7.5	4.7								
95th Percentile	2.9	2.9	2.9	9.1	3.6	5.7	6.1	3.7								
# of Portfolios	79	79	79	72	61	58	50	49								
● Total Fund	3.6 (88)	3.6 (88)	3.6 (88)	9.9 (92)	6.5 (13)	8.8 (15)	9.3 (7)	6.1 (15)								
▲ Policy Index	3.9 (85)	3.9 (85)	3.9 (85)	10.3 (83)	6.4 (15)	8.7 (19)	9.2 (8)	-- (-)								

Total Fund

Peer Universe Comparison: Consecutive Periods (Gross of Fees)

Period Ending: March 31, 2017

Total Fund Consecutive Periods vs. InvestorForce Public DB > \$1B Gross



	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
5th Percentile	9.7	2.7	8.5	20.2	14.7	3.3	15.7	27.7	-21.0	11.0
25th Percentile	8.6	1.1	6.8	17.0	13.9	1.6	14.2	22.5	-24.9	9.5
Median	8.0	0.3	5.7	15.0	13.0	0.8	13.5	20.5	-26.7	8.6
75th Percentile	7.4	-0.7	4.9	12.0	12.1	0.1	12.5	18.1	-28.3	7.4
95th Percentile	5.5	-2.8	3.1	8.7	9.2	-0.9	10.2	13.4	-30.2	6.2
# of Portfolios	92	98	79	67	74	68	66	66	65	64
● Total Fund	7.4 (74)	2.7 (5)	8.4 (6)	16.4 (33)	14.3 (13)	2.7 (9)	14.0 (29)	21.9 (34)	-26.5 (48)	7.3 (78)
▲ Policy Index	8.8 (17)	0.6 (40)	9.0 (2)	15.6 (43)	14.6 (8)	2.8 (9)	14.1 (27)	-- (--)	-- (--)	-- (--)

Domestic Equity Managers

Intech Large Cap Core Manager Portfolio Overview

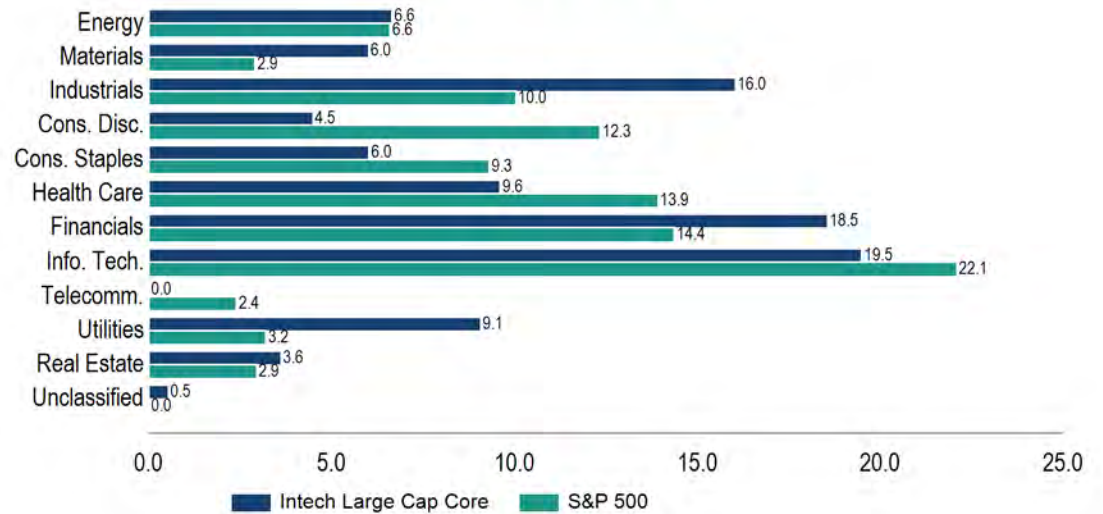
Period Ending: March 31, 2017

Domestic equity large cap core portfolio with high correlation exposure to a broad universe seeking enhanced returns. Primary personnel include Adrian Banner, Vassilios Papatlanakos, Joseph Runnels, and Phillip Whitman.

Characteristics

	Portfolio	S&P 500
Number of Holdings	259	505
Weighted Avg. Market Cap. (\$B)	39.84	151.40
Median Market Cap. (\$B)	21.04	19.87
Price To Earnings	25.28	23.73
Price To Book	4.62	4.42
Price To Sales	3.40	3.31
Return on Equity (%)	19.03	18.81
Yield (%)	1.78	2.02
Beta	0.77	1.00

Sector Allocation (%) vs S&P 500



Largest Holdings

	End Weight	Return
NVIDIA	2.02	2.18
NORTHROP GRUMMAN	1.55	2.64
FISERV	1.26	8.50
APPLE	1.19	24.57
RAYTHEON 'B'	1.09	7.39
LOCKHEED MARTIN	1.06	7.79
CONSTELLATION BRANDS 'A'	1.02	5.99
MARSH & MCLENNAN	1.01	9.87
EQUINIX	0.98	12.62
ILLINOIS TOOL WORKS	0.94	8.71

Top Contributors

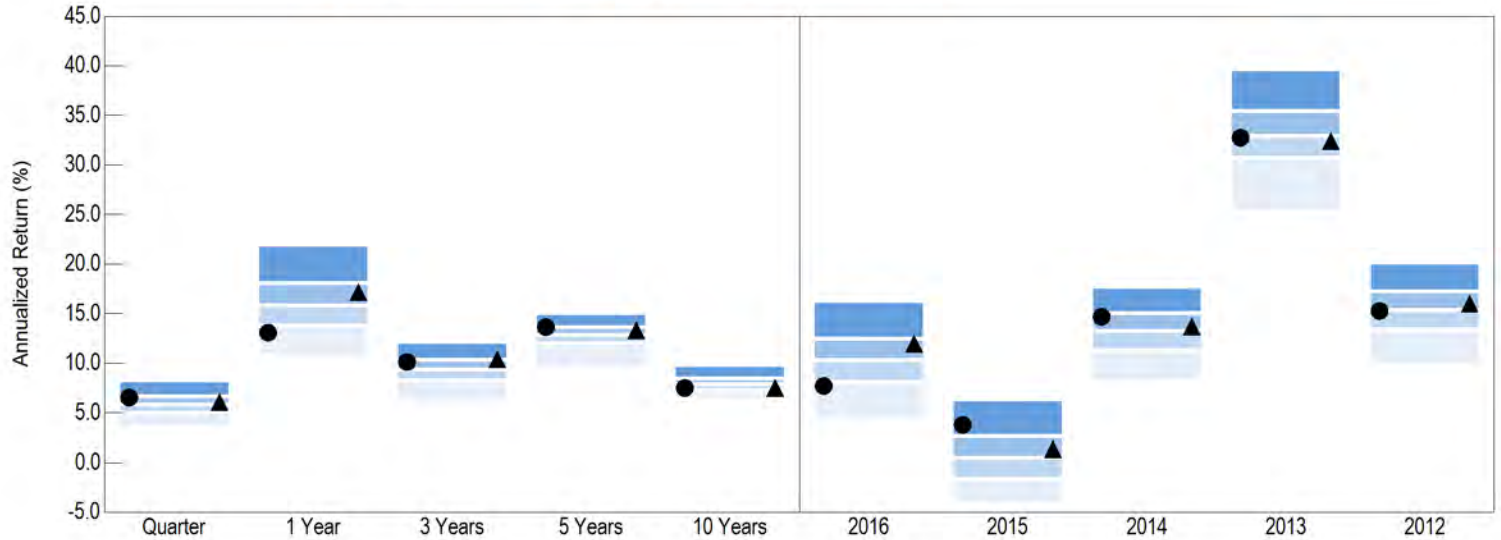
	Avg Wgt	Return	Contribution
EQUINIX	1.91	12.62	0.24
LOCKHEED MARTIN	3.03	7.79	0.24
SYMANTEC	0.81	28.76	0.23
MCGRAW HILL FINANCIAL	0.89	21.95	0.19
CENTERPOINT EN.	1.49	13.04	0.19
ACTIVISION BLIZZARD	0.48	38.91	0.19
APPLIED MATS.	0.90	20.88	0.19
CSX	0.59	30.04	0.18
MICROCHIP TECH.	1.03	15.59	0.16
APPLE	0.50	24.57	0.12

Bottom Contributors

	Avg Wgt	Return	Contribution
ENBRIDGE (NYS)	-221.70	0.36	-0.80
HELMERICH & PAYNE	0.93	-13.11	-0.12
HALLIBURTON	0.73	-8.71	-0.06
MATTEL	1.09	-5.67	-0.06
QUALCOMM	0.52	-11.23	-0.06
APACHE	0.25	-18.71	-0.05
CIMAREX EN.	0.33	-12.02	-0.04
DUN & BRADSTREET	0.35	-10.62	-0.04
DEL.	0.35	-10.62	-0.04
SCANA	0.37	-10.02	-0.04
MURPHY OIL	0.45	-7.35	-0.03

Unclassified sector allocation includes cash allocations.

Intech Large Cap Core vs. eA US Large Cap Core Equity Gross Universe

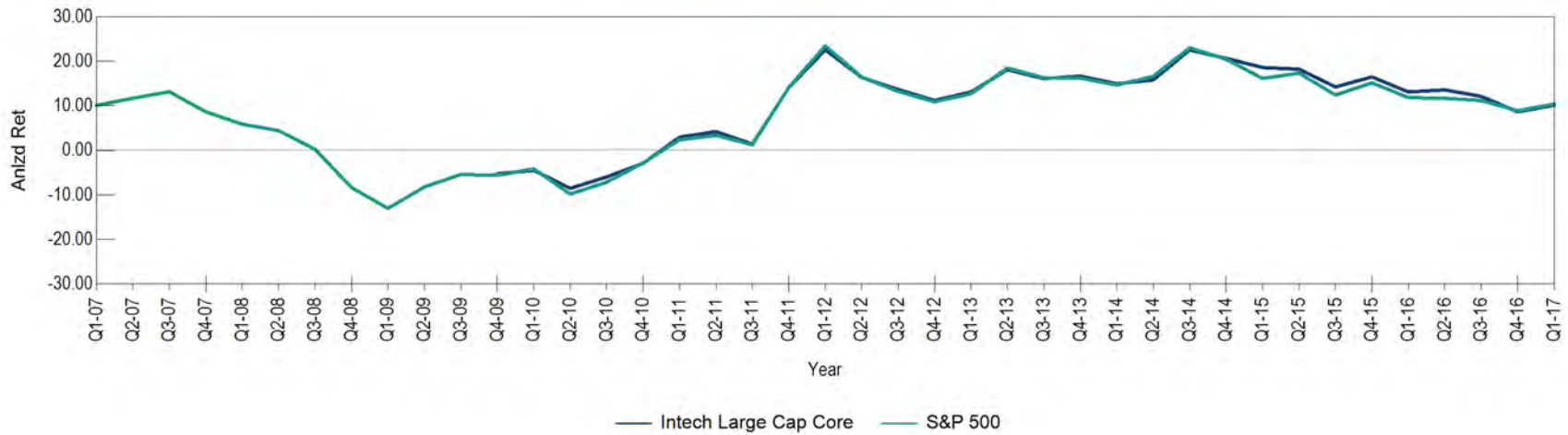


	Quarter	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012
5th Percentile	8.2	21.9	12.1	15.0	9.8	16.3	6.3	17.7	39.6	20.1
25th Percentile	6.7	18.1	10.4	13.7	8.5	12.5	2.7	15.1	35.5	17.2
Median	5.9	15.9	9.4	12.9	7.9	10.4	0.6	13.3	32.9	15.4
75th Percentile	5.0	13.9	8.3	12.0	7.3	8.2	-1.6	11.4	30.8	13.4
95th Percentile	3.6	10.7	6.1	9.6	6.4	4.3	-4.1	8.2	25.4	9.8
# of Portfolios	309	309	302	279	228	308	267	267	261	254
● Intech Large Cap Core	6.5 (30)	13.1 (84)	10.1 (34)	13.6 (26)	7.5 (68)	7.7 (79)	3.8 (16)	14.7 (31)	32.7 (54)	15.3 (54)
▲ S&P 500	6.1 (44)	17.2 (36)	10.4 (26)	13.3 (38)	7.5 (67)	12.0 (31)	1.4 (42)	13.7 (42)	32.4 (58)	16.0 (41)

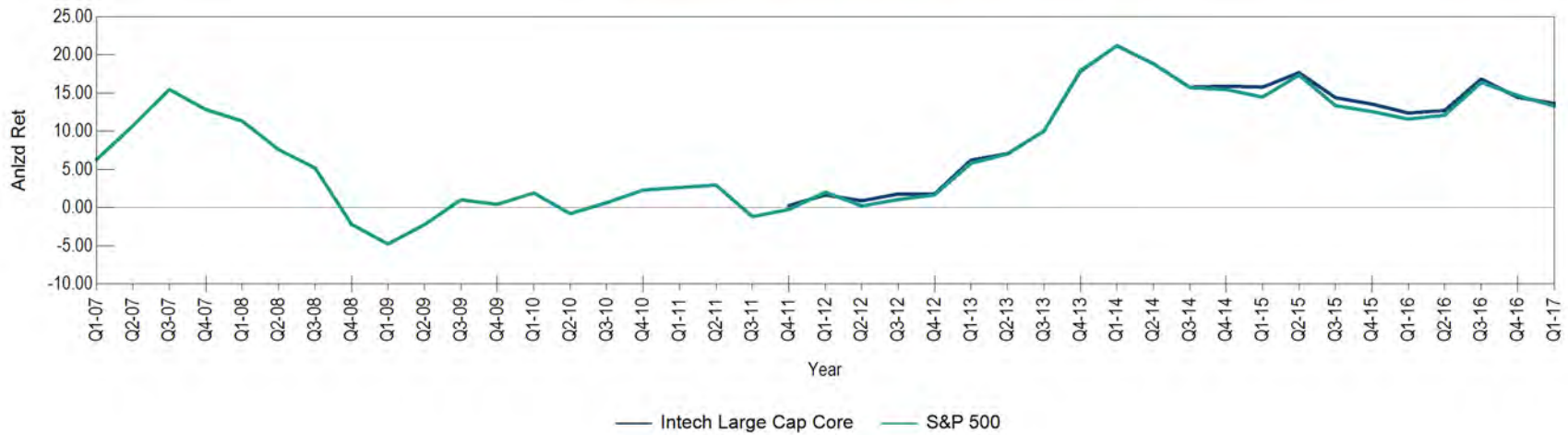
Intech Large Cap Core
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: March 31, 2017

Rolling 3 Year Annualized Return (%)



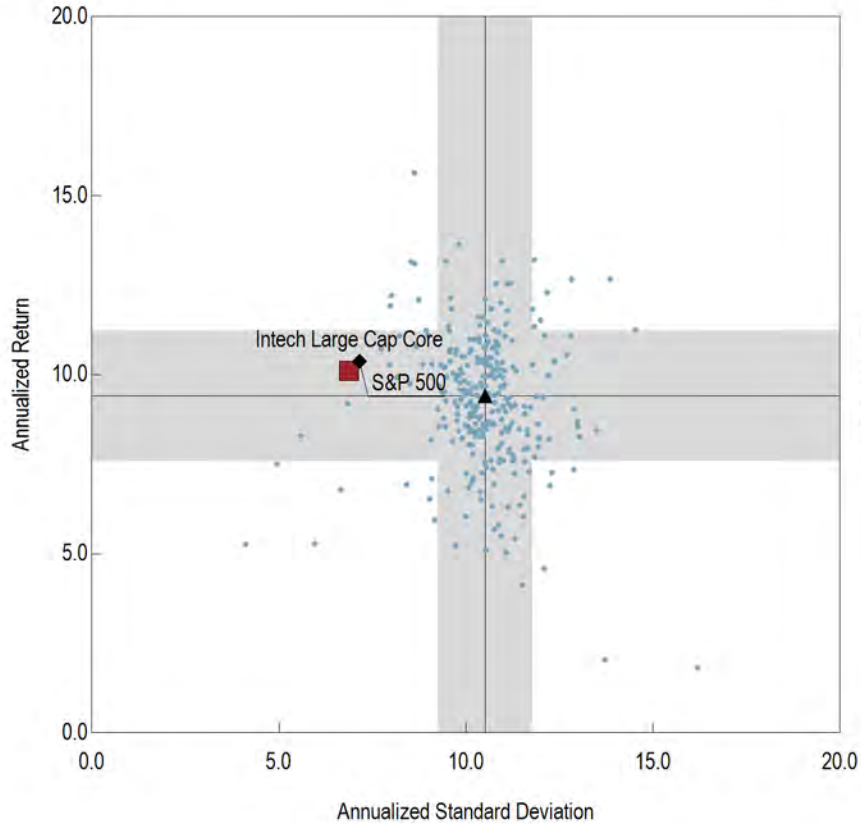
Rolling 5 Year Annualized Return (%)



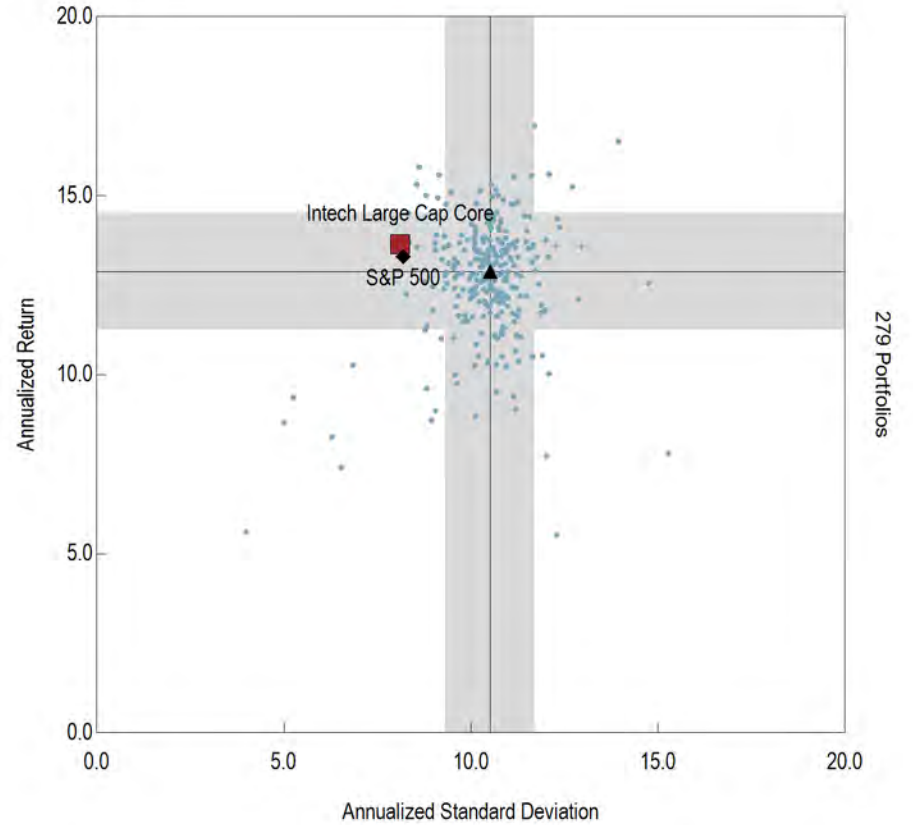
Intech Large Cap Core
 Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: March 31, 2017

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Intech Large Cap Core	10.1%	6.9%	1.4
S&P 500	10.4%	7.2%	1.4
eA US Large Cap Core Equity Gross Median	9.4%	10.5%	0.9

5 Years

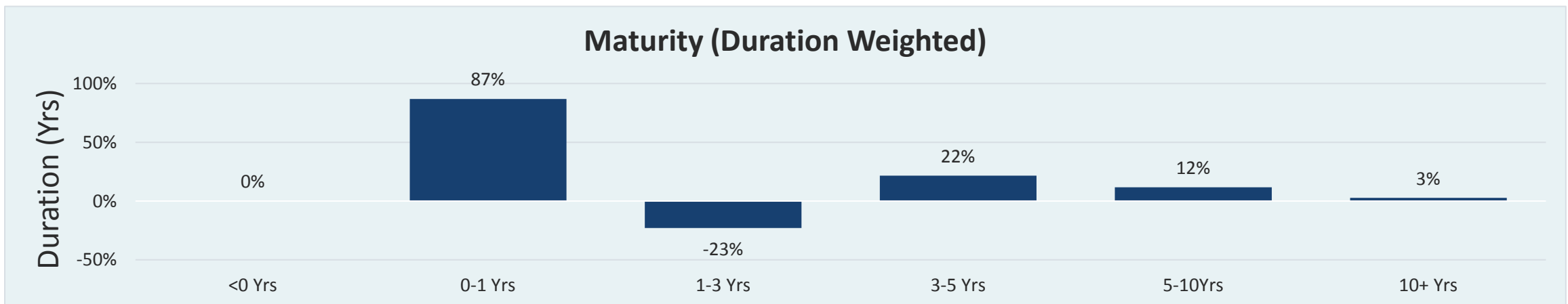
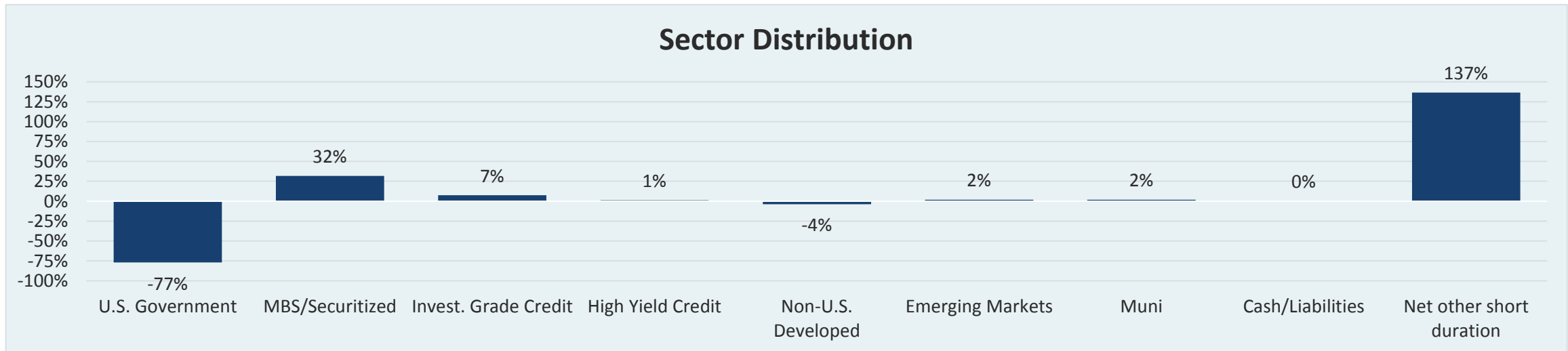
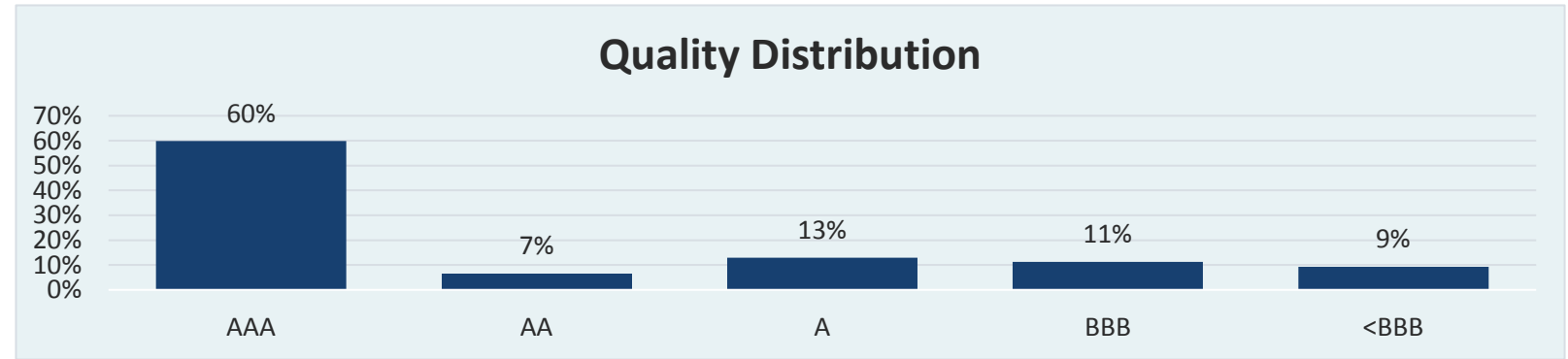
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Intech Large Cap Core	13.6%	8.1%	1.7
S&P 500	13.3%	8.2%	1.6
eA US Large Cap Core Equity Gross Median	12.9%	10.5%	1.2

PIMCO Stocks+ Absolute Return Manager Portfolio Overview

Period Ending: March 31, 2017

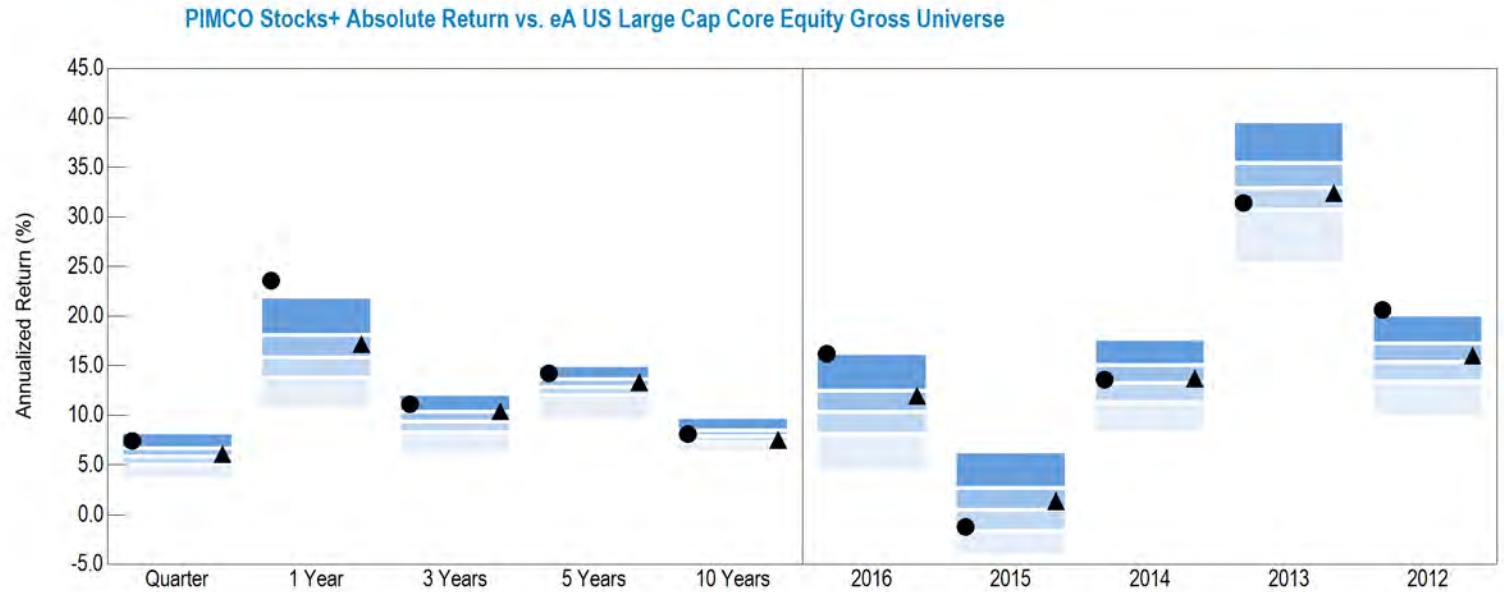
Domestic equity large cap core portfolio with high correlation exposure to a broad universe seeking enhanced returns. Primary personnel include Mohsen Fahmi and Scott Mather.

	PIMCO Stocks+
Effective Duration	0.55
Futures Adjusted Duration	0.47
Yield to Maturity	2.50
Average Quality	AA-



PIMCO Stocks+ Absolute Return
 Manager Performance Comparisons (Gross of Fees)

Period Ending: March 31, 2017

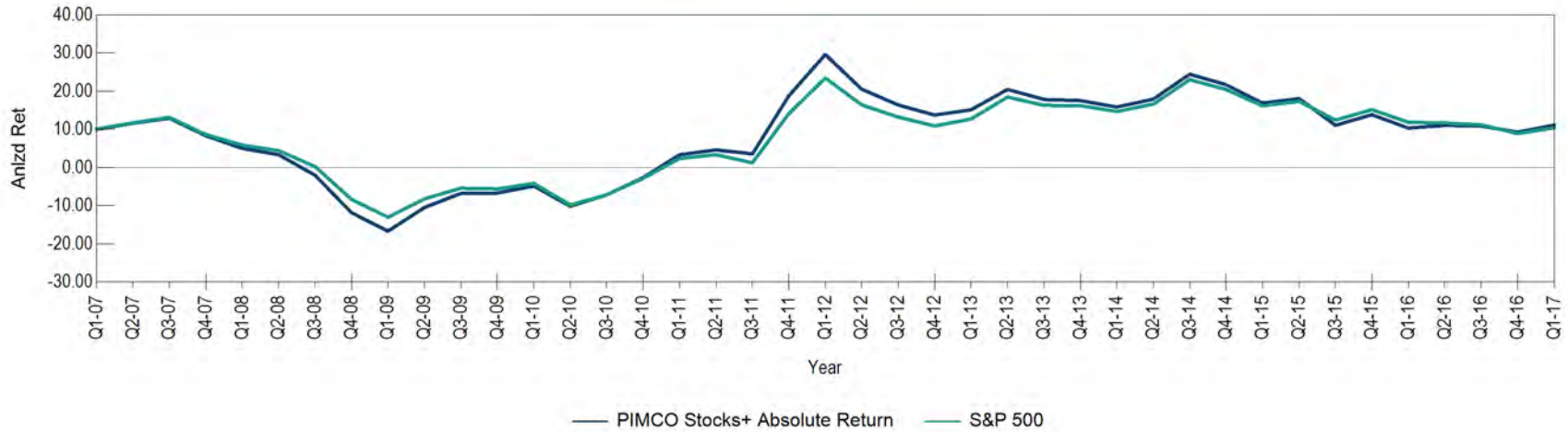


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012
5th Percentile	8.2	21.9	12.1	15.0	9.8	16.3	6.3	17.7	39.6	20.1
25th Percentile	6.7	18.1	10.4	13.7	8.5	12.5	2.7	15.1	35.5	17.2
Median	5.9	15.9	9.4	12.9	7.9	10.4	0.6	13.3	32.9	15.4
75th Percentile	5.0	13.9	8.3	12.0	7.3	8.2	-1.6	11.4	30.8	13.4
95th Percentile	3.6	10.7	6.1	9.6	6.4	4.3	-4.1	8.2	25.4	9.8
# of Portfolios	309	309	302	279	228	308	267	267	261	254
● PIMCO Stocks+ Absolute Return	7.4 (10)	23.6 (2)	11.1 (13)	14.2 (14)	8.1 (42)	16.2 (6)	-1.2 (73)	13.6 (45)	31.4 (68)	20.6 (4)
▲ S&P 500	6.1 (44)	17.2 (36)	10.4 (26)	13.3 (38)	7.5 (67)	12.0 (31)	1.4 (42)	13.7 (42)	32.4 (58)	16.0 (41)

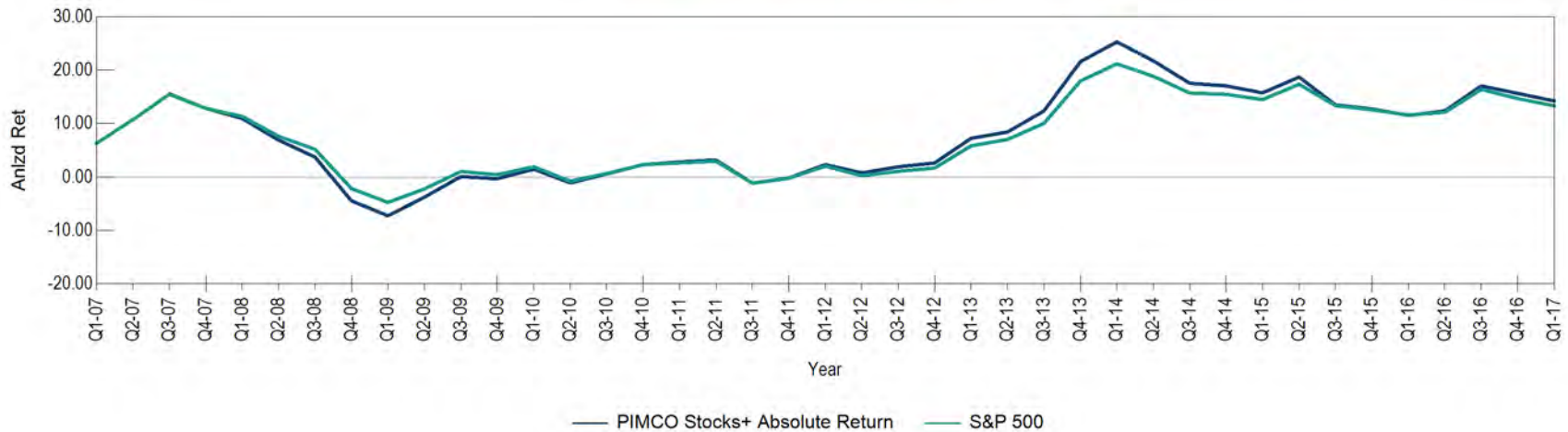
PIMCO Stocks+ Absolute Return
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: March 31, 2017

Rolling 3 Year Annualized Return (%)



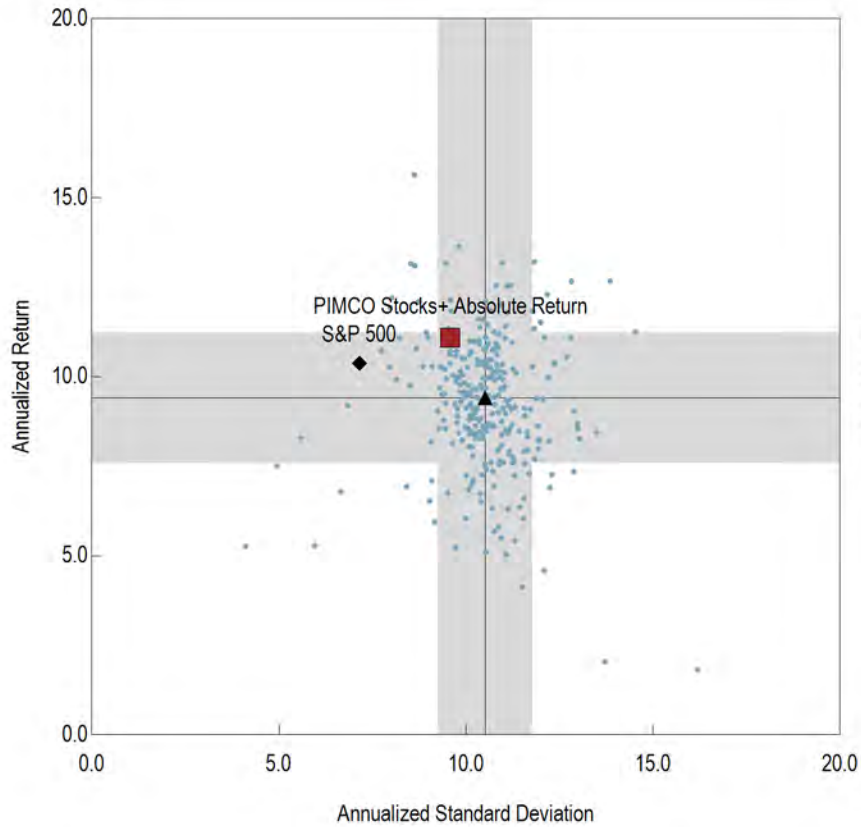
Rolling 5 Year Annualized Return (%)



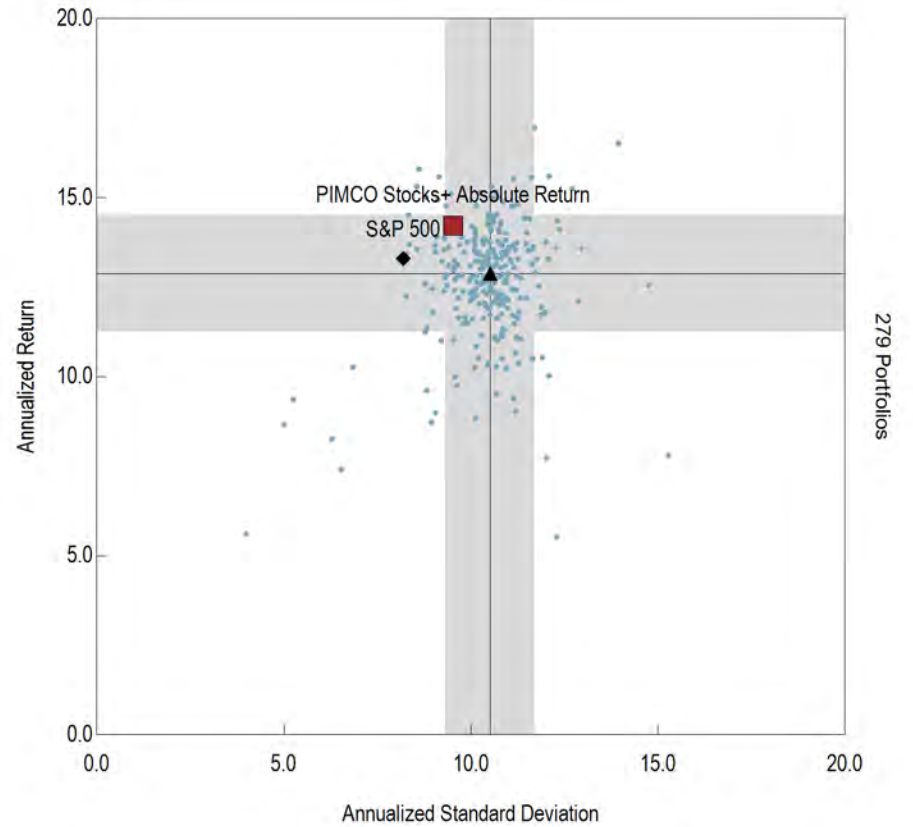
PIMCO Stocks+ Absolute Return
 Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: March 31, 2017

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
PIMCO Stocks+ Absolute Return	11.1%	9.6%	1.1
S&P 500	10.4%	7.2%	1.4
eA US Large Cap Core Equity Gross Median	9.4%	10.5%	0.9

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
PIMCO Stocks+ Absolute Return	14.2%	9.5%	1.5
S&P 500	13.3%	8.2%	1.6
eA US Large Cap Core Equity Gross Median	12.9%	10.5%	1.2

Jackson Square Partners Manager Portfolio Overview

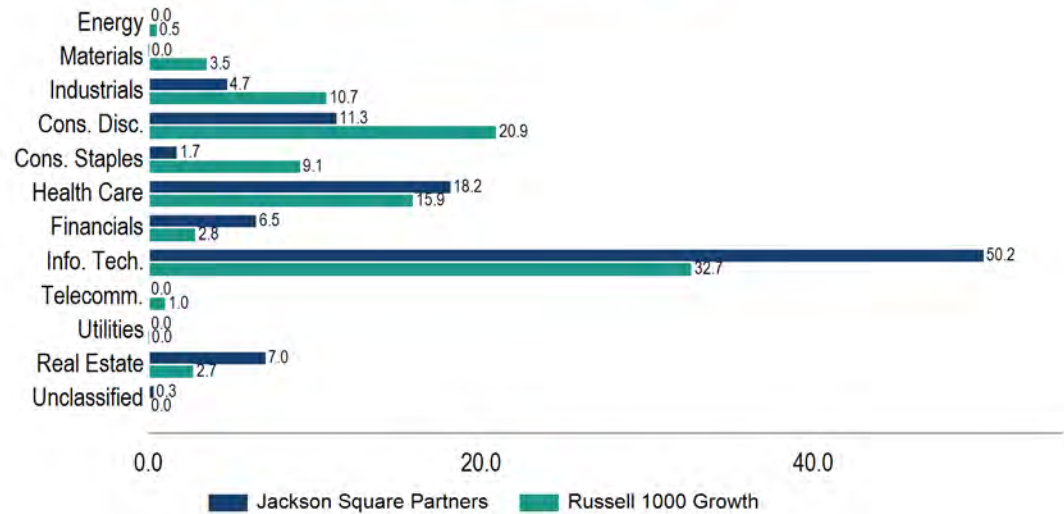
Period Ending: March 31, 2017

Domestic equity large cap growth portfolio concentrated in companies with sustainable long-term growth characteristics. Primary personnel include Jeffrey Van Harte, Christopher Bonavico, Christopher Ericksen, and Daniel Prislin.

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	33	609
Weighted Avg. Market Cap. (\$B)	108.69	159.72
Median Market Cap. (\$B)	46.46	9.27
Price To Earnings	31.76	26.16
Price To Book	6.25	7.12
Price To Sales	6.03	4.01
Return on Equity (%)	22.99	28.54
Yield (%)	0.88	1.51
Beta	1.30	1.00

Sector Allocation (%) vs Russell 1000 Growth



Largest Holdings

	End Weight	Return
MICROSOFT	6.11	6.63
VISA 'A'	5.74	14.12
CELGENE	5.71	7.50
PAYPAL HOLDINGS	5.64	8.99
CROWN CASTLE INTL.	4.59	10.00
MASTERCARD	4.58	9.15
EBAY	4.41	13.07
FACEBOOK CLASS A	4.09	23.47
ELECTRONIC ARTS	3.90	13.66
ALPHABET 'A'	3.87	6.98

Top Contributors

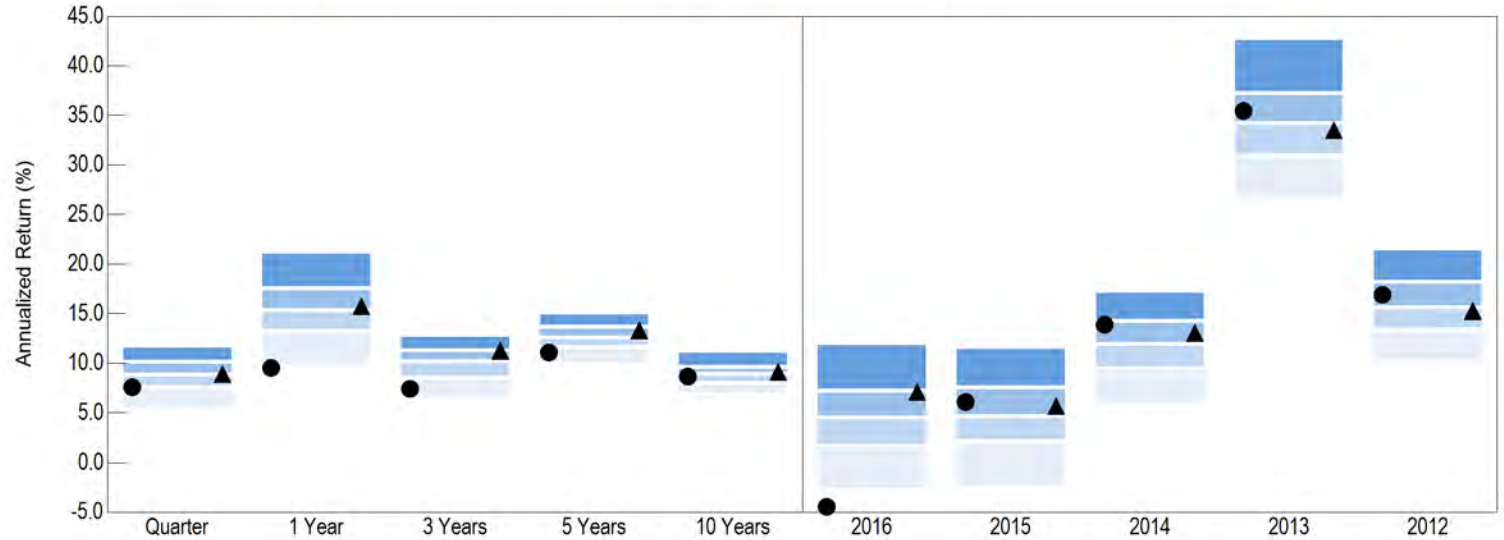
	Avg Wgt	Return	Contribution
FEDEX	88.03	5.03	4.42
FACEBOOK CLASS A	2.74	23.47	0.64
VISA 'A'	3.01	14.12	0.42
EBAY	2.87	13.07	0.37
SYMANTEC	1.26	28.76	0.36
PAYPAL HOLDINGS	3.64	8.99	0.33
CROWN CASTLE INTL.	2.97	10.00	0.30
MASTERCARD	3.17	9.15	0.29
CELGENE	3.72	7.50	0.28
LIBERTY GLOBAL SR.C	1.42	17.98	0.26

Bottom Contributors

	Avg Wgt	Return	Contribution
ELECTRONIC ARTS	-12.31	13.66	-1.68
ALLERGAN	-10.58	14.22	-1.50
L BRANDS	0.73	-27.73	-0.20
TRIPADVISOR 'A'	1.79	-6.92	-0.12
DOLLAR GENERAL	1.04	-5.86	-0.06
QUALCOMM	0.40	-11.23	-0.04
LIBERTY INTACT.QVC GROUP 'A'	-9.62	0.20	-0.02
SYNGENTA SPN.ADR 5:1	-0.10	11.95	-0.01
NIELSEN	-0.12	-0.84	0.00
WALGREENS BOOTS ALLIANCE	0.54	0.80	0.00

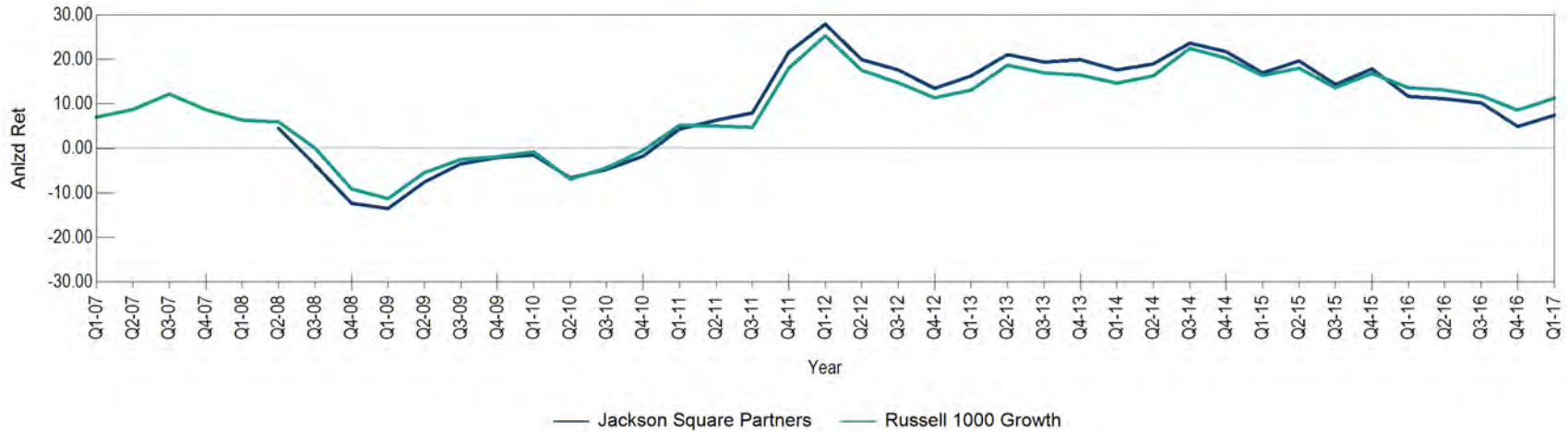
Unclassified sector allocation includes cash allocations.

Jackson Square Partners vs. eA US Large Cap Growth Equity Gross Universe

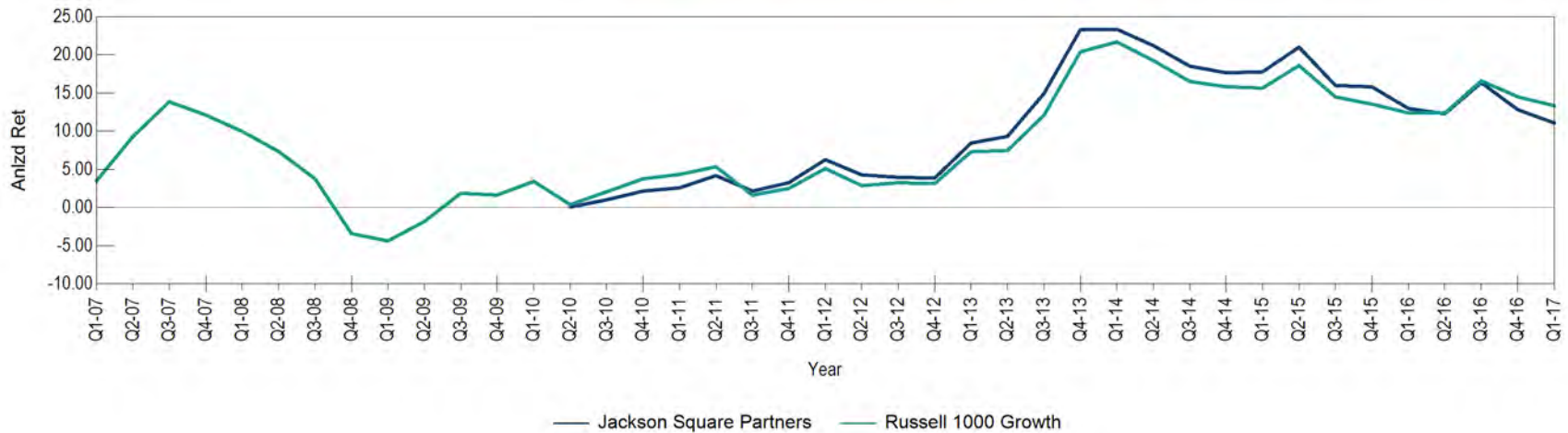


	Quarter	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012
5th Percentile	11.7	21.2	12.8	15.1	11.2	12.0	11.6	17.3	42.8	21.6
25th Percentile	10.2	17.6	11.3	13.7	9.7	7.3	7.6	14.3	37.3	18.2
Median	8.9	15.4	10.2	12.6	8.9	4.6	4.7	12.0	34.3	15.7
75th Percentile	7.6	13.3	8.6	11.7	8.1	1.8	2.1	9.5	31.0	13.4
95th Percentile	5.4	9.7	6.4	10.0	6.9	-2.7	-2.4	5.8	26.6	10.2
# of Portfolios	269	269	266	250	219	282	270	291	274	274
● Jackson Square Partners	7.6 (76)	9.5 (97)	7.4 (90)	11.1 (85)	8.6 (59)	-4.4 (98)	6.1 (37)	13.9 (31)	35.4 (40)	16.9 (37)
▲ Russell 1000 Growth	8.9 (50)	15.8 (47)	11.3 (27)	13.3 (33)	9.1 (46)	7.1 (26)	5.7 (42)	13.0 (38)	33.5 (56)	15.3 (55)

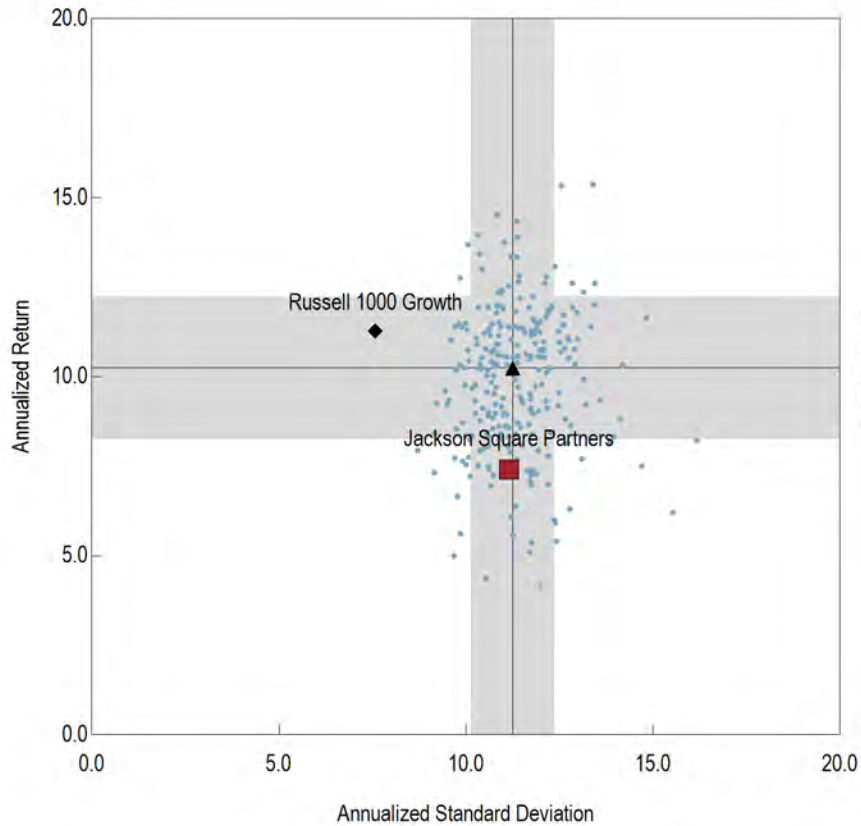
Rolling 3 Year Annualized Return (%)



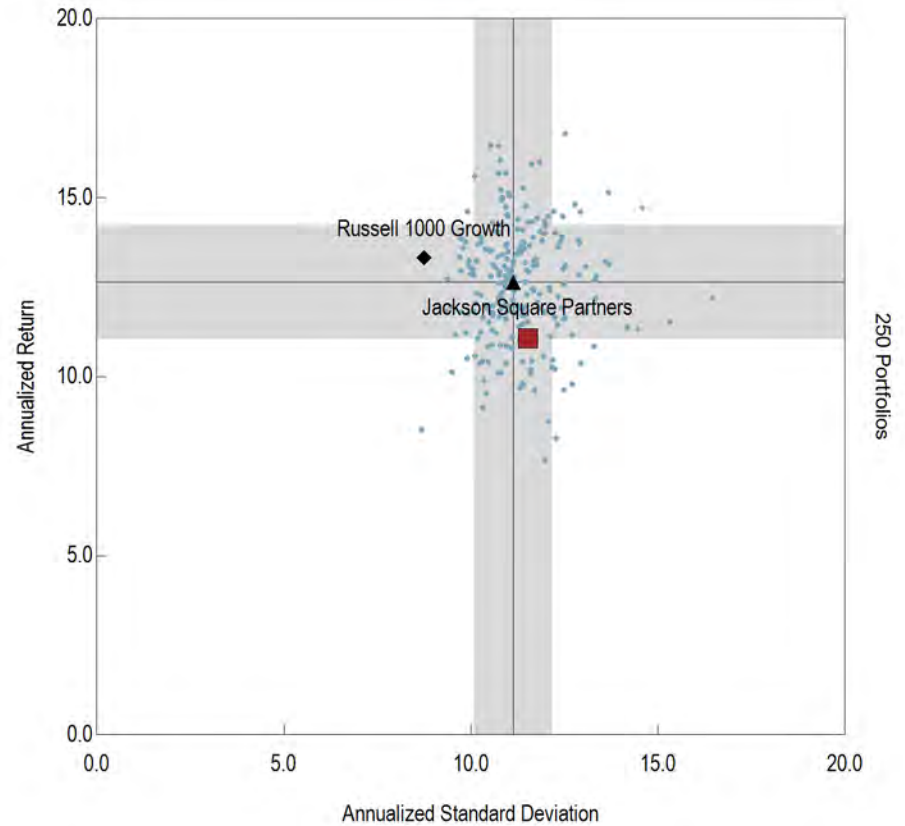
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Jackson Square Partners	7.4%	11.2%	0.6
Russell 1000 Growth	11.3%	7.6%	1.5
eA US Large Cap Growth Equity Gross Median	10.2%	11.3%	0.9

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Jackson Square Partners	11.1%	11.5%	0.9
Russell 1000 Growth	13.3%	8.7%	1.5
eA US Large Cap Growth Equity Gross Median	12.6%	11.1%	1.1

Robeco Boston Partners Manager Portfolio Overview

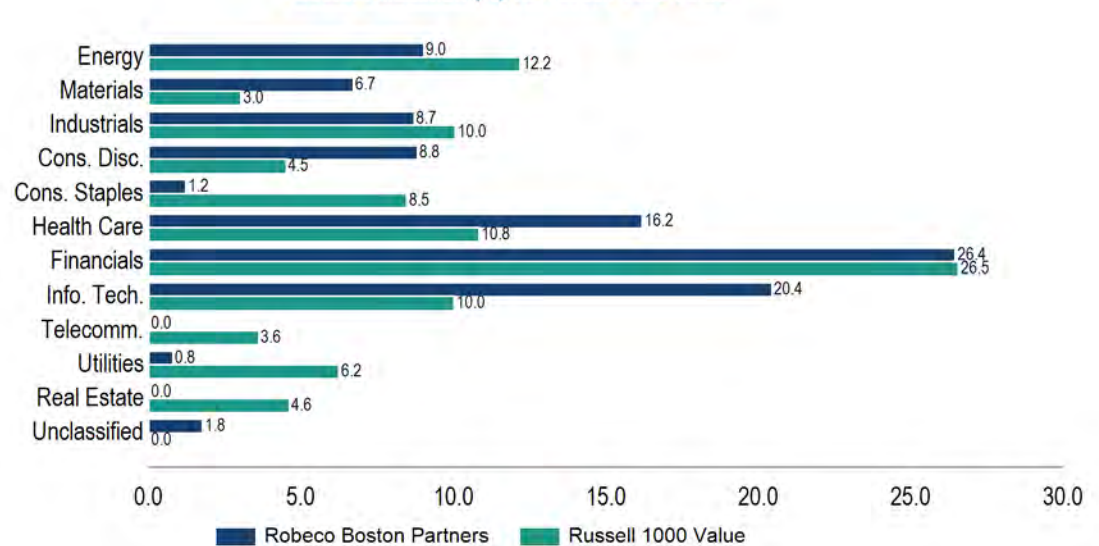
Period Ending: March 31, 2017

Domestic equity large cap value portfolio exhibiting low turnover in companies with low valuations relative to intrinsic value. Primary personnel include Mark Donovan and David Pyle.

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	90	692
Weighted Avg. Market Cap. (\$B)	132.58	115.38
Median Market Cap. (\$B)	32.44	8.32
Price To Earnings	21.15	21.14
Price To Book	2.95	2.49
Price To Sales	2.50	2.89
Return on Equity (%)	14.46	11.22
Yield (%)	1.90	2.43
Beta	0.98	1.00

Sector Allocation (%) vs Russell 1000 Value



Largest Holdings

	End Weight	Return
JP MORGAN CHASE & CO.	4.87	2.36
BANK OF AMERICA	4.56	7.06
BERKSHIRE HATHAWAY 'B'	3.67	2.27
JOHNSON & JOHNSON	3.53	8.81
CITIGROUP	2.97	0.94
MERCK & COMPANY	2.44	8.72
CISCO SYSTEMS	2.38	12.81
APPLE	2.28	24.57
DISCOVER FINANCIAL SVS.	2.22	-4.72
CHEVRON	2.17	-7.90

Top Contributors

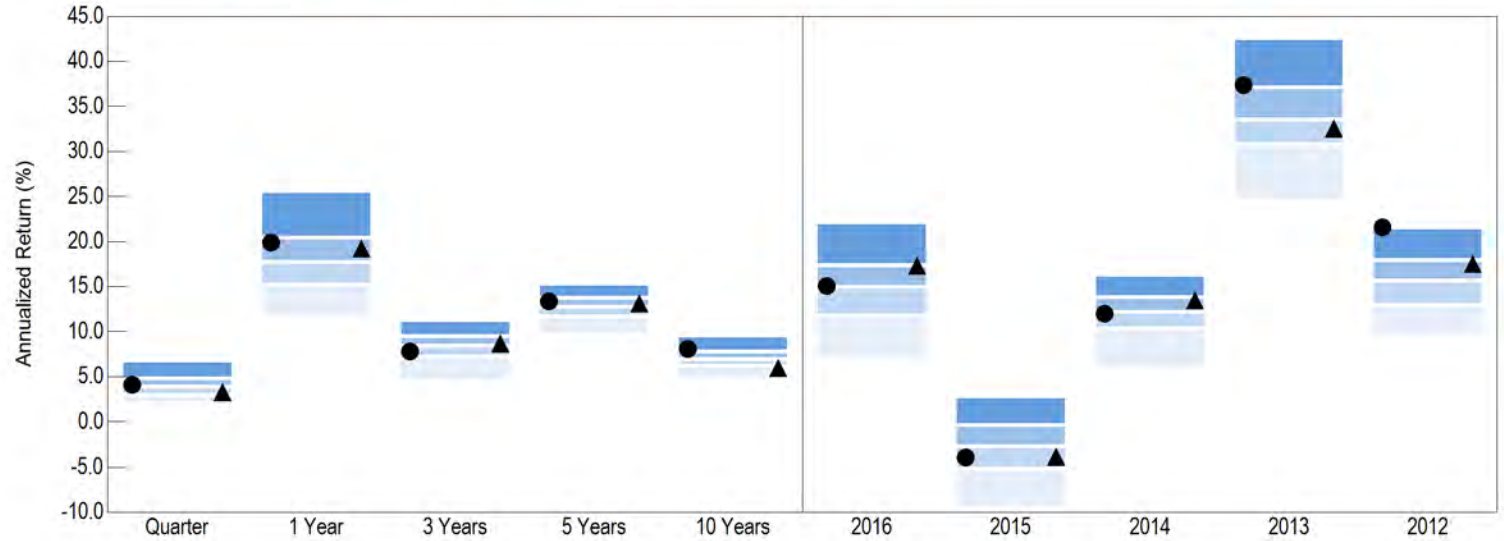
	Avg Wgt	Return	Contribution
ALLY FINANCIAL	7.00	7.32	0.51
APPLE	1.30	24.57	0.32
JOHNSON & JOHNSON	3.38	8.81	0.30
CANADIAN NTRL.RES. (NYS)	7.72	3.49	0.27
BANK OF AMERICA	2.83	7.06	0.20
ORACLE	0.89	16.47	0.15
MERCK & COMPANY	1.59	8.72	0.14
DOW CHEMICAL	1.16	11.84	0.14
COMPUTER SCIS.	0.82	16.38	0.14
PFIZER	1.90	6.39	0.12

Bottom Contributors

	Avg Wgt	Return	Contribution
NEWFIELD EXPLORATION	6.45	-8.86	-0.57
METHANEX (NAS)	-4.28	7.69	-0.33
CHEVRON	2.65	-7.90	-0.21
SEALED AIR	5.44	-3.56	-0.19
TEXTRON	8.26	-1.96	-0.16
KONINKLIJKE PHILIPS ADR 1:1	-2.80	5.04	-0.14
PHILLIPS 66	1.21	-7.59	-0.09
DISCOVER FINANCIAL SVS.	1.57	-4.72	-0.07
DELTA AIR LINES	0.96	-6.19	-0.06
MARATHON OIL	0.71	-8.44	-0.06

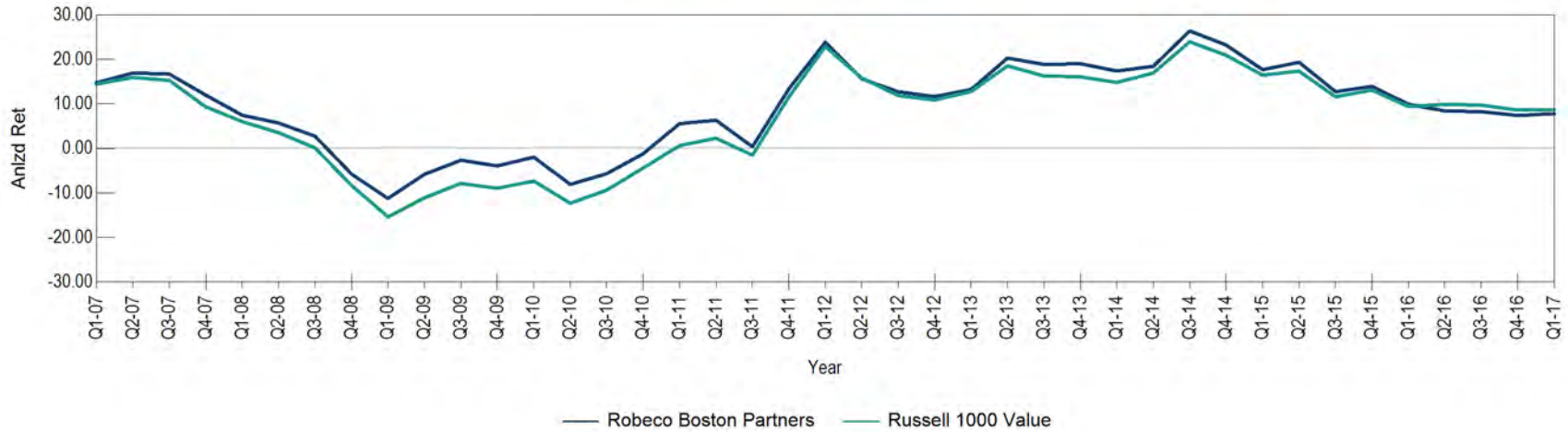
Unclassified sector allocation includes cash allocations.

Robeco Boston Partners vs. eA US Large Cap Value Equity Gross Universe

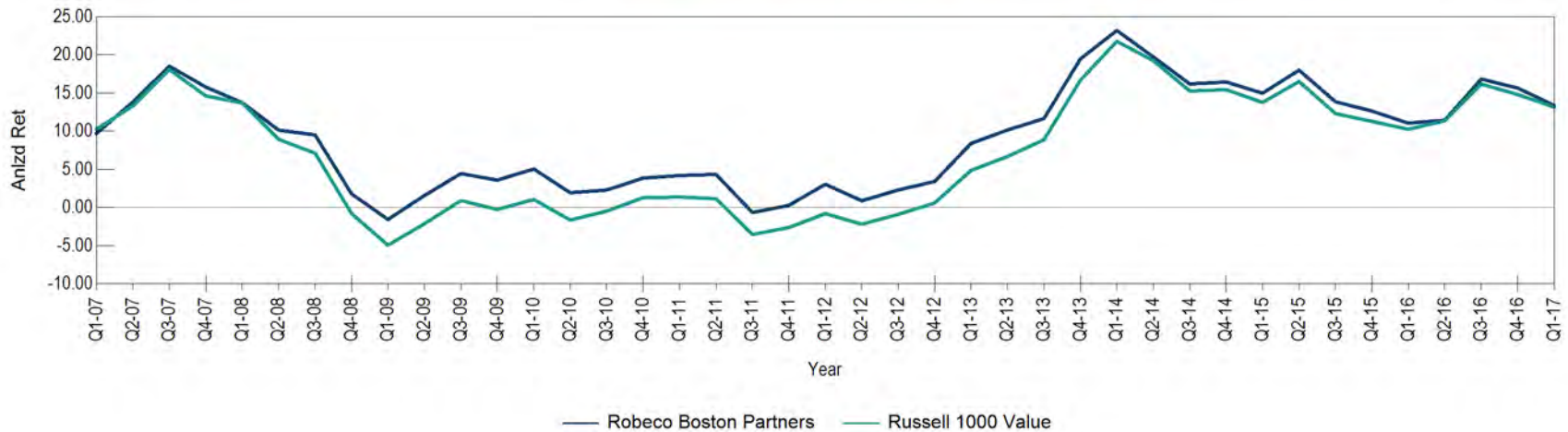


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012
5th Percentile	6.7	25.6	11.3	15.3	9.5	22.1	2.8	16.3	42.5	21.5
25th Percentile	4.8	20.5	9.5	13.8	7.9	17.4	-0.4	13.9	37.2	18.0
Median	3.9	17.8	8.5	12.8	7.0	15.0	-2.6	12.2	33.6	15.7
75th Percentile	3.0	15.3	7.2	11.8	6.3	11.8	-5.1	10.4	30.8	13.0
95th Percentile	2.1	11.7	4.5	9.7	4.8	7.0	-9.4	5.9	24.6	9.6
# of Portfolios	329	329	322	306	252	346	312	307	310	303
● Robeco Boston Partners	4.1 (44)	19.9 (29)	7.8 (65)	13.4 (35)	8.1 (20)	15.1 (50)	-3.9 (65)	12.0 (55)	37.4 (24)	21.6 (5)
▲ Russell 1000 Value	3.3 (70)	19.2 (35)	8.7 (44)	13.1 (44)	5.9 (83)	17.3 (26)	-3.8 (64)	13.5 (33)	32.5 (60)	17.5 (30)

Rolling 3 Year Annualized Return (%)

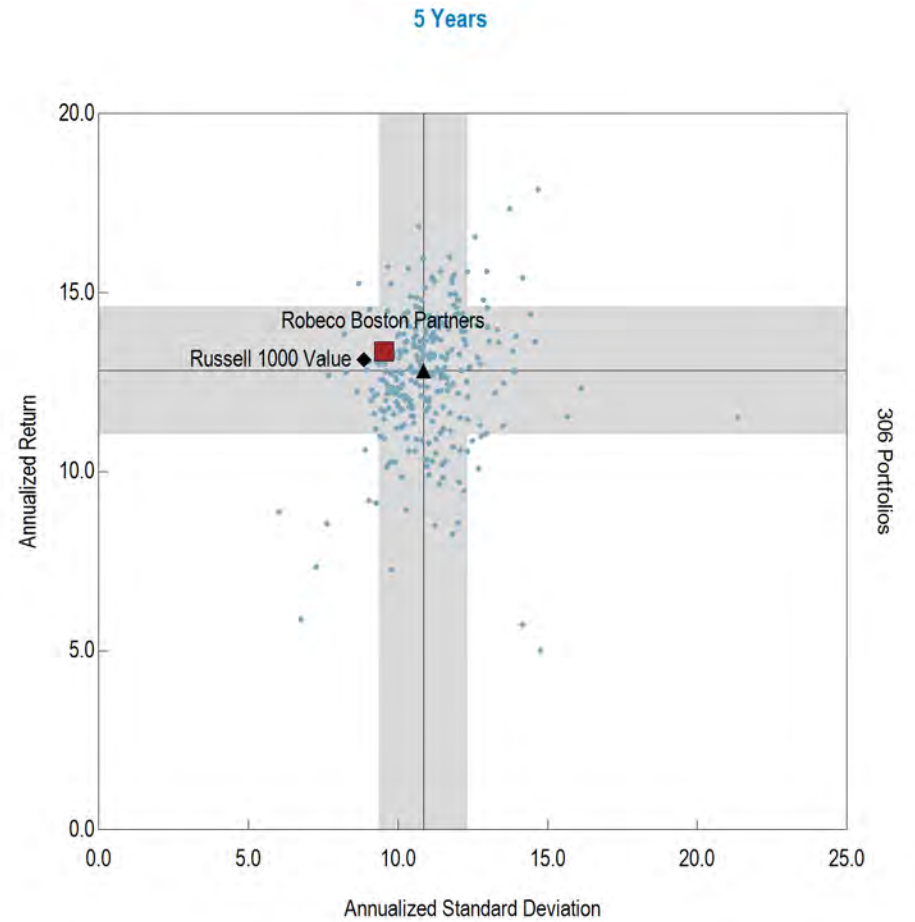
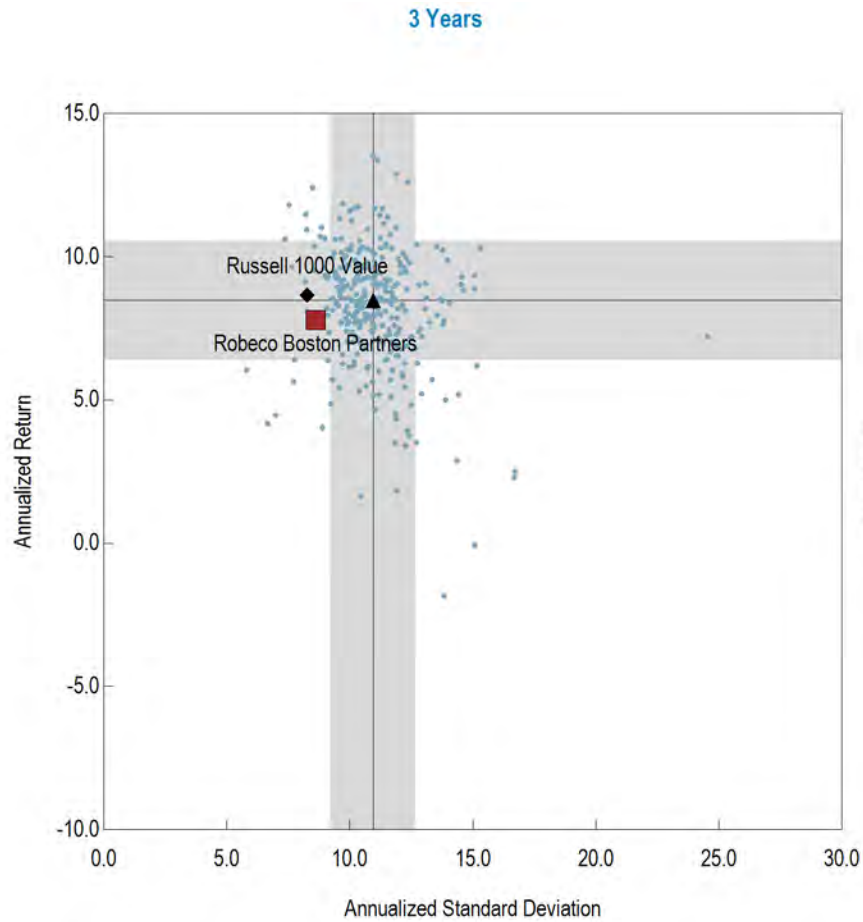


Rolling 5 Year Annualized Return (%)



Robeco Boston Partners
 Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: March 31, 2017



	3 Years			5 Years			
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	
Robeco Boston Partners	7.8%	8.6%	0.9	Robeco Boston Partners	13.4%	9.5%	1.4
Russell 1000 Value	8.7%	8.3%	1.0	Russell 1000 Value	13.1%	8.9%	1.5
eA US Large Cap Value Equity Gross Median	8.5%	10.9%	0.8	eA US Large Cap Value Equity Gross Median	12.8%	10.9%	1.2

Emerald Advisers Manager Portfolio Overview

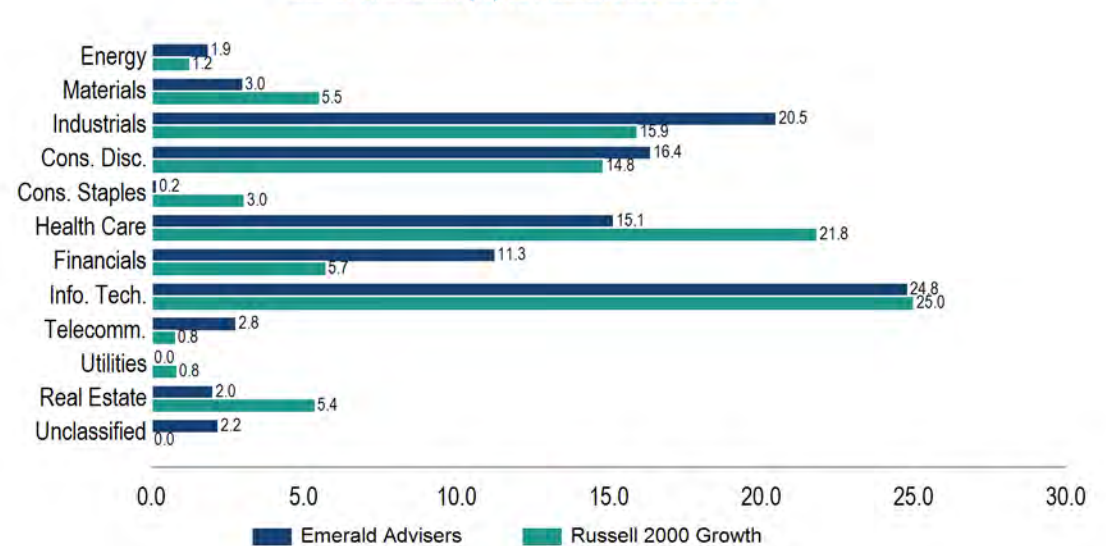
Period Ending: March 31, 2017

Domestic equity small cap growth portfolio of companies with significantly high growth rates. Primary personnel include Kenneth Mertz, Joseph Garner, and Stacey Sears.

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	115	1,157
Weighted Avg. Market Cap. (\$B)	2.39	2.39
Median Market Cap. (\$B)	1.64	0.90
Price To Earnings	28.18	29.86
Price To Book	4.79	4.78
Price To Sales	3.63	3.45
Return on Equity (%)	14.21	14.68
Yield (%)	0.42	0.67
Beta	0.96	1.00

Sector Allocation (%) vs Russell 2000 Growth



Largest Holdings

	End Weight	Return
VEEVA SYSTEMS CL.A	2.90	26.00
BANK OF THE OZARKS	1.98	-0.78
LENDINGTREE	1.95	23.68
MICROSEMI	1.90	-4.52
APOGEE ENTERPRISES	1.80	11.57
INSTALLED BUILDING PRDS.	1.78	27.72
DYCOM INDS.	1.76	15.77
BOFI HOLDING	1.75	-8.48
8X8	1.66	6.64
TAKE TWO INTACT.SFTW.	1.63	20.25

Top Contributors

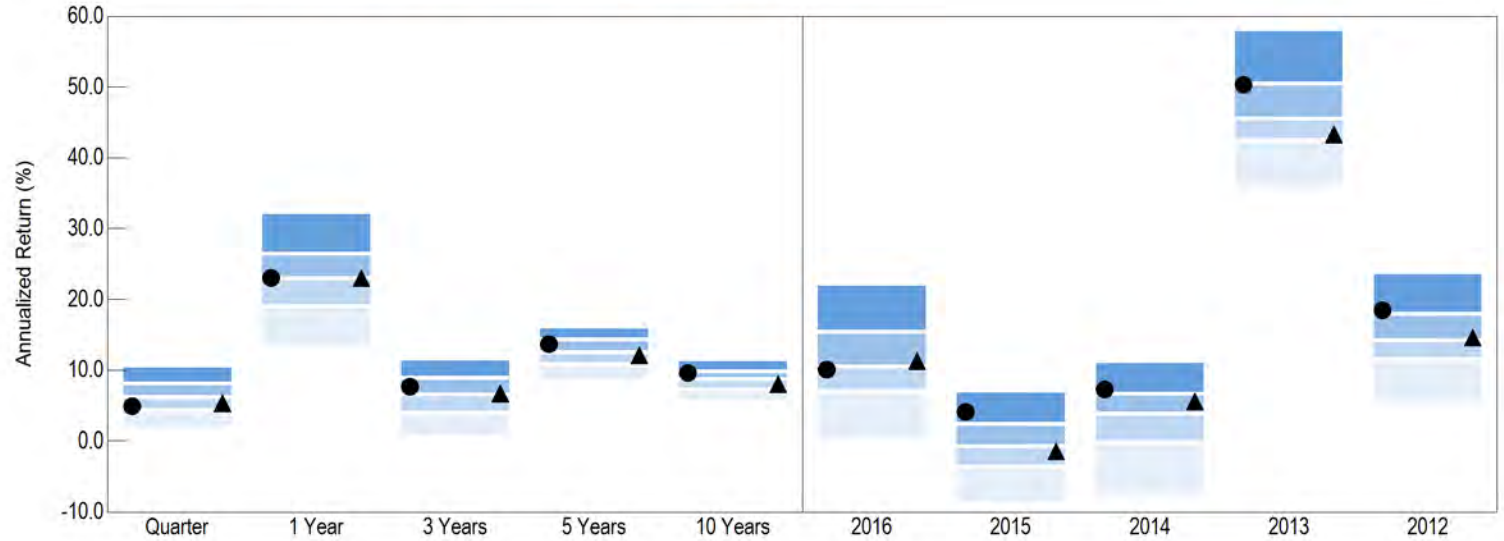
	Avg Wgt	Return	Contribution
PRIMORIS SERVICES	103.37	2.17	2.25
APPLIED OPTOELECTRONICS	0.42	139.55	0.59
NUTRISYSTEM	0.78	60.75	0.47
VEEVA SYSTEMS CL.A	1.64	26.00	0.43
PORTOLA PHARMACEUTICALS	0.52	74.64	0.39
TETRA TECH	-6.01	-5.13	0.31
EXELIXIS	0.65	45.34	0.29
LUMENTUM HOLDINGS	0.77	38.03	0.29
INSTALLED BUILDING PRDS.	0.98	27.72	0.27
LENDINGTREE	1.13	23.68	0.27

Bottom Contributors

	Avg Wgt	Return	Contribution
GLOBAL MEDICAL REIT	-56.11	4.22	-2.37
OPUS BANK	0.67	-32.95	-0.22
COMSCORE	0.62	-31.63	-0.20
SYNCHRONOSS TECHNOLOGIES	0.48	-36.29	-0.17
GTT COMMUNICATIONS	1.06	-15.30	-0.16
TENNANT	-5.20	2.34	-0.12
CALLON PTL.DEL.	0.82	-14.38	-0.12
ALBANY MOLECULR.RESH.	0.42	-25.21	-0.11
BOFI HOLDING	1.19	-8.48	-0.10
TILLY'S CLASS A	0.33	-27.68	-0.09

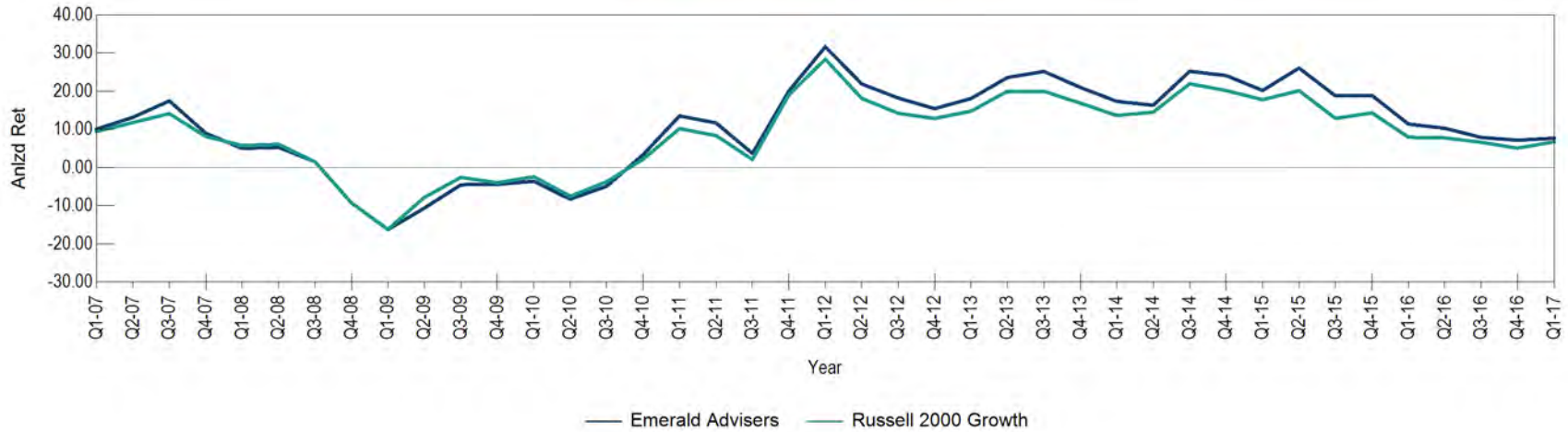
Unclassified sector allocation includes cash allocations.

Emerald Advisers vs. eA US Small Cap Growth Equity Gross Universe

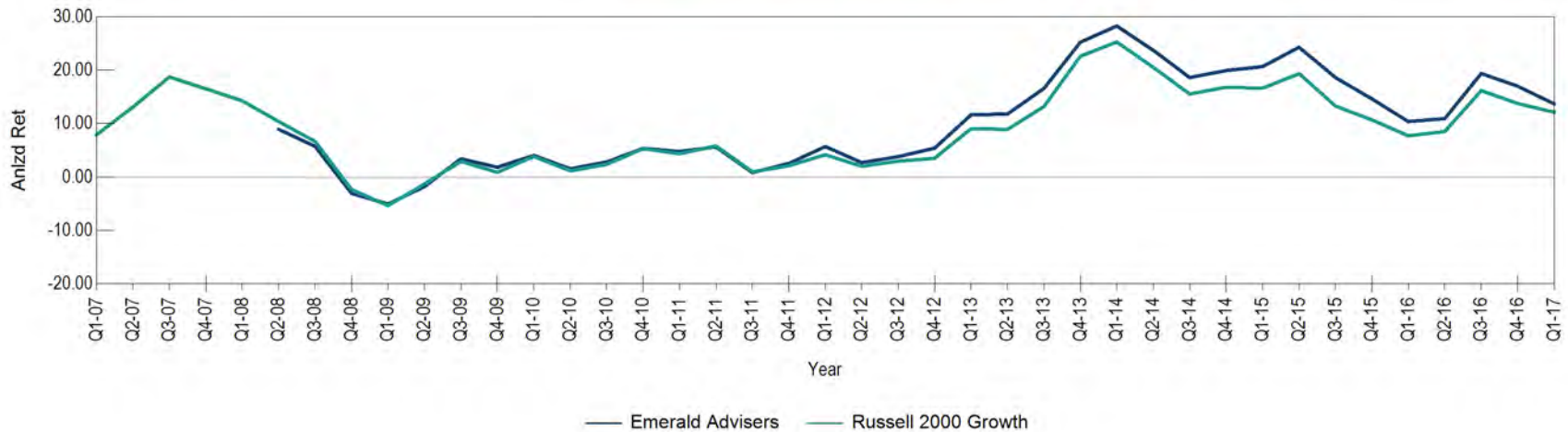


	Return (Rank)									
5th Percentile	10.6	32.3	11.6	16.1	11.5	22.2	7.1	11.3	58.2	23.8
25th Percentile	8.1	26.5	8.9	14.4	9.9	15.5	2.5	6.7	50.6	18.0
Median	6.3	23.1	6.6	12.6	8.8	10.6	-0.6	3.9	45.6	14.3
75th Percentile	4.4	19.1	4.1	10.9	7.4	7.1	-3.5	-0.1	42.6	11.6
95th Percentile	1.8	13.2	0.6	8.4	5.6	0.2	-8.7	-7.6	35.6	5.4
# of Portfolios	167	167	160	152	125	170	154	161	160	162
● Emerald Advisers	4.9 (71)	23.0 (52)	7.7 (42)	13.7 (32)	9.6 (33)	10.1 (54)	4.1 (19)	7.3 (21)	50.3 (27)	18.5 (22)
▲ Russell 2000 Growth	5.3 (62)	23.0 (52)	6.7 (50)	12.1 (58)	8.1 (65)	11.3 (49)	-1.4 (59)	5.6 (32)	43.3 (70)	14.6 (48)

Rolling 3 Year Annualized Return (%)



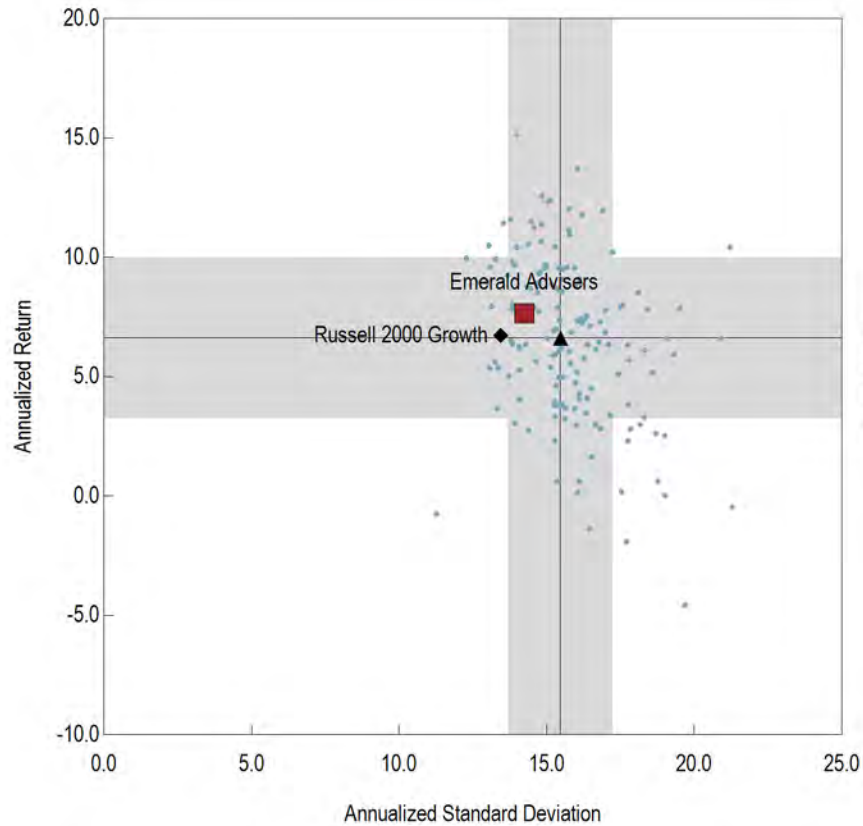
Rolling 5 Year Annualized Return (%)



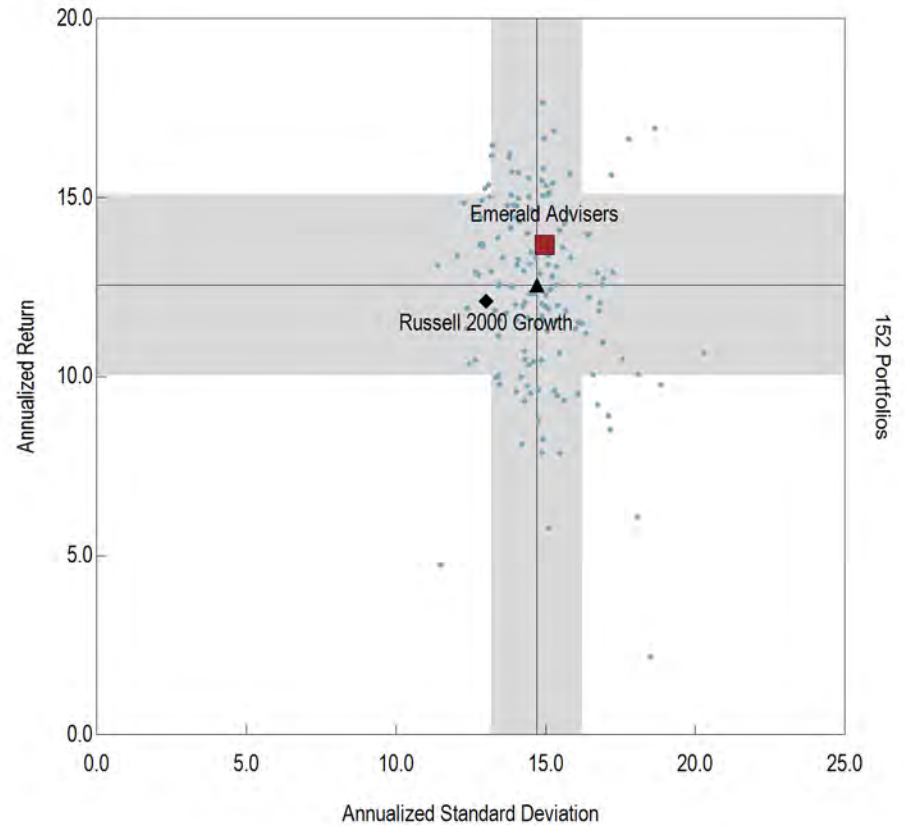
Emerald Advisers
 Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: March 31, 2017

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	7.7%	14.2%	0.5
Russell 2000 Growth	6.7%	13.4%	0.5
eA US Small Cap Growth Equity Gross Median	6.6%	15.5%	0.4

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	13.7%	15.0%	0.9
Russell 2000 Growth	12.1%	13.0%	0.9
eA US Small Cap Growth Equity Gross Median	12.6%	14.7%	0.8

Ceredex Manager Portfolio Overview

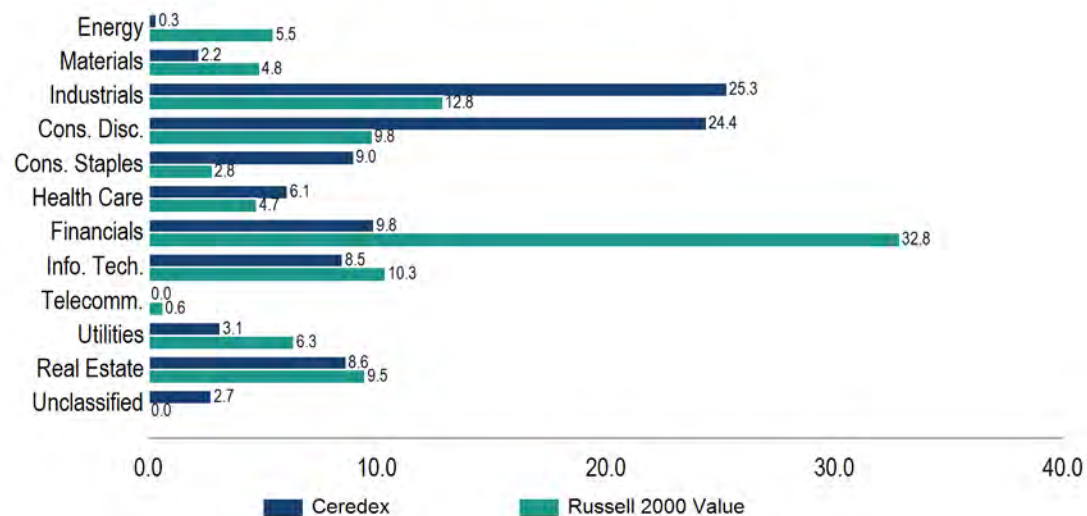
Period Ending: March 31, 2017

Domestic equity small cap value portfolio of companies with dividend yields and low valuations. Primary personnel include Brett Barner and David Maynard.

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	84	1,352
Weighted Avg. Market Cap. (\$B)	2.25	2.11
Median Market Cap. (\$B)	1.80	0.69
Price To Earnings	26.77	20.79
Price To Book	3.83	1.81
Price To Sales	2.12	2.72
Return on Equity (%)	15.42	7.27
Yield (%)	2.22	1.68
Beta	0.74	1.00

Sector Allocation (%) vs Russell 2000 Value



Largest Holdings

	End Weight	Return
FAIR ISAAC	5.05	8.18
ENERGIZER HOLDINGS	3.92	25.61
HILL-ROM HOLDINGS	3.31	26.08
BLOOMIN' BRANDS	2.92	9.94
EVERCORE PARTNERS 'A'	2.75	13.87
AMC ENTERTAINMENT HDG. CL.A	2.65	-5.91
COVANTA HOLDING	2.56	2.31
HSN	2.43	9.19
B & G FOODS	2.36	-7.08
EDUCATION REAL.TST.	2.31	-2.52

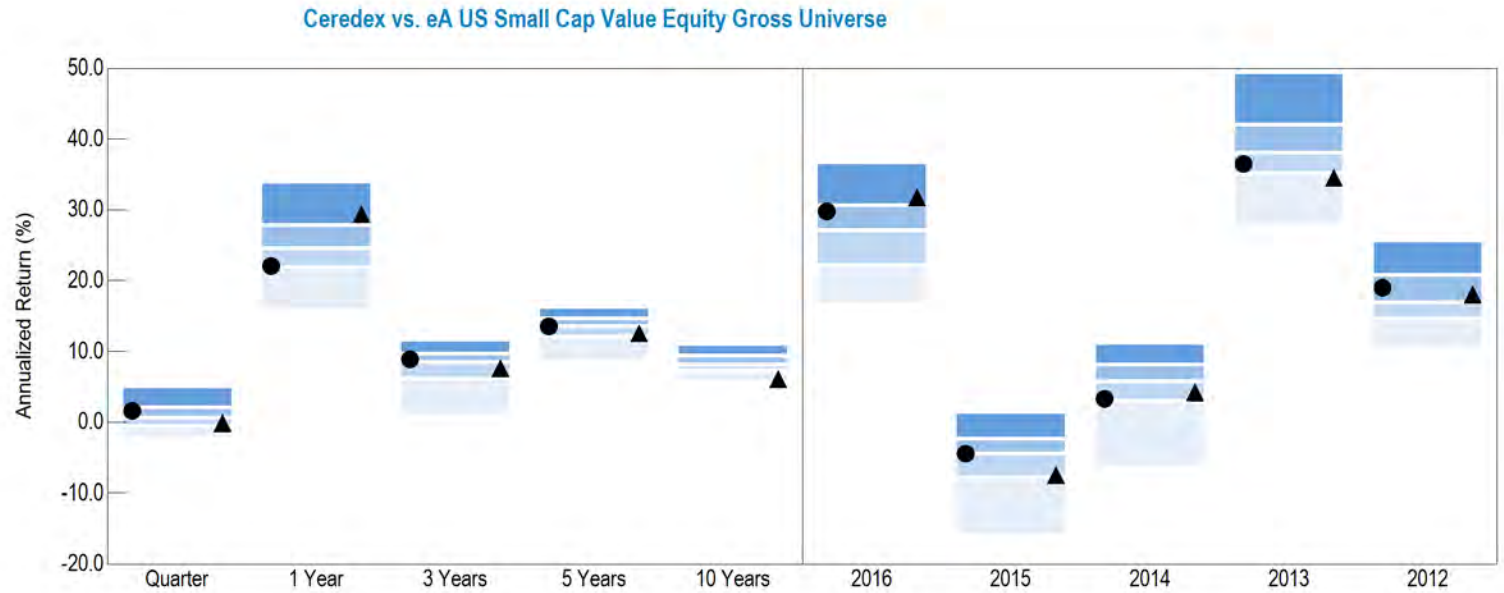
Top Contributors

	Avg Wgt	Return	Contribution
APOGEE ENTERPRISES	57.77	11.57	6.68
KORN FERRY INTERNATIONAL	40.30	7.34	2.96
EMCOR GROUP	-25.15	-10.93	2.75
MUELLER WATER PRODUCTS	-16.88	-10.91	1.84
UMB FINANCIAL	-67.88	-2.02	1.37
BANK OF HAWAII	-18.77	-6.59	1.24
SCHOLASTIC	-9.52	-10.07	0.96
COVANTA HOLDING	26.61	2.31	0.62
HILL-ROM HOLDINGS	1.79	26.08	0.47
RETAIL OPPOR.INVS.	84.36	0.44	0.37

Bottom Contributors

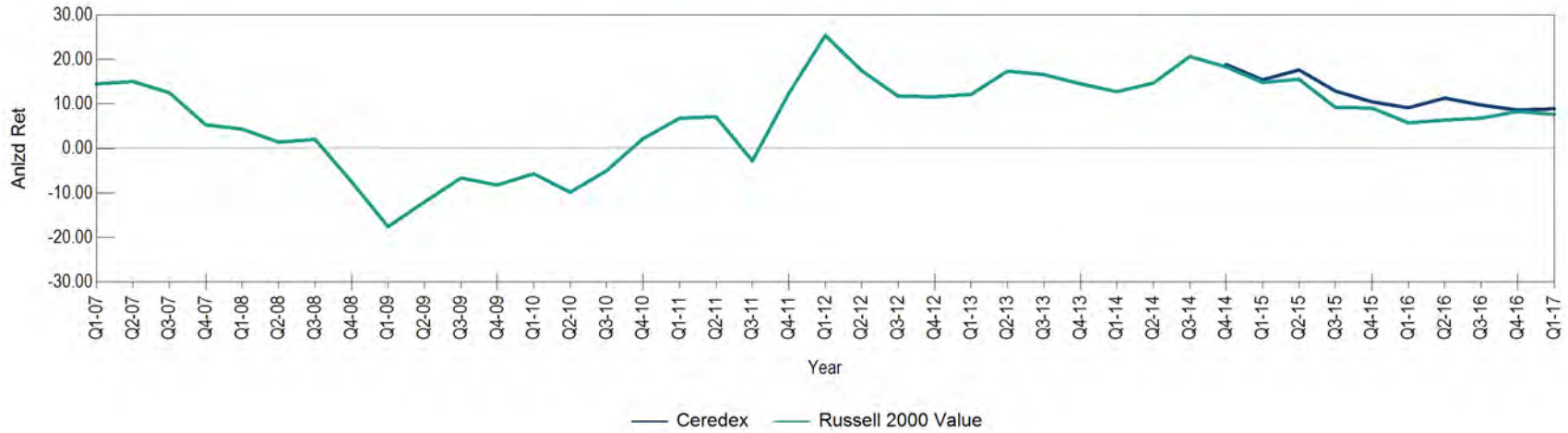
	Avg Wgt	Return	Contribution
DSW 'A'	113.99	-7.80	-8.89
BWX TECHNOLOGIES	-36.40	20.13	-7.33
PRIMERICA	-36.43	19.15	-6.98
SONIC	167.94	-3.81	-6.39
CLARCOR	-289.69	0.95	-2.74
MEDICAL PROPS.TRUST	-35.64	6.86	-2.44
TETRA TECH	43.95	-5.13	-2.25
KNOLL	14.72	-14.19	-2.09
SUN HYDRAULICS	22.14	-9.38	-2.08
ITT	-23.65	6.70	-1.58

Unclassified sector allocation includes cash allocations.

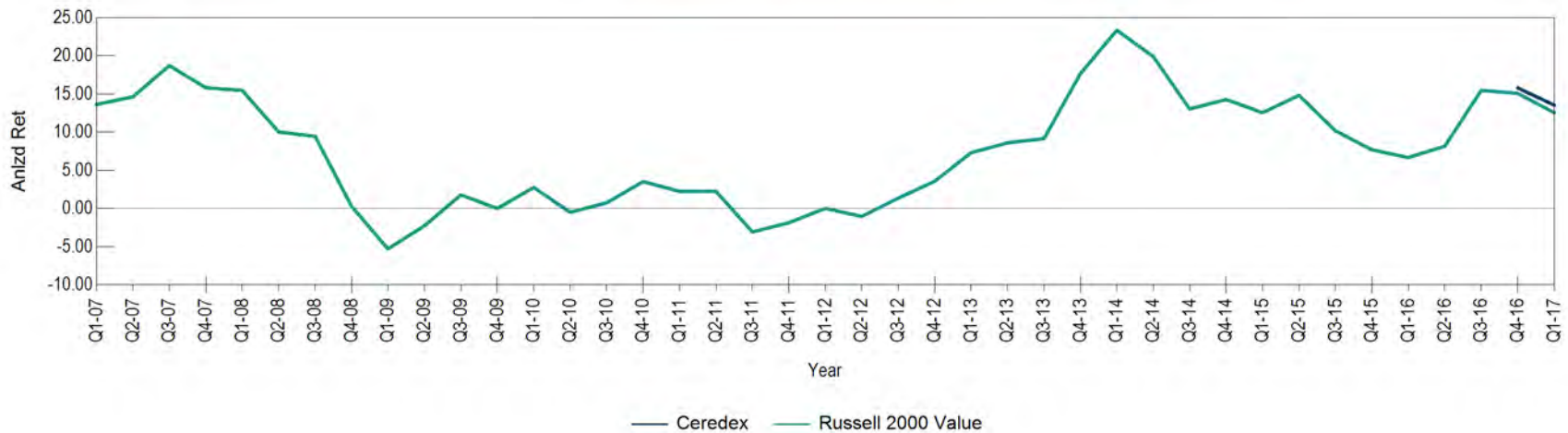


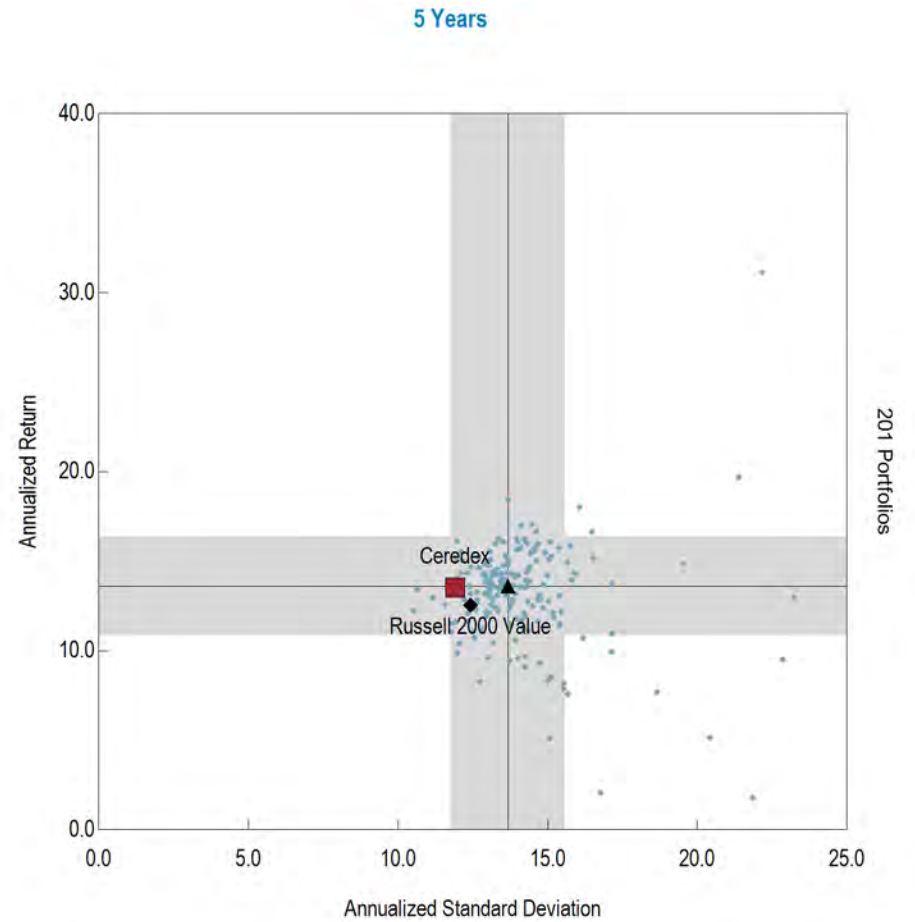
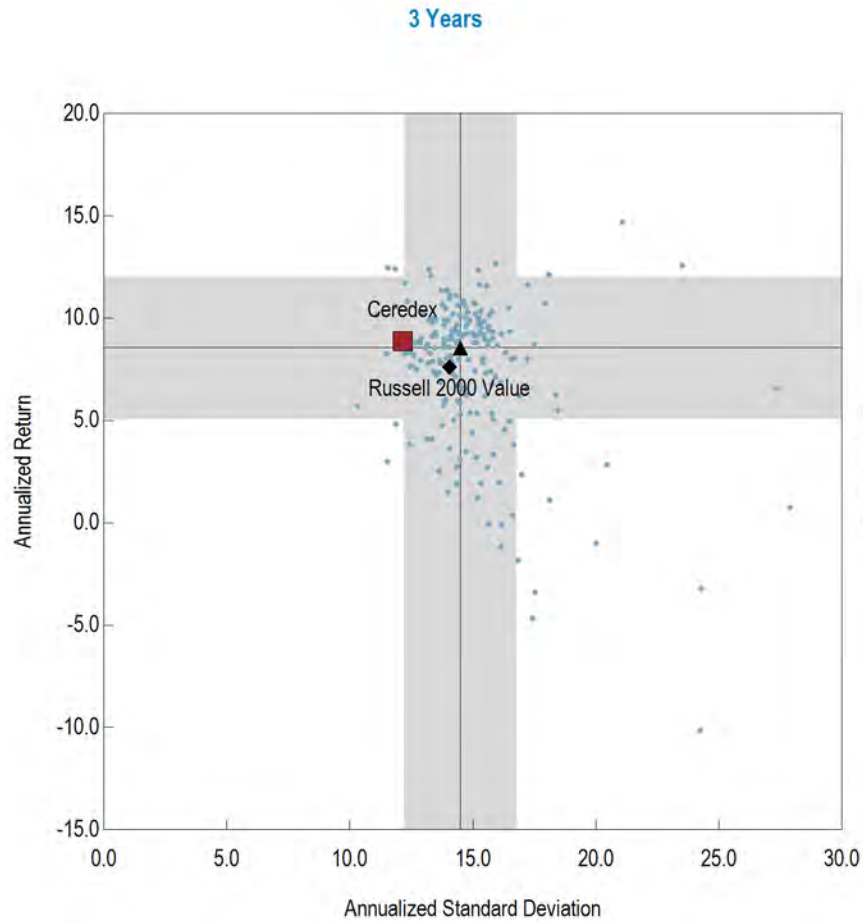
	Quarter	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012
5th Percentile	5.1	33.9	11.6	16.2	11.0	36.7	1.5	11.2	49.4	25.7
25th Percentile	2.2	27.9	9.7	14.7	9.4	30.7	-2.2	8.2	42.1	20.8
Median	0.7	24.7	8.6	13.6	8.2	27.2	-4.3	5.8	38.1	16.9
75th Percentile	-0.5	21.9	6.2	12.2	7.4	22.2	-7.7	3.1	35.2	14.7
95th Percentile	-2.2	15.8	0.9	8.5	5.7	16.8	-15.8	-6.3	27.8	10.3
# of Portfolios	217	217	211	201	169	222	212	206	199	187
● Ceredex	1.6 (33)	22.1 (75)	8.9 (42)	13.5 (53)	-- (--)	29.8 (32)	-4.4 (52)	3.3 (74)	36.5 (66)	19.0 (38)
▲ Russell 2000 Value	-0.1 (67)	29.4 (17)	7.6 (64)	12.5 (70)	6.1 (93)	31.7 (17)	-7.5 (74)	4.2 (68)	34.5 (78)	18.1 (43)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	8.9%	12.2%	0.7
Russell 2000 Value	7.6%	14.0%	0.5
eA US Small Cap Value Equity Gross Median	8.6%	14.5%	0.6

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	13.5%	11.9%	1.1
Russell 2000 Value	12.5%	12.4%	1.0
eA US Small Cap Value Equity Gross Median	13.6%	13.7%	1.0

International Equity Managers

Pyrford Manager Portfolio Overview

Period Ending: March 31, 2017

International equity value portfolio of non-US companies with low valuations at the country and stock level. Primary personnel include Tony Cousins, Daniel McDonagh, and Paul Simons.

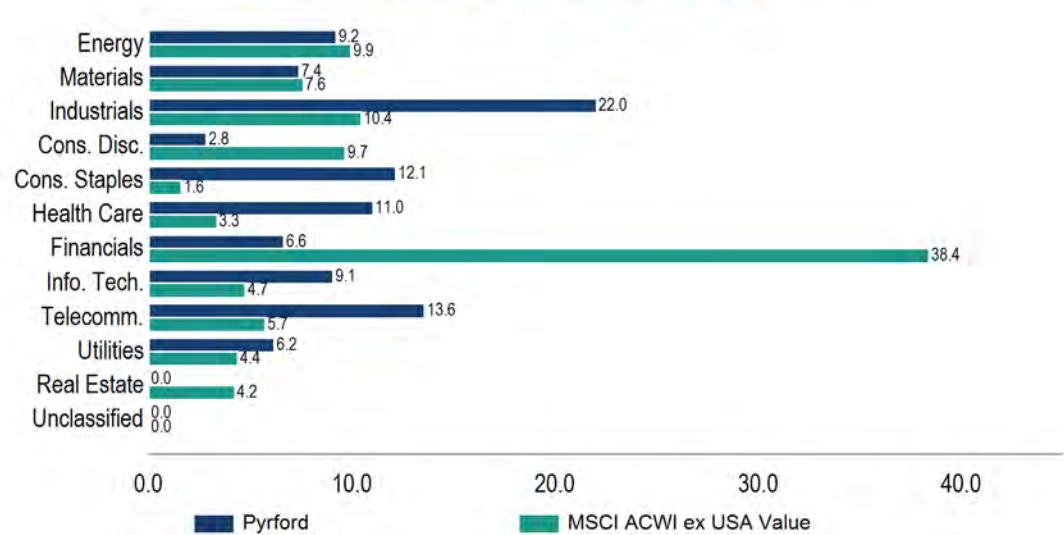
Characteristics

	MSCI ACWI Portfolio	MSCI ACWI ex USA Value
Number of Holdings	67	1,060
Weighted Avg. Market Cap. (\$B)	54.37	49.18
Median Market Cap. (\$B)	19.56	7.08
Price To Earnings	25.71	16.17
Price To Book	3.49	1.57
Price To Sales	2.24	1.54
Return on Equity (%)	15.32	10.27
Yield (%)	3.38	3.64
Beta		1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	92.3%	76.7%
Emerging*	7.7%	23.3%
Top 10 Largest Countries		
Switzerland	15.4%	3.4%
Australia	11.1%	5.4%
Japan	9.5%	16.5%
France	8.9%	7.9%
Germany	7.7%	6.7%
Hong Kong	7.5%	2.4%
United Kingdom	7.2%	13.1%
Netherlands	6.9%	1.4%
Singapore	5.4%	0.9%
Sweden	5.2%	2.2%
Total-Top 10 Largest Countries	85.0%	60.1%

Sector Allocation (%) vs MSCI ACWI ex USA Value



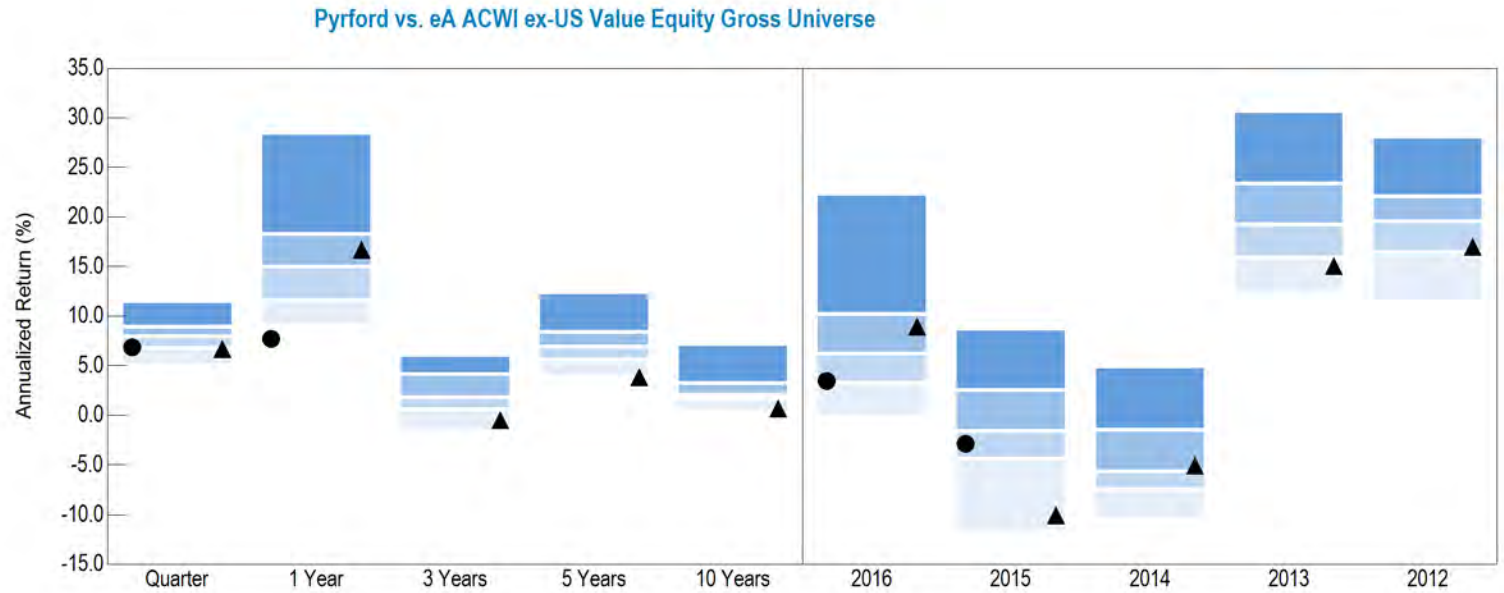
Top Contributors

	Avg Wgt	Return	Contribution
ROCHE HOLDING	3.13	15.30	0.48
ASM PACIFIC TECH.	1.53	28.36	0.43
BRITISH AMERICAN TOBACCO	2.06	18.72	0.38
UNILEVER CERTS.	1.75	21.72	0.38
COMPUTERSHARE	1.69	20.39	0.34
WOOLWORTHS	1.82	17.39	0.32
SINGAPORE TECHS.ENGR.	1.55	19.40	0.30
ATLAS COPCO 'A'	1.85	15.98	0.30
FUCHS PETROLUB PREF.	1.75	16.77	0.29
SANOFI	2.21	11.58	0.26

Bottom Contributors

	Avg Wgt	Return	Contribution
BRAMBLES	2.08	-19.31	-0.40
VTECH HOLDINGS	1.40	-10.63	-0.15
VOPAK	1.27	-7.64	-0.10
TEVA PHARMACEUTICAL	0.75	-11.21	-0.08
BP	1.09	-7.52	-0.08
ROYAL DUTCH SHELL B	1.34	-4.50	-0.06
CNOOC	1.16	-4.56	-0.05
ROYAL DUTCH SHELL A	1.73	-2.25	-0.04
PANALPINA WELTTRANSPORT	1.01	-3.49	-0.04
BEZEQ THE ISRAELI TELECM CORP.LTD.	0.63	-5.19	-0.03

Unclassified sector allocation includes cash allocations.



	Return (Rank)															
5th Percentile	11.4	28.4	6.1	12.4	7.1	22.3	8.7	4.9	30.7	28.1						
25th Percentile	8.9	18.3	4.1	8.4	3.3	10.2	2.5	-1.4	23.4	22.1						
Median	8.0	15.0	1.9	7.0	2.1	6.2	-1.6	-5.7	19.3	19.6						
75th Percentile	6.9	11.7	0.6	5.7	1.7	3.3	-4.3	-7.4	15.9	16.5						
95th Percentile	5.1	9.1	-1.6	3.9	0.4	-0.1	-11.6	-10.4	12.4	11.7						
# of Portfolios	55	55	50	44	29	55	45	37	34	32						
● Pyrford	6.8 (76)	7.7 (97)	-- (--)	-- (--)	-- (--)	3.4 (74)	-2.9 (59)	-- (--)	-- (--)	-- (--)						
▲ MSCI ACWI ex USA Value	6.7 (79)	16.7 (37)	-0.5 (86)	3.8 (96)	0.7 (95)	8.9 (35)	-10.1 (93)	-5.1 (49)	15.0 (83)	17.0 (74)						

William Blair Manager Portfolio Overview

Period Ending: March 31, 2017

International equity growth portfolio of non-US companies with high growth rates constructed from the security level. Primary personnel include Simon Fennell and Jeffrey Urbina.

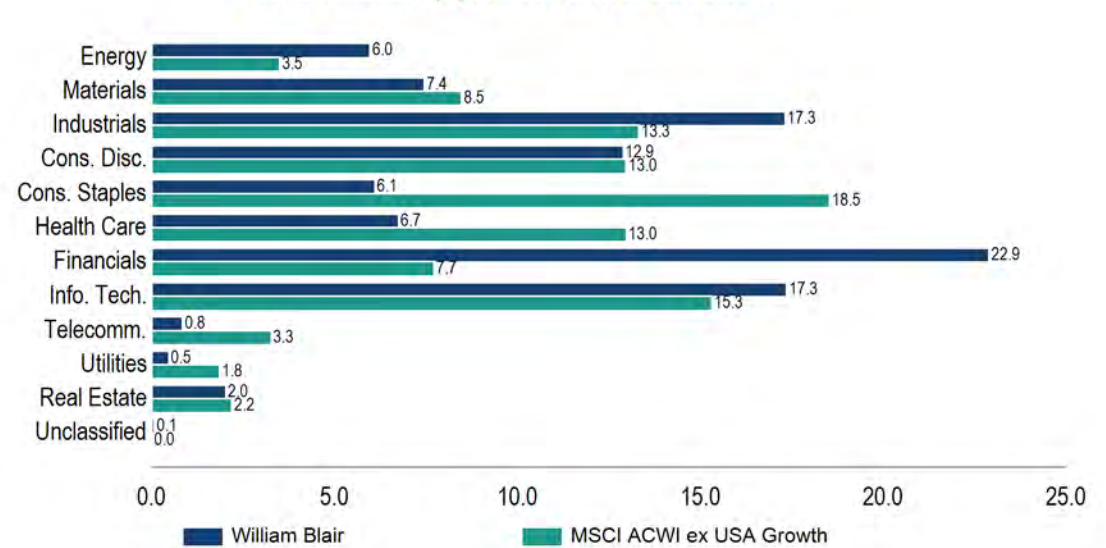
Characteristics

	MSCI ACWI Portfolio	MSCI ACWI ex USA Growth
Number of Holdings	210	1,021
Weighted Avg. Market Cap. (\$B)	46.30	57.10
Median Market Cap. (\$B)	7.56	7.36
Price To Earnings	23.44	25.36
Price To Book	4.03	3.88
Price To Sales	2.96	3.06
Return on Equity (%)	20.99	16.97
Yield (%)	2.28	2.05
Beta	0.88	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	80.4%	76.2%
Emerging*	19.6%	23.8%
Top 10 Largest Countries		
Japan	17.8%	16.2%
United Kingdom	16.9%	11.7%
France	12.3%	6.1%
Germany	7.5%	6.4%
China*	6.4%	6.5%
Canada	4.1%	6.5%
India*	3.7%	2.0%
Hong Kong	3.1%	2.5%
Brazil*	2.9%	1.8%
Switzerland	2.8%	8.9%
Total-Top 10 Largest Countries	77.4%	68.6%

Sector Allocation (%) vs MSCI ACWI ex USA Growth



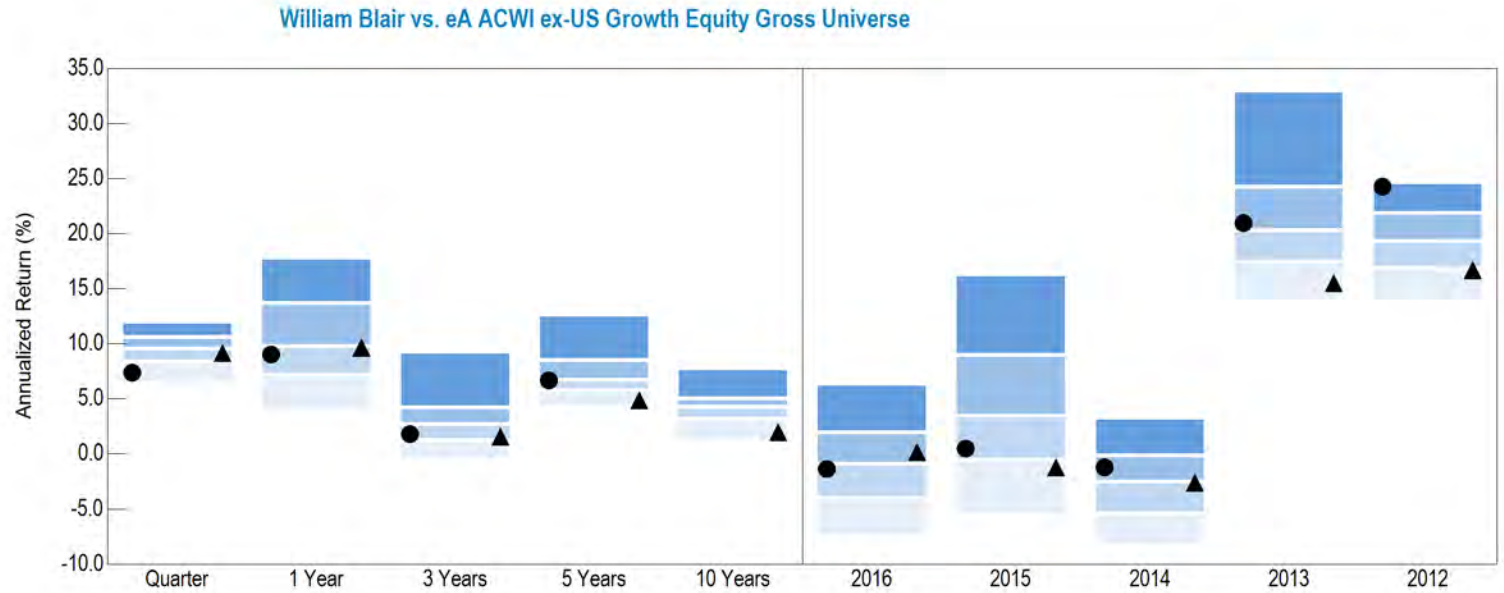
Top Contributors

	Avg Wgt	Return	Contribution
SAMSUNG ELECTRONICS	1.65	23.47	0.39
ACTELION	0.97	30.18	0.29
SK HYNIX	1.15	22.02	0.25
FANUC	1.21	20.54	0.25
VINCI	1.38	16.44	0.23
CHECK POINT SFTW.TECHS.	0.81	21.55	0.17
RIO TINTO	1.86	8.99	0.17
BRITISH AMERICAN TOBACCO	0.83	18.72	0.16
KEYENCE	0.87	16.56	0.14
TAIWAN SEMICON.SPN.ADR 1:5	1.00	14.23	0.14

Bottom Contributors

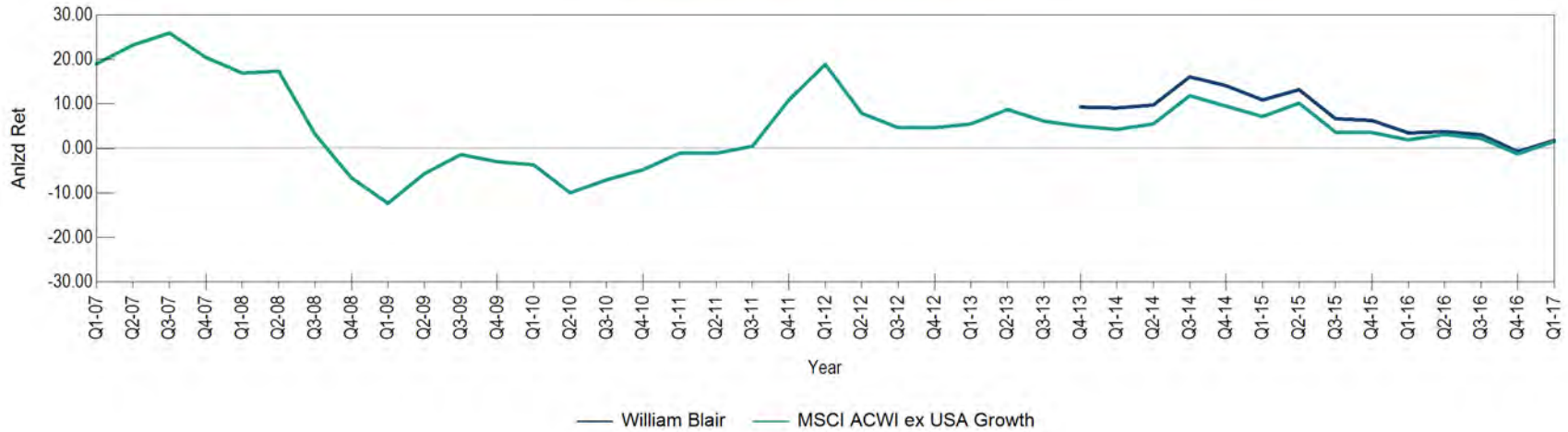
	Avg Wgt	Return	Contribution
FUJI HEAVY INDS.	1.65	-8.89	-0.15
PANDORA	0.61	-14.35	-0.09
ORIX	1.45	-3.88	-0.06
SUNCOR ENERGY	0.83	-5.76	-0.05
ROYAL DUTCH SHELL A	1.91	-2.25	-0.04
SUMITOMO MITSUI FINL.GP.	1.24	-3.35	-0.04
NISSAN CHEMICAL INDS.	0.26	-12.47	-0.03
SPAR GROUP	0.23	-10.50	-0.02
BHP BILLITON	1.21	-1.90	-0.02
WPP	0.85	-2.37	-0.02

Unclassified sector allocation includes cash allocations.

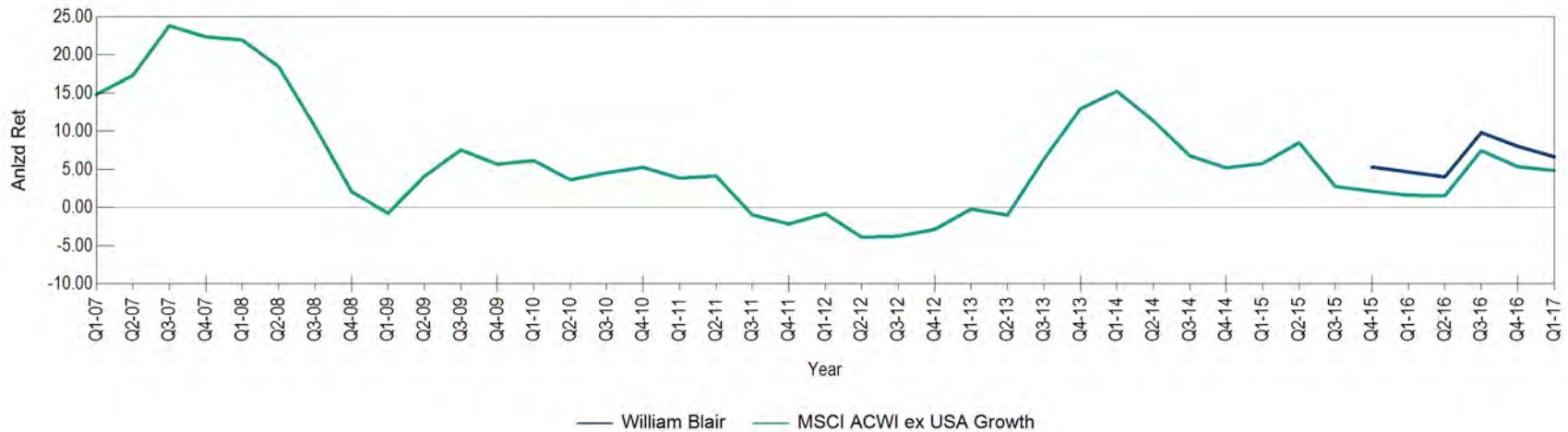


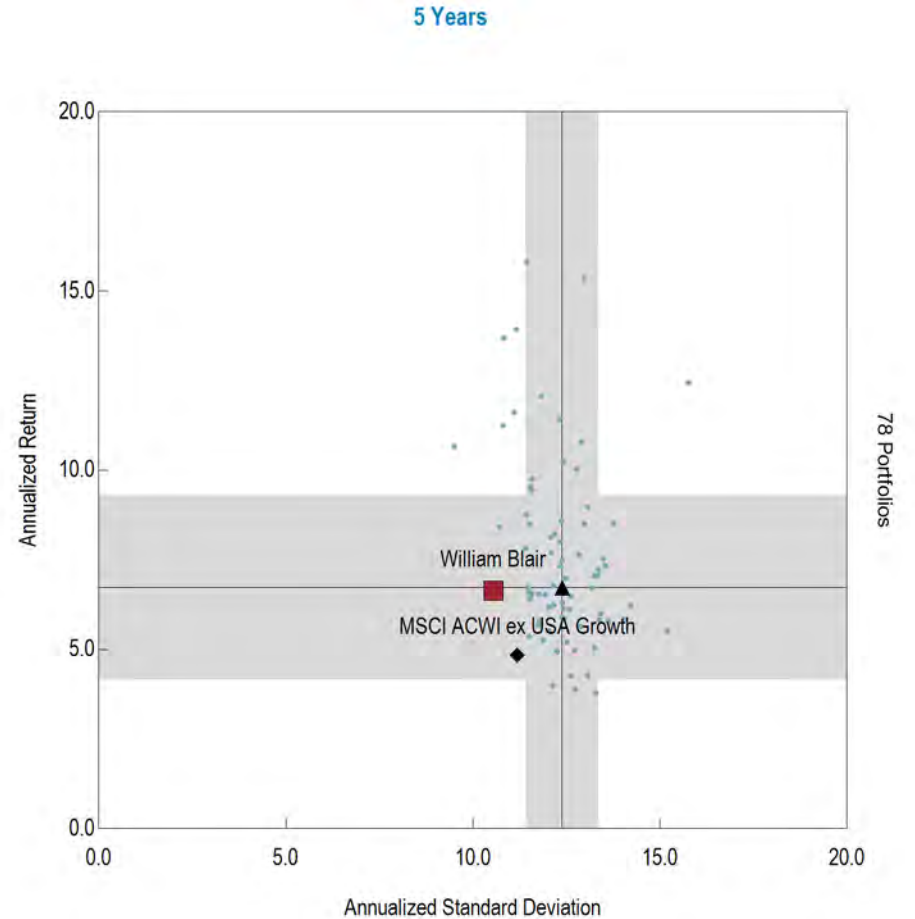
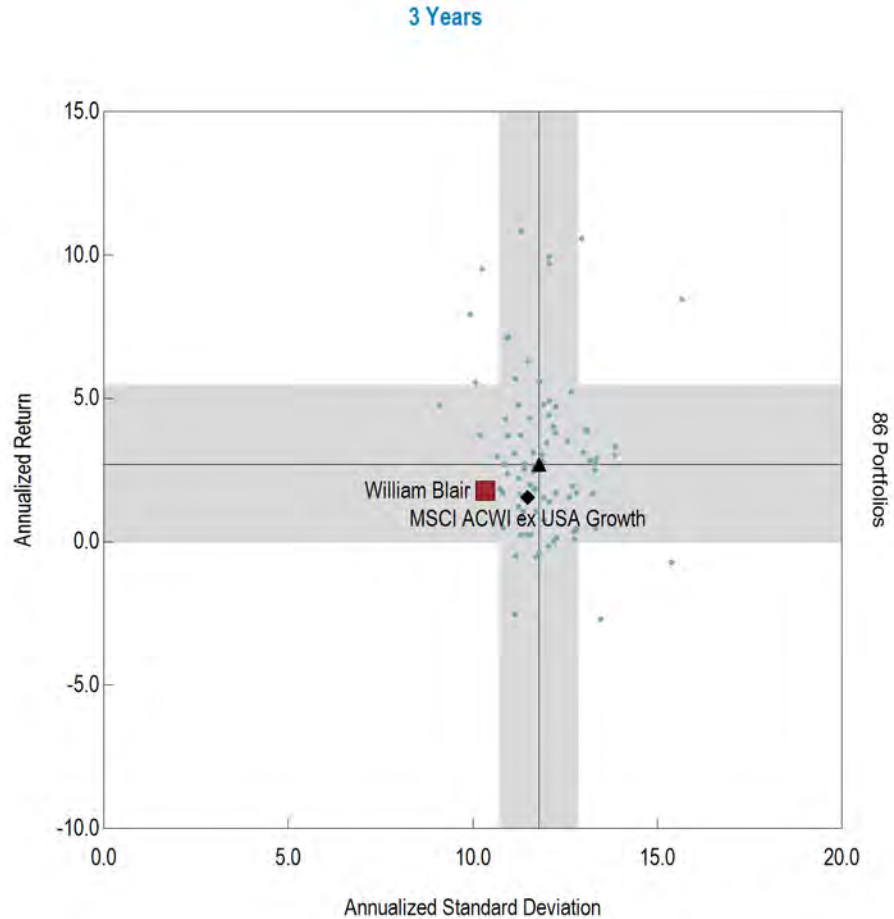
	Quarter	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012
5th Percentile	12.0	17.8	9.2	12.6	7.7	6.3	16.3	3.2	33.0	24.6
25th Percentile	10.6	13.7	4.2	8.5	5.1	2.0	9.0	-0.1	24.3	21.9
Median	9.6	9.8	2.7	6.7	4.3	-0.9	3.5	-2.5	20.3	19.3
75th Percentile	8.4	7.2	1.3	5.8	3.2	-3.9	-0.5	-5.3	17.5	16.9
95th Percentile	6.4	3.9	-0.5	4.3	1.2	-7.4	-5.4	-8.2	14.0	13.7
# of Portfolios	94	94	86	78	58	90	70	50	46	51
● William Blair	7.4 (90)	9.0 (61)	1.8 (66)	6.6 (53)	-- (--)	-1.4 (55)	0.5 (69)	-1.2 (37)	20.9 (44)	24.3 (6)
▲ MSCI ACWI ex USA Growth	9.1 (58)	9.6 (52)	1.5 (73)	4.8 (94)	2.0 (90)	0.1 (45)	-1.3 (83)	-2.6 (53)	15.5 (87)	16.7 (78)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	3 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	1.8%	10.3%	0.2
MSCI ACWI ex USA Growth	1.5%	11.5%	0.1
eA ACWI ex-US Growth Equity Gross Median	2.7%	11.8%	0.2

	5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	6.6%	10.6%	0.6
MSCI ACWI ex USA Growth	4.8%	11.2%	0.4
eA ACWI ex-US Growth Equity Gross Median	6.7%	12.4%	0.5

PIMCO RAE Emerging Markets Manager Portfolio Overview

Period Ending: March 31, 2017

The PIMCO RAE Emerging Markets portfolio seeks to invest 80% of its assets in investments that are economically tied to emerging market countries. The portfolio is sub-advised by Research Affiliates, LLC.

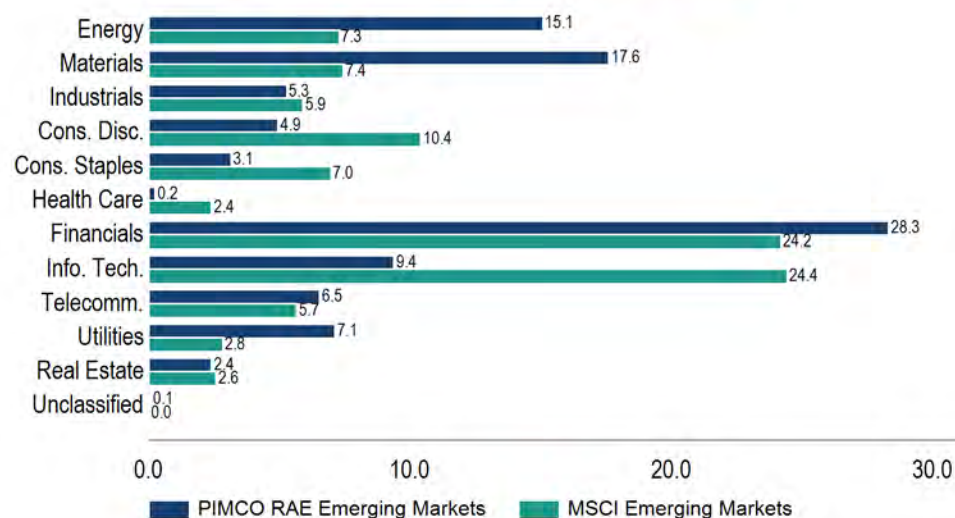
Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	514	830
Weighted Avg. Market Cap. (\$B)	31.78	56.89
Median Market Cap. (\$B)	3.95	5.06
Price To Earnings	12.76	19.36
Price To Book	1.34	2.74
Price To Sales	1.06	2.17
Return on Equity (%)	10.21	15.84
Yield (%)	3.31	2.44
Beta		1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	6.6%	0.0%
Emerging*	93.4%	100.0%
Top 10 Largest Countries		
Brazil*	20.2%	7.7%
Korea*	16.0%	15.0%
China*	13.3%	26.8%
Russia*	11.0%	3.8%
Taiwan*	8.1%	12.2%
India*	7.2%	8.7%
South Africa*	6.1%	7.0%
Hong Kong	5.8%	0.0%
Poland*	2.6%	1.2%
Thailand*	2.4%	2.2%
Total-Top 10 Largest Countries	92.7%	84.7%

Sector Allocation (%) vs MSCI Emerging Markets



Top Contributors

	End Weight	Return	Contribution
VALE PN	3.73	23.90	0.89
SAMSUNG ELECTRONICS	3.74	23.47	0.88
BANCO DO BRASIL ON	2.01	23.60	0.47
CIA. ENGT. DE MINASGR.ADR 1:1	0.85	44.30	0.38
JINDAL STEEL & POWER	0.42	82.76	0.35
ITAU UNIBANCO BANCO HLDG.ADR 1:1	1.69	19.76	0.33
LG ELECTRONICS	0.69	42.12	0.29
TPK HOLDING	0.31	90.12	0.28
POSCO	1.24	22.05	0.27
KGHM	0.74	31.93	0.24

Bottom Contributors

	End Weight	Return	Contribution
OAO GAZPROM ADS (LON)	2.11	-10.34	-0.22
PTRO.BRAO.ADR 1:2	2.13	-4.15	-0.09
CTI.ELETR BRAS-ELETROBRAS SR.B PN	0.67	-12.61	-0.08
LUKOIL OAO ADR. (LON)	1.88	-3.99	-0.07
OJSC OC ROSNEFT GDR REG	0.49	-12.46	-0.06
BARCLAYS AFRICA GROUP	0.32	-15.66	-0.05
CNOOC	0.94	-4.56	-0.04
ALPHA BANK	0.33	-10.34	-0.03
BANK OF PIRAEUS	0.19	-17.52	-0.03
MMC NORILSK NICKEL (LON) SPN.ADR 10:1	0.50	-6.37	-0.03

Unclassified sector allocation includes cash allocations.

Global Equity Managers

Artisan Partners Manager Portfolio Overview

Period Ending: March 31, 2017

Global equity portfolio of companies that is benchmark agnostic with accelerating profit cycles and a focus on capital allocation. Primary personnel include James Hamel, Craig Cepukenas, and Matthew Kamm.

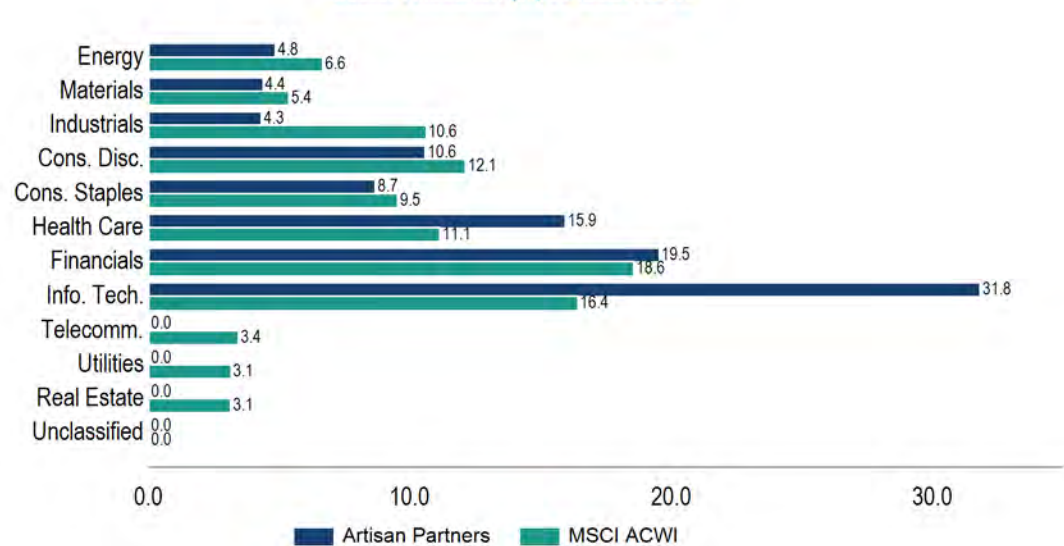
Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	45	2,480
Weighted Avg. Market Cap. (\$B)	72.59	101.77
Median Market Cap. (\$B)	30.61	9.07
Price To Earnings	42.21	22.34
Price To Book	6.27	3.40
Price To Sales	6.91	2.82
Return on Equity (%)	15.56	15.55
Yield (%)	0.79	2.40
Beta	1.17	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	95.7%	88.9%
Emerging*	4.3%	11.1%
Top 10 Largest Countries		
United States	60.4%	53.1%
Japan	8.3%	7.7%
United Kingdom	5.6%	5.8%
Australia	5.1%	2.5%
Hong Kong	5.1%	1.1%
Denmark	3.5%	0.5%
Germany	3.0%	3.1%
Netherlands	2.4%	1.1%
France	1.8%	3.3%
India*	1.4%	1.0%
Total-Top 10 Largest Countries	96.5%	79.2%

Sector Allocation (%) vs MSCI ACWI



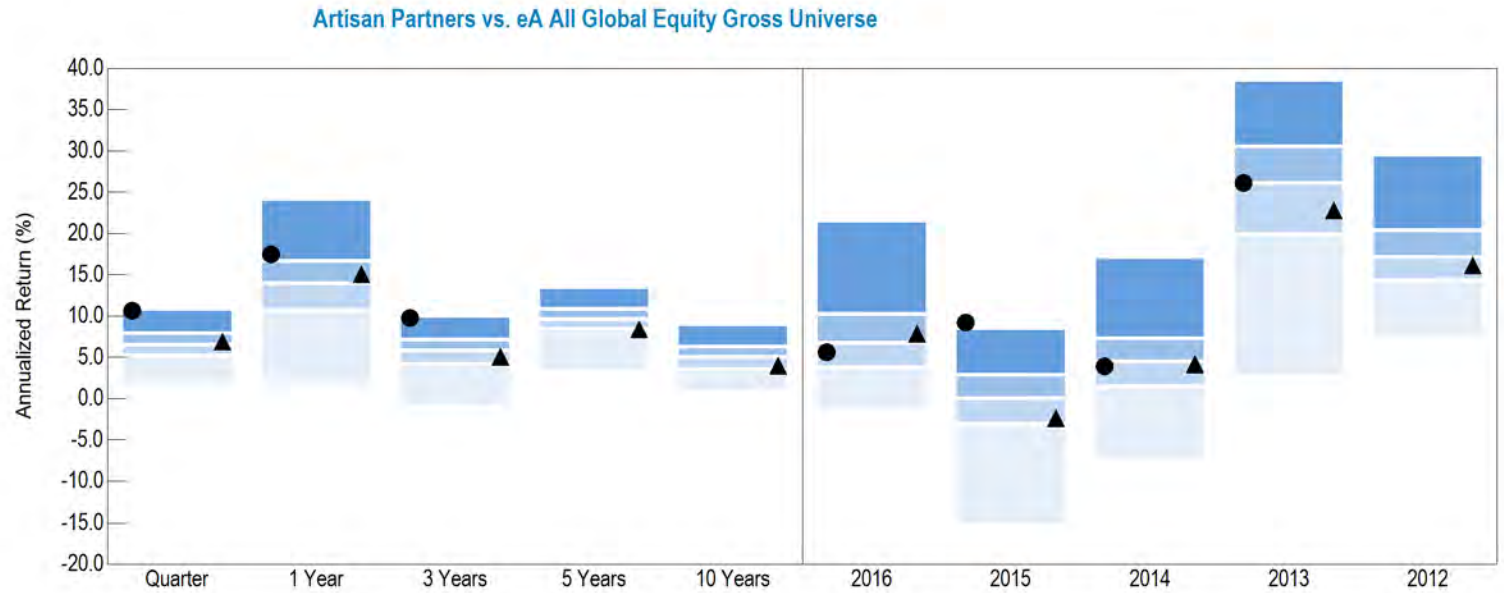
Top Contributors

	Avg Wgt	Return	Contribution
MARKIT	9.02	18.47	1.67
FACEBOOK CLASS A	3.38	23.47	0.79
MCGRAW HILL FINANCIAL	3.50	21.95	0.77
VISA 'A'	5.31	14.12	0.75
AVAGO TECHNOLOGIES	2.29	24.44	0.56
BOSTON SCIENTIFIC	3.70	14.98	0.55
GENMAB	3.30	16.09	0.53
TREASURY WINE ESTATES	2.28	21.95	0.50
DEXCOM	1.14	41.93	0.48
ASOS	1.84	23.24	0.43

Bottom Contributors

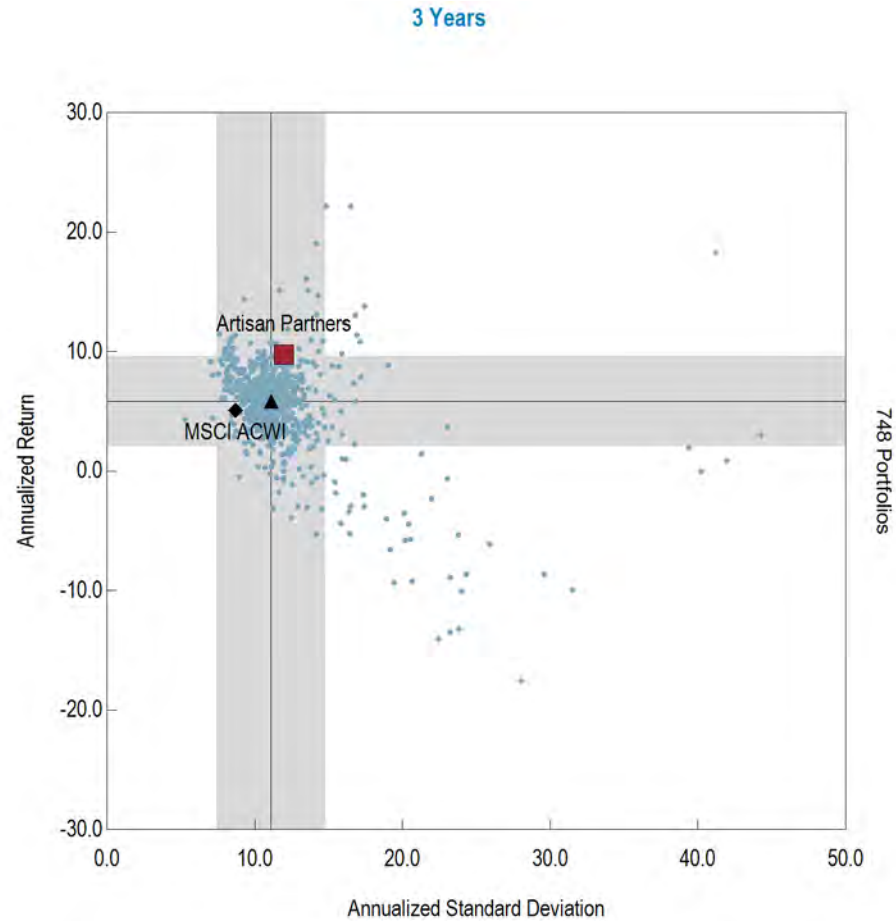
	Avg Wgt	Return	Contribution
NOBLE ENERGY	2.05	-9.55	-0.20
LKQ	3.05	-4.50	-0.14
SCHLUMBERGER	1.31	-6.40	-0.08
AMOREPACIFIC	1.06	-5.77	-0.06
AUTO TRADER GROUP	1.66	-2.53	-0.04
DIRECT LINE IN.GROUP	1.81	-2.06	-0.04
JAMES HARDIE INDS.CDI.	2.46	-1.36	-0.03
RAIA DROGASIL ON	1.07	-1.44	-0.02
KROTON EDUCACIONAL ON	0.12	2.72	0.00
BRENTAG	2.20	0.42	0.01

Unclassified sector allocation includes cash allocations.



	Quarter	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012
5th Percentile	10.8	24.1	10.0	13.5	9.0	21.5	8.5	17.1	38.6	29.5
25th Percentile	8.0	16.7	7.2	10.9	6.3	10.3	3.0	7.4	30.6	20.4
Median	6.5	14.0	5.8	9.7	5.1	6.8	0.1	4.6	26.2	17.2
75th Percentile	5.3	10.8	4.3	8.5	3.6	3.9	-2.9	1.5	20.0	14.4
95th Percentile	1.7	1.8	-0.8	3.4	0.9	-1.4	-15.1	-7.4	2.7	7.4
# of Portfolios	820	818	748	657	376	842	692	609	552	475
● Artisan Partners	10.6 (6)	17.5 (21)	9.8 (6)	-- (--)	-- (--)	5.6 (61)	9.2 (4)	3.9 (56)	26.1 (51)	-- (--)
▲ MSCI ACWI	6.9 (42)	15.0 (41)	5.1 (64)	8.4 (79)	4.0 (73)	7.9 (42)	-2.4 (73)	4.2 (54)	22.8 (66)	16.1 (61)





3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	9.8%	12.0%	0.8
MSCI ACWI	5.1%	8.7%	0.6
eA All Global Equity Gross Median	5.8%	11.1%	0.5

First Eagle Manager Portfolio Overview

Period Ending: March 31, 2017

Global equity portfolio that is benchmark agnostic comprised of companies with low valuations. Primary personnel include Matt McLennan and Kimball Brooker.

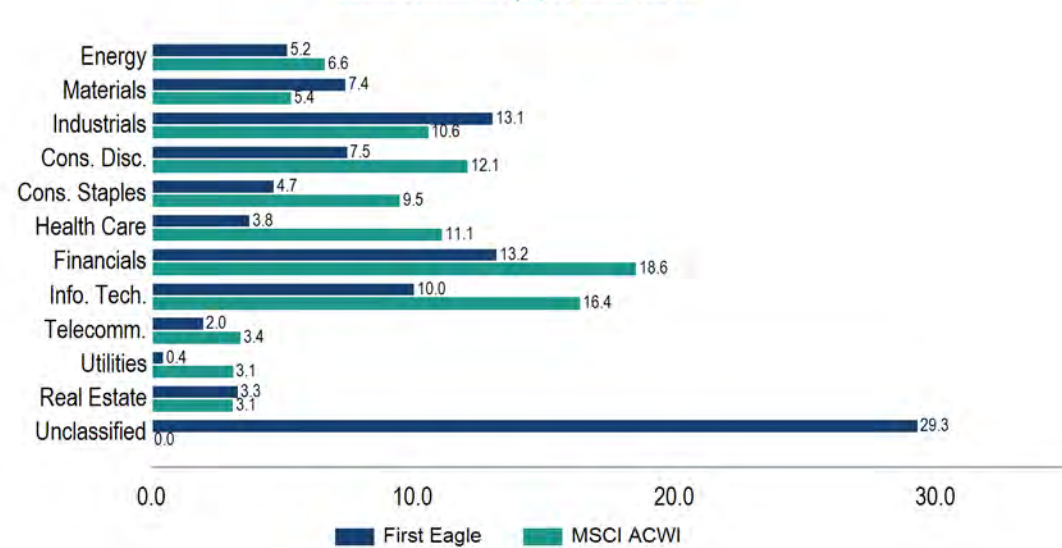
Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	168	2,480
Weighted Avg. Market Cap. (\$B)	60.10	101.77
Median Market Cap. (\$B)	17.81	9.07
Price To Earnings	24.78	22.34
Price To Book	3.36	3.40
Price To Sales	3.13	2.82
Return on Equity (%)	15.51	15.55
Yield (%)	1.94	2.40
Beta	0.77	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	76.7%	88.9%
Emerging*	4.0%	11.1%
Cash	19.4%	
Top 10 Largest Countries		
United States	43.0%	53.1%
Cash	19.4%	0.0%
Japan	13.0%	7.7%
France	6.0%	3.3%
Canada	3.6%	3.2%
United Kingdom	3.0%	5.8%
Germany	1.6%	3.1%
Mexico*	1.6%	0.4%
Switzerland	1.3%	2.9%
Singapore	1.3%	0.4%
Total-Top 10 Largest Countries	93.7%	79.9%

Sector Allocation (%) vs MSCI ACWI



Top Contributors

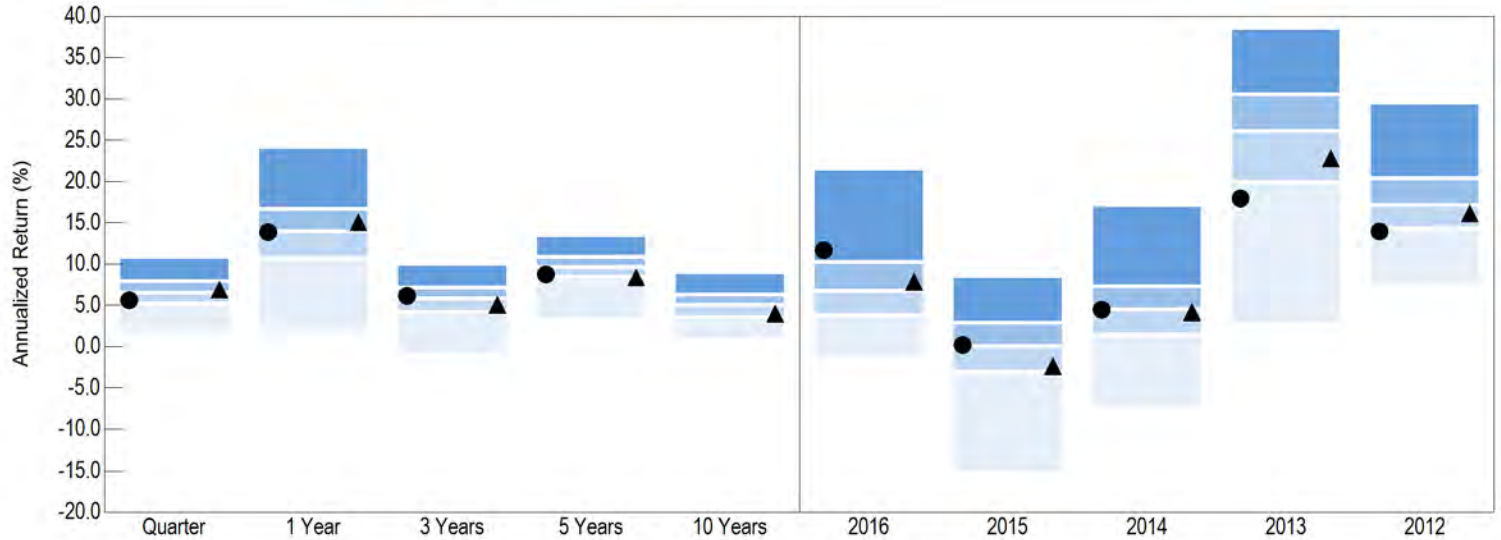
	Avg Wgt	Return	Contribution
ORACLE	1.37	16.47	0.23
FANUC	1.09	20.54	0.22
SMC	0.71	23.85	0.17
WEYERHAEUSER	0.90	13.96	0.13
COMCAST 'A'	1.35	8.88	0.12
GRUPO TELEVISIA SPN.ADR 1:5	0.50	24.17	0.12
KEYENCE	0.63	16.56	0.10
FRESNILLO	0.36	28.96	0.10
MICROSOFT	1.47	6.63	0.10
BARRICK GOLD (NYS)	0.47	19.02	0.09

Bottom Contributors

	Avg Wgt	Return	Contribution
MITSUBISHI ESTATE	0.77	-8.31	-0.06
VISTA OUTDOOR	0.14	-44.20	-0.06
CENOVUS ENERGY (NYS)	0.21	-25.08	-0.05
AMERICAN INTL.GP.	1.04	-3.93	-0.04
DEVON ENERGY	0.46	-8.52	-0.04
BB&T	0.74	-4.31	-0.03
SHIMANO	0.38	-7.26	-0.03
SYNCHRONY FINANCIAL	0.54	-5.08	-0.03
SCHLUMBERGER	0.40	-6.40	-0.03
NOW	0.13	-17.15	-0.02

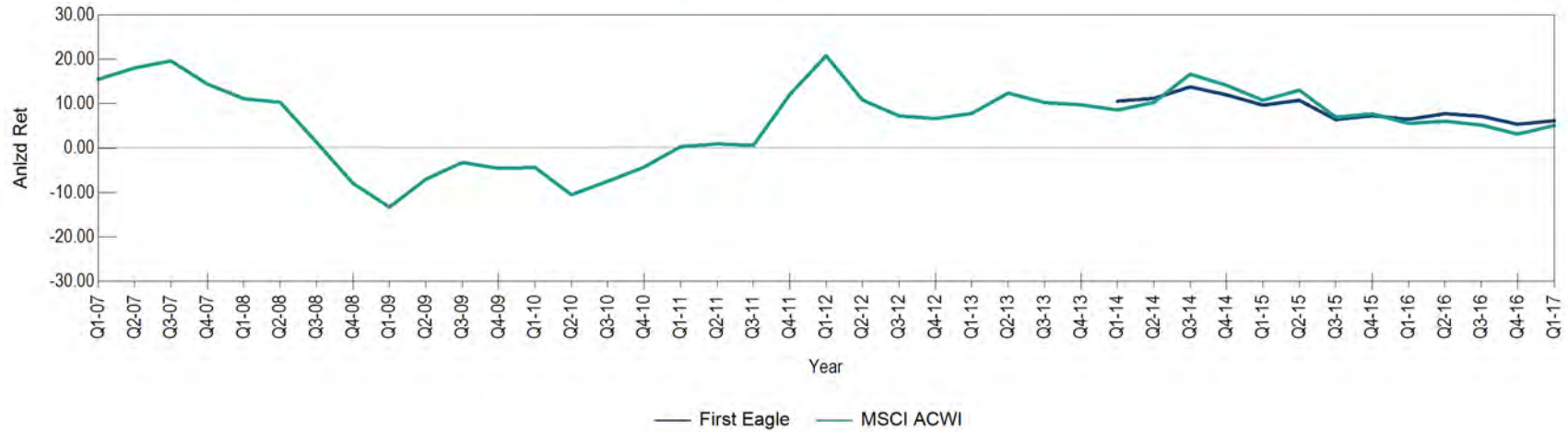
Unclassified sector allocation includes cash allocations and Gold allocations (6.8% as of 12/31/2016).

First Eagle vs. eA All Global Equity Gross Universe

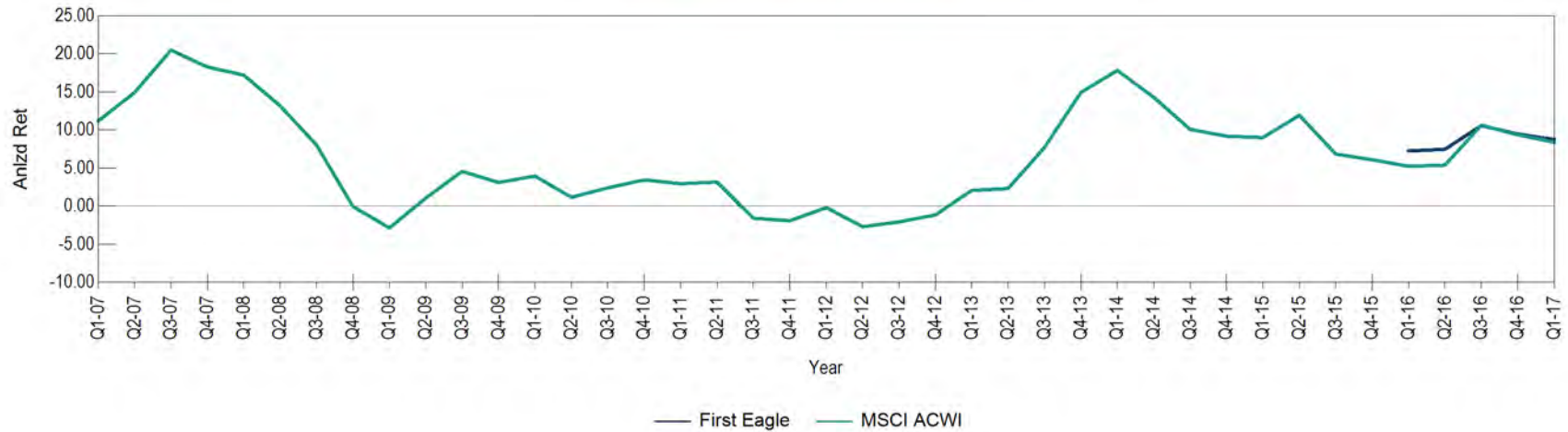


	Quarter	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012
5th Percentile	10.8	24.1	10.0	13.5	9.0	21.5	8.5	17.1	38.6	29.5
25th Percentile	8.0	16.7	7.2	10.9	6.3	10.3	3.0	7.4	30.6	20.4
Median	6.5	14.0	5.8	9.7	5.1	6.8	0.1	4.6	26.2	17.2
75th Percentile	5.3	10.8	4.3	8.5	3.6	3.9	-2.9	1.5	20.0	14.4
95th Percentile	1.7	1.8	-0.8	3.4	0.9	-1.4	-15.1	-7.4	2.7	7.4
# of Portfolios	820	818	748	657	376	842	692	609	552	475
● First Eagle	5.6 (70)	13.9 (52)	6.1 (44)	8.7 (72)	-- (--)	11.7 (19)	0.2 (49)	4.5 (51)	17.9 (80)	13.9 (78)
▲ MSCI ACWI	6.9 (42)	15.0 (41)	5.1 (64)	8.4 (79)	4.0 (73)	7.9 (42)	-2.4 (73)	4.2 (54)	22.8 (66)	16.1 (61)

Rolling 3 Year Annualized Return (%)



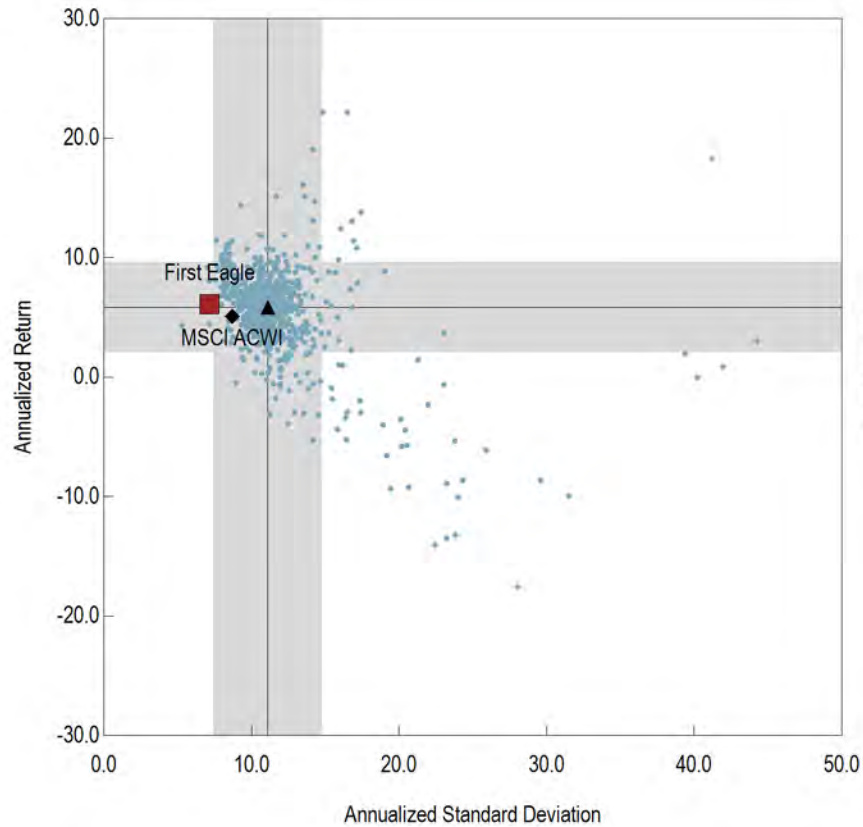
Rolling 5 Year Annualized Return (%)



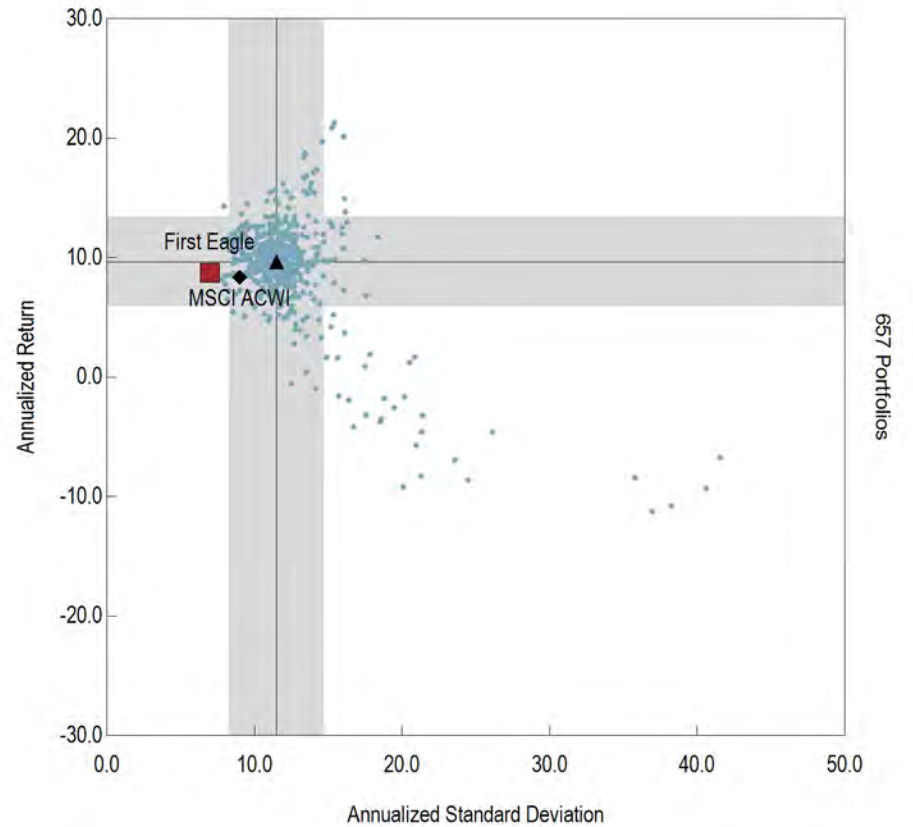
First Eagle
Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: March 31, 2017

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	6.1%	7.2%	0.8
MSCI ACWI	5.1%	8.7%	0.6
eA All Global Equity Gross Median	5.8%	11.1%	0.5

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	8.7%	7.0%	1.2
MSCI ACWI	8.4%	9.0%	0.9
eA All Global Equity Gross Median	9.7%	11.5%	0.8

Intech Global Low Vol Manager Portfolio Overview

Period Ending: March 31, 2017

Global equity diversified portfolio focused on maintaining volatility at or below the benchmark. Primary personnel include Adrian Banner, Vassilios Papathanakos, and Joseph Runnels.

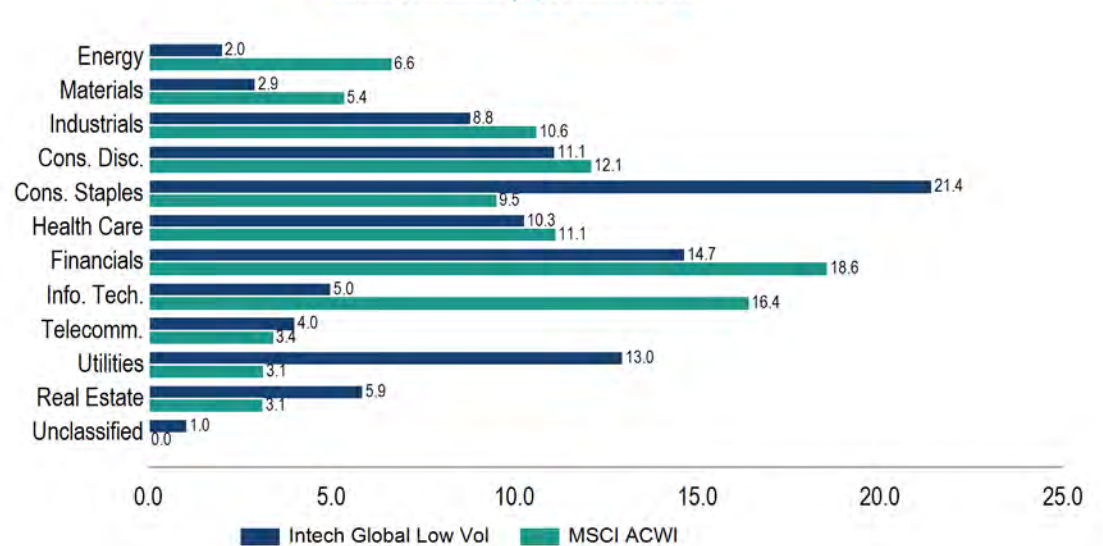
Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	456	2,480
Weighted Avg. Market Cap. (\$B)	43.09	101.77
Median Market Cap. (\$B)	12.91	9.07
Price To Earnings	22.89	22.34
Price To Book	3.53	3.40
Price To Sales	3.25	2.82
Return on Equity (%)	17.52	15.55
Yield (%)	2.57	2.40
Beta	0.42	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	99.0%	88.9%
Cash	1.0%	
Top 10 Largest Countries		
United States	60.0%	53.1%
Japan	17.1%	7.7%
Hong Kong	9.5%	1.1%
Canada	3.6%	3.2%
Israel	2.2%	0.2%
Singapore	1.7%	0.4%
Switzerland	1.1%	2.9%
Cash	1.0%	0.0%
Germany	0.9%	3.1%
Australia	0.9%	2.5%
Total-Top 10 Largest Countries	98.1%	74.2%

Sector Allocation (%) vs MSCI ACWI



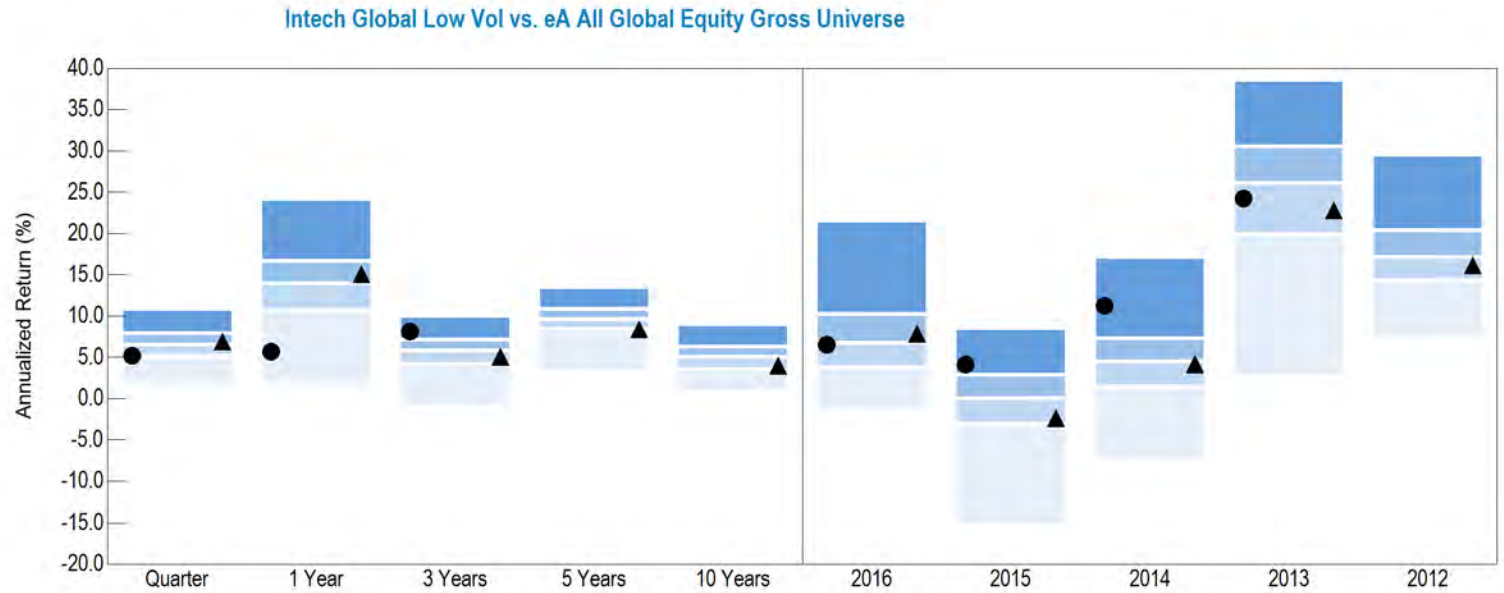
Top Contributors

	Avg Wgt	Return	Contribution
XCEL ENERGY	6.44	10.12	0.65
WEC ENERGY GROUP	8.97	4.31	0.39
NEXTERA ENERGY	3.92	8.26	0.32
PARSLEY ENERGY CLASS A	-3.51	-7.75	0.27
AVALONBAY COMMNS.	5.51	4.44	0.24
KIMBERLY-CLARK	1.45	16.19	0.24
WILLIAMS	-5.78	-3.98	0.23
CLP HOLDINGS	1.41	15.36	0.22
SOUTHERN	7.34	2.37	0.17
MCDONALDS	2.38	7.27	0.17

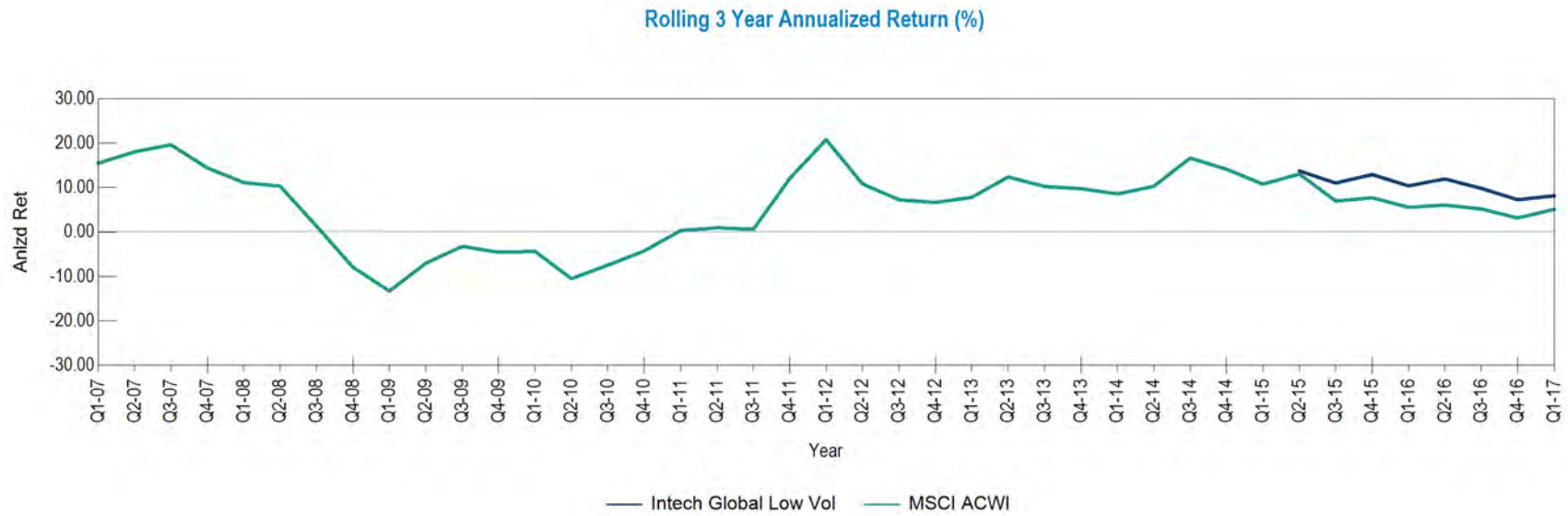
Bottom Contributors

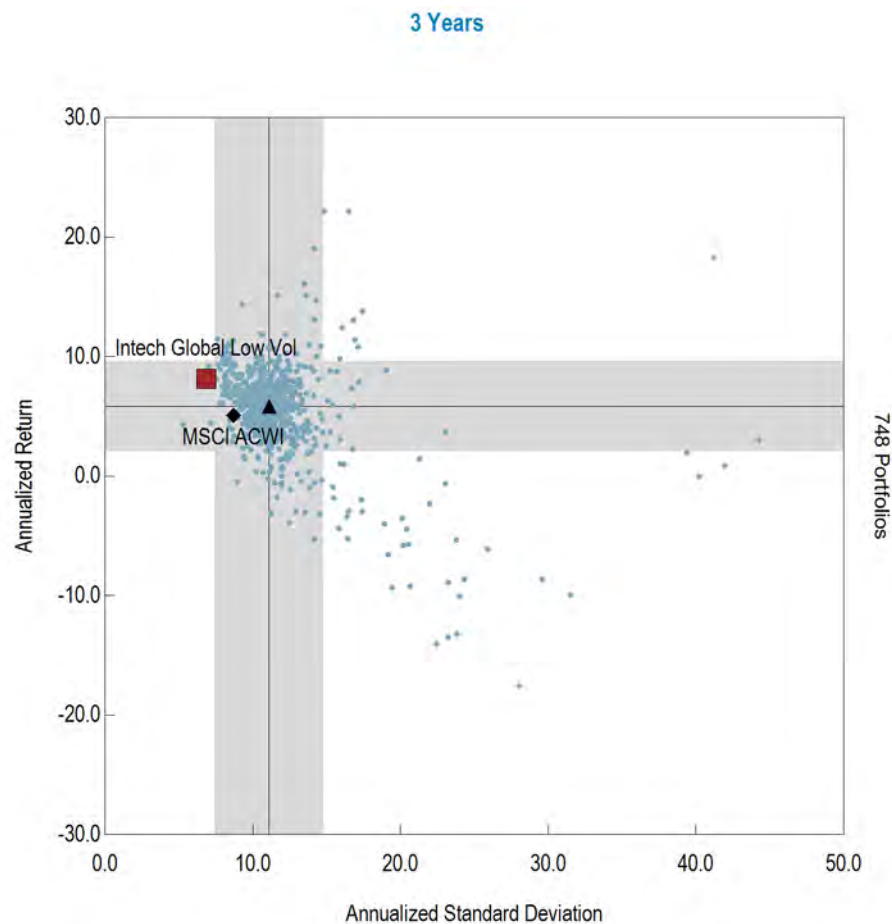
	Avg Wgt	Return	Contribution
AUTOZONE	23.28	-8.45	-1.97
RITE AID	1.83	-48.42	-0.89
SEATTLE GENETC.	-3.84	19.12	-0.73
DELL TECHNOLOGIES CL V ORD	-3.67	16.57	-0.61
SEAGATE TECH.	-1.39	21.98	-0.31
QUEST DIAGNOSTICS	-2.83	7.37	-0.21
PRINCIPAL FINL.GP.	-1.81	9.86	-0.18
TARGA RESOURCES	-1.65	8.53	-0.14
TARGET	0.48	-22.88	-0.11
GENERAL MILLS	2.62	-3.72	-0.10

Unclassified sector allocation includes cash allocations.



	Quarter	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012
5th Percentile	10.8	24.1	10.0	13.5	9.0	21.5	8.5	17.1	38.6	29.5
25th Percentile	8.0	16.7	7.2	10.9	6.3	10.3	3.0	7.4	30.6	20.4
Median	6.5	14.0	5.8	9.7	5.1	6.8	0.1	4.6	26.2	17.2
75th Percentile	5.3	10.8	4.3	8.5	3.6	3.9	-2.9	1.5	20.0	14.4
95th Percentile	1.7	1.8	-0.8	3.4	0.9	-1.4	-15.1	-7.4	2.7	7.4
# of Portfolios	820	818	748	657	376	842	692	609	552	475
● Intech Global Low Vol	5.2 (77)	5.7 (93)	8.1 (16)	-- (--)	-- (--)	6.5 (53)	4.1 (18)	11.2 (14)	24.2 (62)	-- (--)
▲ MSCI ACWI	6.9 (42)	15.0 (41)	5.1 (64)	8.4 (79)	4.0 (73)	7.9 (42)	-2.4 (73)	4.2 (54)	22.8 (66)	16.1 (61)





3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Intech Global Low Vol	8.1%	6.8%	1.2
MSCI ACWI	5.1%	8.7%	0.6
eA All Global Equity Gross Median	5.8%	11.1%	0.5

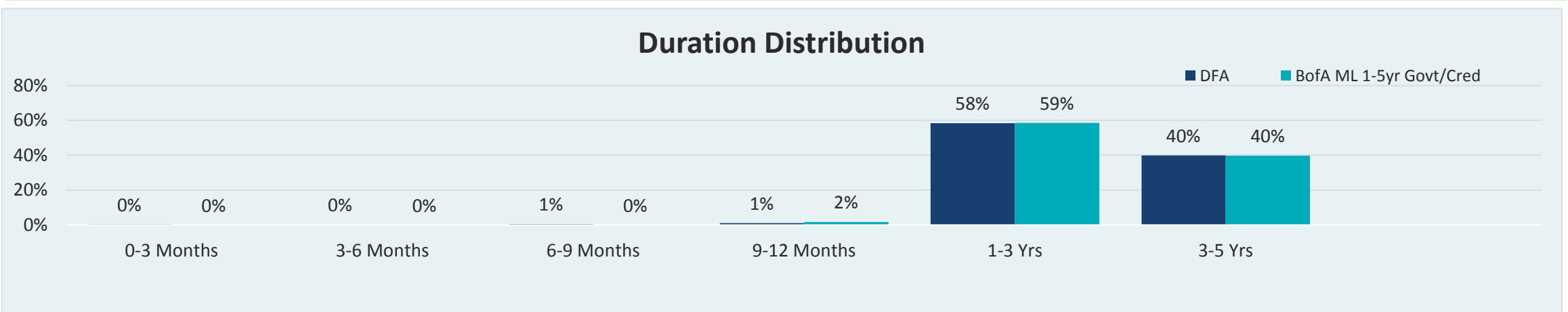
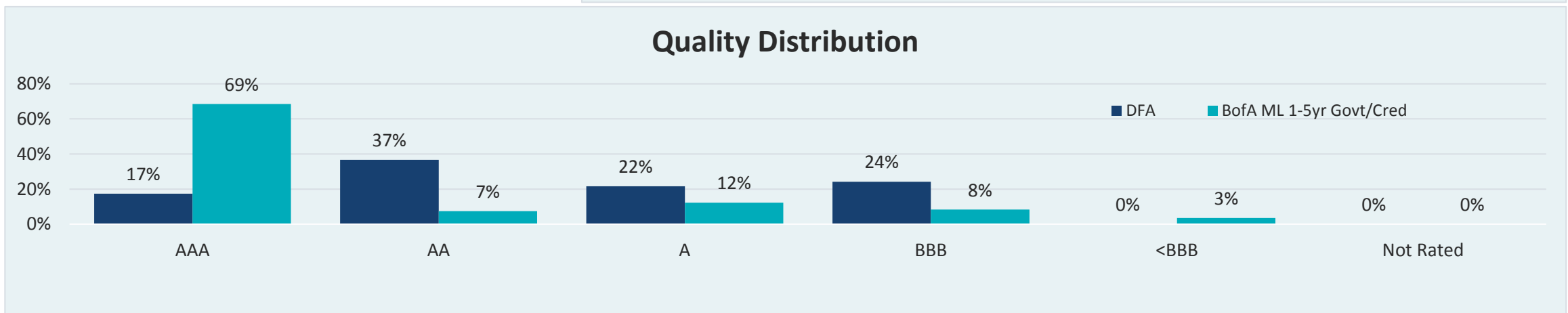
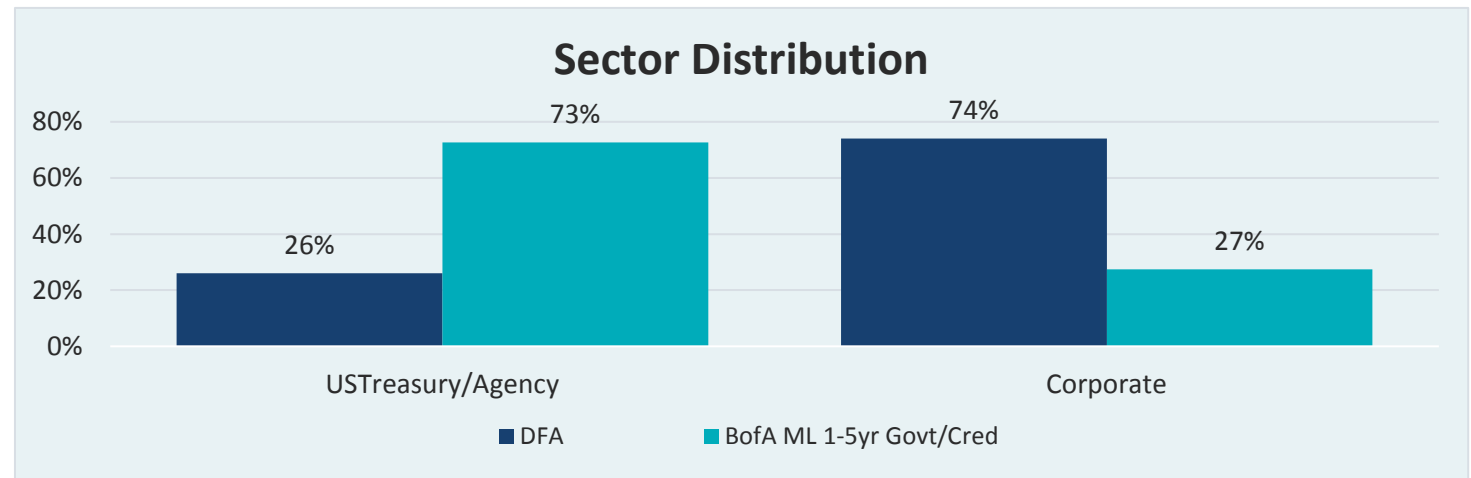
Domestic Fixed Income Managers

DFA Short Credit Manager Portfolio Overview

Period Ending: March 31, 2017

Domestic short term US credit fixed income portfolio that maximizes total return through income and capital appreciation. Primary personnel include Dave Plecha and Joseph Kolerich.

	DFA	BofA ML 1-5yr Gov/Credit
Effective Duration	2.72	2.72
Yield to Maturity	2.21	2.72
Average Quality	A+	Aa1
Average Coupon	2.74%	2.46%

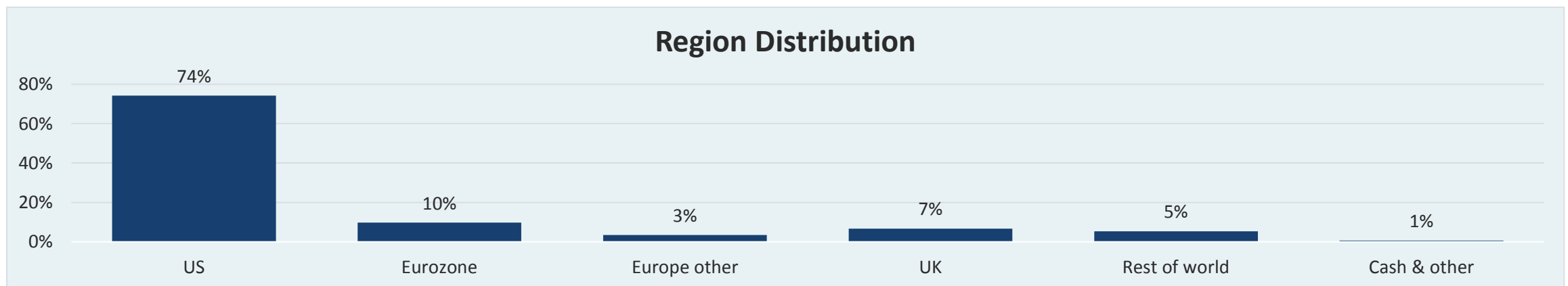
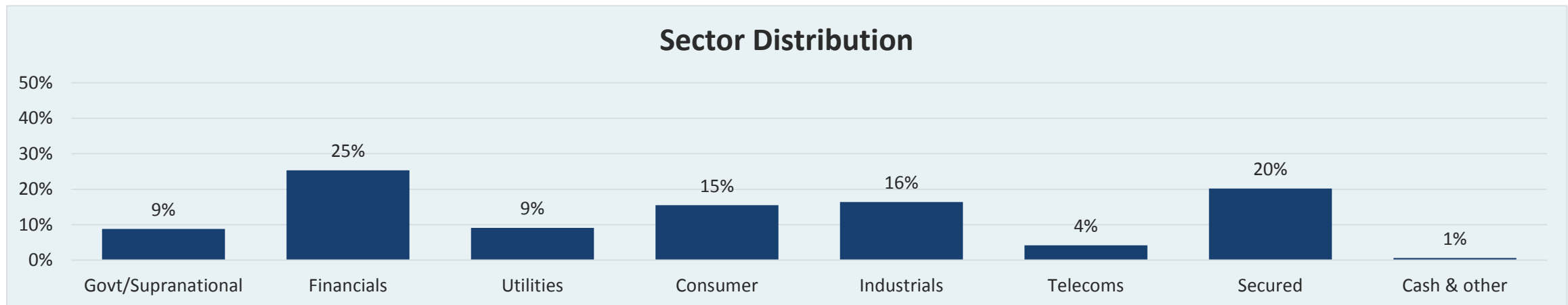
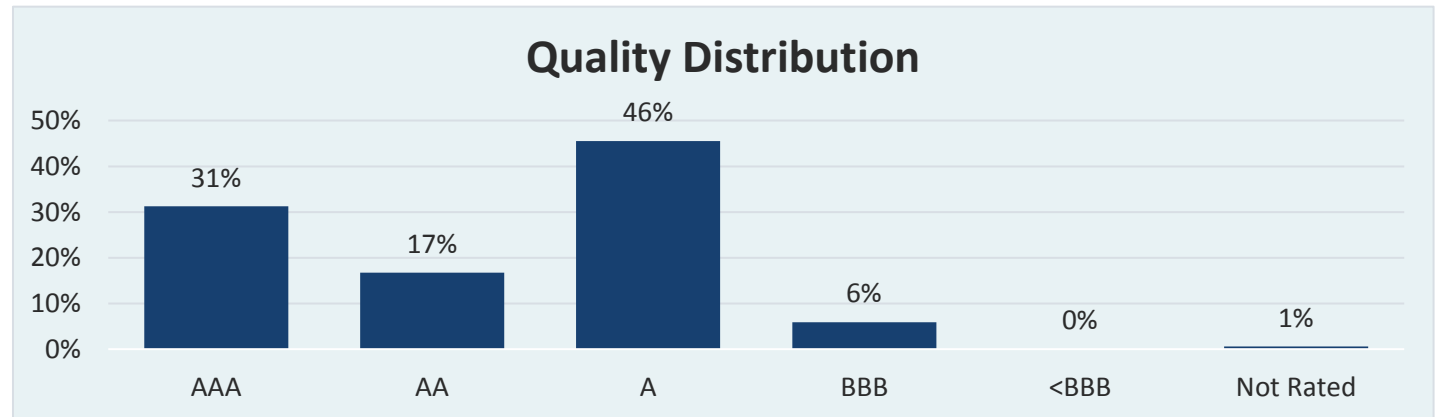


Insight Short Duration Manager Portfolio Overview

Period Ending: March 31, 2017

High quality, short duration multi-sector fixed income portfolio comprised of Treasuries, Agencies, investment grade corporates, and ABS designed specifically to meet CCCERA's liabilities. Key personnel include Gerard Berrigan and Jesse Fogarty.

	Insight
Effective Duration	1.74
Yield to Maturity	1.74
Average Quality	AA-

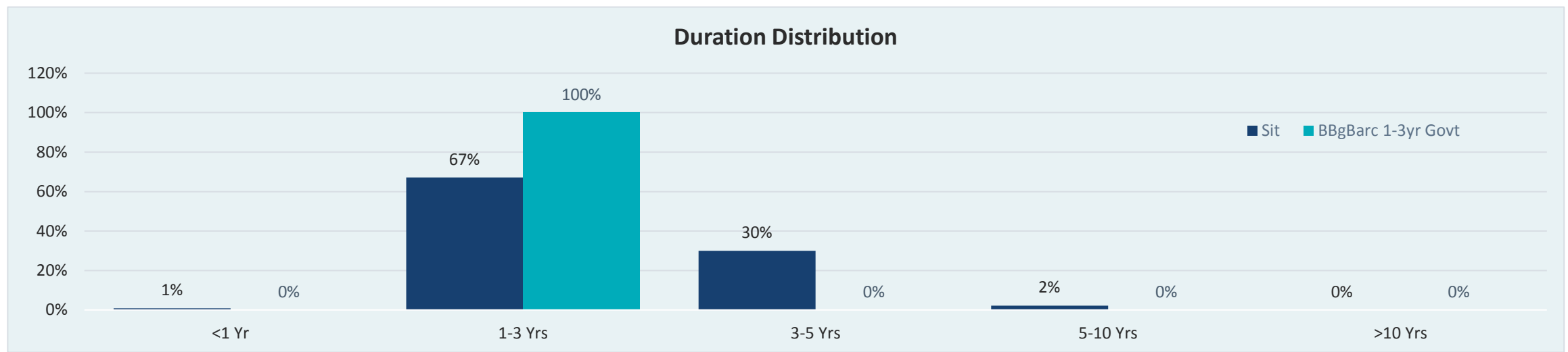
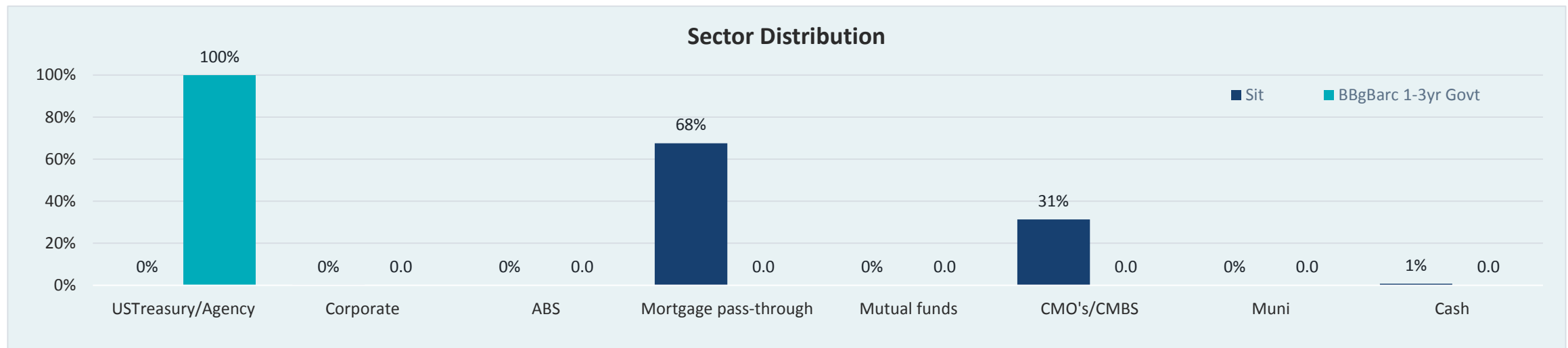
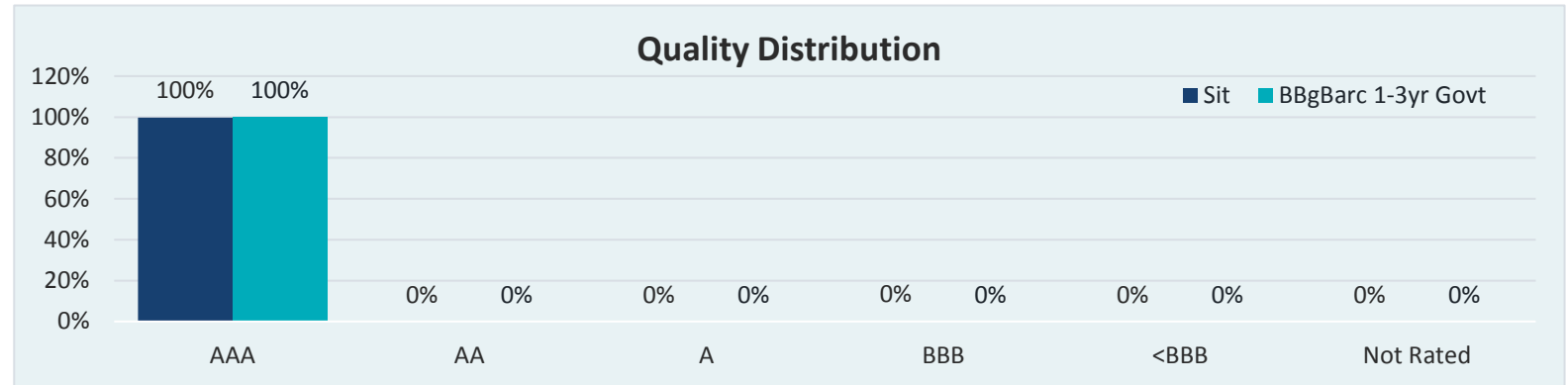


Sit Short Duration Manager Portfolio Overview

Period Ending: March 31, 2017

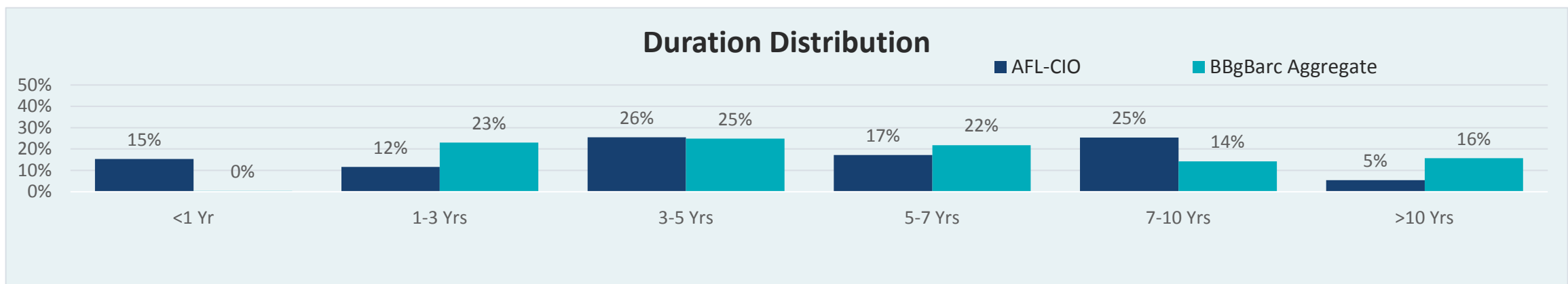
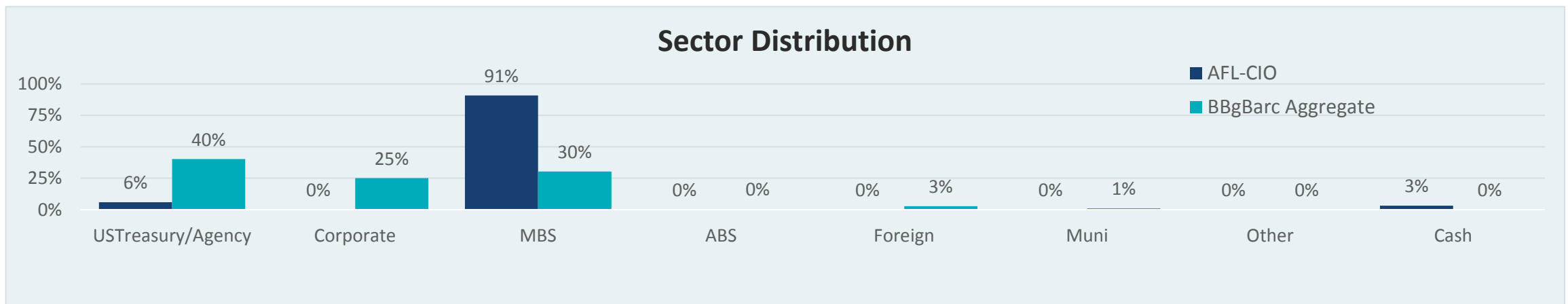
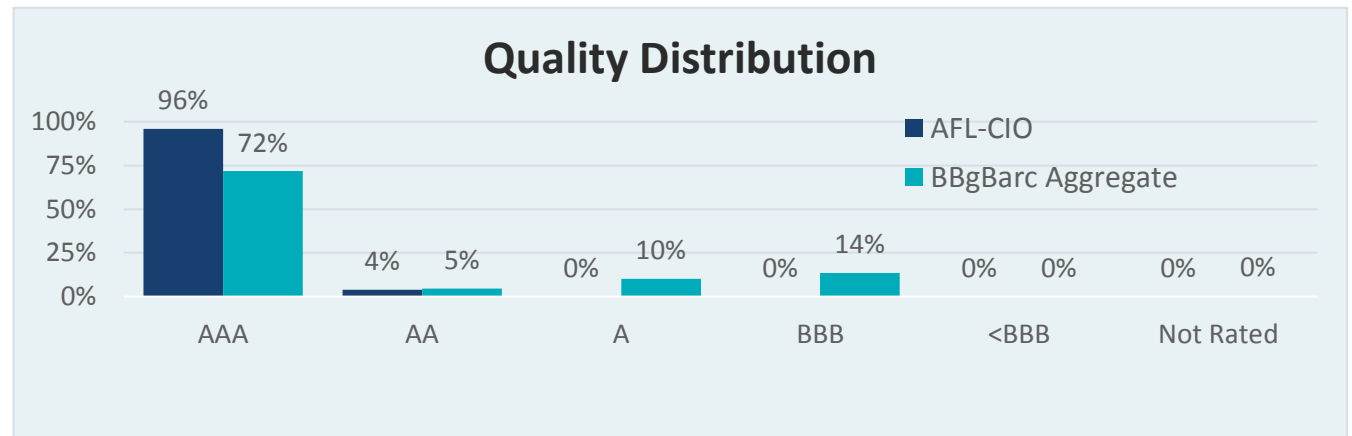
Short duration fixed income portfolio with a focus on earning high levels of interest income. Primary personnel include Bryce Doty, Paul Jungquist and Michael Brilley.

	Sit	BBgBarc 1-3yr Govt
Adjusted Duration	2.5	2.0
Average Quality	AA-	AAA
Average Coupon	6.6%	1.5%

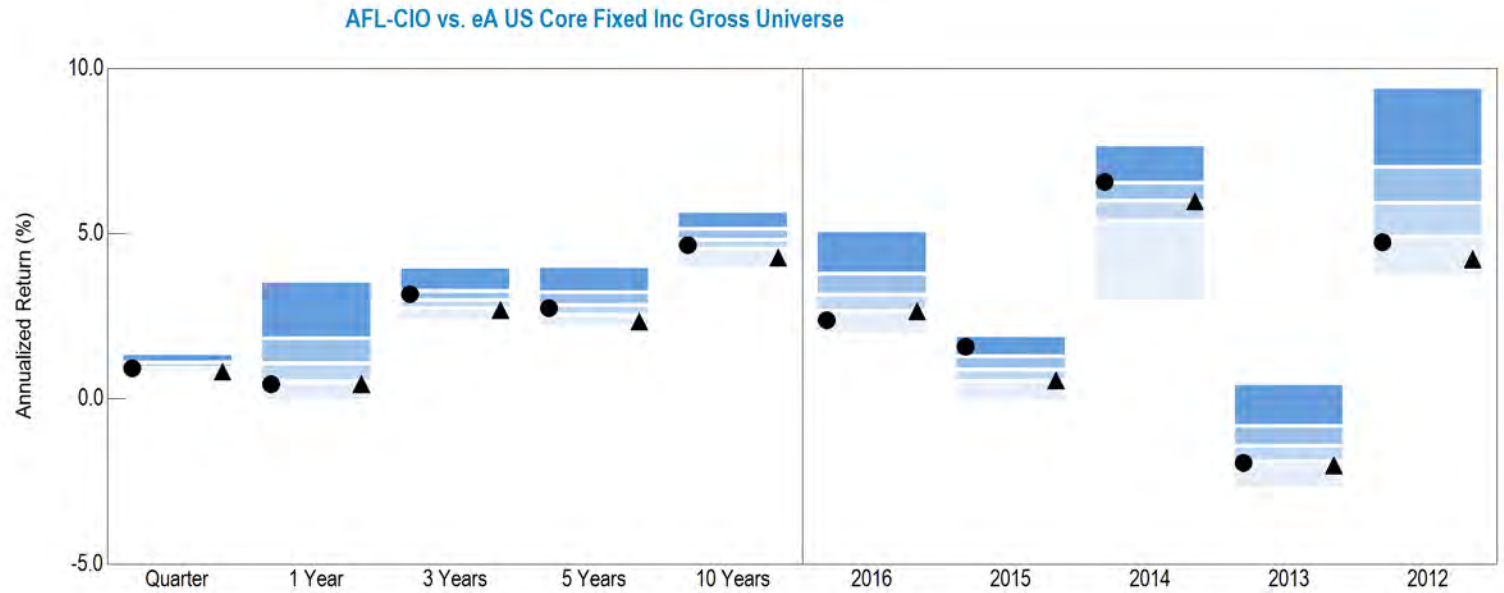


Domestic core fixed income portfolio with an exclusive focus on mortgage-related securities. Primary personnel include Stephen Coyle and Chang Su.

	AFL-CIO	BBgBarc Aggregate
Effective Duration	5.47	6.06
Yield to Maturity	3.30	2.55
Average Quality	AAA	AA
Average Coupon	3.27%	3.14%

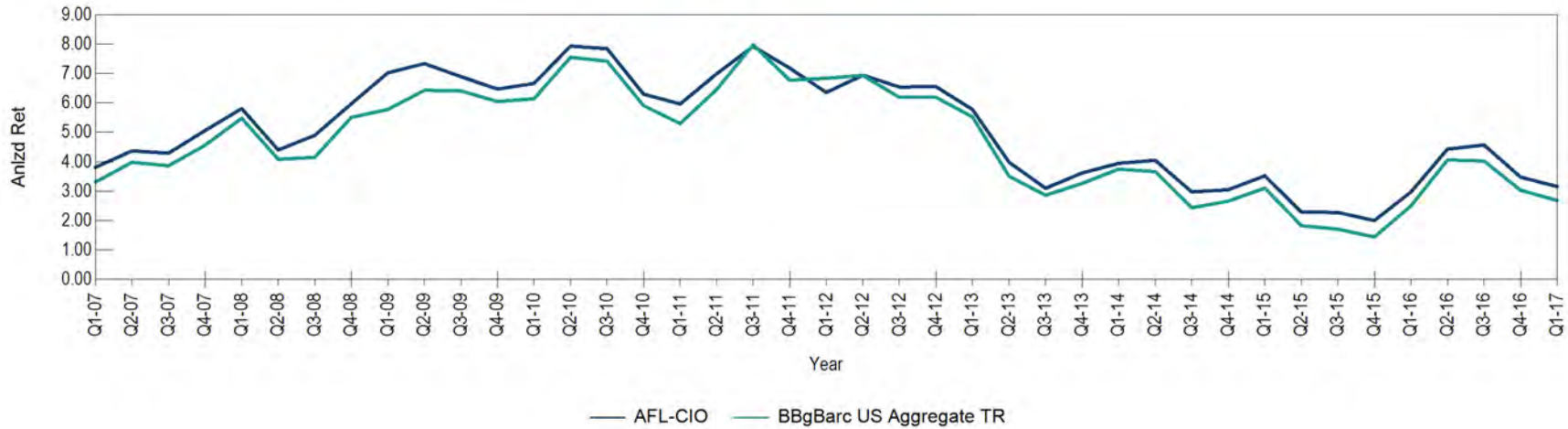


Duration and Quality distributions exclude cash.

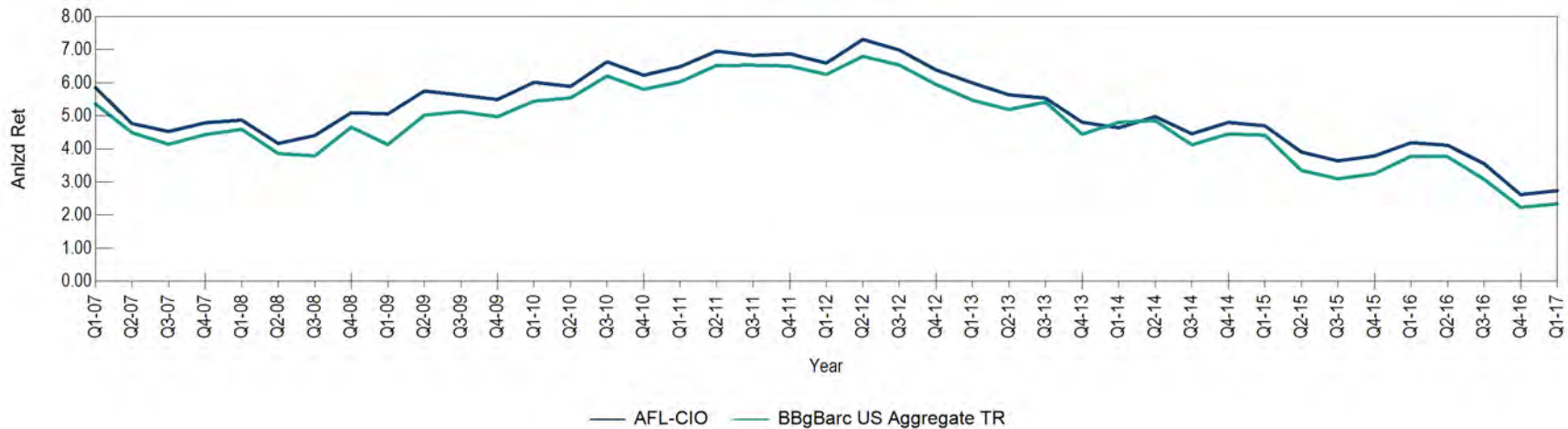


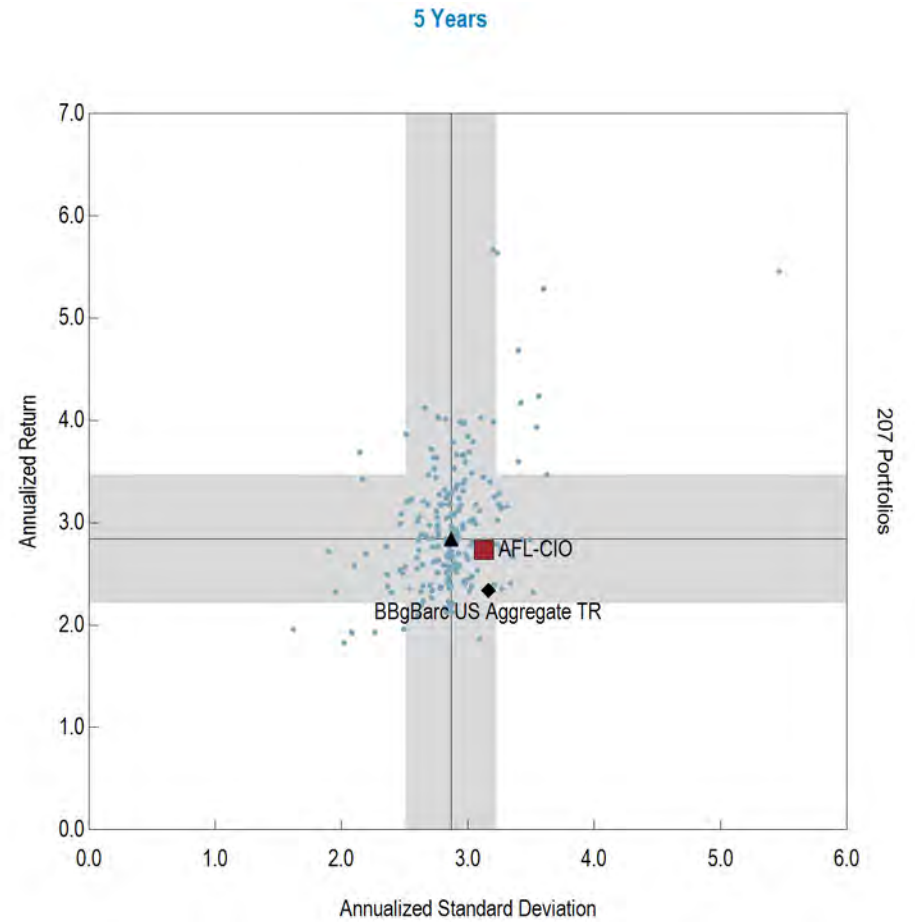
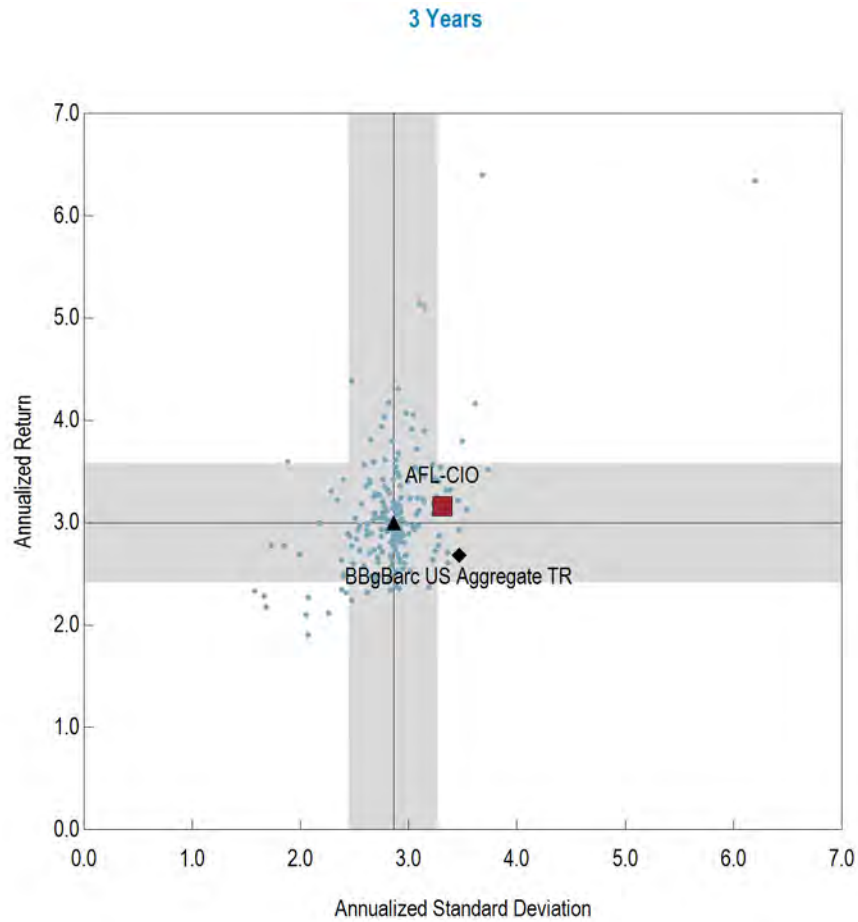
	Quarter	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012
Return (Rank)										
5th Percentile	1.4	3.6	4.0	4.0	5.7	5.1	1.9	7.7	0.5	9.4
25th Percentile	1.1	1.8	3.3	3.2	5.1	3.8	1.3	6.5	-0.8	7.0
Median	0.9	1.1	3.0	2.8	4.8	3.2	0.9	6.0	-1.4	5.9
75th Percentile	0.8	0.5	2.7	2.5	4.6	2.7	0.5	5.4	-1.9	4.9
95th Percentile	0.7	-0.1	2.3	2.2	4.0	2.0	-0.1	2.9	-2.7	3.7
# of Portfolios	210	210	209	207	186	223	196	213	209	228
● AFL-CIO	0.9 (54)	0.4 (79)	3.2 (35)	2.7 (61)	4.6 (66)	2.4 (87)	1.6 (15)	6.6 (25)	-1.9 (78)	4.7 (80)
▲ BBgBarc US Aggregate TR	0.8 (76)	0.4 (78)	2.7 (81)	2.3 (89)	4.3 (90)	2.6 (77)	0.6 (75)	6.0 (52)	-2.0 (82)	4.2 (90)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)



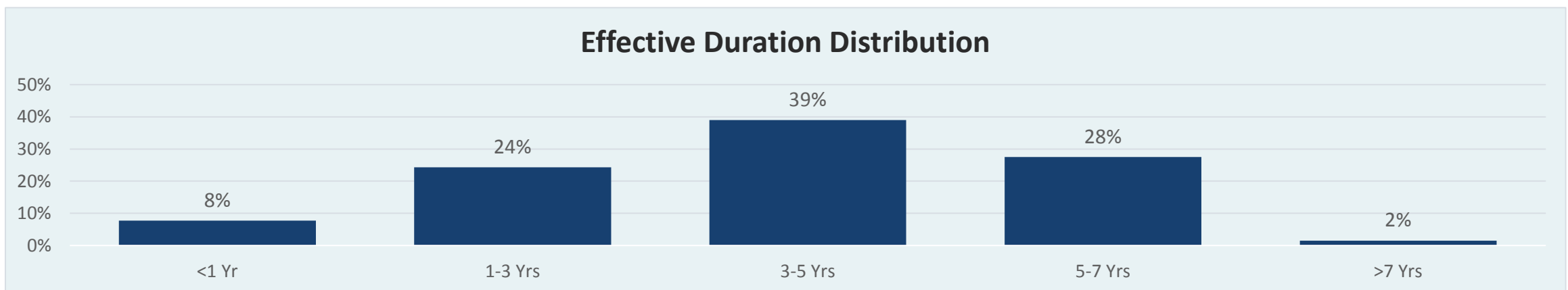
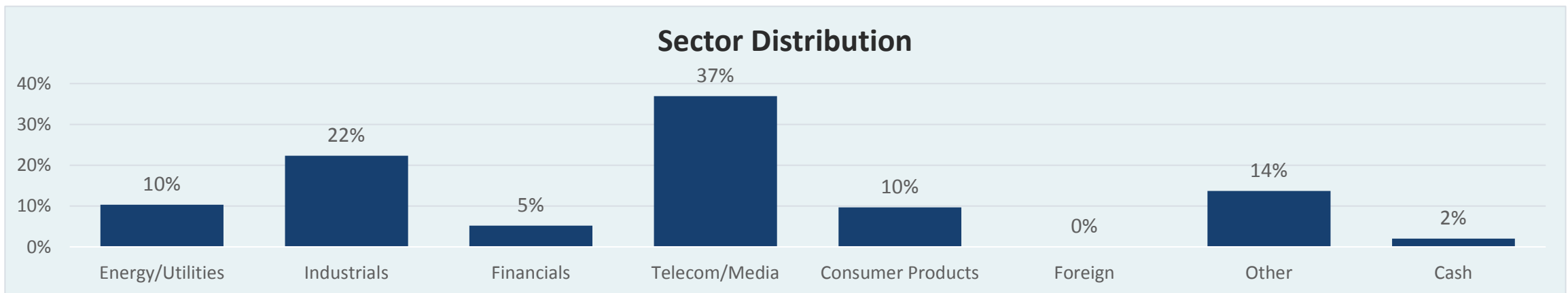
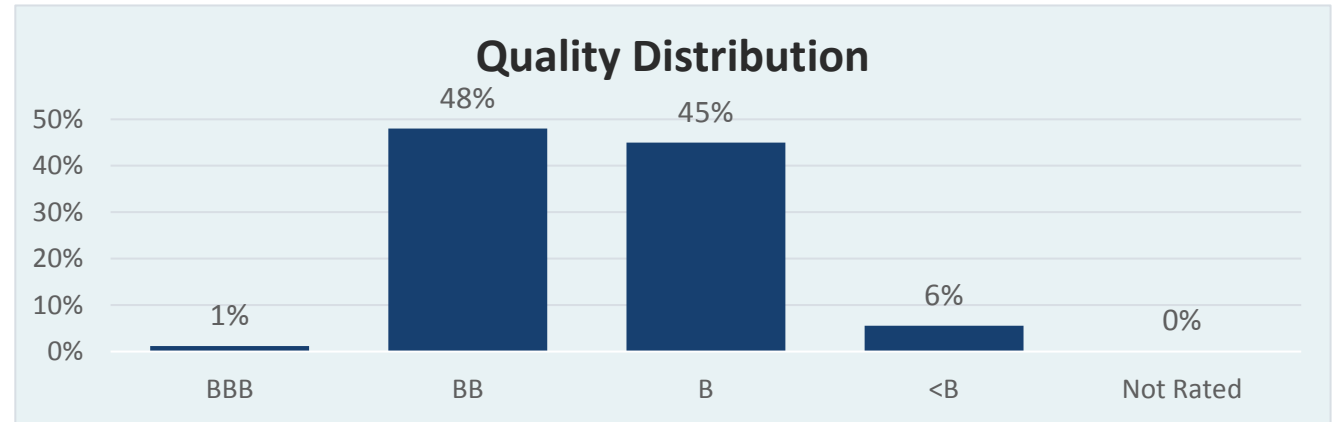


	3 Years			5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	3.2%	3.3%	0.9	2.7%	3.1%	0.8
BBgBarc US Aggregate TR	2.7%	3.5%	0.7	2.3%	3.2%	0.7
eA US Core Fixed Inc Gross Median	3.0%	2.9%	1.0	2.8%	2.9%	1.0

High Yield Managers

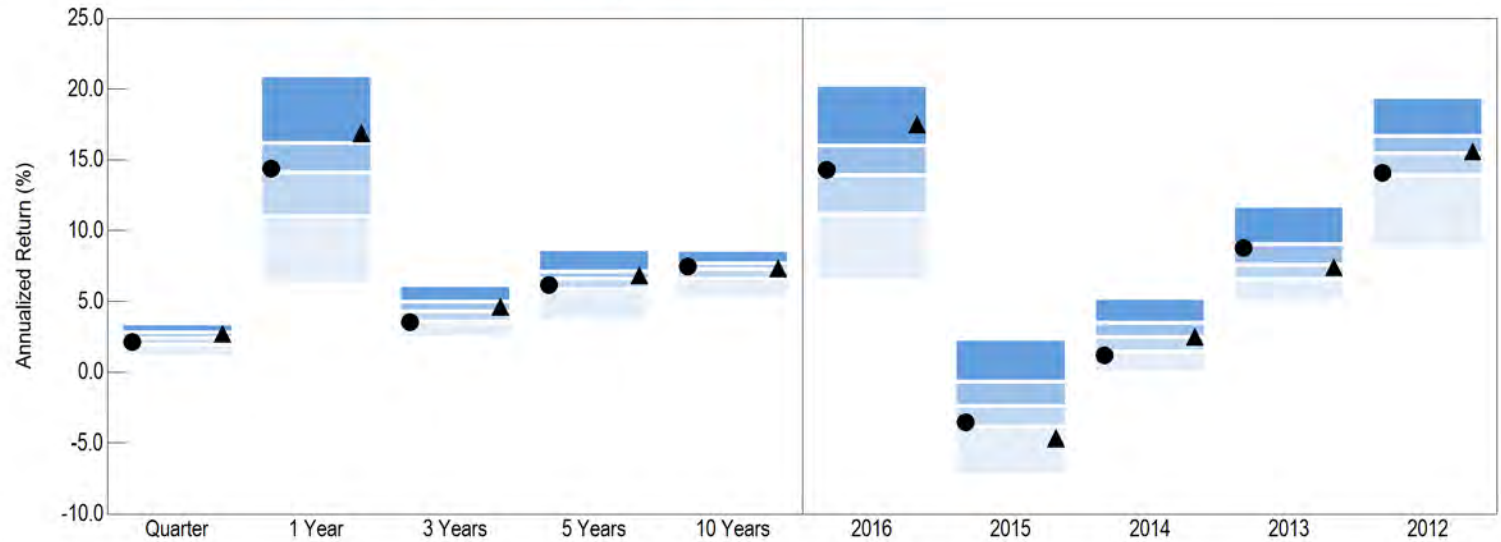
Domestic high yield fixed income portfolio with a focus on security selection. Primary personnel include Douglas Forsyth, Justin Kass, William Stickney, and Michael Yee.

	Allianz	BofA ML HY Master II
Effective Duration	3.9	4.2
Yield to Maturity	5.9	6.2
Average Quality	B1	B1
Average Coupon	6.7%	6.5%



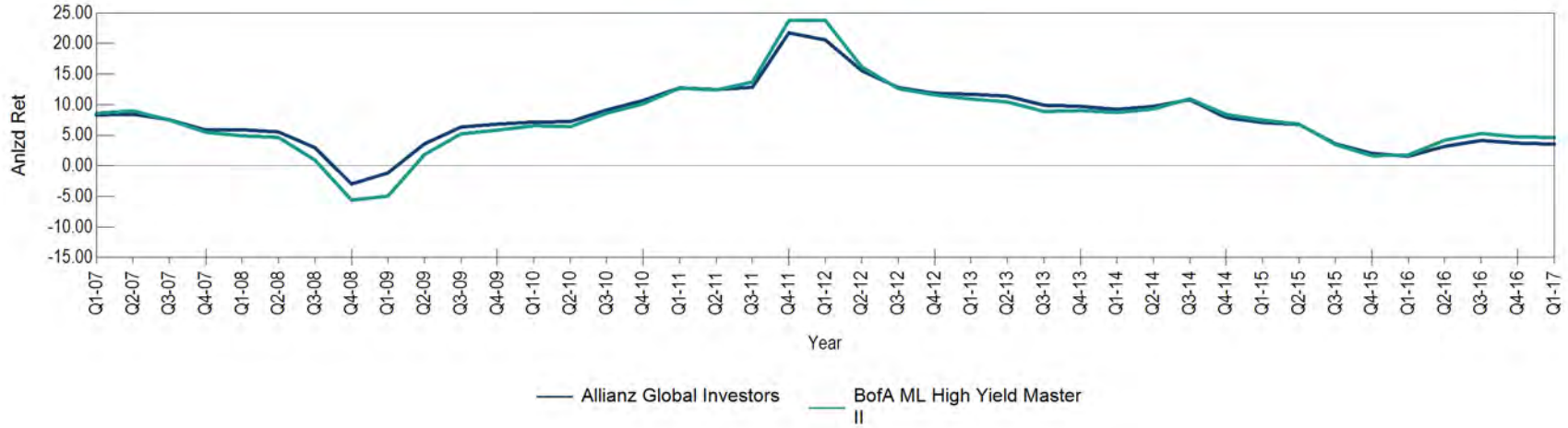
Quality distribution excludes cash.

Allianz Global Investors vs. eA US High Yield Fixed Inc Gross Universe

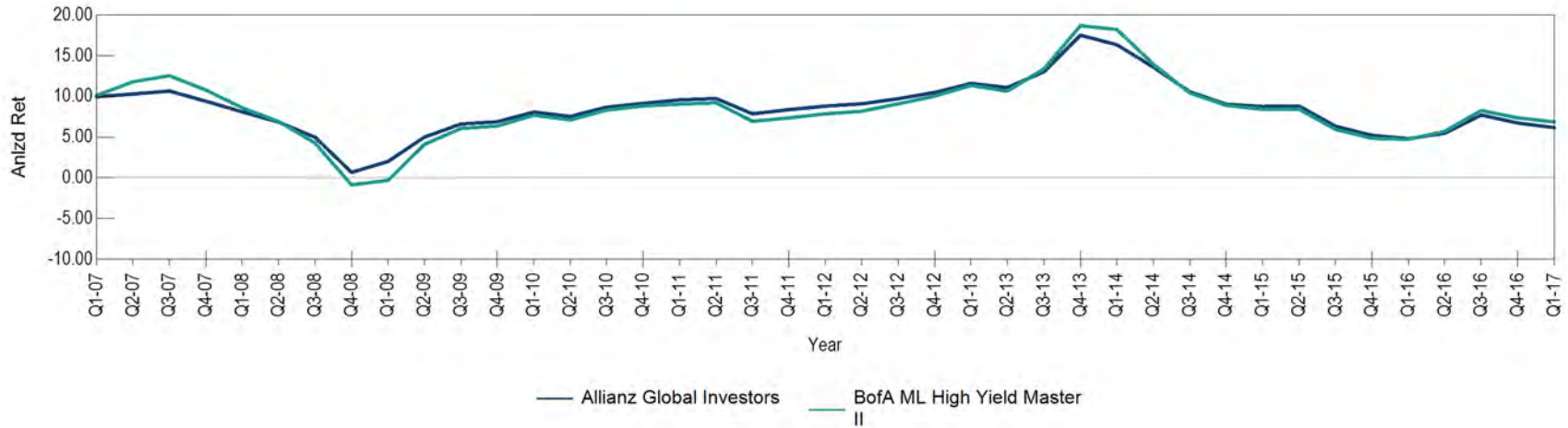


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012
5th Percentile	3.4	21.0	6.1	8.6	8.6	20.3	2.3	5.2	11.7	19.4
25th Percentile	2.8	16.2	5.0	7.1	7.7	16.0	-0.7	3.5	9.1	16.7
Median	2.4	14.1	4.3	6.6	7.3	14.0	-2.4	2.5	7.6	15.5
75th Percentile	2.0	11.1	3.6	5.9	6.6	11.3	-3.8	1.5	6.6	14.0
95th Percentile	1.1	6.3	2.5	3.7	5.3	6.6	-7.2	0.0	5.0	8.9
# of Portfolios	182	181	172	160	114	183	155	141	130	129
● Allianz Global Investors	2.1 (70)	14.4 (47)	3.5 (77)	6.2 (68)	7.5 (40)	14.3 (47)	-3.5 (68)	1.2 (83)	8.8 (28)	14.1 (73)
▲ BofA ML High Yield Master II	2.7 (34)	16.9 (20)	4.6 (38)	6.8 (36)	7.3 (48)	17.5 (14)	-4.6 (83)	2.5 (50)	7.4 (55)	15.6 (47)

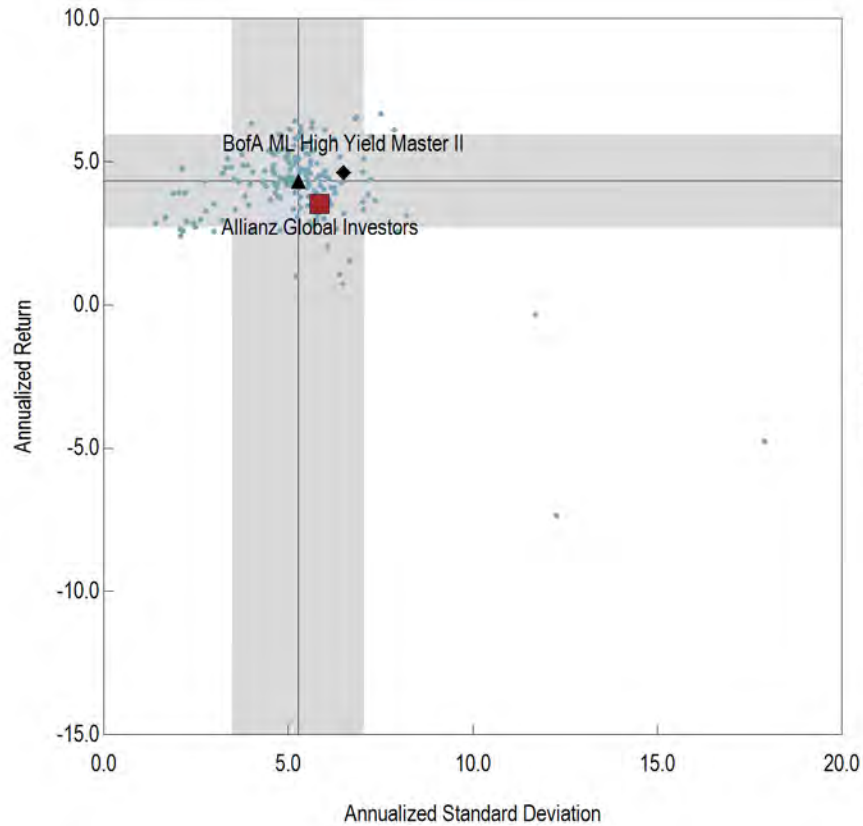
Rolling 3 Year Annualized Return (%)



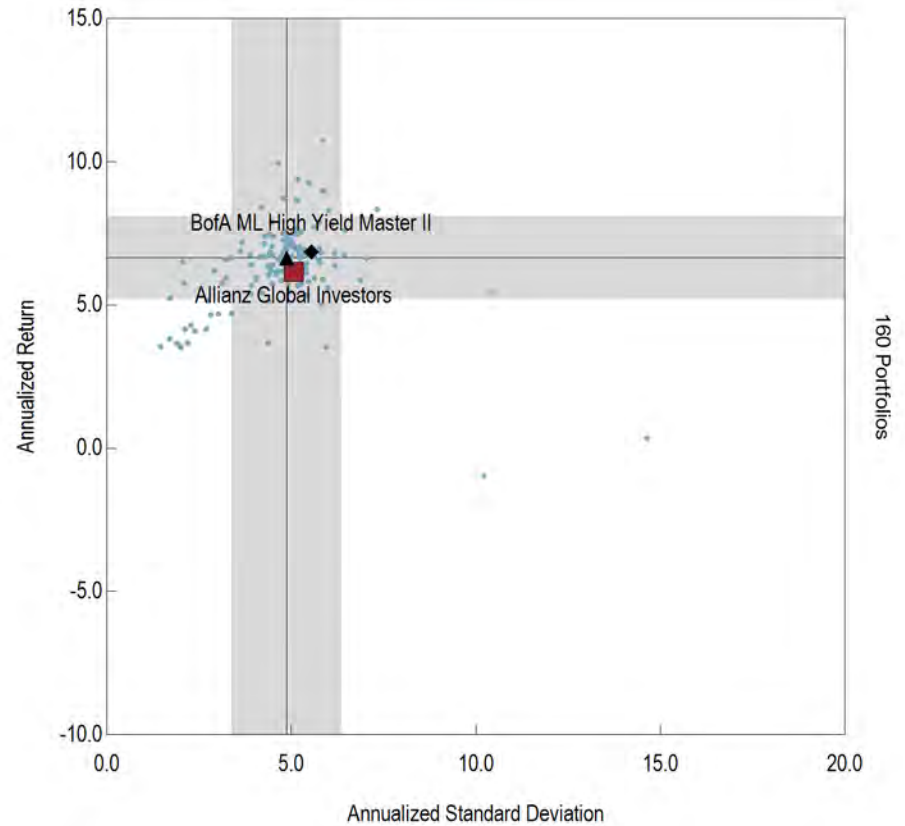
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	3.5%	5.9%	0.6
BofA ML High Yield Master II	4.6%	6.5%	0.7
eA US High Yield Fixed Inc Gross Median	4.3%	5.3%	0.8

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	6.2%	5.1%	1.2
BofA ML High Yield Master II	6.8%	5.5%	1.2
eA US High Yield Fixed Inc Gross Median	6.6%	4.9%	1.4

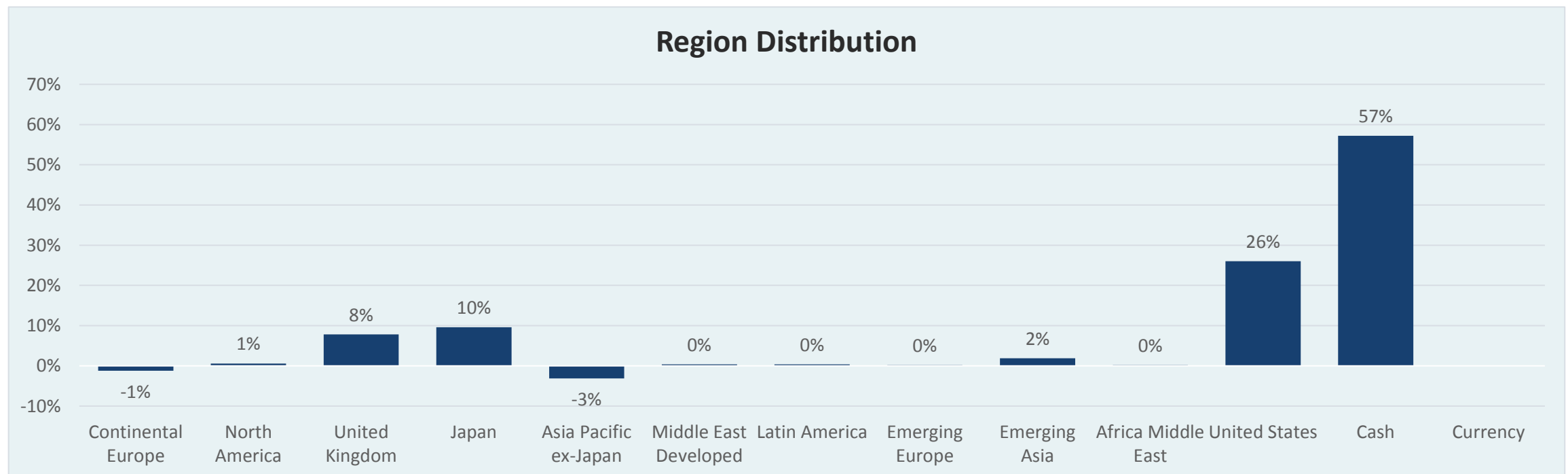
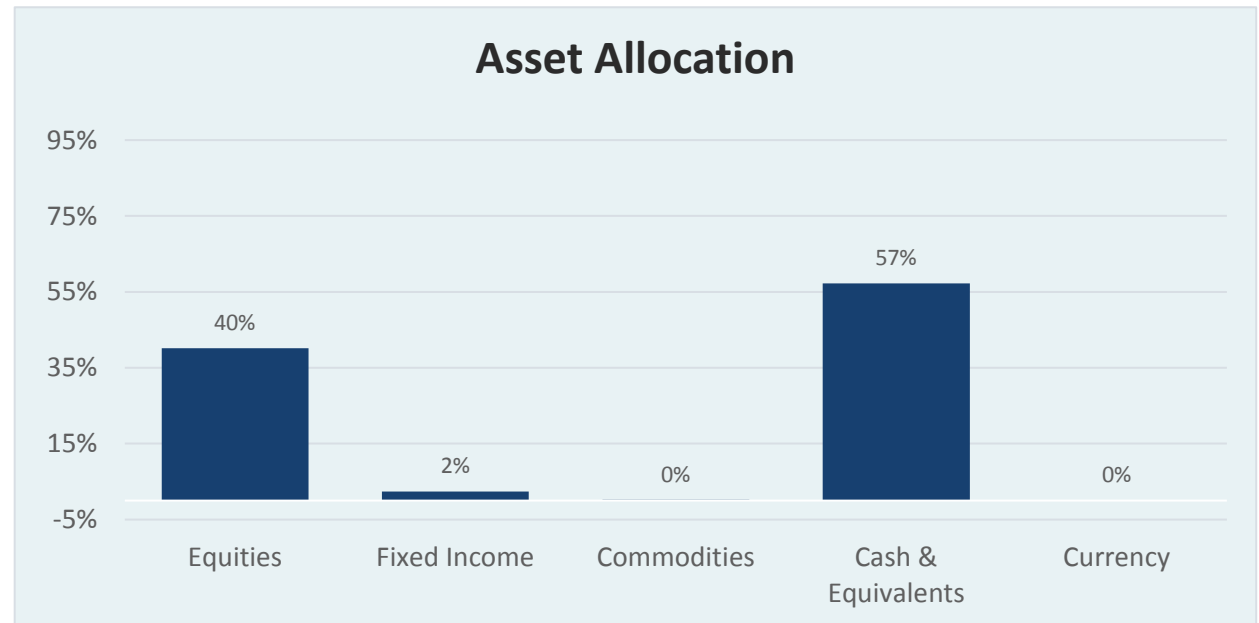
Inflation Hedge Managers

Wellington Total Return Manager Portfolio Overview

Period Ending: March 31, 2017

Tactical multi-asset class real return strategy with a focus on managing risk of active strategies used to gain exposure to attractive assets of markets.

	Wellington Total Return
Number of Equity Holdings	808
Number of Commodity Holdings	149
Effective Duration (Years)	3.20
Average Quality	D



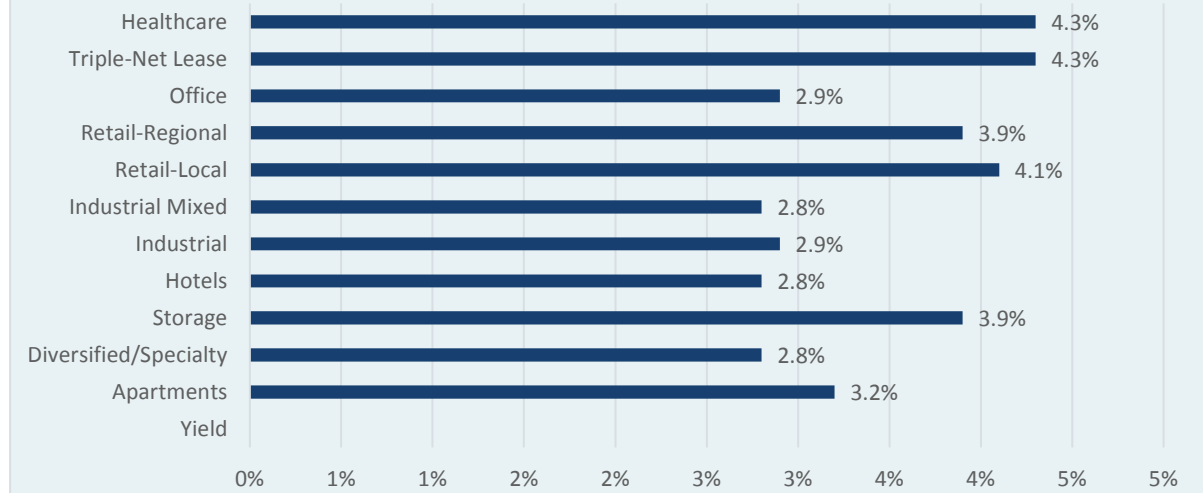
Real Estate Managers

Diversified portfolio of U.S. REITs with a focus on the underlying real estate assets

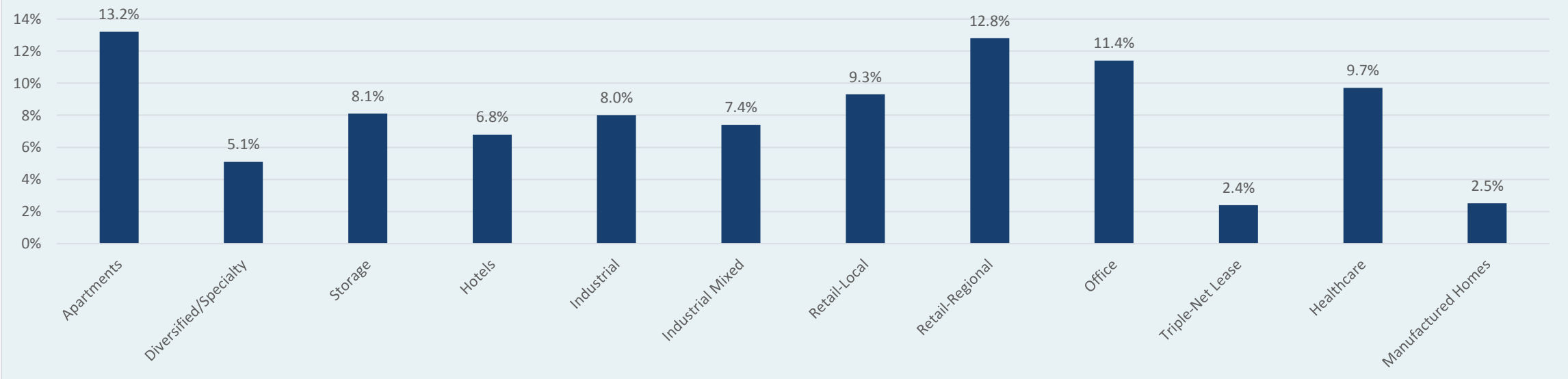
Top Five Holdings

Company	Property Type	Allocation
Simon Property Group	Retail-Regional	10.4%
Equity Residential	Apartments	5.1%
Welltower Inc.	Healthcare	4.9%
Apartment Investment Co.	Apartments	4.8%

Dividend Yield by Property Type



Property Type Allocation



1.4% is allocated to Cash and Cash Equivalents.

Performance Return Calculations

Performance is calculated using Modified Dietz and for time periods with large cash flow (generally greater than 10% of portfolio value), 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
Intech Large Cap Core	11/10/2006	State Street	Long Wharf Fund III	03/30/2007	Long Wharf
PIMCO Stocks+ AR	08/31/2002	State Street	Long Wharf Fund IV	07/03/2013	Long Wharf
Jackson Square Partners	05/01/2005	State Street	Long Wharf Fund V	09/30/2016	Long Wharf
Robeco Boston Partners	06/01/1995	State Street	Invesco Real Estate I	02/01/2005	Invesco
Emerald Advisors	04/07/2003	State Street	Invesco Real Estate II	11/26/2007	Invesco
Ceredex	11/06/2011	State Street	Invesco Real Estate III	06/30/2013	Invesco
Pyrford	04/25/2014	State Street	Invesco Real Estate IV	06/30/2014	Invesco
William Blair	10/29/2010	William Blair	Oaktree REOF V	12/31/2011	Oaktree
Artisan Partners	10/01/2012	SEI Trust	Oaktree REOF VI	09/30/2013	Oaktree
First Eagle	01/18/2011	State Street	Oaktree REOF VII	04/01/2015	Oaktree
Intech Global Low Vol	05/06/2012	State Street	Siguler Guff DREOF	01/25/2012	Siguler Guff
JP Morgan Global Opportunities	01/31/2010	JP Morgan	Siguler Guff DREOF II	08/31/2013	Siguler Guff
AFL-CIO	06/30/1991	AFL-CIO	Siguler Guff DREOF II Co-Inv	01/27/2016	Siguler Guff
Sit Short Duration	11/02/2016	State Street	Paulson Real Estate Fund II	11/10/2013	State Street
DFA Short Credit	11/21/2016	State Street	Adams Street Partners	03/18/1996	Adams Street
Insight Short Duration	11/18/2016	State Street	Adams Street Partners II	01/16/2009	Adams Street
Torchlight II	09/30/2006	Torchlight	Adams Street Partners - BFP	01/18/1996	Adams Street
Torchlight III	12/31/2008	Torchlight	Adams Street Partners - Fund 5	09/21/2012	Adams Street
Torchlight IV	07/01/2012	Torchlight	Bay Area Equity Fund	06/14/2004	DBL Investors
Torchlight V	07/01/2012	Torchlight	Bay Area Equity Fund II	12/07/2009	DBL Investors
Allianz Global Investors	04/25/2000	State Street	Carpenter Bancfund	01/31/2008	Carpenter Bancfund
BlackRock Transition	11/01/2016	State Street	EIF US Power Fund I	11/26/2003	Ares Management
Wellington Real Total Return	02/26/2013	State Street	EIF US Power Fund II	08/16/2005	Ares Management
Aether Real Assets III	11/27/2013	Aether	EIF US Power Fund III	05/30/2007	Ares Management
Commonfund	06/28/2013	Commonfund	EIF US Power Fund IV	11/28/2011	Ares Management
Adelante	09/30/2001	State Street	EIF US Power Fund V	11/28/2016	Ares Management
Cash	-	State Street	Nogales	02/15/2004	Nogales
Angelo Gordon Realty Fund VIII	01/23/2012	Angelo Gordon	Paladin III	11/30/2007	Paladin
Angelo Gordon Realty Fund IX	12/08/2014	Angelo Gordon	Ocean Avenue Fund II	06/11/2014	Ocean Avenue
Angelo Gordon Energy Credit Opp	09/24/2015	Angelo Gordon	Ocean Avenue Fund III	04/15/2016	Ocean Avenue
DLJ RECP II	09/24/1999	DLJ	Pathway	11/09/1998	Pathway

DLJ RECP III	06/23/2005	DLJ	Pathway 2008	12/26/2008	Pathway
DLJ RECP IV	02/11/2008	DLJ	Pathway 6	05/24/2011	Pathway
DLJ RECP V	07/01/2014	DLJ	Pathway 7	02/07/2013	Pathway
Wastewater Opp. Fund	12/08/2015	Wastewater	Siguler Guff CCCERA Opps	06/03/2014	Siguler Guff
LaSalle Income & Growth VI	07/16/2013	LaSalle	Siguler Guff Secondary Opps	11/30/2016	Siguler Guff
LaSalle Income & Growth VII	02/28/2017	LaSalle	Aether Real Assets IV	03/16/2016	Aether
Hearthstone II	06/17/1998	Hearthstone	Parametric Overlay	03/29/2017	State Street

Policy & Custom Index Composition

Policy Index (12/1/2016 - present)	22.9% Russell 3000, 11% MSCI ACWI ex-US (Gross), 10.9% MSCI ACWI (Net), 1% Wilshire REIT, 1.7% NCREIF Property Index, 6.8% NCREIF ODCE Index, 3.6% CPI +4%, 8.1% S&P 500 +4%, 1.7% BofA High Yield Master II +2%, 5.1% BofA High Yield Master II, 22.4% BBgBarc 1-3 Yr Gov/Credit, 1.6% 90-day T-Bills, 3.2% BBgBarc US Aggregate.
Policy Index (4/1/2012-11/30/2016)	High Yield Master II, 4% BBgBarc Global Aggregate, 13.5% Real Estate Benchmark, 6.8% S&P 500 +4% (Lagged), 0.5%
Real Estate Benchmark (current)	11% Wilshire REIT, 18% NCREIF Property Index, 71% NCREIF ODCE Index.
Real Estate Benchmark (4/1/2012-11/30/2016)	40% Wilshire REIT, 50% NCREIF Property Index, 10% FTSE/EPRA NAREIT Developed ex-US.

Other Disclosures

All data prior to 12/31/2014 was provided by previous consultant.

Glossary

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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The information presented may be deemed to contain forward-looking information. Examples of forward looking information include, but are not limited to, (a) projections of or statements regarding return on investment, future earnings, interest income, other income, growth prospects, capital structure and other financial terms, (b) statements of plans or objectives of management, (c) statements of future economic performance, and (d) statements of assumptions, such as economic conditions underlying other statements. Such forward-looking information can be identified by the use of forward looking terminology such as believes, expects, may, will, should, anticipates, or the negative of any of the foregoing or other variations thereon comparable terminology, or by discussion of strategy. No assurance can be given that the future results described by the forward-looking information will be achieved. Such statements are subject to risks, uncertainties, and other factors which could cause the actual results to differ materially from future results expressed or implied by such forward looking information. The findings, rankings, and opinions expressed herein are the intellectual property of Verus and are subject to change without notice. The information presented does not claim to be all-inclusive, nor does it contain all information that clients may desire for their purposes. The information presented should be read in conjunction with any other material provided by Verus, investment managers, and custodians.

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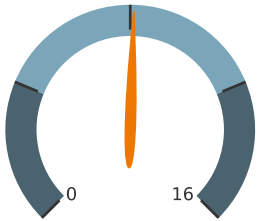
Verus receives universe data from InvestorForce, eVestment Alliance, and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. 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.

Contra Costa County Employees' Retirement Association

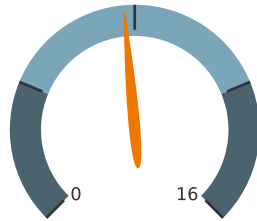
Portfolio Risk Report

March 31, 2017

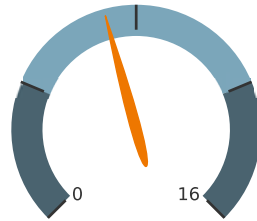
1 Portfolio risk



Portfolio: 8.1%



Policy: 7.7%



Average Pension: 7.1%

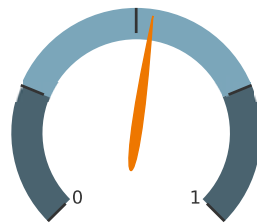
2 Portfolio equity beta



Portfolio: 0.61



Policy: 0.58



Average Pension: 0.53

3 Portfolio interest rate risk - Duration



Portfolio: 0.9



Policy: 0.9



Average Pension: 1.8

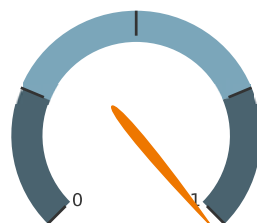
4 Portfolio credit risk - Spread duration



Portfolio: 0.6



Policy: 0.6

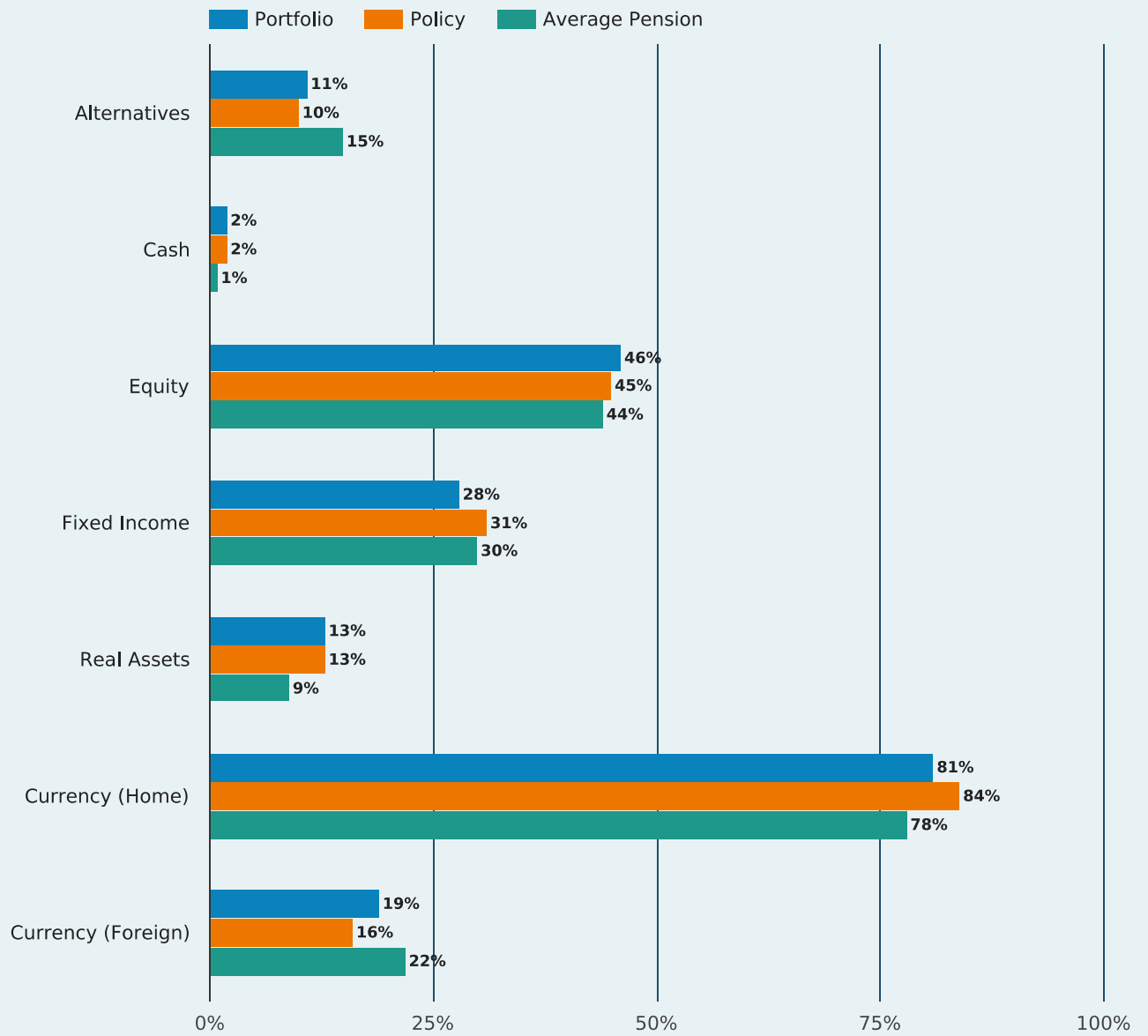


Average Pension: 1.1

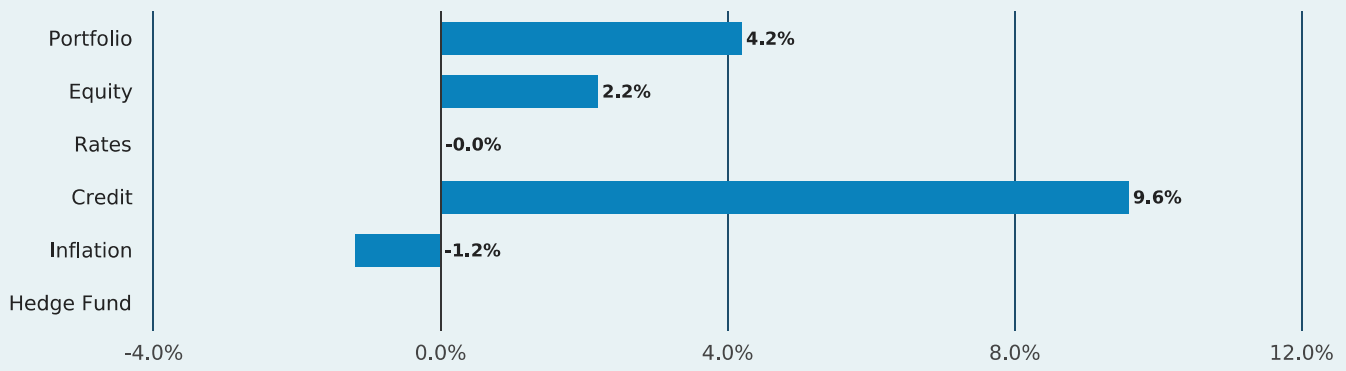
5 Exposure allocation by asset class

		Portfolio	Policy	Average Pension
Alternatives	Hedge Fund	0.0%		8.1%
	Opportunistic	0.4%		
	Private Credit	1.8%	1.7%	
	Private Equity	8.4%	8.1%	6.6%
Alternatives Total		10.7%	9.8%	14.6%
Cash	Cash Overlay	0.2%		
	Cash	2.1%	1.6%	1.1%
Cash Total		2.3%	1.6%	1.1%
Equity	Global Equity	9.3%	10.9%	
	International Equity	15.1%	11.0%	18.4%
	Domestic Equity	21.5%	22.9%	25.9%
Equity Total		46.0%	44.8%	44.3%
Fixed Income	Global Bonds	0.0%		8.1%
	Core Fixed Income	3.1%	3.2%	22.4%
	High Yield	5.1%	5.1%	
	Short-term Gov or Credit	20.1%	22.4%	
Fixed Income Total		28.3%	30.7%	30.5%
Real Assets	Real Assets	3.8%	3.6%	2.1%
	Real Estate	9.0%	9.5%	7.3%
Real Assets Total		12.8%	13.1%	9.5%
Total Portfolio		100%	100%	100%

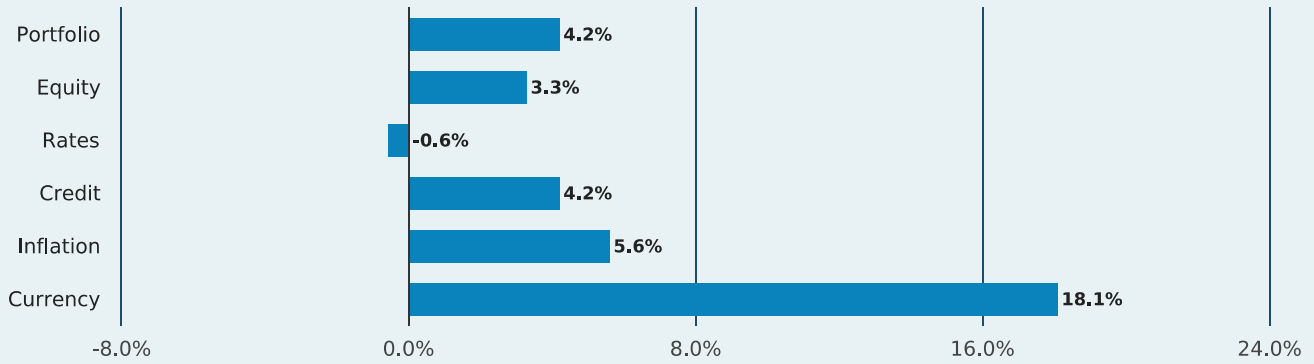
6 Exposure allocation



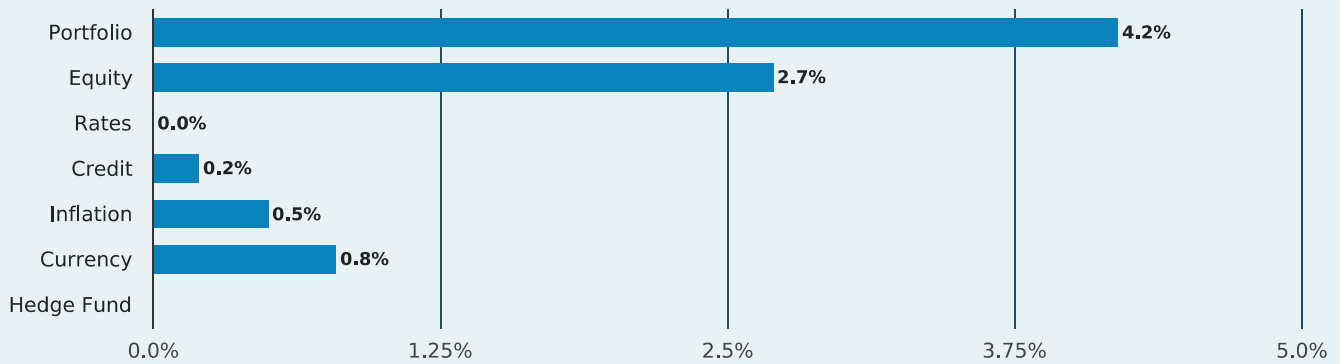
7 Relative risk vs target by bucket



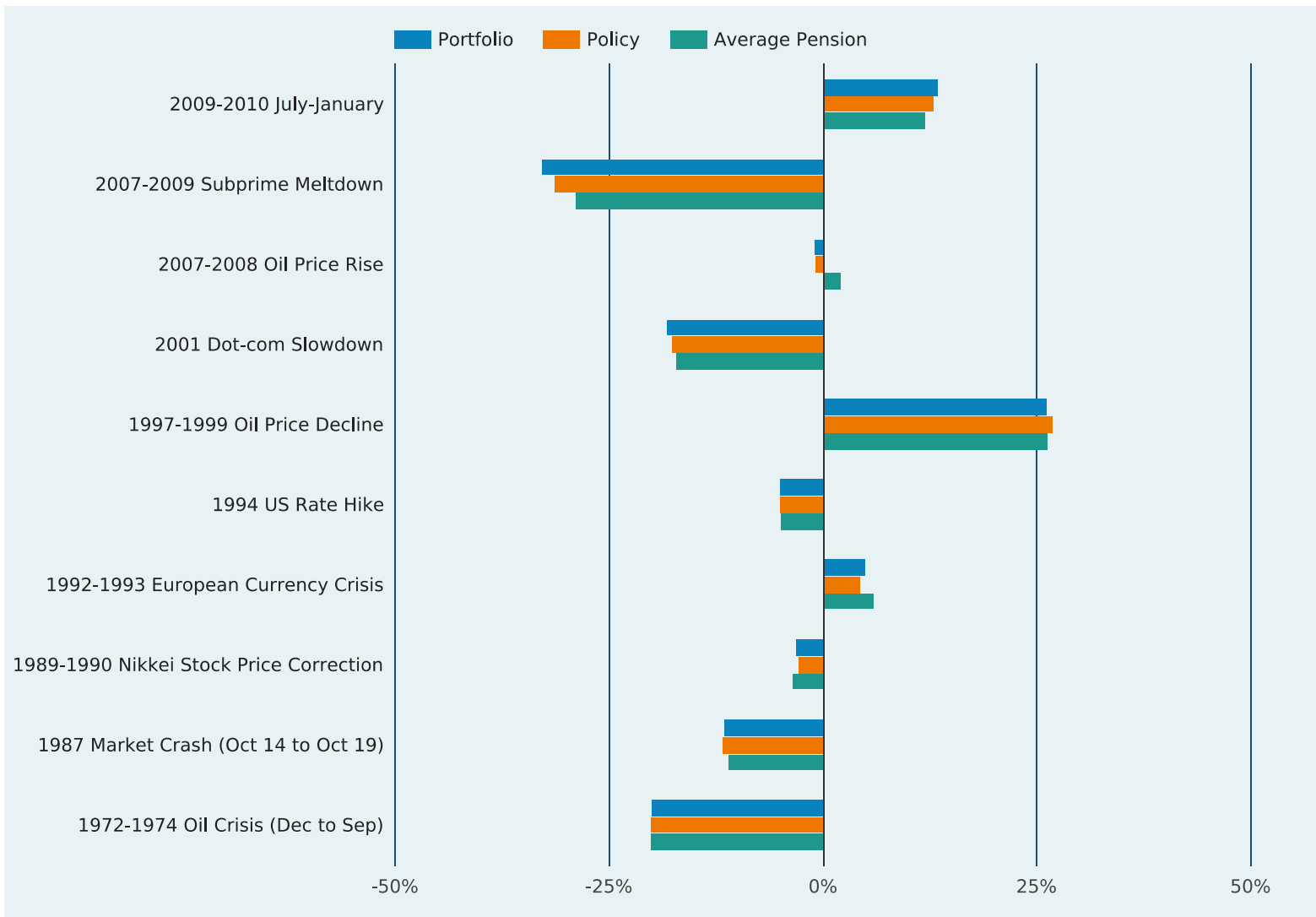
8 Relative risk vs target by risk factor



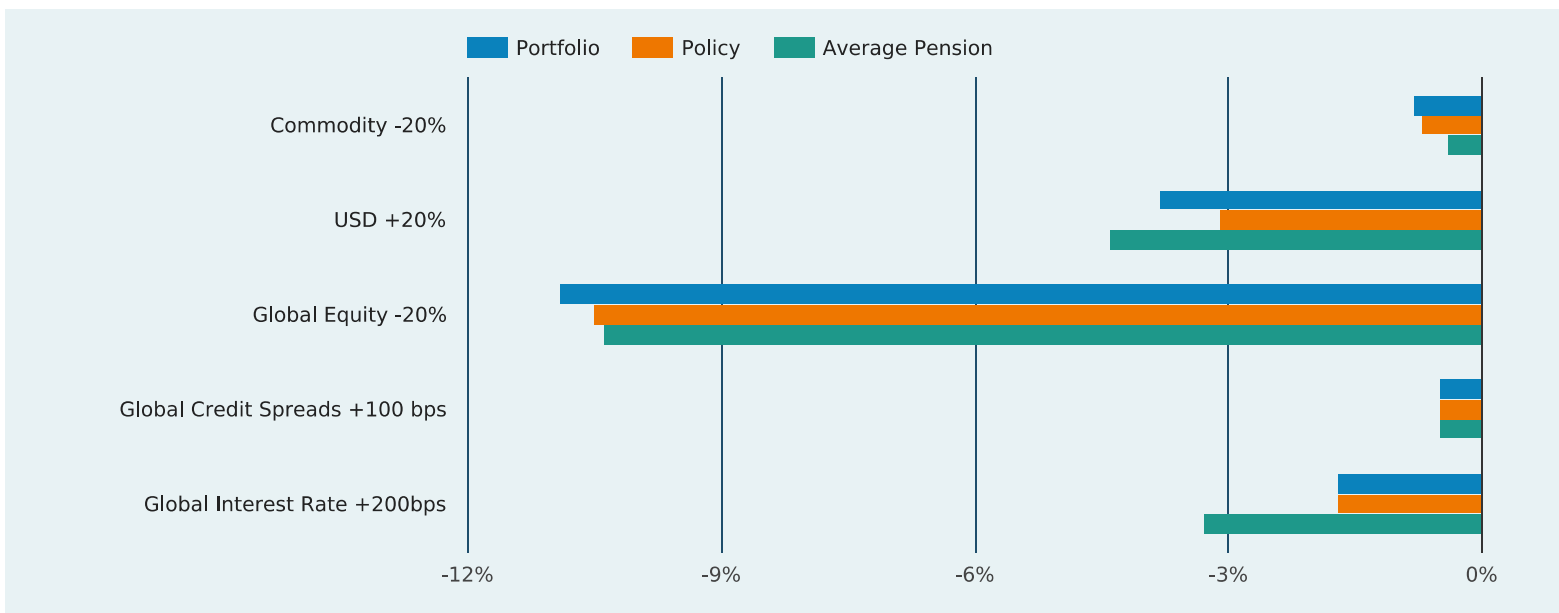
9 Risk factor weight relative to target



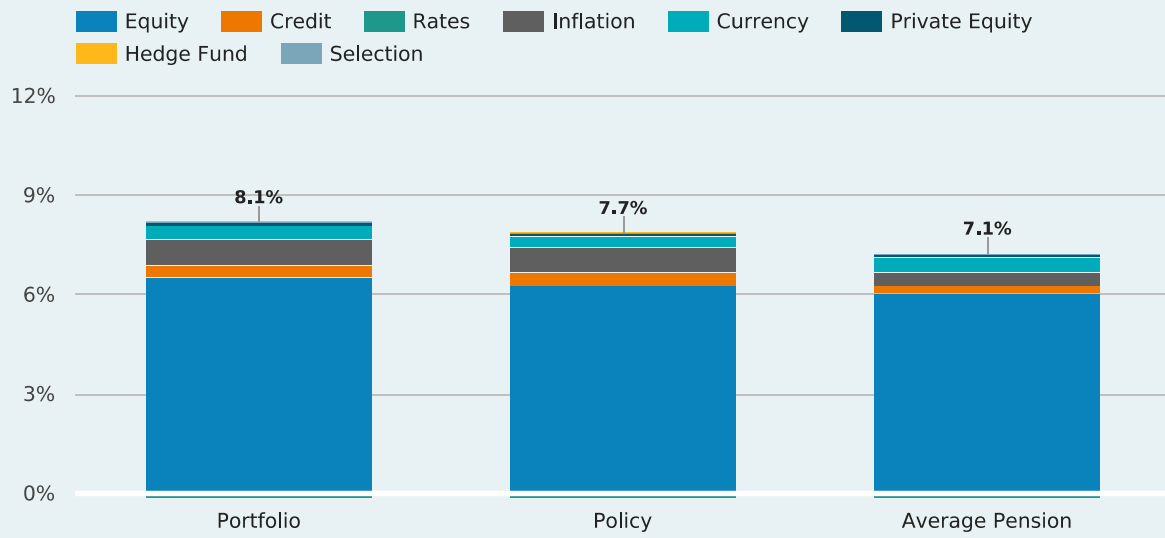
10 Tail risk - Scenario analysis



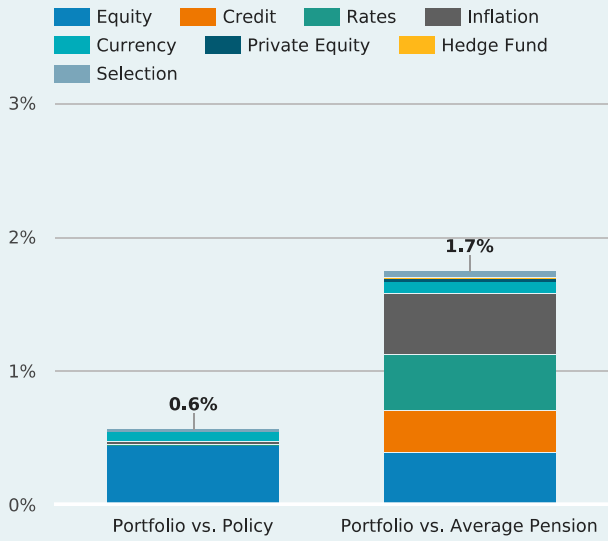
11 Tail risk - Stress tests



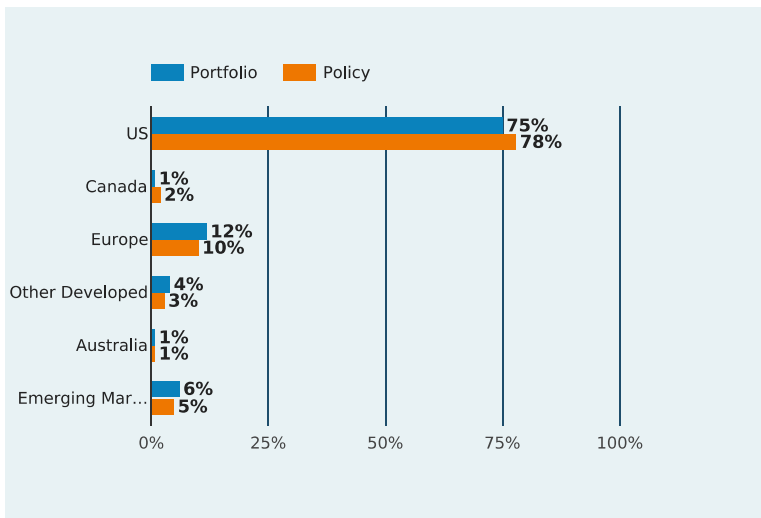
12 Risk contribution by risk factor



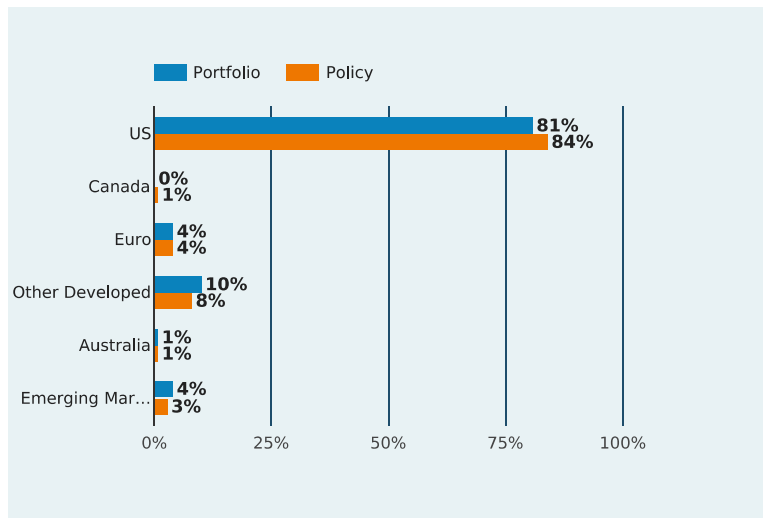
13 Active risk contribution by risk factor



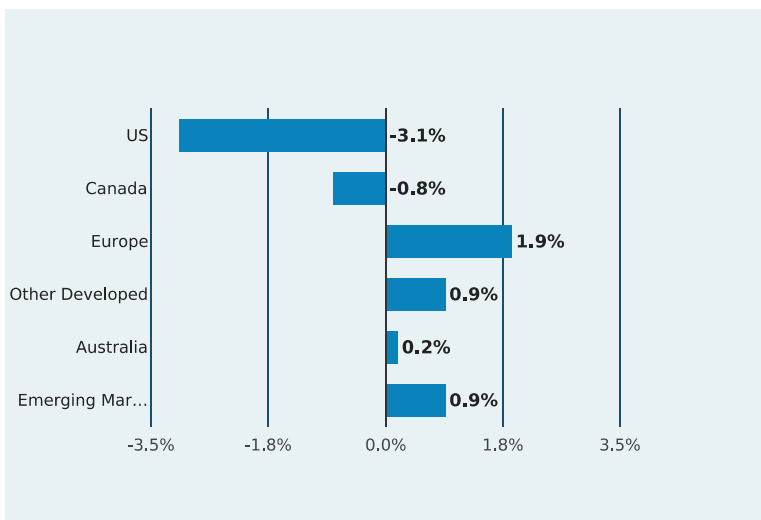
14 Geographic exposure



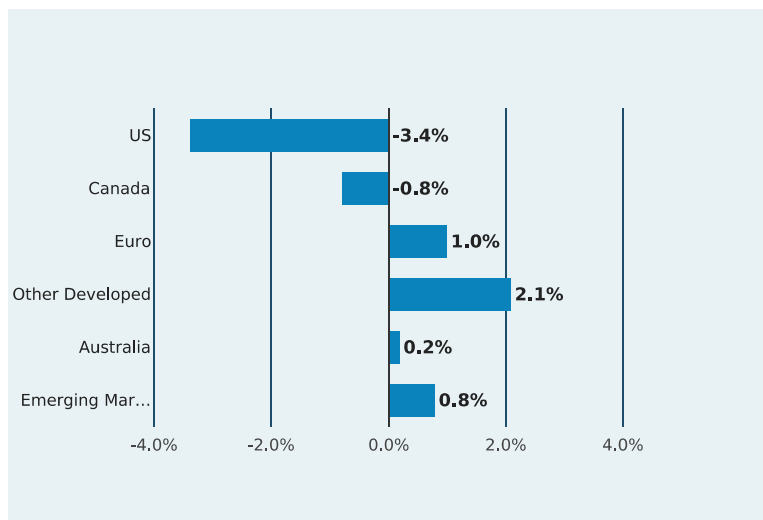
15 Currency exposure



16 Net geographic exposure



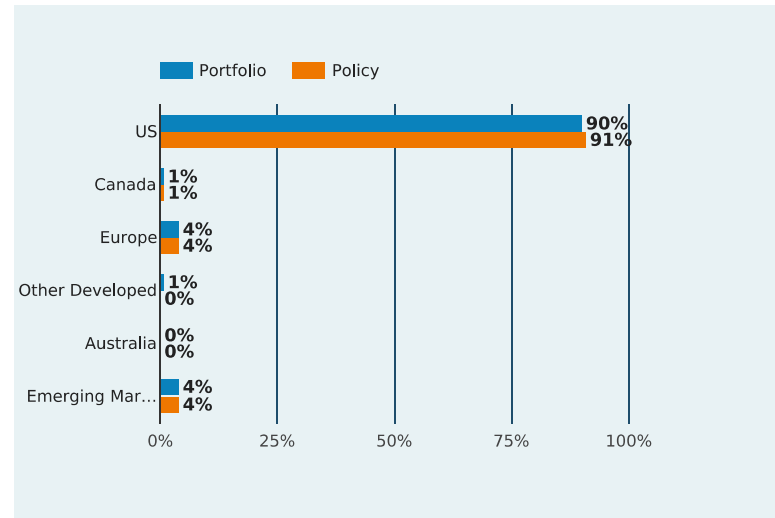
17 Net currency exposure



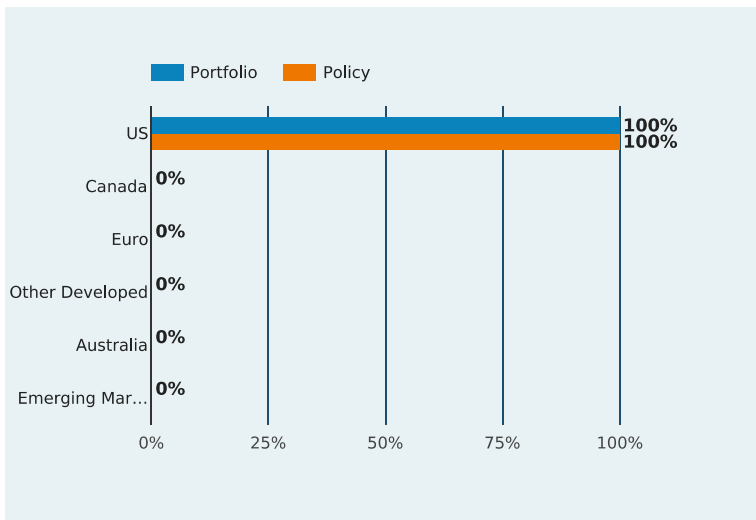
18 Interest rate bucket

	Portfolio	Policy	Difference
Duration	5.8	5.8	0.0
Yield to Maturity	3.1%	3.1%	-0.0%
Wt. Avg. Rating	Aa1 / Aa2	Aa1 / Aa2	

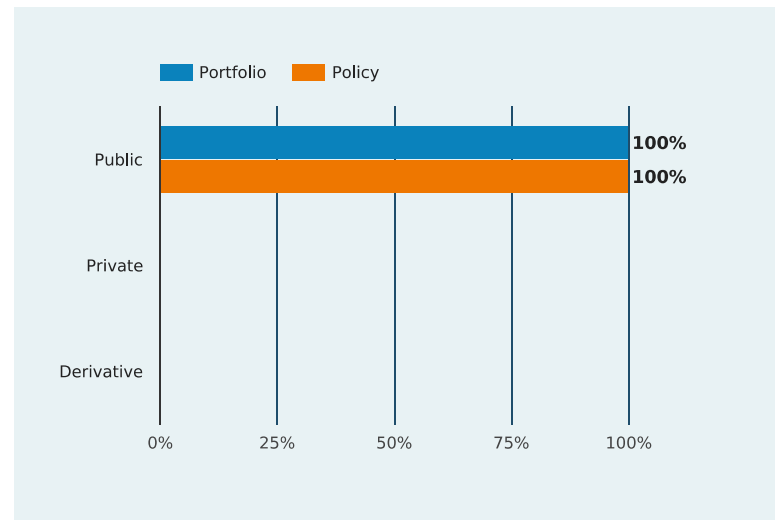
19 Rates bucket - Geographic exposure



20 Rates bucket - Currency exposure



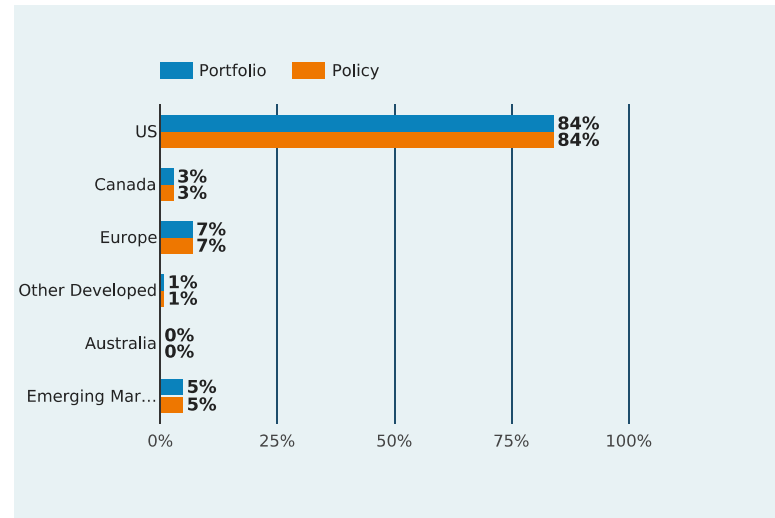
21 Rates bucket - Security type



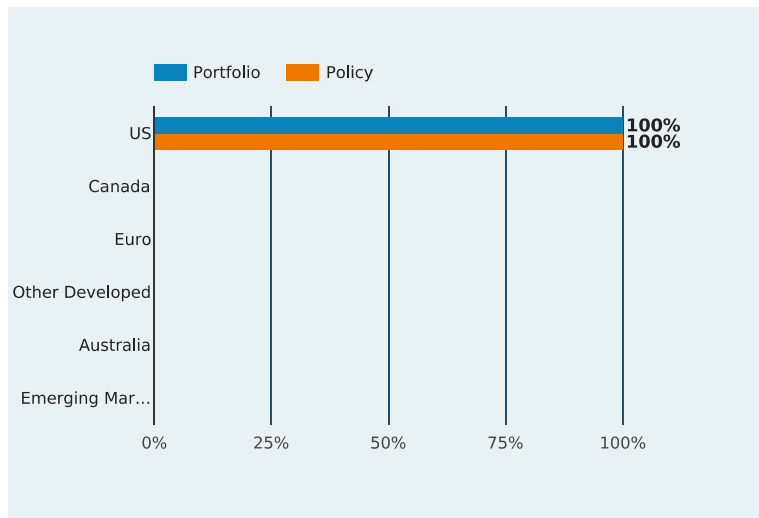
22 Credit bucket

	Portfolio	Policy	Difference
Duration	2.5	2.5	0.1
Coupon Yield	3.2%	3.1%	0.1%
Yield to Maturity	3.6%	3.4%	0.2%
Wt. Avg. Rating	A1 / A2	A1 / A2	

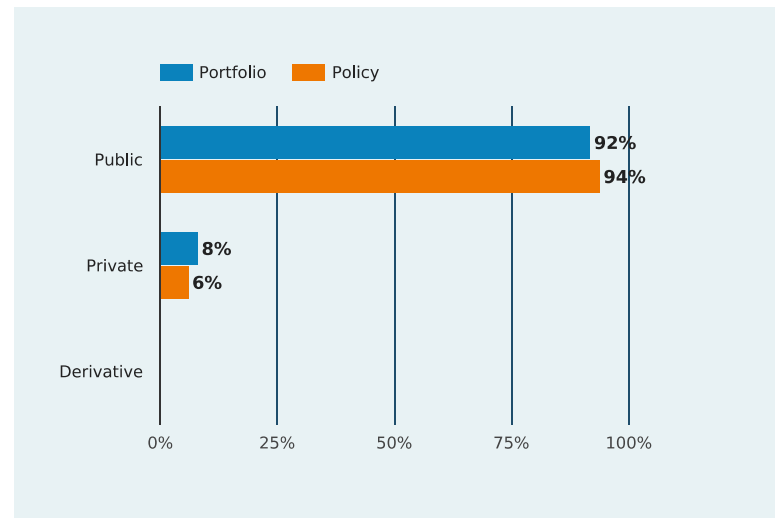
23 Credit bucket - Geographic exposure



24 Credit bucket - Currency exposure



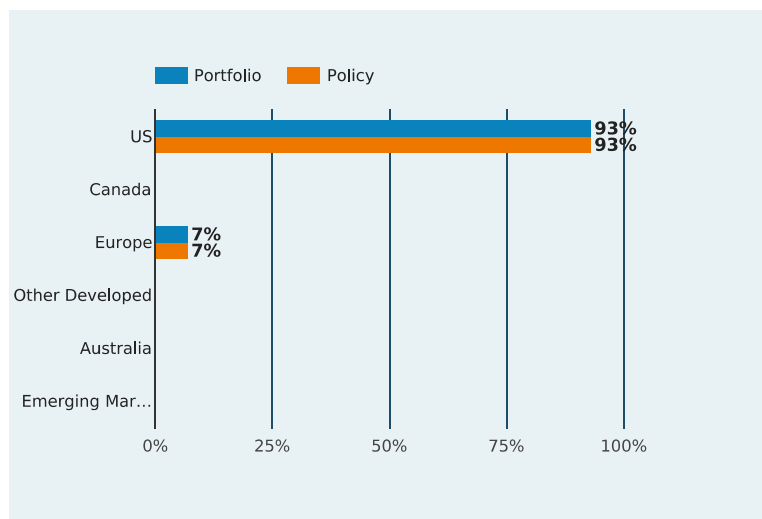
25 Credit bucket - Security type



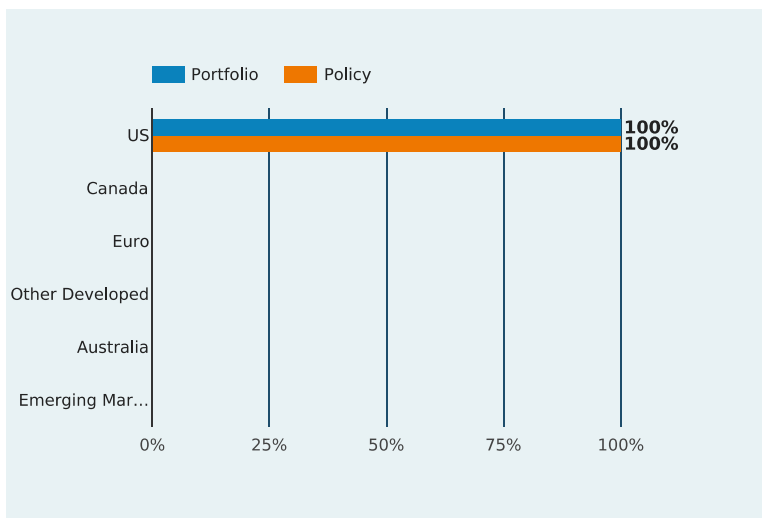
26 Inflation bucket

	Portfolio	Policy	Difference
Real Estate Allocation	9.0%	9.5%	-0.5%
Other Real Assets	3.8%	3.6%	0.2%

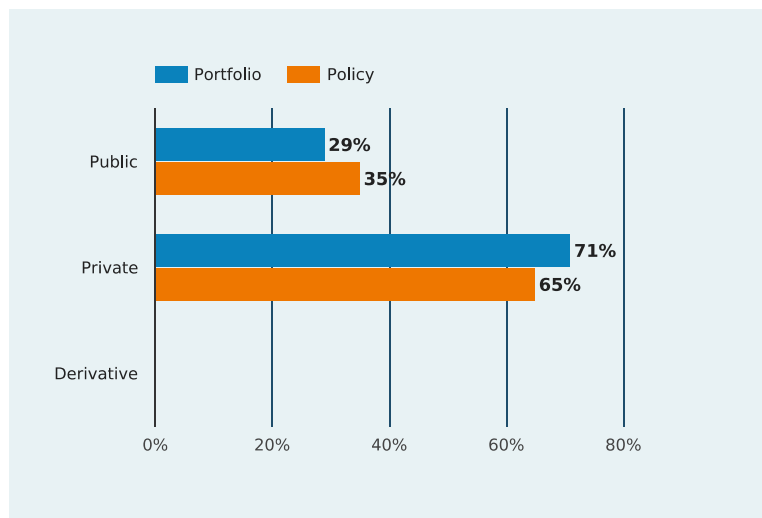
27 Inflation bucket - Geographic exposure



28 Inflation bucket - Currency exposure



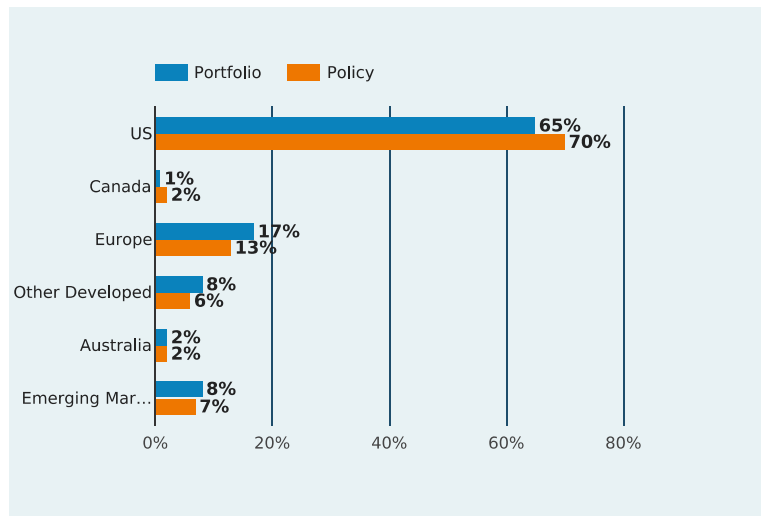
29 Inflation bucket - Security type



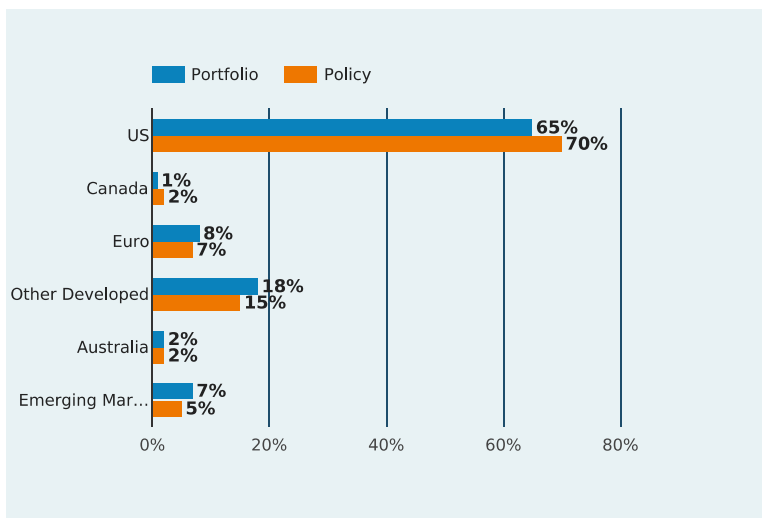
30 Equity bucket

	Portfolio	Policy	Difference
Beta	1.0	1.0	0.0
Dividend Yield	2.3%	2.3%	0.0%
PE Ratio	24.2	24.4	-0.2

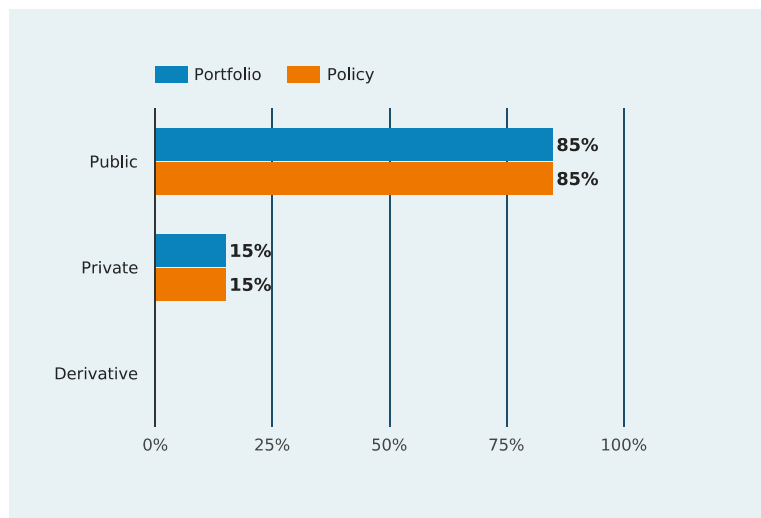
31 Equity bucket - Geographic exposure



32 Equity bucket - Currency exposure



33 Equity bucket - Security type



34 Market value summary per BarraOne

Bucket	Asset Class	Account Name	Account	Market Value (millions)
Cash	Cash	Unallocated Cash	CCCERAPeno75	158.7
		Parametric Overlay	CCCERAPeno88	15.0
		Treasurer's Fixed	CCCERAPeno76	0.0
		Transition	CCCERAPeno77	0.0
Cash Total				173.7
Credit	HY Bonds	Allianz Global Investors	CCCERAPeno23	391.2
	Opportunistic Credit	Angelo Gordon Energy Credit Opportunities	CCCERAPeno74	18.5
	Private Credit	Torchlight IV	CCCERAPeno20	65.1
		Torchlight II	CCCERAPeno18	44.3
		Torchlight V	CCCERAPeno21	20.4
		Torchlight III	CCCERAPeno19	10.9
	Short-term Gov or Credit	Insight Short Duration	CCCERAPeno81	754.0
		Sit Short Duration	CCCERAPeno80	431.7
		DFA Short Credit	CCCERAPeno79	366.4
Credit Total				2,102.5
Equity	EAFE Equity	William Blair	CCCERAPeno08	433.4
		Pyrford	CCCERAPeno07	431.4
	EM Equity	PIMCO RAE Emerging Markets	CCCERAPeno87	301.8
	Global Equity	Artisan Partners	CCCERAPeno10	354.7
		First Eagle	CCCERAPeno11	341.4
		Intech Global Low Vol	CCCERAPeno12	24.2
		JP Morgan Global Opportunities	CCCERAPeno13	0.2
	Private Equity	Adams Street Partners	CCCERAPeno52	125.7
		Siguler Guff CCCERA Opportunities Fund	CCCERAPeno72	94.9
		Energy Investor Fund IV	CCCERAPeno61	51.9
		Energy Investor Fund III	CCCERAPeno60	46.7

	Pathway 7	CCCERAPeno63	42.0
	Energy Investor Fund II	CCCERAPeno59	37.8
	Pathway Private Equity Fund	CCCERAPeno65	33.5
	Pathway 6	CCCERAPeno62	32.8
	Carpenter Bancfund	CCCERAPeno67	30.8
	Paladin III	CCCERAPeno69	24.8
	Pathway Private Equity Fund 2008	CCCERAPeno66	24.0
	Adams Street Partners Fund 5	CCCERAPeno54	22.6
	Ocean Avenue Fund II	CCCERAPeno70	16.8
	Oaktree PIF 2009	CCCERAPeno73	14.5
	Pathway 8	CCCERAPeno64	13.6
	Adams Street Partners II	CCCERAPeno53	13.4
	Energy Investor Fund V	CCCERAPeno85	11.1
	Bay Area Equity Fund II	CCCERAPeno57	8.7
	Ocean Avenue Fund III	CCCERAPeno71	7.1
	Siguler Guff Secondary Opportunities	CCCERAPeno82	4.3
	Brinson - Venture Capital	CCCERAPeno55	4.3
	Bay Area Equity Fund I	CCCERAPeno56	3.2
	Energy Investor Fund	CCCERAPeno58	0.8
	Nogales	CCCERAPeno68	0.1
US Equity	Robeco Boston Partners	CCCERAPeno04	355.6
	Jackson Square Partners	CCCERAPeno03	335.3
	Intech Large Cap Core	CCCERAPeno01	295.3
	Emerald Advisers	CCCERAPeno05	263.6
	Ceredex	CCCERAPeno06	245.4
	PIMCO Stocks+ Absolute Return	CCCERAPeno02	162.1

Equity Total

4,209.5

Inflation	Real Assets	Wellington Real Total Return	CCCERAPeno26	188.6
		Aether Real Assets III	CCCERAPeno27	54.9
		Commonfund	CCCERAPeno29	37.2
		Aether Real Assets IV	CCCERAPeno28	5.8
		Wastewater Opportunity Fund LLC	CCCERAPeno30	2.7
	Real Estate	DLJ Real Estate IV	CCCERAPeno35	87.1
		Oaktree REOF VI	CCCERAPeno47	72.9
		Adelante	CCCERAPeno31	65.0
		Siguler Guff Distressed RE Opportunities	CCCERAPeno49	56.1
		Siguler Guff Distressed RE Opportunities II	CCCERAPeno50	53.5
		Angelo Gordon & Co. Realty Fund VIII	CCCERAPeno32	48.0
		LaSalle Income & Growth Fund VI	CCCERAPeno43	40.0
		LaSalle Income & Growth Fund VII	CCCERAPeno86	39.7
		DLJ Real Estate V	CCCERAPeno36	33.0
		DLJ Real Estate III	CCCERAPeno34	31.7
		Angelo Gordon & Co. Realty Fund IX	CCCERAPeno33	31.6
		Paulson Real Estate II	CCCERAPeno48	24.8
		INVESCO Real Estate III	CCCERAPeno41	22.2
		Long Wharf Fund IV	CCCERAPeno45	22.1
		Oaktree REOF V	CCCERAPeno46	18.8
		Siguler Guff Distressed RE Opportunities II Co-Inv	CCCERAPeno51	14.8
		INVESCO Real Estate IV	CCCERAPeno42	13.4
		Long Wharf Fund V	CCCERAPeno78	12.9
		Oaktree REOF VII	CCCERAPeno84	5.2
		Long Wharf Fund III	CCCERAPeno44	4.4
		INVESCO Real Estate II	CCCERAPeno40	0.5
		INVESCO Real Estate I	CCCERAPeno39	0.1

		Hearthstone Advisors II	CCCERAPen037	0.0
Inflation Total				986.9
Rates	Global Bonds	Lazard	CCCERAPen024	1.1
	US Bonds	AFL-CIO	CCCERAPen022	236.8
		BlackRock Transition	CCCERAPen083	2.1
		Goldman Sachs Core Plus	CCCERAPen014	0.1
		PIMCO Fixed Income	CCCERAPen017	0.0
Rates Total				240.0
Total Portfolio (millions)				7,712.5

Chart Definitions

1 Portfolio risk

Total risk comparison of Portfolio, Policy, and Avg. Pension. Policy is composed of 22.90% Russell 3000 Index, 10.9% MSCI ACWI, 11.0% MSCI ACWI ex US, 8.1% Private Equity, 3.2% Bloomberg Barclays U.S. Aggregate, 5.1% Bloomberg Barclays U.S. Corporate High Yield, 1.7% Bloomberg Barclays U.S. Corporate High Yield as Private Credit, 22.4% Bloomberg Barclays 1-3 Yr Gov/Credit, 3.6% Bloomberg Commodities, 1.0% MSCI USA/Equity REITS, 1.7% NCREIF NPI, 6.8% NFI ODCE, and 1.6% Bloomberg Barclays U.S. Treasury Bills: 1-3 Months. Average pension is based on median allocation of DB Plans > \$1 Billion, which is composed of 25.91% S&P 500, 14.98% MSCI EAFE, 3.42% MSCI EM, 6.57% Private Equity, 22.38% Bloomberg Barclays Capital U.S. Aggregate, 4.26% Bloomberg Barclays Global Aggregate, 1.49% Barclays Global Treasury ex U.S., 2.37% Bloomberg Capital Global Emerging Markets, 1.11% Bloomberg Capital U.S. Treasury Bills: 1-3 Months, 8.06% HFRI FOF Index, 2.12% Bloomberg Commodities, and 7.34% NCREIF NPI.

2 Portfolio equity beta

Equity risk presented by equity beta to market. Equity beta is a measure describing the sensitivity of portfolio returns with returns of the equity market (MSCI ACWI).

3 Portfolio interest rate risk - Duration

Interest rate risk presented by duration and dollar movement of portfolios. Duration of a financial asset that consists of fixed cash flows is the weighted average of the times until those fixed cash flows are received (measured in years). It also measures the percentage change in price for a given change in yields (the price sensitivity to yield). DV01 \$ (dollar duration) is the change in price in dollars of a financial instrument resulting from a one basis point change in yield.

4 Portfolio credit risk - Spread duration

Credit risk presented by spread duration and dollar movement of portfolios. Spread duration measures the percentage change in price for a one percentage point change in spreads.

5 Exposure allocation by asset class

Exposure allocation among various asset classes.

6 Exposure allocation

Exposure allocation among major risk buckets (rates, credit, equity, inflation, currency) and net currency exposure (domestic vs. foreign). Full Cash collateral is assumed for all derivatives.

7 Relative risk vs target by bucket

Comparative riskiness of Portfolio vs. Policy on total portfolio and risk bucket levels: For example, equity bucket relative risk compares the riskiness of the Portfolio equity bucket vs the Policy equity bucket.

8 Relative risk vs target by risk factor

Comparative riskiness of Portfolio vs. Policy on a total portfolio level and major risk factor levels.

9 Risk factor weight relative to target

Contribution by factor to total relative risk of the Portfolio vs the Policy: For example, Equity is equity risk contribution to Portfolio minus equity risk contribution to the Policy, divided by total risk of the Policy. The factor overweights are additive to the total relative risk at the top line.

10 Tail risk - Scenario analysis

Tail risk is a form of risk measurement that considers the possibility that a market will experience losses greater than what the normal distribution would suggest. This graph shows the expected performance under various historical scenarios (described in the appendix at the end of this report). For each historical scenario, the current market value is recalculated to determine return under identical market conditions, assuming an instantaneous shock.

11 Tail risk - Stress tests

This display shows expected performance when individual risk factors are subjected to instantaneous shocks. Directly affected assets are revalued at factor level.

12 Risk contribution by risk factor

Risk contribution by risk factor. Volatility measures the price variation of a portfolio or financial instrument over time.

13 Active risk contribution by risk factor

Active risk in terms of annual tracking error: Tracking Error (TE) measures how closely a portfolio follows its benchmark. It is the standard deviation of the difference between the portfolio and benchmark returns.

14 Geographic exposure

Geographic exposures are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.

15 Currency exposure

Currency portfolio allocation. Currency exposures from both the underlying securities and the purchasing currency of the futures contract are included.

16 Net geographic exposure

Difference between portfolio and policy allocation among major geographic areas.

17 Net currency exposure

Difference between portfolio and policy allocation among major currencies.

18 Interest rate bucket

Coupon yield (nominal yield) of a fixed income security is a fixed percentage of the par value that does not vary with the market price of the security. Yield to Maturity (YTM) is the interest rate of return earned by an investor who buys a fixed-interest security today at the market price and holds it until maturity. Ratings indicate credit quality of a security and the issuer's ability to make payments of interest and principal.

19 Rates bucket - Geographic exposure

Geographic exposures specific to the Rates bucket are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.

20	Rates bucket - Currency exposure Currency allocation of interest rate instruments.
21	Rates bucket - Security type Allocation of interest rate instruments among different security types.
22	Credit bucket Various characteristics of credit instruments.
23	Credit bucket - Geographic exposure Geographic exposures specific to the Credit bucket are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.
24	Credit bucket - Currency exposure Currency allocation of credit instruments.
25	Credit bucket - Security type Allocation of credit instruments among different security types.
26	Inflation bucket Composition of inflation hedging instruments in portfolio and benchmark. Notional duration of real rates instruments is also included.
27	Inflation bucket - Geographic exposure Geographic exposures specific to the Inflation bucket are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.
28	Inflation bucket - Currency exposure Currency allocation of inflation instruments.
29	Inflation bucket - Security type Allocation of inflation instruments among different security types.
30	Equity bucket P/E ratio is a valuation ratio of a company's current share price compared to its per-share earnings. Beta measures sensitivity to Global Equities.
31	Equity bucket - Geographic exposure Geographic exposures specific to the Equity bucket are calculated using the notional exposure as a percentage of market value, including derivatives, cash securities and currency holdings, but excluding currency derivatives. Any portfolio that uses derivatives may have a total different than 100% because both cash and derivative country exposures are included.
32	Equity bucket - Currency exposure Currency allocation of equity assets.
33	Equity bucket - Security type Allocation of equity assets among different security types.
34	Market value summary per BarraOne Summary of market value of Portfolio holdings by bucket as reported through BarraOne. Some differences may exist due to timing, pricing sources and availability of information on new investments.

Tail Risk Scenario Definitions

1	2009-2010 July-January (7/1/2009 - 12/31/2009) As global economic woes persisted, many countries were saddled with widening budget deficits, rising borrowing costs, slowing growth, higher unemployment, and higher inflation, which made monetary stimulus difficult. Dubai World sought to delay its huge debt repayments, shocking the global market, while the financial distress in Greece and Ireland began to emerge in late 2009.
2	2007-2009 Subprime Meltdown (1/10/2007 - 2/27/2009) The burst of the housing bubble in mid-2007 marked the beginning of the years-long subprime mortgage crisis, rooted from the easy credit, low interest rates, and loose regulatory environment in the early 2000s, which made low quality (subprime) mortgaging extremely easy. The contagious meltdown quickly led to plunging asset prices in the financial markets, rising bankruptcies, delinquencies, and foreclosures, and central bank monetary rescues and fiscal interventions by governments around the globe.
3	2007-2008 Oil Price Rise (1/18/2007 - 6/27/2008) Oil prices spiked from around \$60/bbl in 2007 to a record high of \$145/bbl on 3 July 2008.
4	2001 Dot-com Slowdown (3/10/2001 - 10/9/2002) Upon the burst of the tech bubble in 2000, more and more internet companies went out of business as the stock market plummeted further.
5	1997-1999 Oil Price Decline (1/8/1997 - 2/16/1999) The combined effect of OPEC overproduction and lower oil demand due to the Asia economic crisis sent oil prices into a downward spiral.
6	1994 US Rate Hike (1/31/1994 - 12/13/1994) In combating inflation, the U.S. Federal Reserve raised its interest rate from 3.25% in February to 5.5% in November 1994.
7	1992-1993 European Currency Crisis (9/1/1992 - 8/13/1993) Upon Germany's reunification, the German mark appreciated rapidly, which destabilized exchange rates between European countries under the European Monetary System. It led to a series of European currency devaluations, interest rate increases, and the widening range of exchange rates in 1992.

8 **1989-1990 Nikkei Stock Price Correction**

(12/29/1989 - 3/30/1990) After hitting the Nikkei stock index's all-time high on December 29, 1989, the Japan financial market crashed and plunged to a low in March 1990.

9 **1987 Market Crash (Oct 14 to Oct 19)**

(10/14/1987 - 10/19/1987) The U.S. stock market began to topple on October 14, 1987 after reaching a record high. It was triggered by reports of a larger trade deficit and the elimination of the tax benefits of financing mergers. The aggravating selling pressure in October 19, from confused and fearful investors, and the failing portfolio insurers' models led to a substantial global market sell-off.

10 **1972-1974 Oil Crisis (Dec to Sep)**

(12/1/1972 - 9/30/1974) Many developed countries suffered in this energy crisis as OPEC members placed an oil embargo on the U.S. and Israel's allies during the Yom Kippur War in October 1973, which sent global oil prices soaring.

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**Contra Costa County Employees' Retirement Association
Liquidity Report – April 2017**

April 2017 Performance

	Cash Flow	Coverage Ratio
Benefit Cash Flow Projected by Model	\$37,500,000	
Liquidity Sub-Portfolio Cash Flow	\$37,500,000	100%
Actual Benefits Paid	\$36,760,902	102%
<i>Next Month's Projected Benefit Payment</i>	<i>\$37,500,000</i>	

Monthly Manager Positioning - April 2017

	Beginning Market Value	Liquidity Program Cash Flow	Market Value Change/Other Activity	Ending Market Value
Sit	\$431,661,983	-\$750,000	\$993,814	\$431,905,797
DFA	\$366,385,809	-\$12,250,000	\$1,469,903	\$355,605,712
Insight	\$753,966,122	-\$24,500,000	\$1,648,724	\$731,114,846
Liquidity Sub-Portfolio	\$1,552,013,914	-\$37,500,000	\$4,112,441	\$1,518,626,355
Cash	\$160,717,866	\$739,098	-\$70,846,003	\$90,610,961
Liquidity + Cash	\$1,712,731,780	-\$36,760,902	-\$66,733,562	\$1,609,237,316

Functional Roles

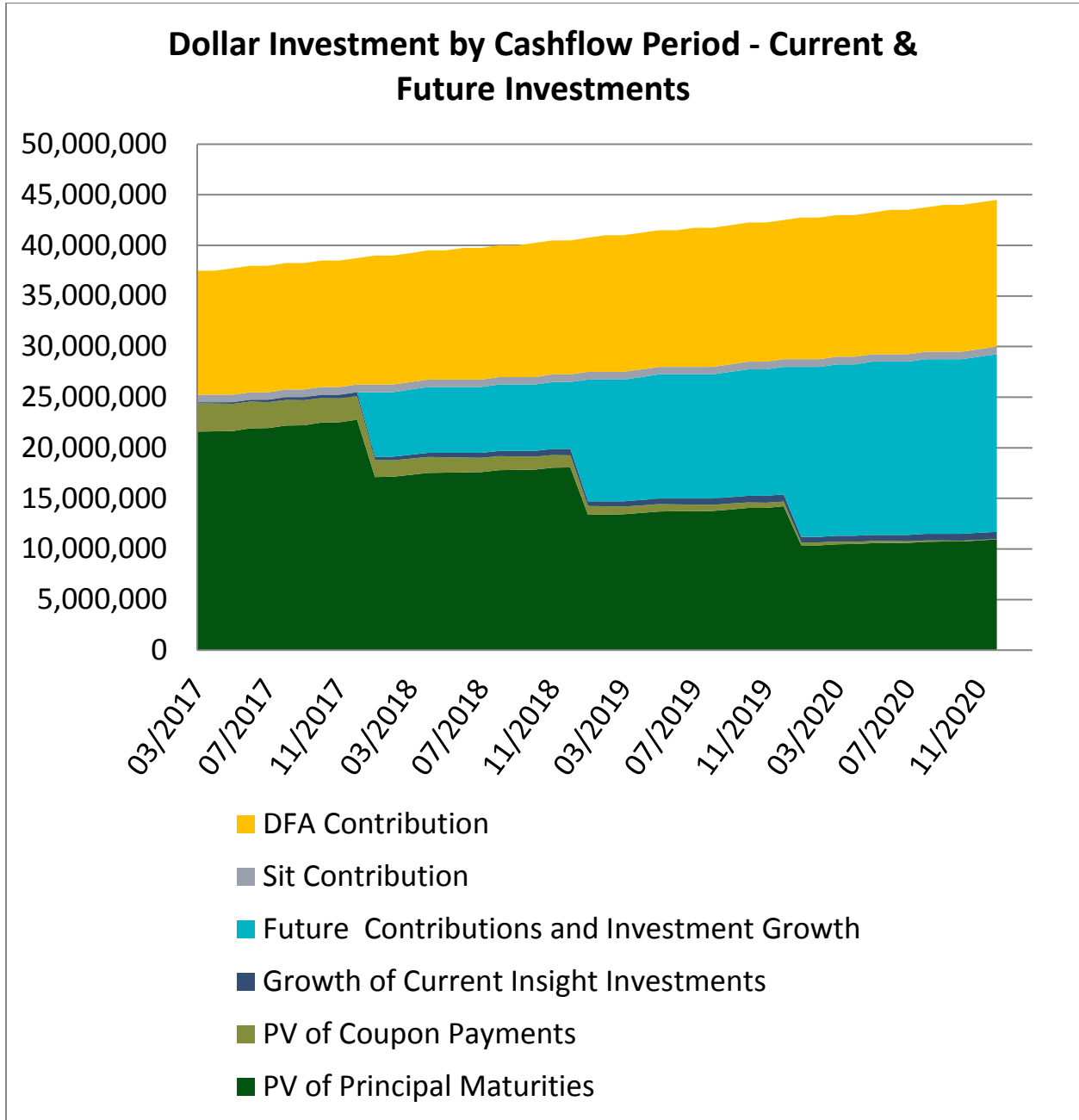
Manager	Portfolio Characteristics	Liquidity Contribution
Sit	High quality portfolio of small balance, government guaranteed mortgages with higher yields.	Pays out net income on monthly basis. We expect this income to rise somewhat in the upcoming year.
DFA	High quality, short duration portfolio of liquid, low volatility characteristics.	Pays out a pre-determined monthly amount. DFA sources liquidity from across their portfolio.
Insight	Buy and maintain (limited trading) portfolio of high quality, short duration, primarily corporates.	Completion portfolio makes a payment through net income and bond maturities that bridges the gap between other managers and projected payment.
Cash	STIF account at custodial bank.	Buffer in the event of any Liquidity shortfall/excess.

Notes

The fourth monthly cash flow from the liquidity program was completed on April 21, 2017 and covered more than the actual benefit payments. The excess cash flow of approximately \$739 thousand was smaller than seen in the first few months of the program. We continue to monitor the coverage ratio and may adjust our forecasting model if we find a systematic pattern of excess coverage.

Cash Flow Structure

The chart below shows the sources of cash flow for the next several years of CCCERA’s projected benefit payments. This table will change slightly as the model is tweaked and as the portfolios receive new rounds of funding each July as part of the Annual Funding Plan.



CCCERA 2017 COMPLIANCE ACTIVITY PLAN

Prepared by Wrally Dutkiewicz
Compliance Officer
February 2017

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Introduction

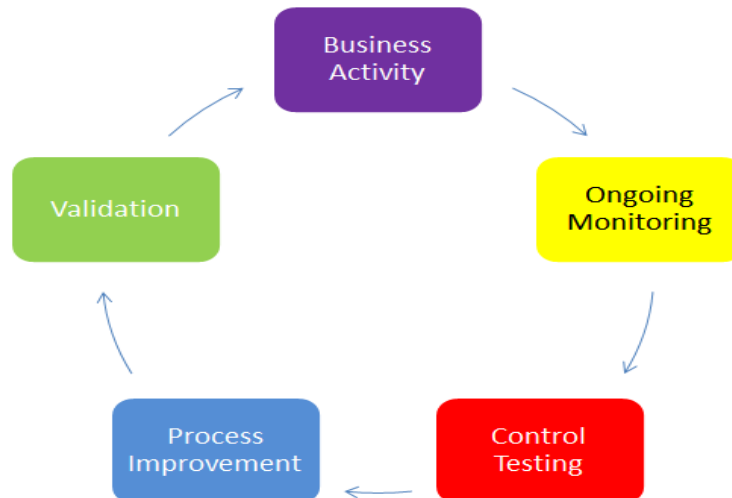
The Compliance Officer is authorized to engage in audit programs, risk assessments, and to coordinate audit efforts with external auditors to ensure compliance with CERL, PEPRA, IRC, DOL, and other government statutes.

Auditing is the principal tool for the Compliance Department to evaluate the efficacy of the CCCERA's internal controls, compliance, governance, and risk management.

Scope & Mission

The IIA Standards, CERL, PEPRA and CCCERA's policies provide the framework within which the Compliance Officer performs audits to support, manage, and test CCCERA's Compliance Program and to determine the priorities for compliance activities. The Compliance Officer prepares an annual Audit Plan and Risk Assessment to help identify, measure, and prioritize potential issues based on the level of risk to the retirement system, and advise CCCERA Executive Management on the potential regulatory, administrative, and fiscal impact of those risks. The purpose of the annual Audit Plan is to outline the work to be performed and is designed to cover high risk activities while limiting the scope of work to what can realistically be accomplished during the upcoming fiscal year.

The goal is to create a continually validating compliance program that is integrated into business processes:



The annual compliance planning process includes the following major planning activities:

- Defining the Compliance Universe
- Conducting a Risk Assessment
- Preparing the Compliance Activity Plan
- Presenting the Compliance Activity Plan

The audit process encompasses the following five stages:

1. Planning
2. Audit Fieldwork
3. Reporting
4. Quality assessment
5. Follow-up

Risk Assessment

The Risk Assessment for audit planning is the process of systematically scoring (or rating) the relative impact of a variety of “risk factors.” A risk factor is an observable or measurable indicator of conditions or events that could adversely affect the organization. Various risk factors will be used to measure inherent risks (such as the complexity of operations or regulations) or organizational vulnerability (such as weak internal controls).

A questionnaire is completed for each business process activity to score the level of risk for each of the risk factors identified. Also, weights are assigned to each risk factor based on relative importance as determined by input from management. The final step to complete the Risk Assessment is to calculate the total risk score for each business process activity in order from highest risk score to the lowest by tabulating the information gathered from the questionnaires and applying the weights assigned to the risk factors.

The Compliance Department prepares a Risk Assessment Worksheet that provides a weighted risk assessment score for each business activity component under review. If a business activity is comprised of several functional parts, the overall risk assessment will be the average of the sum of the risk assessment scores for its component parts.

The Risk Assessment Worksheet takes into consideration the following ten risk factors:

<p>Incapacitation: Significance of an impairment event on the ability to meet strategic and/or organizational goals and objectives. Amount of impact the business activity process has on the retirement system’s constituents.</p>
<p>External Influence: Concern about adverse publicity; laws and regulations; customer demands; and political exposure.</p>
<p>Internal Controls:</p> <ul style="list-style-type: none"> • The internal control structure takes into consideration the adequacy of written procedures and whether or not controls have been previously tested. • Degree of segregation of duties and responsibilities, supervision and training, planning for business resumption and contingency, and reconciliation controls, make exposures for this audit.
<p>Complexity:</p> <ul style="list-style-type: none"> • Business process has many steps and several control points. May include both manual and system based steps; • Complexity can increase both the probability of error and the effort required to monitor the business activity process. Includes complexity of federal and state laws, rules and regulations governing a particular program.
<p>Information Technology Controls:</p> <ul style="list-style-type: none"> • Computer applications affect the accuracy and timeliness of completed work tasks, as well as the productivities of the staff. Information systems should process information in a secure, reliable and accurate manner. • Age, condition, extent of manual user intervention, efficiency and effectiveness of the data processing system specific to this business activity, and the perceived impact of general information technology controls related to: consistent use of an acceptable systems development methodology (including programmer and user documentation and testing procedures), consistent use of an acceptable project management system, effective computer maintenance change controls (to assure application program changes are properly authorized, managed, and recorded), and effective logical access security to guard against unwarranted access and unauthorized changes to computer programs and/or data.
<p>Change:</p> <ul style="list-style-type: none"> • Changes in operation to meet statutory, regulatory, and legal requirements, and/or to address organizational restructuring including modifications to manual or automated procedures such as increased use of technology. • Changes in operations can impact the efficiency and effectiveness of the retirement system's performance. Criteria include changes in staff size, processing changes (manual to computerized), systems (input and/or output), as well as staff turnover. This area includes concerns of rapid growth, which includes rapid growth of personnel size and of additional programs added to an operational area.

Risk Assessment Scoring assigns a weighting to each of the ten risk assessment factors to generate an Overall Risk Assessment Score. This scoring is used to create a risk based map of CCCERA’s operations over time to aid in its governance, risk, and compliance (GRC) strategic planning.

A “risk assignment” refers to the subjective classification of risk based on judgment rather than observation. A “risk assessment” refers to the assignment of risk based on observable facts, activities, identified threats, and empirical analysis.

The focus of the “risk assignment” review is to prioritize business activities that CCCERA’s compliance department will review in connection with its Compliance Activity Plan. The following criteria are used during the “risk assignment” assignment review:

- Financial Exposure
- Compliance – Laws and Regulations
- Complexity of Operations
- Public Exposure

Internal Audit Risk Assignments:

Risk assignments will be reviewed, validated and adjusted through the risk assessment component of each department's written operational procedures (WOPs) and written supervisory procedures (WSPs). Adjustments to the risk assignments will also take into consideration each department manager's procedural priority list on which each manager has self-identified an operational or supervisory item requiring updating, retooling, or the development of a new procedure.

The development and implementation of updated department procedures is an ongoing goal and CCCERA Compliance will work with each of the department managers and advise on matters concerning workflow, technical applications of government code and BOR policy, and supervisory tools and structures.

With input and guidance from CCCERA's Audit Committee, the Internal Audit work plan will take into consideration the ongoing testing, monitoring, and ad hoc audit items that will be reviewed.

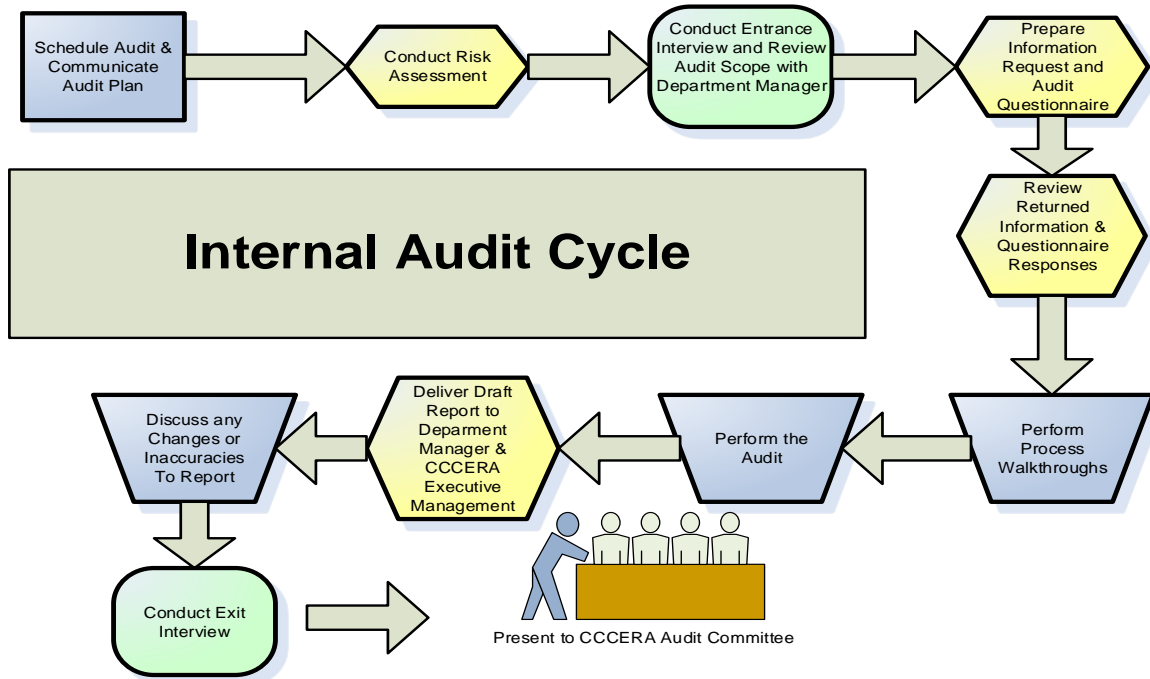
Employer Audit Risk Assignments:

With respect to Employer Audits, similar risk assignment criteria is used to establish a priority review framework to plan areas of focus for employer audits. The following chart indicates those employer business activities that generally fall within the employer audit scope:

Control Item	Control Test
Payroll Procedures	Review Payroll Transactions and compare district payroll register with data reported to CCCERA to ensure pay rates in compliance with posted salary information
Payroll Data & Conveyance	Review process for reporting payroll to CCCERA. i) Timeliness; ii) Validation (time keeping, vacation, sick leave, disability, overtime)
Earn Code Classifications	Inventory of earn code classification - i) allowable pensionable compensation; ii) compensation calculation - methodology
Internal Controls/EUC	Review District's Internal Controls WSPs - i) segregation of duties; ii) system access; iii) reporting levels
Contract between CCCERA & District	MOU & Clarifying Addendums - in compliance with BOS/BOR/CERL Requirements
Correspondence Between CCCERA & District	Does communication methods support SLA (Service Level Agreements)?
Personnel Procedures	Inventory of WSP (Written Supervisory Procedures) and match against regulatory & CCCERA policy requirements
Enrollment Procedures	Review District Employee new hire enrollment procedures and match against regulatory & CCCERA Policy Requirements i) Part-Time/Temporary Employees; ii) Retired Employees; iii) Independent Contractors
Employee Classification	Review District Employee Classification to match against reported group, function and eligibility
CCCERA Policy Compliance	Review Compliance with i) Financial Controls; ii) Administrative Controls; iii) Procedural Controls
CERL Compliance	Match governance and policies against regulatory requirements

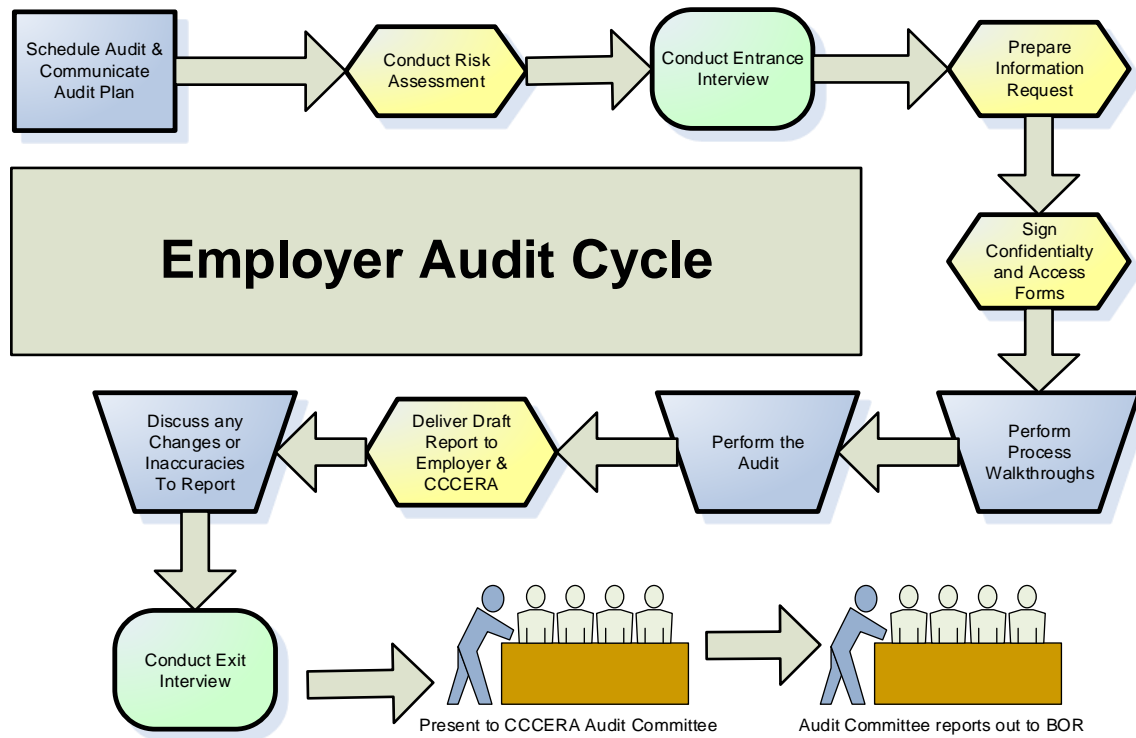
The Audit Process

Internal Audit



The Compliance Officer will obtain a sufficiently detailed explanation of the business process from CCCERA staff. This process will be documented in the working paper files. Such documentation may take the form of a narrative description, a flowchart depiction, or a combination of both when appropriate.

Employer Audits



Upon completion of the audit, CCCERA staff will provide to the Board a written report of the audit results and the conclusions of the auditor and CCCERA staff. A copy of the report will be provided to the employer at least 10 days prior to any Board discussion or action.

Reporting

At the conclusion of fieldwork for each audit, the Compliance Officer will prepare a draft report of significant findings and observations including any significant risk exposures and control issues, fraud risks, or governance issues identified during the audit. The report should be accurate, objective, clear, concise, constructive, complete, and timely.

The “Audit Work-Paper Report” includes the audit objectives, the scope of audit work performed, an overview of the business or activity, an opinion on the adequacy of the internal controls, conclusions regarding significant finding and observations, and recommendations to management to address any issues found. The report will also acknowledge when satisfactory performance is determined.

Follow-Up

Follow-up work is performed after the completion of an audit. It entails the Compliance Officer reviewing recommendations with management and determining whether the weakness in procedures or processes identified have been adequately corrected in accordance with the management response and committed timelines. In addition, the Internal Auditor will also follow up any recommendations issued by external auditors or the actuary.

All recommendations arising from the internal and external auditors and the actuary are summarized in an audit recommendations file maintained by the Compliance Officer. The file is continuously updated with the implementation status of the recommendations. Any information obtained as part of the follow up process, is electronically retained in a Follow Up file. Quarterly, a formal review of the status of outstanding recommendations will be completed and presented to CCCERA Executive Management and the Audit Committee when there are recommendations outstanding that still need to be properly implemented.

Compliance Activity Planned for 2017

Sources of Areas Selected For Audit

Areas selected for audit can come from a variety of sources. These include risk assessment, management and employee requests, surprise audits and allegations of fraud, waste, and abuse.

Risk must be one of the primary factors in selecting areas for audit. Risk for some aspects of CCCERA operations is higher than others for many reasons. This includes the type of activities, financial and operational impact to CCCERA and its members if something were to go wrong. Those areas of the CCCERA and its participating Employers which are high risk should receive more audit attention than those of lower risk. It should be noted, however, that areas of lower risk should not be ignored; rather, they should be done with less frequency than the higher risk areas.

Compliance Internal Control Reviews & Projects:

- Projects:
 - Pension Administration Review
 - Pension Administration Systems Audit RFP
 - Sub-Ledger Decommissioning Plan

- Compliance and Internal Controls Activities:
 - Accounting Department Process Review & Procedural Update
 - Member Services Procedures Update
 - Investment Department Procedures and Supervisory Structure
 - Underwriting Procedures
 - Investment Department Supervisory Procedures – Staff Oversight
 - Investment Manager Operational Due Diligence (ODD) – Assessment & Onsite Review Framework
 - GASB 72 Implementation – Liaison with Investment & Accounting Departments
 - AB 2833 – Public Investment Fund Disclosures

Employer Audits:

CCCERA compliance resources will be focused on a review of the following audit scope items:

- Timekeeping and Payroll Reporting
- Employee Enrollment Procedures
- Retiree Return to Work Monitoring

The following employer audits will be conducted:

- Contra Costa County Health Services Department – Finalize and Report Out
- Contra Costa Superior Court
- East Contra Costa County Fire Protection District

SAVE THE DATE

Meeting Date
05/24/17
Agenda Item
#13a.



2017 ANNUAL LIMITED PARTNERS MEETING

DATE

WEDNESDAY, JUNE 21

SESSION: 10 AM – 2:30 PM

ADVISORY BOARD MEETING: 3:00 PM – 4:00 PM

LOCATION

EVENTI HOTEL

851 AVENUE OF THE AMERICAS, NEW YORK

INVITATION AND ADDITIONAL INFORMATION TO FOLLOW

**REGISTER
TODAY!**

Meeting Date
05/24/17
Agenda Item
#13b.

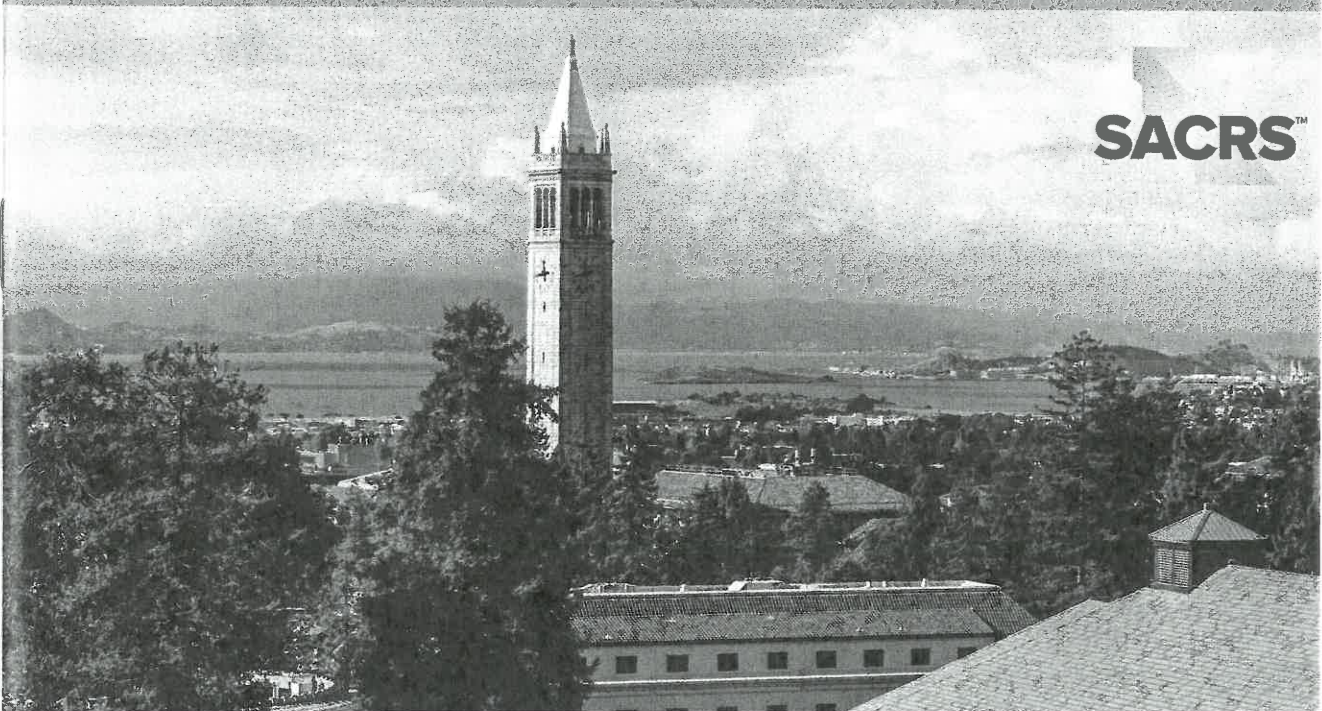
Modern Investment Theory & Practice for Retirement Systems

SACRS PUBLIC PENSION
INVESTMENT MANAGEMENT PROGRAM 2017



July 24-26, 2017

center for
UC Berkeley
executive education



SACRS™



PROGRAM SCHEDULE*

Much has changed in finance in the last 50 years; this three-day program will bring you to the frontier of current investment theory and practice. The program is presented on the beautiful and dynamic campus of UC Berkeley and is taught by the world renowned Finance faculty from UC Berkeley's Haas School of Business.

MONDAY July 24, 2017	TUESDAY July 25, 2017	WEDNESDAY July 26, 2017
Breakfast Hotel Shattuck White Cotton Room, 6th Floor 7:00am-8:00am	Breakfast Hotel Shattuck White Cotton Room, 6th Floor 7:00am-8:00am	Breakfast Hotel Shattuck White Cotton Room, 6th Floor 7:00am-8:00am
7:45am Begin Loading Bus Meet at the front of hotel	7:45am Begin Loading Bus Meet at the front of hotel	7:45am Begin Loading Bus Meet at the front of hotel
8:00am Depart Hotel to UC Berkeley	8:00am Depart Hotel to UC Berkeley	8:00am Depart Hotel to UC Berkeley
Long Term Planning: How Predictable are Asset Returns? Thomas Gilbert 9:00am-10:30am	Real Estate in Pension Portfolio Strategy Chris Palmer 9:00am-10:30am	Hedge Funds: The New Math Gregory LaBlanc 9:00am-10:30am
10:30am Break	10:30am Break	10:30am Break
Advanced Portfolio Analysis with Risk Factors Thomas Gilbert 11:00am-12:30pm	Infrastructure as an Asset Class Josh Rauh 11:00am-12:30pm	SASB and ESG Reporting Industry Panel Adair Morse Bob Eccles 11:00am-12:30pm
12:30pm-1:30pm Lunch	12:30pm-1:30pm Lunch	12:30pm-1:30pm Lunch
Dynamic Asset and Liability Management Thomas Gilbert John O'Brien 1:30pm-3:00pm	GASB 67 Disclosures and Investment Strategies Josh Rauh 1:30pm-3:00pm	Asset Bubbles and Investment Strategy Gregory LaBlanc 1:30pm-3:00pm
3:00pm Break	3:00pm Break	3:00pm-3:15pm Wrap Up
The Role of Fixed Income in Pension Portfolio Strategy Thomas Gilbert 3:30pm-5:00pm	Private Equity: T Private Equity: The New Landscape Peter Goodson 3:30pm-5:00pm	Certificate Distribution 3:30pm-4:00pm
5:00pm-5:15pm Wrap Up	5:00pm-5:15pm Wrap Up	
Adjourn	Adjourn	Adjourn
Reception Hotel Shattuck White Cotton Room, 6th Floor 5:30pm-6:30pm	Reception Hotel Shattuck White Cotton Room, 6th Floor 5:30pm-6:30pm	

* AGENDA SUBJECT TO CHANGE



SACRS Class of 2016

Exceptional Educational Opportunity

SACRS Public Pension Investment Management Program 2017

Are you ready for an immersive, profoundly impactful learning experience? Here's your chance, as you join fellow public pension trustees and retirement staff for SACRS' Public Pension Investment Management Program 2017, taking place July 24–26. Entitled "Modern Investment Theory and Practice for Retirement Systems," the program is presented in partnership with the UC Berkeley Center for Executive Education at the Haas School of Business. This exclusive three-day program is designed for SACRS trustees and staff that aspire to better understand current investment theory and practice.

The SACRS Public Pension Investment Management Program blends the expertise of the University of California, Berkeley-Haas School of Business's distinguished faculty with a network of industry experts to teach the fundamentals of public pension management. As the spotlight on public pensions grows hotter, trustees and staff are increasingly challenged to grapple with alternative investments, policy and governance changes, cost pressures, and much more. After completing this program, attendees will understand the larger context and history of public pension funds and will have enhanced skills and knowledge to improve decision-making.

Over the course of the three-day program, attendees will have the opportunity to explore the predictability of asset returns, review the role of fixed income in the pension portfolio, take a look at how real estate fits into the pension portfolio mix, delve into private equity's new landscape, study the new math of hedge funds, and more. For the complete program see the facing page.

Located in one of the most stimulating business environments in the world, the Berkeley campus is at the intersection of business and academia. Berkeley-Haas is renowned for developing innovative business leaders—individuals who redefine the business landscape by putting new ideas into action in all areas of their organizations.

This is such a rich opportunity for extended learning and presented so conveniently in a concise package, maximizing your time and effort. Education is the cornerstone of SACRS' mission. The UC Berkeley Center for Executive Education staff along with the SACRS Affiliate team is committed to the continual development and delivery of content that is current, innovative, results-driven, and responds to the needs of public pension trustees and staff. Attendees in this program will not only gain new insight and knowledge, but also will add to the core strengths of our organization—the range of expertise and the diversity of perspective found in our public pension community.

We urge you to consider participating.

Sincerely,

Dan McAllister

Dan McAllister
SACRS President, San Diego County
Treasurer-Tax Collector and
San Diego County Employees
Retirement Association Trustee

Sulema H. Peterson

Sulema H. Peterson
SACRS Administrator



WELLINGTON
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Investment Managers

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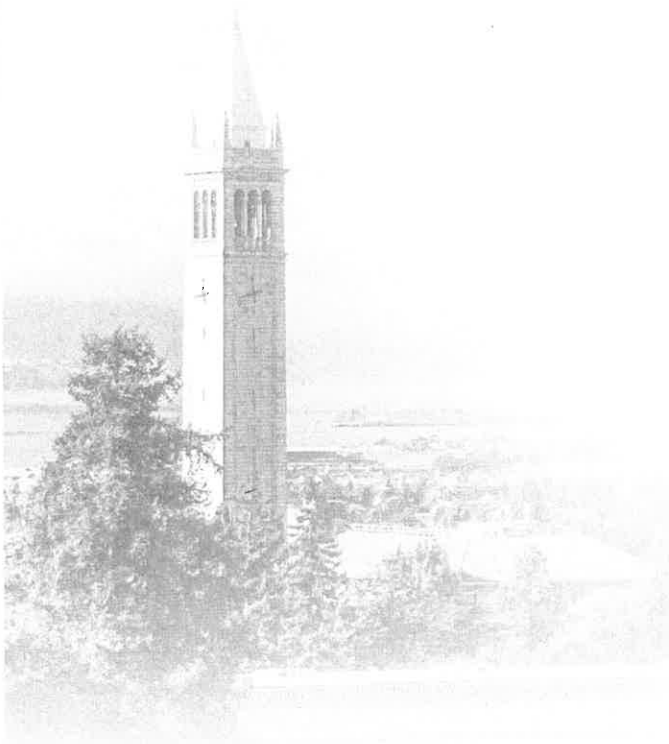
LORD ABBETT

Parametric

Deutsche
Asset Management



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UC Berkeley
 executive education



GREGORY LABLANC



Gregory LaBlanc has been a lecturer at UC Berkeley since 2004, teaching courses in Finance, Accounting, Law, and Strategy in the Haas School, the Law School (Boalt Hall) and the department of Economics. Prior to joining the Berkeley faculty, he studied Economics, Business, and Law at the Wharton School of the

University of Pennsylvania, George Mason University Law School, Duke Law School, and Berkeley Law (Boalt Hall). He has previously taught Finance, Management, Law and Economics at the Wharton School, Duke University and the University of Virginia and has been a consultant in the fields of IP litigation and competitive intelligence. His research focuses on the impact of tax policy on organizational design, capital formation, and innovation. He has received several teaching awards and has previously been involved in executive education programs at the Wharton School and Darden School.

JOHN O'BRIEN



John O'Brien is Adjunct Professor and Academic Advisor to the Master's in Financial Engineering (MFE) program at the Haas School of Business. Prior to joining Haas in 2000, Mr. O'Brien was Managing Director at Credit Suisse Asset Management responsible for the performance measurement and risk management functions.

Prior to Credit Suisse, Mr. O'Brien was co-founder, Chairman and CEO of Leland O'Brien Rubinstein (LOR) Associates, and Chairman of the Capital Market Fund, and the S&P 500 SuperTrust – the first exchange traded fund (ETF). Prior to LOR, Mr. O'Brien co-founded Wilshire Associates (originally operated as O'Brien Associates), and co-developed the Wilshire 5000 common stock index (originally named and published as the O'Brien 5000 Index).

Mr. O'Brien has received various awards, including the Financial Analyst's Graham and Dodd Scroll Award, the Matthew R. McArthur Award from the Investment Management Consultants Association for lifetime contributions to investment consulting. Mr. O'Brien was named among Fortune Magazine's ten Businessmen of the Year in 1987. Mr. O'Brien holds a S.B. in economics from MIT, and an M.S. in operations research from UCLA. He served as a Lieutenant in the United States Air Force.

THOMAS GILBERT

Thomas Gilbert graduated from the Finance Ph.D. Program at the Haas School of Business in May 2008. Thomas is currently an Assistant Professor of Finance and Business Economics at the Michael G. Foster School of Business, University of Washington. His research lies in the area of information aggregation and the role of macroeconomic announcements on stock prices. Since 2003, he has taught parts of the Certified Investment Management Analyst program (CIMA®) and the Berkeley Finance Series within the Finance Executive Programs at the Haas School of Business. He has also taught in the Undergraduate, Full-Time MBA, and Evening & Weekend MBA programs at Haas, for which he won the Best Graduate Student Instructor Award in 2005, 2006, and 2007. He holds a Masters in Finance from U.C. Berkeley and a Masters in Physics from Imperial College (United Kingdom).

ROBERT ECCLES

Robert Eccles is the leading academic authority on integrated reporting, as well as one of the world's top researchers on sustainability from both a company and investor perspective. Bob is Chairman of Arabesque Partners, the world's first ESG Quant fund. He joined the faculty of the Harvard Business School in 1979 and received tenure in 1989. An award-winning author of twelve books, including two on integrated reporting, Bob has written numerous articles and has a column on Forbes.com. He is the founding Chairman of the Sustainability Accounting Standards Board (SASB) and also played a central role in establishing the International Integrated Reporting Council (IIRC). In 2011, he was selected as one of the world's Top 100 Thought Leaders in Trustworthy Business Behavior, and in 2014 and 2015 was named as one of the 100 Most Influential People in Business Ethics. His most recent book is *The Integrated Reporting Movement: Meaning, Momentum, Motives, and Materiality* (with Michael P. Krzus and Sydney Ribot) published in 2014. Bob was nominated by the Center for Responsible Business.

**BENJAMIN LAZARUS,
PARAMETRIC**

Mr. Lazarus joined the firm in 2004*. He is responsible for developing, coordinating, and executing the business development and client services plan for Parametric unique family of products with emphasis on the Western region of the United States and Canada. In addition, Ben works on developing and managing new partnerships for Parametric and has presented on the use of derivatives at different industry events. From 2015 to 2016, he was the Senior Vice President of US Sales at Nuveen Investments in Minneapolis, Minnesota. Ben earned a B.A. in Psychology from the University of California, San Diego and an MBA in Marketing and Strategic Management from the University of Minnesota. He is a CFA® charterholder and a member of the CFA Society of Minnesota. *Reflects the year employee was hired by The Clifton Group, which was acquired by Parametric Portfolio Associates® LLC on December 31, 2012.

TERI NOBLE, AMERICAN REALTY ADVISORS

Teri Noble is responsible for marketing American Realty Advisors' full line of real estate investment management services, including commingled fund and separate account investment programs to institutional clients in the Western United States.

“Yes, I feel that all staff and board members should take advantage of this course. This course has been a refresher and update on many of the concepts used at board meeting level.”

*— Sharon Naramore,
Contra Costa County Employees
Retirement Association*



DELIA M. ROGES, INVESCO



Delia M. Roges, Invesco is a member of the Invesco US Institutional Sales and Service Team. As managing director, she is responsible for relationship management and new business generation for institutional investors in public funds in the western United States. Ms. Roges

has been in the institutional investment management business since 1991.

Prior to joining Invesco in 2011, she was a senior member of a boutique investment banking and private placement firm focused on securing capital for private equity and real estate general partnerships. She served previously as a Senior Vice President at Trust Company of the West where she was responsible for advising institutional clients and developing product solutions for new business development. Ms. Roges serves on the Board of Regents to Loyola Marymount University and on the Board of Visitors at the School of Education at LMU. She earned an MBA at the University of Southern California and a Bachelors in Business Administration from Loyola Marymount University.

KRISTIN V. SHOFNER, FIDELITY INSTITUTIONAL ASSET MGMT.



Kristin Shofner is Senior Vice President, Business Development at Fidelity Institutional Asset Mgmt. In this role, she leads the development of relationships with public pension plans.

Prior to joining Fidelity in 2013, Kristin was a Director of Institutional Sales and Marketing at Lord Abbett & Co, Inc since June 2003. Her previous positions include serving as a manager of Institutional Sales and Client Services from 2000 to 2003 and as a manager research associate from 1998 to 2000 at Asset Strategy Consulting/InvestorForce, Inc. She has been in the industry since 1998. Kristin earned her bachelor of arts degree in history and sociology from the University of California at Santa Barbara.

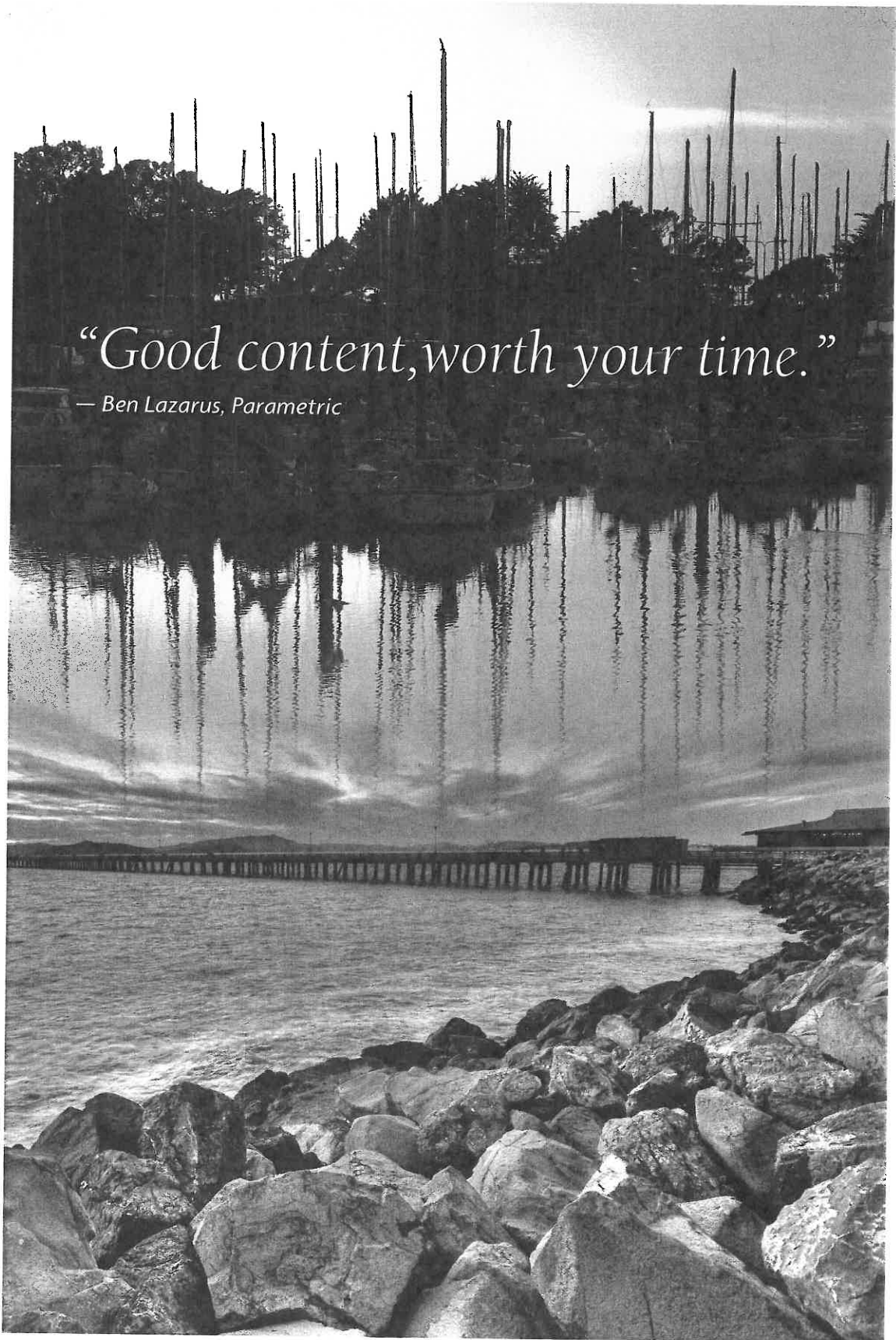
EDWARD J. HOFFMAN, VERUS



Mr. Hoffman brings over 20 years of experience to his clients, providing strategic investment advice to ensure that clients meet their long-term investment objectives. He serves as lead consultant to both public and Taft-Hartley benefits plans.

Before joining Verus (previously known as Wurts & Associates) in 2011, Mr. Hoffman served institutional clients at Legg Mason and Prudential. In addition to his client service responsibilities at Legg Mason, he served on the asset management division operating committee and Legg Mason Funds valuation committee, led corporate development initiatives including several related to the 2005 acquisition of Citigroup's asset management division, and managed a variety of product development initiatives. Today, his work in risk-based advisory services provides an additional and valuable perspective to his non-discretionary clients.

Mr. Hoffman earned a bachelor of science (BS) in industrial management with college and university honors from Carnegie Mellon University, where he earned membership into Beta Gamma Sigma and Mortar Board honor societies. He earned a master's degree in business administration (MBA) from the Harvard Business School. He has earned the Chartered Financial Analyst (CFA) designation and is certified as a Financial Risk Manager (FRM). He is also a member of the CFA Society of Los Angeles and the Global Association of Risk Professionals (GARP).



“Good content, worth your time.”

— Ben Lazarus, Parametric



“Successful Retirement Plan Managers recognize innovation as an opportunity to maximize the creation of value.”

The strength of the Berkeley-Haas School of Business is expressed in its motto, “Leading through Innovation.” Successful Retirement Plan Managers recognize innovation as an opportunity to maximize the creation of value. This program focuses on individual, team, and organizational levels of innovative potential.

The Public Pension Investment Management Program is carefully designed to give participants the tools, knowledge and networks they need to master their particular challenges. Bringing perspective from their own Retirement Plans to the program, and exposed to that of their peers, participants have the opportunity to further define and develop their knowledge and objectives under the guidance of the same faculty who teach in Berkeley-Haas’s renowned Masters of Financial Engineering program, including top finance experts John O’Brien, Thomas Gilbert and Greg LeBlanc.

ATTENDEE INFORMATION

PLEASE COMPLETE ONE REGISTRATION PER ATTENDEE AND RETURN TO SACRS.

Name: _____
 (Print exactly for name badge)

Organization: _____ Position Title: _____

Address (No P.O. Boxes Please): _____

City/State/Zip: _____

Business Telephone: _____ Fax: _____

Home Telephone: _____ Email address: _____

List any special needs you may require during your stay:

(Dietary, Handicap Accessible, etc.) _____

Emergency Contact Name: _____ Emergency Phone: _____

HOTEL ACCOMMODATIONS

Arrival Date: _____ Departure Date: _____

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BILLING INFORMATION

CREDIT CARD BILL ME

SEND INVOICE TO THE FOLLOWING INDIVIDUAL

Name: _____

Address (No P.O. Boxes Please): _____

City/State/Zip: _____

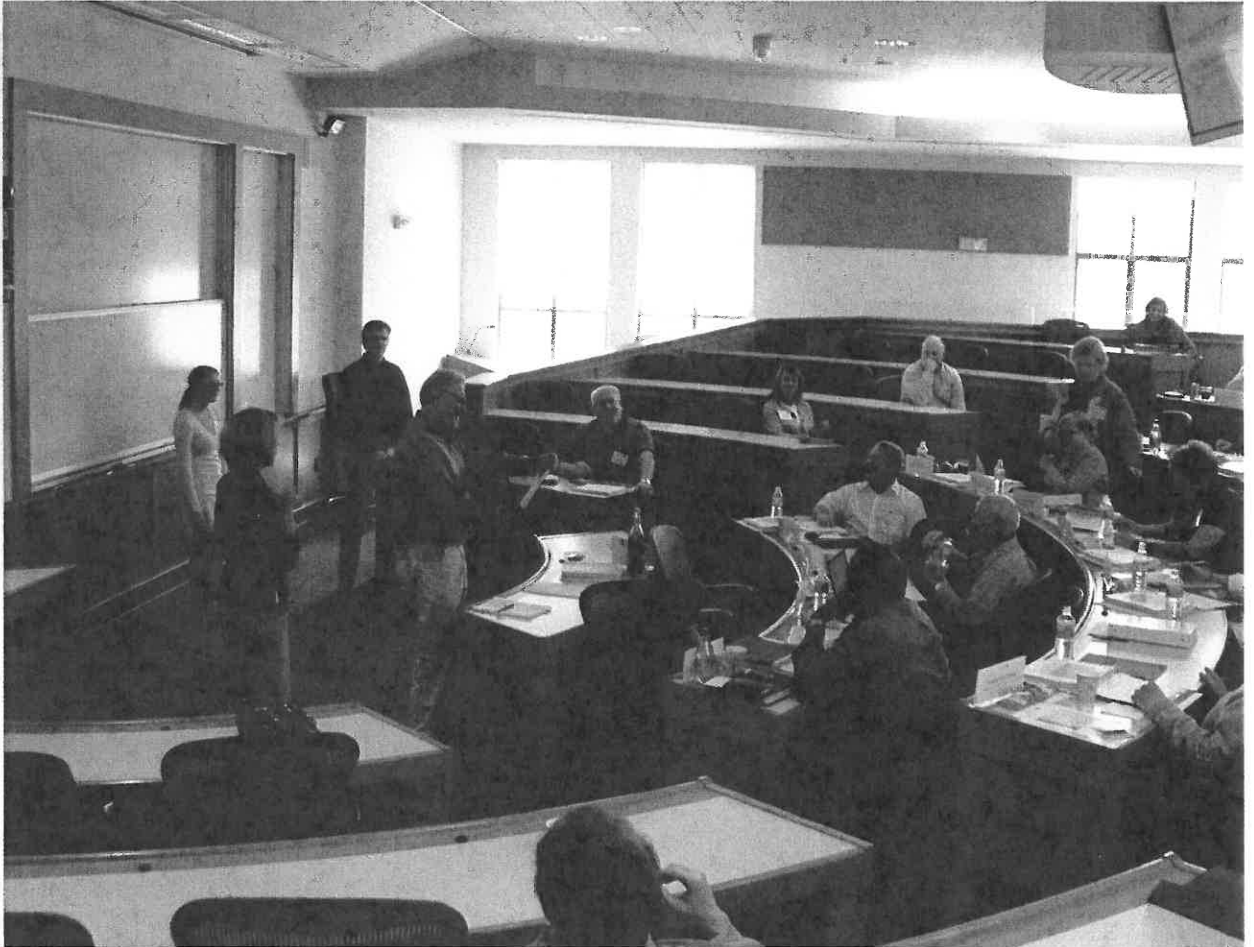
Telephone: _____ Fax: _____

MEMBERSHIP INFORMATION

Type of Member: _____ Name of County or Organization: _____

Principal Activity of the Organization (e.g. Retirement, Marketing, Consulting, Non-Profit): _____

Organization Type: Other Government Non-Profit Public Private



PROGRAM REGISTRATION

Registration online at sacrs.org
JULY 24–26, 2017

All program activities will take place on the campus of **UC Berkeley Center for Executive Education**. The host hotel is the **Hotel Shattuck Plaza**. Price for the SACRS Investment Management Program is \$2500 per person. Registration fees cover registration, training materials, meals (breakfast, lunch and light receptions) and daily transportation to and from the Hotel Shattuck Plaza/UC Berkeley. Hotel accommodations are separate (see page 11).

PROGRAM LOCATION

UC Berkeley Center for Executive Education
2220 Piedmont Ave., Berkeley, CA 94720-1900

In order to receive a refund, you must cancel your registration in writing by July 1, 2017. After July 1, 2017, no refunds will be permitted.

PARTICIPATION IS LIMITED.

Register early by visiting sacrs.org. To submit your registration, complete the enclosed form and:

MAIL TO: **SACRS**
C/O Sulema Peterson
1415 L Street, Suite 1000
Sacramento, CA 95814

OR E-MAIL TO: sulema@sacrs.org

OR VISIT: sacrs.org and submit online



HOTEL ACCOMMODATIONS

Hotel Shattuck Plaza

2086 Allston Way, Berkeley, California 94704

Tel: (510) 845-7300

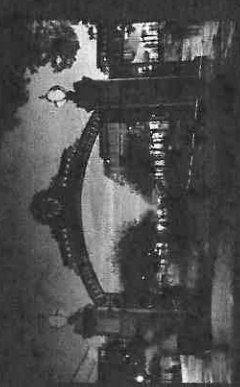
hotelshattuckplaza.com

Accommodations will be made for confirmed attendees at the **Hotel Shattuck Plaza** in downtown Berkeley, which offers participants a hip and historic retreat just blocks from the UC Berkeley campus and the Rockridge District. Reflecting California's architectural heritage and re-designed with a contemporary aesthetic, this historic boutique hotel is the jewel of downtown Berkeley.

Shuttle service between the hotel and UC Berkeley Center for Executive Education will be provided. **SACRS room rate is \$229 per room (not including tax).** Guests have full use of the computers and internet in the business center, high speed internet access in guest room, access to the YMCA, local calls, newspaper delivery and in-room coffee.

Cancellation with no penalties is 72 hours prior to arrival. **All hotel reservations will be made through SACRS. Please do not call the hotel directly to make reservations.** To reserve your hotel accommodations, contact Sulema H. Peterson, SACRS Administrator at the following: sulema@sacrs.org or (916) 441-1850.

An informal and collegial atmosphere develops at the SACRS UC Berkeley Program. Program faculty and participants enjoy lunchtime meals together, when topics from daily discussions are often reinforced, vetted and simplified. During the evening, participants share dinner together as a group, taking in Berkeley's local restaurants within walking distance from the hotel.



July 24-26, 2017

UC Berkeley Center for Executive Education

**STATE ASSOCIATION of
COUNTY RETIREMENT SYSTEMS**

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